



Metro®

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Acronyms and Abbreviations

AA	Alternatives Analysis
ACS	American Community Survey
ADA	Americans with Disabilities Act
AV	assessed value
BEA	Bureau of Economic Analysis
BLS	Bureau of Labor Statistics
BRT	Bus Rapid Transit
CAO	Chief Administrative Officer
CBP	County Business Patterns
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CTOD	Center for Transit-Oriented Development
DEIS/DEIR	Draft Environmental Impact Statement/Draft Environmental Impact Report
EDD	Employment Development Department
ESFV	East San Fernando Valley
FAR	floor area ratio
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FY	fiscal year
GIS	Geographic Information System
I	Interstate
LAX	Los Angeles International Airport
LEHD	Longitudinal Employer-Household Dynamics
LRT	Light Rail Transit
L RTP	Long-Range Transportation Plan
Metro	Los Angeles County Metropolitan Transportation Authority
MSF	maintenance and storage facility
NEPA	National Environmental Policy Act
OCS	overhead contact system
RTP	Regional Transportation Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SCAG	Southern California Association of Governments

SR	State Route
TAZ	traffic analysis zone
TOD	transit-oriented development
TPSS	traction power substations
TSM	Transportation System Management

Executive Summary

This technical report evaluates the potential for demographic, economic and fiscal impacts that could arise from the construction and long-term operation of the proposed East San Fernando Valley Transit Corridor Project. The project options evaluated include No-Build, Transportation Systems Management (TSM), two Bus Rapid Transit (BRT) and two Light Rail Transit (LRT) Alternatives. The BRT Alternatives include both a curbside-running and median-running option. The LRT Alternatives include a Low-Floor LRT/Tram and standard Light Rail option. The baseline fiscal and economic conditions (i.e., local and regional demographic and employment levels and property tax revenues) by which the project alternatives are assessed are also described. The report evaluates the direct and indirect tax revenue impacts, construction-related employment, total output, labor income impacts, and value added construction-related impacts on the Los Angeles County regional economy, cumulative impacts and potential mitigation measures for the project. Topics discussed also include the regulatory framework for this analysis, existing demographic, employment, transit dependent population, land uses patterns and the methodologies and data sources used.

This analysis finds no evidence of unplanned growth inducement associated with any of the project alternatives. However, the findings indicate that there are opportunities where project alternatives could serve as a “catalyst” for economic revitalization and growth. Within the East San Fernando Valley Transit Corridor project area there are many opportunities for joint development at station locations and other public/private transit oriented development (TOD) opportunities along the proposed alignments, primarily for the LRT Alternative. The report discusses these opportunities qualitatively in the context of existing and forecasted demographic and economic conditions in the study area and the transit corridor and based on the current experience along other light rail transit TODs, either developed or in the planning stages in Los Angeles County. Before these developments could be fully realized, the cities of Los Angeles and San Fernando would have to consider various station specific zoning and general plan amendments through a public review and hearing process.

The No-Build, TSM, Low-Floor LRT/Tram Alternative, and LRT Alternative would not adversely affect the economic and fiscal health of the communities in the project area beyond the short-term disruption associated with construction (excluding the No-Build Alternative), which can be mitigated. None of these alternatives would result in any direct, indirect, or cumulatively significant adverse impacts. On the contrary, both of the build alternatives provide considerable mobility improvements and travel time and cost savings benefits compared to the No-Build and TSM Alternatives. Without meaningful investment in transportation infrastructure to handle this increase in population and employment density, the region’s existing comparative advantages may be compromised by rising travel times and associated congestion costs, and increased negative impacts such as air emissions, and reduced travel reliability.

The LRT Alternative would have long-term benefits for the communities it traverses and would further goals and policies for revitalization and investment within the project area. The project’s operation would have long-term mobility benefits for the communities in terms of travel time cost savings. The losses of real estate tax revenue, although not significant, would likely be offset by increased development near stations and along the LRT alignment. The LRT Alternative would not result in a considerable contribution to cumulative adverse impacts during operation, but would rather be economically beneficial to the surrounding communities. Construction activities could contribute to community disruption resulting from short-term parcel acquisition and construction activities. This may result in short-term economic impacts on local businesses, but would be

temporary and not significant as many of these impacts could be mitigated. Overall, the LRT Alternative would not result in a considerable contribution to adverse cumulative impacts but rather could result in a considerable contribution to beneficial cumulative impacts.

While the LRT Alternatives would result in minor losses in the tax base and associated revenue, these impacts would not be significant. Moreover, the loss of tax revenue could be offset by increased development near stations and along the LRT alignment, particularly if jurisdictions work to establish and apply TOD zoning and supportive general plan policies, such as parking ratios that reflect the increased transit usage and commensurate reductions in automobile travel. This creates economic opportunity for the communities in the project area. Therefore, the LRT Alternatives would not result in any direct, indirect, or cumulatively significant impacts and offers travel time and mobility improvements, along with the potential to increase development activity near some of the proposed LRT stations.

1.1 Study Background

What Is the East San Fernando Valley Transit Corridor?

The Federal Transit Administration (FTA) and Los Angeles County Metropolitan Transportation Authority (Metro) have initiated a Draft Environmental Impact Statement (DEIS)/Environmental Impact Report (DEIR) for the East San Fernando Valley Transit Corridor Project. The DEIS/DEIR is being prepared with the FTA as the Lead Agency under the National Environmental Policy Act (NEPA) and Metro as the Lead Agency under the California Environmental Quality Act (CEQA).

The DEIS/DEIR and related engineering are being undertaken by Metro, in close coordination with the Cities of Los Angeles and San Fernando. The DEIS/DEIR will be a combined document complying with the most recent state and federal environmental laws. The project's public/community outreach component is being undertaken as an integrated parallel effort to the DEIS/DEIR.

Prior to the initiation of the DEIS/DEIR, an Alternatives Analysis (AA) was received by the Metro Board in January 2013 to study the East San Fernando Valley Transit Corridor and define, screen, and recommend alternatives for future study. This study enabled Metro, the City of Los Angeles, and the City of San Fernando to evaluate a range of new public transit service alternatives that can accommodate future population growth and transit demand, while being compatible with existing land uses and future development opportunities. The study considered the Sepulveda Pass Corridor, which is another Measure R project, and the proposed California High Speed Rail Project. Both of these projects may be directly served by a future transit project in the project study area. The Sepulveda Pass Corridor could eventually link the West Los Angeles area to the eastern San Fernando Valley and the California High Speed Rail Project via the project corridor. As part of the January 2013 Alternatives Analysis, most of Sepulveda Boulevard was eliminated as an alignment option, as well as the alignment extending to Lakeview Terrace. As a result of the Alternatives Analysis, the recommended modes were Bus Rapid Transit (BRT) and Light Rail Transit (LRT).

As a result of the alternatives screening process and feedback received during the public scoping period, a curb-running BRT, median-running BRT, median-running low-floor LRT/tram, and a median-running LRT, were identified as the four build alternatives, along with the Transportation Systems Management (TSM) and No-Build Alternatives to be carried forward for analysis in this DEIS/DEIR.

1.1.1 Study Area

Where Is the Study Area Located?

The East San Fernando Valley Transit Corridor Project study area is located in the San Fernando Valley in Los Angeles County. Generally, the project study area extends from the city of San Fernando and the Sylmar/San Fernando Metrolink Station in the north to the Van Nuys Metro Orange Line Station within the city of Los Angeles in the south. However, the project study area used for the

environmental issue described in this report could vary from this general project study area, depending on the needs of the analysis. For the purposes of the analysis contained in this report, the project study area coincides with the general project study area.

The eastern San Fernando Valley includes the two major north-south arterial roadways of Sepulveda and Van Nuys Boulevards, spanning approximately 10 to 12 miles and the major north/west arterial roadway of San Fernando Road.

Several freeways traverse or border the eastern San Fernando Valley. These include the Ventura Freeway (US-101), the San Diego Freeway (Interstate [I] 405), the Golden State Freeway (I-5), the Ronald Reagan Freeway (State Route [SR] 118), and the Foothill Freeway (I-210). The Hollywood Freeway (SR-170) is located east of the project study area. In addition to Metro Local and Metro Rapid bus service, the Metro Orange Line BRT service, the Metrolink Ventura Line commuter rail service, Amtrak inter-city rail service, and the Metrolink Antelope Valley Line commuter rail service are the major transit corridors that provide interregional trips in the project study area.

Land uses in the project study area include neighborhood and regional commercial land uses, as well as government and residential land uses. Specifically, land uses in the project study area include government services at the Van Nuys Civic Center, retail shopping along the project corridor, and medium- to high-density residential uses throughout the project study area. Notable land uses in the eastern San Fernando Valley include: The Village at Sherman Oaks, Panorama Mall, Whiteman Airport, Van Nuys Airport, Mission Community Hospital, Kaiser Permanente Hospital, Van Nuys Auto Row, and several schools, youth centers, and recreational centers.

1.1.1.1 Alternatives Considered

What Alternatives Are under Consideration?

The following six alternatives, including four build alternatives, a TSM Alternative, and the No-Build Alternative, are being evaluated as part of this study:

- No-Build Alternative
- TSM Alternative
- Build Alternative 1 – Curb-Running BRT Alternative
- Build Alternative 2 – Median-Running BRT Alternative
- Build Alternative 3 – Low-Floor LRT/Tram Alternative
- Build Alternative 4 – LRT Alternative

All build alternatives would operate over 9.2 miles, either in a dedicated bus lane or guideway (6.7 miles) and/or in mixed-flow traffic lanes (2.5 miles), from the Sylmar/San Fernando Metrolink station to the north to the Van Nuys Metro Orange Line station to the south, with the exception of Build Alternative 4 which includes a 2.5-mile segment within Metro-owned railroad right-of-way adjacent to San Fernando Road and Truman Street and a 2.5-mile underground segment beneath portions of Panorama City and Van Nuys.

1.1.1.2 No-Build Alternative

The No-Build Alternative represents projected conditions in 2040 without implementation of the project. No new transportation infrastructure would be built within the project study area, aside from

projects that are currently under construction or funded for construction and operation by 2040. These projects include highway and transit projects funded by Measure R and specified in the current constrained element of the Metro 2009 Long-Range Transportation Plan (LRTP) and the 2012 Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Existing infrastructure and future planned and funded projects assumed under the No-Build Alternative include:

- Existing Freeways – I-5, and I-105, SR-118, and US-101;
- Existing Transitway – Metro Orange Line;
- Existing Bus Service – Metro Rapid and Metro Local Shuttle;
- Los Angeles Department of Transportation Commuter Express, and DASH;
- Existing and Planned Bicycle Projects – Bicycle facilities on Van Nuys Boulevard and connecting east/west facilities; and
- Other Planned Projects – Various freeway and arterial roadway upgrades, expansions to the Metro Rapid bus system, upgrades to the Metrolink system and proposed California High Speed Rail project.

This alternative establishes a baseline for comparison to other alternatives in terms of potential environmental effects, including adverse and beneficial environmental effects.

1.1.1.3 TSM Alternative

The TSM Alternative enhances the No-Build Alternative by emphasizing transportation systems upgrades that focus on relatively low-cost transit service improvements. It represents efficient and feasible improvements to transit service, such as increased bus frequencies and minor modifications to the roadway network. Additional TSM Alternative transit improvements that may be considered include, but are not limited to, traffic signalization improvements, bus stop amenities/improvements, and bus schedule restructuring (Figure 1-1).

The TSM Alternative considers the existing bus network, enhanced operating hours, and increased bus frequencies for Metro Rapid Line 761 and Local Line 233. Under this alternative, the Metro Rapid Line 761 and Metro Local Line 233 bus routes would retain existing stop locations. This alternative would add 20 additional buses to the existing Metro Local 233 and Metro Rapid 761 bus routes. These buses would be similar to existing Metro 60-foot articulated buses, and each bus would have the capacity to serve up to 75 passengers (57 seats x 1.30 passenger loading standard). Buses would be equipped with transit signal priority equipment to allow for improved operations and on-time performance.

The existing Metro Division 15 maintenance and storage facility (MSF) located in Sun Valley would be able to accommodate the 20 additional buses with the implementation of the TSM Alternative. Operational changes would include reduced headway (elapsed time between buses) times for Metro Rapid Line 761 and Metro Local Line 233, as follows:

- Metro Rapid Line 761 would operate with headways reduced from 10 minutes to 8 minutes during peak hours (7 a.m. to 9 a.m. and 4 p.m. to 7 p.m. on weekdays) and from 17.5 minutes to 12 minutes during off-peak hours.
- Metro Local Line 233 would operate with headways reduced from 12 minutes to 8 minutes during peak hours and from 20 minutes to 16 minutes during off-peak hours.

Figure 1-1: TSM Alternative



Source: STV, 2014.

1.1.1.4 Build Alternative 1 – Curb-Running BRT Alternative

Under the Curb-Running BRT Alternative, the BRT alignment would incorporate 6.7 miles of existing curb lanes (i.e., lanes closest to the curb) along Van Nuys Boulevard between San Fernando Road and the Metro Orange Line. This alternative would be similar to the Metro Wilshire BRT project and would operate similarly. The lanes would be dedicated curb-running bus lanes for Metro Rapid Line 761 and Metro Local Line 233, and for other transit lines that operate on short segments of Van Nuys Boulevard. In addition, this alternative would incorporate 2.5 miles of mixed-flow lanes, where buses would operate in the curb lane along San Fernando Road and Truman Street between Van Nuys Boulevard and Hubbard Avenue for Metro Line 761. Metro Line 233 would continue north on Van Nuys Boulevard to Lakeview Terrace. These improvements would result in an improved Metro Rapid Line 761 (hereafter referred to as 761X) and an improved Metro Local Line 233 (hereafter referred to as 233X). The route of the Curb-Running BRT Alternative is illustrated in Figure 1-2.

From the Sylmar/San Fernando Metrolink station:

- Metro Rapid Line 761X would operate within roadway travel lanes on Truman Street and San Fernando Road.
- At Van Nuys Boulevard, Metro Rapid Line 761X would turn southwest and travel south within a curb-running dedicated bus lane along Van Nuys Boulevard.
- The alternative would continue to be curb running along Van Nuys Boulevard until reaching the Metro Orange Line Van Nuys station where Metro Rapid Line 761X service would be integrated into mixed-flow traffic.
- Metro Line 761X would then continue south to Westwood as under existing conditions, though it should be noted that in December 2014 the Metro Rapid Line 761 will be re-routed to travel from Van Nuys Boulevard to Ventura Boulevard, and then to Reseda Boulevard, while a new Metro Rapid Line 788 would travel from Van Nuys Boulevard through the Sepulveda Pass to Westwood as part of a Metro demonstration project.

Metro Local Line 233X would operate similar to how it currently operates between the intersections of Van Nuys and Glenoaks Boulevards to the north and Van Nuys and Ventura Boulevards to the south. However, Metro Local Line 233X would operate with improvements over existing service because it would utilize the BRT lanes where its route overlaps with the alignment along Van Nuys Boulevard.

Transit service would not be confined to only the dedicated curb lanes. Buses would still have the option to operate within the remaining mixed-flow lanes to bypass right-turning vehicles, a bicyclist, or another bus at a bus stop.

The Curb-Running BRT Alternative would operate in dedicated bus lanes, sharing the lanes with bicycles and right turning vehicles. However, on San Fernando Road and Truman Street, no dedicated bus lanes would be provided. The Curb-Running BRT Alternative would include 18 bus stops.

Figure 1-2: Build Alternative 1 – Curb-Running BRT Alternative

East San Fernando Valley Transit Corridor
Curb Running Bus Rapid Transit (BRT)



Source: KOA and ICF International, 2014.



1.1.1.5 **Build Alternative 2 – Median-Running BRT Alternative**

The Median-Running BRT Alternative consists of approximately 6.7 miles of dedicated median-running bus lanes between San Fernando Road and the Metro Orange Line, and would have operational standards similar to the Metro Orange Line. The remaining 2.5 miles would operate in mixed-flow traffic between the Sylmar/San Fernando Metrolink Station and San Fernando Road/Van Nuys Boulevard. The Median-Running BRT Alternative is illustrated in Figure 1-3.

Similar to the Curb-Running BRT Alternative, the Median-Running BRT (Metro Rapid Line 761X) would operate as follows from the Sylmar/San Fernando Metrolink station:

- Metro Rapid Line 761X would operate within mixed-flow lanes on Truman Street and San Fernando Road.
- At Van Nuys Boulevard, the route would turn southwest and travel south within the median of Van Nuys Boulevard in a new dedicated guideway.
- Upon reaching the Van Nuys Metro Orange Line Station, the dedicated guideway would end and the Metro Rapid Line 761X service would then be integrated into mixed-flow traffic.
- The route would then continue south to Westwood, similar to the existing route. Similar to Build Alternative 1, it should be noted that in December 2014 the Metro Rapid Line 761 will be re-routed to travel from Van Nuys Boulevard to Ventura Boulevard, and then to Reseda Boulevard, while a new Metro Rapid Line 788 would travel from Van Nuys Boulevard through the Sepulveda Pass to Westwood as part of a Metro demonstration project.

Metro Local Line 233 would operate similar to existing conditions between the intersections of Van Nuys and Glenoaks Boulevards to the north and Van Nuys and Ventura Boulevards to the south. Rapid bus stops that currently serve the 794 and 734 lines on the northern part of the alignment along Truman Street and San Fernando Road would be upgraded and have design enhancements that would be Americans with Disabilities Act (ADA) compliant. These stops would also serve the redirected 761X line:

1. Sylmar/San Fernando Metrolink Station
2. Hubbard Station
3. Maclay Station
4. Paxton Station
5. Van Nuys/San Fernando Station

Along the Van Nuys Boulevard segment, bus stop platforms would be constructed in the median. Seventeen new median bus stops would be included.

Figure 1-3: Build Alternative 2 – Median-Running BRT Alternative

East San Fernando Valley Transit Corridor Median Running Bus Rapid Transit (BRT)



Source: KOA and ICF International, 2014.



1.1.1.6 Build Alternative 3 – Low-Floor LRT/Tram Alternative

The Low-Floor LRT/Tram Alternative would operate along a 9.2-mile route from the Sylmar/San Fernando Metrolink station to the north, to the Van Nuys Metro Orange Line station to the south. The Low-Floor LRT/Tram Alternative would operate in a median dedicated guideway for approximately 6.7 miles along Van Nuys Boulevard between San Fernando Road and the Van Nuys Metro Orange Line station. The low-floor LRT/tram alternative would operate in mixed-flow traffic lanes on San Fernando Road between the intersection of San Fernando Road/Van Nuys Boulevard and just north of Wolfskill Street. Between Wolfskill Street and the Sylmar/San Fernando Metrolink station, the low-floor LRT/tram would operate in a median dedicated guideway. It would include 28 stations. The route of the Low-Floor LRT/Tram Alternative is illustrated in Figure 1-4.

The Low-Floor LRT/Tram Alternative would operate along the following route:

- From the Sylmar/San Fernando Metrolink station, the low-floor LRT/tram would operate within a median dedicated guideway on San Fernando Road.
- At Wolfskill Street, the low-floor LRT/tram would operate within mixed-flow travel lanes on San Fernando Road to Van Nuys Boulevard.
- At Van Nuys Boulevard, the low-floor LRT/tram would turn southwest and travel south within the median of Van Nuys Boulevard in a new dedicated guideway.
- The low-floor LRT/tram would continue to operate in the median along Van Nuys Boulevard until reaching its terminus at the Van Nuys Metro Orange Line Station.

Based on Metro's *Operations Plan for the East San Fernando Valley Transit Corridor Project*, the Low-Floor LRT/Tram Alternative would assume a similar travel speed as the Median-Running BRT Alternative, with speed improvements of 18 percent during peak hours/peak direction and 15 percent during off-peak hours.

The Low-Floor LRT/Tram Alternative would operate using low-floor articulated vehicles that would be electrically powered by overhead wires. This alternative would include supporting facilities, such as an overhead contact system (OCS), traction power substations (TPSS), signaling, and a maintenance and storage facility (MSF).

Because the Low-Floor LRT/Tram Alternative would fulfill the current functions of the existing Metro Rapid Line 761 and Metro Local Line 233, these bus routes would be modified to maintain service only to areas outside of the project corridor. Thus, Metro Rapid Line 761 (referred to as 761S with reduced service) would operate only between the Metro Orange Line and Westwood, and Metro Local Line 233 (referred to as 233S with reduced service) would operate only between San Fernando Road and Glenoaks Boulevard. It should be noted that in December 2014 the Metro Rapid Line 761 will be re-routed to travel from Van Nuys Boulevard to Ventura Boulevard, and then to Reseda Boulevard, while a new Metro Rapid Line 788 would travel from Van Nuys Boulevard through the Sepulveda Pass to Westwood as part of a Metro demonstration project.

Stations for the Low-Floor LRT/Tram Alternative would be constructed at various intervals along the entire route. There are portions of the route where stations are closer together and other portions where they are located further apart. Twenty-eight stations are proposed with the Low-Floor LRT/Tram Alternative. The 28 proposed low-floor LRT/tram stations would be ADA compliant.

Figure 1-4: Build Alternative 3 – Low-Floor LRT/Tram Alternative



Source: KOA and ICF International, 2014.



1.1.1.7 Build Alternative 4 – LRT Alternative

Similar to the Low-Floor LRT/Tram Alternative, the LRT would be powered by overhead electrical wires (Figure 1-5). Under Build Alternative 4, the LRT would travel in a dedicated guideway from the Sylmar/San Fernando Metrolink station along San Fernando Road south to Van Nuys Boulevard, from San Fernando Road to the Van Nuys Metro Orange Line Station, over a distance of approximately 9.2 miles. The LRT Alternative includes a segment in exclusive right-of-way through the Antelope Valley Metrolink railroad corridor, a segment with semi-exclusive right-of-way in the middle of Van Nuys Boulevard, and an underground segment beneath Van Nuys Boulevard from just north of Parthenia Street to Hart Street.

The LRT Alternative would be similar to other street-running LRT lines that currently operate in the Los Angeles area, such as the Metro Blue Line, Metro Gold Line, and Metro Exposition Line. The LRT would travel along the median for most of the route, with a subway of approximately 2.5 miles in length between Vanowen Street and Nordhoff Street. On the surface-running segment, the LRT Alternative would operate at prevailing traffic speeds and would be controlled by standard traffic signals.

Stations would be constructed at approximately 1-mile intervals along the entire route. There would be 14 stations, three of which would be underground near Sherman Way, the Van Nuys Metrolink station, and Roscoe Boulevard. Entry to the three underground stations would be provided from an entry plaza and portal. The entry portals would provide access to stairs, escalators, and elevators leading to an underground LRT station mezzanine level, which, in turn, would be connected via additional stairs, escalators, and elevators to the underground LRT station platforms.

Similar to the Low-Floor LRT/Tram Alternative, the LRT Alternative would require a number of additional elements to support vehicle operations, including an OCS, TPSS, communications and signaling buildings, and an MSF.

Figure 1-5: Build Alternative 4 – LRT Alternative

East San Fernando Valley Transit Corridor Median Running Light Rail Transit (LRT)



Source: KOA and ICF International, 2014.



2.1 Regulatory Framework

2.1.1 Federal Regulations

The National Environmental Policy Act of 1969, as amended, establishes that the federal government will use all practicable means to ensure all Americans safe, healthful, productive, and aesthetically (emphasis added) and culturally pleasing surroundings (42 U.S.C. 4331[b][2]). To further emphasize this point, the Federal Highway Administration (FHWA), in its implementation of NEPA (23 U.S.C. 109[h]) directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others: (1) economic impacts on the regional and/or local economy such as the effects of the proposed alternatives on development, tax revenues and public expenditures, employment opportunities, accessibility, and retail sales; (2) impacts on the economic vitality of existing highway-related businesses and resultant impacts on the local economy; and (3) impacts on established business districts.

2.1.2 State Regulations

Pursuant to the CEQA Guidelines, economic or social effects of a project that are not related to physical changes in the environment shall not be treated as significant effects on the environment, but may be used to determine the significance of physical changes caused by the project (Section 15131(b)).

2.1.3 Local Regulations

The City of Los Angeles Planning Department does not have formal requirements or guidelines related to fiscal and economic impact analyses. However, sometimes they are completed on an *ad hoc* basis for large projects as part of an EIR in the form of an Urban Decay Study, Economic Impact Study, Fiscal Analysis or Market Study. If any of these studies are prepared, they would typically be included as documents along with the EIR. The Chief Administrative Officer's (CAO's) office also prepares fiscal impact analyses for selected projects, but these are just statements. They are part of City Planning Commission agendas, even though they are not prepared by the City Planning Department.

2.2 Methodology

2.2.1 Existing Economics and Land Use Conditions

For this analysis, demographic, economic, Los Angeles County Assessor assessed valuation, property tax, sales tax, construction cost, and land use data were examined for purposes of evaluating potential impacts of the TSM, LRT and BRT Alternatives. Also, other socioeconomic data related to transit dependent population and SCAG forecasts from 2010 to 2035 were utilized to identify and/or evaluate potential transit supportive land uses, including jobs-generating and residential land uses by density.

2.2.2 Route Alternatives and Basic Units of Analysis

Alignment alternatives for the transportation corridor were provided by KOA Corporation in the form of GIS *shapefiles*, which were then used as reference alignments, around which to assemble data for the socioeconomic indicators presented in this analysis. The basic unit of analysis used for estimating 2010 data for areas in the immediate vicinity of each route alignment alternatives is the Tier 2 traffic analysis zone (TAZ) developed by SCAG for the RTP. The 2012 TAZ dataset was adopted on April 4, 2012. Tier 2 TAZs are the smallest units of geography developed by SCAG and these are a close approximation to Census Block-groups.

2.2.3 Population, Households, and Employment

Population and household estimates for the year 2010 were based on recent SCAG estimates, developed as part of the 2012 RTP process. These estimates were then cross-validated against a separate assembly of Census 2010 Blocks that fit closely with the selected Tier 2 TAZ units. The results were found to be within a 99.4 to 99.9 percent accuracy range. Density ratios were calculated based on the total acreage of the assembled Tier 2 selections for each route alternative. Additionally, total household population for the defined Tier 2 geographies was estimated based on the household population to total population ratios calculated from 2010 Census Tracts containing these selected Tier 2 units.

2.2.4 Transit Dependent Populations

Transit dependent population was defined using the following socioeconomic variables: 1) by average household income; 2) persons in poverty; 3) by indicators of transit dependency using age structure, i.e. population less than 18 years old and 65 years and older; and 4) ownership of vehicles per household developed from the 2009-2013 American Community Survey 5-year estimate at the census tract level for each alignment alternative. Estimates of population and household variables for each sub-category of analysis were calculated by applying the Census Tract level percentage distribution for each variable to the 2010 Tier 2 population and household control totals.

2.2.5 Employment, Wage and Payroll Estimates

Total employment estimates for 2008, 2010, and 2035 were obtained directly from the assembled Tier 2 datasets for each alignment alternative. Estimates for total employment in 2010 were developed by applying an area-wide adjustment that reflected the decline (in Los Angeles County) in employment over the 2008 to 2010 time period due to the major recession and economic downturn that began in late 2007. This decline was estimated at around 4.6 percent based on countywide datasets prepared by SCAG for the 2012 RTP.

Information on the distribution of employment is not included in SCAG's Tier 2 RTP dataset, but it is included in the SCAG Tier 1 dataset, which approximates the larger Census Tract geography. The employment distribution data were used for those Tier 1 units, which include the selected Tier 2 units as subsets of the Tier 1 data. The calculated weighted Tier 1 employment distribution was then applied to the total employment control totals established for each alignment alternative at the Tier 2 level.

The year 2008 distribution was then applied to the 2010 control total. Annual average wages by industry category were obtained from the California Employment Development Department (EDD) for the year 2010 on an area-wide basis for a selection of ZIP codes approximating the study area. Total wages were calculated for each alignment alternative by multiplying the employment estimates, disaggregated by sectors, by the estimated average wages for each corresponding sector.

2.2.6 Average Wages and Payroll Distribution

Annual average wages by employment categories were obtained from the California Employment Development Department for 2010, on an area-wide basis for a selection of ZIP codes approximating the study area. The distribution of employment for various categories for 2010 was provided by the SCAG 2012 RTP Tier 1 socioeconomic data.

2.2.7 Parcel Data

Los Angeles County Assessor parcel data, in GIS format, were provided for the total study area by Parcel Quest, a data vendor used by Metro. Parcels located within a one-quarter mile buffer area surrounding each route alignment alternative were selected and then analyzed for indicators such as land use, valuation, and developed versus vacant land area. This parcel information was supplemented by more recent 2014 Los Angeles County Assessor parcel data for the study area and the $\frac{1}{4}$ mile buffer area along the transit corridor alignment.

2.2.8 Transit Supportive Land Use

As discussed previously, parcels located within the Tier 2 SCAG zones and also within the one-quarter mile buffer areas, for each route alternative, were selected for analysis. Commercial, industrial, and residential land uses were identified as “developed or undeveloped acres.” For 2010, densities were calculated by dividing households by developed residential acres or employment by non-residential developed acres.

Commercial employment density is defined as the number of commercial jobs per developed commercial acre. Commercial jobs include employment in the following sectors: Retail, Information, FIRE (Finance, Insurance, and Real Estate), Professional Services, Arts, Entertainment, Recreation, Accommodation, and Food, and Other Services.

Industrial employment density is defined as industrial jobs per developed industrial acre. Industrial jobs include employment in the following sectors: Construction, Manufacturing, Wholesale Trade, and Transportation, Warehousing, and Utilities.

Population density was calculated as persons per residential acre, or total population divided by total developed residential acres; similarly, households per residential acre were calculated as total households divided by total developed residential acres.

2.3 Significance Thresholds

Significance thresholds are used to determine whether a project may have a significant environmental effect. The significance thresholds for the project, as defined by federal and state regulations and guidelines, are discussed below.

2.3.1 Federal

NEPA requires federal agencies to determine if an undertaking would significantly affect the environment; however, NEPA does not include specific significance thresholds. According to the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA, the determination of significance under NEPA is based on context and intensity.¹

Context relates to the various levels of society where impacts could occur, such as society as a whole, the affected region, the affected interests, and the locality. The intensity of an impact relates to several factors, including the degree to which the impact would affect public health and safety; the proximity of the project to sensitive resources; and the degree to which effects on the quality of the human environment are likely to be highly controversial or involve unique or unknown risks.

Under NEPA, the context and intensity of a project's impacts are discussed regardless of any thresholds levels, and mitigation measures are included where reasonable.

2.3.2 State

2.3.2.1 State CEQA Guidelines

Pursuant to Section 15131(a) of the CEQA Guidelines, economic or social effects of a project shall not be treated as significant effects on the environment. Pursuant to Section 15131(b) of the CEQA Guidelines, economic and social effects of a project may be used to determine the significance of physical changes caused by the project. In addition, as directed by Section 15131(c) of the CEQA Guidelines, economic and social factors (with a particular emphasis on housing factors) shall be considered, along with technological and environmental factors, if it is feasible to modify a project in order to reduce or avoid significant effects on the environment identified through the environmental review process.

Although the CEQA Guidelines state that economic or social effects of a project shall not be treated as significant effects on the environment, they are used to determine the significance of physical changes caused by a project. CEQA does not provide specific numerical thresholds. The following analysis is intended to document potential economic impacts due to the construction and operation of rail transit in the project study area, as well as potential fiscal impacts associated with losses to the tax base due to property acquisitions required to construct the project. Also, economic impact analysis includes the potential for the proposed alternatives to facilitate greater development of jobs and housing in proximity to one another and encourage the use of transit versus the automobile.

2.3.2.2 L.A. CEQA Thresholds Guide

The L.A. CEQA Thresholds Guide does not include specific thresholds for economic and fiscal impacts.

¹ Code of Federal Regulations. *CEQ – Regulations for Implementing NEPA, 40 CFR Part 1508, Terminology and Index*. Available: <<http://ceq.hss.doe.gov/nepa/regs/ceq/1508.htm>>. Accessed: February 15, 2013;
California Natural Resources Agency. 2010b. *State CEQA Guidelines, 14 CCR Section 15382*. Available: <<http://ceres.ca.gov/ceqa/guidelines/art20.html>>. Accessed: April 18, 2013.

2.3.2.3 City of San Fernando CEQA Significance Thresholds

The City of San Fernando does not have specific CEQA Thresholds, but instead uses the potentially significant effects listed in Appendix G of the State CEQA Guidelines as a guide for conducting environmental analyses. However, as noted earlier, CEQA does not specifically address environmental justice impacts.

2.3.3 Employment and Economic Activity

For purposes of this environmental document, a direct loss of jobs associated with ROW acquisitions in excess of 1 percent of project study area employment would be considered an adverse effect under NEPA (significant effect under CEQA). The project study area is as defined in Section 2 of this report.

Direct employment and economic activity are construction- and operation-related employment in industries whose jobs and services are used to build or operate a project. Indirect employment and economic activity are created by the secondary demand for goods and services across a broader spectrum of industrial sectors as a result of the economic multiplier effect of construction or operation.

The construction and operational employment and economic activity generated by the alternatives are based on construction and operational cost estimates. The number of direct and indirect jobs generated by a project and the earnings as a result of capital and operational expenditures were estimated using employment and earnings multipliers provided by the IMPLAN Economic Impact Model developed by the IMPLAN Group, LLC. These results were estimated using costs in 2012 dollars to provide a consistent basis for reporting and comparison across alternatives.

2.3.4 Tax Sources and Revenue

For purposes of this analysis, property tax losses in excess of one percent of the project study area tax base would be considered an adverse effect under NEPA (significant effect under CEQA).

Property tax losses to each jurisdiction were based on the assessed tax dollar values of the parcel acquisitions. The tax dollar values for these parcels were obtained from the Los Angeles County Assessor's records for 2012. The relevant data include property taxes paid/assessed value/applicable tax rate in fiscal year (FY) 2012, city location, property ownership, land use, building square footage and whether the parcel acquisition is partial or total.

The total value of acquisitions removed from the tax base was then compared to the total tax base, to identify the percentage permanently removed and therefore no longer generating tax revenues for each alternative.

3.1 Existing Economic and Land Use Conditions

Socioeconomic indicators include: average household income, low income households, low vehicle ownership households, and transit dependent population per acre (see below for definitions). These indicators were based on the 2009-2013 American Community Survey (ACS) 5-year characteristics at the census tract level. These distributions were then applied to 2010 population and household SCAG Tier 2 control totals. Economic data including employment, and wage and payroll distribution estimates for 2010 were obtained from the SCAG RTP and the California EDD.

3.1.1 Route Alternatives and Basic Units of Analysis

Complete Tier 2 TAZs that intersected quarter mile buffer areas on either side of the transit corridor and East San Fernando Valley (ESFV) study area were selected, as shown in Figures 3-1 through 3-3.

3.2 Population, Households, and Employment

Information developed by SCAG for the Tier 2 TAZs includes total population, household and employment numbers for 2010.²

3.2.1 Demographic Estimates

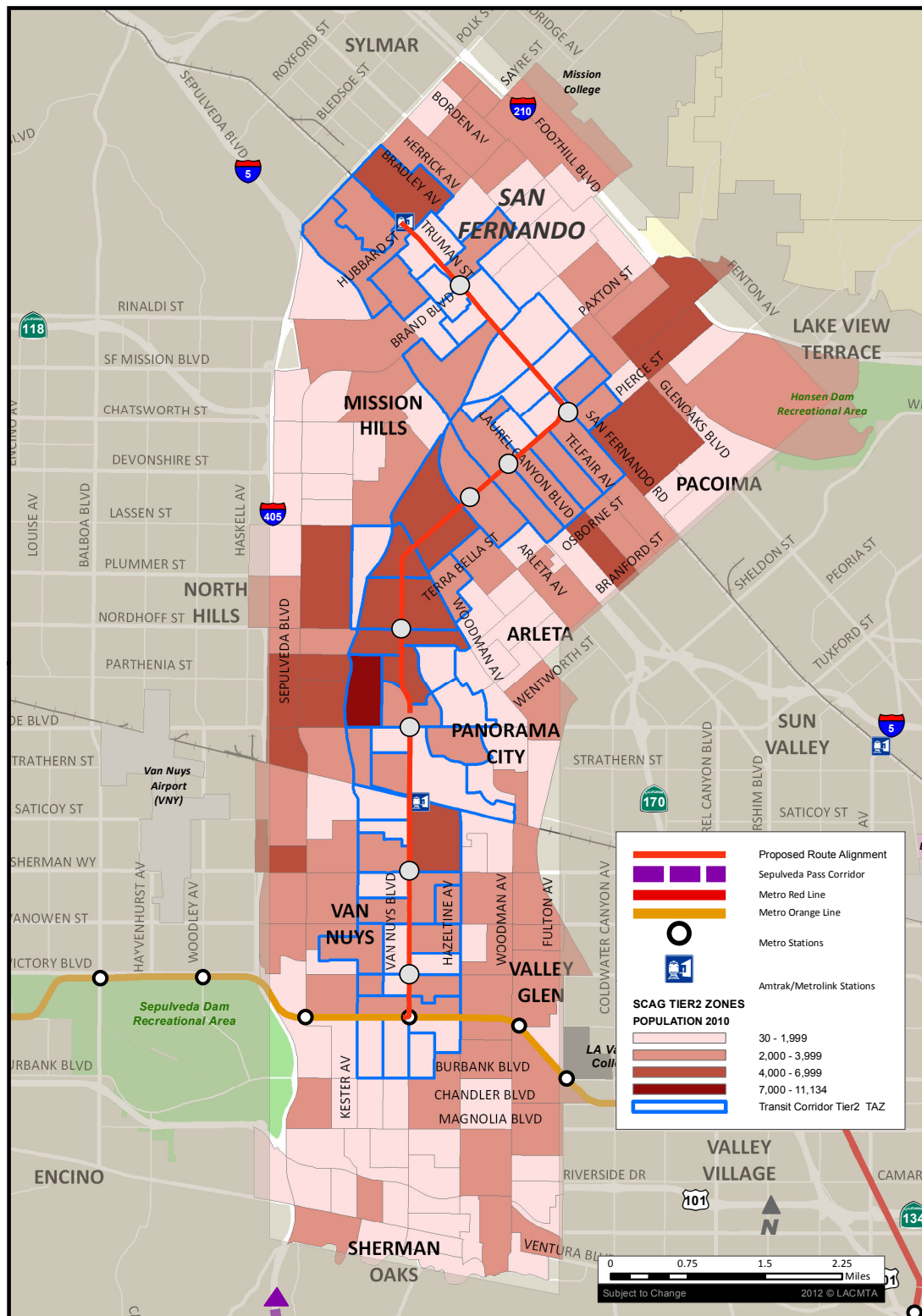
The following section includes a discussion of population, household, and employment estimates for the transit corridor and the ESFV study area.

3.2.1.1 Estimated Population

As shown in Figure 3-1 and Table 3-1, in 2010, the transit corridor's total population (167,834) was about 37 percent of the ESFV study area's total population (458,379). The estimated household population (excluding group quarters population) for the transit corridor (167,093) and for the ESFV study area (454,525) was relatively close to the total population estimates for these two areas, indicating a very small estimate for Group Quarters population. As shown on Figure 3-1, the highest concentrations of population tend to focus in Panorama City north of Roscoe Boulevard on either side of Van Nuys Boulevard. The transit corridor is identified by the SCAG Tier 2 TAZs outlined in blue on Figure 3-1.

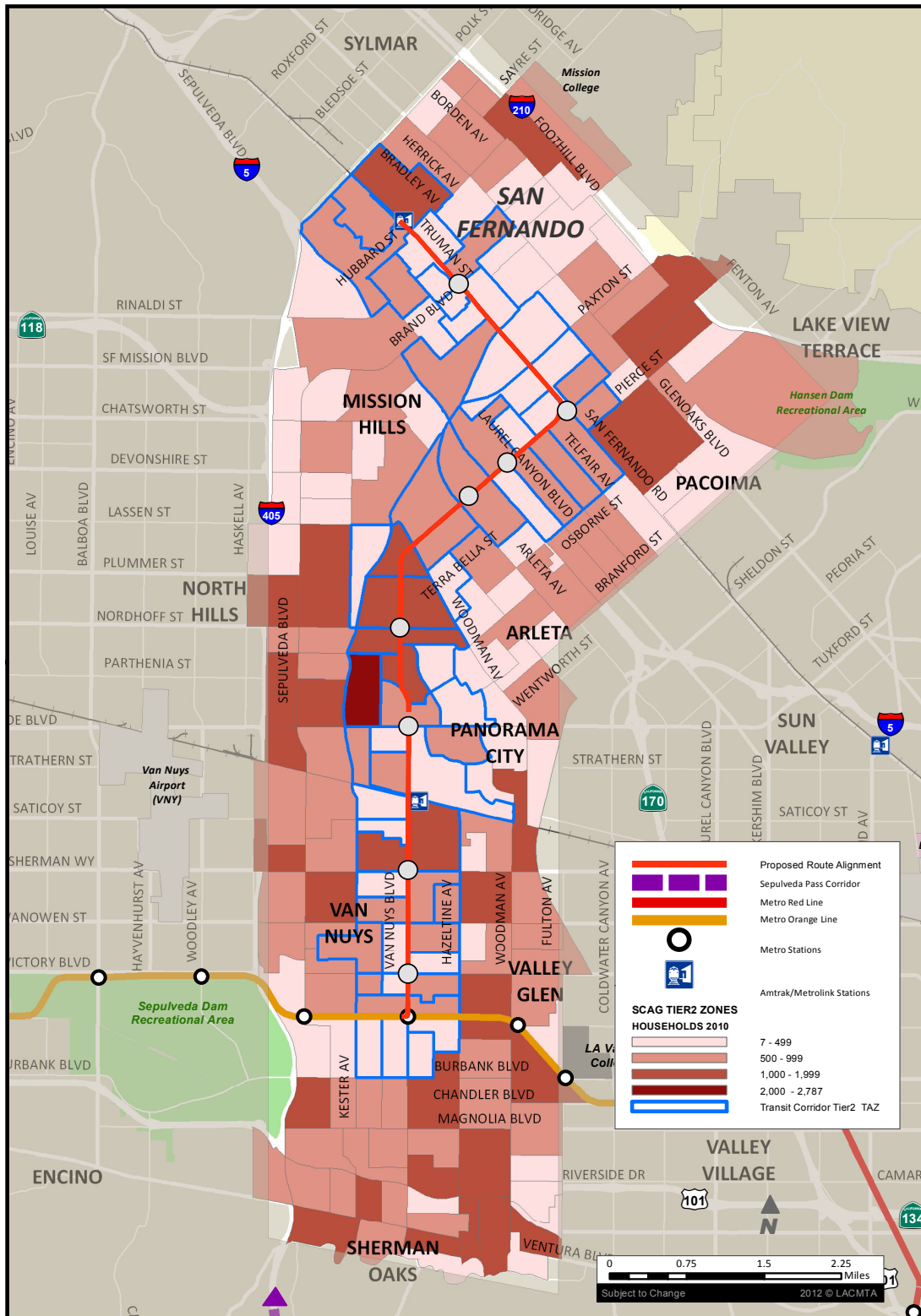
² Southern California Association of Governments, *2012 Regional Transportation Plan*. Available: <<http://rtpsc.scag.ca.gov>>. Accessed: March 25, 2013.

Figure 3-1: Population Concentrations in Transit Corridor (2010)



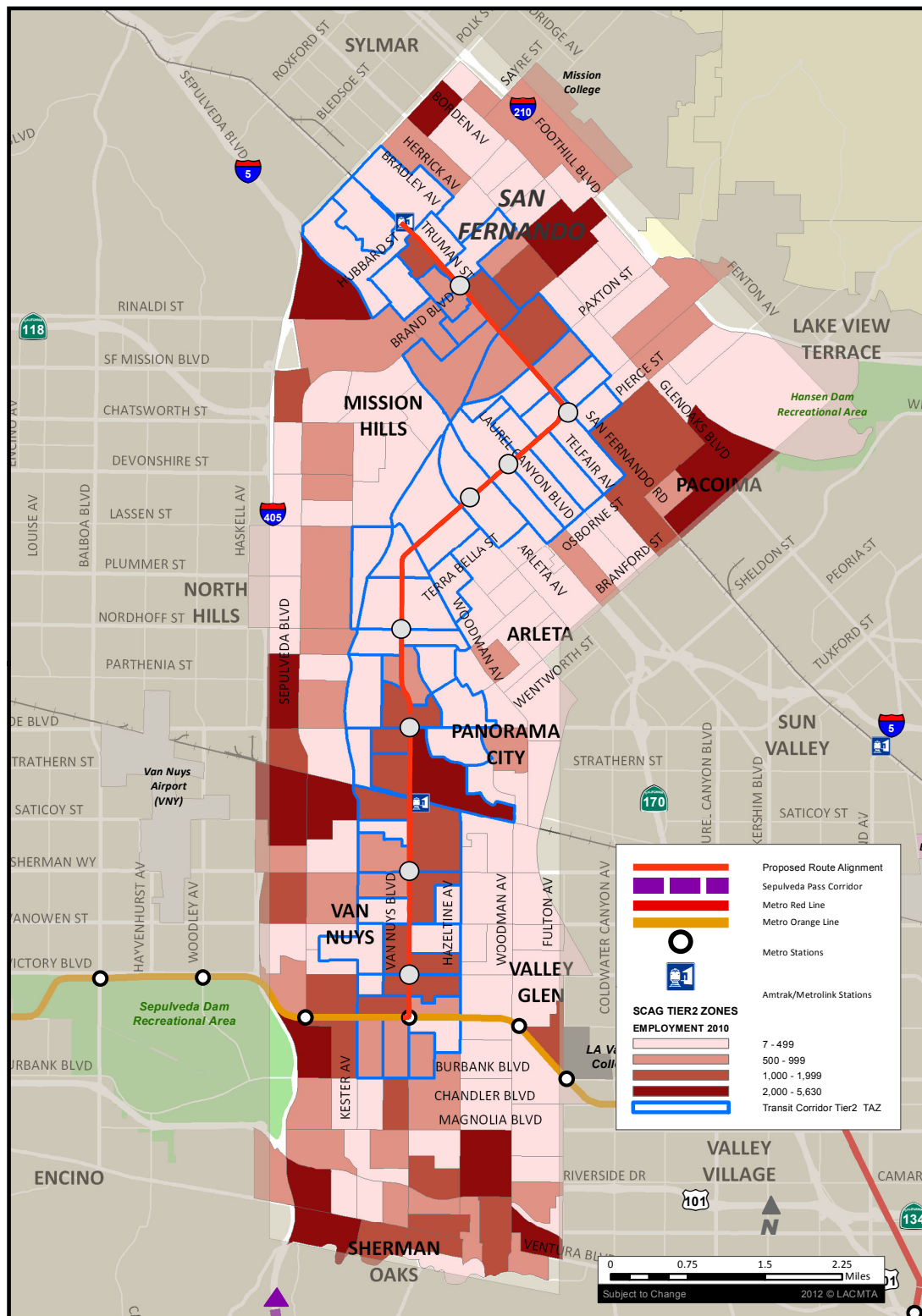
Sources: Stanley R. Hoffman Associates, Inc.; Southern California Association of Governments, 2012 Regional Transportation Plan.

Figure 3-2: Households Concentrations in Transit Corridor (2010)



Sources: Stanley R. Hoffman Associates, Inc.; Southern California Association of Governments, 2012 Regional Transportation Plan.

Figure 3-3: Employment Concentrations in Transit Corridor (2010)



Sources: Stanley R. Hoffman Associates, Inc.; Southern California Association of Governments, 2012 Regional Transportation Plan.

Table 3-1: Population, Households, and Employment (2010)

	Transit Corridor	ESFV Study Area	Corridor as % of Study Area
Estimated Population	167,834	458,379	36.6%
Estimated Household Population	167,093	454,525	36.8%
Estimated Households	42,859	134,023	32.0%
Estimated Employment	41,610	140,915	29.5%
Estimated Persons per Household	3.90	3.39	115.0%
Estimated Jobs per Household	0.97	1.05	92.3%

Sources: Stanley R. Hoffman Associates, Inc. Southern California Association of Governments, *2012 Regional Transportation Plan, Tier 2 Socioeconomic Data*.

3.2.1.2 Estimated Households

As shown in Figure 3-2 and Table 3-1, in 2010, the transit corridor household count (42,859) was about 32 percent of the study area’s household count (134,023). However, the persons per household estimate was slightly higher for the transit corridor, at about 3.90, compared to the ESFV study area, which was about 3.39, with the highest household concentrations similar to those for the population north of Roscoe Boulevard along either side of Van Nuys Boulevard. The transit corridor is similarly identified by the Tier 2 TAZs outlined in blue on Figure 3-2.

3.2.1.3 Estimated Employment

As shown in Figure 3-3 and Table 3-1, in 2010, employment in the transit corridor (41,610) was about 30 percent of the employment in the ESFV study area (140,915). The estimated jobs per household were slightly lower for the transit corridor at about 0.97 compared to the ESFV study area’s estimate of 1.05. Along the transit corridor—again outlined in blue in Figure 3-3—the highest concentrations of employment were within the Van Nuys Civic Center, along Van Nuys Boulevard just north of the Orange Bus Line, and also within the Panorama City area adjacent and near the intersection of Van Nuys Boulevard and Roscoe Boulevard. Additionally, there are relatively higher concentrations of employment at the northern end of the route alignment in the downtown area of the city of San Fernando.

3.3 Transit-Dependent Populations

3.3.1 Census Socioeconomic Variables

As mentioned above in Section 2.2.4, socioeconomic variables, including average household income, persons in poverty, and indicators of transit dependency (by age structure) and ownership of vehicles per household were developed from the 2009-2013 American Community Survey 5-year estimate at

the census tract level for each alignment. Census tracts that closely matched the SCAG Tier 2 selections were assembled for the transit corridor and the study area to develop these variables.³ Density and ratio calculations were based on the acreage information at the census tract level.

3.3.2 Low-Income Households

The following section includes a discussion of average household income and adult persons below the poverty line, for the transit corridor and ESFV study area.

3.3.2.1 Average Household Income

As shown in Part A of Table 3-2, average household income across the transit corridor and ESFV study area ranges from \$53,224 (transit corridor) to \$64,038 (ESFV study area), in constant 2010 dollars, based on the 2010 American Community Survey (ACS) 5-year Estimates. The transit corridor's average household income was about 83.1 percent of the ESFV study area's household income. In contrast, the average household income for urbanized Los Angeles County is higher than both of these, at about \$79,658.

3.3.2.2 Adult Persons below Poverty Line

Adult persons are defined as persons 18 years and over. As shown in Part A of Table 3-2, the ESFV study area had a lower proportion of its population in poverty at an estimated 13.8 percent (63,093 persons) compared to the transit corridor at about 15.4 percent (25,846 persons). The persons below the poverty line in the transit corridor were about 12 percent higher than the percentage in the ESFV study area.

3.3.2.3 Adult Persons below Poverty Line per Census Tract Acre

As shown in Part A of Table 3-2, the transit corridor had a higher concentration of persons below the poverty line per census tract acre estimated at 3.5 compared to the ESFV study area's estimate of 2.7. In contrast, there were an estimated 1.08 adult persons below the poverty line per census tract acre in urbanized Los Angeles County.

3.3.3 Low Vehicle Ownership Households

The following section includes a discussion of vehicles per household and zero-vehicles per household per census tract, for the transit corridor and ESFV study area

3.3.3.1 Vehicles per Household

As shown in Part B of Table 3-2, the transit corridor and the ESFV study area have almost equal estimates for vehicles per household of 1.76 (transit corridor) and 1.75 (ESFV study area). These averages are similar to urbanized Los Angeles County at 1.67.

³ Southern California Association of Governments. *2012 Regional Transportation Plan*. Available: <<http://rtpscscag.ca.gov>>. Accessed: March 25, 2013.

Table 3-2: Transit-Dependent Populations (2010)

	Transit Corridor	ESFV Study Area	Corridor as % of Study Area
A. Low Income Households			
Average Household Income	\$53,224	\$64,038	83.1%
Adult Persons below Poverty Line	25,846	63,093	41.0%
Percent of Population in Poverty	15.4%	13.8%	111.9%
Adult Persons below Poverty Line per Census Tract Acre ¹	3.5	2.7	128.5%
B. Low Vehicle Ownership Households			
Vehicles per Household	1.76	1.75	99.6%
Zero Vehicle Households per Census Tract Acre ¹	0.4	0.3	120.3%
C. Transit Dependent Population			
Transit Dependent Population	62,390	164,506	37.9%
Transit Dependent Population as Percent of Population	37.2%	35.9%	103.6%
Transit Dependent Population per Census Tract Acre ¹	8.5	7.1	119.0%

¹ Intensity measures for adult persons below poverty line, zero vehicle households, and transit dependent population per census tract acre are measured against total acreage of census tracts.

Sources: Stanley R. Hoffman Associates, Inc.; *American Community Survey 2009–2013, 5-Year Estimates*.

3.3.3.2 Zero-Vehicle Households per Census Tract Acre

This intensity measure for zero vehicle households per census tract acre is also measured against total acreage of census tracts. As shown in Part B of Table 3-2, the transit corridor has an estimated 0.4 zero vehicle households per census tract acre, while the ESFV study area has 0.3 zero vehicle households per acre. These estimates are very similar to the average for urbanized Los Angeles County, which averages 0.3 zero vehicle households per census tract acre.

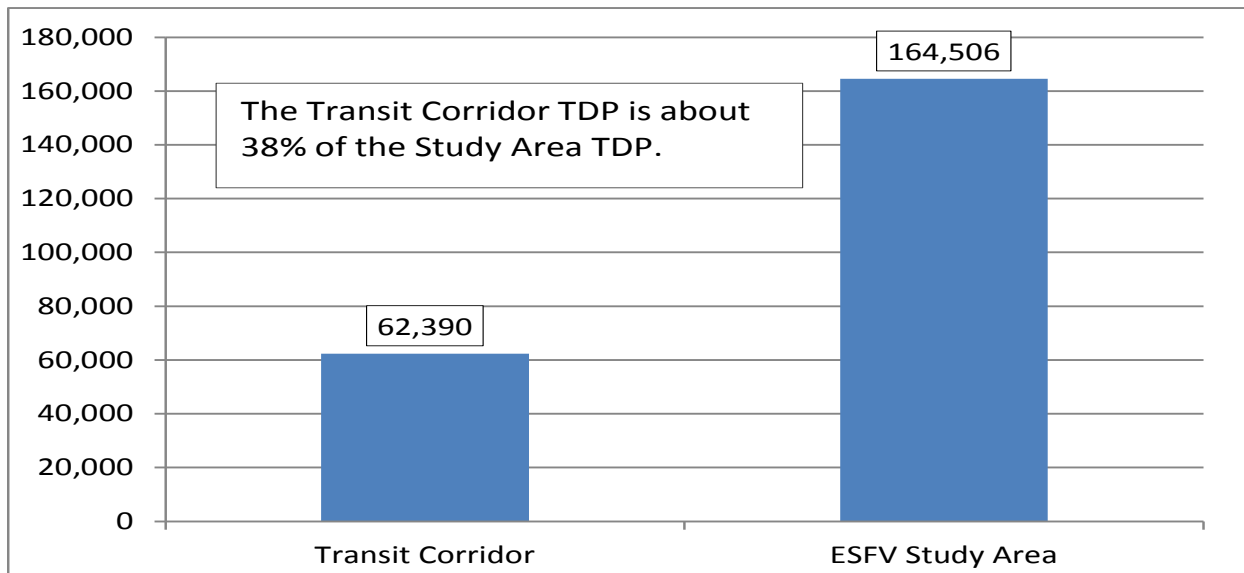
3.3.4 Transit-Dependent Population

The following section includes a discussion of the transit-dependent population, defined by the U.S. Census as persons equal to or below the age of 18 years and 65 years and older, and the transit-dependent population density by census tract acreage for the transit corridor and ESFV study area.

3.3.4.1 Transit-Dependent Population

The transit dependent population is defined as total persons equal to or below the age of 18 years and 65 years and older. For the transit corridor, the transit dependent population (62,390) is about 38 percent of the ESFV study area’s transit dependent population (164,506), as shown in Part C of Table 3-2 and in Figure 3-4. The transit-dependent population is evenly distributed at about 37 percent of the study area population and about 36 percent of the transit corridor population.

Figure 3-4: Transit-Dependent Population (TDP)¹ (2010)



¹ TDP is defined as persons ≤ 18 or ≥ 65 years old.

Sources: Stanley R. Hoffman Associates, Inc.; *American Community Survey, 2009–2013, 5-Year Estimates*; Southern California Association of Governments, *2012 Regional Transportation Plan, Tier 2 Socioeconomic Data*.

3.3.4.2 Transit-Dependent Population per Census Tract Acre

This intensity measure for transit dependent population per census tract acre is measured against total acreage of census tracts within each route alternative. Transit dependent population per census tract acre ranges from 8.5 in the transit corridor compared to 7.1 in the ESFV study area, as shown in Part C of Table 3-2 and Figure 3-5. In comparison, these averages are greater than the urbanized Los Angeles County average of 3.2 transit dependent population per census tract acre.

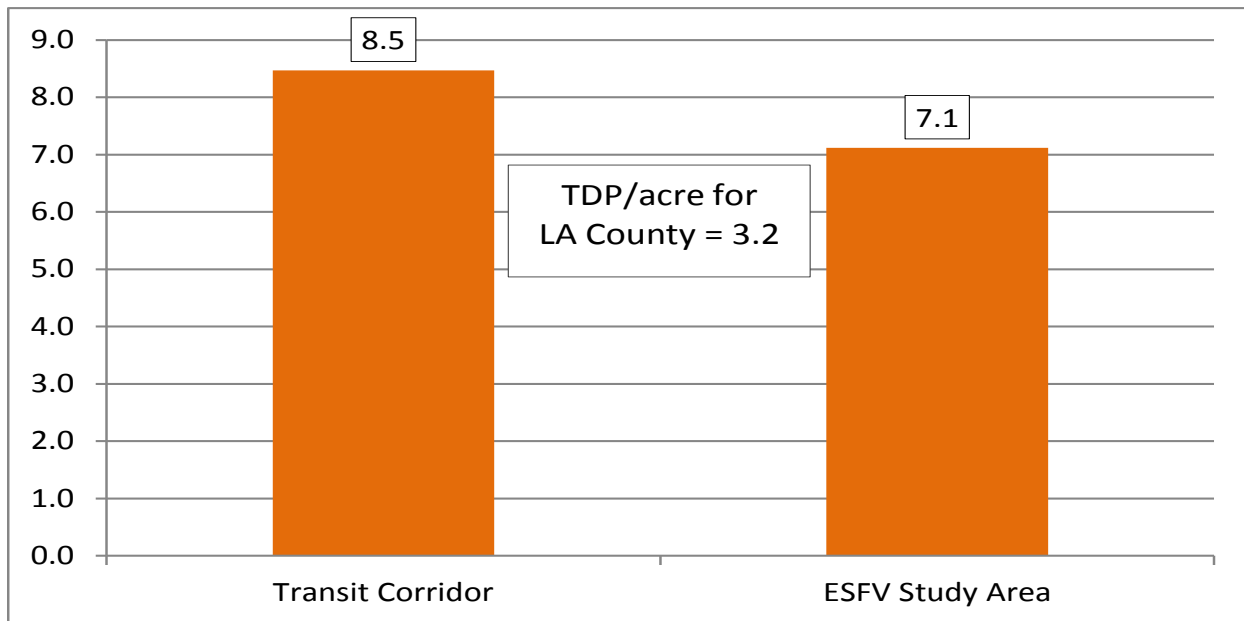
3.4 Economic Context

3.4.1 Employment Distribution

Table 3-3 shows employment distribution by industry categories for the transit corridor and the ESFV study area for 2010.⁴ The total estimated employment in the transit corridor (41,610) is about 30 percent of the total estimated employment in the ESFV study area (140,915). Education and Health jobs constitute the largest share of employment in each area at about 28 percent for the transit corridor and about 25 percent for the ESFV study area. The next two largest employment sectors in the transit corridor are Professional Services (12.8 percent) and Retail (12.4 percent). The next two largest employment sectors in the ESFV study area are also Professional Services (14.8 percent) and Retail Trade (12.6 percent). Together these three employment sectors—Education and Health, Professional Services and Retail—constitute about 52–53 percent of the total employment in both areas.

⁴ Southern California Association of Governments, *2012 Regional Transportation Plan*. Available: <<http://rtpsc.scag.ca.gov>>. Accessed: March 25, 2013.

Figure 3-5: Transit-Dependent Population per Acre (2010)



Sources: Stanley R. Hoffman Associates, Inc.; *American Community Survey, 2009–2013, 5-Year Estimates*; Southern California Association of Governments, *2012 Regional Transportation Plan, Tier 2 Socioeconomic Data*.

Table 3-4 shows the percentage of each employment sector for the transit corridor as a percentage of the ESFV study area to show relative employment concentrations. These percentages are then compared against the total employment percentage estimate for the transit corridor, about 30 percent of the ESFV study area. As shown in Table 3-4, Public Administration is relatively concentrated in the transit corridor—representing primarily the Van Nuys government center—and has about 60 percent of the total Public Administration employment in the study area. The Information sector is about 37 percent of Information employment in the ESFV study area. For the other sectors above the 30 percent overall average for the study area, Manufacturing (34 percent), and Education and Health (33 percent), and Other Services (33 percent) are only slightly higher. For Agriculture and Mining (84 percent), this higher percentage is out-weighted by the relatively small size of this sector in the study area.

3.4.2 Average Wages and Payroll Distribution

Table 3-5 shows average wages by employment category for 2010 based on California Employment Development Department data for the study area. Table 3-6 shows total payroll by employment categories (the product of average wages and employment by sector) in thousands of constant 2010 dollars for the transit corridor and ESFV study area.⁵

⁵ California Employment Development Department, *2012 Quarterly Census of Employment and Wages*. Available: < <http://www.labormarketinfo.edd.ca.gov/qcew/>>. Accessed: March 25, 2013.

Table 3-3: Distribution of Employment by Sector (2010)

	Transit Corridor	% Distribution	ESFV Study Area	% Distribution
Agriculture and Mining	234	0.6%	277	0.2%
Construction	2,119	5.1%	7,443	5.3%
Manufacturing	3,652	8.8%	10,636	7.5%
Wholesale Trade	1,723	4.1%	9,524	6.8%
Retail Trade	5,141	12.4%	17,724	12.6%
Transportation, Warehousing and Utilities	1,758	4.2%	5,929	4.2%
Information	1,741	4.2%	4,725	3.4%
FIRE	1,807	4.3%	7,716	5.5%
Professional Services	5,310	12.8%	20,890	14.8%
Education and Health	11,470	27.6%	35,079	24.9%
Arts, Ent, Recr, Accom and Food	3,163	7.6%	12,154	8.6%
Other Services	2,160	5.2%	6,612	4.7%
Public Administration	1,332	3.2%	2,206	1.6%
Total	41,610	100.0%	140,915	100.0%

Source: Stanley R. Hoffman Associates, Inc.; Southern California Association of Governments, *2012 Regional Transportation Plan, Tier 2 Socioeconomic Data*.

Table 3-4: Employment by Sector as Percent of Study Area (2010)

	Transit Corridor	ESFV Study Area	Corridor as % of Study Area
Agriculture and Mining	234	277	84%
Construction	2,119	7,443	28%
Manufacturing	3,652	10,636	34%
Wholesale Trade	1,723	9,524	18%
Retail Trade	5,141	17,724	29%
Transportation, Warehousing and Utilities	1,758	5,929	30%
Information	1,741	4,725	37%
FIRE	1,807	7,716	23%
Professional Services	5,310	20,890	25%
Education and Health	11,470	35,079	33%
Arts, Ent, Recr, Accom and Food	3,163	12,154	26%
Other Services	2,160	6,612	33%
Public Administration	1,332	2,206	60%
<i>Total</i>	41,610	140,915	30%

Source: Stanley R. Hoffman Associates, Inc.; Southern California Association of Governments, *2012 Regional Transportation Plan, Tier 2 Socioeconomic Data*.

Table 3-5: Los Angeles County Annual Average Wages (2010)

EMPLOYMENT CATEGORY	Amount
Agriculture and Mining	N/A
Construction	\$43,989
Manufacturing	\$62,746
Wholesale Trade	\$41,927
Retail Trade	\$27,569
Transportation, Warehousing and Utilities	\$45,941
Information	\$61,738
FIRE	\$48,914
Professional Services	\$45,659
Education and Health	\$49,932
Arts, Ent, Recr, Accom and Food	\$17,858
Other Services	\$18,367
Public Administration	\$47,340

Sources: Stanley R. Hoffman Associates, Inc.; California Employment Development Department, 2010 Quarterly Census of Employment and Wages.

Table 3-6: Total Payroll Distribution (2010)

	Transit Corridor	ESFV Study Area
Agriculture and Mining	N/A	N/A
Construction	\$93,212,691	\$327,410,127
Manufacturing	\$229,148,392	\$667,366,456
Wholesale Trade	\$72,240,221	\$399,312,748
Retail Trade	\$141,732,229	\$488,632,956
Transportation, Warehousing and Utilities	\$80,764,278	\$272,384,189
Information	\$107,485,858	\$291,712,050
FIRE	\$88,387,598	\$377,420,424
Professional Services	\$242,449,290	\$953,816,510
Education and Health	\$572,720,040	\$1,751,564,628
Arts, Ent, Recr, Accom and Food	\$56,484,854	\$217,046,132
Other Services	\$39,672,720	\$121,442,604
Public Administration	\$63,056,880	\$104,432,040
Total	\$1,787,355,051	\$5,972,540,864
Estimated Average Wage	\$43,198	\$42,467

Source: Stanley R. Hoffman Associates, Inc.; Southern California Association of Governments, 2012 Regional Transportation Plan, Tier 2 Socioeconomic Data.

As shown in Table 3-5, the average wages at the study area level range from a low of \$17,858 for Arts, Entertainment, Recreation, Accommodations and Food and \$18,367 for Other Services to a high of \$62,746 for Manufacturing and \$61,738 for Information. When these average wages by sector are multiplied by the estimated employment by each sector, the total payroll for the transit corridor is estimated at \$1.79 billion, about 30 percent of the total payroll of \$5.97 billion estimated for the ESFV study area. The largest payroll sector for the transit corridor is Education and Health at about \$572.7 million, or about 32 percent of the total estimated payroll in the transit corridor. Similarly, the largest payroll sector for the ESFV study area is also Education and Health at about \$1.75 billion, or about 29 percent of the total estimated payroll in the study area. The estimated average wage for the transit corridor (\$43,198) and the ESFV study area (\$42,467) are very similar.

3.5 Parcel Data

3.5.1 Property Valuation and Acreage

Part A of Table 3-7 and Figure 3-6 show assessed valuation for the study area (\$30.8 billion) and parcels identified within the quarter-mile SCAG Tier 2 zones (\$8.1 billion). Figure 3-6 displays a comparison of commercial, industrial and residential development assessed valuation. Residential valuation for the study area (\$22.3 billion) represents about 72 percent of the total study area valuation, and residential valuation for the transit corridor (\$5.6 billion) represents about 69 percent of the total transit corridor valuation. While the transit corridor represents an average of 26.4 percent of the total valuation of the study area, it also comprises a comparatively higher percentage of valuation for commercial, industrial, and multi-family residential parcels.

As shown in Part B of Table 3-7, the transit corridor comprised 26.6 percent of the total acreage within the study area. Multi-family land uses were relatively more concentrated at about 34.1 percent of the study area. As shown in Figure 3-7, examining the land use distributions, single-family residential acreage comprised the majority of the land uses in both the transit corridor (about 57 percent) and the study area (about 53 percent).

As shown in Part C of Table 3-7, the average assessed valuation per acre was estimated at \$1,551,259 per acre in the transit corridor, which was similar to the average for the study area at \$1,560,656 per acre. Also, valuation per acre was higher in the transit corridor compared to the study area for both commercial (1.17 times) and industrial land use (1.20 times), as shown in Table 3-7, Panel C.

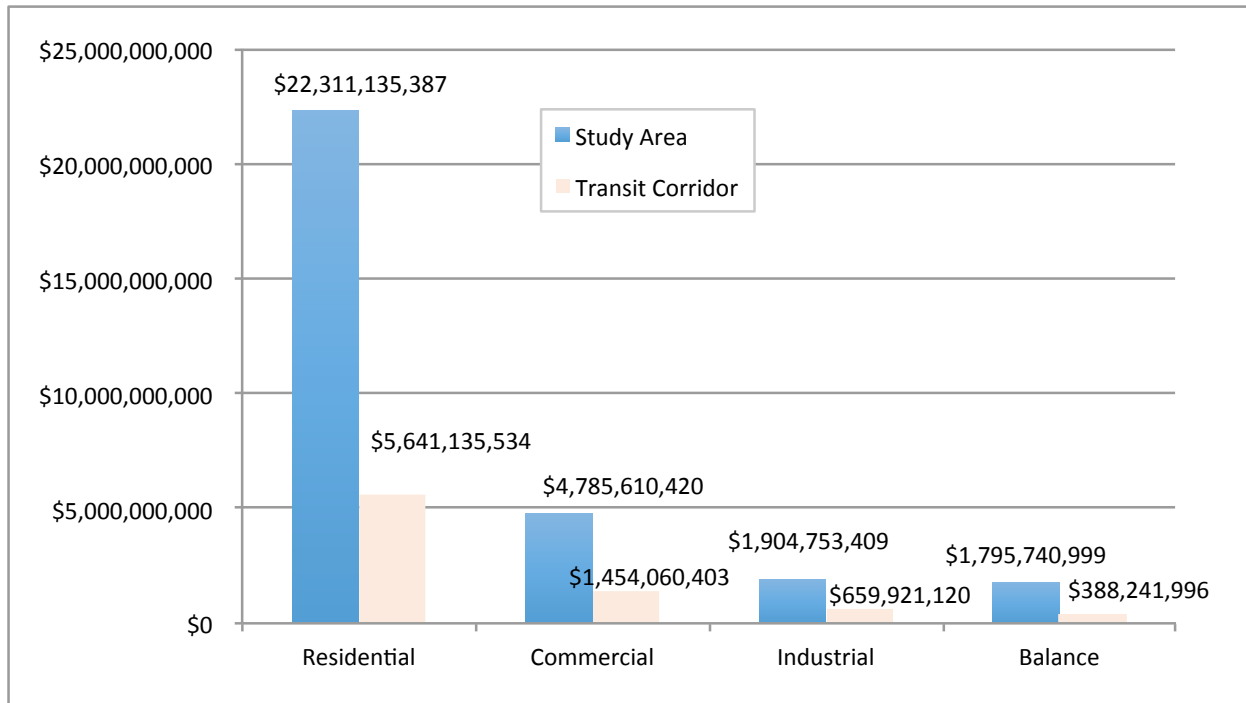
As shown in Part D of Table 3-7, vacant land in the transit corridor comprised almost 30 percent of the vacant land in the study area. Over 80 percent of the vacant land is within two categories in the study area: single-family residential (42% of total vacant) and commercial (40% of total vacant). This is very similar to the transit corridor with residential (45% of total vacant) and commercial (39% of total vacant).

Table 3-7: Property Valuation (2014)

Performance Measures	ESFV Study Area	Transit Corridor	Corridor as percent of Study Area
A. Assessed Valuation by Land Use			
Commercial	\$4,785,610,420	\$1,454,060,403	30.4%
Industrial	\$1,904,753,409	\$659,921,120	34.6%
Single-Family Residential	\$17,006,966,690	\$4,112,513,706	24.2%
Multiple-Family Residential	\$5,304,168,697	\$1,528,621,828	28.8%
Public/Institutional	\$1,014,783,181	\$220,443,976	21.7%
Miscellaneous	\$20,222,957	\$2,653,434	13.1%
Vacant	\$760,734,861	\$165,144,586	21.7%
<i>Total</i>	\$30,797,240,215	\$8,143,359,053	26.4%
B. Total Acres by Land Use			
Commercial	2,281	591	25.9%
Industrial	1,422	410	28.8%
Single-Family Residential	10,390	2,998	28.9%
Multiple-Family Residential	1,545	527	34.1%
Public/Institutional	3,166	493	15.6%
Miscellaneous	213	18	8.3%
Vacant	717	213	29.8%
<i>Total</i>	19,734	5,250	26.6%
C. Assessed Valuation per Acre			
Commercial	\$2,098,258	\$2,460,021	1.17
Industrial	\$1,339,588	\$1,609,712	1.20
Single-Family Residential	\$1,636,866	\$1,371,923	0.84
Multiple-Family Residential	\$3,432,759	\$2,899,460	0.84
Public/Institutional	\$320,499	\$447,445	1.40
Miscellaneous	\$95,017	\$151,019	1.59
Vacant	\$1,061,495	\$773,880	0.73
<i>Average</i>	\$1,560,656	\$1,551,259	0.99
D. Vacant Acres by Land Use			
Commercial	288	84	29.3%
Industrial	80	30	38.2%
Single-Family Residential	301	95	31.7%
Multiple-Family Residential	5	2	36.3%
Public/Institutional	27	0	1.2%
Miscellaneous	16	1	5.2%
<i>Total</i>	717	213	29.8%

Sources: Stanley R. Hoffman Associates, Inc.; Southern California Association of Governments, *2012 Regional Transportation Plan, Tier 2 Socioeconomic Data*; Los Angeles County Assessor's Parcel Data, 2014.

Figure 3-6: Assessed Valuation (2014)

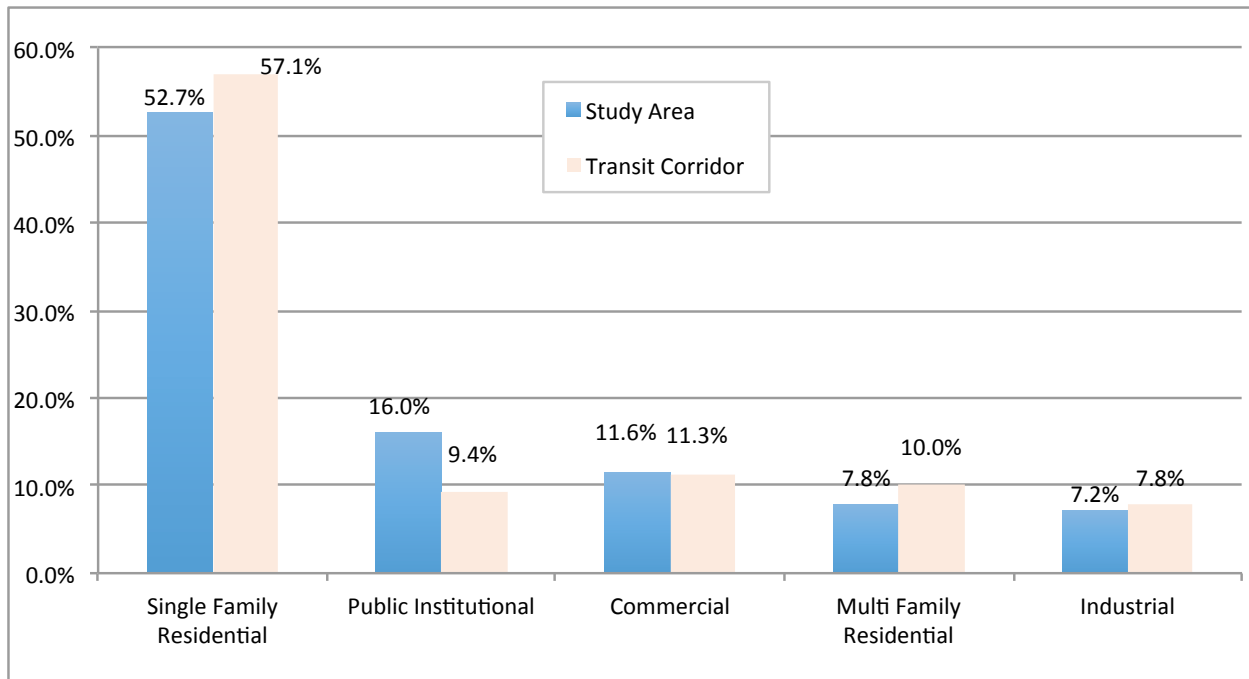


Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s Parcel Data, 2014.

3.5.1.1 Property Valuation of Non-Residential Development

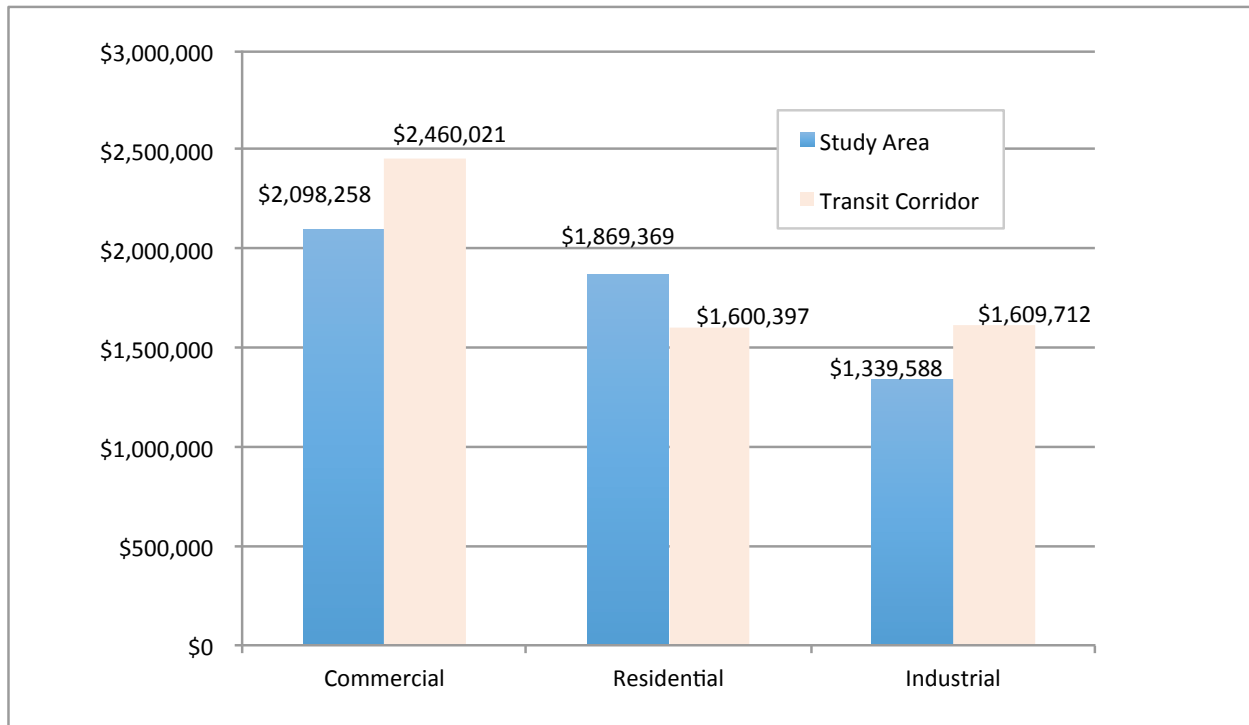
As shown in Figure 3-8, on a valuation per acre basis, commercial land use was estimated the highest at about \$2.4 million per acre within the transit corridor; it was estimated about 14 percent lower at \$2.1 million within the study area. Similarly, industrial land valuation was also estimated higher at \$1.6 million per acre within the transit corridor, compared with about \$1.3 million per acre within the study area. Residential land valuation had a different relationship with the estimated \$1.6 million per acre valuation within the transit corridor actually about 16 percent lower than the estimate of about \$1.9 million per acre within the study area.

Figure 3-7: Distribution of Land Use Acres (2014)



Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s Parcel Data, 2014.

Figure 3-8: Assessed Valuation per Acre (2014)

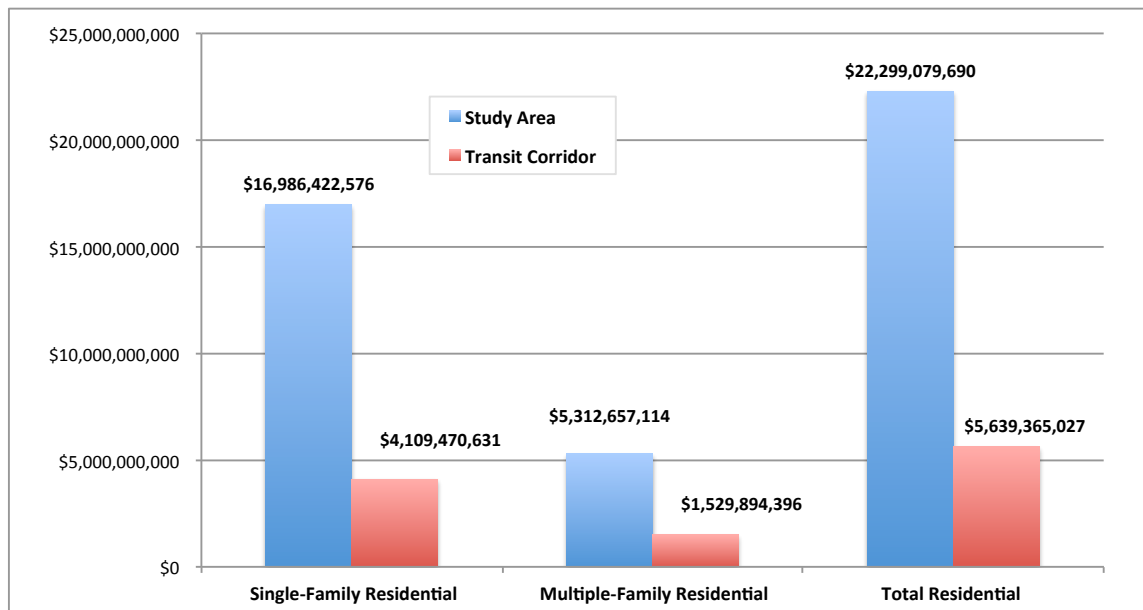


Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s Parcel Data, 2014.

3.5.1.2 Property Valuation of Residential Development

Figure 3-9 shows assessed valuation for single- and multiple-family residential development within the transit corridor and the study area. The estimated transit corridor total residential valuation of \$5.6 billion comprised about 25 percent of the study area total valuation of \$22.2 billion in 2014. As a percent of the total residential valuation, single-family residential land uses comprised about 73 to 76 percent of the total residential valuation for the study area and the transit corridor, respectively.

Figure 3-9: Assessed Valuation of Residential Development (2014)



Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s Parcel Data, 2014.

3.6 Transit Supportive Land Use

Table 3-8 show indicators for jobs-generating (Part A) land uses and residential (Part B) land uses by density; the indicators are discussed below.⁶

3.6.1 Jobs-Generating Land Uses by Density

3.6.1.1 Commercial Employment Density (Jobs per Developed Commercial Acre)

In 2010, commercial employment density for the transit corridor at 32.7 jobs per developed acre was slightly higher than that for the study area at 30.6 jobs per developed acre.

⁶ Land use data for this section obtained from Los Angeles County Assessor’s Parcel data for 2014, while demographic and employment information was obtained from the SCAG 2012 RTP Tier 2 dataset.

Table 3-8: Job-Generating and Residential Land Uses by Density (2010)

	ESFV Study Area	Transit Corridor
A. Jobs-Generating Land Uses by Density		
Commercial Employment Density (jobs per commercial acre)	30.6	32.7
Industrial Employment Density (jobs per industrial acre)	19.4	18.4
Total Jobs per Household	1.1	1.0
B. Residential Land Uses by Density		
Population Density (persons per residential acre)	38.1	47.4
Persons per Household	3.4	3.9
Households per Acre	11.2	12.2

Sources: Stanley R. Hoffman Associates, Inc.; Southern California Association of Governments, *2012 Regional Transportation Plan, Tier 2 Socioeconomic Data*; Los Angeles County Assessor’s Parcel Data, 2014.

3.6.1.2 Industrial Employment Density (Jobs per Developed Industrial Acre)

Similarly, industrial employment density for the transit corridor at 18.4 jobs per developed acre was slightly lower compared to that for the study area at 19.4 jobs per developed acre.

3.6.1.3 Jobs per Household

In 2010, the transit corridor had an estimated jobs per household ratio of about 1.0, very similar to the study area ratio of 1.1.jobs per household.

3.6.2 Residential Land Uses by Density

3.6.2.1 Population Density (Population per Developed Acre)

In 2010, population density, estimated as a ratio of residential population per developed residential acre, was estimated relatively higher at 47.4 persons per acre within the transit corridor compared to 38.1 persons per acre in the study area.

3.6.2.2 Persons per Household

In 2010, household size within the corridor at 3.9 persons per household was relatively higher compared to the study area at 3.4 persons per household.

3.6.2.3 Households per Acre

In 2010, households per developed residential acre were slightly higher within the transit corridor at 12.2 households per acre compared to 11.2 households per acre within the study area.

4.1 Property Acquisition Assessed Valuation and Parcel Statistics

4.1.1 Introduction

Six (6) alternative configurations of Parcel Acquisitions were provided for the proposed ESFV transit corridor; Alternatives 3 Option A, Option B, and Option C and Alternative 4 Option A, Option B, and Option C. The parcel acquisitions were provided as Geographic Information System (GIS) shape files by KOA Corporation. These shape files were overlaid on the 2014 Los Angeles County Assessor's file that provided parcel information, including: assessed land and assessed improvement value, and parcel and building square feet. Several other values were calculated, such as parcel acreage, assessed value per acre, and the floor area ratio (FAR), which is the total building square feet divided by the parcel square feet. Additionally, the number of parcels in each alternative and the estimated total square feet of the full or partial parcel acquisitions are presented. The estimated square feet to be acquired, where less than the total parcel square feet in the Assessor's file, has been provided by KOA Corporation. Additional economic and fiscal impacts are discussed in Section 4.5 for Alternative 3 and Section 4.6 for Alternative 4. The estimated property taxes and sales taxes lost from the potential parcel acquisitions are relatively minor, as shown in the subsequent sections. Additionally, no hotel or motel transient occupancy taxes are estimated to be lost since no lodging facilities were identified among the potential parcel acquisitions.

4.2 No-Build Alternative

There are no parcel acquisition impacts from the No-Build Alternative because no parcel acquisitions are required.

4.3 TSM Alternative

There are no parcel acquisition impacts from the Transportation System Management Alternative because no parcel acquisitions are required.

4.3 Build Alternative 1 – Curb-Running BRT Alternative

There are no parcel acquisition impacts from the Build Alternative 1 – Curb-Running BRT Alternative because no parcel acquisitions are required.

4.4 Build Alternative 2 – Median-Running BRT Alternative

There are no parcel acquisition impacts from the Build Alternative 2 – Median-Running BRT Alternative because no parcel acquisitions are required.

4.5 Build Alternative 3 – Low-Floor LRT/Tram Alternative

4.5.1 Direct Impacts

Tables 4-1 and 4-2 summarize the assessed valuation and parcel acquisition analysis for the ESFV transit corridor alternative configurations. While Table 4-1 depicts the assessed land and improvement values and the total assessed value per acre, Table 4-2 shows the number of affected parcels and the estimated square footage to be acquired for each alternative where it is less than the full parcel area. More in-depth analysis on these categories is provided in subsequent sections of this report, which break down the analysis by land use categories and are tailored to each individual alternative.

As shown in Table 4-1, the Total Assessed Value for Alternative 3 Option A, Option B, and Option C ranged from a low of about \$40.6 million (Option C) to a high of \$45.9 million (Option B), requiring potentially 32.1 acres (Option A) to 36.7 acres (Option B). As shown in Table 4-2, non-residential valuations constituted the largest proportion of the total assessed valuation ranging from 86 to 89 percent for Alternative 3, Options B and A, respectively. In general, residential land uses constituted a very small proportion of the total assessed value (AV) – less than 1 percent for all Alternative 3 Options, with vacant land accounting for about 8 to 11 percent of the total AV, as shown in Table 4-2. On an Assessed Value per Acre basis, Alternative 3 Options A, B, and C ranged from about \$1.2 (Option C) to \$1.3 million (Option A). Under Proposition 13, which limits the amount of annual increase until the property is sold, the assessed valuation is generally less than the estimated fair market value at the time of sale.

For all of the alternatives, FARs are relatively low, ranging from 0.25 (Option B) to 0.34 (Option C), typical of lower density suburban areas. In a few cases there are relatively higher densities in commercial and retail land uses, such as 0.66 for commercial land in Alternative 3 Option A. These higher densities are typically found in the section along Van Nuys Boulevard from the Van Nuys Civic Center and the Metro Orange Bus Line on the south (just north of Aetna Street) to the Panorama Mall and the surrounding commercial areas at Roscoe Boulevard on the north.

As summarized in Table 4-3, in some cases, the full parcel is acquired – in other cases, only a portion of the parcel is acquired. Additionally, the average percentage of parcel area acquired is higher for Alternative 3 Option A, Option B, and Option C, ranging between 88.2 percent (Option A) to 89.5 percent (Option B).

The estimated parcel square footage to be acquired for Alternative 3 Option A, Option B, and Option C range from about 1.2 million sq. ft. (Option A) to 1.4 million sq. ft. (Option B). Also, the number of affected parcels ranges from 63 parcels (Option B) to 90 parcels (Option A). Table 4-4 summarizes the economic impacts for affected number of firms, employment, output, value-added, and labor compensation. Also shown are fiscal impacts for property and sales tax. Table 4-5 presents a more detailed analysis of the potential sales tax lost from the parcel acquisitions.

Table 4-1: Summary of Assessed Valuation and Parcel Statistics by Alternative 3 – Proposed Parcel Acquisition for ESFV Transit Corridor

ALT 3	Assessed Land Value	Assessed Improvement Value	Total Assessed Value	Building Sq. Ft.	Parcel Sq. Ft.	Acres	FAR	Value Per Acre
Option A	\$23,602,035	\$17,312,249	\$40,914,284	460,223	1,397,068	32.1	0.33	\$1,275,691
Option B	\$26,943,151	\$19,044,182	\$45,987,333	405,371	1,599,168	36.7	0.25	\$1,252,656
Option C	\$24,285,429	\$16,282,455	\$40,567,884	485,528	1,433,459	32.9	0.34	\$1,232,778

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Table 4-2: Distribution of Assessed Value by Major Land Uses for Alternatives 3 and 4

A. Alternative 3						
Land Use	Option A		Option B		Option C	
	Total Assessed Value	As % of Total	Total Assessed Value	As % of Total	Total Assessed Value	As % of Total
Non-Residential	\$36,547,953	89.3%	\$39,702,678	86.3%	\$35,513,780	87.5%
Residential	\$324,816	0.8%	\$238,652	0.5%	\$238,652	0.6%
Other ¹	\$805,204	2.0%	\$984,928	2.1%	\$351,768	0.9%
Vacant	\$3,236,311	7.9%	\$5,061,075	11.0%	\$4,463,684	11.0%
Total	\$40,914,284	100.0%	\$45,987,333	100.0%	\$40,567,884	100.0%
B. Alternative 4						
Land Use	Option A		Option B		Option C	
	Total Assessed Value	As % of Total	Total Assessed Value	As % of Total	Total Assessed Value	As % of Total
Non-Residential	\$59,391,373	90.2%	\$85,960,324	91.5%	\$79,916,005	91.5%
Residential	\$324,816	0.5%	\$238,652	0.3%	\$238,652	0.3%
Other ¹	\$1,528,628	2.3%	\$1,075,192	1.1%	\$1,075,192	1.2%
Vacant	\$4,577,627	7.0%	\$6,683,545	7.1%	\$6,086,154	7.0%
Total	\$65,822,444	100.0%	\$93,957,713	100.0%	\$87,316,003	100.0%

¹ Other includes government properties including Caltrans properties.

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Table 4-3: Summary of Total Parcel Square Footage and Estimated Acquired Square Footage by Alternative Proposed Parcel Acquisition for ESFV Transit Corridor

ALT 3	No. of Parcels	Parcel Square Footage	Parcel Acquisition Square Footage	Difference	Percentage of Parcels Acquired
Option A	90	1,397,068	1,232,118	164,950	88.2%
Option B	63	1,599,168	1,430,828	168,340	89.5%
Option C	68	1,433,459	1,273,168	160,291	88.8%

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Table 4-4: Summary of Estimated Employment and Fiscal Impacts

Alternative 3	Firms	Jobs	Output	Value- Added	Labor Income	Property Tax	Sales Tax
Option A	79	413	\$73,905,065	\$38,009,745	\$22,731,044	\$409,143	\$41,798
Option B	54	580	\$87,838,069	\$50,789,184	\$29,280,634	\$459,873	\$184,639
Option C	79	576	\$162,736,261	\$66,597,176	\$37,810,922	\$405,679	\$62,851

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

Table 4-5: Estimated Retail and Food Services Sales Tax Impact

	ALT 3 Option A	ALT 3 Option B	Alt 3 Option C
Employment Impact¹			
Food and Beverage	6	6	6
All Other Retail	44	34	68
Retail Total	50	40	74
Food Services	3	242	3
TOTAL	53	282	77
Estimated Output Impact²			
Food and Beverage	\$431,959	\$431,959	\$431,959
All other Retail	\$3,859,867	\$2,982,625	\$5,965,250
Retail Total	\$4,291,826	\$3,414,584	\$6,397,208
Food Services	\$190,310	\$15,351,655	\$190,310
TOTAL	\$4,482,136	\$18,766,239	\$6,587,518
Estimated Taxable Output³			
Food and Beverage	\$129,588	\$129,588	\$129,588
All Other Retail	\$3,859,867	\$2,982,625	\$5,965,250
Retail Total	\$3,989,455	\$3,112,212	\$6,094,837
Food Services	\$190,310	\$15,351,655	\$190,310
TOTAL	\$4,179,765	\$18,463,868	\$6,285,147
ESTIMATED LOCAL SALES TAX LOST	\$41,798	\$184,639	\$62,851

¹ Employment impacts calculated from jobs located within parcel takes by alternative. Jobs information obtained from the InfoUSA 2011 provided by the Southern California Association of Governments.

² Output impacts based on jobs within parcel takes and output per employee by industry obtained from the IMPLAN LLC model for Los Angeles County.

³ Taxable share of total output is estimated at 30 percent for food and beverage stores, 100 percent for all other retail stores, and 75 percent for food services.

⁴ Sales tax is estimated at 1 percent of taxable sales.

Sources: Stanley R. Hoffman Associates, Inc.; KOA Corporation; *InfoUSA 2011*, provided by the Southern California Association of Governments; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013; California State Board of Equalization.

The following sections of the report describe the various potential parcel acquisitions for each alternative—Option A, Option B, and Option C—by residential and non-residential land use categories, as well as vacant land and government land, including Caltrans and Metrolink parcels.

4.5.1.1 Alternative 3 Option A

Property Acquisition Assessed Valuation and Parcel Statistics. As shown in Table 4-6, the total AV of Alternative 3 Option A is about \$40.9 million. Non-residential land uses, consisting of industrial, commercial, office and retail land uses, at \$36.5 million AV constitute about 89 percent of the total assessed valuation. The next largest category is vacant land at \$3.2 million AV, or about 8 percent of the total AV. Residential land uses constitutes a very small proportion of the total AV at \$324,816, or less than 1 percent of the total AV. There is an estimated total of 32.07 acres of potential parcel acquisitions, of which about 21.20 acres, or 66 percent, is non-residential land uses. Vacant land represents only 4.54 acres or 14 percent of the total with developed residential land estimated at less than 1 acre. Overall, the FAR of 0.33 is relatively low density, typical of suburban development. The non-residential FAR is 0.35, also typical of suburban development. FAR is defined as total building square footage divided by parcel square footage. The valuation per acre is the highest for non-residential land uses at \$1.7 million per acre, about 35 percent higher than the average of \$1.3 million per acre for all land uses. Valuation per acre for residential (\$574,095) and vacant (\$713,455) land uses are relatively lower at 45 to 56 percent of the average valuation per acre.

As shown in Table 4-7, the total parcel square footage is 1,397,068 with 88 percent estimated to be acquired, or 1,232,118 square feet. Almost the entire residential and non-residential parcel square footage is estimated to be acquired, while the vacant land is only 46 percent estimated to be acquired.

Property Tax Loss Analysis (Alternative 3 Option A). For Alternative 3 Option A, about \$409,000 is estimated to be lost in property taxes from potential parcel acquisitions under the 1% basic property tax levy to the operating budgets of local jurisdictions, special districts and agencies. As shown in Table 4-8 and Figure 4-1, almost 28 percent of the study area's property tax loss is estimated from the Los Angeles County General Fund, with about 26 percent estimated loss from the Los Angeles City General Fund. When the property revenues loss to the Los Angeles County Unified School District is combined with other K-12 educational revenue funds, approximately 40 percent of the total is estimated to be lost to their operating budgets. Other districts and agencies make up a relatively small proportion of the total. However, when property taxes lost are compared with the ¼ mile transit corridor and the study area, the loss ranges from only 0.5 percent overall for the transit corridor, to 0.4 to 0.6 percent for the fund categories. Similarly, when the estimated property tax lost is compared against the study area, the loss is even less at 0.1 percent for both the study area and the fund categories.

Table 4-6: Assessed Valuation and Parcel Statistics by Land Use for Alternative 3 Option A

Land Use	Assessed Land Value	Assessed Improvement Value	Total Assessed Value	Building Sq. Ft.	Parcel Sq. Ft.	Acres	FAR	Value Per Acre
Commercial	\$519,558	\$588,834	\$1,108,392	11,402	17,314	0.40	0.66	\$2,788,622
Industrial	\$14,542,967	\$10,958,068	\$25,501,035	228,819	632,370	14.52	0.36	\$1,756,606
Office	\$1,158,800	\$650,599	\$1,809,399	13,411	51,673	1.19	0.26	\$1,525,321
Retail	\$3,761,308	\$4,367,819	\$8,129,127	66,718	221,967	5.10	0.30	\$1,595,305
Subtotal	\$19,982,633	\$16,565,320	\$36,547,953	320,350	923,324	21.20	0.35	\$1,724,237
Multi-Family Residential	\$55,328	\$30,836	\$86,164	2,889	10,312	0.24	0.28	\$363,992
Single-Family Residential	\$107,225	\$131,427	\$238,652	1,492	14,334	0.33	0.10	\$725,235
Subtotal	\$162,553	\$162,263	\$324,816	4,381	24,646	0.57	0.18	\$574,095
Government	\$805,204	\$0	\$805,204	0	239,419	5.50	0.00	\$146,499
Caltrans	\$0	\$0	\$0	0	12,086	0.28	0.00	\$0
Subtotal	\$805,204	\$0	\$805,204	0	251,505	5.77	0.00	\$139,459
Vacant	\$2,651,645	\$584,666	\$3,236,311	135,492	197,593	4.54	N/A ¹	\$713,455
Subtotal	\$2,651,645	\$584,666	\$3,236,311	135,492	197,593	4.54	N/A	\$713,455
Total	\$23,602,035	\$17,312,249	\$40,914,284	460,223	1,397,068	32.07	0.33	\$1,275,691

¹ While the assessor reports a small amount of improvement value for some of the vacant designated parcels, this is not considered to be habitable space. Therefore, no FAR is calculated.

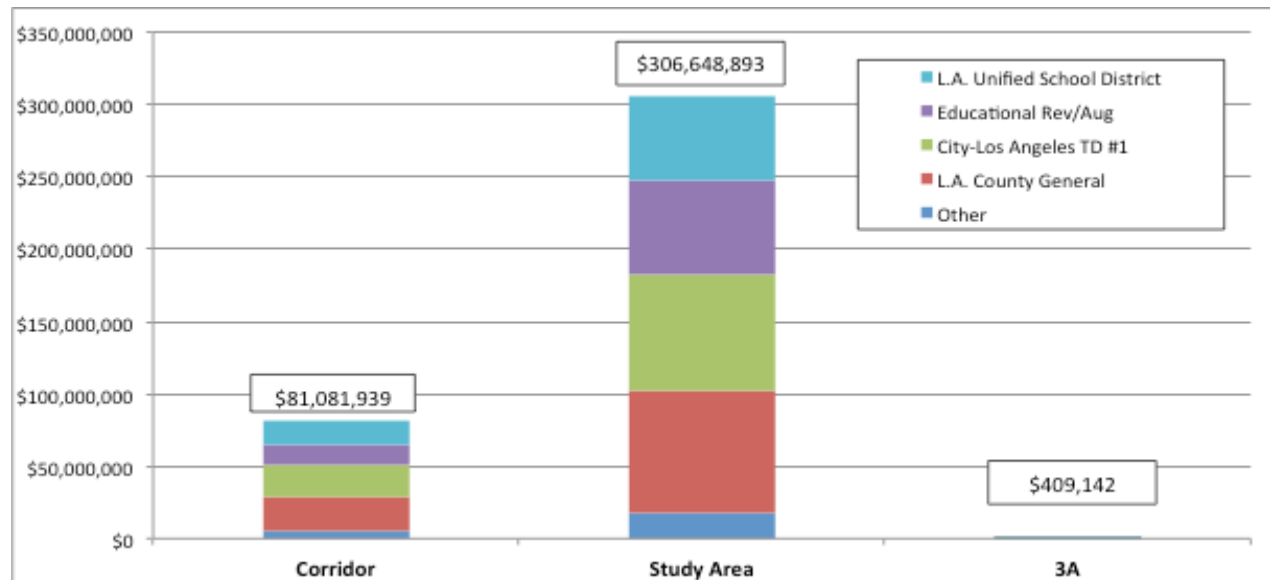
Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor's File, 2014.

Table 4-7: Parcel Square Feet and Estimated Built Square Feet by Land Use for Alternative 3 Option A

Land Use	No. of Parcels	Parcel Sq. Ft.	Parcel Acquisition Sq. Ft.	Difference	Percentage of Parcels Acquired
Commercial	2	17,314	17,370	(56)	100%
Industrial	43	632,370	633,450	(1,080)	100%
Office	5	51,673	51,701	(28)	100%
Retail	20	221,967	217,510	4,457	98%
Subtotal	70	923,324	920,031	3,293	100%
Multi-Family Residential	1	10,312	10,310	2	100%
Single-Family Residential	2	14,334	14,350	(16)	100%
Subtotal	3	24,646	24,660	(14)	100%
Government	2	239,419	183,860	55,559	77%
Caltrans	1	12,086	12,090	(4)	100%
Subtotal	3	251,505	195,950	55,555	78%
Vacant	14	197,593	91,477	106,116	46%
Subtotal	14	197,593	91,477	106,116	46%
Total	90	1,397,068	1,232,118	164,950	88%

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor's File, 2014.

Figure 4-1: Estimated Property Tax Loss Due to Parcel Acquisition: Alternative 3 Option A Compared with Total Corridor and Study Area Property Taxes



Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Table 4-8: Estimated Property Tax Loss Due to Parcel Acquisition: Corridor, Study Area, Alternative 3 Option A

Jurisdiction/ Special District	Corridor	Corridor as % of Total	Study Area	Study Area as % of Total	Property Tax Loss-Alternative 3 Option A	Alternative 3 Option A as % of Corridor	Alternative 3 Option A as % of Study Area
Other	\$5,354,852	6.6%	\$18,325,853	6.0%	\$20,932	0.4%	0.1%
L.A. County General	\$24,116,803	29.8%	\$84,464,467	27.5%	\$113,039	0.5%	0.1%
City-Los Angeles TD #1	\$20,930,291	25.8%	\$79,284,389	25.9%	\$111,361	0.5%	0.1%
Other Educ. Revenues	\$15,088,795	18.6%	\$65,981,868	21.5%	\$86,102	0.6%	0.1%
L.A. Unified School Dist.	\$15,528,198	19.2%	\$58,592,316	19.1%	\$77,710	0.5%	0.1%
Total	\$81,018,939	100.0%	\$306,648,893	100.0%	\$409,143	0.5%	0.1%

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Economic Impacts of Parcel Acquisitions for Alternative 3 Option A. As shown in Table 4-9, Alternative 3 Option A's parcel acquisitions affects 413 jobs divided among 79 firms, which have a total output of about \$73.9 million. Total labor income for this option is about \$22.7 million, which is 31 percent of the total output. Jobs are concentrated mostly in six industries, with Other Services (except Public Administration) accounting for the highest number of estimated employees at 102. The next largest sector in terms of employment is Manufacturing with an estimated 62 employees. Manufacturing also accounts for the highest level of output with nearly \$30 million, over twice as much as the second highest output for Wholesale Trade at about \$13 million. Value added at \$38 million is the combination of labor income, property type income, and indirect business taxes.

Table 4-9: Estimated Economic Impacts

Industry Category	Firms	Jobs	Output	Value-Added	Labor Income
Agriculture	0	0	\$0	\$0	\$0
Mining, Quarrying, and Oil and Gas Extraction	0	0	\$0	\$0	\$0
Utilities	0	0	\$0	\$0	\$0
Construction	11	40	\$6,552,460	\$2,806,231	\$2,526,867
Manufacturing	5	62	\$29,704,744	\$8,580,890	\$4,832,601
Wholesale Trade	9	59	\$12,634,127	\$8,387,093	\$4,454,773
Retail Trade	11	50	\$4,229,065	\$3,310,379	\$1,993,027
Transportation and Warehousing	0	0	\$0	\$0	\$0
Information	2	3	\$971,686	\$616,030	\$347,885
Finance and Insurance	0	0	\$0	\$0	\$0
Real Estate and Rental and Leasing	2	8	\$3,100,627	\$2,484,860	\$197,480
Professional, Scientific and Technical Services	3	9	\$1,643,032	\$1,293,834	\$757,350
Management of Companies	0	0	\$0	\$0	\$0
Admin, Support, Waste Mgmt and Remediation Services	3	11	\$2,543,353	\$1,457,963	\$778,363
Educational Services	0	0	\$0	\$0	\$0
Arts, Entertainment, and Recreation	2	5	\$512,903	\$351,201	\$301,994
Health Care and Social Assistance	9	52	\$5,834,445	\$4,415,697	\$2,879,594
Accommodation and Food Services	2	3	\$204,457	\$123,670	\$84,649
Other Services, except Public Administration	17	102	\$5,974,166	\$4,181,896	\$3,576,462
Public Administration	0	0	\$0	\$0	\$0
Unclassified	3	2	\$0	\$0	\$0
TOTAL	79	413	\$73,905,065	\$38,009,745	\$22,731,044

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

Estimated Retail and Food Services Sales Tax Impact for Alternative 3 Option A. The estimated local sales tax lost by the potential parcel acquisitions for Alternative 3 Option A is estimated at \$41,798. As shown previously in Table 4-5, this is based on the estimated employment lost from the associated parcel acquisitions that include employment from three main employment categories that generate taxable sales transactions. These employment categories are shown as follows with the average output per worker shown in parentheses: 1) food and beverage stores (\$71,993); 2) food services, including restaurants and fast food establishments (\$63,437); and 3) all other retail activities (\$87,724). The total average output per store type was then multiplied by the number of estimated workers lost in each category to generate estimated total taxable sales transactions. The Food and Beverage Category was further factored by 30 percent to estimate the taxable transactions for grocery and convenience food stores. The resultant taxable retail sales transactions were then factored by 1 percent to estimate the local sales tax lost.

4.5.1.2 Alternative 3 Option B

Property Acquisition Assessed Valuation and Parcel Statistics. As shown in Table 4-10, the total AV of Alternative 3 Option B is about \$46.0 million. Non-residential land uses, consisting of industrial, commercial, office and retail land uses, at \$39.7 million AV constitute about 86 percent of the total assessed valuation. The next largest category is vacant land at \$5.1 million AV, or about 11 percent of the total AV. Residential land uses constitutes a very small proportion of the total AV at \$238,652, or less than 1 percent of the total AV. There is an estimated total of 34.56 acres of potential parcel acquisitions, of which about 27.23 acres, or 79 percent, is non-residential land uses. Vacant land represents only 3.78 acres or 11 percent of the total with developed residential land again estimated at less than 1 acre. Overall, the FAR of 0.25 is relatively low density, typical of suburban development. The non-residential FAR is 0.20, also typical of suburban development. The valuation per acre is the highest for non-residential land uses at \$1.5 million per acre, only about 10 percent higher than the average of \$1.3 million per acre for all land uses. Valuation per acre for residential (\$725,235) is relatively lower at 55 percent of the average valuation per acre. However, vacant land AV per acre (\$1.3 million) is virtually the same as the average. As shown in Table 4-11, the total parcel square footage is 1,599,168 with 89 percent estimated to be acquired, or 1,430,828 square feet. Almost the entire residential and non-residential parcel square footage is estimated to be acquired, while the vacant land is only 59 percent estimated to be acquired.

Table 4-10: Assessed Valuation and Parcel Statistics for Land Use for Alternative 3 Option B

Land Use	Assessed Land Value	Assessed Improvement Value	Total Assessed Value	Building Sq. Ft.	Parcel Sq. Ft.	Acres	FAR	Value Per Acre
Commercial	\$390,226	\$601,285	\$991,511	0	98,135	2.25	0.00	\$440,112
Industrial	\$18,548,712	\$13,951,116	\$32,499,828	180,972	868,006	19.93	0.21	\$1,630,971
Office	\$398,038	\$455,959	\$853,997	5,311	35,280	0.81	0.15	\$1,054,431
Retail	\$1,403,926	\$2,670,604	\$4,074,530	33,360	147,211	3.38	0.23	\$1,205,662
Recreational	\$974,854	\$307,958	\$1,282,812	11,970	32,969	0.76	0.36	\$1,694,916
Subtotal	\$21,715,756	\$17,986,922	\$39,702,678	231,613	1,181,600	27.13	0.20	\$1,463,650
Multi-Family Residential	\$107,225	\$131,427	\$238,652	1,492	14,334	0.33	0.10	\$725,235
Subtotal	\$107,225	\$131,427	\$238,652	1,492	14,334	0.33	0.10	\$725,235
Government	\$351,768	\$0	\$351,768	0	115,991	2.66	0.00	\$132,106
Caltrans	\$0	\$0	\$0	0	12,086	0.28	0.00	\$0
Metrolink	\$319,714	\$313,446	\$633,160	7,776	17,038	0.39	0.46	\$1,618,783
Subtotal	\$671,482	\$313,446	\$984,928	7,776	145,115	3.33	0.05	\$295,652
Vacant	\$4,448,688	\$612,387	\$5,061,075	164,490	258,119	3.78	N/A ¹	\$1,340,266
Subtotal	\$4,448,688	\$612,387	\$5,061,075	164,490	258,119	3.78	N/A	\$1,340,266
Total	\$26,943,151	\$19,044,182	\$45,987,333	405,371	1,599,168	34.56	0.25	\$1,330,559

¹ While the assessor reports a small amount of improvement value for some of the vacant designated parcels, this is not considered to be habitable space. Therefore, no FAR is calculated.

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor's File, 2014.

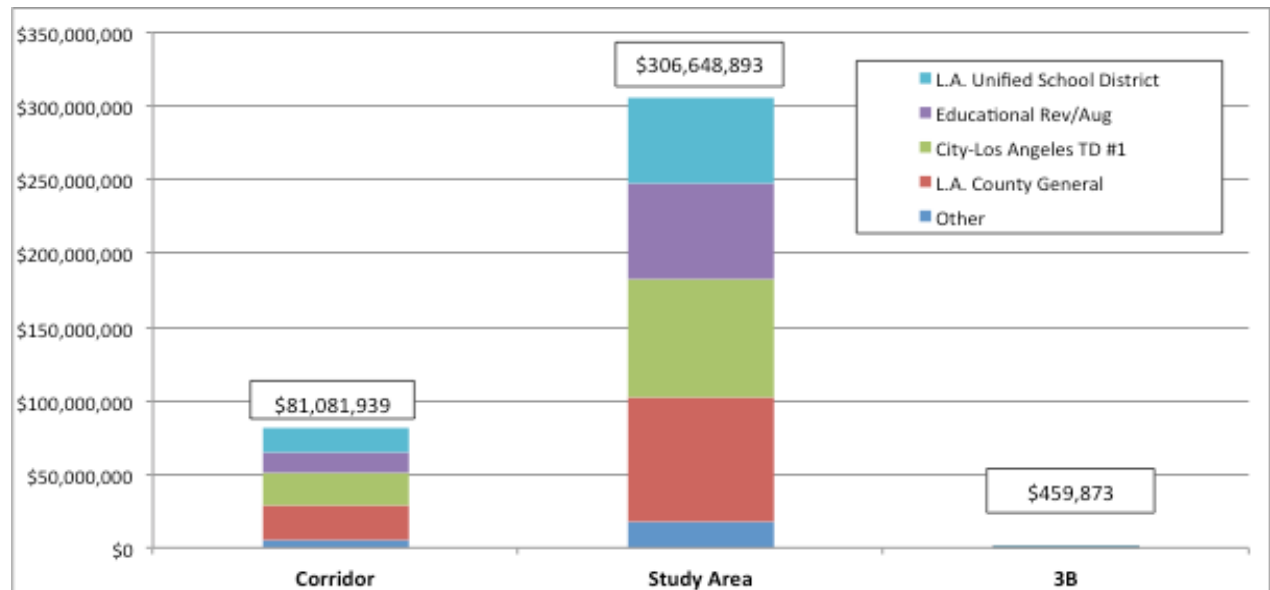
Table 4-11: Parcel Square Feet and Estimated Built Square Feet by Land Use – Alternative 3 Option B

Land Use	No. of Parcels	Parcel Sq. Ft.	Parcel Acquisition Sq. Ft.	Difference	Percentage of Parcels Acquired
Commercial	1	98,135	97,600	535	99%
Industrial	27	868,006	868,380	(374)	100%
Office	3	35,280	35,261	19	100%
Retail	12	147,211	142,770	4,441	97%
Recreational	1	32,969	32,670	299	99%
Subtotal	44	1,181,600	1,176,681	4,919	100%
Single-Family Residential	2	14,334	14,350	(16)	100%
Subtotal	2	14,334	14350	(16)	100%
Government	1	115,991	59,020	56,971	51%
Caltrans	1	12,086	12,090	(4)	100%
Metrolink	1	17,038	17,020	18	100%
Subtotal	3	145,115	88130	56,985	61%
Vacant	14	258,119	151,667	106,452	59%
Subtotal	14	258,119	151,667	106,452	59%
Total	63	1,599,168	1,430,828	168,340	89%

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Property Tax Loss Analysis (Alternative 3 Option B). For Alternative 3 Option B, about \$460,000 is estimated to be lost in property taxes from potential parcel acquisitions under the 1% basic property tax levy to the operating budgets of local jurisdictions, special districts and agencies. As shown in Figure 4-2 and Table 4-12, almost 28 percent of the study area’s property tax loss is estimated from the Los Angeles County General Fund, with about 26 percent estimated loss from the Los Angeles City General Fund. When the property revenues loss to the Los Angeles County Unified School District is combined with other K-12 educational revenue funds, approximately 40 percent of the total is estimated to be lost to their operating budgets. Other districts and agencies make up a relatively small proportion of the total. However, when property taxes lost are compared with the ¼ mile transit corridor and the study area, the loss ranges from only 0.6 percent overall for the transit corridor, to 0.4 to 0.7 percent for the fund categories. Similarly, when the estimated property tax lost is compared against the study area, the loss is even less at 0.1 percent overall, and ranges between 0.1 to 0.2 percent for the fund categories.

Figure 4-2: Estimated Property Tax Loss Due to Parcel Acquisition: Alternative 3 Option B Compared with Total Study Area and Corridor Property Taxes



Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Table 4-12: Estimated Property Tax Loss Due to Parcel Acquisition: Corridor, Study Area, Alternative 3 Option B

Jurisdiction/ Special District	Corridor	Corridor as % of Total	Study Area	Study Area as % of Total	Property Tax Loss – Alternative 3 Option B	Alternative 3 Option B as % of Corridor	Alternative 3 Option B as % of Study Area
Other	\$5,354,852	6.6%	\$18,325,853	6.0%	\$23,407	0.4%	0.1%
L.A. County General	\$24,116,803	29.8%	\$84,464,467	27.5%	\$125,447	0.5%	0.1%
City-Los Angeles TD #1	\$20,930,291	25.8%	\$79,284,389	25.9%	\$124,695	0.6%	0.2%
Other Educ. Revenues	\$15,088,795	18.6%	\$65,981,868	21.5%	\$98,985	0.7%	0.2%
L.A. Unified School Dist.	\$15,528,198	19.2%	\$58,592,316	19.1%	\$87,339	0.6%	0.1%
Total	\$81,018,939	100.0%	\$306,648,893	100.0%	\$459,873	0.6%	0.1%

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Economic Impacts of Parcel Acquisitions for Alternative 3 Option B. Table 4-13 shows that parcel acquisitions for Alternative 3 Option B affects 580 jobs in 54 firms. Labor income amounts to about \$29.3 million, which is almost exactly a third of these firms’ total output of \$87.8 million. Employment is dominated by Accommodation and Food Services at 242 employees and Whole Sale Trade at 142 employees. Together these industries provide over two thirds of the jobs affected by this alternative. In terms of output, Wholesale Trade is the largest industry, as its output of about \$33 million is about twice as high as Manufacturing, which is the second largest in this regard. Value added is estimated at \$50.8 million.

Table 4-13: Estimated Economic Impacts

Industry Category	Firms	Jobs	Output	Value-Added	Labor Income
	0	0	\$0	\$0	\$0
Mining, Quarrying, and Oil and Gas Extraction	2	10	\$5,180,253	\$3,802,923	\$926,381
Utilities	0	0	\$0	\$0	\$0
Construction	4	24	\$3,931,476	\$1,683,739	\$1,516,120
Manufacturing	5	36	\$17,247,916	\$4,982,452	\$2,806,026
Wholesale Trade	14	154	\$32,977,212	\$21,891,736	\$11,627,714
Retail Trade	6	40	\$3,383,252	\$2,648,303	\$1,594,421
Transportation and Warehousing	5	16	\$2,657,212	\$1,317,085	\$967,846
Information	0	0	\$0	\$0	\$0
Finance and Insurance	0	0	\$0	\$0	\$0
Real Estate and Rental and Leasing	0	0	\$0	\$0	\$0
Professional, Scientific and Technical Services	1	3	\$547,677	\$431,278	\$252,450
Management of Companies	0	0	\$0	\$0	\$0
Admin, Support, Waste Mgmt and Remediation Services	0	0	\$0	\$0	\$0
Educational Services	0	0	\$0	\$0	\$0
Arts, Entertainment, and Recreation	0	0	\$0	\$0	\$0
Health Care and Social Assistance	8	41	\$4,600,235	\$3,481,607	\$2,270,449
Accommodation and Food Services	4	242	\$16,492,851	\$9,976,076	\$6,828,339
Other Services, except Public Administration	5	14	\$819,984	\$573,986	\$490,887
Public Administration	0	0	\$0	\$0	\$0
Unclassified	0	0	\$0	\$0	\$0
TOTAL	54	580	\$87,838,069	\$50,789,184	\$29,280,634

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

Estimated Retail and Food Services Sales Tax Impact. The estimated local sales tax lost by the potential parcel acquisitions for Alternative 3 Option B is estimated at \$184,639. As shown previously in Table 4-4, this is based on the estimated employment lost from the associated parcel acquisitions that include employment from three main employment categories that generate taxable sales transactions. These employment categories are shown as follows with the average output per worker shown in parentheses: 1) food and beverage stores (\$71,993); 2) food services, including restaurants and fast food establishments (\$63,437); and 3) all other retail activities (\$87,724). The total average output per store type was then multiplied by the number of estimated workers lost in each category to generate estimated total taxable sales transactions. The Food and Beverage Category was further factored by 30 percent to estimate the taxable transactions for grocery and convenience food stores. The resultant taxable retail sales transactions were then factored by 1 percent to estimate the local sales tax lost.

4.5.1.3 Alternative 3 Option C

Property Acquisition Assessed Valuation and Parcel Statistics. As shown in Table 4-14, the total AV of Alternative 3 Option C is about \$40.6 million. Non-residential land uses, consisting of industrial, commercial, office and retail land uses, at \$35.5 million AV constitute about 87 percent of the total assessed valuation. The next largest category is vacant land at \$4.5 million AV, or about 11 percent of the total AV. Residential land uses constitutes a very small proportion of the total AV at \$238,652, or less than 1 percent of the total AV. There is an estimated total of 32.91 acres of potential parcel acquisitions, of which about 24.74 acres, or 75 percent, is non-residential land uses. Vacant land represents only 4.90 acres or 15 percent of the total with developed residential land again estimated at less than 1 acre. Overall, the FAR of 0.34 is relatively low density, typical of suburban development. The non-residential FAR is 0.30, also typical of suburban development. The valuation per acre is the highest for non-residential land uses at \$1.4 million per acre, about 16 percent higher than the average of \$1.2 million per acre for all land uses. Valuation per acre for residential (\$725,235) is relatively lower at 59 percent of the average valuation per acre. Vacant land AV per acre (\$911,276) is about 74 percent of the average.

As shown in Table 4-15, the total parcel square footage is 1,433,459 with 89 percent estimated to be acquired, or 1,273,168 square feet. Almost the entire residential and non-residential parcel square footage is estimated to be acquired, while the vacant land is only 50 percent estimated to be acquired.

Table 4-14: Assessed Valuation and Parcel Statistics by Land Use for Alternative 3 Option C

Land Use	Assessed Land Value	Assessed Improvement Value	Total Assessed Value	Building Sq. Ft.	Parcel Sq. Ft.	Acres	FAR	Value Per Acre
Industrial	\$16,402,764	\$11,934,415	\$28,337,179	280,410	856,219	19.66	0.33	\$1,441,649
Office	\$541,994	\$539,931	\$1,081,925	8,431	40,039	0.92	0.21	\$1,177,074
Retail	\$3,011,249	\$3,083,427	\$6,094,676	36,493	181,420	4.16	0.20	\$1,463,364
Subtotal	\$19,956,007	\$15,557,773	\$35,513,780	325,334	1,077,679	24.74	0.30	1,435,475
Single-Family Residential	\$107,225	\$131,427	\$238,652	1,492	14,334	0.33	0.10	\$725,235
Subtotal	\$107,225	\$131,427	\$238,652	1,492	14,334	0.33	0.10	725,235
Government	\$351,768	\$0	\$351,768	0	115,991	2.66	0.00	\$132,106
Caltrans	\$0	\$0	\$0	0	12,086	0.28	0.00	\$0
Subtotal	\$351,768	\$0	\$351,768	0	128,077	2.94	0.00	\$119,639
Vacant	\$3,870,429	\$593,255	\$4,463,684	158,702	213,369	4.90	N/A ¹	\$911,276
Subtotal	\$3,870,429	\$593,255	\$4,463,684	158,702	213,369	4.90	N/A	\$911,276
Total	\$24,285,429	\$16,282,455	\$40,567,884	485,528	1,433,459	32.91	0.34	\$1,232,778

¹ While the assessor reports a small amount of improvement value for some of the vacant designated parcels, this is not considered to be habitable space. Therefore, no FAR is calculated.

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor's File, 2014.

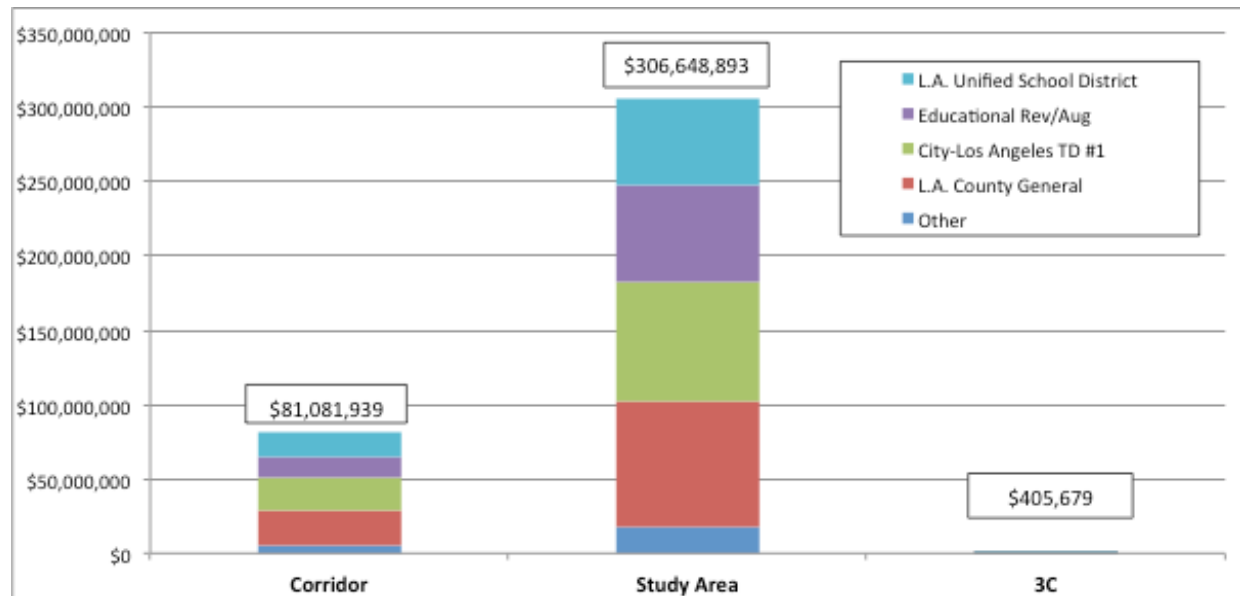
Table 4-15: Parcel Square Feet and Estimated Built Square Feet by Land Use – Alternative 3 Option C

Land Use	No. of Parcels	Parcel Sq. Ft.	Parcel Acquisition Sq. Ft.	Difference	Percentage of Parcels Acquired
Industrial	35	856,219	879,890	(23,671)	103%
Office	4	40,039	40,121	(82)	100%
Retail	15	181,420	160,270	21,150	88%
Subtotal	54	1,077,679	1,080,281	(2,602)	100%
Single-Family Residential	2	14,334	14,350	(16)	100%
Subtotal	2	14,334	14,350	(16)	100%
Government	1	115,991	59,020	56,971	51%
Caltrans	1	12,086	12,090	(4)	100%
Subtotal	2	128,077	71,110	56,967	56%
Vacant	10	213,369	107,427	105,942	50%
Subtotal	10	213,369	107,427	105,942	50%
Total	68	1,433,459	1,273,168	160,291	89%

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Property Tax Loss Analysis (Alternative 3 Option C). For Alternative 3 Option C, about \$406,000 is estimated to be lost in property taxes from potential parcel acquisitions under the 1% basic property tax levy to the operating budgets of local jurisdictions, special districts and agencies. As shown in Figure 4-3 and Table 4-16, almost 28 percent of the study area’s property tax loss is estimated from the Los Angeles County General Fund, with about 26 percent estimated loss from the Los Angeles City General Fund. When the property revenues loss to the Los Angeles County Unified School District is combined with other K-12 educational revenue funds, approximately 40 percent of the total is estimated to be lost to their operating budgets. Other districts and agencies make up a relatively small proportion of the total. However, when property taxes lost are compared with the ¼ mile transit corridor and the study area, the loss ranges from only 0.5 percent overall for the transit corridor, to 0.0 to 0.7 percent for the fund categories. Similarly, when the estimated property tax loss is compared against the study area, the loss is even less at 0.1 percent overall, and ranges between 0.0 to 0.2 percent for the fund categories.

Figure 4-3: Estimated Property Tax Loss Due to Parcel Acquisition: Alternative 3 Option C Compared with the Total Corridor and Study Area Property Taxes



Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Table 4-16: Estimated Property Tax Loss Due to Parcel Acquisition: Corridor, Study Area, Alternative 3 Option C

Jurisdiction/ Special District	Corridor	Corridor as % of Total	Study Area	Study Area as % of Total	Property Tax Loss – Alternative 3 Option C	Alternative 3 Option C as % of Corridor	Alternative 3 Option C as % of Study Area
Other	\$5,354,852	6.6%	\$18,325,853	6.0%	\$22,882	0.4%	0.1%
L.A. County General	\$24,116,803	29.8%	\$84,464,467	27.5%	\$172,018	0.7%	0.2%
City-Los Angeles TD #1	\$20,930,291	25.8%	\$79,284,389	25.9%	\$131,414	0.6%	0.2%
Other Educ. Revenues	\$15,088,795	18.6%	\$65,981,868	21.5%	\$2,312	0.0%	0.0%
L.A. Unified School Dist.	\$15,528,198	19.2%	\$58,592,316	19.1%	\$77,052	0.5%	0.1%
Total	\$81,018,939	100.0%	\$306,648,893	100.0%	\$405,679	0.5%	0.1%

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Economic Impacts of Parcel Acquisitions for Alternative 3 Option C. As shown in Table 4-17, Alternative 3 Option C affects 576 jobs spread among 79 firms. The total output of these firms is \$162.7 million. The labor income for this option is just over \$37.8 million, representing a much smaller portion (about 23 percent) of the total output than the previous options. Manufacturing accounts for about 40 percent of all jobs affected by this option with 231, and also accounts for nearly 70 percent of the option’s dollar output. For total employment, Wholesale Trade is the second largest industry with 74 workers and Retail Trade is third with 69. Value added is \$66.6 million.

Table 4-17: Estimated Economic Impacts

Industry Category	Firms	Jobs	Output	Value-Added	Labor Income
Agriculture	0	0	\$0	\$0	\$0
Mining, Quarrying, and Oil and Gas Extraction	0	0	\$0	\$0	\$0
Utilities	0	0	\$0	\$0	\$0
Construction	7	47	\$7,699,141	\$3,297,322	\$2,969,069
Manufacturing	15	231	\$110,674,128	\$31,970,735	\$18,005,335
Wholesale Trade	9	69	\$14,775,504	\$9,808,635	\$5,209,820
Retail Trade	15	74	\$6,259,017	\$4,899,361	\$2,949,679
Transportation and Warehousing	0	0	\$0	\$0	\$0
Information	2	7	\$2,267,267	\$1,437,404	\$811,732
Finance and Insurance	0	0	\$0	\$0	\$0
Real Estate and Rental and Leasing	3	11	\$4,263,362	\$3,416,683	\$271,535
Professional, Scientific and Technical Services	7	23	\$4,198,860	\$3,306,464	\$1,935,450
Management of Companies	0	0	\$0	\$0	\$0
Admin, Support, Waste Mgmt and Remediation Services	1	20	\$4,624,278	\$2,650,842	\$1,415,205
Educational Services	1	1	\$79,687	\$55,331	\$47,066
Arts, Entertainment, and Recreation	2	9	\$923,226	\$632,161	\$543,589
Health Care and Social Assistance	8	41	\$4,600,235	\$3,481,607	\$2,270,449
Accommodation and Food Services	2	3	\$204,457	\$123,670	\$84,649
Other Services, except Public Administration	6	37	\$2,167,099	\$1,516,962	\$1,297,344
Public Administration	0	0	\$0	\$0	\$0
Unclassified	1	3	\$0	\$0	\$0
TOTAL	79	576	\$162,736,261	\$66,597,176	\$37,810,922

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

Estimated Retail and Food Services Sales Tax Impact. The estimated local sales tax lost by the potential parcel acquisitions for Alternative 3 Option C is estimated at \$62,851. As shown previously in Table 4-4, this is based on the estimated employment lost from the associated parcel acquisitions that include employment from three main employment categories that generate taxable sales transactions. These employment categories are shown as follows with the average output per worker shown in parentheses: 1) food and beverage stores (\$71,993); 2) food services, including restaurants and fast food establishments (\$63,437); and 3) all other retail activities (\$87,724). The total average output per store type was then multiplied by the number of estimated workers lost in each category to generate estimated total taxable sales transactions. The Food and Beverage Category was further factored by 30 percent to estimate the taxable transactions for grocery and convenience food stores. The resultant taxable retail sales transactions were then factored by 1 percent to estimate the local sales tax lost.

4.6 Build Alternative 4 – LRT Alternative

4.6.1 Direct Impacts

Tables 4-18 and 4-19 summarize the assessed valuation and parcel acquisition analysis for the ESFV transit corridor alternative configurations. While Table 4-19 depicts the assessed land and improvement values and the total assessed value per acre, Table 4-19 shows the number of affected parcels and the estimated square footage to be acquired for each alternative where it is less than the full parcel area. More in-depth analysis on these categories is provided in subsequent sections of this report, which break down the analysis by land use categories and are tailored to each individual alternative.

As shown in Table 4-18, the Total Assessed Value for Alternative 4 Option A, Option B, and Option C ranged from a low of about \$65.8 million (Option A) to a high of \$94.0 million (Option B), requiring potentially 60.5 acres (Option A) to 72.2 acres (Option B).

As shown previously in Table 4-2, non-residential valuations constituted the largest proportion of the total assessed valuation ranging from 90 to 92 percent for Alternative 4 Option A and both Option B and Option C. In general, residential land uses constituted a very small proportion of the total AV (less than 1 percent), with vacant land accounting for about 7 percent of the total AV.

On an Assessed Value per Acre basis, Alternative 4 Option A, Option B, and Option C were relatively similar ranging from about \$1.1 million (Option A) to \$1.3 million (Option B). Under Proposition 13, which limits the amount of annual increase until the property is sold, the assessed valuation is generally less than the estimated fair market value at the time of sale.

For all of the alternatives, FARs are relatively low, ranging from 0.30 (Option B) to 0.35 (Option C), typical of lower density suburban areas. However, in a few cases there are relatively higher densities in commercial and retail land uses, ranging from about 0.60 (Option B and Option C) to 0.66 (Option A). These higher densities are typically found in the section along Van Nuys Boulevard from the Van Nuys Civic Center and Orange Bus Line on the south (just north of Aetna Street) to the Panorama Mall and the surrounding commercial areas at Roscoe Boulevard on the north.

As summarized in Table 4-19, in some cases, the full parcel is acquired – in other cases, only a portion of the parcel is acquired. As illustrated by Table 4-19, the average percentage of parcel area acquired for Alternative 4 Option A, Option B, and Option C, ranged between 66.7 percent (Option A) and 71.4 percent (Option B).

The estimated parcel square footage to be acquired for Alternative 4 Option A, Option B, and Option C ranged between about 1.8 million sq. ft. (Option A) to 2.2 million sq. ft. (Option B). Also, the number of affected parcels ranges from 102 parcels (Option B) to 118 parcels (Option A). Table 4-20 summarizes the economic impacts for affected number of firms, employment, output, value-added, and labor compensation. Also shown are fiscal impacts for property and sales tax. Table 4-21 presents a more detailed analysis of the potential sales tax lost from the parcel acquisitions.

The following sections of the report describe the various potential parcel acquisitions for each alternative— Option A, Option B, and Option C —by residential and non-residential land use categories, as well as vacant land and government land, including Caltrans and Metrolink parcels.

Table 4-18: Summary of Assessed Valuation and Parcel Statistics by Alternative 4 – Proposed Parcel Acquisition for ESFV Transit Corridor

Land Use	Assessed Land Value	Assessed Improvement Value	Total Assessed Value	Building Sq. Ft.	Parcel Sq. Ft.	Acres	FAR	Value Per Acre
Option A	\$37,750,237	\$28,072,207	\$65,822,444	869,681	2,633,345	60.5	0.33	\$1,088,815
Option B	\$52,272,725	\$41,684,988	\$93,957,713	943,959	3,146,251	72.2	0.30	\$1,300,849
Option C	\$48,923,971	\$38,392,032	\$87,316,003	1,023,712	2,954,449	67.8	0.35	\$1,287,376

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Table 4-19: Summary of Total Parcel Sq. Ft. and Estimated Acquired Sq. Ft. by Alternative Proposed Parcel Acquisition for ESFV Transit Corridor

ALT	No. of Parcels	Parcel Sq. Ft.	Parcel Acquisition Sq. Ft.	Difference	Percentage of Parcels Acquired
Option A	118	2,633,345	1,755,281	878,064	66.7%
Option B	102	3,146,251	2,245,671	900,580	71.4%
Option C	106	2,954,449	2,060,321	894,128	69.7%

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Table 4-20: Summary of Estimated Employment Impacts

Alternative 4	Firms	Jobs	Output	Value-Added	Labor Income	Property Tax	Sales Tax
Option A	106	974	\$215,034,217	\$91,240,338	\$57,126,873	\$658,000	\$66,632
Option B	126	1,285	\$248,514,020	\$115,093,588	\$70,330,356	\$940,000	\$236,438
Option C	147	1,280	\$325,433,391	\$131,861,261	\$79,294,826	\$873,000	\$113,774

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

Table 4-21: Summary of Estimated Retail and Food Services Sales Tax Impact

	ALT 4 Option A	ALT 4 Option B	Alt 4 Option C
Employment Impact ¹			
Food and Beverage	16	14	14
All other Retail	59	73	106
Retail Total	75	87	120
Food Services	18	267	28
TOTAL	93	354	148
Estimated Output Impact ²			
Food and Beverage	\$1,151,890	\$1,007,904	\$1,007,904
All other Retail	\$5,175,731	\$6,403,871	\$9,298,772
Retail Total	\$6,327,621	\$7,411,775	\$10,306,675
Food Services	\$1,141,859	\$16,937,570	\$1,776,225
TOTAL	\$7,469,480	\$24,349,345	\$12,082,900
Estimated Taxable Output ³			
Food and Beverage	\$345,567	\$302,371	\$302,371
All other Retail	\$5,175,731	\$6,403,871	\$9,298,772
Retail Total	\$5,521,298	\$6,706,242	\$9,601,143
Food Services	\$1,141,859	\$16,937,570	\$1,776,225
TOTAL	\$6,663,157	\$23,643,812	\$11,377,367
ESTIMATED LOCAL SALES TAX LOST	\$66,632	\$236,438	\$113,774

1. Employment impacts calculated from jobs located within parcel takes by alternative. Jobs information obtained from InfoUSA 2011 provided by the Southern California Association of Governments.

2. Output impacts based on jobs within parcel takes and output per employee by industry obtained from the IMPLAN LLC model for Los Angeles County.

3. Taxable share of total output is estimated at 30 percent for food and beverage stores, 100 percent for all other retail stores, and 75 percent for food services.

4. Sales tax is estimated at 1 percent of taxable sales.

Sources: Stanley R. Hoffman Associates, Inc.; KOA Corporation; *InfoUSA 2011*, provided by the Southern California Association of Governments; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013; California State Board of Equalization.

4.6.1.1 Alternative 4 Option A

Property Acquisition Assessed Valuation and Parcel Statistics. As shown in Table 4-22, the total AV of Alternative 4 Option A is about \$65.8 million. Non-residential land uses, consisting of industrial, commercial, office and retail land uses, at \$59.4 million AV constitute about 90 percent of the total assessed valuation. The next largest category is vacant land at \$4.6 million AV, or about 7 percent of the total AV. Residential land uses constitutes a very small proportion of the total AV at \$324,816, or less than 1 percent of the total AV. There is an estimated total of 60.45 acres of potential parcel acquisitions, of which about 37.66 acres, or 62 percent, is non-residential land uses. In this alternative, Government land use is identified as 16.85 acres, or about 28 percent of the total acreage. Vacant land represents only 5.37 acres or 9 percent of the total with developed residential land again estimated at less than 1 acre. Overall, the FAR of 0.33 is relatively low density, typical of suburban development. The non-residential FAR is 0.49, which has relatively higher densities for Commercial and Retail land uses. The valuation per acre is the highest for non-residential land uses at \$1.6 million per acre, about 45 percent higher than the average of \$1.1 million per acre for all land uses. Valuation per acre for residential (\$574,095) is relatively lower at 53 percent of the average valuation per acre. Vacant land AV per acre (\$852,253) is about 78 percent of the average.

Table 4-22: Summary of Assessed Valuation and Parcel Statistics for Alternative 4 Option A

Land Use	Assessed Land Value	Assessed Improvement Value	Total Assessed Value	Building Sq. Ft.	Parcel Sq. Ft.	Acres	FAR	Value Per Acre
Commercial	\$519,558	\$588,834	\$1,108,392	11,402	17,314	0.40	0.66	\$2,788,622
Industrial	\$17,620,033	\$12,678,782	\$30,298,815	271,234	823,201	18.90	0.33	\$1,603,273
Office	\$1,092,589	\$475,879	\$1,568,468	13,411	31,912	0.73	0.42	\$2,140,964
Retail	\$12,669,922	\$13,559,456	\$26,229,378	497,594	752,874	17.28	0.66	\$1,517,586
Recreational	\$105,102	\$81,218	\$186,320	6,265	15,327	0.35	0.41	\$529,514
Subtotal	\$32,007,204	\$27,384,169	\$59,391,373	799,906	1,640,629	37.66	0.49	\$1,576,888
Multi-Family Residential	\$55,328	\$30,836	\$86,164	2,889	10,312	0.24	0.28	\$363,992
Single-Family Residential	\$107,225	\$131,427	\$238,652	1,492	14,334	0.33	0.10	\$725,235
Subtotal	\$162,553	\$162,263	\$324,816	4,381	24,646	0.57	0.18	\$574,095
Government	\$1,528,628	\$0	\$1,528,628	8,000	734,100	16.85	0.01	\$90,706
Subtotal	\$1,528,628	\$0	\$1,528,628	8,000	734,100	16.85	0.01	\$90,706
Vacant	\$4,051,852	\$525,775	\$4,577,627	57,394	233,970	5.37	N/A ¹	\$852,253
Subtotal	\$4,051,852	\$525,775	\$4,577,627	57,394	233,970	5.37	N/A	\$852,253
Total	\$37,750,237	\$28,072,207	\$65,822,444	869,681	2,633,345	60.45	0.33	\$1,088,815

¹ While the assessor reports a small amount of improvement value for some of the vacant designated parcels, this is not considered to be habitable space. Therefore, no FAR is calculated.

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

As shown in Table 4-23, the total parcel square footage is 2,633,345 with 67 percent estimated to be acquired, or 1,755,281 square feet. In this alternative, the residential land uses are entirely acquired while non-residential parcel square footage is estimated to be 79 percent acquired. About 67 percent of the vacant land is estimated to be acquired.

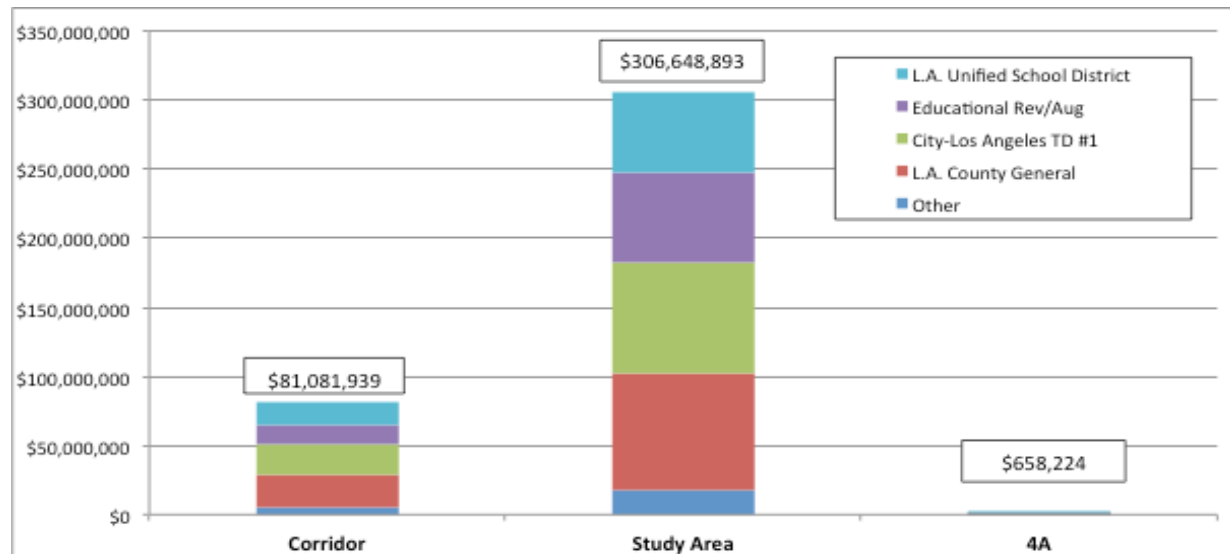
Table 4-23: Summary of Parcel Square Feet and Estimated Built Square Feet – Alternative 4 Option A

Land Use	No. of Parcels	Parcel Sq. Ft.	Parcel Acquisition Sq. Ft.	Difference	Percentage of Parcels Acquired
Commercial	2	17,314	17,370	(56)	100%
Industrial	48	823,201	794,544	28,657	97%
Office	4	31,912	31,940	(28)	100%
Retail	29	752,874	442,700	310,174	59%
Recreational	1	15,327	15,230	97	99%
Subtotal	84	1,640,629	1,301,784	338,845	79%
Multi-Family Residential	1	10,312	10,310	2	100%
Single-Family Residential	2	14,334	14,350	(16)	100%
Subtotal	3	24,646	24,660	(14)	100%
Government	7	734,100	271,500	462,600	37%
Subtotal	7	734,100	271,500	462,600	37%
Vacant	24	233,970	157,337	76,633	67%
Subtotal	24	233,970	157,337	76,633	67%
Total	118	2,633,345	1,755,281	878,064	67%

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Property Tax Loss Analysis (Alternative 4 Option A). For Alternative 4 Option A, about \$658,000 is estimated to be lost in property taxes from potential parcel acquisitions under the 1% basic property tax levy to the operating budgets of local jurisdictions, special districts and agencies. As shown in Figure 4-4 and Table 4-24, almost 28 percent of the study area’s property tax loss is estimated from the Los Angeles County General Fund, with about 26 percent estimated loss from the Los Angeles City General Fund. When the property revenues loss to the Los Angeles County Unified School District is combined with other K-12 educational revenue funds, approximately 40 percent of the total is estimated to be lost to their operating budgets. Other districts and agencies make up a relatively small proportion of the total. However, when property taxes lost are compared with the ¼ mile transit corridor and the study area, the loss ranges from only 0.8 overall for the transit corridor, to 0.7 to 1.1 percent for the fund categories. Similarly, when the estimated property tax lost is compared against the study area, the loss is even less at 0.2 percent overall, and ranges between 0.2 and 0.3 percent for the fund categories.

Figure 4-4: Estimated Property Tax Loss Due to Parcel Acquisition: Alternative 4 Option A Property Tax Loss compared with Total Corridor and Study Area Property Taxes



Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Table 4-24: Estimated Property Tax Loss Due to Parcel Acquisition: Corridor, Study Area, Alternative 4 Option A

Jurisdiction/ Special District	Corridor	Corridor as % of Total	Study Area	Study Area as % of Total	Property Tax – Alternative 4 Option A	Alternative 4 Option A as % of Corridor	Alternative 4 Option A as % of Study Area
Other	\$5,354,852	6.6%	\$18,325,853	6.0%	\$60,849	1.1%	0.3%
L.A. County General	\$24,116,803	29.8%	\$84,464,467	27.5%	\$212,608	0.9%	0.3%
City-Los Angeles TD #1	\$20,930,291	25.8%	\$79,284,389	25.9%	\$152,494	0.7%	0.2%
Other Educ. Revenues	\$15,088,795	18.6%	\$65,981,868	21.5%	\$104,473	0.7%	0.2%
L.A. Unified School Dist.	\$15,528,198	19.2%	\$58,592,316	19.1%	\$127,800	0.8%	0.2%
Total	\$81,018,939	100.0%	\$306,648,893	100.0%	\$658,224	0.8%	0.2%

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Economic Impacts of Parcel Acquisitions for Alternative 4 Option A. Table 4-25 shows that Alternative 4 Option A affects 106 firms containing a total of 974 jobs. Total labor income for the option is about \$57.1 million, which is about a quarter of its total output of \$215 million. Manufacturing is the most significant industry in terms of both employment, with 289 jobs, and output, with \$138.4 million. Educational Services provide the second highest number of jobs with 249, and also has the second highest output at \$19.5 million. Value added is \$91.2 million.

Table 4-25: Estimated Economic Impacts

Industry Category	Firms	Jobs	Output	Value-Added	Labor Income
Agriculture	0	0	\$0	\$0	\$0
Mining, Quarrying, and Oil and Gas Extraction	0	0	\$0	\$0	\$0
Utilities	0	0	\$0	\$0	\$0
Construction	12	42	\$6,880,083	\$2,946,543	\$2,653,211
Manufacturing	9	289	\$138,462,437	\$39,998,019	\$22,526,155
Wholesale Trade	10	60	\$12,848,264	\$8,529,248	\$4,530,278
Retail Trade	17	75	\$6,343,598	\$4,965,568	\$2,989,540
Transportation and Warehousing	0	0	\$0	\$0	\$0
Information	3	6	\$1,943,372	\$1,232,061	\$695,770
Finance and Insurance	2	29	\$6,526,554	\$3,837,967	\$2,325,748
Real Estate and Rental and Leasing	2	8	\$3,100,627	\$2,484,860	\$197,480
Professional, Scientific and Technical Services	5	12	\$2,190,710	\$1,725,112	\$1,009,800
Management of Companies	0	0	\$0	\$0	\$0
Admin, Support, Waste Mgmt and Remediation Services	4	13	\$3,005,781	\$1,723,048	\$919,883
Educational Services	2	245	\$19,523,405	\$13,555,982	\$11,531,134
Arts, Entertainment, and Recreation	2	5	\$512,903	\$351,201	\$301,994
Health Care and Social Assistance	9	52	\$5,834,445	\$4,415,697	\$2,879,594
Accommodation and Food Services	6	18	\$1,226,741	\$742,022	\$507,893
Other Services, except Public Administration	19	107	\$6,267,017	\$4,386,891	\$3,751,778
Public Administration	1	4	\$368,281	\$346,122	\$306,615
Unclassified	3	9	\$0	\$0	\$0
TOTAL	106	974	\$215,034,217	\$91,240,338	\$57,126,873

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

Estimated Retail and Food Services Sales Tax Impact. The estimated local sales tax lost by the potential parcel acquisitions for Alternative 4 Option A is estimated at \$66,632. As shown previously in Table 4-21, this is based on the estimated employment lost from the associated parcel acquisitions that include employment from three main employment categories that generate taxable sales transactions. These employment categories are shown as follows with the average output per worker shown in parentheses: 1) food and beverage stores (\$71,993); 2) food services, including restaurants and fast food establishments (\$63,437); and 3) all other retail activities (\$87,724). The total average output per store type was then multiplied by the number of estimated workers lost in each

category to generate estimated total taxable sales transactions. The Food and Beverage Category was further factored by 30 percent to estimate the taxable transactions for grocery and convenience food stores. The resultant taxable retail sales transactions were then factored by 1 percent to estimate the local sales tax lost

4.6.1.2 Alternative 4 Option B

Property Acquisition Assessed Valuation and Parcel Statistics. As shown in Table 4-26, the total AV of Alternative 4 Option B is about \$94.0 million. Non-residential land uses, consisting of industrial, commercial, office and retail land uses, at \$86.0 million AV constitute about 92 percent of the total assessed valuation. The next largest category is vacant land at \$6.7 million AV, or about 7 percent of the total AV. Residential land uses constitutes a very small proportion of the total AV at \$238,652, or less than 1 percent of the total AV. There is an estimated total of 72.23 acres of potential parcel acquisitions, of which about 50.57 acres, or 70 percent, is non-residential land uses. In this alternative, Government land use is identified as 14.02 acres, or about 19 percent of the total acreage. Vacant land represents only 7.31 acres or 10 percent of the total with developed residential land again estimated at less than 1 acre. Overall, the FAR of 0.30 is relatively low density, typical of suburban development. The non-residential FAR is 0.38, which is a relatively higher FAR for Retail land uses at 0.60. The valuation per acre is the highest for non-residential land uses at \$1.7 million per acre, about 31 percent higher than the average of \$1.3 million per acre for all land uses. Valuation per acre for residential (\$725,235) is relatively lower at 56 percent of the average valuation per acre. Vacant land AV per acre (\$914,275) is about 70 percent of the average.

Table 4-26: Assessed Valuation and Parcel Statistics by Land Use for Alternative 4 Option B

Land Use	Assessed Land Value	Assessed Improvement Value	Total Assessed Value	Building Sq. Ft.	Parcel Sq. Ft.	Acres	FAR	Value Per Acre
Commercial	\$390,226	\$601,285	\$991,511	0	98,135	2.25	0.00	\$440,112
Industrial	\$23,207,813	\$18,152,245	\$41,360,058	277,707	1,123,236	25.79	0.25	\$1,603,977
Office	\$331,827	\$281,239	\$613,066	5,311	15,519	0.36	0.34	\$1,720,789
Retail	\$19,950,514	\$21,576,043	\$41,526,557	546,172	917,626	21.07	0.60	\$1,971,279
Recreational	\$1,079,956	\$389,176	\$1,469,132	18,235	48,296	1.11	0.38	\$1,325,060
Subtotal	\$44,960,336	\$40,999,988	\$85,960,324	847,425	2,202,812	50.57	0.38	\$1,699,842
Single-Family Residential	\$107,225	\$131,427	\$238,652	1,492	14,334	0.33	0.10	\$725,235
Subtotal	\$107,225	\$131,427	\$238,652	1,492	14,334	0.33	0.10	\$725,235
Government	\$1,075,192	\$0	\$1,075,192	8,000	610,672	14.02	0.01	\$76,695
Subtotal	\$1,075,192	\$0	\$1,075,192	8,000	610,672	14.02	0.01	\$76,695
Vacant	\$6,129,972	\$553,573	\$6,683,545	87,042	318,433	7.31	N/A ¹	\$914,275
Subtotal	\$6,129,972	\$553,573	\$6,683,545	87,042	318,433	7.31	N/A	\$914,275
Total	\$52,272,725	\$41,684,988	\$93,957,713	943,959	3,146,251	72.23	0.30	\$1,300,849

¹ While the assessor reports a small amount of improvement value for some of the vacant designated parcels, this is not considered to be habitable space. Therefore, no FAR is calculated.

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

As shown in Table 4-27, the total parcel square footage is 3,146,251 with 71 percent estimated to be acquired, or 2,245,671 square feet. In this alternative, the residential land uses are entirely acquired while non-residential parcel square footage is estimated to be 84 percent acquired. About 76 percent of the vacant land is estimated to be acquired.

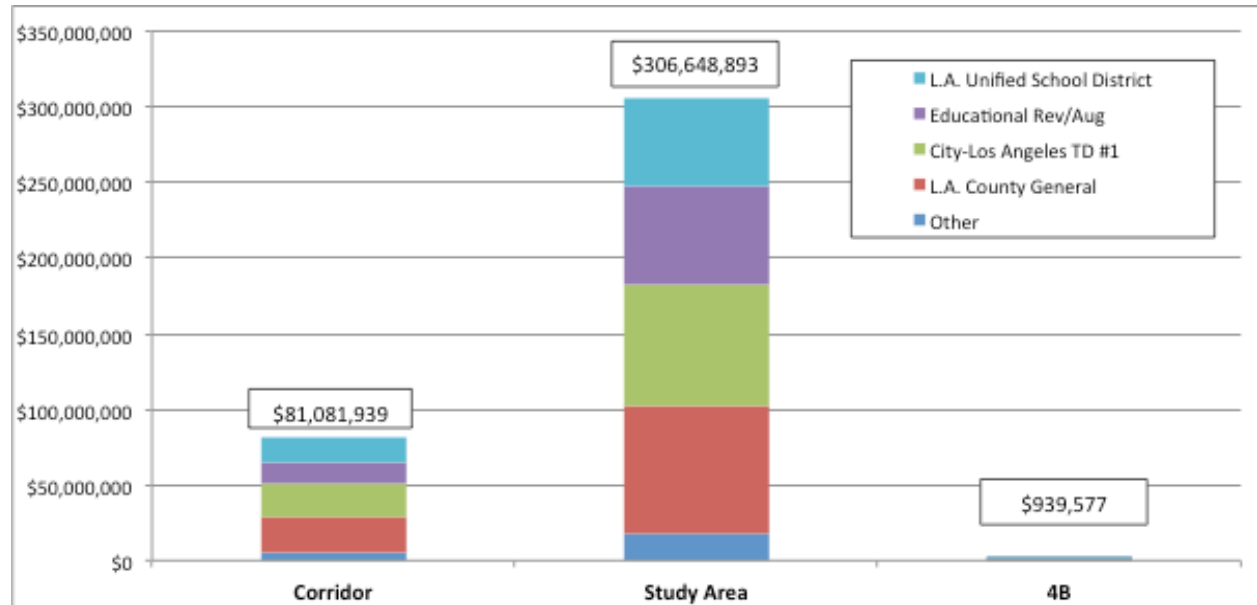
Table 4-27: Parcel Square Feet and Estimated Built Square Feet by Land Use for Alternative 4 Option B

Land Use	No. of Parcels	Parcel Sq. Ft.	Parcel Acquisition Sq. Ft.	Difference	Percentage of Parcels Acquired
Commercial	1	98,135	97,600	535	99%
Industrial	34	1,123,236	1,098,554	24,682	98%
Office	2	15,519	15,500	19	100%
Retail	29	917,626	583,710	333,916	64%
Recreational	2	48,296	47,900	396	99%
Subtotal	68	2,202,812	1,843,264	359,548	84%
Single-Family Residential	2	14,334	14,350	(16)	100%
Subtotal	2	14,334	14,350	(16)	100%
Government	6	610,672	146,660	464,012	24%
Subtotal	6	610,672	146,660	464,012	24%
Vacant	26	318,433	241,397	77,036	76%
Subtotal	26	318,433	241,397	77,036	76%
Total	102	3,146,251	2,245,671	900,580	71%

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Property Tax Loss Analysis (Alternative 4 Option B). For Alternative 4 Option B, about \$940,000 is estimated to be lost in property taxes from potential parcel acquisitions under the 1% basic property tax levy to the operating budgets of local jurisdictions, special districts and agencies. As shown in Figure 4-5 and Table 4-28, almost 28 percent of the study area’s property tax loss is estimated from the Los Angeles County General Fund, with about 26 percent estimated loss from the Los Angeles City General Fund. When the property revenues loss to the Los Angeles County Unified School District is combined with other K-12 educational revenue funds, approximately 40 percent of the total is estimated to be lost to their operating budgets. Other districts and agencies make up a relatively small proportion of the total. However, when property taxes loss is compared with the ¼ mile transit corridor and the study area, the loss ranges from only 1.2 overall, for the transit corridor, to 1.1 to 1.4 percent for the fund categories. Similarly, when the estimated property tax loss is compared against the study area, the loss is even less at 0.3 percent overall, and ranges between 0.3 and 0.4 percent for the fund categories.

Figure 4-5: Estimated Property Tax Loss Due to Parcel Acquisition: Property Tax Loss for Alternative 4 Option B compared with Total Corridor and Study Area Property Taxes



Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Table 4-28: Estimated Property Tax Loss Due to Parcel Acquisition: Corridor, Study Area, Alternative 4 Option B

Jurisdiction/ Special District	Corridor	Corridor as % of Total	Study Area	Study Area as % of Total	Property Tax Loss – Alternative 4 Option B	Alternative 4 Option B as % of Corridor	Alternative 4 Option B as % of Study Area
Other	\$5,354,852	6.6%	\$18,325,853	6.0%	\$74,580	1.4%	0.4%
L.A. County General	\$24,116,803	29.8%	\$84,464,467	27.5%	\$281,426	1.2%	0.3%
City-Los Angeles TD #1	\$20,930,291	25.8%	\$79,284,389	25.9%	\$226,447	1.1%	0.3%
Other Educ. Revenues	\$15,088,795	18.6%	\$65,981,868	21.5%	\$175,923	1.2%	0.3%
L.A. Unified School Dist.	\$15,528,198	19.2%	\$58,592,316	19.1%	\$181,202	1.2%	0.3%
Total	\$81,018,939	100.0%	\$306,648,893	100.0%	\$939,577	1.2%	0.3%

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Economic Impacts of Parcel Acquisitions for Alternative 4 Option B. Alternative 4 Option B affects 1,285 jobs, the highest among options for Alternative 4, and 126 firms, as can be seen in Table 4-29. The total labor income is about \$70.3 million, which is 28 percent of the option’s total output. Manufacturing is again the most significant industry in terms of both employment, with 276 jobs, and output at about \$132.2 million. Food Services has the second highest number of employees with 267, while Educational Services is third with 245. Value is estimated at \$115.1 million.

Table 4-29: Estimated Economic Impacts

Industry Category	Firms	Jobs	Output	Value-Added	Labor Income
Agriculture	0	0	\$0	\$0	\$0
Mining, Quarrying, and Oil and Gas Extraction	2	10	\$5,180,253	\$3,802,923	\$926,381
Utilities	0	0	\$0	\$0	\$0
Construction	5	26	\$4,259,099	\$1,824,050	\$1,642,464
Manufacturing	12	276	\$132,234,023	\$38,198,800	\$21,512,868
Wholesale Trade	18	167	\$35,761,002	\$23,739,739	\$12,609,274
Retail Trade	22	87	\$7,358,574	\$5,760,059	\$3,467,866
Transportation and Warehousing	7	24	\$3,985,818	\$1,975,628	\$1,451,769
Information	1	3	\$971,686	\$616,030	\$347,885
Finance and Insurance	3	31	\$6,976,661	\$4,102,654	\$2,486,144
Real Estate and Rental and Leasing	2	3	\$1,162,735	\$931,823	\$74,055
Professional, Scientific and Technical Services	3	6	\$1,095,355	\$862,556	\$504,900
Management of Companies	0	0	\$0	\$0	\$0
Admin, Support, Waste Mgmt and Remediation Services	1	2	\$462,428	\$265,084	\$141,521
Educational Services	2	245	\$19,523,405	\$13,555,982	\$11,531,134
Arts, Entertainment, and Recreation	0	0	\$0	\$0	\$0
Health Care and Social Assistance	14	66	\$7,405,257	\$5,604,538	\$3,654,870
Accommodation and Food Services	10	267	\$18,196,658	\$11,006,663	\$7,533,746
Other Services, except Public Administration	21	61	\$3,572,786	\$2,500,938	\$2,138,864
Public Administration	1	4	\$368,281	\$346,122	\$306,615
Unclassified	2	7	\$0	\$0	\$0
TOTAL	126	1,285	\$248,514,020	\$115,093,588	\$70,330,356

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

Estimated Retail and Food Services Sales Tax Impact. The estimated local sales tax lost by the potential parcel acquisitions for Alternative 4 Option B is estimated at \$236,438. As shown previously in Table 4-21, this is based on the estimated employment lost from the associated parcel acquisitions that include employment from three main employment categories that generate taxable sales transactions. These employment categories are shown as follows with the average output per worker shown in parentheses: 1) food and beverage stores (\$71,993); 2) food services, including restaurants and fast food establishments (\$63,437); and 3) all other retail activities (\$87,724). The total average output per store type was then multiplied by the number of estimated workers lost in each

category to generate estimated total taxable sales transactions. The Food and Beverage Category was further factored by 30 percent to estimate the taxable transactions for grocery and convenience food stores. The resultant taxable retail sales transactions were then factored by 1 percent to estimate the local sales tax lost.

4.6.1.3 Alternative 4 Option C

Property Acquisition Assessed Valuation and Parcel Statistics. As shown in Table 4-30, the total AV of Alternative 4 Option C is about \$87.3 million. Non-residential land uses, consisting of industrial, commercial, office and retail land uses, at \$79.9 million AV constitute about 92 percent of the total assessed valuation. The next largest category is vacant land at \$6.1 million AV, or about 7 percent of the total AV. Residential land uses constitutes a very small proportion of the total AV at \$238,652, or less than 1 percent of the total AV. There is an estimated total of 67.82 acres of potential parcel acquisitions, of which about 47.19 acres, or 70 percent, is non-residential land uses. In this alternative, Government land use is identified as 14.02 acres, or about 21 percent of the total acreage. Vacant land represents only 6.28 acres or 9 percent of the total with developed residential land again estimated at less than 1 acre. Overall, the FAR of 0.35 is relatively low density, typical of suburban development. The non-residential FAR is 0.45, is a relatively higher FAR with Retail land uses at 0.60 FAR. The valuation per acre is the highest for non-residential land uses at \$1.7 million per acre, about 32 percent higher than the average of \$1.3 million per acre for all land uses. Valuation per acre for residential (\$725,235) is relatively lower at 56 percent of the average valuation per acre. Vacant land AV per acre (\$968,687) is about 75 percent of the average.

Table 4-30: Assessed Valuation and Parcel Statistics by Land Use for Alternative 4 Option C

Land Use	Assessed Land Value	Assessed Improvement Value	Total Assessed Value	Building Sq. Ft.	Parcel Sq. Ft.	Acres	FAR	Value Per Acre
Industrial	\$20,743,366	\$15,389,926	\$36,133,292	369,325	1,102,113	25.30	0.34	\$1,428,136
Office	\$475,783	\$365,211	\$840,994	8,431	20,278	0.47	0.42	\$1,806,559
Retail	\$20,865,590	\$21,889,809	\$42,755,399	548,945	918,042	21.08	0.60	\$2,028,693
Recreational	\$105,102	\$81,218	\$186,320	6,265	15,327	0.35	0.41	\$529,514
Subtotal	\$42,189,841	\$37,726,164	\$79,916,005	932,966	2,055,760	47.19	0.45	\$1,693,360
Single-Family Residential	\$107,225	\$131,427	\$238,652	1,492	14,334	0.33	0.10	\$725,235
Subtotal	\$107,225	\$131,427	\$238,652	1,492	14,334	0.33	0.10	\$725,235
Government	\$1,075,192	\$0	\$1,075,192	8,000	610,672	14.02	0.01	\$76,695
Subtotal	\$1,075,192	\$0	\$1,075,192	8,000	610,672	14.02	0.01	\$76,695
Vacant	\$5,551,713	\$534,441	\$6,086,154	81,254	273,683	6.28	N/A ¹	\$968,687
Subtotal	\$5,551,713	\$534,441	\$6,086,154	81,254	273,683	6.28	N/A	\$968,687
Total	\$48,923,971	\$38,392,032	\$87,316,003	1,023,712	2,954,449	67.82	0.35	\$1,287,376

¹ While the assessor reports a small amount of improvement value for some of the vacant designated parcels, this is not considered to be habitable space. Therefore, no FAR is calculated.

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

As shown in Table 4-31, the total parcel square footage is 2,954,449 with 70 percent estimated to be acquired, or 2,060,321 square feet. In this alternative, the residential land uses are entirely acquired while non-residential parcel square footage is estimated to be 83 percent acquired. About 72 percent of the vacant land is estimated to be acquired.

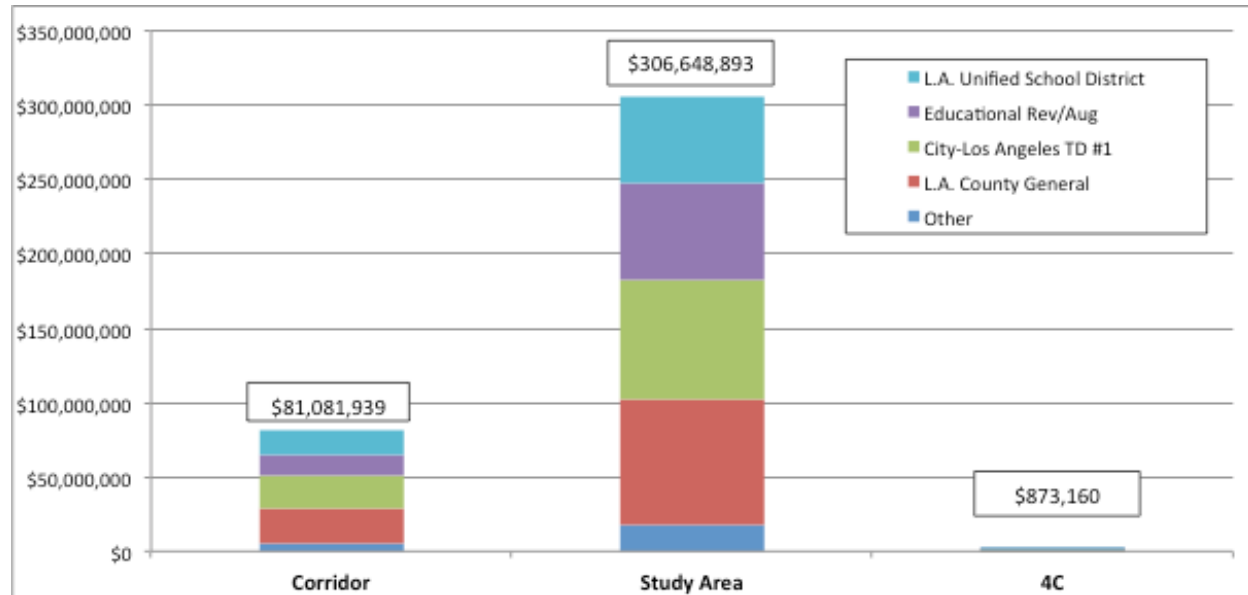
Table 4-31: Parcel Square Feet and Estimated Built Square Feet by Land Use – Alternative 4 Option C

Land Use	No. of Parcels	Parcel Sq. Ft.	Parcel Acquisition Sq. Ft.	Difference	Percentage of Parcels Acquired
Industrial	42	1,102,113	1,099,044	3,069	100%
Office	3	20,278	20,360	(82)	100%
Retail	30	918,042	567,520	350,522	62%
Recreational	1	15,327	15,230	97	99%
Subtotal	76	2,055,760	1,702,154	353,606	83%
Single-Family Residential	2	14,334	14,350	(16)	100%
Subtotal	2	14,334	14,350	(16)	100%
Government	6	610,672	146,660	464,012	24%
Subtotal	6	610,672	146,660	464,012	24%
Vacant	22	273,683	197,157	76,526	72%
Subtotal	22	273,683	197,157	76,526	72%
Total	106	2,954,449	2,060,321	894,128	70%

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Property Tax Loss Analysis (Alternative 4 Option C). For Alternative 4 Option C, about \$873,000 is estimated to be lost in property taxes from potential parcel acquisitions under the 1% basic property tax levy to the operating budgets of local jurisdictions, special districts and agencies. As shown in Figure 4-6 and Table 4-32, almost 28 percent of the study area’s property tax loss is estimated from the Los Angeles County General Fund, with about 26 percent estimated loss from the Los Angeles City General Fund. When the property revenues loss to the Los Angeles County Unified School District is combined with other K-12 educational revenue funds, approximately 40 percent of the total is estimated to be lost to their operating budgets. Other districts and agencies make up a relatively small proportion of the total. However, when property taxes lost are compared with the ¼ mile transit corridor and the study area, the loss ranges from only 0.5 percent overall, for the transit corridor, to 0.5 to 1.4 percent for the fund categories. Similarly, when the estimated property tax lost is compared against the study area, the loss is even less at 0.3 percent overall, and ranges between 0.1 and 0.4 percent for the fund categories.

Figure 4-6: Estimated Property Tax Loss Due to Parcel Acquisition: Property Tax Loss Alternative 4 Option C Compared with the Total Corridor and Study Area Property Taxes



Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Table 4-32: Estimated Property Tax Loss Due to Parcel Acquisition: Corridor, Study Area, Alternative 4 Option C

Jurisdiction/ Special District	Corridor	Corridor as % of Total	Study Area	Study Area as % of Total	Property Tax Loss – Alternative 4 Option C	Alternative 4 Option C as % of Corridor	Alternative 4 Option C as % of Study Area
Other	\$5,354,852	6.6%	\$18,325,853	6.0%	\$73,476	1.4%	0.4%
L.A. County General	\$24,116,803	29.8%	\$84,464,467	27.5%	\$325,522	1.3%	0.4%
City-Los Angeles TD #1	\$20,930,291	25.8%	\$79,284,389	25.9%	\$230,133	1.1%	0.3%
Other Educ. Revenues	\$15,088,795	18.6%	\$65,981,868	21.5%	\$75,433	0.5%	0.1%
L.A. Unified School Dist.	\$15,528,198	19.2%	\$58,592,316	19.1%	\$168,596	1.1%	0.3%
Total	\$81,018,939	100.0%	\$306,648,893	100.0%	\$873,160	1.1%	0.3%

Sources: Stanley R. Hoffman Associates, Inc.; Los Angeles County Assessor’s File, 2014.

Economic Impacts of Parcel Acquisitions for Alternative 4 Option C. As can be seen in Table 4-33, Alternative 4 Option C affects 1,280 jobs spread among 147 firms. Labor income for the option is just under \$79.3 million, which is about a quarter of the option’s total output of roughly \$325.4 million. This is the largest output among the options in Alternative 4. Manufacturing is again the leading employer with 473 jobs, and has the highest output at about \$226.6 million. Educational Services is the second leading employer with 246 workers, while Retail Trade is third with 120 workers. Value added is estimated at \$131.9 million.

Table 4-33: Estimated Economic Impacts

Industry Category	Firms	Jobs	Output	Value-Added	Labor Income
Agriculture	0	0	\$0	\$0	\$0
Mining, Quarrying, and Oil and Gas Extraction	0	0	\$0	\$0	\$0
Utilities	0	0	\$0	\$0	\$0
Construction	8	49	\$8,026,764	\$3,437,633	\$3,095,412
Manufacturing	23	473	\$226,618,453	\$65,463,885	\$36,868,068
Wholesale Trade	13	89	\$19,058,259	\$12,651,717	\$6,719,912
Retail Trade	30	120	\$10,149,757	\$7,944,909	\$4,783,264
Transportation and Warehousing	2	8	\$1,328,606	\$658,543	\$483,923
Information	3	10	\$3,238,953	\$2,053,435	\$1,159,617
Finance and Insurance	3	31	\$6,976,661	\$4,102,654	\$2,486,144
Real Estate and Rental and Leasing	5	14	\$5,426,097	\$4,348,505	\$345,590
Professional, Scientific and Technical Services	9	26	\$4,746,538	\$3,737,742	\$2,187,900
Management of Companies	0	0	\$0	\$0	\$0
Admin, Support, Waste Mgmt and Remediation Services	2	22	\$5,086,706	\$2,915,927	\$1,556,726
Educational Services	3	246	\$19,603,092	\$13,611,313	\$11,578,200
Arts, Entertainment, and Recreation	2	9	\$923,226	\$632,161	\$543,589
Health Care and Social Assistance	14	66	\$7,405,257	\$5,604,538	\$3,654,870
Accommodation and Food Services	8	28	\$1,908,264	\$1,154,257	\$790,056
Other Services, except Public Administration	19	78	\$4,568,480	\$3,197,920	\$2,734,941
Public Administration	1	4	\$368,281	\$346,122	\$306,615
Unclassified	2	7	\$0	\$0	\$0
TOTAL	147	1,280	\$325,433,391	\$131,861,261	\$79,294,826

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

Estimated Retail and Food Services Sales Tax Impact. The estimated local sales tax lost by the potential parcel acquisitions for Alternative 4 Option C is estimated at \$113,774. As shown previously in Table 4-21, this is based on the estimated employment lost from the associated parcel acquisitions that include employment from three main employment categories that generate taxable sales transactions. These employment categories are shown as follows with the average output per worker shown in parentheses: 1) food and beverage stores (\$71,993); 2) food services, including restaurants and fast food establishments (\$63,437); and 3) all other retail activities (\$87,724). The total average output per store type was then multiplied by the number of estimated workers lost in each category to generate estimated total taxable sales transactions. The Food and Beverage Category was further factored by 30 percent to estimate the taxable transactions for grocery and convenience food stores. The resultant taxable retail sales transactions were then factored by 1 percent to estimate the local sales tax lost.

4.7 Construction Impacts

Construction Cost Estimates by Alternative. Table 4-34 shows the total cost for each alternative, broken down by the alternatives' cost of vehicles and cost of construction. Total cost ranges from a low of under \$35.2 million for TSM to a high of nearly \$2.9 billion for Alternative 4 Option B, which involves LRT. The percentage of total cost represented by construction is positively correlated with capital intensity of the alternative. For example, because the Alternative 4 LRT options are highly capital intensive, 95 percent of the total cost is estimated to go toward construction, with the construction cost for the Alternative 4 options ranging from \$2.6 to \$2.9 billion. The Alternative 3 Tram Median Running options are also capital intensive, as 83 percent of the total cost is estimated to go toward construction with slightly over \$1 billion for each Alternative 3 option. In contrast, the TSM Alternative is the least capital intensive with only 24 percent of the total cost going toward construction, or about \$8.6 million.

Table 4-34: Construction Cost Estimates for ESFV Transit Corridor Alternatives

Alternative	Total	Vehicles	Construction Cost
<i>TSM Alternative</i>	\$35,193,533	\$26,628,588	\$8,564,945
<i>Percent of Total Cost</i>	100%	76%	24%
Alt. 1 – BRT Curb Running	\$294,007,619	\$34,236,756	\$259,770,863
<i>Percent of Total Cost</i>	100%	12%	88%
Alt. 2 – BRT Median Running	\$402,587,250	\$40,576,896	\$362,010,354
<i>Percent of Total Cost</i>	100%	10%	90%
Alt. 3 – Option A – Tram Median Running	\$1,222,912,414	\$209,760,000	\$1,013,152,414
<i>Percent of Total Cost</i>	100%	17%	83%
Alt. 3 – Option B – Tram Median Running	\$1,244,870,414	\$209,760,000	\$1,035,110,414
<i>Percent of Total Cost</i>	100%	17%	83%
Alt. 3 – Option C – Tram Median Running	\$1,225,267,752	\$209,760,000	\$1,015,507,752
<i>Percent of Total Cost</i>	100%	17%	83%
Alt. 4 – Option A – LRT Median Running	\$2,673,740,407	\$135,556,476	\$2,538,183,931
<i>Percent of Total Cost</i>	100%	5%	95%
Alt. 4 – Option B – LRT Median Running	\$2,875,401,849	\$135,556,476	\$2,739,845,373
<i>Percent of Total Cost</i>	100%	5%	95%
Alt. 4 – Option C – LRT Median Running	\$2,786,977,298	\$135,556,476	\$2,651,420,822
<i>Percent of Total Cost</i>	100%	5%	95%

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

Summary of Total Construction Cost Impacts. Table 4-35 shows the total construction economic impacts for each alternative, which include direct construction cost impacts plus those from indirect and induced economic impacts. The economic impacts are greater for the alternatives with higher construction costs. Alternative 4 Option B, which has the highest construction cost, also has the highest total output at over \$5.1 billion and generates the most employment with an estimated 35,518 jobs that may occur over multiple years depending upon the construction phasing. Conversely, the alternative with the lowest construction cost, the TSM Alternative, also has the lowest output with just over \$16 million and generates the least employment with an estimated 111 jobs. For each alternative, total labor income is about 42 percent of total output, and value added is about 53 percent of total output. Value added is the combination of labor income, property type income, and indirect business taxes.

Table 4-35: Summary of Total Construction Cost Impacts

Alternative	Employment	Labor Income	Output	Value Added
TSM Alternative	111	\$6,812,547	\$16,049,539	\$8,497,892
Alternative 1 BRT Curb-Running	3,368	\$206,621,422	\$486,775,180	\$257,737,184
Alternative 2 BRT Median-Running	4,693	\$287,942,587	\$678,358,047	\$359,176,268
Alternative 3A Tram	13,134	\$805,860,183	\$1,898,509,497	\$1,005,220,717
Alternative 3B Tram	13,419	\$823,325,539	\$1,939,655,789	\$1,027,006,802
Alternative 3C Tram	13,165	\$807,733,606	\$1,902,923,073	\$1,007,557,604
Alternative 4A LRT	33,157	\$2,018,868,375	\$4,756,210,646	\$2,518,313,174
Alternative 4B LRT	35,518	\$2,179,269,638	\$5,134,096,695	\$2,718,395,864
Alternative 4C LRT	34,372	\$2,108,936,859	\$4,968,401,141	\$2,630,663,564

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

Definition and Derivation of Economic Impact Multipliers. The total construction cost impacts presented in Table 4-35 were derived from running the IMPLAN economic impact model developed by IMPLAN Group, LLC using the initial direct construction cost impacts presented in Table 4-36. IMPLAN is an acronym for IMPact analysis for PLANing and is an input-output model that can be run for regional areas. In this case, the IMPLAN model was run using the Los Angeles County 2012 data set.

Based on the initial direct construction cost impacts of building each of the alternatives, as shown in Table 4-36, the IMPLAN model estimates the indirect and induced economic impacts using a set of multipliers based on the model’s regional data. The primary sources of the data include: 1) U.S. Bureau of Labor Statistics (BLS); 2) U.S. Bureau of Economic Analysis (BEA); 3) BLS Consumer Expenditure Survey; 4) U.S. Census Bureau County Business Patterns (CBP) programs; 5) U.S. Census Bureau Decennial Census and Populations Surveys; 6) U.S. Census Bureau Economic Censuses and Surveys; and 7) the U.S. Department of Agriculture Census.

Indirect expenditures are the effects of local inter-industry expenditures as a result of the direct construction expenditures. Induced expenditures are the result of the spending of employee’s wages that stem from both the direct and indirect industry expenditures. Labor income is composed of two components: 1) the wages and benefits paid to wage and salary employees; and 2) proprietor income – the profits earned by self-employed individuals. Value added is the combination of labor income, other property type income and indirect business taxes.

Detailed economic impacts are presented by various industry groups in Appendix A, but in summary, the total impact multipliers are:

1. One (1) direct employee yields 1.68 total employment;
2. One (1) dollar of labor income yields 1.71 total dollars of labor income;
3. One (1) dollar of direct expenditure yields 1.87 total dollars of total output; and
4. One (1) dollar of direct value added yields 2.09 dollars of total value added.

Summary of Direct Construction Cost Impacts. Table 4-36 depicts the direct impacts of construction, with the direct output being equal to the cost of construction, as discussed above. Direct construction employment ranges from a low of 66 for the TSM alternative to a high of 21,098 for Alternative 4 LRT Option B. For each alternative, direct employment represents slightly less than 60 percent of total employment shown above. Direct construction labor income ranges from a low of about \$4.0 million for the TSM Alternative to a high of \$1.3 billion for Alternative 4 LRT Option B. This represents about 58 percent of total labor income presented above. Direct Output represents about 54 percent of total Output and direct Value Added represents about 48 percent of total Value Added. Information on indirect and induced impacts of construction is provided in the following sections for each alternative.

Table 4-36: Summary of Direct Construction Cost Impacts

Alternative	Employment	Labor Income	Output	Value Added
TSM Alternative	66	\$3,984,175	\$8,564,945	\$4,068,237
Alternative 1 BRT Curb-Running	2,000	\$120,838,191	\$259,770,863	\$123,387,776
Alternative 2 BRT Median-Running	2,788	\$168,397,163	\$362,010,354	\$171,950,202
Alternative 3A Tram	7,802	\$471,290,374	\$1,013,152,414	\$481,234,207
Alternative 3B Tram	7,971	\$481,504,618	\$1,035,110,414	\$491,663,962
Alternative 3C Tram	7,820	\$472,386,004	\$1,015,507,752	\$482,352,953
Alternative 4A LRT	19,798	\$1,180,692,695	\$2,538,183,932	\$1,205,604,324
Alternative 4B LRT	21,098	\$1,274,499,999	\$2,739,845,374	\$1,301,390,884
Alternative 4C LRT	20,417	\$1,233,367,353	\$2,651,420,823	\$1,259,390,373

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

4.7.1 No-Build Alternative

For the No-Build Alternative, no construction costs impacts are estimated because no increased construction costs are associated with this alternative.

4.7.2 TSM Alternative

As previously shown in Table 4-36, the construction costs for the TSM Alternative are estimated to be about \$8.6 million. Table 4-37 summarizes the direct, indirect, and induced impacts of this construction work, while Appendix A presents more detail. The TSM Alternative would generate an estimated 111 jobs. Of these jobs, 66 would be generated directly by construction and 19 would be generated indirectly. About 37 percent of these indirectly generated jobs would be in the Professional, Scientific and Technical Services Industry, while 16 percent would be in Management of Companies. The remaining 47 percent of indirect employment would be spread relatively evenly among 8 other industries. An additional 26 jobs would be induced through increased household spending by direct and indirect employees, with 22 percent of these induced jobs coming from the Health Care and Social Assistance Industry, 18 percent coming from Retail, and the remainder being spread relatively evenly among 10 other industries.

As shown in Table 4-37, total labor income for the TSM Alternative would be about \$6.8 million, with \$4 million of this being the result of direct construction impacts. As can be seen in Table 4-37, labor income for jobs created via indirect impact would be about \$1.4 million, 49 percent of which would be earned by employees in the Professional, Scientific and Technical Services Industry. Labor income for induced jobs would also be about \$1.4 million, of which about 26 percent would be earned by employees in the Health Care and Social Services Industry and 14 percent of which would be earned by employees in Retail Trade. Total Output for this alternative would be just over \$16 million, \$8.6 million of which would be generated directly by construction. As shown in Table 4-37, output generated by indirect impacts amounts to about \$3.7 million, of which 32 percent comes from the Professional, Scientific and Technical Services Industry and 24 percent being generated by manufacturing. Induced impacts of construction generate nearly \$3.8 million of output, with the highest proportions coming from Real Estate at 19 percent and Health Care and Social Services at 17 percent.

The TSM Alternative generates about \$8.5 million in value added, with about \$4.1 million coming from direct impacts of construction. Indirect impacts generate just about \$2.1 million in value added, with Professional, Scientific and Technical Services contributing nearly 39 percent. Induced value added amounts to about \$2.4 million with Real Estate contributing about 22 percent.

Table 4-37: Summary of Construction Impacts for TSM Alternative

Impact Type	Employment Generated	Labor Income	Total Output	Value Added
Direct	66	\$3,984,175	\$8,564,945	\$4,068,237
Indirect	19	\$1,431,186	\$3,717,056	\$2,052,089
Induced	26	\$1,397,186	\$3,767,538	\$2,377,566
Total	111	\$6,812,547	\$16,049,539	\$8,497,892

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

4.7.3 Build Alternative 1 – Curb-Running BRT Alternative

As previously shown in Table 4-36, the construction costs for Alternative 1 are estimated to be about \$260.0 million. Table 4-38 summarizes the direct, indirect, and induced impacts of this construction work, while Appendix A presents more detail. Alternative 1 would generate an estimated 3,368 jobs. Of these jobs, 2,000 would be generated directly by construction and 577 would be generated indirectly. About 38 percent of these indirectly generated jobs in the Professional, Scientific and Technical Services industry, while 16 percent would be in Management of Companies. The remaining 46 percent of indirect employment would be spread among 15 other industries. An additional 790 jobs would be induced through increased household spending by direct and indirect employees, with 22 percent of these induced jobs coming from the Health Care and Social Assistance Industry, 18 percent coming from Retail, and the remainder being spread among 19 other industries.

Total labor income for Alternative 1 would be about \$206.6 million, with \$120.8 million of this being the result of direct construction impacts. As can be seen in Table 4-38, labor income for jobs created via indirect impact would be about \$43.4 million, 49 percent of which would be earned by employees in the Professional, Scientific and Technical Services industry. Labor income for induced jobs would be about \$42.4 million, about 26 percent of which would be earned by employees in the Health Care and Social Services industry and 14 percent of which would be earned by employees in Retail Trade.

Total Output for this alternative would be about \$486.8 million, \$259.8 million of which would be generated directly by construction. As shown in Table 4-38, output generated by indirect impacts amounts to about \$112.7 million, of which 32 percent comes from the Professional, Scientific and Technical Services industry and 24 percent being generated by manufacturing. Induced impacts of construction generate nearly \$114.3 million of output, with the highest proportions coming from Real Estate at 19 percent and Health Care and Social Services at about 17 percent.

Alternative 1 generates about \$257.7 million in value added, with about \$123.4 million coming from direct impacts of construction. Indirect impacts generate just about \$62.2 million in value added, with Professional, Scientific and Technical Services contributing nearly 39 percent. Induced value added amounts to about \$72.1 million with Real Estate contributing 22 percent.

Table 4-38: Summary of Construction Impacts for Alternative 1 – BRT Curb-Running

Impact Type	Employment Generated	Labor Income (\$)	Value Added (\$)	Total Output (\$)
Direct	2,000	120,838,191	123,387,776	259,770,863
Indirect	577	43,407,206	62,238,924	112,736,610
Induced	790	42,376,025	72,110,484	114,267,707
Total	3,368	206,621,422	257,737,184	486,775,180

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

4.7.4 Build Alternative 2 – Median-Running BRT Alternative

As previously shown in Table 4-36, the construction costs for Alternative 2 are estimated to be about \$362 million. Table 4-39 summarizes the direct, indirect, and induced impacts of this construction work, while Appendix A presents more detail. Alternative 2 would generate an estimated 4,693 jobs. Of these jobs, 2,788 would be generated directly by construction and 804 would be generated indirectly with about 37 percent of these indirectly generated jobs in the Professional, Scientific and Technical Services industry, while 16 percent would be in Management of Companies. The remaining 47 percent of indirect employment would be spread among 15 other industries. An additional 1,101 jobs would be induced through increased household spending by direct and indirect employees, with 22 percent of these jobs coming from the Health Care and Social Assistance Industry, 18 percent coming from Retail, and the remainder being spread among 16 other industries.

Total labor income for Alternative 2 would be about \$287.9 million, with \$168.4 million of this being the result of direct construction impacts. As can be seen in Table 4-39, labor income for jobs created via indirect impacts would be about \$60.5 million, 49 percent of which would be earned by employees in the Professional, Scientific and Technical Services Industry. Labor income for induced jobs would be about \$59.1 million, of which about 26 percent would be earned by employees in the Health Care and Social Services industry and 14 percent of which would be earned by employees in Retail. Total Output for this alternative would be about \$678.4 million, \$362.0 million of which would be generated directly by construction. As shown in Table 4-39, output generated by indirect impacts amounts to about \$157.1 million, of which 32 percent comes from the Professional, Scientific and Technical Services Industry and 24 percent being generated by manufacturing. Induced impacts of construction generate about \$159.2 million of output, with the highest proportions coming from Real Estate at 19 percent and Health Care and Social Services at 17 percent.

Alternative 2 generates about \$359.2 million in value added, with about \$172.0 million coming from direct impacts of construction. Indirect impacts generate about \$86.7 million in value added, with Professional, Scientific and Technical Services contributing nearly 39 percent. Induced value added amounts to about \$100.5 million with Real Estate contributing 22 percent.

Table 4-39: Summary of Construction Impacts for Alternative 2 – BRT Median-Running

Impact Type	Employment Generated	Labor Income (\$)	Value Added (\$)	Total Output (\$)
Direct	2,788	168,397,163	171,950,202	362,010,354
Indirect	804	60,491,227	86,734,651	157,106,996
Induced	1,101	59,054,197	100,491,415	159,240,697
Total	4,693	287,942,587	359,176,268	678,358,047

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

4.7.5 Build Alternative 3 – Low-Floor LRT/Tram Alternative

Alternative 3 Option A. As previously shown in Table 4-36, the construction costs for Alternative 3 Option A are estimated to be over \$1.0 billion. Table 4-40 summarizes the direct, indirect, and induced impacts of this construction work, while Appendix A presents more detail. Alternative 3 Option A would generate an estimated 13,134 jobs. Of these jobs, 7,802 would be generated directly by construction and 2,250 would be generated indirectly. About 37 percent of these are indirectly generated jobs in the Professional, Scientific and Technical Services industry, while 16 percent would be in Management of Companies. The remaining 47 percent of indirect employment would be spread among 17 other industries. An additional 3,082 jobs would be induced through increased household spending by direct and indirect employees, with 22 percent of these jobs coming from the Health Care and Social Assistance Industry, 18 percent coming from Retail, and the remainder being spread among 16 other industries.

Total labor income for Alternative 3 Option A would be about \$805.9 million, with \$471.3 million of this being the result of direct construction impacts. As can be seen in Table 4-40, labor income for jobs created via indirect impact would be about \$169.3 million, 49 percent of which would be earned by employees in the Professional, Scientific and Technical Services Industry. Labor income for induced jobs would be about \$165.3 million, of which about 26 percent would be earned by employees in the Health Care and Social Services Industry and 14 percent of which would be earned by employees in Retail Trade.

Total Output for this alternative would be about \$1.9 billion, \$1.0 billion of which would be generated directly by construction. As shown in Table 4-40, output generated by indirect impacts amounts to about \$439.7 million, of which 32 percent comes from the Professional, Scientific and Technical Services Industry and 24 percent being generated by manufacturing. Induced impacts of construction generate nearly \$445.7 million of output, with the highest proportions coming from Real Estate at 19 percent and Health Care and Social Services at 17 percent.

Alternative 3 Option A generates about \$1.0 billion in value added, with about \$481.2 million coming from direct impacts of construction. Indirect impacts generate about \$242.7 million in value added, with Professional, Scientific and Technical Services contributing nearly 39 percent. Induced value added amounts to about \$281.2 million with Real Estate contributing 22 percent.

Table 4-40: Summary of Construction Impacts for Alternative 3 Option A – Low Floor LRT/Tram

Impact Type	Employment Generated	Labor Income (\$)	Value Added (\$)	Total Output (\$)
Direct	7,802	471,290,374	481,234,207	1,013,152,414
Indirect	2,250	169,295,799	242,742,838	439,692,762
Induced	3,082	165,274,010	281,243,672	445,664,320
Total	13,134	805,860,183	1,005,220,717	1,898,509,497

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

Alternative 3 Option B. As previously shown in Table 4-36, the construction costs for Alternative 3 Option B are estimated to be about \$1.0 billion. Table 4-41 summarizes the direct, indirect, and induced impacts of this construction work, while Appendix A presents more detail. Alternative 3 Option B would generate an estimated 13,419 total jobs. Of these jobs, 7,971 would be generated directly by construction and 2,299 would be generated indirectly. About 37 percent of these indirectly generated jobs in the Professional, Scientific and Technical Services industry, while 16 percent would be in Management of Companies. The remaining 47 percent of indirect employment would be spread among 17 other industries. An additional 3,149 jobs would be induced through increased household spending by direct and indirect employees, with 22 percent of these jobs coming from the Health Care and Social Assistance Industry, 18 percent coming from Retail, and the remainder being spread among 18 other industries.

Total labor income for Alternative 3 Option B would be about \$823.3 million, with \$481.5 million of this being the result of direct construction impacts. As can be seen in Table 4-41, labor income for jobs created via indirect impact would be about \$173.0 million, 49 percent of which would be earned by employees in the Professional, Scientific and Technical Services Industry. Labor income for induced jobs would be about \$168.9 million, of which about 26 percent would be earned by employees in the Health Care and Social Services Industry and 14 percent of which would be earned by employees in Retail Trade.

Total Output for this alternative would be just over \$1.9 billion, about \$1.0 billion of which would be generated directly by construction. As shown in Table 4-41, output generated by indirect impacts amounts to about \$449.2 million, of which 32 percent comes from the Professional, Scientific and Technical Services Industry and 24 percent being generated by manufacturing. Induced impacts of construction generate over \$455.3 million of output, with the highest proportions coming from Real Estate at 19 percent and Health Care and Social Services at 17 percent.

Alternative 3 Option B generates about \$1.0 billion in value added, with about \$491.7 million coming from direct impacts of construction. Indirect impacts generate about \$248.0 million in value added, with Professional, Scientific and Technical Services contributing nearly 39 percent. Induced value added amounts to about \$287.3 million with Real Estate contributing 22 percent.

Table 4-41: Summary of Construction Impacts for Alternative 3 Option B – Low Floor LRT/Tram

Impact Type	Employment Generated	Labor Income (\$)	Value Added (\$)	Total Output (\$)
Direct	7,971	481,504,618	491,663,962	1,013,152,414
Indirect	2,299	172,964,939	248,003,791	449,222,200
Induced	3,149	168,855,983	287,339,048	455,323,175
Total	13,419	823,325,539	1,027,006,802	1,939,655,789

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

Alternative 3 Option C. As previously shown in Table 4-36, the construction costs for Alternative 3 Option C are estimated to be about \$1.0 billion. Table 4-42 summarizes the direct, indirect, and induced impacts of this construction work, while Appendix A presents more detail. Alternative 3 Option C would generate an estimated 13,165 jobs. Of these jobs, 7,820 would be generated directly by construction and 2,255 would be generated indirectly. About 37 percent of these indirectly generated jobs in the Professional, Scientific and Technical Services industry, while 16 percent would be in Management of Companies. The remaining 47 percent of indirect employment would be spread among 17 other industries. An additional 3,090 jobs would be induced through increased household spending by direct and indirect employees, with 22 percent of these jobs coming from the Health Care and Social Assistance Industry, 18 percent coming from Retail, and the remainder being spread among 18 other industries.

Total labor income for Alternative 3 Option C would be about \$807.7 million, with \$472.4 million of this being the result of direct construction impacts. As can be seen in Table 4-42, labor income for jobs created via indirect impact would be about \$169.7 million, 49 percent of which would be earned by employees in the Professional, Scientific and Technical Services Industry. Labor income for induced jobs would be about \$165.7 million, of which about 26 percent would be earned by employees in the Health Care and Social Services Industry and 14 percent of which would be earned by employees in Retail Trade.

Total Output for this alternative would be about \$1.9 billion, \$1.0 billion of which would be generated directly by construction. As shown in Table 4-42, output generated by indirect impacts amounts to about \$440.7 million, of which 32 percent comes from the Professional, Scientific and Technical Services Industry and 24 percent being generated by manufacturing. Induced impacts of construction generate \$446.7 million of output, with the highest proportions coming from Real Estate at 19 percent and Health Care and Social Services at 17 percent.

Alternative 3 Option C generates about \$1.0 billion in value added, with about \$482.4 million coming from direct impacts of construction. Indirect impacts generate just about \$243.3 million in value added, with Professional, Scientific and Technical Services contributing nearly 39 percent. Induced value added amounts to about \$281.9 million with Real Estate contributing 22 percent.

Table 4-42: Summary of Construction Impacts for Alternative 3 Option C – Low Floor LRT/Tram

Impact Type	Employment Generated	Labor Income (\$)	Value Added (\$)	Total Output (\$)
Direct	7,820	472,386,004	482,352,953	1,015,507,752
Indirect	2,255	169,689,372	243,307,158	440,714,943
Induced	3,090	165,658,230	281,897,493	446,700,378
Total	13,165	807,733,606	1,007,557,604	1,902,923,073

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

4.7.6 Build Alternative 4 – LRT Alternative

Alternative 4 Option A. As previously shown in Table 4-36, the construction costs for Alternative 4 Option A are estimated to be about \$2.5 billion. Table 4-43 summarizes the direct, indirect, and induced impacts of this construction work, while Appendix A presents more detail. Alternative 4 Option A would generate an estimated 33,157 jobs. Of these jobs, 19,798 would be generated directly by construction and 5,637 would be generated indirectly. About 37 percent of these indirectly generated jobs in the Professional, Scientific and Technical Services industry, while 16 percent would be in Management of Companies. The remaining 47 percent of indirect employment would be spread among 17 other industries. An additional 7,722 jobs would be induced through increased household spending by direct and indirect employees, with 22 percent of these jobs coming from the Health Care and Social Assistance Industry, 18 percent coming from Retail, and the remainder being spread among 18 other industries.

Total labor income for Alternative 4 Option A would be about \$2.0 billion, with about \$1.2 billion of this being the result of direct construction impacts. As can be seen in Table 4-43, labor income for jobs created via indirect impact would be about \$424.1 million, 49 percent of which would be earned by employees in the Professional, Scientific and Technical Services Industry. Labor income for induced jobs would be about \$414.1 million, of which about 26 percent would be earned by employees in the Health Care and Social Services Industry and 14 percent of which would be earned by employees in Retail Trade.

Total Output for this alternative would be about \$4.8 billion, about \$2.5 billion of which would be generated directly by construction. As shown in Table 4-43, output generated by indirect impacts amounts to about \$1.1 billion, of which 32 percent comes from the Professional, Scientific and Technical Services Industry and 24 percent being generated by manufacturing. Induced impacts of construction also generate about \$1.1 billion of output, with the highest proportions coming from Real Estate at 19 percent and Health Care and Social Services at 17 percent.

Alternative 4 Option A generates about \$2.5 billion in value added, with about \$1.2 billion coming from direct impacts of construction. Indirect impacts generate about \$608.1 million in value added, with Professional, Scientific and Technical Services contributing nearly 39 percent. Induced value added amounts to about \$704.6 million with Real Estate contributing 22 percent.

Table 4-43: Summary of Construction Impacts for Alternative 4 Option A – Light Rail Transit

Impact Type	Employment Generated	Labor Income (\$)	Value Added (\$)	Total Output (\$)
Direct	19,798	1,180,692,695	1,205,604,324	2,538,183,932
Indirect	5,637	424,125,602	608,127,625	1,101,533,281
Induced	7,722	414,050,078	704,581,225	1,116,493,433
Total	33,157	2,018,868,375	2,518,313,174	4,756,210,646

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

Alternative 4 Option B. As previously shown in Table 4-36, the construction costs for Alternative 4 Option B are estimated to be about \$2.7 billion. Table 4-44 summarizes the direct, indirect, and induced impacts of this construction work, while Appendix A presents more detail. Alternative 4 Option B would generate an estimated 35,518 jobs. Of these jobs, 21,098 would be generated directly by construction and 6,085 would be generated indirectly. About 37 percent of these indirectly generated jobs in the Professional, Scientific and Technical Services industry, while 16 percent would be in Management of Companies. The remaining 47 percent of indirect employment would be spread among 17 other industries. An additional 8,336 jobs would be induced through increased household spending by direct and indirect employees, with 22 percent of these jobs coming from the Health Care and Social Assistance Industry, 18 percent coming from Retail, and the remainder being spread among 18 other industries.

Total labor income for Alternative 4 Option B would be about \$2.2 billion, with \$1.3 billion of this being the result of direct construction impacts. As can be seen in Table 4-44, labor income for jobs created via indirect impact would be about \$457.8 million, 49 percent of which would be earned by employees in the Professional, Scientific and Technical Services Industry. Labor income for induced jobs would be about \$446.9 million, of which about 26 percent would be earned by employees in the Health Care and Social Services Industry and 14 percent of which would be earned by employees in Retail Trade. Total Output for this alternative would be about \$5.1 billion, about \$2.7 billion of which would be generated directly by construction. As shown in Table 4-44, output generated by indirect impacts amounts to about \$1.2 billion, of which 32 percent comes from the Professional, Scientific and Technical Services Industry and 24 percent is generated by manufacturing. Induced impacts of construction also generate about \$1.2 billion of output, with the highest proportions coming from Real Estate at 19 percent and Health Care and Social Services at 17 percent.

Alternative 4 Option B generates about \$2.7 billion in value added, with about \$1.3 billion coming from direct impacts of construction. Indirect impacts generate about \$656.4 million in value added, with Professional, Scientific and Technical Services contributing nearly 39 percent. Induced value added amounts to about \$760.6 million with Real Estate contributing 22 percent.

Table 4-44: Summary of Construction Impacts for Alternative 4 Option B – Light Rail Transit

Impact Type	Employment Generated	Labor Income (\$)	Value Added (\$)	Total Output (\$)
Direct	21,098	1,274,499,999	1,301,390,884	2,739,845,374
Indirect	6,085	457,822,837	656,444,019	1,189,051,285
Induced	8,336	446,946,801	760,560,961	1,205,200,036
Total	35,518	2,179,269,638	2,718,395,864	5,134,096,695

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

Alternative 4 Option C. As previously shown in Table 4-36, the construction costs for Alternative 4 Option C are estimated to be just under \$2.7 billion. Table 4-45 summarizes the direct, indirect and induced impacts of this construction work while Appendix A. presents more detail. Alternative 4 Option C would generate an estimated 34,372 jobs. Of these jobs, 20,417 would be generated directly by construction and 5,888 would be generated indirectly. About 37 percent of these indirectly generated jobs in the Professional, Scientific and Technical Services industry, while 16 percent would be in Management of Companies. The remaining 47 percent of indirect employment would be spread among 17 other industries. An additional 8,067 jobs would be induced through increased household spending by direct and indirect employees, with 22 percent of these jobs coming from the Health Care and Social Assistance Industry, 18 percent coming from Retail, and the remainder being spread among 18 other industries.

Total labor income for Alternative 4 Option C would be about \$2.1 billion, with about \$1.2 billion of this being the result of direct construction impacts. As can be seen in Table 4-45, labor income for jobs created via indirect impact would be about \$443.0 million, 49 percent of which would be earned by employees in the Professional, Scientific and Technical Services Industry. Labor income for induced jobs would be about \$432.5 million, of which about 26 percent would be earned by employees in the Health Care and Social Services Industry and 14 percent of which would be earned by employees in Retail Trade.

Total Output for this alternative would be just under \$5.0 billion, about \$2.7 billion of which would be generated directly by construction. As shown in Table 4-45, output generated by indirect impacts amounts to about \$1.2 billion, of which 32 percent comes from the Professional, Scientific and Technical Services Industry and 24 percent is generated by manufacturing. Induced impacts of construction also generate about \$1.2 billion of output, with the highest proportions coming from Real Estate at 19 percent and Health Care and Social Services at 17 percent.

Alternative 4 Option C generates about \$2.6 billion in value added, with just under \$1.3 billion coming from direct impacts of construction. Indirect impacts generate about \$635.3 million in value added, with Professional, Scientific and Technical Services contributing nearly 39 percent. Induced value added amounts to about \$736.0 million with Real Estate contributing 22 percent.

Table 4-45: Summary of Construction Impacts for Alternative 4 Option C – Light Rail Transit

Impact Type	Employment Generated	Labor Income (\$)	Value Added (\$)	Total Output (\$)
Direct	20,417	1,233,367,353	1,259,390,373	2,651,420,823
Indirect	5,888	443,047,267	635,258,237	1,150,676,372
Induced	8,067	432,522,239	736,014,955	1,166,303,946
Total	34,372	2,108,936,859	2,630,663,564	4,968,401,141

Sources: Stanley R. Hoffman Associates, Inc.; IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013.

4.8 Cumulative Impacts

The study area for cumulative impacts would be the same as the study area for the analysis of project impacts, which is defined as the Tier 2 TAZs that intersected quarter-mile buffer areas on either side of the Transit Corridor (see Chapter 3).

The direct adverse economic and fiscal impacts that could occur as a result of development of the build alternatives would be limited to acquisition of properties, displacement of businesses and the resulting potential loss of jobs, and the loss of tax revenues generated by the properties that would be acquired. Indirect adverse impacts could also occur during construction (loss of on-street parking and temporary closure of travel lanes, streets, or sidewalks that could diminish access to local businesses and properties) and operation (loss of on-street parking).

Additionally, the build alternatives could provide development and economic opportunities and induce additional growth. The growth inducement potential of the build alternatives are described in greater detail in Section 4.8.1.

The No-Build, TSM, and BRT Alternatives would not require acquisition of properties and consequently would not result in direct adverse effects that could contribute to cumulative adverse economic and fiscal impacts. The indirect economic and fiscal effects due to Build Alternatives 1 and 2 would be minimal and can be further reduced with implementation of mitigation measures; therefore, Alternatives 1 and 2 would not contribute to any significant adverse cumulative fiscal and economic impacts.

Build Alternatives 3 and 4 would require acquisition of parcels and therefore could directly contribute to adverse cumulative economic and fiscal impacts. However, it should be noted that the direct and indirect effects are considered minor and can be further reduced with implementation of mitigation measures. Additionally, the related projects that have been identified in the study area do not include any other significant public works projects that would result in the acquisition of properties and loss of jobs and tax revenues. Therefore, Build Alternatives 3 and 4 would not directly contribute to any direct and indirect significant adverse cumulative impacts related to loss of jobs, income, and tax revenues.

4.8.1 Growth-Inducement and Indirect Cumulative Impacts

The cumulative impact analysis has examined the growth inducing impacts within the transit corridor generally defined as approximating a $\frac{1}{4}$ mile zone along the proposed ESFV transit corridor. This distance is used as an estimation of the primary area that will draw transit ridership and that will likely be most affected by potential transit-oriented development (TOD). A study by Daniels and Mulley (2011) also finds that transit passengers tend to walk further for rail transit than bus stops, and their walking behavior is influenced by the quality of the station design and the pedestrian access.

In this cumulative impact analysis, SCAG adopted forecasts for the study area and the $\frac{1}{4}$ mile transit corridor zone are used for representing the cumulative growth potential that would likely occur from 2010 to 2035. The resulting households per acre and employees per acre densities are then compared against estimated average densities identified in the literature as viable for light rail transit.

The base growth conditions are presented in Table 4-46 from the 2012 adopted SCAG RTP for total population, household population, households and employment for the transit corridor and the study area. As shown in Table 4-46, the household population (excluding group quarters population), is

forecast to grow in the transit corridor by 10.7 percent from 167,093 in 2010 to 184,959 in 2035. By 2035, the transit corridor represents about 37.0 percent of the total study area household population of 503,648 – the same percentage as in 2010.

The households (representing occupied housing units) are forecast to grow by 18.8 percent in the transit corridor from 42,859 in 2010 to 50,910 in 2035. By 2035, the transit corridor forecast represents about 32.0 percent of the study area households of 159,317 – again the same percentage as in 2010. Additionally, the employment forecasts shown for the transit corridor in Table 4-46 show a growth of 14.6 percent from 41,610 in 2010 to 47,666 in 2035. By 2035, the transit corridor represents about 29.0 percent of the study area employment of 161,677 – a slight decrease from 30 percent in 2010.

Residential densities on a household per acre basis and commercial employment densities on an employee per acre basis are useful indicators of analysis. These densities are calculated based on the estimated developed residential, commercial or industrial acres from the 2014 Assessor's parcel file, as shown in Table 4-47.

As shown in Table 4-47, the residential density in the transit corridor is forecast to increase from an average of 12.2 households per residential acre in 2010 to 14.4 in 2035. For the largely suburban San Fernando Valley, the transit corridor densities are only about 8–9 percent higher than the estimated average densities in the study area ranging from 11.2 to 13.3 households per acre.

Commercial employment density is forecast to increase in the transit corridor from 32.7 employees per acre in 2010 to 37.7 in 2035. This is about 7 percent higher than the commercial employee densities in the study area ranging from 30.6 to 35.3 employees per acre. Industrial employee densities, which are not generally considered for TODs, are estimated as relatively lower in the transit corridor at 18.4 employees per acre in 2010 to 20.4 employees per acre in 2035. These densities are actually about 5 percent lower in the transit corridor than the study area, indicating that these lower density uses will likely be replaced with higher commercial density uses over time.

Transit density requirements vary among different studies and different locations and need to be viewed with caution, according to a Fall 2014 article, *Transit and the "D" Word*, by Erick Guerra and Robert Cervero in *Access Magazine*. While they estimate several average densities for light and heavy rail project based on their research, they also state: "There is no one hard and fast rule that can be applied across all projects." In this analysis, we will use their estimates, along with those from another study by Pushkarev and Zupan (1977) as guidelines. We will also present estimates of average densities for example transit lines within Los Angeles County for comparison with the existing average densities in the transit corridor for 2010 and those forecasted for 2035.

In the Guerra and Cervero article, they estimate that "average-cost, average-performance heavy-rail investments need surrounding densities of approximately 45 residents per gross acre within a half mile of stations to meet the cost-effectiveness threshold. Light rail needs about 30 residents per gross acre." Using an estimated person per household ratio in year 2010 of 3.9 within the transit corridor results in about 11.5 households per gross acre for heavy-rail and 7.7 per gross acre for light-rail. The Pushkarev and Zupan study estimated average minimum net residential densities at twelve (12) households per acre could support a cost-effective heavy-rail investment, and nine (9) households per acre could support a minimal light-rail investment. The Pushkarev and Zupan study also estimated that an average of 25 commercial employees per acre was the minimum for a light-rail system. The density requirements for more urbanized areas may well be significantly above these average minimum thresholds as Guerra and note that it is more costly to build in these more dense areas, because of higher land-acquisition, labor and relocation costs.

As shown in Table 4-48, average transit densities were estimated for a Quarter-Mile and Half-Mile radius for population, households and employment around stations along example rail transit lines and the Metro Orange Line in Los Angeles County, including: 1) the Metro Purple and Red heavy-rail lines; 2) the Metro Blue, Gold and Green light-rail lines; and 3) the Orange rapid bus line. The data were assembled from their National TOD Database, which is a project of the Center for Transit-Oriented Development (CTOD). The information on their website is from nationally available data sets including the 2000 and 2010 Decennial Census, the 2009 American Community Survey, the 2000 Census Transportation Planning Package, and the 2002–2009 Longitudinal Employer-Households Dynamics census file.

As shown in Table 4-48, the estimated household densities ranged from 6.4 to 7.1 for the Metro Gold and Blue light-rail lines for the quarter-mile zone, and from 6.1 to 8.0 for the half-mile zone. The Metro Green light-rail line was excluded from this analysis because its lower average density is probably due to the fact that it runs down the middle of the Century (105) Freeway where there are no adjacent households or employment. The Metro Orange Line rapid bus route shows an average household density of 5.0 for the quarter-mile zone to 6.4 for the half-mile zone.

While heavy-rail is not being considered, the Metro Purple and Red heavy-rail lines show that the household densities are relatively higher ranging from a low of 13.1 in the quarter-mile zone to a high of 19.7 in the half-mile zone. For employment, the employee per acre average ranges from 17.5 to 41.7 for the Gold and Blue light-rail lines in the quarter-mile zone to 21.2 to 34.9 in the half-mile zone.

While the ESFV system has not yet been implemented, for comparison purposes, the population, household and employment densities for 2010 were obtained from the SCAG 2012 RTP Tier 2 TAZ dataset, consistent with information used for analysis in the remainder of the report; the spatial size of the Tier 2 TAZ best approximates the ½ mile radius around the ESFV corridor. These densities represent existing densities before any ESFV transit system is implemented or before any stations are constructed. As shown in Table 4-48, the ESFV densities for population (22.97) and households (5.87) are within the range of the other transit systems, but the density for employment (5.70) is below the lower side of the range, thus indicating less employment concentration along this corridor compared with the others, although implementation of enhanced transit would likely spur more residential and non-residential development over the long-term.

Table 4-46: Growth Projections¹ for the Transit Corridor and Study Area

A. Transit Corridor	2010	2035	Growth 2010-2035	Percentage Change 2010-2035
Population	167,834	185,738	17,904	10.7%
Household Population	167,093	184,959	17,866	10.7%
Households	42,859	50,910	8,051	18.8%
Employment	41,610	47,666	6,056	14.6%
Persons per Household	3.90	3.63		
JPHH	0.97	0.94		
B. Study Area	2010	2035	Growth 2010-2035	Percentage Change 2010-2035
Population	458,379	507,699	49,320	10.8%
Household Population	454,525	503,648	49,123	10.8%
Households	134,023	159,317	25,294	18.9%
Employment	140,915	161,677	20,762	14.7%
Persons per Household	3.39	3.19		
JPHH	1.05	1.01		

¹ Growth projections obtained from the SCAG 2012 RTP at the Tier 2 level for each analysis area.

Sources: Southern California Association of Governments, *Regional Transportation Plan 2012*.

Table 4-47: Land Use Intensities for the Transit Corridor and Study Area

Transit Corridor	Parcel Acres ¹	HHs or Jobs 2010 ²	Density 2010	HHs or Jobs 2035 ²	Density 2035
Residential Use (Households)	3,525	42,859	12.2	50,910	14.4
Non-Residential					
Commercial (Jobs)	591	19,322	32.7	22,281	37.7
Industrial (Jobs)	410	7,557	18.4	8,348	20.4
Study Area	Parcel Acres ¹	HHs or Jobs 2010 ²	Density 2010	HHs or Jobs 2035 ²	Density 2035
Residential Use (Households)	11,935	134,023	11.2	159,317	13.3
Non-Residential					
Commercial (Jobs)	2,281	69,821	30.6	80,431	35.3
Industrial (Jobs)	1,422	27,578	19.4	30,342	21.3

¹ Obtained from the LA County Assessor's parcel data for 2014 for areas within the transit corridor.

² Obtained from the SCAG RTP 2012 Tier 2 dataset.

Sources: Southern California Association of Governments, *Regional Transportation Plan 2012*.

Table 4-48: Estimated Demographic and Employment Transit Densities – Los Angeles County

Selected Transit Lines (Los Angeles County)	QUARTER MILE ¹			HALF MILE ¹		
	Population	Households	Employment	Population	Households	Employment
Metro Blue Line	19.2	7.1	41.7	23.2	8.0	34.9
Metro Gold Line	18.0	6.4	17.5	18.8	6.1	21.2
Metro Green Line	10.1	2.6	7.9	12.9	3.4	12.2
Metro Orange Line	11.8	5.0	10.9	15.3	6.4	8.4
Metro Purple Line	32.7	16.7	201.7	44.7	19.7	113.3
Metro Red Line	29.9	13.1	43.7	35.2	15.5	24.1
ESFV Corridor	NA	NA	NA	22.97	5.87	5.70

Population and households from census 2010 at the block level divided by the aggregated census block area for the transit zone from the National TOD Dataset.

Employment from LEHD (Longitudinal Employer-Household Dynamics) for the year 2009 at the block level divided by the aggregated census block area for the transit zone from the National TOD Dataset.

For the ESFV corridor, the population, household and employment densities for 2010 were obtained from the SCAG 2012 RTP Tier 2 TAZ dataset, consistent with information used for analysis in the remainder of the report; the spatial size of the Tier 2 TAZ best approximates the ½ mile radius around the ESFV corridor. These densities represent existing densities before any ESFV transit system is implemented or before any stations are constructed.

Sources: Stanley R. Hoffman Associates, Inc.; Center for Transit-Oriented Development, National TOD Dataset, including the 2000 and 2010 Decennial Census, the 2009 American Community Survey, the 2000 Census Transportation Planning Package, and the 2002–2009 Longitudinal Employer-Household Dynamics census file,

SCAG RTP 2012 Tier 2 dataset.

4.8.2 No-Build Alternative

The No-Build Alternative is assumed to have no cumulative impacts because the status quo transit system is maintained.

4.8.3 TSM Alternative

The TSM Alternative is also assumed to have no cumulative impacts because the transit system improvements are considered too minimal to spur the private sector to build higher density mixed-use TOD.

4.8.4 Build Alternative 1 – Curb-Running BRT Alternative

The Build Alternative 1 – Curb Running BRT Alternative could potentially spur some modest increased mixed use development at key bus stops along the proposed alignment, but the development would likely be at select locations and serving more of the local market at a scale that would not likely cause significant cumulative impacts.

4.8.5 Build Alternative 2 – Median-Running BRT Alternative

The Build Alternative 2 – Median-Running BRT Alternative could potentially also spur some modest increased mixed use development at key bus stops along the proposed alignment, but the development would likely be at select locations and serving more of the local market at a scale that would not likely cause significant cumulative impacts.

4.8.6 Build Alternative 3 – Low-Floor LRT/Tram Alternative

The Build Alternative 3 – Low Floor LRT/Tram Alternative could potentially spur more significant increased mixed use development because of its more permanent, major investment into a fixed rail system that would probably incentivize the private sector to make more significant mixed use developments at key station locations. However, similar to the BRT Build Alternatives 1 and 2, because of the more localized nature of a tram system, compared with a more regional serving Light Rail System, it is not expected that this alternative would generate significant cumulative impacts.

4.8.7 Build Alternative 4 – LRT Alternative

The Build Alternative 4 – Light Rail Transit Alternative is the most capital intensive of all of the alternatives. Also, it would eventually become even more regional serving if it is eventually connected to a rapid transit link from the San Fernando Valley to West Los Angeles via the Sepulveda Pass. Given that similar transit oriented development activity is occurring along other light rail transit corridors in the region, this alternative is not expected to have adverse potential cumulative impacts regarding higher density, mixed use developments at key station locations.

Other light rail corridors that have already created TOD, or are in the process of developing TODs, include the Gold Line through Pasadena, the Gold Line extension to Monterey Park, the Exposition light rail line from Exposition Park south of downtown Los Angeles to its future terminus in Santa Monica, and the extension of the light rail line from the Exposition Line at Crenshaw Boulevard to its future extension to Los Angeles International Airport (LAX). Each of these lines either has already developed or are developing TODs, such as the existing Del Mar, Holly Street and East Pasadena stations along the Gold Line in Pasadena, to the future TOD planning along the other lines. This includes the Exposition Line in Los Angeles at the La Cienega Station and in Santa Monica at the Bergamot and downtown Santa Monica stations. Also, the City of Inglewood is in the TOD planning stages for future light rail stations at the intersection of La Brea and Florence Avenues adjacent to its downtown area and at the intersection of West Boulevard and Florence Avenue along Inglewood's eastern border.

The forecasted household densities in the ¼ mile transit corridor increasing from 12.2 in 2010 to 14.4 in year 2035 are at the level where transit oriented, mixed use development would likely be supported, particularly given that the Metro Gold and Blue lines have existing estimated average densities ranging from 6.4 to 7.1 households per acre. As mentioned above, the average minimum densities were estimated at 9 households per acre by Pushkarev and Zupan and about 7.7 by the Guerra and Cervero study. Additionally, the average forecasted employees per acre of 32.7 in 2010 increasing to 37.7 in 2035 are both above the estimated minimum 25 commercial employee per acre density identified by Pushkarev and Zupan.

While it is expected that residential and commercial transit oriented development would occur at key station locations with the introduction of a light rail transit line along the corridor, based on SCAG forecasts described above, it is not anticipated that the forecasted growth would cause adverse cumulative impacts. This is because the SCAG forecasts – based on local plans – show modest increases in both households and commercial employment per acre that are consistent with densities observed along other light rail transit lines in the region. Also, the lack of large parcels of vacant land along the corridor will likely encourage the market to develop higher density, more efficient land uses at or near key station locations and be a catalyst for economic revitalization.

Further, the anticipated reduction in automobile trips in favor of increased transit ridership and associated increases in pedestrian and bicycle trips are anticipated to have beneficial effects on the transit corridor in terms of travel time and mobility improvements, reducing traffic congestion and automobile emissions. Alternatives would not result in any direct, indirect, or cumulatively significant impacts and offer the potential to increase development activity near the proposed LRT stations.

Finally, because the transit corridor is largely built-out, it is assumed that land assembly for efficient development will require coordination with the City of Los Angeles Planning Department to obtain the appropriate zoning and general plan amendments, and engagement in the community review and public hearing process that would delay any immediate changes.

5.1 Compliance Requirements and Design Features

There are no specific technical design features or compliance requirements with reference to a transit project as it relates to the project's economic and fiscal impacts in the surrounding community. Other technical resource areas such as geology, noise and vibration, or hazardous materials are examples of technical areas that feature industry standard compliance requirements and design features when planning and building a transit system to mitigate potential environmental impacts.

5.2 Operational Mitigation Measures

5.2.1 No-Build Alternative

There is no change in operations with this alternative; thus no mitigation would be required.

5.2.2 TSM Alternative

No negative impacts on the region's economy have been identified for this alternative; therefore, no mitigation would be required.

5.2.3 Build Alternatives 1–4

No negative impacts on the region's economy have been identified for any of the build alternatives; therefore, no mitigation would be required.

5.3 Construction Mitigation Measures

5.3.1 No-Build Alternative

There is no construction associated with this alternative; thus no mitigation would be required.

5.3.2 TSM Alternative

Construction would have temporary impacts on commercial and industrial businesses, particularly those near or adjacent to construction sites. Sidewalk space might be taken temporarily for alignment construction, thereby reducing business access. Business impacts could include reduced visibility of commercial signs and businesses. These construction impacts for the TSM Alternative should be monitored during the construction period so they would be more limited than the build alternatives and generally would be short in duration. However, they could in turn produce minor economic impacts to commercial establishments.

There are a number of mitigation measures that could be undertaken to temper these impacts.

Examples include the following.

- Notify property owners, businesses, and residences of major construction activities (e.g., utility relocation/disruption and milestones; re-routing of delivery trucks).
- Whenever possible, develop detours for any road or sidewalks to be closed during construction. Post signs (in appropriate languages) alerting pedestrians, bicyclists, and motorists of road and sidewalk closures and detours. Ensure pedestrian detours are accessible to seniors and disabled persons. Develop Worksite Traffic Control Plans in conjunction with the County and municipal departments of transportation to accommodate automobile, bicycle, and pedestrian traffic.
- Provide crossing guards as needed in the vicinity of construction sites, haul routes, and other relevant sites as proposed in the California Department of Transportation (DOT) Traffic Manual, Chapter 10-07.3, Warrants for Adult Crossing Guards.
- Erect barriers as needed during construction to minimize trespassing and vandalism.
- Forewarn the public of any anticipated road closures or detours due to construction activity.

5.3.3 Build Alternatives 1–4

Construction would have temporary impacts on commercial and industrial businesses, particularly those near or adjacent to construction sites. Sidewalk space might be taken temporarily for alignment construction, thereby reducing business access. Business impacts could include reduced visibility of commercial signs and businesses. These construction impacts could in turn produce minor economic impacts to commercial establishments.

There are a number of mitigation measures that could be undertaken to temper these impacts.

Examples include the following.

- Metro Public Affairs staff and construction personnel would contact and interview individual businesses to identify business usage, delivery, and shipping patterns, as well as critical times of the day or year for business activities to aid in developing Worksite Traffic Control Plans and to ensure that critical business activities are not disrupted.
- During construction, develop, fund, and maintain a telephone hotline and one or more Metro Field Offices with staff to address community issues and concerns as they arise. Office could be open from 9 a.m.–5 p.m. weekdays and any weekends when work occurs. Schedule would be developed prior to construction. The office would provide a physical location where information pertaining to construction can be exchanged. Ensure that all potentially affected persons and businesses know the name and telephone number(s) of public affairs staff that they can contact if needed. The contractor staffing plan is subject to Metro review.
- Participate in local events to promote awareness of the project.
- Notify property owners, businesses, and residences of major construction activities (e.g., utility relocation/disruption and milestones; re-routing of delivery trucks).
- Provide literature to public and news media, schedule promotional displays, participate in community committees, and make presentations, as needed, about the project.

- Coordinate business outreach programs, and implement promotions for businesses most affected by the construction.
- Whenever possible, develop detours for any road or sidewalks to be closed during construction. Post signs (in appropriate languages) alerting pedestrians, bicyclists, and motorists of road and sidewalk closures and detours. Ensure pedestrian detours are accessible to seniors and disabled persons. Develop Worksite Traffic Control Plans in conjunction with the County and municipal departments of transportation to accommodate automobile, bicycle, and pedestrian traffic.
- Maintain access to community facilities affected by construction activities
- Develop a community outreach plan to notify local communities of construction schedules, road and sidewalk closures, and detours. Coordinate with local communities during preparation of traffic management plans to minimize potential construction impacts to community resources and special events. Consider limiting construction activities during special events.
- During construction, provide temporary replacement or shared parking as needed to absorb the loss of parking due to acquisitions. Temporary parking could be added by constructing surface lots on nearby vacant parcels or restriping nearby streets to allow diagonal on-street parking.
- Provide crossing guards as needed in the vicinity of construction sites, haul routes, and other relevant sites as proposed in the California Department of Transportation (DOT) Traffic Manual, Chapter 10-07.3, Warrants for Adult Crossing Guards.
- Erect barriers as needed during construction to minimize trespassing and vandalism.
- Forewarn the public of any anticipated road closures or detours due to construction activity.

Chapter 6

Impacts Remaining After Mitigation

With incorporation of mitigation measures, the proposed project alternatives would result in less than significant impacts under CEQA and avoid adverse effects under NEPA.

7.1 No-Build Alternative

The No-Build Alternative would not result in any direct, indirect, or cumulative impacts on the economic and fiscal health of communities in the project area . However, the No-Build Alternative would not provide the positive benefits of mobility and travel time and cost savings of the other alternatives, nor would it serve as a catalyst for economic revitalization as would the build alternatives.

7.2 TSM Alternative

The TSM Alternative would not significantly affect the economic and fiscal health of communities in the project area beyond minor disruption associated with construction, which can be mitigated. The TSM Alternative would not result in any significant direct, indirect, or cumulative impacts. The TSM Alternative offers modest mobility improvements relative to the baseline but less than the build alternatives as it does not have a dedicated ROW. It also would not serve as a catalyst for economic revitalization to the extent of the build alternatives.

7.3 BRT Alternatives

The BRT alternatives (both Curb-Running and Median-Running) would not significantly affect the economic and fiscal health of communities in the project area beyond the temporary disruption associated with construction, which can be mitigated. The BRT alternatives offer much greater mobility benefits than the TSM and No-Build Alternatives. The BRT alternatives also may provide marginal increased development resulting from improved mobility along the corridor. The BRT alternatives would not result in any significant direct, indirect, or cumulative impacts and would provide travel time and mobility improvements.

7.4 Rail Alternatives

The rail alternatives (both Low-Floor LRT/Tram and LRT) would not significantly affect the economic and fiscal health of communities in the project area beyond the temporary disruption associated with construction, which can be mitigated. The rail alternatives offer much greater mobility benefits than the TSM and No-Build Alternatives and modestly improved mobility benefits compared to the BRT alternatives. While the rail alternatives would result in minor losses in the tax base and associated revenue, these impacts would not be significant. Moreover, the loss of tax revenue could potentially be offset by increased development near stations and along the LRT alignment, particularly if jurisdictions work to establish and apply TOD zoning and supportive policies. This creates economic opportunity for the communities in the project area. Therefore, the rail alternatives would not result in any significant direct, indirect, or cumulative impacts and would provide travel time and mobility improvements, along with a potential to increase development activity near the proposed LRT stations.

Chapter 8 References

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**Appendix A Economic and fiscal Impact Report, Detailed Economic Impact Tables:
ESFV Transit Corridor Construction Alternatives**

East San Fernando Valley Transit Corridor

Draft Environmental Impact Statement/ Draft Environmental Impact Report

APPENDIX A ECONOMIC AND FISCAL IMPACT REPORT DETAILED ECONOMIC IMPACT TABLES: ESFV TRANSIT CORRIDOR CONSTRUCTION ALTERNATIVES

January 2015



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Introduction

This appendix presents the detailed construction related economic impacts based on the estimated construction costs by alternative as discussed in Chapter 4, Section 7 of the report. The IMPLAN model was used to estimate the direct, indirect and induced economic impacts of construction. Variables that were calculated by the IMPLAN model, and presented in the detailed tables by twenty (20) industry sectors, include: 1) Employment, 2) Labor Income, 3) Output and 4) Value Added. These four tables are presented for each of the nine (9) alternatives that follow.

TSM Alternative

Table A-1 TSM Alternative Construction Impact on Employment

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	0	0	0	0
Mining	0	0	0	0
Utilities	0	0	0	0
Construction	66	0	0	66
Manufacturing	0	1	0	1
Wholesale trade	0	1	1	2
Retail trade	0	1	5	6
Transportation and Warehousing	0	1	0	1
Information	0	1	1	1
Finance and Insurance	0	1	2	3
Real Estate	0	0	1	2
Professional, scientific & technical services	0	7	1	8
Management of companies	0	3	1	4
Administrative and waste management	0	0	0	0
Education services	0	0	1	1
Health care and social assistance	0	0	6	6
Arts, entertainment and recreation	0	0	1	1
Accommodations and food services	0	1	3	4
Other services	0	2	2	4
Government & no-NAICS	0	0	0	0
Total	66	19	26	111

Sources: Stanley R. Hoffman Associates, Inc.

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Table A-2 TSM Alternative Construction Impact on Labor Income

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$415	\$331	\$746
Mining	\$0	\$20,081	\$4,495	\$24,576
Utilities	\$0	\$5,953	\$8,125	\$14,079
Construction	\$3,984,175	\$15,356	\$10,467	\$4,009,998
Manufacturing	\$0	\$76,159	\$19,101	\$95,259
Wholesale trade	\$0	\$76,521	\$60,344	\$136,865
Retail trade	\$0	\$60,300	\$194,049	\$254,349
Transportation and Warehousing	\$0	\$39,361	\$26,959	\$66,320
Information	\$0	\$52,034	\$57,014	\$109,048
Finance and Insurance	\$0	\$86,446	\$140,564	\$227,011
Real Estate	\$0	\$12,472	\$29,753	\$42,226
Professional, scientific & technical services	\$0	\$695,375	\$101,311	\$796,687
Management of companies	\$0	\$128,006	\$60,601	\$188,607
Administrative and waste management	\$0	\$4,835	\$3,395	\$8,230
Education services	\$0	\$688	\$59,113	\$59,801
Health care and social assistance	\$0	\$12	\$366,835	\$366,847
Arts, entertainment and recreation	\$0	\$7,307	\$27,982	\$35,289
Accommodations and food services	\$0	\$17,036	\$88,870	\$105,905
Other services	\$0	\$118,861	\$106,446	\$225,306
Government & no-NAICS	\$0	\$13,969	\$31,430	\$45,399
Total	\$3,984,175	\$1,431,186	\$1,397,186	\$6,812,547

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-3 TSM Construction Impact on Output

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$1,053	\$435	\$1,488
Mining	\$0	\$75,268	\$16,838	\$92,106
Utilities	\$0	\$38,667	\$51,731	\$90,398
Construction	\$8,564,945	\$28,425	\$18,430	\$8,611,800
Manufacturing	\$0	\$902,115	\$215,946	\$1,118,062
Wholesale trade	\$0	\$203,684	\$160,626	\$364,310
Retail trade	\$0	\$111,377	\$367,559	\$478,937
Transportation and Warehousing	\$0	\$100,080	\$69,972	\$170,052
Information	\$0	\$196,647	\$194,988	\$391,635
Finance and Insurance	\$0	\$288,908	\$455,332	\$744,239
Real Estate	\$0	\$90,100	\$700,730	\$790,830
Professional, scientific & technical services	\$0	\$1,184,421	\$190,916	\$1,375,337
Management of companies	\$0	\$213,292	\$105,023	\$318,315
Administrative and waste management	\$0	\$15,441	\$10,841	\$26,282
Education services	\$0	\$1,184	\$89,886	\$91,070
Health care and social assistance	\$0	\$24	\$623,925	\$623,949
Arts, entertainment and recreation	\$0	\$14,585	\$59,619	\$74,204
Accommodations and food services	\$0	\$40,518	\$210,194	\$250,712
Other services	\$0	\$187,342	\$169,552	\$356,894
Government & no-NAICS	\$0	\$23,923	\$54,997	\$78,919
Total	\$8,564,945	\$3,717,056	\$3,767,538	\$16,049,539

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-4 TSM Alternative Construction Impact on Value Added

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$371	\$261	\$632
Mining	\$0	\$32,757	\$7,333	\$40,090
Utilities	\$0	\$21,568	\$29,960	\$51,528
Construction	\$4,068,237	\$15,682	\$10,645	\$4,094,564
Manufacturing	\$0	\$193,548	\$50,154	\$243,701
Wholesale trade	\$0	\$141,327	\$111,451	\$252,778
Retail trade	\$0	\$80,869	\$267,235	\$348,104
Transportation and Warehousing	\$0	\$46,934	\$33,026	\$79,960
Information	\$0	\$118,256	\$117,408	\$235,664
Finance and Insurance	\$0	\$199,683	\$269,996	\$469,678
Real Estate	\$0	\$73,808	\$529,200	\$603,008
Professional, scientific & technical services	\$0	\$799,918	\$132,619	\$932,537
Management of companies	\$0	\$144,276	\$69,663	\$213,939
Administrative and waste management	\$0	\$9,143	\$6,420	\$15,563
Education services	\$0	\$730	\$56,550	\$57,279
Health care and social assistance	\$0	\$15	\$391,681	\$391,695
Arts, entertainment and recreation	\$0	\$10,163	\$39,093	\$49,256
Accommodations and food services	\$0	\$23,211	\$119,996	\$143,207
Other services	\$0	\$124,701	\$104,248	\$228,949
Government & no-NAICS	\$0	\$15,132	\$30,628	\$45,761
Total	\$4,068,237	\$2,052,089	\$2,377,566	\$8,497,892

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Alternative 1 (Curb-Running BRT)

Table A-5 Alternative 1 Construction Impact on Employment

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	0	0	0	0
Mining	0	6	1	8
Utilities	0	1	1	3
Construction	2,000	7	4	2,012
Manufacturing	0	24	7	31
Wholesale trade	0	29	23	52
Retail trade	0	42	140	182
Transportation and Warehousing	0	20	14	34
Information	0	15	17	32
Finance and Insurance	0	29	51	80
Real Estate	0	15	35	50
Professional, scientific & technical services	0	215	36	251
Management of companies	0	90	43	133
Administrative and waste management	0	2	1	3
Education services	0	0	37	38
Health care and social assistance	0	0	176	176
Arts, entertainment and recreation	0	5	24	29
Accommodations and food services	0	18	95	114
Other services	0	54	75	129
Government & no-NAICS	<u>0</u>	<u>4</u>	<u>8</u>	<u>12</u>
Total	2,000	577	790	3,368

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-6 Alternative 1 Construction Impact on Labor Income

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$12,573	\$10,039	\$22,612
Mining	\$0	\$609,055	\$136,319	\$745,373
Utilities	\$0	\$180,557	\$246,438	\$426,995
Construction	\$120,838,191	\$465,751	\$317,469	\$121,621,411
Manufacturing	\$0	\$2,309,860	\$579,311	\$2,889,171
Wholesale trade	\$0	\$2,320,832	\$1,830,216	\$4,151,047
Retail trade	\$0	\$1,828,857	\$5,885,421	\$7,714,278
Transportation and Warehousing	\$0	\$1,193,806	\$817,662	\$2,011,469
Information	\$0	\$1,578,168	\$1,729,219	\$3,307,387
Finance and Insurance	\$0	\$2,621,870	\$4,263,256	\$6,885,126
Real Estate	\$0	\$378,280	\$902,405	\$1,280,685
Professional, scientific & technical services	\$0	\$21,090,414	\$3,072,724	\$24,163,138
Management of companies	\$0	\$3,882,365	\$1,837,991	\$5,720,356
Administrative and waste management	\$0	\$146,655	\$102,967	\$249,622
Education services	\$0	\$20,855	\$1,792,885	\$1,813,740
Health care and social assistance	\$0	\$369	\$11,125,932	\$11,126,301
Arts, entertainment and recreation	\$0	\$221,610	\$848,681	\$1,070,291
Accommodations and food services	\$0	\$516,682	\$2,695,382	\$3,212,065
Other services	\$0	\$3,604,985	\$3,228,453	\$6,833,438
Government & no-NAICS	\$0	\$423,663	\$953,255	\$1,376,918
Total	\$120,838,191	\$43,407,206	\$42,376,025	\$206,621,422

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-7 Alternative 1 Construction Impact on Output

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$31,948	\$13,182	\$45,131
Mining	\$0	\$2,282,857	\$510,684	\$2,793,541
Utilities	\$0	\$1,172,747	\$1,568,970	\$2,741,717
Construction	\$259,770,863	\$862,120	\$558,969	\$261,191,952
Manufacturing	\$0	\$27,360,741	\$6,549,557	\$33,910,298
Wholesale trade	\$0	\$6,177,650	\$4,871,715	\$11,049,364
Retail trade	\$0	\$3,378,027	\$11,147,901	\$14,525,928
Transportation and Warehousing	\$0	\$3,035,376	\$2,122,223	\$5,157,598
Information	\$0	\$5,964,225	\$5,913,884	\$11,878,109
Finance and Insurance	\$0	\$8,762,445	\$13,809,997	\$22,572,442
Real Estate	\$0	\$2,732,697	\$21,252,827	\$23,985,524
Professional, scientific & technical services	\$0	\$35,922,942	\$5,790,389	\$41,713,331
Management of companies	\$0	\$6,469,048	\$3,185,310	\$9,654,358
Administrative and waste management	\$0	\$468,310	\$328,803	\$797,113
Education services	\$0	\$35,924	\$2,726,187	\$2,762,111
Health care and social assistance	\$0	\$719	\$18,923,361	\$18,924,080
Arts, entertainment and recreation	\$0	\$442,370	\$1,808,212	\$2,250,582
Accommodations and food services	\$0	\$1,228,897	\$6,375,084	\$7,603,981
Other services	\$0	\$5,682,004	\$5,142,426	\$10,824,430
Government & no-NAICS	\$0	\$725,562	\$1,668,027	\$2,393,588
Total	\$259,770,863	\$112,736,610	\$114,267,707	\$486,775,180

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-8 Alternative 1 Construction Impact on Value Added

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$11,248	\$7,930	\$19,177
Mining	\$0	\$993,502	\$222,403	\$1,215,905
Utilities	\$0	\$654,135	\$908,674	\$1,562,809
Construction	\$123,387,776	\$475,618	\$322,868	\$124,186,263
Manufacturing	\$0	\$5,870,210	\$1,521,145	\$7,391,355
Wholesale trade	\$0	\$4,286,378	\$3,380,251	\$7,666,629
Retail trade	\$0	\$2,452,722	\$8,105,112	\$10,557,833
Transportation and Warehousing	\$0	\$1,423,486	\$1,001,653	\$2,425,140
Information	\$0	\$3,586,642	\$3,560,938	\$7,147,581
Finance and Insurance	\$0	\$6,056,285	\$8,188,841	\$14,245,127
Real Estate	\$0	\$2,238,551	\$16,050,398	\$18,288,948
Professional, scientific & technical services	\$0	\$24,261,147	\$4,022,264	\$28,283,412
Management of companies	\$0	\$4,375,830	\$2,112,840	\$6,488,670
Administrative and waste management	\$0	\$277,311	\$194,701	\$472,013
Education services	\$0	\$22,126	\$1,715,134	\$1,737,260
Health care and social assistance	\$0	\$445	\$11,879,495	\$11,879,940
Arts, entertainment and recreation	\$0	\$308,228	\$1,185,672	\$1,493,900
Accommodations and food services	\$0	\$703,968	\$3,639,435	\$4,343,403
Other services	\$0	\$3,782,136	\$3,161,781	\$6,943,918
Government & no-NAICS	\$0	\$458,955	\$928,948	\$1,387,903
Total	\$123,387,776	\$62,238,924	\$72,110,484	\$257,737,184

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Alternative 2 (Median-Running BRT)

Table A-9 Alternative 2 Construction Impact on Employment

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	0	0	0	1
Mining	0	9	2	11
Utilities	0	2	2	4
Construction	2,788	10	6	2,804
Manufacturing	0	33	10	43
Wholesale trade	0	41	32	73
Retail trade	0	59	195	254
Transportation and Warehousing	0	27	20	47
Information	0	21	23	44
Finance and Insurance	0	40	71	112
Real Estate	0	20	49	69
Professional, scientific & technical services	0	300	50	350
Management of companies	0	126	60	186
Administrative and waste management	0	3	2	5
Education services	0	1	52	53
Health care and social assistance	0	0	245	245
Arts, entertainment and recreation	0	6	33	40
Accommodations and food services	0	25	133	158
Other services	0	75	105	180
Government & no-NAICS	0	5	11	16
Total	2,788	804	1,101	4,693

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-10 Alternative 2 Construction Impact on Labor Income

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$17,521	\$13,990	\$31,512
Mining	\$0	\$848,764	\$189,971	\$1,038,734
Utilities	\$0	\$251,620	\$343,430	\$595,050
Construction	\$168,397,163	\$649,059	\$442,416	\$169,488,638
Manufacturing	\$0	\$3,218,965	\$807,313	\$4,026,278
Wholesale trade	\$0	\$3,234,255	\$2,550,544	\$5,784,799
Retail trade	\$0	\$2,548,651	\$8,201,779	\$10,750,430
Transportation and Warehousing	\$0	\$1,663,659	\$1,139,475	\$2,803,134
Information	\$0	\$2,199,296	\$2,409,797	\$4,609,093
Finance and Insurance	\$0	\$3,653,775	\$5,941,170	\$9,594,944
Real Estate	\$0	\$527,162	\$1,257,570	\$1,784,732
Professional, scientific & technical services	\$0	\$29,391,088	\$4,282,074	\$33,673,161
Management of companies	\$0	\$5,410,369	\$2,561,380	\$7,971,749
Administrative and waste management	\$0	\$204,375	\$143,492	\$347,867
Education services	\$0	\$29,063	\$2,498,521	\$2,527,584
Health care and social assistance	\$0	\$514	\$15,504,829	\$15,505,342
Arts, entertainment and recreation	\$0	\$308,831	\$1,182,701	\$1,491,532
Accommodations and food services	\$0	\$720,036	\$3,756,219	\$4,476,255
Other services	\$0	\$5,023,820	\$4,499,093	\$9,522,913
Government & no-NAICS	\$0	\$590,406	\$1,328,433	\$1,918,839
Total	\$168,397,163	\$60,491,227	\$59,054,197	\$287,942,587

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-11 Alternative 2 Construction Impact on Output

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$44,523	\$18,371	\$62,893
Mining	\$0	\$3,181,334	\$711,677	\$3,893,011
Utilities	\$0	\$1,634,312	\$2,186,479	\$3,820,791
Construction	\$362,010,354	\$1,201,429	\$778,966	\$363,990,749
Manufacturing	\$0	\$38,129,263	\$9,127,303	\$47,256,566
Wholesale trade	\$0	\$8,609,022	\$6,789,103	\$15,398,125
Retail trade	\$0	\$4,707,537	\$15,535,444	\$20,242,980
Transportation and Warehousing	\$0	\$4,230,026	\$2,957,478	\$7,187,504
Information	\$0	\$8,311,598	\$8,241,445	\$16,553,043
Finance and Insurance	\$0	\$12,211,129	\$19,245,276	\$31,456,406
Real Estate	\$0	\$3,808,220	\$29,617,423	\$33,425,643
Professional, scientific & technical services	\$0	\$50,061,338	\$8,069,345	\$58,130,683
Management of companies	\$0	\$9,015,108	\$4,438,970	\$13,454,079
Administrative and waste management	\$0	\$652,626	\$458,211	\$1,110,837
Education services	\$0	\$50,062	\$3,799,148	\$3,849,210
Health care and social assistance	\$0	\$1,002	\$26,371,136	\$26,372,138
Arts, entertainment and recreation	\$0	\$616,476	\$2,519,880	\$3,136,356
Accommodations and food services	\$0	\$1,712,562	\$8,884,161	\$10,596,723
Other services	\$0	\$7,918,303	\$7,166,360	\$15,084,663
Government & no-NAICS	\$0	\$1,011,125	\$2,324,521	\$3,335,647
Total	\$362,010,354	\$157,106,996	\$159,240,697	\$678,358,047

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-12 Alternative 2 Construction Impact on Value Added

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$15,675	\$11,051	\$26,725
Mining	\$0	\$1,384,520	\$309,935	\$1,694,455
Utilities	\$0	\$911,587	\$1,266,305	\$2,177,892
Construction	\$171,950,202	\$662,810	\$449,942	\$173,062,954
Manufacturing	\$0	\$8,180,581	\$2,119,831	\$10,300,412
Wholesale trade	\$0	\$5,973,392	\$4,710,636	\$10,684,028
Retail trade	\$0	\$3,418,053	\$11,295,087	\$14,713,140
Transportation and Warehousing	\$0	\$1,983,736	\$1,395,880	\$3,379,616
Information	\$0	\$4,998,257	\$4,962,437	\$9,960,694
Finance and Insurance	\$0	\$8,439,892	\$11,411,770	\$19,851,662
Real Estate	\$0	\$3,119,590	\$22,367,444	\$25,487,033
Professional, scientific & technical services	\$0	\$33,809,745	\$5,605,330	\$39,415,074
Management of companies	\$0	\$6,098,050	\$2,944,402	\$9,042,452
Administrative and waste management	\$0	\$386,454	\$271,331	\$657,785
Education services	\$0	\$30,834	\$2,390,168	\$2,421,003
Health care and social assistance	\$0	\$620	\$16,554,975	\$16,555,595
Arts, entertainment and recreation	\$0	\$429,539	\$1,652,323	\$2,081,863
Accommodations and food services	\$0	\$981,033	\$5,071,828	\$6,052,861
Other services	\$0	\$5,270,693	\$4,406,181	\$9,676,875
Government & no-NAICS	\$0	\$639,589	\$1,294,559	\$1,934,148
Total	\$171,950,202	\$86,734,651	\$100,491,415	\$359,176,268

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Alternative 3 Option A (Tram)

Table A-13 Alternative 3 Option A Construction Impact on Employment

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	0	1	1	2
Mining	0	25	6	30
Utilities	0	4	6	10
Construction	7,802	29	15	7,846
Manufacturing	0	93	28	121
Wholesale trade	0	114	90	205
Retail trade	0	165	546	711
Transportation and Warehousing	0	76	55	131
Information	0	59	65	124
Finance and Insurance	0	112	200	312
Real Estate	0	57	136	193
Professional, scientific & technical services	0	838	141	980
Management of companies	0	353	167	520
Administrative and waste management	0	8	5	13
Education services	0	2	145	147
Health care and social assistance	0	0	686	686
Arts, entertainment and recreation	0	18	93	111
Accommodations and food services	0	71	372	443
Other services	0	209	293	503
Government & no-NAICS	0	14	31	45
Total	7,802	2,250	3,082	13,134

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-14 Alternative 3 Option A Construction Impact on Labor Income

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$49,037	\$39,155	\$88,192
Mining	\$0	\$2,375,421	\$531,667	\$2,907,089
Utilities	\$0	\$704,205	\$961,151	\$1,665,356
Construction	\$471,290,374	\$1,816,511	\$1,238,184	\$474,345,068
Manufacturing	\$0	\$9,008,863	\$2,259,414	\$11,268,277
Wholesale trade	\$0	\$9,051,656	\$7,138,165	\$16,189,821
Retail trade	\$0	\$7,132,866	\$22,954,185	\$30,087,051
Transportation and Warehousing	\$0	\$4,656,055	\$3,189,029	\$7,845,084
Information	\$0	\$6,155,134	\$6,744,260	\$12,899,394
Finance and Insurance	\$0	\$10,225,759	\$16,627,454	\$26,853,213
Real Estate	\$0	\$1,475,359	\$3,519,539	\$4,994,899
Professional, scientific & technical services	\$0	\$82,256,353	\$11,984,169	\$94,240,522
Management of companies	\$0	\$15,141,912	\$7,168,491	\$22,310,403
Administrative and waste management	\$0	\$571,980	\$401,590	\$973,570
Education services	\$0	\$81,339	\$6,992,569	\$7,073,907
Health care and social assistance	\$0	\$1,437	\$43,393,109	\$43,394,546
Arts, entertainment and recreation	\$0	\$864,319	\$3,310,007	\$4,174,326
Accommodations and food services	\$0	\$2,015,152	\$10,512,470	\$12,527,622
Other services	\$0	\$14,060,082	\$12,591,539	\$26,651,620
Government & no-NAICS	\$0	\$1,652,359	\$3,717,864	\$5,370,224
Total	\$471,290,374	\$169,295,799	\$165,274,010	\$805,860,183

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-15 Alternative 3 Option A Construction Impact on Output

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$124,605	\$51,414	\$176,018
Mining	\$0	\$8,903,548	\$1,991,759	\$10,895,306
Utilities	\$0	\$4,573,922	\$6,119,263	\$10,693,184
Construction	\$1,013,152,414	\$3,362,419	\$2,180,079	\$1,018,694,913
Manufacturing	\$0	\$106,711,740	\$25,544,432	\$132,256,172
Wholesale trade	\$0	\$24,093,929	\$19,000,550	\$43,094,479
Retail trade	\$0	\$13,174,906	\$43,478,791	\$56,653,696
Transportation and Warehousing	\$0	\$11,838,504	\$8,277,044	\$20,115,548
Information	\$0	\$23,261,533	\$23,065,197	\$46,326,730
Finance and Insurance	\$0	\$34,175,087	\$53,861,438	\$88,036,525
Real Estate	\$0	\$10,658,003	\$82,889,796	\$93,547,798
Professional, scientific & technical services	\$0	\$140,105,842	\$22,583,544	\$162,689,386
Management of companies	\$0	\$25,230,435	\$12,423,274	\$37,653,709
Administrative and waste management	\$0	\$1,826,493	\$1,282,389	\$3,108,882
Education services	\$0	\$140,109	\$10,632,612	\$10,772,721
Health care and social assistance	\$0	\$2,804	\$73,804,464	\$73,807,268
Arts, entertainment and recreation	\$0	\$1,725,322	\$7,052,346	\$8,777,668
Accommodations and food services	\$0	\$4,792,918	\$24,863,956	\$29,656,874
Other services	\$0	\$22,160,824	\$20,056,374	\$42,217,198
Government & no-NAICS	\$0	\$2,829,820	\$6,505,600	\$9,335,419
Total	\$1,013,152,414	\$439,692,762	\$445,664,320	\$1,898,509,497

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-16 Alternative 3 Option A Construction Impact on Value Added

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$15,675	\$11,051	\$26,725
Mining	\$0	\$1,384,520	\$309,935	\$1,694,455
Utilities	\$0	\$911,587	\$1,266,305	\$2,177,892
Construction	\$171,950,202	\$662,810	\$449,942	\$173,062,954
Manufacturing	\$0	\$8,180,581	\$2,119,831	\$10,300,412
Wholesale trade	\$0	\$5,973,392	\$4,710,636	\$10,684,028
Retail trade	\$0	\$3,418,053	\$11,295,087	\$14,713,140
Transportation and Warehousing	\$0	\$1,983,736	\$1,395,880	\$3,379,616
Information	\$0	\$4,998,257	\$4,962,437	\$9,960,694
Finance and Insurance	\$0	\$8,439,892	\$11,411,770	\$19,851,662
Real Estate	\$0	\$3,119,590	\$22,367,444	\$25,487,033
Professional, scientific & technical services	\$0	\$33,809,745	\$5,605,330	\$39,415,074
Management of companies	\$0	\$6,098,050	\$2,944,402	\$9,042,452
Administrative and waste management	\$0	\$386,454	\$271,331	\$657,785
Education services	\$0	\$30,834	\$2,390,168	\$2,421,003
Health care and social assistance	\$0	\$620	\$16,554,975	\$16,555,595
Arts, entertainment and recreation	\$0	\$429,539	\$1,652,323	\$2,081,863
Accommodations and food services	\$0	\$981,033	\$5,071,828	\$6,052,861
Other services	\$0	\$5,270,693	\$4,406,181	\$9,676,875
Government & no-NAICS	\$0	\$639,589	\$1,294,559	\$1,934,148
Total	\$171,950,202	\$86,734,651	\$100,491,415	\$359,176,268

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Alternative 3 Option B (Tram)

Table A-17 Alternative 3 Option B Construction Impact on Employment

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	0	1	1	2
Mining	0	25	6	31
Utilities	0	4	6	10
Construction	7,971	30	16	8,016
Manufacturing	0	95	29	124
Wholesale trade	0	117	92	209
Retail trade	0	169	557	726
Transportation and Warehousing	0	78	56	134
Information	0	61	66	127
Finance and Insurance	0	115	204	319
Real Estate	0	58	139	197
Professional, scientific & technical services	0	856	144	1,001
Management of companies	0	361	171	531
Administrative and waste management	0	8	6	13
Education services	0	2	148	150
Health care and social assistance	0	0	701	701
Arts, entertainment and recreation	0	19	95	114
Accommodations and food services	0	73	380	453
Other services	0	214	300	513
Government & no-NAICS	0	15	32	46
Total	7,971	2,299	3,149	13,419

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-18 Alternative 3 Option B Construction Impact on Labor Income

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$50,100	\$40,003	\$90,103
Mining	\$0	\$2,426,904	\$543,190	\$2,970,094
Utilities	\$0	\$719,467	\$981,982	\$1,701,449
Construction	\$481,504,618	\$1,855,880	\$1,265,019	\$484,625,516
Manufacturing	\$0	\$9,204,112	\$2,308,382	\$11,512,494
Wholesale trade	\$0	\$9,247,832	\$7,292,870	\$16,540,702
Retail trade	\$0	\$7,287,456	\$23,451,669	\$30,739,126
Transportation and Warehousing	\$0	\$4,756,966	\$3,258,144	\$8,015,110
Information	\$0	\$6,288,534	\$6,890,428	\$13,178,962
Finance and Insurance	\$0	\$10,447,382	\$16,987,820	\$27,435,201
Real Estate	\$0	\$1,507,335	\$3,595,818	\$5,103,153
Professional, scientific & technical services	\$0	\$84,039,090	\$12,243,901	\$96,282,992
Management of companies	\$0	\$15,470,081	\$7,323,854	\$22,793,935
Administrative and waste management	\$0	\$584,377	\$410,293	\$994,670
Education services	\$0	\$83,101	\$7,144,118	\$7,227,219
Health care and social assistance	\$0	\$1,468	\$44,333,565	\$44,335,034
Arts, entertainment and recreation	\$0	\$883,052	\$3,381,744	\$4,264,796
Accommodations and food services	\$0	\$2,058,826	\$10,740,306	\$12,799,132
Other services	\$0	\$14,364,805	\$12,864,434	\$27,229,239
Government & no-NAICS	\$0	\$1,688,171	\$3,798,442	\$5,486,612
Total	\$481,504,618	\$172,964,939	\$168,855,983	\$823,325,539

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-19 Alternative 3 Option B Construction Impact on Output

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$127,305	\$52,528	\$179,833
Mining	\$0	\$9,096,514	\$2,034,926	\$11,131,440
Utilities	\$0	\$4,673,052	\$6,251,885	\$10,924,937
Construction	\$1,035,110,414	\$3,435,293	\$2,227,328	\$1,040,773,035
Manufacturing	\$0	\$109,024,498	\$26,098,055	\$135,122,553
Wholesale trade	\$0	\$24,616,115	\$19,412,348	\$44,028,464
Retail trade	\$0	\$13,460,445	\$44,421,104	\$57,881,548
Transportation and Warehousing	\$0	\$12,095,079	\$8,456,432	\$20,551,512
Information	\$0	\$23,765,679	\$23,565,088	\$47,330,767
Finance and Insurance	\$0	\$34,915,762	\$55,028,773	\$89,944,535
Real Estate	\$0	\$10,888,993	\$84,686,261	\$95,575,254
Professional, scientific & technical services	\$0	\$143,142,348	\$23,072,996	\$166,215,344
Management of companies	\$0	\$25,777,253	\$12,692,522	\$38,469,775
Administrative and waste management	\$0	\$1,866,078	\$1,310,182	\$3,176,260
Education services	\$0	\$143,146	\$10,863,052	\$11,006,198
Health care and social assistance	\$0	\$2,865	\$75,404,023	\$75,406,889
Arts, entertainment and recreation	\$0	\$1,762,715	\$7,205,191	\$8,967,906
Accommodations and food services	\$0	\$4,896,795	\$25,402,831	\$30,299,626
Other services	\$0	\$22,641,115	\$20,491,054	\$43,132,169
Government & no-NAICS	\$0	\$2,891,150	\$6,646,595	\$9,537,745
Total	\$1,035,110,414	\$449,222,200	\$455,323,175	\$1,939,655,789

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-20 Alternative 3 Option B Construction Impact on Value Added

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$44,819	\$31,597	\$76,417
Mining	\$0	\$3,958,812	\$886,210	\$4,845,023
Utilities	\$0	\$2,606,537	\$3,620,796	\$6,227,333
Construction	\$491,663,962	\$1,895,199	\$1,286,536	\$494,845,697
Manufacturing	\$0	\$23,391,057	\$6,061,316	\$29,452,373
Wholesale trade	\$0	\$17,079,954	\$13,469,307	\$30,549,261
Retail trade	\$0	\$9,773,373	\$32,296,485	\$42,069,858
Transportation and Warehousing	\$0	\$5,672,173	\$3,991,294	\$9,663,468
Information	\$0	\$14,291,714	\$14,189,291	\$28,481,004
Finance and Insurance	\$0	\$24,132,513	\$32,630,122	\$56,762,636
Real Estate	\$0	\$8,919,966	\$63,956,109	\$72,876,075
Professional, scientific & technical services	\$0	\$96,673,530	\$16,027,539	\$112,701,069
Management of companies	\$0	\$17,436,393	\$8,419,045	\$25,855,438
Administrative and waste management	\$0	\$1,105,004	\$775,828	\$1,880,832
Education services	\$0	\$88,166	\$6,834,302	\$6,922,468
Health care and social assistance	\$0	\$1,772	\$47,336,290	\$47,338,062
Arts, entertainment and recreation	\$0	\$1,228,199	\$4,724,552	\$5,952,751
Accommodations and food services	\$0	\$2,805,107	\$14,502,076	\$17,307,183
Other services	\$0	\$15,070,700	\$12,598,768	\$27,669,468
Government & no-NAICS	\$0	\$1,828,802	\$3,701,584	\$5,530,386
Total	\$491,663,962	\$248,003,791	\$287,339,048	\$1,027,006,802

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Alternative 3 Option C (Tram)

Table A-21 Alternative 3 Option C Construction Impact on Employment

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	0	1	1	2
Mining	0	25	6	31
Utilities	0	4	6	10
Construction	7,820	29	16	7,864
Manufacturing	0	93	29	122
Wholesale trade	0	115	90	205
Retail trade	0	165	547	712
Transportation and Warehousing	0	76	55	131
Information	0	60	65	125
Finance and Insurance	0	113	200	313
Real Estate	0	57	136	194
Professional, scientific & technical services	0	840	142	982
Management of companies	0	354	167	521
Administrative and waste management	0	8	5	13
Education services	0	2	146	147
Health care and social assistance	0	0	688	688
Arts, entertainment and recreation	0	18	93	112
Accomodations and food services	0	71	373	444
Other services	0	210	294	504
Government & no-NAICS	0	14	31	45
Total	7,820	2,255	3,090	13,165

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-22 Alternative 3 Option C Construction Impact on Labor Income

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$49,151	\$39,246	\$88,397
Mining	\$0	\$2,380,944	\$532,903	\$2,913,847
Utilities	\$0	\$705,842	\$963,385	\$1,669,227
Construction	\$472,386,004	\$1,820,734	\$1,241,062	\$475,447,800
Manufacturing	\$0	\$9,029,807	\$2,264,667	\$11,294,473
Wholesale trade	\$0	\$9,072,699	\$7,154,760	\$16,227,458
Retail trade	\$0	\$7,149,448	\$23,007,547	\$30,156,996
Transportation and Warehousing	\$0	\$4,666,880	\$3,196,442	\$7,863,322
Information	\$0	\$6,169,443	\$6,759,939	\$12,929,382
Finance and Insurance	\$0	\$10,249,532	\$16,666,109	\$26,915,640
Real Estate	\$0	\$1,478,789	\$3,527,721	\$5,006,511
Professional, scientific & technical services	\$0	\$82,447,579	\$12,012,030	\$94,459,609
Management of companies	\$0	\$15,177,113	\$7,185,156	\$22,362,269
Administrative and waste management	\$0	\$573,310	\$402,523	\$975,833
Education services	\$0	\$81,528	\$7,008,825	\$7,090,352
Health care and social assistance	\$0	\$1,441	\$43,493,987	\$43,495,428
Arts, entertainment and recreation	\$0	\$866,329	\$3,317,702	\$4,184,030
Accommodations and food services	\$0	\$2,019,837	\$10,536,908	\$12,556,745
Other services	\$0	\$14,092,768	\$12,620,811	\$26,713,579
Government & no-NAICS	\$0	<u>\$1,656,201</u>	<u>\$3,726,508</u>	<u>\$5,382,708</u>
Total	\$472,386,004	\$169,689,372	\$165,658,230	\$807,733,606

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-23 Alternative 3 Option C Construction Impact on Output

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$124,894	\$51,533	\$176,427
Mining	\$0	\$8,924,246	\$1,996,389	\$10,920,635
Utilities	\$0	\$4,584,555	\$6,133,488	\$10,718,043
Construction	\$1,015,507,752	\$3,370,236	\$2,185,147	\$1,021,063,136
Manufacturing	\$0	\$106,959,820	\$25,603,816	\$132,563,636
Wholesale trade	\$0	\$24,149,942	\$19,044,722	\$43,194,664
Retail trade	\$0	\$13,205,534	\$43,579,868	\$56,785,402
Transportation and Warehousing	\$0	\$11,866,026	\$8,296,286	\$20,162,312
Information	\$0	\$23,315,611	\$23,118,818	\$46,434,429
Finance and Insurance	\$0	\$34,254,536	\$53,986,652	\$88,241,188
Real Estate	\$0	\$10,682,780	\$83,082,494	\$93,765,274
Professional, scientific & technical services	\$0	\$140,431,554	\$22,636,045	\$163,067,600
Management of companies	\$0	\$25,289,090	\$12,452,155	\$37,741,244
Administrative and waste management	\$0	\$1,830,739	\$1,285,370	\$3,116,109
Education services	\$0	\$140,435	\$10,657,331	\$10,797,765
Health care and social assistance	\$0	\$2,811	\$73,976,041	\$73,978,852
Arts, entertainment and recreation	\$0	\$1,729,333	\$7,068,741	\$8,798,074
Accommodations and food services	\$0	\$4,804,060	\$24,921,759	\$29,725,819
Other services	\$0	\$22,212,343	\$20,103,000	\$42,315,342
Government & no-NAICS	\$0	\$2,836,398	\$6,520,724	\$9,357,122
Total	\$1,015,507,752	\$440,714,943	\$446,700,378	\$1,902,923,073

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-24 Alternative 3 Option C Construction Impact on Value Added

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$43,970	\$30,999	\$74,969
Mining	\$0	\$3,883,841	\$869,428	\$4,753,269
Utilities	\$0	\$2,557,175	\$3,552,227	\$6,109,401
Construction	\$482,352,953	\$1,859,308	\$1,262,172	\$485,474,433
Manufacturing	\$0	\$22,948,083	\$5,946,528	\$28,894,612
Wholesale trade	\$0	\$16,756,498	\$13,214,228	\$29,970,726
Retail trade	\$0	\$9,588,287	\$31,684,862	\$41,273,150
Transportation and Warehousing	\$0	\$5,564,755	\$3,915,708	\$9,480,463
Information	\$0	\$14,021,061	\$13,920,577	\$27,941,638
Finance and Insurance	\$0	\$23,675,498	\$32,012,181	\$55,687,679
Real Estate	\$0	\$8,751,042	\$62,744,924	\$71,495,966
Professional, scientific & technical services	\$0	\$94,842,751	\$15,724,014	\$110,566,765
Management of companies	\$0	\$17,106,187	\$8,259,607	\$25,365,794
Administrative and waste management	\$0	\$1,084,077	\$761,136	\$1,845,213
Education services	\$0	\$86,496	\$6,704,876	\$6,791,373
Health care and social assistance	\$0	\$1,739	\$46,439,847	\$46,441,586
Arts, entertainment and recreation	\$0	\$1,204,940	\$4,635,080	\$5,840,020
Accommodations and food services	\$0	\$2,751,985	\$14,227,439	\$16,979,424
Other services	\$0	\$14,785,295	\$12,360,175	\$27,145,470
Government & no-NAICS	\$0	\$1,794,169	\$3,631,485	\$5,425,653
Total	\$482,352,953	\$243,307,158	\$281,897,493	\$1,007,557,604

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Alternative 4 Option A (LRT)

Table A-25 Alternative 4 Option A Construction Impact on Employment

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	0	3	1	4
Mining	0	62	14	76
Utilities	0	11	15	25
Construction	19,798	73	39	19,910
Manufacturing	0	233	71	304
Wholesale trade	0	287	226	513
Retail trade	0	413	1,367	1,780
Transportation and Warehousing	0	191	137	328
Information	0	149	163	312
Finance and Insurance	0	281	500	782
Real Estate	0	143	341	484
Professional, scientific & technical services	0	2,100	354	2,454
Management of companies	0	884	418	1,302
Administrative and waste management	0	19	14	33
Education services	0	5	364	369
Health care and social assistance	0	0	1,720	1,720
Arts, entertainment and recreation	0	46	233	279
Accommodations and food services	0	178	933	1,111
Other services	0	524	735	1,259
Government & no-NAICS	0	36	78	113
Total	19,798	5,637	7,722	33,157

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-26 Alternative 4 Option B Construction Impact on Labor Income

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$122,849	\$98,092	\$220,941
Mining	\$0	\$5,950,986	\$1,331,951	\$7,282,937
Utilities	\$0	\$1,764,198	\$2,407,907	\$4,172,105
Construction	\$1,180,692,695	\$4,550,784	\$3,101,940	\$1,188,345,419
Manufacturing	\$0	\$22,569,311	\$5,660,361	\$28,229,672
Wholesale trade	\$0	\$22,676,517	\$17,882,774	\$40,559,291
Retail trade	\$0	\$17,869,499	\$57,505,605	\$75,375,104
Transportation and Warehousing	\$0	\$11,664,509	\$7,989,263	\$19,653,772
Information	\$0	\$15,420,052	\$16,895,950	\$32,316,001
Finance and Insurance	\$0	\$25,617,920	\$41,655,664	\$67,273,584
Real Estate	\$0	\$3,696,121	\$8,817,270	\$12,513,391
Professional, scientific & technical services	\$0	\$206,071,416	\$30,023,149	\$236,094,565
Management of companies	\$0	\$37,934,033	\$17,958,749	\$55,892,782
Administrative and waste management	\$0	\$1,432,944	\$1,006,077	\$2,439,021
Education services	\$0	\$203,772	\$17,518,021	\$17,721,793
Health care and social assistance	\$0	\$3,601	\$108,709,895	\$108,713,495
Arts, entertainment and recreation	\$0	\$2,165,322	\$8,292,342	\$10,457,664
Accommodations and food services	\$0	\$5,048,427	\$26,336,197	\$31,384,624
Other services	\$0	\$35,223,795	\$31,544,752	\$66,768,547
Government & no-NAICS	\$0	\$4,139,547	\$9,314,121	\$13,453,668
Total	\$1,180,692,695	\$424,125,602	\$414,050,078	\$2,018,868,375

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-27 Alternative 4 Option A Construction Impact on Output

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$312,164	\$128,803	\$440,967
Mining	\$0	\$22,305,471	\$4,989,822	\$27,295,292
Utilities	\$0	\$11,458,744	\$15,330,185	\$26,788,929
Construction	\$2,538,183,932	\$8,423,647	\$5,461,608	\$2,552,069,187
Manufacturing	\$0	\$267,337,886	\$63,994,781	\$331,332,667
Wholesale trade	\$0	\$60,360,931	\$47,600,826	\$107,961,757
Retail trade	\$0	\$33,006,222	\$108,924,547	\$141,930,769
Transportation and Warehousing	\$0	\$29,658,224	\$20,735,933	\$50,394,157
Information	\$0	\$58,275,586	\$57,783,717	\$116,059,303
Finance and Insurance	\$0	\$85,616,592	\$134,935,508	\$220,552,100
Real Estate	\$0	\$26,700,791	\$207,658,339	\$234,359,130
Professional, scientific & technical services	\$0	\$350,997,926	\$56,577,064	\$407,574,990
Management of companies	\$0	\$63,208,145	\$31,123,208	\$94,331,353
Administrative and waste management	\$0	\$4,575,792	\$3,212,684	\$7,788,476
Education services	\$0	\$351,006	\$26,637,183	\$26,988,189
Health care and social assistance	\$0	\$7,026	\$184,897,457	\$184,904,483
Arts, entertainment and recreation	\$0	\$4,322,336	\$17,667,778	\$21,990,113
Accommodations and food services	\$0	\$12,007,381	\$62,290,031	\$74,297,412
Other services	\$0	\$55,518,052	\$50,245,910	\$105,763,962
Government & no-NAICS	\$0	\$7,089,361	\$16,298,050	\$23,387,411
Total	\$2,538,183,932	\$1,101,533,281	\$1,116,493,433	\$4,756,210,646

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-28 Alternative 4 Option A Construction Impact on Value Added

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$109,901	\$77,480	\$187,380
Mining	\$0	\$9,707,364	\$2,173,068	\$11,880,431
Utilities	\$0	\$6,391,462	\$8,878,519	\$15,269,982
Construction	\$1,205,604,324	\$4,647,198	\$3,154,701	\$1,213,406,223
Manufacturing	\$0	\$57,356,979	\$14,862,892	\$72,219,871
Wholesale trade	\$0	\$41,881,585	\$33,027,953	\$74,909,538
Retail trade	\$0	\$23,965,191	\$79,193,891	\$103,159,081
Transportation and Warehousing	\$0	\$13,908,680	\$9,787,013	\$23,695,693
Information	\$0	\$35,044,569	\$34,793,418	\$69,837,987
Finance and Insurance	\$0	\$59,175,096	\$80,011,999	\$139,187,095
Real Estate	\$0	\$21,872,559	\$156,826,140	\$178,698,699
Professional, scientific & technical services	\$0	\$237,052,200	\$39,300,970	\$276,353,170
Management of companies	\$0	\$42,755,606	\$20,644,256	\$63,399,862
Administrative and waste management	\$0	\$2,709,568	\$1,902,400	\$4,611,969
Education services	\$0	\$216,191	\$16,758,325	\$16,974,516
Health care and social assistance	\$0	\$4,346	\$116,072,845	\$116,077,191
Arts, entertainment and recreation	\$0	\$3,011,655	\$11,585,028	\$14,596,682
Accommodations and food services	\$0	\$6,878,375	\$35,560,397	\$42,438,771
Other services	\$0	\$36,954,714	\$30,893,313	\$67,848,027
Government & no-NAICS	\$0	\$4,484,387	\$9,076,619	\$13,561,006
Total	\$1,205,604,324	\$608,127,625	\$704,581,225	\$2,518,313,174

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Alternative 4 Option B (LRT)

Table A-29 Alternative 4 Option B Construction Impact on Employment

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	0	3	2	5
Mining	0	67	15	82
Utilities	0	11	16	27
Construction	21,098	79	42	21,218
Manufacturing	0	251	77	328
Wholesale trade	0	309	244	553
Retail trade	0	446	1,475	1,921
Transportation and Warehousing	0	206	148	354
Information	0	161	176	337
Finance and Insurance	0	304	540	844
Real Estate	0	154	368	522
Professional, scientific & technical services	0	2,267	382	2,649
Management of companies	0	954	452	1,406
Administrative and waste management	0	21	15	36
Education services	0	5	393	398
Health care and social assistance	0	0	1,856	1,856
Arts, entertainment and recreation	0	49	252	301
Accommodations and food services	0	192	1,007	1,199
Other services	0	565	794	1,359
Government & no-NAICS	0	38	84	122
Total	21,098	6,085	8,336	35,518

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-30 Alternative 4 Option B Construction Impact on Labor Income

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$132,609	\$105,885	\$238,494
Mining	\$0	\$6,423,798	\$1,437,776	\$7,861,575
Utilities	\$0	\$1,904,366	\$2,599,218	\$4,503,584
Construction	\$1,274,499,999	\$4,912,349	\$3,348,392	\$1,282,760,740
Manufacturing	\$0	\$24,362,467	\$6,110,083	\$30,472,550
Wholesale trade	\$0	\$24,478,190	\$19,303,580	\$43,781,770
Retail trade	\$0	\$19,289,250	\$62,074,487	\$81,363,737
Transportation and Warehousing	\$0	\$12,591,266	\$8,624,019	\$21,215,285
Information	\$0	\$16,645,191	\$18,238,351	\$34,883,542
Finance and Insurance	\$0	\$27,653,292	\$44,965,251	\$72,618,543
Real Estate	\$0	\$3,989,782	\$9,517,811	\$13,507,593
Professional, scientific & technical services	\$0	\$222,444,012	\$32,408,521	\$254,852,532
Management of companies	\$0	\$40,947,932	\$19,385,591	\$60,333,523
Administrative and waste management	\$0	\$1,546,793	\$1,086,010	\$2,632,803
Education services	\$0	\$219,962	\$18,909,847	\$19,129,808
Health care and social assistance	\$0	\$3,887	\$117,347,013	\$117,350,899
Arts, entertainment and recreation	\$0	\$2,337,360	\$8,951,177	\$11,288,537
Accommodations and food services	\$0	\$5,449,530	\$28,428,636	\$33,878,166
Other services	\$0	\$38,022,364	\$34,051,016	\$72,073,380
Government & no-NAICS	\$0	\$4,468,439	\$10,054,138	\$14,522,576
Total	\$1,274,499,999	\$457,822,837	\$446,946,801	\$2,179,269,638

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-31 Alternative 4 Option B Construction Impact on Output

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$336,966	\$139,036	\$476,002
Mining	\$0	\$24,077,664	\$5,386,268	\$29,463,933
Utilities	\$0	\$12,369,154	\$16,548,184	\$28,917,338
Construction	\$2,739,845,374	\$9,092,915	\$5,895,539	\$2,754,833,828
Manufacturing	\$0	\$288,578,168	\$69,079,235	\$357,657,403
Wholesale trade	\$0	\$65,156,672	\$51,382,763	\$116,539,435
Retail trade	\$0	\$35,628,602	\$117,578,720	\$153,207,322
Transportation and Warehousing	\$0	\$32,014,601	\$22,383,425	\$54,398,027
Information	\$0	\$62,905,644	\$62,374,696	\$125,280,339
Finance and Insurance	\$0	\$92,418,922	\$145,656,279	\$238,075,201
Real Estate	\$0	\$28,822,198	\$224,157,017	\$252,979,215
Professional, scientific & technical services	\$0	\$378,885,088	\$61,072,173	\$439,957,261
Management of companies	\$0	\$68,230,100	\$33,595,981	\$101,826,080
Administrative and waste management	\$0	\$4,939,343	\$3,467,936	\$8,407,279
Education services	\$0	\$378,893	\$28,753,536	\$29,132,429
Health care and social assistance	\$0	\$7,584	\$199,587,759	\$199,595,343
Arts, entertainment and recreation	\$0	\$4,665,750	\$19,071,502	\$23,737,252
Accommodations and food services	\$0	\$12,961,381	\$67,239,040	\$80,200,421
Other services	\$0	\$59,929,021	\$54,238,002	\$114,167,022
Government & no-NAICS	\$0	\$7,652,618	\$17,592,947	\$25,245,565
Total	\$2,739,845,374	\$1,189,051,285	\$1,205,200,036	\$5,134,096,695

Sources: Stanley R. Hoffman Associates, Inc.

IMPLAN Group, LLC, IMPLAN System (data and software), Copyright 2013

Table A-32 Alternative 4 Option B Construction Impact on Value Added

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$118,632	\$83,636	\$202,268
Mining	\$0	\$10,478,624	\$2,345,720	\$12,824,345
Utilities	\$0	\$6,899,271	\$9,583,927	\$16,483,198
Construction	\$1,301,390,884	\$5,016,423	\$3,405,346	\$1,309,812,652
Manufacturing	\$0	\$61,914,052	\$16,043,765	\$77,957,817
Wholesale trade	\$0	\$45,209,122	\$35,652,060	\$80,861,181
Retail trade	\$0	\$25,869,251	\$85,485,930	\$111,355,181
Transportation and Warehousing	\$0	\$15,013,740	\$10,564,601	\$25,578,341
Information	\$0	\$37,828,897	\$37,557,793	\$75,386,690
Finance and Insurance	\$0	\$63,876,621	\$86,369,038	\$150,245,659
Real Estate	\$0	\$23,610,357	\$169,286,146	\$192,896,503
Professional, scientific & technical services	\$0	\$255,886,252	\$42,423,474	\$298,309,726
Management of companies	\$0	\$46,152,585	\$22,284,464	\$68,437,049
Administrative and waste management	\$0	\$2,924,846	\$2,053,548	\$4,978,395
Education services	\$0	\$233,368	\$18,089,792	\$18,323,160
Health care and social assistance	\$0	\$4,692	\$125,294,958	\$125,299,649
Arts, entertainment and recreation	\$0	\$3,250,934	\$12,505,471	\$15,756,405
Accommodations and food services	\$0	\$7,424,869	\$38,385,708	\$45,810,577
Other services	\$0	\$39,890,806	\$33,347,820	\$73,238,625
Government & no-NAICS	\$0	\$4,840,676	\$9,797,766	\$14,638,442
Total	\$1,301,390,884	\$656,444,019	\$760,560,961	\$2,718,395,864

Sources: Stanley R. Hoffman Associates, Inc.

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Alternative 4 Option C (LRT)

Table A-33 Alternative 4 Option C Construction Impact on Employment

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	0	3	2	4
Mining	0	65	15	80
Utilities	0	11	15	26
Construction	20,417	76	41	20,534
Manufacturing	0	243	74	318
Wholesale trade	0	299	236	536
Retail trade	0	432	1,428	1,859
Transportation and Warehousing	0	199	143	342
Information	0	156	170	326
Finance and Insurance	0	294	523	817
Real Estate	0	149	356	505
Professional, scientific & technical services	0	2,194	370	2,563
Management of companies	0	924	437	1,361
Administrative and waste management	0	20	14	34
Education services	0	5	380	385
Health care and social assistance	0	0	1,796	1,796
Arts, entertainment and recreation	0	48	244	291
Accommodations and food services	0	186	974	1,160
Other services	0	547	768	1,315
Government & no-NAICS	0	37	81	118
Total	20,417	5,888	8,067	34,372

Sources: Stanley R. Hoffman Associates, Inc.

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Table A-34 Alternative 4 Option C Construction Impact on Labor Income

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$128,329	\$102,468	\$230,797
Mining	\$0	\$6,216,480	\$1,391,374	\$7,607,854
Utilities	\$0	\$1,842,905	\$2,515,332	\$4,358,237
Construction	\$1,233,367,353	\$4,753,810	\$3,240,327	\$1,241,361,490
Manufacturing	\$0	\$23,576,203	\$5,912,889	\$29,489,092
Wholesale trade	\$0	\$23,688,192	\$18,680,585	\$42,368,777
Retail trade	\$0	\$18,666,718	\$60,071,123	\$78,737,840
Transportation and Warehousing	\$0	\$12,184,901	\$8,345,691	\$20,530,592
Information	\$0	\$16,107,992	\$17,649,734	\$33,757,726
Finance and Insurance	\$0	\$26,760,821	\$43,514,063	\$70,274,884
Real Estate	\$0	\$3,861,017	\$9,210,638	\$13,071,655
Professional, scientific & technical services	\$0	\$215,264,952	\$31,362,582	\$246,627,535
Management of companies	\$0	\$39,626,397	\$18,759,949	\$58,386,346
Administrative and waste management	\$0	\$1,496,872	\$1,050,961	\$2,547,834
Education services	\$0	\$212,863	\$18,299,559	\$18,512,421
Health care and social assistance	\$0	\$3,761	\$113,559,807	\$113,563,569
Arts, entertainment and recreation	\$0	\$2,261,925	\$8,662,291	\$10,924,216
Accommodations and food services	\$0	\$5,273,654	\$27,511,143	\$32,784,797
Other services	\$0	\$36,795,247	\$32,952,069	\$69,747,315
Government & no-NAICS	\$0	\$4,324,226	\$9,729,655	\$14,053,881
Total	\$1,233,367,353	\$443,047,267	\$432,522,239	\$2,108,936,859

Sources: Stanley R. Hoffman Associates, Inc.

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Table A-35 Alternative 4 Option C Construction Impact on Output

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$326,091	\$134,549	\$460,640
Mining	\$0	\$23,300,592	\$5,212,434	\$28,513,027
Utilities	\$0	\$11,969,957	\$16,014,116	\$27,984,073
Construction	\$2,651,420,823	\$8,799,455	\$5,705,269	\$2,665,925,546
Manufacturing	\$0	\$279,264,725	\$66,849,802	\$346,114,527
Wholesale trade	\$0	\$63,053,835	\$49,724,458	\$112,778,293
Retail trade	\$0	\$34,478,740	\$113,784,036	\$148,262,777
Transportation and Warehousing	\$0	\$30,981,376	\$21,661,033	\$52,642,409
Information	\$0	\$60,875,455	\$60,361,642	\$121,237,097
Finance and Insurance	\$0	\$89,436,235	\$140,955,433	\$230,391,668
Real Estate	\$0	\$27,892,003	\$216,922,673	\$244,814,676
Professional, scientific & technical services	\$0	\$366,657,120	\$59,101,156	\$425,758,276
Management of companies	\$0	\$66,028,072	\$32,511,719	\$98,539,791
Administrative and waste management	\$0	\$4,779,933	\$3,356,013	\$8,135,946
Education services	\$0	\$366,665	\$27,825,557	\$28,192,222
Health care and social assistance	\$0	\$7,339	\$193,146,352	\$193,153,691
Arts, entertainment and recreation	\$0	\$4,515,170	\$18,455,996	\$22,971,166
Accommodations and food services	\$0	\$12,543,071	\$65,068,998	\$77,612,068
Other services	\$0	\$57,994,898	\$52,487,548	\$110,482,446
Government & no-NAICS	\$0	\$7,405,641	\$17,025,160	\$24,430,801
Total	\$2,651,420,823	\$1,150,676,372	\$1,166,303,946	\$4,968,401,141

Sources: Stanley R. Hoffman Associates, Inc.
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Table A-36 Alternative 4 Option C Construction Impact on Value Added

Industry Name	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	\$0	\$114,804	\$80,936	\$195,740
Mining	\$0	\$10,140,442	\$2,270,016	\$12,410,457
Utilities	\$0	\$6,676,607	\$9,274,620	\$15,951,227
Construction	\$1,259,390,373	\$4,854,525	\$3,295,443	\$1,267,540,341
Manufacturing	\$0	\$59,915,866	\$15,525,976	\$75,441,841
Wholesale trade	\$0	\$43,750,062	\$34,501,441	\$78,251,503
Retail trade	\$0	\$25,034,358	\$82,726,995	\$107,761,354
Transportation and Warehousing	\$0	\$14,529,193	\$10,223,644	\$24,752,837
Information	\$0	\$36,608,024	\$36,345,669	\$72,953,694
Finance and Insurance	\$0	\$61,815,095	\$83,581,602	\$145,396,697
Real Estate	\$0	\$22,848,367	\$163,822,680	\$186,671,047
Professional, scientific & technical services	\$0	\$247,627,893	\$41,054,318	\$288,682,211
Management of companies	\$0	\$44,663,077	\$21,565,265	\$66,228,342
Administrative and waste management	\$0	\$2,830,451	\$1,987,273	\$4,817,724
Education services	\$0	\$225,836	\$17,505,970	\$17,731,806
Health care and social assistance	\$0	\$4,540	\$121,251,244	\$121,255,784
Arts, entertainment and recreation	\$0	\$3,146,015	\$12,101,875	\$15,247,889
Accommodations and food services	\$0	\$7,185,242	\$37,146,865	\$44,332,107
Other services	\$0	\$38,603,388	\$32,271,567	\$70,874,955
Government & no-NAICS	\$0	\$4,684,451	\$9,481,557	\$14,166,008
Total	\$1,259,390,373	\$635,258,237	\$736,014,955	\$2,630,663,564

Sources: Stanley R. Hoffman Associates, Inc.
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