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## Appendix C

### Tempe Streetcar, Environmental Assessment Economic Impacts Evaluation



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# MEMO

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**To:** Jerri Horst  
**From:** Cavan Noone  
**Date:** May 27, 2015  
**Re:** Tempe Streetcar, Environmental Assessment  
Economic Impacts Evaluation

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Over the last several years, the City of Tempe has experienced dramatic urban growth, fostered in part by investments in public transportation infrastructure. In addition to the creation of new mixed-use developments and high-rise office commercial and residential space, the intensification of Downtown Tempe, supported by major employers including Arizona State University (ASU), has attracted thousands of new residents to the city, catalyzed the creation of round-the-clock cultural, entertainment, sporting activities, and commercial services, leading to a greater variety of retail and dining options, as well as organized community events. With over five million visitors annually, more than 30,000 residents, and nearly 30,000 employees, the Central Business District of Tempe is a premier activity center destination in the Valley. Downtown Tempe is the home of several national or regional corporate headquarters including Limelight Productions, and Chase Bank which serve as large employers. As the center of commerce in the City, downtown Tempe has an office and commercial property vacancy rate of approximately 11 percent, the lowest reported vacancy rate within the greater Phoenix region, 1.2 percent below the same quarter in 2013, and 7 percentage points below the current Phoenix regional average office and commercial property vacancy rate. Projections continue to suggest that this vacancy rate will continue to fall in the coming quarters.

In the case of the Build Alternative, current conditions, trends, policies and planned development underpin a positive future for substantial transit-supportive development throughout the project's 3.0 mile corridor. With a high volume of regular pedestrian traffic and linkages to regional transit networks in Downtown Tempe, the Build Alternative would capitalize on the rapid urban development currently occurring, foster future growth and urban intensification, and greatly improve urban circulation throughout Downtown Tempe. As such, the Build Alternative is anticipated to have positive economic affects for both the City of Tempe and the region.

This memorandum focuses on the potential economic effects to the local economy resulting from implementation of the Build Alternative. The project is anticipated to have direct, indirect, and induced economic benefits related to construction and long-term operational expenditures. Furthermore, the project is anticipated to have a positive

influence on property values, tax revenues, and employment through the development of new commercial, retail, and residential space, and the re-use of existing facilities. These effects would be realized to varying degrees throughout the region in terms of increased economic output, earnings, and employment.

### **Effects on Property Values**

Previous studies around the country have illustrated the positive economic effects fixed-guideway transit facilities can have on surrounding property values. Empirical research shows that transit-oriented development yields social and economic benefits for communities. These community development benefits are typically reflected through the appreciation of property values for both commercial and residential sectors, thereby resulting in increased tax revenues.

A study conducted in Dallas between 1997 and 2001 showed a 32.1 percent increase in the median value of residential properties near Light Rail Transit (LRT) stations, as compared to a 19.5 percent increase in properties not near LRT stations. Furthermore, the study showed office building values near LRT stations increased 24.7 percent as compared to only 11.5 percent for office buildings not near LRT stations (University of North Texas, 2002). Similarly, a property value study in Santa Clara County (San Jose, California, and environs) found that the benefits of light rail accessibility were capitalized in commercial land values for properties within a quarter-mile distance of an LRT station. The statistical results found a \$4 per square foot benefit for LRT station proximity (University of California, 2001).

Despite the relatively short history of modern streetcar systems in the United States, empirical data suggest that streetcars have successfully stimulated transit-oriented development, leading to increased property values and revitalizing urban neighborhoods. Like LRT systems, streetcars have had a measurable impact on property values due to their permanence, connectivity, and marketability. In the case of Portland, Oregon, the country's pre-eminent modern streetcar system, property values have increased dramatically in previously depressed urban areas as properties along the streetcar line become more desirable with the presence of a fixed-rail facility and stops. According to the report "Streetcar-Development Linkage: The Portland Streetcar Loop" prepared for the City of Portland's Office of Transportation in 2008, in downtown Portland, more than half of all new development during the previous decade occurred within one block of the Portland Streetcar. Previously, the same one block area surrounding the future streetcar alignment accounted for less than 20% of total development. Development densities along the streetcar line have also been denser than those not on the line. Within one block of the Portland Streetcar, nearly 90% of allowable floor area-ratio (FAR) has been utilized; by comparison, an average of under 30% FAR was utilized for the same one block geographic area prior to the streetcar's implementation.

Based on the development trends witnessed along Valley Metro's existing LRT line, it is anticipated that the Build Alternative would attract new, transit supportive development within the project area. As of January 2014, approximately \$7.4 billion in new development has been completed or is under construction along the LRT alignment (within ½ mile of a station) which includes about \$1.0 billion in projects which have been proposed or are in the planning stages. Approximately \$1.9 billion of this development has occurred along Tempe's portion of the LRT line. The City's experience with light rail has proven that it can encourage development growth in areas better served by transit, driven by complimentary land use and tourism policies.

### **Effects on New Development Locally**

The Build Alternative is anticipated to have positive effects on both commercial and residential development located near streetcar stops. It is anticipated that new development in the study area would capture an increasing share of residential and employment growth as densities increase. The project is an integral part of approved plans by the City of Tempe, and is identified in regional plans including the Maricopa Association of Government's Regional Transportation Plan (RTP), as a fixed-guideway corridor for implementation as part of the region's future network of high-capacity transit corridors.

While the region's experience with fixed-rail transit projects is limited to the existing Valley Metro LRT line, the development experienced along the Tempe and Mesa light rail corridors can serve as an indicator of how future development may proceed within the Tempe Streetcar corridor. Approximately 4,000 residential units have been built or are under construction along the Tempe and Mesa portions of the line, with an additional 4,000 units proposed. This concentration of residential development is indicative of the suitability and demand for denser housing in the area over the past few years. The growth and development trends experienced in Downtown Tempe are expected to continue as evidenced by population and employment projections for 2035. While current population and employment within a half-mile of the project corridor is 30,855 and 29,501 respectively, population is projected to grow by 79 percent to 55,267 and employment is projected to grow by 73 percent to 51,135 by 2035.

Along the project corridor, the anticipated development numbers are equally impressive. Collectively, development anticipated within a half-mile of the Build Alternative by the opening year (2018) includes approximately 100,000 SF of single family residential, 550,000 SF of hotel, 2,287,000 SF of multi-family residential, and 5,619,000 SF of office space. One third of this office space has already been completed, as have the 22-story and 30-story residential towers of the West Six development. Among the development projects known, almost 60 percent are identified as being mixed-use, thereby incorporating housing and commercial uses (office or retail space) along the project corridor.

State Farm Insurance is the anchor tenant of the Marina Heights project currently under construction, and will establish their western regional operations center at this facility, bringing over 7,000 additional employees to downtown Tempe in 2015. Recently, the construction of two new high rise towers was announced at the intersection of Mill Avenue and Rio Salado Parkway that will include 280,000 square feet of Class A office space, retail and restaurant commercial space, and a 274-room downtown hotel.

The area of analysis where economic effects associated with the proposed project are most anticipated to occur was a half-mile radial area surrounding the proposed alignment and stop locations. Current research on existing light rail systems in other metro areas including Dallas, Denver, Portland, and Sacramento, shows that the measureable economic impacts occur around access points, or stations, specifically within ¼ to ½ mile. This is true for both changes in the value of existing development, as well as the occurrence of new transit-oriented development.

Table 1 identifies several transit supportive projects located along the Build Alternative alignment that are anticipated to be built by 2018.

**Table 1. Development Projects within One-half Mile of the Build Alternative<sup>1</sup>**

<b>Number of Projects</b>	17
<b>Residential Units</b>	2,218
<b>Area (SqFt)</b>	
<i>Residential</i>	1,307,966
<i>Commercial</i>	85,000
<i>Mixed-Use (Commercial/Residential)</i>	6,259,596
<b>Total</b>	7,652,562
<b>Value (2014 Dollars)</b>	\$1,199,600,000

**Sources:** City of Tempe, Rider Levett Bucknall Quarterly Cost Reports (2014, 1st Quarter)

<sup>1</sup>Under Construction or anticipated for completion by 2018

**Notes:** Values reported are based upon an average of full cash values for building types based on downtown Tempe location or Tempe Town Lake location and new construction costs as reported in the Rider Levett Bucknall Quarterly Cost Reports.

A combination of vacant, underdeveloped and potentially obsolete sites along the corridor provide ample opportunity for new development within the half-mile study area surrounding the Build Alternative that conforms with the City’s vision of a sustainable transit-supportive urban development pattern. Tempe has pursued an aggressive adaptive-reuse program, establishing a policy that is soon to be adopted by the City Council, for the reuse of structures particularly along Apache Boulevard and other transit corridors. Even with the density and intensity of existing development throughout much of the corridor, there are a number of parcels available for redevelopment along the proposed streetcar lines’ entire length that the City is actively interested in developing. Information from the 2014 Maricopa County Assessors database and the City of Tempe indicates that there are approximately 46 acres of vacant land within one-half mile of the proposed corridor, plus an additional 36 acres of surface parking lots

prime for redevelopment in the future. ASU has outlined an aggressive development program, particularly along Rio Salado Parkway, for the reuse of such parking facilities into developed land uses for research and teaching facilities. Within one-quarter mile of the proposed corridor there are an additional 136 acres of land that are “highly susceptible to redevelopment,” defined as being those parcels that contain low density commercial uses at less than 0.3 FAR. The development potential of these properties is underscored by the fact that approximately 80 percent have improvements that are over 30 years old and are potentially obsolete. For the purposes of this analysis, it is conservatively assumed that one-third of these properties will become available for development by 2035. This adds an additional 45 acres to the 82 vacant and surface parking acres for a total of 127 acres of land available for development by 2035.

### **Effects on Tax Revenues, Employment, and Overall Economic Growth**

Construction and the continuing operation of the streetcar system represent a substantial capital investment in the local economy that is anticipated to positively influence economic activity. Market reaction to the availability of improved transit service is also expected to influence economic activity. Project construction would expand local earnings for the duration of the construction cycle. Operation of the streetcar is anticipated to stimulate local economic activity through increased earnings and output, particularly around streetcar stops.

Construction of the Build Alternative would require the acquisition of a minor amount of private land and minor improvements for right-of-way and streetcar stops. The acquisition of land for right-of-way (e.g. utility right-of-way to traction power substation sites) would remove the affected portions of properties from the existing local tax base. The lost tax revenues associated with the small reduction in the tax base will be a recurring loss on an annual basis. However, offsetting these losses is an increase in other tax revenues. With relatively few property acquisitions along the alignment, the reduction in the county’s and city’s property tax bases will be minimal. No businesses will be displaced as a result of the project, and therefore, there will be no losses in sales tax revenue resulting from the project. The creation of new jobs and earnings associated with the recurring operations and maintenance spending will foster greater retail spending. The additional revenues from this spending are recurring gains. Construction of the proposed project is also expected to have positive effects on the value of residential and commercial properties within walking distance to the stops. The increase in property values translates into greater tax revenues and is expected to accrue to the local economy. Given the anticipated redevelopment trends in the study area, assumed based on observed local and national development trends as discussed previously, the long-term effect on property and sales taxes is likely to be positive due to gains from new businesses opening or businesses relocating near stop locations and potential increases in sales tax revenues for current area businesses.

Focused development in areas with existing infrastructure accrues benefits to the taxing jurisdiction. National experience with fixed-guideway rail-transit systems (including LRT and streetcars) has demonstrated that investments in transit infrastructure have had positive effects on residential and commercial development near stops. National studies have shown that business output and personal income is positively affected by transit investment, and grows rapidly over time. These transit investment impacts create savings to business operations and increase the overall efficiency of the economy, positively affecting business sales and household incomes.

The Build Alternative is anticipated to provide some long-term employment benefits by creating new and sustained employment opportunities. Additional jobs will be needed to operate and maintain the streetcar system, and should the system expand to serve other areas of the city and region, additional employment could follow. The new jobs required to operate and maintain the Build Alternative would be a long-term benefit, unlike the one-time capital construction spending. Long-term employment opportunities are likely to be only partially driven by operations and maintenance of the system; long-term employment is more likely due to indirect employment opportunities in retail, service, and municipal services sectors that would result from the anticipated growth and increased densities within one-half mile of the streetcar stops. Together, the short- and long-term jobs represent the direct effects of investment in the Tempe Streetcar study area. The earnings of these new construction and transit workers would translate into a proportional increase in consumer demand as these workers purchase goods and services in the region. A further increase of new employment across a wide variety of industrial sectors and occupational classifications is expected as employers hire to meet this increase in local consumer demand. This type of hiring represents the project's indirect impact.

The economic impact of expenditures for the streetcar varies substantially by activity and depends on the amount of goods and services procured locally. Several construction goods and services (labor, tools, and materials such as concrete) will be purchased in the local economy, as will professional services (e.g., engineering, design, and other agency costs). Goods and services procured locally have a direct impact on the local economy. Conversely, some materials and services will be procured from outside the city and county. Steel for rails will be procured from outside sources, and the purchase and manufacturing of vehicles will not occur locally. Transit vehicles are not manufactured within the City of Tempe or Maricopa County, and as no local labor would be used to produce the vehicles, no local impact generated by their purchase is realized by the local economy. Some assembly would be required upon delivery of the vehicles, and it is possible that a component of the vehicle could be made by a local supplier; however, these possibilities represent a negligible share of the vehicles' total cost and are excluded from this analysis. This analysis assumed that funding for operations and maintenance would be procured primarily from local funds and project-generated funds.

Potential joint development opportunities would provide benefits to transit users and transit agencies or local jurisdictions. The transit user would be benefited by additional conveniences tied to the streetcar stop or adjacent land and by improved access to surrounding land uses. The transit agency or unit of government would control joint uses on land adjacent to the streetcar stop. Joint uses potentially benefit the transit agency through increased funds and ridership resulting from the increased convenience for patrons.

Transit facilities and stops that provide a comfortable, accessible, efficient, and safe customer experience have proven successful toward attracting riders, and many communities seek to incorporate transit facilities as part of future development plans. Physical and recognizable streetcar stops provide a focal gathering point, and real estate near public transportation can therefore become more attractive to the development community, help spur growth and revitalization. Closely related to neighborhood revitalization is the ability of transit-oriented development to attract new land investments and businesses at streetcar stop locations. In turn, new or relocating businesses can help stimulate local job growth. New employment has a multiplier effect as employees purchase goods and services from neighboring businesses, thereby helping to spin off other local jobs. Where a sustained transit investment is provided, observations indicate that local economies generally benefit according to the following trends:

- A sustained investment in transit has the potential to generate an increase of \$2 million in business output and \$0.8 million in personal income for every \$10 million in the short run (during year one);
- In the long run (during year 20), these benefits increase to \$31 million and \$18 million respectively, for business output and personal income; and
- It is also estimated that every \$10 million in capital investment in public transportation yields \$30 million in increased business sales, and that every \$10 million in operating investment in public transportation yields \$32 million in increased business sales (Cambridge Systematics Inc. 1999).

Additionally, recent FTA research indicates that households located in transit-oriented communities (within a half-mile to a mile of a fixed guide-way LRT station) save an average of approximately \$250 per month or \$3,000 per year per household in auto-related costs as compared to households in auto-oriented areas. These savings are associated chiefly with the ability to walk to a wider range of destinations and, to a lesser extent, to transit access itself. Benefits stemming from transit investments are typically categorized into user and non-user benefits. User benefits typically refer to benefits accrued to system users through the reduction of travel time and travel costs. In addition to user benefits, the prevailing evaluation framework also recognizes non-user benefits – benefits that accrue to non-riders, such as environmental benefits and employment impacts, among others. The non-user benefit category is reflective of the belief that transit improvements generate external economies – public benefit accruing broadly in addition to the benefit accruing to the direct users of the investment.

Economic development benefits can accrue to local resident and businesses (and other landowners), but may also accrue to the greater metropolitan area through increasing tax revenues, improved land use, and increasing economic welfare.

The enhanced access and mobility that streetcar offers, coupled with potential investment in pedestrian-oriented development and implementation of transit-oriented development policies measures already adopted by the City of Tempe are likely to generate additional jobs within the study area. This would serve to not only create new businesses but could boost the economic activity of existing businesses in the vicinity of the alignment as employees and visitors purchase goods and services. Thus, operation of the streetcar could result in indirect spin-off economic growth.