1.0 INTRODUCTION

The purpose of this memo is to evaluate the potential impacts on low-income and minority populations of the Build Alternative (4-Lane, 2-Lane, and 2-Lane with Roundabout Option) for design on Main Street in Mesa. Refer to Chapter 2 of the Gilbert Road Extension EA for a full description of the proposed project.

2.0 REGULATORY SETTING

“Title VI, of the Civil Rights Act of 1964” and related statutes assure that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of Race, Color, National Origin, Age, Sex, and Disability. Executive Order (EO) 12898, Federal Actions to Address Environmental Justice (EJ) in Minority Populations and Low-Income Populations, requires that federal agencies consider and address disproportionately high and adverse environmental effects of proposed federal projects on the health and environment of minority and low-income populations to the greatest extent practicable by law. Following the direction of EO 12898 Federal agencies developed their own guidelines for implementing EJ. In May 2012, the United States Department of Transportation (USDOT) issued Order 5610.2(a) which defines the fundamental principles of EJ. In August 2012, the Federal Transit Administration (FTA) issued Circular 4703.1, Environmental Justice Policy Guidance for Federal Transit Administration Recipients. The guiding EJ principles followed by USDOT and FTA are summarized as follows:

- Avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority and low-income populations;
- Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process; and
- Prevent the denial of, reduction in or significant delay in the receipt of benefits by minority and low-income populations.

USDOT Order 5610.2(a) requires the following:

- Identifying and evaluating environmental, public health, and interrelated social and economic effects of USDOT programs, policies, and activities,
• Proposing measures to avoid, minimize and/or mitigate disproportionately high and adverse environmental and public health effects and interrelated social and economic effects, and providing offsetting benefits and opportunities to enhance communities, neighborhoods, and individuals affected by USDOT programs, policies, and activities, where permitted by law and consistent with EO 12898,

• Considering alternatives to proposed programs, policies, and activities, where such alternatives would result in avoiding and/or minimizing disproportionately high and adverse human health or environmental impacts, consistent with EO 12898, and

• Eliciting public involvement opportunities and considering the results thereof, including soliciting input from affected minority and low-income populations in considering alternatives.

3.0 EVALUATION METHODOLOGY

The FTA Circular 4703.1 guidance defines a ‘minority person’ as any individual who is a member of any of the following populations groups: American Indian, Alaska Native, Asian, Pacific Islander, Black, or Hispanic. Low-income is defined as a person whose household income is at or below 150% of the Department of Health and Human Services poverty level. The methodology for analyzing the effects of the proposed project on EJ populations (any identifiable population group meeting the requirements for minority or low-income) consists of the following steps:

• Define the unit of geographic analysis impacted by the proposed project. The boundaries of the geographic unit should be large enough to include the area likely to experience adverse effects, but not so large as to artificially dilute the minority and/or low-income population;

• Gather the relevant demographic data from a reliable source such as U.S. Census data or American Community Survey (ACS) data at the census tract (CT) or block group (BG) level;

• Analyze the severity of impacts associated with the project alternatives;

• Identify the mitigation to avoid or minimize the impacts;

• Identify the project benefits; and

• Determine disproportionately high adverse impacts (if any).

Information to evaluate minority populations within the project corridor is based on the 2010 U.S. Decennial Census data for minority populations. The low income populations are based on the 2011 ACS. Low income is defined as the population with incomes at or below 150 percent of the Department of Health and Human Services poverty level.

Maricopa County has been selected as the unit of geographic analysis for comparison to the study area level per FTA Circular 4703.1. The study area level identified for this analysis is approximately ½ mile around the project alignment and other facilities associated with the Gilbert Road Extension project and coincide with the boundaries of the census BG. Fourteen BGs make up the study area. Four BGs are immediately west of the western end of the light rail transit (LRT) alignment and two BGs are immediately
east of the eastern end of the alignment and are within the one half mile of the project alignment (See Figures 1 and 2).

**Determination of Disproportionately High and Adverse Environmental Effects**

USDOT Order 5610.2(a) defines disproportionately high and adverse effects on minority and low-income populations as an adverse effect that:

- is predominantly borne by a minority population and/or a low-income population, or
- will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

The identification and avoidance of whether a project will have disproportionately high and adverse environmental effects on minority and low-income populations depends on a number of factors including: 1) identifying and evaluating environmental, public health, and interrelated social and economic effects, 2) proposing measures to avoid, minimize and/or mitigate the effects and provide offsetting benefits and opportunities to enhance communities, neighborhoods, and individuals impacted, 3) the alternatives considered, and 4) the public involvement process itself. Potential adverse impacts, as identified in this EA, were examined in these critical areas: 1) displacements and relocations; 2) transportation; 3) noise and vibration; 4) community facilities/parklands; and 5) construction impacts.

The evaluation summarizes the beneficial and adverse impacts for the Build Alternatives, including efforts to solicit input from the public in considering the alternatives. In making determinations of whether a project will have "disproportionately high and adverse environmental effects" on minority and low-income populations, mitigation and enhancement measures that will be incorporated into the project and all off-setting benefits to the affected minority and low-income populations may be taken into account, as well as design, comparative impacts, and the relevant number of similar existing system elements in non-minority and non-low-income areas. If adverse impacts of the project fall disproportionately on minority and low-income populations, additional mitigation measures beyond those already identified may be required. If strategies cannot be taken to adequately mitigate these impacts, then selection of an alternative with less adverse impacts may need to be considered.

**4.0 EVALUATION RESULTS**

**4.1 Do Any Areas Along The Proposed Project Include Minorities Or Low-Income Populations?**

Yes. There are minority and low-income populations throughout the study area. All neighborhoods (BGs) surrounding the proposed LRT route on Main Street are comprised of minority populations greater than 36% of the population within each BG. Overall, 13 of the 14 BGs within ½-mile of the LRT alignment have concentrations of minority populations greater than the 41% for Maricopa County (Figure 1 and Table 1).

Although all of the BGs within ½-mile of the LRT alignment contain low-income populations, eleven (11) are comprised of low-income populations in concentrations
greater than that of Maricopa County (25%). The percent of the total population with incomes at or below 150% of the Department of Health and Human Services poverty level within ½-mile of the LRT alignment ranges between 16 and 67 percent (Figure 2 and Table 1).

<table>
<thead>
<tr>
<th>TABLE 1: MINORITY AND LOW-INCOME POPULATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minority Population</td>
</tr>
<tr>
<td>Total Population</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>Maricopa County</td>
</tr>
<tr>
<td>Study Area CT and BGS</td>
</tr>
<tr>
<td>CT – 4214</td>
</tr>
<tr>
<td>BG - 1</td>
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<tr>
<td>BG - 2</td>
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<tr>
<td>CT – 4215.01</td>
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<td>BG – 2</td>
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<tr>
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</tr>
<tr>
<td>CT – 4217.02</td>
</tr>
<tr>
<td>BG – 1</td>
</tr>
</tbody>
</table>

1Minority population is derived from the 2010 U.S. Census Data.
2Low-Income population is derived from the 2011 American Community Survey Data.
3The U.S. Bureau of Census defines this term as the “population for whom poverty status is determined”.
4Low-Income for Census BG uses 2011 ACS data and is defined as the population with incomes at or below 150 percent of the Department of Health and Human Services poverty level.

4.2 Will Minority and/or Low-Income Populations Experience Adverse Impacts And Disproportionately High And Adverse Impacts Compared To Others?

As earlier stated, the evaluation of adverse impacts considered the following: 1) displacements and relocations; 2) transportation; 3) noise and vibration; 4) community facilities/parklands; and 5) construction impacts.
4.2.1 Business and Residential Relocations

**No-Build Alternative**

The No-Build Alternative would require no additional property acquisition to accommodate the planned roadway and transit improvements.

**Build Alternatives**

Table 2 shows the number of impacted parcels and total ROW anticipated for each build alternative.

<table>
<thead>
<tr>
<th>Build Alternative</th>
<th>Number of Impacted Parcels</th>
<th>Total ROW (Square Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Lane</td>
<td>66</td>
<td>85,950</td>
</tr>
<tr>
<td>2-Lane</td>
<td>12</td>
<td>25,590</td>
</tr>
<tr>
<td>2-Lane Roundabouts</td>
<td>27</td>
<td>29,065</td>
</tr>
<tr>
<td>Hybrid</td>
<td>37</td>
<td>65,500</td>
</tr>
</tbody>
</table>

1 Property acquisitions do not include ROW requirements for TPSS or a park-and-ride facility. See Section 3.1.3 for park-and-ride requirements. Right-of-way requirements for TPSS sites will be determined once the site locations are determined. Source: Valley Metro, 2012.

**Build Alternative (4-Lane)**

The Build Alternative (4-Lane) would have the highest right-of-way (ROW) requirements of the alternatives being considered. Conceptual design plans for the Build Alternative (4-Lane) suggest the need to acquire a small portion of as many as 66 parcels (commercial) on both the north and south sides of Main Street, amassing a total land area of approximately 86,000 square feet. With the LRT trackway planned to run down the center of the street, property would need to be acquired in order to widen Main Street to include two vehicular travel lanes, and relocate the pedestrian sidewalk along both sides of the street.

The conceptual design plans also anticipate that at least three buildings, all used for commercial purposes, would be directly impacted by the acquisition of property for ROW purposes. A fourth structure, an outdoor awning for a restaurant, which is used to shade picnic benches, would also need to be removed, but it is possible that this structure could be relocated to another part of the current property. The three structures would need to be permanently removed (requiring full property acquisition) or physically altered (requiring partial property acquisition) in order to implement this alternative. The disposition of these properties would be determined as design advances and property negotiations with the affected property owners are undertaken. All of the other parcels required to implement this alternative would be partial acquisitions of land in the form of linear strips paralleling the roadway. Much of the land area that would be purchased is currently used for surface parking for adjacent businesses. This Build Alternative will also require acquisition of property mid-way along the route to accommodate a traction power substation (TPSS). The parcel at 1240 E. Main Street, which is now vacant and zoned for commercial use, has been preliminarily identified as a potential location for TPSS necessitating partial acquisition to accommodate the facility. A TPSS typically requires an area measuring approximately 30 feet by 60 feet. Note that these
acquisitions do not include those required for the Park-and-Ride (PNR). Right-of-way requirements for the PNR are discussed below.

**Build Alternative (2-Lane)**

The Build Alternative (2-Lane) is located almost entirely within existing public street ROW, but would require partial acquisition of land from eleven parcels on both the north and south side of Main Street near the intersection of Gilbert Road to accommodate the LRT trackway, station platform, vehicle through lanes, and a left turn lanes for vehicles turning from eastbound Main Street to northbound Gilbert Road. A twelfth parcel is identified in Table 3-3 as a parcel necessary for a future TPSS facility, however exact ROW needs have yet to be determined. Conceptual design plans also show a short linear strip of land on the north side of the intersection would be necessary to expand the roadway width and accommodate the other features just described. The land area necessary for this ROW expansion measures slightly less than 25,590 square feet. At this stage of conceptual alignment design, this alternative does not anticipate any displacements or relocations of businesses or residences. Note that this does not include acquisitions required for the PNR. Like the Build Alternative (4-Lane), this alternative also requires partial acquisition of one commercial parcel mid-way along the route to accommodate a TPSS.

**Build Alternative (2-Lane Roundabout Option)**

The 2-Lane Roundabout design option would require the same partial acquisitions as the Build Alternative (2-Lane), plus the partial acquisition of about 3,500 additional square feet of land to construct and operate roundabouts at five intersections of neighborhood collector streets with Main Street. The partial acquisitions would mostly be from commercial properties as well as a small portion from a trailer park.

**Build Alternative (Hybrid)**

The Build Alternative (Hybrid) would require partial acquisition of 37 parcels from commercial properties and one trailer park totaling an estimated 65,500 square feet. This alternative requires more right-of-way than the Build Alternative (2-Lane) or it's Roundabouts Option; however, the right-of-way needs are less than the Build Alternative (4-Lane). Like the Build Alternative (4-Lane), the Build Alternative (Hybrid) would directly impact three commercial buildings resulting in either permanent removal (involving full property acquisition and relocation) or physical alteration which would involve partial property acquisition and relocation. The disposition of these three buildings would be determined in the latter design phases during property owner negotiations.

**Park-and-Ride**

In addition to the ROW needs for the LRT trackway, stations, and auxiliary facilities, the project intends to construct a PNR facility at the proposed Gilbert Road Station. Currently, two site options are being considered, a North Option and a South Option. The North Option is located on the northwest quadrant of the Main Street and Gilbert Road intersection and is comprised of six parcels, amassing a total land area of approximately 10.2 acres, or about 481,100 square feet. Much of the land area is
currently occupied by an existing surface parking lot serving a mixture of retail commercial businesses, restaurants, an insurance office and dental clinic. Current plans for the project anticipate the full acquisition of all six parcels necessitating relocation of the six businesses currently operating there. A former restaurant, now closed, is also located within this site.

The South Option is located on the southwest quadrant of Main Street and Gilbert Road and would require full acquisition of three parcels with a total land area of approximately 6.9 acres, or about 300,150 square feet. Three used car dealerships and a combined used car/recreational vehicle dealership currently occupy the three parcels and all four businesses would need to be relocated to accommodate a PNR facility.

**Mitigation**

Because federal funds would be used for project construction, the project is subject to provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended by the Uniform Relocation Act Amendments of 1987. Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 mandates that relocation services and payments be made available to eligible residents and businesses. The Uniform Relocation Act and its amendments provide protection and assistance to residents and businesses displaced by the acquisition or demolition of real property during the construction of federally funded projects.

An offer of just compensation, which would not be less than the approved appraisal, would be made to each property owner. Equivalent, safe, and sanitary replacement housing, which is within the displaced person’s financial means, would be made available before the person is displaced. Expenses for moving personal property from acquired homes and businesses to the relocation site, escrow fees, surveys, appraisals, and other closing costs on a new home would also be eligible for payment within certain limits.

A displaced person cannot be required to move from his or her dwelling unless and until at least one comparable, safe, and sanitary replacement dwelling within the displaced person’s financial means is made available to that person. When such a dwelling cannot be provided, the law provides for Housing of Last Resort (Last Resort Housing). Last resort housing is a provision to make replacement housing available under certain circumstances, e.g., when there is a lack of certain types of dwelling or the displaced person cannot readily be relocated using the regular program relocation benefits.

Note that the Gilbert Road Extension corridor is highly urbanized and located within the Phoenix metropolitan area which has a large population with a rich variety of business and residential opportunities. Adequate reasonable, safe, and sanitary development sites are anticipated to be available to accommodate businesses and residents that may be displaced as a result of the project. If, after ROW negotiations, any businesses would require full acquisition and relocation, vacant property is available within the study area to relocate them so they would not need to develop new clientele in a new service area. In general, the build lines of existing structures are setback at significant distances from the street such that most ROW acquisitions would not directly affect these structures. Implementation of the project is also anticipated to positively affect the development
potential of properties along the proposed route, particularly near proposed station locations.

4.2.2 Transportation

No-Build Alternative

The No-Build Alternative would result in acceptable Levels of Service (LOS) at all intersections studied along Main Street with the exception of Mesa Drive/Main Street. The intersection of Mesa Drive/Main Street would operate at an overall intersection LOS F during the PM peak hour. The No-Build Alternative would have no effect to on-street parking; sidewalks or the pedestrian environment; existing or planned bicycle facilities in the corridor; freight movements; or emergency services vehicle access. However, it would not provide any transportation improvements beyond those currently programmed in the applicable transportation improvement plans or programs.

Build Alternative (4-Lane)

Based on the traffic analysis, the Build Alternative (4-Lane) will operate at acceptable LOS at all locations along the alignment. Therefore, the project would have no adverse effects on traffic.

This alternative would have the most effect to on-street parking because all 212 existing parking spaces would be removed. Occupancy of on-street parking and parking maneuvers along Main Street east of Downtown Mesa is likely to be less than in Downtown Mesa because businesses along the Gilbert Road Extension corridor tend to have proprietary off-street parking. On-street parking in the Main Street study area primarily serves as a convenience to business patrons. Therefore, the project would have no adverse effect on parking.

The Build Alternative (4-Lane) would have no adverse effect on pedestrian facilities or bike lanes. This alternative will retain most of the existing bicycle lanes, and the design’s proposed elimination of numerous uncontrolled left turn opportunities would reduce the potential hazards faced by bicyclists on Main Street. Sidewalks would be retained along both sides of Main Street. The existing curb would be relocated in some areas, and in these areas the sidewalk would be reconstructed behind the curb. Sidewalk reconstruction would conform to current ADA standards.

Build Alternative (2-Lane)

Intersections along Main Street would all operate at an acceptable LOS during the PM peak periods, except for the intersection of Stapley Drive/Main Street. This intersection would operate at an overall average LOS F during the PM peak period. Therefore, the project would have an adverse effect on traffic at the Stapley/Main Street intersection. Mitigation identified below would minimize the adverse effects on traffic at this intersection.

The Build Alternative (2-Lane) would require removal of approximately 120 spaces leaving about 84 on-street parking spaces along Main Street. As previously mentioned,
there would be no adverse effect because ample off-street parking exists at most businesses along the route.

Similar to the Build Alternative (4-Lane), the Build Alternative (2-Lane) will retain most of the existing bicycle lanes, and the design’s proposed elimination of numerous uncontrolled left turn opportunities would reduce the potential hazards faced by bicyclists on Main Street. The pedestrian facilities for the Build Alternative (2-Lane) will be the same as those planned for the 4-Lane design, so there would be no adverse effects.

**Build Alternative (2-Lane Roundabout Option)**

The intersection of Stapley Drive/Main Street would operate at the same LOS F as the 2-Lane design without the roundabouts. Although all the other intersections would operate at an acceptable LOS, the five roundabout intersections would experience more delay in the PM peak than those same intersections without the roundabouts. This is due to slower design/posted speeds of 20 miles per hour through the roundabout and the additional delay incurred due to crossing gates coming down when trains pass through the roundabouts restricting automobile traffic moving in the north-south direction and also restricting east-west bound traffic from making left turns north or south across the tracks. Therefore, the project would have an adverse effect to traffic at the Stapley/Main Street intersection. Mitigation identified below would reduce the adverse effects on traffic at this intersection.

This design option would remove the least amount of on-street parking (63 spaces) leaving 141 parking spaces along Main Street. As with the Build Alternative (2-Lane), the roundabout option will have no adverse effect on on-street parking.

Similar to the other Build Alternatives the roundabout option will retain most of the existing bicycle lanes. At the roundabouts bicyclists would merge into the stream of motorized traffic or move to and from the sidewalk with pedestrians. The pedestrian facilities for the roundabout option would be designed differently than typical signalized intersections. The roundabouts’ crosswalks would be set back away from the intersection location, and all pedestrian crossings across Main Street would be signalized to ensure protected crossings in coordination with LRT operations. Therefore, the project would not result in adverse effects.

**Build Alternative (Hybrid)**

The Build Alternative (Hybrid) would operate most like the Build Alternative (4-Lane), even though it has some of the characteristics of the Build Alternative (2-Lane) and Build Alternative (2-Lane Roundabouts). The Build Alternative (4-Lane) was found to operate at an acceptable LOS in the horizon year of 2031 at all intersections studied along Main Street. The Build Alternative (2-Lane), as well as its Roundabouts Option, would operate at an acceptable LOS at all intersections with the exception of Main Street/Stapley Drive. That intersection would operate at LOS F during peak periods. Because the Build Alternative (Hybrid) would be widened to four lanes in the vicinity of Stapley Drive, this alternative is expected to operate at an acceptable LOS at all intersections similar to the Build Alternative (4-Lane).
This alternative will remove approximately 120 on-street parking spaces leaving 92 parking spaces along Main Street. As with the other alternatives, the hybrid alternative will have no adverse effect on on-street parking.

Similar to the other Build Alternatives the hybrid alternative will retain most of the existing bicycle lanes. However, at the roundabouts the bicycle lanes should be dropped on the approach to the roundabout intersections to minimize potential conflicts between bicyclists and vehicles turning right to exit the roundabout. The pedestrian facilities for the roundabout option would be designed differently than typical signalized intersections. The roundabouts’ crosswalks would be set back away from the intersection location, and all pedestrian crossings across Main Street would be signalized to ensure protected crossings in coordination with LRT operations. Therefore, the project would not result in adverse effects.

**Transit Service**

No region-wide transit service or local transit service will be reduced as a result of the proposed LRT project, regardless of which Build Alternative is selected for implementation. However, there will be changes in local bus service to provide optimal service and connectivity between local bus and the LRT project. In addition, the existing Main Street LINK service will end its service at Gilbert Road instead of Centennial Way. It is anticipated that access and mobility will be increased for transit-dependent persons and others both within the Gilbert Road study area as well as throughout the region’s transit service area. Note also that the Maricopa Association of Governments (MAG) Regional Transportation Plan (RTP), 2010 Update, which includes the Gilbert Road Extension project, indicates that minority and low-income communities (97%) are served by the transit improvements in the RTP compared to only 88% of non-low income communities. The fare structure for the new transit project would be the same as the existing fares so there would be no impact on local residents with regard to increasing fares for this improved high capacity transit service. In addition, there is no linkage between funding for the Gilbert Road project and impacts to service/fare increases that may occur in the future. Local funding for the Gilbert Road Extension project is derived from the Surface Transportation Funds that have been reallocated to this project. These funds do not affect other transit services and funds in the region.

**Mitigation**

The following potential strategies would minimize the adverse effect that the 2-Lane Build Alternatives, including the roundabout option, are expected to have on traffic at the Main Street and Stapley Drive intersection:

- Allow this intersection to go unmitigated. Drivers may divert to other less congested intersections so they are not “stuck in traffic”. In this area, there are other corridors that have the capacity to handle additional traffic volumes. This has been observed to occur at some locations along the existing 20-mile LRT line where there are nearby parallel facilities with excess capacity.
• Add 100-foot right turn lanes along Main Street at Stapley Drive in both the eastbound and westbound directions. This would improve the LOS to an acceptable LOS E.

• Continue to evaluate this intersection in future design phases, including collecting new traffic counts at Stapley Drive. The traffic counts used as a basis for the traffic evaluation at this intersection were conducted when construction was occurring along nearby roadways which may have influenced the turning movement counts at this location.

• Use more sophisticated software in future design phases, such as VISSIM, and its more detailed analysis capabilities to re-analyze the intersection and corridor since that software better addresses LRT operations along with auto operations and may achieve more accurate results.

4.2.3 Noise and Vibration

The noise and vibration impact analyses for this project are based on the FTA Guidance Manual. Potential noise impacts were assessed for the light rail operations and construction of the project. The key conclusions of the noise impact assessment are:

**No-Build Alternative**

The No-Build Alternative may result in increased traffic volumes in the study area as growth occurs as projected by 2031, but traffic volumes would need to more than double in order to result in any noise impacts. The traffic provided by the MAG Travel Demand Model indicates that there would not be a doubling of traffic volumes along the route; therefore, there would be no noise impacts. Light rail transit is the transportation mode that is considered in the evaluation of vibration levels since auto and bus traffic, as associated with the No-Build Alternative, are not typically considered to be substantial generators of vibration; therefore, there would no vibration impacts.

**Build Alternative (4-Lane)**

The project noise levels are predicted to exceed the FTA moderate impact thresholds at three motels (El Rancho Motel, Unnamed Motel, and Frontier Motel), Days Inn Hotel and two trailer parks (Suit You and Shady Grove). It includes 18 first floor rooms and 4 second floor rooms at the three motels and Days Inn Hotel, and 8 mobile homes at the two trailer parks.

Potential impacts from groundborne vibration were found at four receivers which include: an unnamed motel; Frontier Motel; Days Inn Hotel; and Suit You Trailer Park. The vibration impacts would potentially affect 14 first floor units and four second floor units at the two motels and one hotel. Four mobile homes at the Suit You Trailer Park also have the potential for groundborne vibration impact. The vibration impact at the Days Inn Hotel is due to the hotel rooms being within 100 feet of special trackwork, which is assumed to amplify the vibration. At the unnamed motel, Frontier Motel, and Suit You Trailer Park, vibration impacts are due to the receivers being within 50 feet of the near track.
Build Alternative (2-Lane)

The project noise levels are predicted to exceed the FTA moderate impact threshold at four mobile homes at the Shady Grove Trailer Park. Potential impacts from groundborne vibration are the same as those found for the 4-Lane Alternative.

Build Alternative (2-Lane Roundabout Option)

The noise impact of the 2-Lane Roundabouts Option is anticipated to be the same as that predicted for Build Alternative (2-lane).

The potential for vibration impacts are the same as the 2-Lane and 4-Lane Build Alternatives because the LRT track is in the same location relative to vibration-sensitive receptors for each alternative.

Build Alternative (Hybrid)

Based on a comparison of the traffic and LRT configurations and operational characteristics of the previous alternatives evaluated in Section 3.8.2 of the EA, the potential noise impacts of the Build Alternative (Hybrid) were estimated. The potential impacts of this alternative are:

- Like the Build Alternative (4-Lane), the hybrid alternative will result in a moderate impact per FTA criteria on the unnamed motel and Frontier Motel.
- Like the Build Alternative (2-Lane Roundabouts), the hybrid alternative will result in a moderate impact per FTA criteria on the Shady Grove Trailer Park. However, because the LRT trackway is shifted somewhat north (further away from the trailer park) for the Build Alternative (Hybrid), the projected LRT sound levels may actually be somewhat less than that projected for the Build Alternative (2-Lane Roundabouts).

Potential impacts from groundborne vibration are the same as those found for the 4-Lane, 2-lane, and 2-lane with Roundabout Alternatives.

Mitigation

Build Alternative (4-Lane):

This alternative would not result in a noise impact that FTA defines as severe. However, moderate impacts as defined by FTA are likely to occur at five locations. FTA requires consideration of measures to mitigate moderate noise impacts but indicates that other factors, as mentioned earlier, may also be considered to determine their feasibility for implementation. In addition, vibration impacts have the potential to occur at four locations. Mitigation identified below would minimize the adverse effects caused from noise and vibration.

- El Rancho and Unnamed Motels (Noise): The motels have limited outdoor land use, and easy access to Main Street is critical for the motel business. Mitigation measures such as sound walls are not feasible because to be effective they must be continuous with no breaks for driveways, etc., in the noise-affected area. This would
result in a sound wall blocking access to the motels. Therefore, no mitigation is recommended for the motels.

- Days Inn Hotel (Noise): The noise impact is within 0.1 dB of the moderate noise impact threshold. Installation of a special frog, as discussed for mitigation of vibration impacts, would eliminate the noise impact at this hotel.

- Suit You and Shady Grove Trailer Parks (Noise): The predicted moderate noise impacts would be eliminated by either relocating the mobile homes that are within 140 feet of the near track to a location a farther distance away, or moving the homes to another trailer park that is equivalent to the existing trailer park.

- Unnamed and Frontier Motels, Suit You Trailer Park (Vibration): Install a resilient layer under the embedded track slab such as Tire-Derived Aggregate or continuous elastomeric mats or install Qtrack. An alternative mitigation measure for the Suit You Trailer Park would be to relocate the mobile homes at least 60 feet from the near track.

- Days Inn Hotel (Vibration): The predicted groundborne vibration impact at the hotel is due to a crossover located close to the hotel. The impact would be eliminated through the use of a well-designed flange-bearing frog with longer ramps than normal or through the use of other low impact frog designs.

**Build Alternative (2-Lane) and (2-Lane Roundabout Option)**

This alternative, as well as its roundabouts design option, would not result in a noise impact that FTA defines as severe. However, a moderate impact as defined by FTA is likely to occur at a trailer park and the Frontier Motel. In addition, vibration impacts have the potential to occur at four locations (three motels/hotels and one trailer park).

- Shady Grove Trailer Park (**Noise**). Use the same noise mitigation measures listed for the Build Alternative (4-Lane).

- Frontier Motel (**Noise**). No mitigation is recommended for the same reasons listed for the Build Alternative (4-Lane).

- Unnamed and Frontier Motels, Days Inn Hotel, and Suit You Trailer Park (**Vibration**). Use the same vibration mitigation measures listed for the Build Alternative (4-Lane).

**Build Alternative (Hybrid)**

This alternative would not result in a noise impact that FTA defines as severe. However, like the Build Alternative (4-Lane), the hybrid alternative will result in a moderate impact per FTA criteria on the unnamed motel and Frontier Motel. Like the Build Alternative (2-Lane Roundabouts), the hybrid alternative will result in a moderate impact per FTA criteria on the Shady Grove Trailer Park. However, because the LRT trackway is shifted somewhat north (further away from the trailer park) for the Build Alternative (Hybrid), the projected LRT sound levels may actually be somewhat less than that projected for the Build Alternative (2-Lane Roundabouts). The same mitigation measures listed for the 4-Lane and 2-Lane Alternatives would apply.
Vibration impacts also occur with this alternative the same four locations identified above under the Build Alternative (4-Lane) and the same mitigation measures would apply.

### 4.2.4 Community Facilities/Parklands

The project would have no adverse impact on community facilities, including parklands. As discussed in Section 3.13 of the EA, the project would not result in long term community disruption. Potential impacts on the community during construction are discussed below.

### 4.2.5 Construction

The major impacts during construction would be in the areas of air quality, noise, and traffic. Specific impacts and standard construction practices are discussed in the separate technical reports prepared for the Gilbert Road Extension EA for each of these impact categories and are summarized in Chapter 3 of the EA. The adverse impacts would be temporary and last the period of construction for the entire length of the project. Although the proposed standard construction practices would lessen the severity of the impacts, some adverse impacts would still exist during the construction period.

### 4.3 PROJECT BENEFITS

Extension of the LRT system to Gilbert Road would provide residents of central and east Mesa (and residents of the East Valley) with a one-seat transit ride to employment centers and other popular regional destinations. Current analysis of regional travel demand patterns indicates that the majority of trips originating from central and east Mesa are destined for the regional employment centers of downtown Tempe, Arizona State University, Sky Harbor International Airport, and downtown Phoenix. Additionally, several other regional activity centers are clustered around the existing LRT starter line, including the Phoenix Convention Center, Phoenix Art Museum, Chase Field, and the US Airways Center.

The city’s new Central Main Street Plan provides policy guidance for future investments and the design of Main Street between Sycamore and Gilbert roads. East of Mesa Drive, Gilbert Road is the busiest north-south arterial road in the city. Coupled with the city’s form-based code ordinance, local land use and zoning policies have been adopted to encourage transit-supportive developments and facilities surrounding LRT. Significant opportunities for economic development are possible within the project study area. Introduction of LRT to Gilbert Road, in coordination with local land use planning, can support the community’s goals for promoting concentrated urban development and revitalizing the east side of downtown Mesa.

### 4.4 MITIGATION

The mitigation and standard construction practices discussed in other sections of this technical memo will reduce the levels of potential adverse impacts to less than adverse.
4.5 PUBLIC ENGAGEMENT

The public involvement program has been designed and executed to reach the affected population, including the Environmental Justice populations in the area. Two public meetings were held to engage the community during the development of project alternatives and scoping for the environmental document. The two public meetings were held in September and October 2012 and were held within the study area at public venues accessible to minority and low-income members of the community. Public meetings included means to ensure access and understanding for non-English speakers with interpreters available and bilingual reading materials provided. Public notification of these meetings was widely publicized through:

- The Information Brochure;
- Individual outreach to key businesses, residents, government officials and other stakeholders;
- Group outreach to community groups, government agencies, chambers of commerce, churches, schools and neighborhood/homeowner’s groups;
- Media outreach through press releases in local media including Wrangler News, Arizona Republic, East Valley Tribune, and Spanish language publications LaVoz, Latino Perspectives, Monitor Hispano, Prensa Hispana; and
- City of Mesa and Valley Metro websites which post public meeting and project details.

Valley Metro also held neighborhood meetings in April and May 2012; information tables were setup to talk with the public at the local Food City store; special presentations were held at two local churches; several meetings with business owners along the project alignment occurred in October and November of 2012; and the entire study area was canvassed to hand out project material and to seek input on the proposed project. In addition, Valley Metro held meetings with various City of Mesa and MAG board and committee meetings and community stakeholder meetings that were open to the general public and accessible to minority and low-income members of the community (See Chapter 4 of this EA for additional information).

4.6 DISPROPORTIONATELY HIGH AND ADVERSE IMPACTS

Minority and low-income residents are present throughout the ½-mile area around the proposed project. As described in Section 4.1, the Gilbert Road Extension project occurs within an area comprised of minority populations in concentrations greater than 36%. The percent of the total population with incomes at or below 150% of the Department of Health and Human Services poverty level within ½-mile of the LRT alignment ranges between 16 and 67 percent.

The adverse effects caused by property acquisition for all Build Alternatives; impacts on traffic for the 2-Lane Alternative with or without roundabouts; and noise and vibration impacts as a result of all Build Alternatives, including the roundabout design option would be minimized through the mitigation measures identified above. Temporary adverse impacts caused by construction activities to residents and businesses along the light rail route would also be minimized through use of the standard construction practices identified in Table 3-23 of the EA and also through the programs listed below.
For the LRT Starter Line and Central Mesa LRT Extension Project, Valley Metro implemented programs to help minimize the impacts of construction including:

Business outreach: Valley Metro and its member cities, including Mesa, offered a variety of business outreach programs that included:

- Low interest loan programs in partnership with financial institutions.
- A-frame signs or banners to let customers know businesses are open.
- METRO Max discount card program. Businesses listings are free on the Valley Metro web site.
- Postcard marketing program for businesses to advertise to customers.
- Maps to inform customers of the best routes to reach businesses

Community Advisory Board (CAB) Program: Composed of citizens, property owners and business owners directly impacted by LRT construction. The group met monthly to evaluate construction contractors with regard to: 1) traffic management; 2) contractor response; 3) property restoration; and 4) public outreach.

Construction Outreach Support: During construction a Valley Metro public involvement coordinator was on-call 24 hours a day, seven days a week. The coordinator provided day-to-day contact with businesses and residents, answered construction questions, and helped to solve construction-related problems.

Valley Metro intends to continue similar programs for construction of the Gilbert Road Extension project.

As stated above the adverse effects on traffic, as well as adverse impacts due to property acquisition, and noise and vibration would be mitigated to minimize the adverse effects. As noted in Section 3.21 of the EA, the project is not anticipated to result in adverse cumulative impacts and may contribute to beneficial impacts in a cumulative sense. The benefits would apply equally to all populations in the vicinity of the light rail project.

The adverse impacts and temporary construction impacts from the proposed project would be equally shared (placement of track, LRT stations, right-of-way requirements, and construction activities) by all populations within the study area. The standard construction practices that would be applied to minimize impacts would also be applied throughout the project and not concentrated in any particular area. The adverse impacts from construction activities would be temporary and end when construction is complete and would be minimized through use of the standard construction practices identified in Table 3-23 of the EA and also through the programs listed above. Valley Metro will work with the contractor, residents and property and business owners most affected before construction begins to create a construction plan and schedule that best addresses concerns of nearby businesses and residents.

In view of the considerable project benefits and local support for implementing a high capacity transit alternative on Main Street in Gilbert, the temporary adverse impacts from construction on the low-income and minority populations would not be disproportionate to the improved consistency and reliability of transit service, increased
mobility, regional connectivity, and economic gains that the proposed project would offer.
Figure 2. STUDY AREA LOW-INCOME POPULATION PERCENTAGE COMPARISON

Legend:
- Central Mesa Extension
- Central Mesa Extension Station
- Park-and-Ride
- Percent Low Income%

*Low income is defined as the percent of the total population with incomes at or below 150% of the Department of Health and Human Services' poverty level.