# CENTRAL MESA
## LRT EXTENSION

## FINAL ENVIRONMENTAL ASSESSMENT

May 2011

METRO

This page intentionally left blank.

# CENTRAL MESA LRT EXTENSION
# FINAL ENVIRONMENTAL ASSESSMENT

Prepared in accordance with:

- National Environmental Policy Act of 1969 (42 U.S.C. 4332 et seq.), as amended
- Federal Transit Act (49 U.S.C. 5301 et seq.) as amended
- Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) (Public Law 104-59)

By the:
Federal Transit Administration, U.S. Department of Transportation
and
Valley Metro Rail, Inc. (METRO)

**Responsible Agencies**
**Lead Agencies:** Federal Transit Administration and Valley Metro Rail, Inc.

**For additional information concerning this document, contact:**
**Robert Forrest**
Environmental Planner III
METRO
101 N. 1st Avenue, Suite 1300
Phoenix, AZ 85003
(602) 322-4514

**Paul Page**
Federal Transit Administration, Region IX
201 Mission Street, Suite 1650
San Francisco, CA, 94105-1831
(415) 744-2734

**Abstract**
The proposed Central Mesa Light Rail Transit (LRT) Extension project would extend LRT facilities and service a distance of 3.1 miles from the current LRT Starter Line end-of-line station in west Mesa through the downtown and into Central Mesa. This Environmental Assessment (EA) examines two alternatives: the No-Build Alternative; and the Locally Preferred Alternative (LPA), or Build Alternative. The alternatives considered within this EA are the result of the Central Mesa High Capacity Transit Alternatives Analysis process, which culminated in the selection of the Main Street LRT as the LPA. The Build Alternative would extend LRT and related facilities from its current terminus at Sycamore/Main Street along Main Street through the downtown area to a new terminal station at Mesa Drive/Main Street. Two design options have been considered for Main Street in the downtown portion of the project. One option evaluates a traffic configuration with the current four travel lanes (two lanes in each direction) while the other option considers reducing the numbers of travel lanes to two (one lane in each direction). Based on findings and considerable stakeholder input, the 2-lane traffic option (one lane in each direction with protected left turn lanes) has been recommended for implementation. This EA considers potential long-term, short-term, indirect and cumulative effects on local traffic, bicycles and pedestrians, land use, economics, neighborhoods, environmental justice, visual and aesthetic resources, ecosystems, air quality, water quality, noise, vibration, energy, hazardous materials, historic and cultural resources, and parklands.

# TABLE OF CONTENTS

**APPENDICES**



**LIST OF FIGURES**

## LIST OF TABLES

## ACRONYMS

## List of Acronyms

| | |
|---|---|
| AA | Alternatives Analysis |
| ADA | American with Disabilities Act |
| BRT | Bus Rapid Transit |
| CBD | Central Business District |
| CP/EV | Central Phoenix / East Valley |
| CEQ | Council on Environmental Quality |
| CHPO | City Historic Preservation Office |
| DEIS | Draft Environmental Impact Statement |
| EA | Environmental Assessment |
| EIS | Environmental Impact Statement |
| FEIS | Final Environmental Impact Statement |
| FONSI | Finding of No Significant Impact |
| FTA | Federal Transit Administration |
| HCT | High Capacity Transit |
| HOV | High Occupancy Vehicle |
| LOS | Level of Service |
| LPA | Locally Preferred Alternative, or Build Alternative |
| LRT | Light Rail Transit |
| MAG | Maricopa Association of Governments, also the MPO |
| METRO | Valley Metro Rail, Inc. |
| MPO | Metropolitan Planning Organization |
| NEPA | National Environmental Policy Act |
| NOI | Notice of Intent |
| NRHP | National Register of Historic Places |
| O&M | Operations & Maintenance |
| OCS | Overhead Catenary System |
| OMC | Operations & Maintenance Center |
| PE | Preliminary Engineering |
| PIP | Public Involvement Program |
| ROD | Record of Decision |
| ROW | Right-Of-Way |
| RPTA | Regional Public Transportation Authority |
| RTP | Regional Transportation Plan |
| SAFETEA-LU | Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users |
| SHPO | State Historic Preservation Office |
| T&E | Threatened, Endangered and Candidate Species |
| TOD | Transit-Oriented Development |
| TPSS | Traction Power Substation |
| TSM | Transportation System Management |
| TSUB | Transit System User Benefit |
| VMT | Vehicle Miles Traveled |

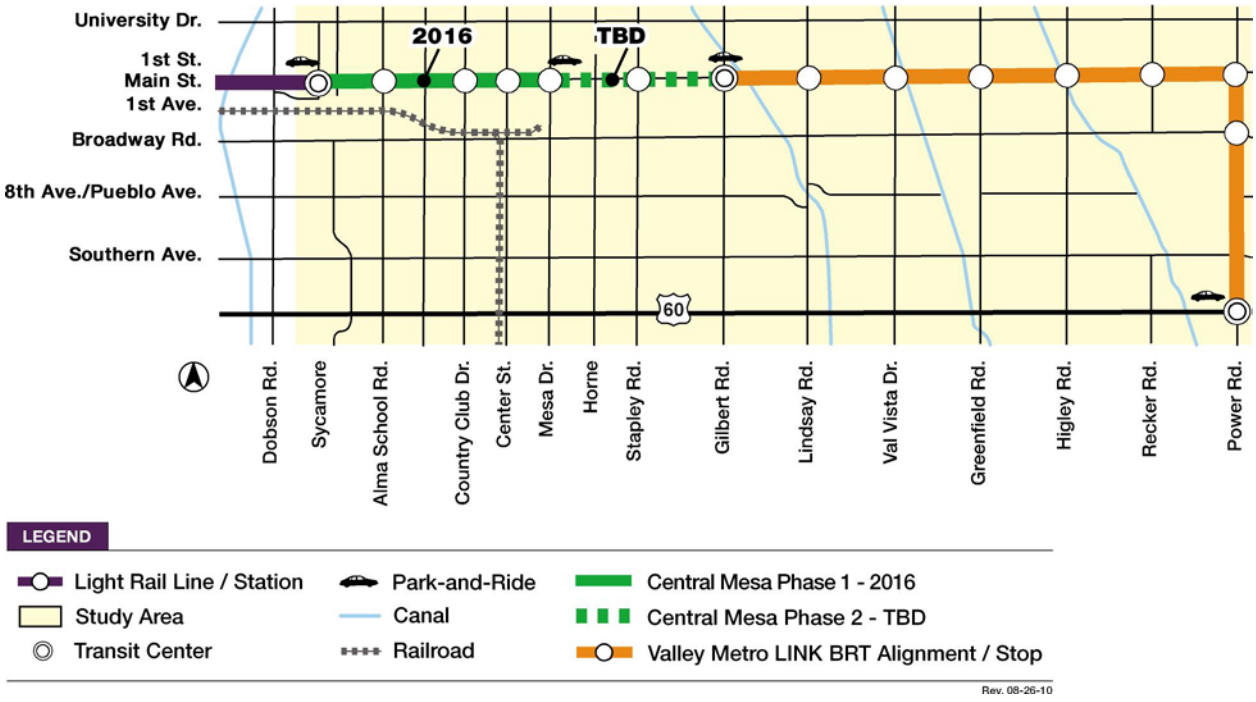
# EXECUTIVE SUMMARY

## ES.1 WHAT IS THE CENTRAL MESA LIGHT RAIL TRANSIT EXTENSION AND WHERE IS IT LOCATED?

The proposed project, also known as the Build Alternative, is an easterly extension to the Light Rail Transit (LRT) Starter Line that would begin at the current LRT terminus at Sycamore/Main Street in West Mesa, Arizona and extend into Central Mesa to Hobson/Main Street (just east of Mesa Drive) (**Figure 1**). This 3.1-mile extension is proposed to serve the Central Mesa Study Area which is bounded by US 60 to the south; Power Road to the east; University Drive to the north; and Sycamore to the west as also shown in the figure.


**METRO Light Rail Vehicle**

**FIGURE 1: BUILD ALTERNATIVE**




Major characteristics of the proposed project are displayed in **Table 1**. Refer to Chapter 1 of the Environmental Assessment (EA) for more information about the project.

## TABLE 1: CENTRAL MESA LRT EXTENSION AT-A-GLANCE

| | |
|---|---|
| **From – To:** | Sycamore/Main St. to Hobson (just east of Mesa Drive) |
| **Distance** | 3.1 miles (including tail tracks at eastern terminus) |
| **No. of stations:** | 4 |
| **Station locations:** | Alma School/Main – Country Club/Main – Center/Main – Mesa/Main |
| **No. traffic lanes** | Sycamore to Country Club – Maintains existing traffic capacity at 2 lanes each direction<br>Country Club to Hobson – 2 options considered:<br>– 2-lane option that reduces traffic capacity to 1 lane each direction<br>– 4-lane option that maintains existing traffic capacity at 2 lanes each direction<br>– 2-lane option has been recommended for implementation. |
| **No. park-and-ride** | 1 – Mesa Drive/Main (near Mesa Drive Station) |
| **Operations begin** | 2016 |
| **Headways/ Operational frequency (Weekdays)** | All day except late evening: 10 minutes<br>Late evening: 20 minutes |
| **Line-haul capacity** | 2,700 passengers per peak hour per direction[1]<br>(Based on 3 vehicles per train and 150 passengers/vehicle) |
| **Hours of operation** | Daily = ~20 hours |
| **Traffic signaling** | Predictive priority for LRT to allow for faster travel times |
| **Operations and maintenance** | Uses existing LRT Starter Line Operations and Maintenance Center (OMC) |

[1]Ultimate capacity. LRT operating plans call for 2-car consists during normal operations with 3-car consists operating only during special events or other high periods of demand.

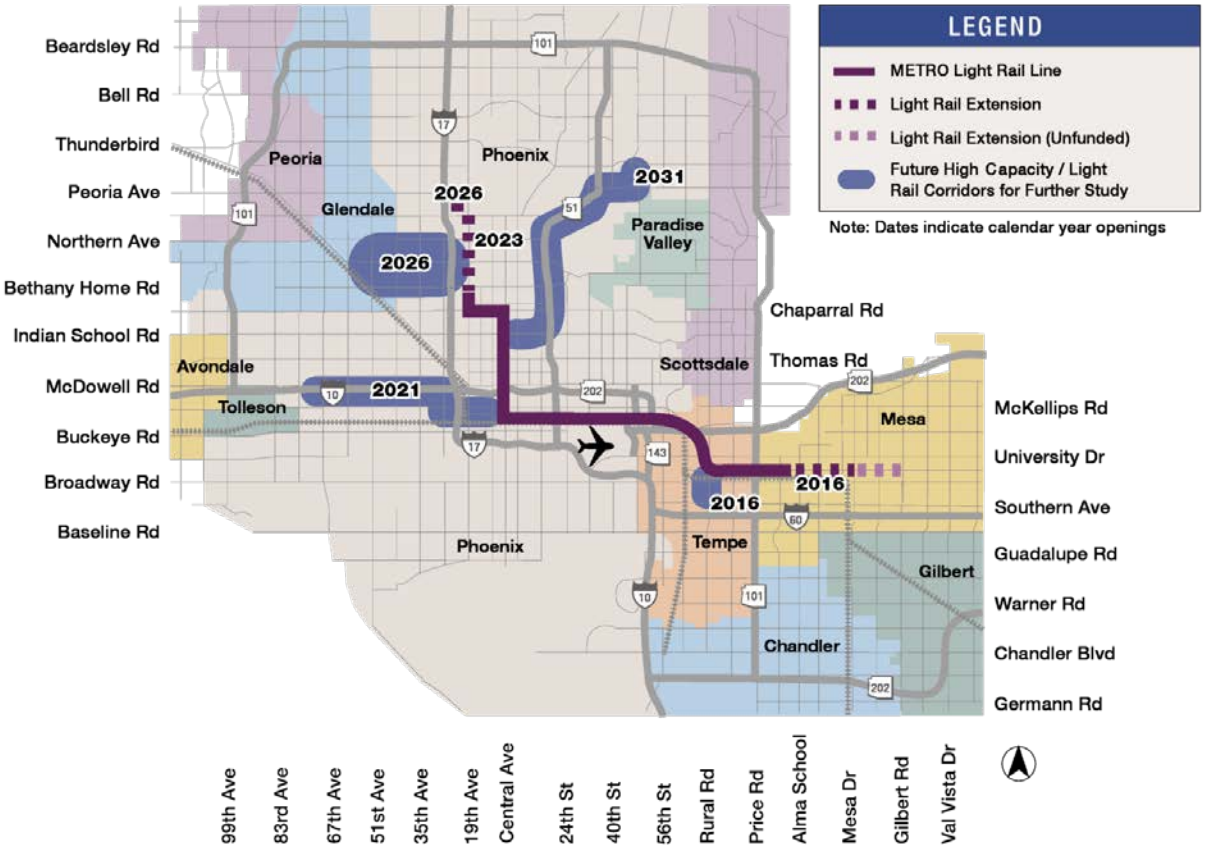
As noted, the Build Alternative would provide a seamless connection (no transfer required) from the current eastern terminus of the LRT Starter Line at Sycamore to just east of Mesa Drive. East of Centennial Way, the existing Valley Metro LINK Bus Rapid Transit (BRT) would connect to LRT and operate in mixed traffic as it does today as a skip-stop express service to Superstition Springs Transit Center (near Power Road and US 60). As a result of the Build Alternative, Valley Metro LINK BRT service would be discontinued along Main Street between Sycamore and Centennial Way to eliminate service duplication.

Valley Metro LINK BRT

Also recommended as funding becomes available is a future (Phase 2) extension of LRT to Gilbert Road. This extension would provide enhanced regional transit connections and opportunity for a larger regional park-and-ride facility. At this time, Phase 2 is not identified in the Maricopa Association of Government's Regional Transportation Plan (MAG RTP), is not funded, and is not evaluated in the EA. However, the Phase 2 recommendation has been forwarded to MAG and has been identified as an "illustrative project" for inclusion in the RTP. Should the Phase 2 project move forward as a federal project, it will be subject to compliance with regulations of the National Environmental Policy Act (NEPA).

The Central Mesa LRT Extension is part of the RTP's concept to build 57 miles of LRT/high capacity transit improvements in the MAG region. **Figure 2** displays the proposed extension and study area in relation to the 20-mile LRT Starter Line and other planned corridor improvements. The extension is planned to begin operations in 2016.

**FIGURE 2: MAG RTP PLANNED HIGH CAPACITY/LIGHT RAIL CORRIDORS**




## ES.2 WHY WAS THE ENVIRONMENTAL ASSESSMENT WRITTEN AND WHAT DOES IT INCLUDE?

It is anticipated that federal funding will be available for the Central Mesa LRT Extension from FTA through a program called "Small Starts". For METRO to be eligible for these federal funds, NEPA requires evaluation of impacts on the human and natural environment that would result from development of the project. This EA provides the results of the evaluation.

This Draft EA has been prepared in accordance with the Council on Environmental Quality Regulations (40 Code of Federal Regulations [CFR] 1500), *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*

*(NEPA)*, and the joint Federal Transit Administration (FTA)/Federal Highway Administration (FHWA) regulations (23 CFR 771), *Environmental Impact and Related Procedures*.

The major chapters of the EA and a synopsis of each are presented in **Figure 3**. This executive summary outlines the information provided in the EA. For additional information on a specific topic, please refer to the EA document itself.

**FIGURE 3: CONTENTS OF THE ENVIRONMENTAL ASSESSMENT**

**Chapter 1: Purpose and Need/Description of Proposed Project –** Presents a discussion of the purpose of the project, the need for mobility improvements, and the goals for the project. Also provides a description of the project proposed for implementation.
**Chapter 2: Alternatives to the Proposed Project –** Describes the alternatives screening process used to select the Locally Preferred Alternative (LPA), or Build Alternative, for the Central Mesa Study Area.
**Chapter 3: Environmental Impacts** – Describes the anticipated impacts associated with the No-Build Alternative and Build Alternative. Potential mitigation measures are identified for adverse impacts of the Build Alternative. Mitigation measures will be finalized in the Final EA.
**Chapter 4: Who are the Agencies and Persons Consulted?** – Describes the community outreach process and specific stakeholders and others consulted as part of project development and selection of the LPA.
**Chapter 5: How will the Proposed Project Be Funded?** – Outlines the federal and local sources of funding anticipated to be used to build and operate the Central Mesa LRT Extension.

## ES.3 WHY IS THE PROJECT NEEDED AND WHAT ISSUES WOULD IT ADDRESS?

The purpose and need for the project is summarized in **Figure 4**. Additional information may be found in Chapter 1 of the EA.

**FIGURE 4: PURPOSE AND NEED FOR THE CENTRAL MESA LRT EXTENSION**

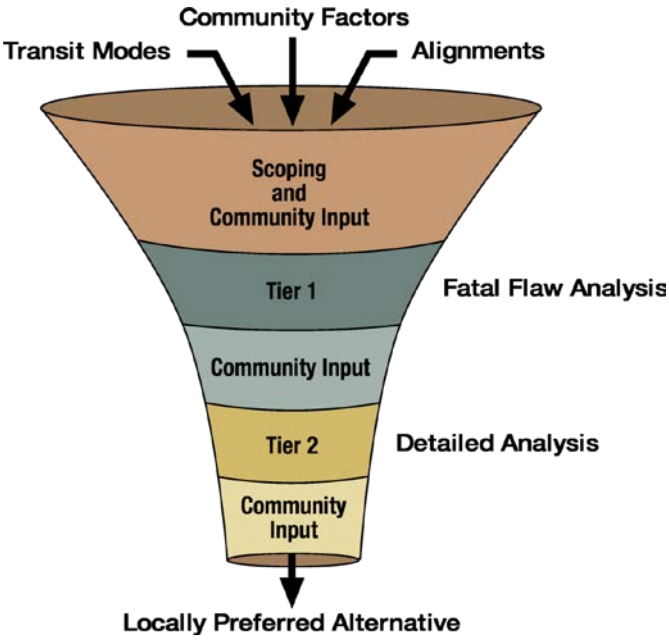
- Accommodate travel needs of a growing population.
- Improve mobility especially during peak travel times and offer a viable alternative to auto travel.
- Enhance access to major attractions in the study area as well as throughout the corridor of the entire LRT system in Mesa, Tempe, and Phoenix.
- Serve as a catalyst to economic and transit-oriented development in the corridor.
- Provide reliable transportation to the transit-dependent population.

## ES.4 WHAT ALTERNATIVES HAVE BEEN CONSIDERED AND HOW DID WE GET TO THE PROJECT NOW PROPOSED?

Several alternatives were developed during the Alternatives Analysis (AA) process and evaluated with the following major points in mind:

- Meeting the purpose and need for the Central Mesa Study Area
- Addressing the travel markets in the study area
- Minimizing environmental impacts
- Responding to agency and community input

**FIGURE 5: ALTERNATIVES ANALYSIS PROCESS**




A two-tiered alternatives development process (**Figure 5**) was used to evaluate alternatives and incorporated input from a wide variety of individual stakeholders, the community, and agencies. Chapter 4 of the EA provides additional information about community outreach and the opportunities for stakeholder involvement to date. The first phase (Tier 1) included a conceptual level evaluation that analyzed the advantages and disadvantages of the initial list of potential alternatives to address the transportation needs of the corridor. The Tier 1 evaluation criteria were primarily qualitative in nature and intended to eliminate alignment and possibly technology options that did not support project goals or that were considered to be "fatally flawed". The alternatives surviving the Tier 1 evaluation were then subjected to a more comprehensive evaluation in Tier 2. The Tier 2 criteria quantify ridership potential, capital costs, land use and economic development impacts, traffic issues, major environmental factors, conceptual engineering, and community goals and desires. As a result of the Tier 2 evaluation and continued public input, the Build Alternative, or Locally Preferred Alternative (LPA) described in Section ES.1, was unanimously approved by the City of Mesa Council on May 18, 2009 as the recommended LPA for further study in the EA. Additional information about the AA process may be found in Chapter 2 of the EA.

Both LRT and BRT modes were considered as well as alternative routes. The major characteristics of each high capacity transit mode are compared in **Figure 6**. All

alignments began at the LRT Starter Line end-of-line station at Sycamore and Main in Mesa and had Downtown Mesa as a major destination.

**FIGURE 6: COMPARISON OF LRT AND BRT HIGH CAPACITY TRANSIT MODES**

| Transit Mode Comparison |  Bus Rapid Transit |  Light Rail Transit |
|---|---|---|
| Exclusive Guideway Operations | x | x |
| Able to Share Auto Travel Lanes | x | |
| Flexible Routing | x | |
| Frequency of Stops: | | |
| 1/8 to 1/2 mile | x | |
| 1/2 to 2 miles | x | x |
| 2 to 5 miles | x | |
| Typically Operates Throughout Day | x | x |
| Travel Speeds: | | |
| Higher(Fixed Guideway) | x | x |
| Slower(Mixed Traffic Lanes) | x | |
| High Capacity Vehicles | | x |
| High Economic Development Potential | | x |

Note: Both modes have valid applications depending on operating environment and passenger demand.

From Sycamore to Country Club Drive, all alternatives used Main Street since no other routes would attract sufficient ridership, and Main Street is the only roadway near Sycamore that directly serves Downtown Mesa, which is a major Purpose and Need for the project as reflected in many of the local plans that show high capacity transit serving Downtown Mesa. East of Country Club Drive, the alternatives used Main Street, 1st Street, 1st Avenue, or some combination thereof to travel through downtown and returned to Main Street further east near Mesa Drive where the alternatives continued to their eastern terminus near Mesa Drive or Horne. Just east of this location, all alternatives assumed BRT would continue east on Main Street to Power Road where the alignment would turn south and continue to the Superstition Springs Center along Power Road near US 60. BRT would operate in mixed traffic as a limited stop express service similar to the current Valley Metro LINK service.

As a result of the findings of the AA and further community input, the recommended alternative was to advance LRT as the preferred mode and Main Street as the preferred alignment. **Figure 7** summarizes the major reasons for the recommendation.

## FIGURE 7: SUMMARY OF RECOMMENDATIONS FOR PREFERRED MODE AND ALIGNMENT

**LRT was selected over BRT since LRT:**

- Has lower long term life cycle costs.
- Provides up to five times the passenger carrying capacity.
- Reduces passenger travel times.
- Eliminates a bus to rail transfer at Main and Sycamore.
- Offers greater economic development opportunities.
- Better serves the documented travel demand.

**Main Street is the recommended alignment over 1st Street and 1st Avenue due to:**

- Closest proximity to major Downtown Mesa activity centers (closest to Downtown Mesa retail activities, Mesa Arts Center, City Hall)
- Lower capital costs
- Reduces property acquisition requirements
- Reduces passenger travel times
- Offers the greatest economic development opportunities
- Best opportunity to meet FTA criteria for cost effectiveness[1]
- Forecasted daily riders. Although this was not a deciding factor because the alternatives on 1st Street and 1st Avenue also have high predicted ridership, it is important to note that the Main Street alignment would have good ridership.

LRT at Sycamore/Main Station

It was further recommended that both a 2-lane option and a 4-lane option on Main Street east of Country Club Drive be carried forward for further evaluation and that the eastern terminus be located near Mesa Drive. The purpose of locating the terminus at Mesa Drive instead of Horne was to reduce project costs for a shorter alignment. In addition, there was concern about adverse impacts on surrounding neighborhoods from constructing a large park-and-ride facility at Horne. The preference was to have a park-and-ride at Gilbert Road, but no funding is currently available to build LRT further east to Gilbert Road. Therefore, the LPA includes a light rail extension on Main Street east to an interim end-of-the-line east of Mesa Drive as Phase 1. The LPA is the proposed project and the subject of this EA.

[1] At the time the Tier 2 evaluation was conducted, FTA's criteria for cost effectiveness was the major criteria used to determine a major transit investment's eligibility for federal funding under the New Starts program. Recent FTA guidance indicates that, although cost effectiveness is still an important criteria, other criteria are also important.

A decision on lane configuration (i.e., 2-lanes or 4-lanes east of Country Club Drive) will occur after the EA is completed and the public comments received have been given adequate consideration. Based on current findings and the considerable stakeholder input to date, the 2-lane traffic option (one lane in each direction with dedicated left turn lanes) has been recommended for implementation. However, the roadway would be constructed to allow for the future conversion to a 4-lane traffic operation utilizing a split phase traffic signal operation with no dedicated left turn lanes in the future if desired. See Sections 2.2.3 and 3.6 of the EA for additional information. The unfunded Phase 2 project to Gilbert Road may be considered later should funding become available and would be a separate project also subject to NEPA regulations if federal funding is sought.

Main Street Downtown Mesa


## ES.5 WOULD THERE BE ANY SIGNIFICANT ENVIRONMENTAL IMPACTS?

Studies have determined that the Build Alternative and its 2 options would not result in any significant impacts; however, the alternatives would still have some effects, both positive and negative, as summarized in **Table 2**. Mitigation measures and standard construction practices for adverse impacts are listed in **Figure 8**. Refer to Chapter 3.0 of the Final EA for additional information regarding impacts and mitigation.

## TABLE 2: ENVIRONMENTAL IMPACTS SUMMARY

| Environmental Category | Build Alternative 4-Lane Option | Build Alternative 2-Lane Option | Can Mitigation or Standard Construction Practices Reduce Impacts To Less Than Significant?[1] |
|---|---|---|---|
| **Land Acquisition[2]:** | | | |
| **Full (No. Parcels)** | 12 | 12 | |
| **Partial (No. Parcels)** | 30 | 29 | ✓ |
| **Relocations:** | | | |
| **No. Businesses[3,4]** | 6 | 6 | |
| **No. Residences[3,4]** | 2 | 2 | |
| **Consistency with Existing Land Uses** | Yes | Yes | N/A |
| **Consistency with Local Plans Related to the Corridor** | Yes | Yes | N/A |
| **Economic Impacts** | Generally positive | Generally positive | N/A |
| **Secondary Development** | Generally positive—Possible minor difference compared to 2-Lane only to extent that a potentially less pedestrian-friendly downtown due to slightly wider 4-lane cross section may have potential to affect attractiveness of additional development. | Generally positive | N/A |
| **Traffic Operations** | Intersections would operate at overall acceptable Level of Service (LOS)[5]. Left turns at signalized intersections would mostly occur from shared left/through lanes and would require a split-phased signal operation, which is typically not an efficient method to move traffic through intersections. | Intersections would operate at overall acceptable LOS[5]. This option has less approach delay overall than the 4-Lane Option. Left turns at signalized intersections would occur in a separate lane using a protected left-turn phase signal. Dual left turn lanes, similar to what now exists, are recommended at Country Club Drive/Main Street in the eastbound direction. Length of turning lanes would be determined in final design. | N/A |
| **Parking** | | | |
| **No. Spaces Displaced** | 195-197 On-street spaces | 185-186 On-street spaces | |
| **No. Spaces Retained** | 130-132 On-street spaces | 141-142 On-street spaces | |
| **Downtown Only :** | | | |
| **No. Spaces Displaced** | 17-19 On-street spaces | 7-8 On-street spaces | |
| **No Spaces Retained** | 126-128 On-street spaces | 138-139 On-street spaces | |
| | No adverse impact – Parking is consistently underutilized in areas where spaces would be removed. Many businesses provide off-street parking. In the downtown area, off-street parking is the primary parking source. Additional on-street parking is available along cross | No adverse impact – Parking is consistently underutilized in areas where spaces would be removed. Many businesses provide off-street parking. In the downtown area, off-street parking is the primary parking source. Additional on-street parking is available along cross | N/A |

| Environmental Category | Build Alternative 4-Lane Option | Build Alternative 2-Lane Option | Can Mitigation or Standard Construction Practices Reduce Impacts To Less Than Significant?[1] |
|---|---|---|---|
| | streets that intersect Main Street throughout the entire route as well as on some parallel streets. | streets that intersect Main Street throughout the entire route as well as on some parallel streets. | |
| **Pedestrians/Bicyclists** | No adverse impact on pedestrians. Bicycle lanes on Main Street between Country Club and Bellview would be removed. Bicyclists could share the travel lane or detour to the bike route on 1st Street. | No adverse impact on pedestrians. Bicycle lanes on Main Street between Country Club and Bellview would be removed. Bicyclists could share the travel lane or detour to the bike route on 1st Street. | ✓ |
| **Air Quality** | No adverse impact | No adverse impact | N/A |
| **Noise and Vibration** | No adverse noise or vibration impact. | No adverse noise or vibration impact. | N/A |
| **Energy** | No adverse impact<br>Potential to conserve energy | No adverse impact<br>Potential to conserve energy | N/A |
| **Historic/Archaeological Properties** | No adverse effect | No adverse effect | N/A |
| **Section 4(f) Resources[6] (Section 4[f] of the U.S. Department of Transportation Act of 1966, as amended)** | No direct, constructive, or temporary use/occupancy of Section 4(f) properties | No direct, constructive, or temporary use/occupancy of Section 4(f) properties | N/A |
| **Visual and Aesthetics** | Introduction of trackway and overhead catenary system (OCS) may add visual clutter. Removal of small segments of streetscape and center landscape median in some locations. Existing light poles in center median will be removed west of Country Club. Lights will be combined with OCS on poles in center median downtown. Without mitigation, substantial impacts are likely in vicinity of Country Club/Main with the 4-lane option. But with recommended mitigation, impacts would be reduced. | Introduction of trackway and overhead catenary system (OCS) may add visual clutter. Removal of small segments of streetscape and center landscape median in some locations. Existing light poles in center median will be removed west of Country Club. Lights will be combined with OCS on poles in center median downtown. | ✓ |
| **Community Disruption** | No long-term adverse impact | No long-term adverse impact | N/A |
| **Environmental Justice[7]** | No disproportionately high and adverse impact on low-income or minority populations. | No disproportionately high and adverse impact on low-income or minority populations. | N/A |
| **Hazardous Materials** | Potential to encounter hazardous materials during construction. | Potential to encounter hazardous materials during construction. | ✓ |
| **Safety and Security** | No adverse impact | No adverse impact | N/A |
| **Water Quality** | Minimal adverse impact due to operations | Minimal adverse impact due to operations | ✓ |
| **Ecologically Sensitive Areas/Threatened and** | None located within or adjacent to project area. | None located within or adjacent to project area. | N/A |

| Environmental Category | Build Alternative 4-Lane Option | Build Alternative 2-Lane Option | Can Mitigation or Standard Construction Practices Reduce Impacts To Less Than Significant?[1] |
|---|---|---|---|
| **Endangered Species** | | | |
| **Wetlands/Floodplains/ Navigable Waterways/ Coastal Zones** | None located within or adjacent to project area. | None located within or adjacent to project area. | N/A |
| **Construction** | Project would result in short-term disruption impacts on businesses and residents surrounding construction. Short-term impacts also anticipated on utilities, traffic/pedestrians/bicycles, and air and water quality. Construction noise is also likely to be an issue. Numerous mitigation options, including methods to minimize the period of construction, are available as discussed in the EA to help minimize impacts. The 4-lane option has potential to result in slightly more impacts on utilities and on other impact categories due to the additional 2,025 square feet of property acquisition required for the project. | Project would result in short-term disruption impacts on businesses and residents surrounding construction. Short-term impacts also anticipated on utilities, traffic/pedestrians/bicycles, and air and water quality. Construction noise is also likely to be an issue. Numerous mitigation options, including methods to minimize the period of construction, are available as discussed in the EA to help minimize impacts. | ✓ |
| **Cumulative Impacts** | Contributes positively to cumulative benefits in the area and would not contribute to cumulative adverse impacts. | Contributes positively to cumulative benefits in the area and would not contribute to cumulative adverse impacts. | N/A |

[1]Refer to Chapter 3 of the EA for potential mitigation options. N/A = Not applicable. ✓ = Yes.
[2]Does not include property required for traction power substations since several options are under consideration.
[3]Based on current conceptual design plans.
[4]Assumes worst case analysis. Assumes 3 businesses relocated west of Country Club and up to 3 businesses east of Country Club if the entire 6.7-acre site being considered for park-and-ride is needed. As many as 2 residences could also be acquired and residents relocated if the entire site is needed. Actual relocations for the park-and-ride facility will likely be less once the final layout is determined during final design.
[5]LOS is a quantitative measure of traffic flow and is frequently expressed in qualitative terms as LOS A (free-flow) to LOS F (congested).
[6]Section 4(f) requires FTA to only approve a project using publicly owned land of a public park or recreation area, or wildlife/waterfowl refuge or historic site of national, state, or local significance only if there is no prudent or feasible alternative to using that land, and project includes all planning to minimize harm resulting from use of the resource.
[7]Presidential Executive Order 12898, F*ederal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires federal agencies to consider and address disproportionately high and adverse environmental effects of proposed federal projects on the health and environment of minority and low-income populations. If adverse impacts of a project fall disproportionately on these 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.

## FIGURE 8: MITIGATION MEASURES AND STANDARD CONSTRUCTION PRACTICES FOR ADVERSE IMPACTS

**Property Acquisitions/Relocations:**

- All full and partial acquisitions of properties and potential relocations of businesses and residences will conform to provisions of the Uniform Relocation and Real Property Acquisition Policies Act of 1970, as amended.

**Removal of bicycle lanes between Country Club Drive and Bellview**:

- Install new signage and pavement markings per City of Mesa standards and in accordance with the *Manual of Uniform Traffic Control Devices*, latest edition.

**Historic:**

- Although the project has been determined to result in no adverse effect on historic or archaeological resources, METRO will work with SHPO and the City Historic Preservation Office during final design of the Country Club/Main Station to develop and implement design strategies compatible with the surroundings of the station location.
- Should unanticipated cultural resources be discovered during construction excavation, activities will cease immediately until a qualified archaeologist can be contacted to make an assessment for the proper treatment of those resources. If human remains or associated funerary objects are discovered, the Arizona State Museum will be notified as required by A.R.S Section 41-865.
- To avoid an adverse effect finding on three historic signs that are eligible for the National Register (the associated buildings are not eligible), METRO will work with the State Historic Preservation Office (SHPO) and the City of Mesa during final design to relocate the sign on the lot relative to the new right-of-way line where feasible. Feasibility requires consideration of other factors as well such as whether the new location will obstruct views, compromise safety, or result in other major adverse impacts. The three signs are associated with the following properties along Main: Trava-Leer's Motel, Larada's Army Surplus, and Payless Car Sales.

**Visual and Aesthetics**:

- Develop and implement specific mitigation measures during final design and construction to minimize potential adverse impacts of the overhead contact wires and trackway and removal of the center landscaped median from the roadway. Mitigation will conform to applicable chapters of METRO's *Design Criteria Manual*; METRO's *Urban Design Guidelines* (June 2001); and *Central Mesa LRT Extension Urban Design Guidelines* (July 2010) which was developed to address and enhance the urban design for this specific project. Section 3.12 of the Final EA provides additional information regarding mitigation.

**Hazardous Materials:**

- Conduct a Preliminary Site Investigation (PSI) at several sites along the LRT line to verify or refute presence of potential contamination. The sites include: Big Two Oldsmobile; Fractured Fiberglass; Chevron (current Taco Bell); and Thomas Gulf (current Quality Bumper). Three other sites should be evaluated if the TPSS option listed is selected for implementation: Falcon Cleaners (B-1); Pit Stop (B-3); and Texaco (C-3).
- Conform with METRO's Master Specifications 01.35.30, Unknown Hazardous and Contaminated Substances, during construction which requires, among other things, that construction stop immediately in an area where potential contamination is discovered and specifies procedures to follow in such an event.
- City of Mesa will conduct site-specific Phase 1 Environmental Site Assessments on all properties identified for fee title acquisition as required by City of Mesa Real Estate Acquisition Management Plan (RAMP), August 2010.

**Water Quality**:

- Develop and implement Best Management Practices (BMP) to minimize impacts on water quality through measures such as spill response operations and detention basins to settle and capture pollutants, discharge project-related runoff from impervious surfaces into storm drains that have a logical conclusion, and additional methods for the design and use of the project's stormwater collection system.

**Construction**

- Follow the standard construction practices listed in Section 3.20 of the Final EA.
- Conduct a pre-construction inspection to determine existing conditions of the first row of buildings along Main Street and any important and potentially fragile historic resources that may be located within 200 feet of Main Street.

## ES.6 HOW MUCH WOULD THE PROJECT COST AND HOW WOULD IT BE FUNDED?

The estimated capital cost for the proposed project is approximately $198.5 million (**Table 3**). Estimated annual operating cost for the Central Mesa LRT extension is $4.7 million (**Table 4**). For additional information, refer to Chapter 5.0 of the EA.

**TABLE 3: ESTIMATED CAPITAL COSTS AND FUNDING SOURCES (YOE $)[1]**

| | Costs | Funds | Funds as % Of Total |
|---|---|---|---|
| **Capital Costs** | **$198,490,000** | | |
| **Funding Sources** | | | |
| Federal | | | |
| Section 5309 New Starts | | $75,000,000 | 37.8% |
| Congestion Management Air Quality | | $44,649,000 | 22.5% |
| Local Sources | | | |
| Public Transportation Funds (PTF) | | $78,841,000 | 39.7% |
| **Total** | | **$198,490,000** | **100.0%** |

[1]YOE $ = Year of expenditure dollars.
Source: METRO, March 2010.

**TABLE 4: ESTIMATED ANNUAL OPERATING COSTS AND FUNDING SOURCES (YOE $)[1]**

| | Costs | Funds | Funds as % Of Total |
|---|---|---|---|
| **Operating Cost** | **$4,700,000** | | |
| **Funding Sources** | | | |
| Farebox Revenues | | $1,175,000 | 25% |
| Mesa General Fund | | $3,525,000 | 75% |
| **Total** | | **$4,700,000** | **100.0%** |

[1]YOE $ = Year of expenditure dollars.
Source: METRO, March 2010.

Slightly more than half of the funds for capital costs are anticipated to come from federal sources, and the remaining would be derived from local sources. The local source includes Public Transportation Funds (PTF) which were derived from the voter-approved regional sales tax for public transit development contained in the RTP. The major source of federal funding being sought is from the Section 5309 Capital Investment Grant program, also known as "New Starts". Specifically, METRO will seek funding from the "Small Starts" portion of the "New Starts" program. The program requires projects to meet specific justification criteria. FTA evaluates the project based on these criteria as well as the local financial commitment and then assigns a rating to the project. A "Medium" or better rating makes a project eligible, but does not guarantee funding. On August 11, 2010, FTA notified METRO that the Central Mesa LRT Extension meets all requirements for consideration as a Small Starts project, and the project received an overall project rating of "Medium-High". FTA also determined that the project is ready to proceed into Project Development which allows the project to begin preliminary engineering tasks. Federal funds for capital costs will also be sought through the Congestion Mitigation and Air Quality Improvement Program (CMAQ). The

program helps fund regional and local efforts to achieve compliance with national air quality standards.

Operating costs will come from local sources. About 75% of the funds are expected to be derived from local sources, and the other 25% would be generated from farebox revenues.

## ES.7 WHAT COMMENTS WERE RECEIVED ON THE DRAFT EA?

The Draft EA was released for public comment in late November 2010. Because of the Thanksgiving and end of the year holidays, the customary 30-day comment period was extended to January 7, 2011 to give anyone who wanted to comment sufficient time to do so. Copies of the document were available at the Mesa Main Library and at METRO headquarters and were available for download from the METRO web site at www.metrolightrail.org/centralmesa.

During the comment period, two public meetings were held on December 10, 2010 in downtown Mesa. Notification for this meeting included advertisements in local newspapers including The Arizona Republic (Mesa section), The East Valley Tribune, and La Voz. In addition, approximately 6,500 doorhangers were delivered to residents and businesses within the corridor from Sycamore to Horne and from Broadway Road to University Drive notifying of the document's release and the opportunities to provide comments. The METRO Project Team also delivered notices to each business along Main Street from Sycamore to Mesa Drive and published the meeting notification on the METRO web site and through METRO's Facebook and Twitter accounts. In addition, the notice/advertisement was sent via a mass email message to all Central Mesa stakeholders in METRO's database.

Comments were received from 15 individuals and two agencies during the comment period. The specific comments and METRO responses may be found in Appendix O of the Final EA.

# 1.0 PURPOSE AND NEED/DESCRIPTION OF PROPOSED PROJECT

This Environmental Assessment (EA) evaluates the impacts of a 3.1-mile easterly extension to the light rail transit (LRT) system currently operating through Phoenix, Tempe, and west Mesa. The project is proposed to serve the Central Mesa Study Area which is bounded by US 60 to the south; Power Road to the east, University Drive to the north, and Sycamore Street to the west.

The Central Mesa LRT Extension is part of the Regional Transportation Plan's (RTP's) concept to build 57 miles of LRT/high capacity transit improvements in the Maricopa Association of Governments (MAG) region approved by voters in 2004. Figure 1-1 displays the proposed extension and study area in relation to the 20-mile LRT Starter Line and other planned high capacity transit corridor improvements. The extension is planned to begin operations in 2016. The Central Mesa Study Area is shown in Figure 1-2.

**FIGURE 1-1: MAG RTP PLANNED HIGH CAPACITY/LIGHT RAIL CORRIDORS**

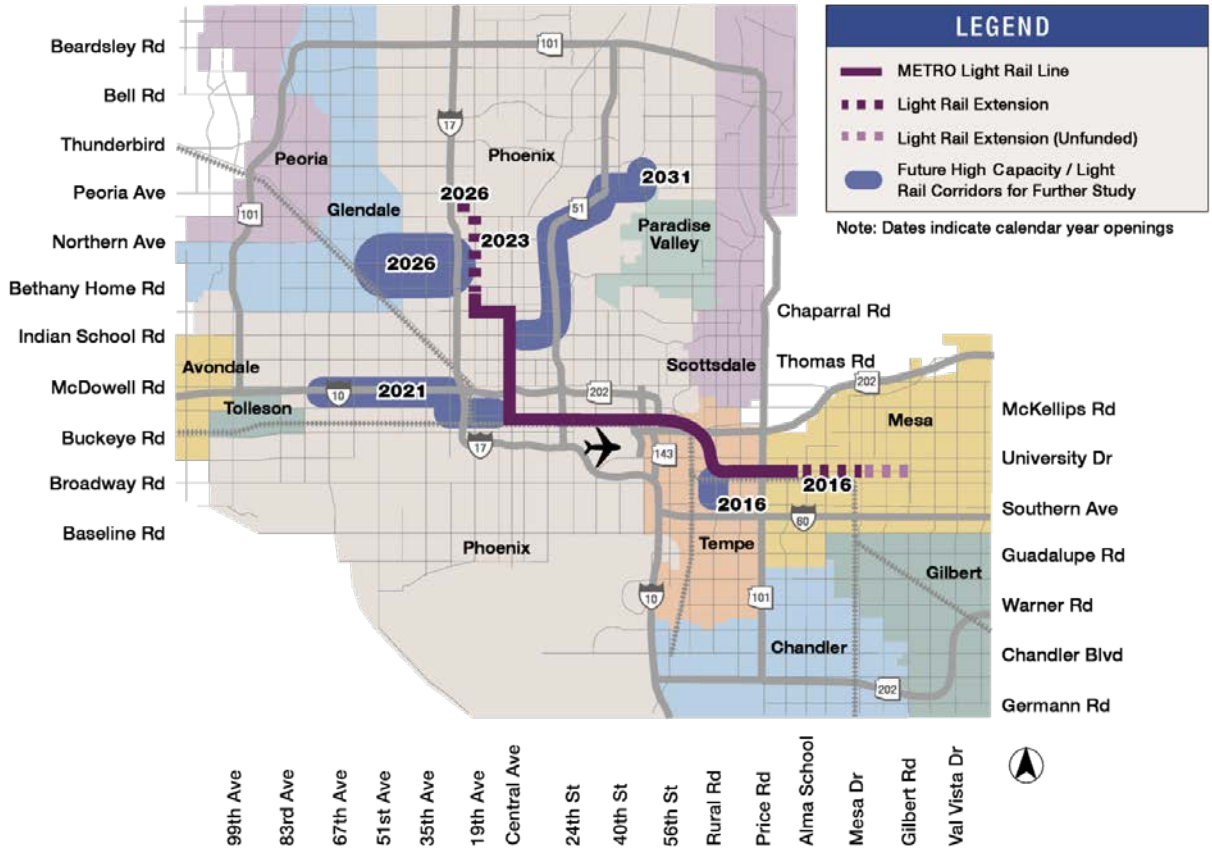
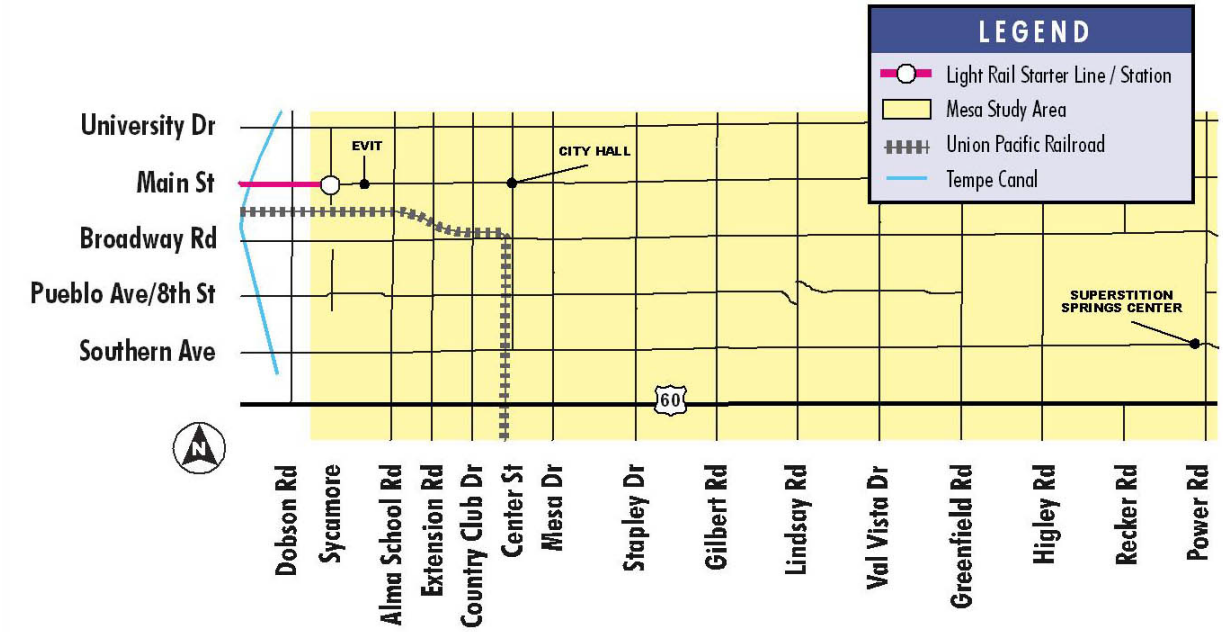


**FIGURE 1-2: CENTRAL MESA STUDY AREA**




Source: METRO, 2009.

## 1.1 WHY DO WE NEED THE CENTRAL MESA LRT EXTENSION?

The need for the proposed project is to:

- Accommodate travel needs of a growing population[1].
- Improve mobility especially during peak travel times and offer a viable alternative to auto travel.
- Enhance access to major attractions in the study area as well as throughout the corridor of the entire LRT system in Mesa, Tempe, and Phoenix.
- Serve as a catalyst to economic and transit-oriented development in the corridor.
- Provide reliable transportation to the transit-dependent population.

Figures 1-3 through 1-7 discuss each of these factors in more detail.

## 1.2 WHAT ARE THE GOALS FOR THE PROPOSED PROJECT?

In addition to the purpose and need, the five goals and objectives stated in Figure 1-8 were formulated to help further guide project development.

[1] Further information may be found in the Purpose and Need Statement, METRO, April 27, 2010.

## FIGURE 1-3: ACCOMMODATE TRAVEL NEEDS OF A GROWING POPULATION

- **Mesa is the second largest city in the Phoenix metro area.**
- **Between 2009 and 2015 the Central Mesa Study Area population and employment is expected to increase 5.8% and 13.6%, respectively.**
- **Between 2009 and 2015, all types of daily trips in the region are forecast to increase nearly 19% to 17 million.**
- **Trips originating from the corridor with purposes categorized as home-based work and university trips destined to areas surrounding the LRT Starter Line now make up slightly less than 10% of total trips; These trips are anticipated to almost double to nearly 19% of all trips by 2015. Most people are destined to north Tempe, Downtown Tempe, Arizona State University (ASU), and vicinity of Sky Harbor International Airport.**
- **The LRT Extension would provide residents of Mesa and communities east of Mesa with a frequent and one-seat transit ride to all of these destinations and more along the 20-mile LRT Starter Line.**
- **The current end-of-line station for the LRT Starter Line is at Sycamore in west Mesa. This station has highest ridership of any in the LRT system and currently has limited parking available. By 2015, auto parking has potential to overflow into adjacent neighborhoods. The next available park-and-ride east of Sycamore is currently about 12 miles east at the Superstition Springs Shopping Center which is at the eastern terminus of the LINK BRT line that connects to LRT at Sycamore. Since most LRT riders currently access the Sycamore Station by car, the proposed park-and-ride near the eastern terminus of the planned LRT extension would provide a greater opportunity to Mesa residents and others who reside further east to park at the new park-and-ride and decrease travel time compared to those using the LINK BRT to access LRT at Sycamore.**

## FIGURE 1-4: IMPROVE MOBILITY ESPECIALLY DURING PEAK TRAVEL TIMES AND OFFER A VIABLE ALTERNATIVE TO AUTO TRAVEL

- **Between 2009 and 2015, transit travel times to many popular destinations are expected to decrease while auto travel times are expected to increase. The transit travel time decrease is even more pronounced in 2015 if the proposed LRT extension is built. See Table 1-1.**
- **Congested conditions in the study area during peak travel times are likely to worsen by 2015. No opportunities exist to expand study area roadways without unacceptable impacts given build-out conditions and impacts on adjacent neighborhoods and businesses. As streets are widened, LOS typically reverts to pre-build conditions; thus displacement impacts and right-of-way costs are incurred without any real long-term benefits. The LRT extension would provide commuters additional options without impacts to congested local streets and freeways.**
- **Roadway congestion prevents buses from achieving desired travel speeds resulting in schedule delays and decreased reliability.**
- **Transit service in study area has limited coverage and modest service levels. While weekday boardings increased 92% region-wide since 1995, weekday boardings in Mesa increased at about double the rate, or 183%, over same period. In terms of revenue miles, supply of transit service is far short of demand (nearly 58%).**
- **Although Mesa and other East Valley communities benefit from relatively low-cost housing, the cost of housing is inversely proportional to the distance from major employment and recreational attractions. Current transit service to many of these further out areas is generally poor.**

## FIGURE 1-5: ENHANCE ACCESS TO MAJOR ATTRACTIONS IN THE STUDY AREA AS WELL AS THROUGHOUT THE METROPOLITAN REGION

- **A multitude of activity centers is located within ½ mile of the proposed Central Mesa LRT stations as shown in Figure 1-9.**
- **The region's largest employment centers as well as other major attractions are located close to the LRT Starter Line including: Phoenix Convention Center; Chase Field (home of Arizona Diamondbacks); US Airways Center (home of Phoenix Suns, Phoenix Mercury, and Arizona Rattlers); Sky Harbor International Airport; several major cultural facilities in Phoenix; Arizona State University (main and downtown campuses); University of Arizona College of Medicine; Gateway Community College.**
- **Extension of rail further east into Mesa will benefit both Mesa residents as well as those wishing to avoid auto congestion by making it possible to have a one-seat ride (no transfers required) to major activity centers both within the study area and along the LRT Starter Line.**

## FIGURE 1-6: SERVE AS A CATALYST TO ECONOMIC AND TRANSIT-ORIENTED DEVELOPMENT IN THE CORRIDOR

- **Along the LRT Starter Line, about $5.4 billion in new development either has occurred or is under construction with an additional $2 billion proposed within ½ mile of the stations (as of December 2008).**
- **Along the Tempe and Mesa portions of the LRT Starter Line alone, approximately $1.2 billion in new development is complete or under construction, and an additional $1.1 billion has been proposed (as of December 2008).**
- **Recent survey of the study area indicates many undeveloped and underutilized parcels, as well as many sites occupied by auto-related uses that are already transitioning to new locations closer to the nearby freeway system.**
- **Given the success of development that has already occurred and is proposed along the existing LRT route, similar opportunities are likely to exist in Central Mesa once the economy begins to recover.**

## FIGURE 1-7: PROVIDE RELIABLE TRANSPORTATION TO THE TRANSIT-DEPENDENT POPULATION

- **The study area contains over half of the households in the entire City of Mesa who do not have access to a car as well as about 44% of the total low-income households.**
- **LRT will be a viable alternative to auto and will provide a convenient and reliable transportation mode to transit-dependent persons.**
- **Connections to the LRT Starter Line will provide greatly improved access to major employment centers, higher educational institutions, and health care services. The enhanced access may increase employment opportunities that could lead to greater employment stability and a higher quality of life.**

# FIGURE 1-8: PROJECT GOALS AND OBJECTIVES

**Goal 1—Improve mobility of the residential and business communities within the project corridor and region.**
Objectives:

- Enhance connectivity to major employment, recreational, cultural, commercial, and educational activity centers within the corridor and the region.
- Improve access to transit-dependent populations.

**Goal 2—Maximize efficiency and effectiveness of the transportation system and accommodate travel-demand growth.**
Objectives:

- Maintain an acceptable and reliable level of transportation service.
- Facilitate continued growth and development of a comprehensive and inter-connected regional transit network.
- Provide expanded public transportation choices.
- Ensure compatibility with the LRT Starter Line's eastern terminal station located at Sycamore and Main Street.
- Provide improved travel times in a congested environment over local bus.
- Attract new riders to the transit system.
- Construct a sustainable high capacity transit system.

**Goal 3—Attain a quality of life consistent with local, state, and federal initiatives by supporting local and regional land use and development goals and enhancing the use of transit-supported land use, planning, and design strategies.**
Objectives:

- Ensure consistency with local and regional plans including the West Main Street Neighborhood Area plan.
- Continue development of the regional 57-mile high capacity transit system contained in the Regional Transportation Plan (RTP).
- Support continued expansion of transit-oriented development around station areas.

**Goal 4—Provide a public transportation project that is compatible with and enhances the Mesa Town Center Concept Plan approved by the City of Mesa in December 1999.**
Objectives:

- Promote a pedestrian-friendly environment.
- Promote economic vitality in the project corridor.
- Connect major activity centers in the project corridor.

**Goal 5—Provide a transportation project that is reasonably within budget constraints for both capital and operating expenses and also provide the highest ridership potential for the costs expended.**
Objectives:

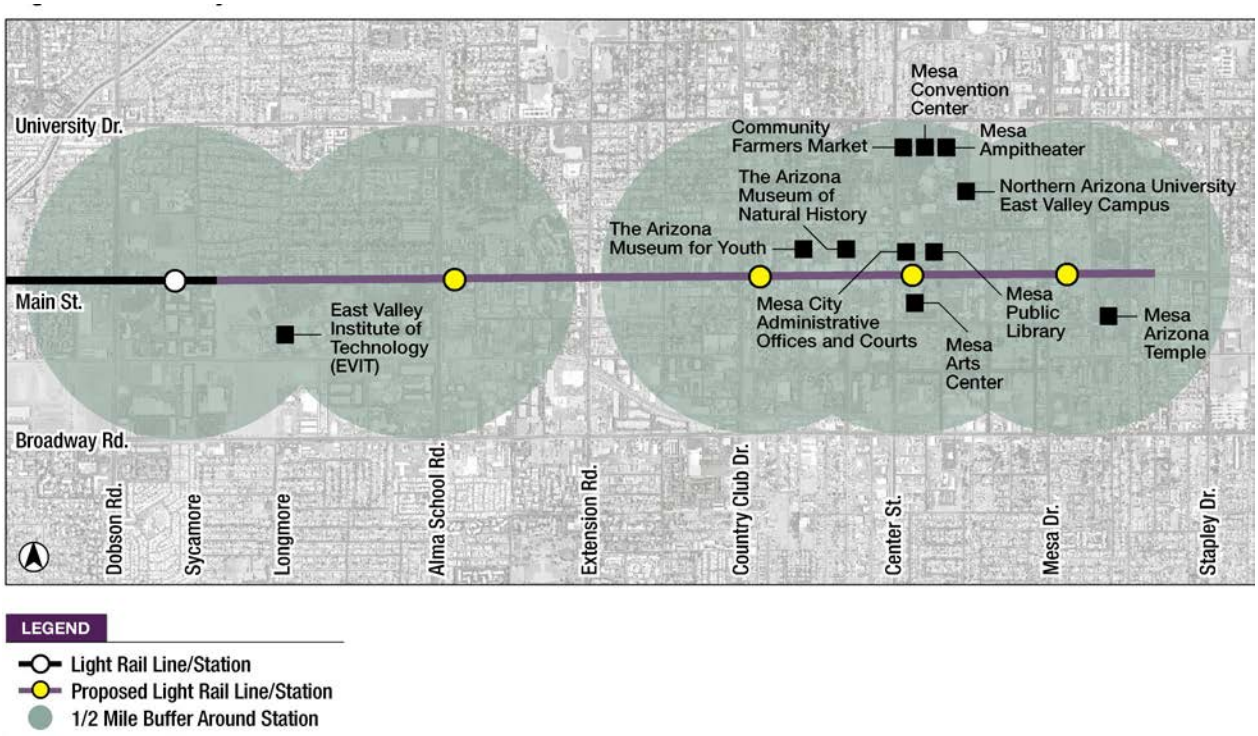
- Minimize capital costs.
- Minimize operating and maintenance costs.
- Maximize cost effectiveness.

**TABLE 1-1: TRAVEL TIME (MINUTES) FOR SELECT DESTINATIONS FROM MESA[1]**

| Walk to Transit (local bus or urban rail) | Transit Time | | | Drive Alone Time | | |
|---|---|---|---|---|---|---|
| | 2009 | 2015 | 2015 Build | 2009 | 2015 | 2015 Build |
| Mesa to ASU or Tempe CBD[2] | 43.8 | 38.6 | 33.9 | 15.3 | 16.5 | 16.5 |
| Mesa to Sky Harbor Airport | 66.4 | 80.5 | 74.8 | 20.9 | 21.6 | 21.6 |
| Mesa to Phoenix CBD[2] | 67.9 | 66.8 | 61.1 | 32.7 | 34.2 | 34.2 |
| Mesa to Central Ave./Camelback Rd. | 90.9 | 86.7 | 81.0 | 31.6 | 33.1 | 33.1 |

[1]The origination point in Mesa is at Alma School Road/Main Street. All components of travel time are included in the above estimates: walk, wait, transfer, and in-vehicle times. Note that the trip to Phoenix CBD requires one less transfer than the trip to Sky Harbor Airport for both the Build and No-Build Alternatives. Average LRT speed to Phoenix CBD is 20-22 mph which is faster than speed to Sky Harbor Airport at 17-18 mph. Additional information may be found in Appendix O of the Final EA in the response to Comment 15.
[2]CBD = Central Business District.
Source: METRO, 2009.

**FIGURE 1-9: MAJOR ATTRACTIONS**




Source: *Transit Supportive Development Analysis*, Central Mesa Light Rail Extension, METRO, September 2009.

## 1.3 WHAT IS THE PROPOSED PROJECT?

The Locally Preferred Alternative (LPA) is a 3.1-mile extension of the existing LRT Starter Line along Main Street from the Sycamore Station to Mesa Drive. The section

describes the planned LRT extension's route, stations, and major interfaces with other public transit and the characteristics of the LRT technology.

### 1.3.1 Alignment, Station, and Other Associated Facilities

Major features of the Build Alternative are illustrated in Table 1-2. The Build Alternative's route is shown in Figure 1-10. The Build Alternative includes a double-track LRT guideway that would operate along the center of Main Street from just east of Sycamore to just east of Mesa Drive near Hobson, a distance of 3.1 miles. LRT is electrically powered and receives its power from overhead power lines within the street rights-of-way. LRT operations would include a traffic signal priority system (predictive priority), to allow for faster travel times. The light rail vehicles will be the same as the ones currently being used for the LRT Starter Line, and no additional vehicles will need to be procured for the Central Mesa LRT extension.


**METRO Light Rail Vehicle**

**TABLE 1-2: CENTRAL MESA LRT EXTENSION AT-A-GLANCE**

| | |
|---|---|
| **From – To:** | Sycamore/Main St. to Hobson |
| **Distance** | 3.1 miles |
| **Number of stations** | 4 |
| **Number of traffic lanes** | Sycamore to Country Club – Maintains existing traffic capacity at 2 lanes each direction<br>Country Club to Hobson – 2 options considered:<br>– 2-lane option that reduces traffic capacity to 1 lane each direction<br>– 4-lane option that maintains existing traffic capacity at 2 lanes each direction |
| **No. park-and-ride** | 1 |
| **Operations begin** | 2016 |
| **Headways/ Operational frequency (Weekdays)** | All day except late evening: 10 minutes<br>Late evening: 20 minutes |
| **Line-haul capacity** | 2,700 passengers per peak hour per direction[1]<br>(Based on 3 vehicles per train and 150 passengers/vehicle) |
| **Hours of operation** | Daily = ~20 hours |
| **Number of vehicles** | 42 – LRT Starter Line + Central Mesa LRT Extension<br>8 – Spare Vehicles<br>50 – Total current fleet |
| **Traffic signaling** | Predictive priority for LRT to allow for faster travel times |
| **Operations and maintenance** | Uses existing LRT Starter Line Operations and Maintenance Center (OMC) |

[1]Ultimate capacity. LRT operating plans call for 2-car consists during normal operations with 3-car consists operating only during special events or other high periods of demand.

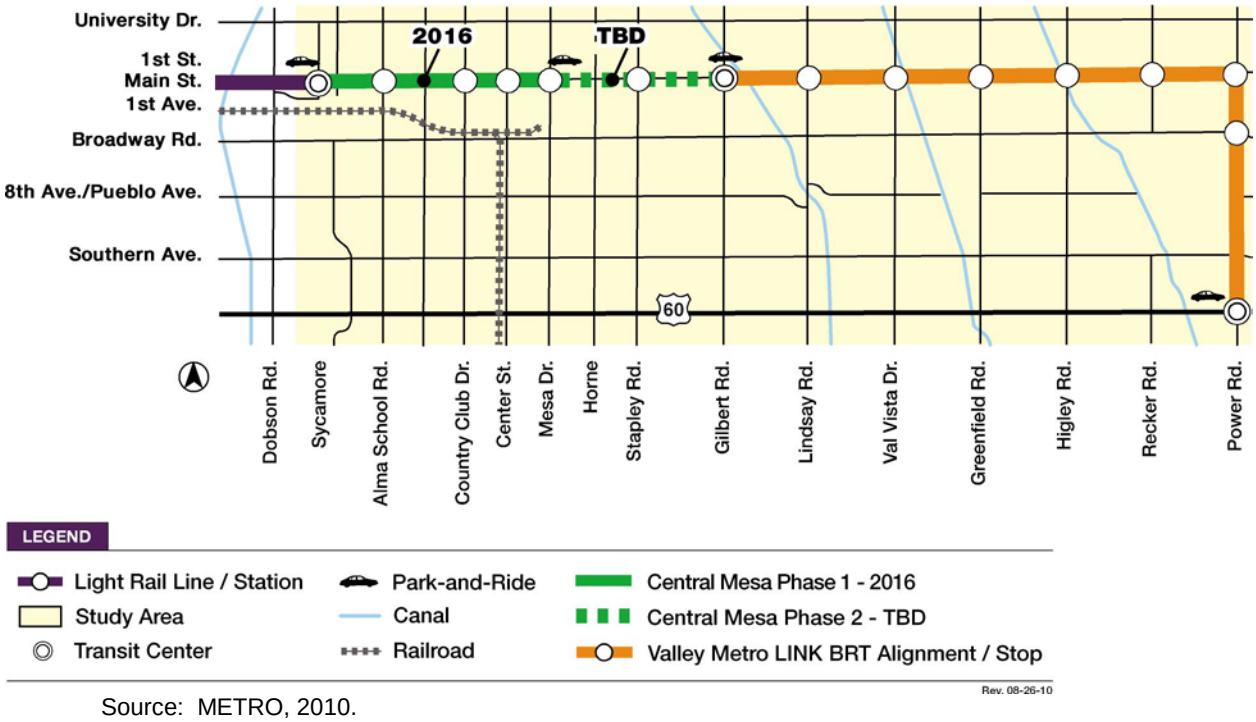
The Build Alternative is an extension of the LRT Starter Line that will provide a seamless connection (no transfer required) from the current eastern terminus of the LRT at Main Street and Sycamore along Main Street to a station east of Mesa Drive. Tail tracks would continue east of the station platform to a point about 425 feet east of

Hobson. East of Centennial Way, the existing Valley Metro LINK Bus Rapid Transit (BRT) would connect to LRT and operate in mixed traffic as it does today as a skip-stop express service to Superstition Springs Transit Center (near Power Road and US 60).

**Valley Metro LINK BRT**

As a result of the Build Alternative, Valley Metro LINK BRT service would be discontinued along Main Street between Sycamore and Centennial Way to eliminate service duplication, and its operational frequency in the off-peak will increase from 30 to 15 minutes. However, service during peak periods will remain the same as today (15 minutes). The LINK stops between Country Club Drive and Centennial Way will be relocated to Centennial Way for a new LINK stop. LINK stops east of Centennial Way will remain and be adjusted within the right-of-way with this project. Other than that, no other changes to the LINK operations or facilities will be necessary for the Phase 1 LRT extension being evaluated in the EA.

**FIGURE 1-10: BUILD ALTERNATIVE**




Source: METRO, 2010.

LRT stations/LINK BRT stops and park-and-ride locations are identified in Table 1-3. A new park-and-ride facility would be built near the Mesa Drive/Main Street end-of-line LRT station on the northeast corner of Main Street/Mesa Drive. Each LRT station would serve one or more existing or planned bus routes in the area.

For the portion of the project between Sycamore/Main Street and Country Club Drive/Main Street, the current four through auto travel lanes on Main Street will be maintained. Typical cross sections for this segment are shown in Figure 1-11. Two design options are being considered for the segment east of Country Club Drive:

- Build Alternative, 2-Lane Option
- Build Alternative, 4-Lane Option

**Build Alternative, 2-Lane Option**. Main Street's traffic lane capacity would generally be reduced from two lanes in each direction to one lane in each direction from Country Club Drive to Horne. The exception is in the westbound direction only between Mesa Drive and Horne where two through lanes would be available. At the westbound approach to the Mesa Drive intersection, one through lane would be dropped into a right turn lane. Single left turn lanes would be maintained at Country Club Drive (except the double left would be retained in the eastbound direction), Robson, MacDonald, Center Street, Centennial Way/Sirrine Street, Hibbert, Mesa Drive, Lesueur, and Hobson. Acquisition of additional right-of-way along the alignment would be minimal to accommodate the fixed guideway as a result of the reduction of travel lanes. Typical cross sections at various locations are shown in Figure 1-12. The station and park-and-ride locations presented in Table 1-3 apply to the 2-Lane Option. This option could allow for future conversion, if desired, to 2 lanes in each direction through downtown by eliminating the dedicated left turn lanes and using split-phase traffic signals that would allow through and left-turning traffic to share the same left lane. The conversion would require minor curb revisions and/or parking removal beyond that shown in the current design between Country Club Drive and Robson. Between Mesa Drive and Udall, some additional curb and right-of-way revisions would be needed on the south side of Main Street.

**Build Alternative, 4-Lane Option**. With the 4-lane option, the current four through travel lanes (two in each direction) would be maintained from Country Club to Hobson. This scenario assumes split-phase traffic signals, and single left turn lanes would only be provided at Country Club Drive and Mesa Drive. All other existing turning lanes would be removed. The bike lane would be eliminated west of Lesueur, and parking would continue to be provided at most locations along this segment where it presently exists. To keep the existing numbers of through lanes will require acquisition of additional right-of-way at the northeast and southeast corners of Main Street and Mesa Drive. Typical cross sections at various locations along the Build Alternative, 4-Lane Option are shown in Figure 1-13. All of the stations and park-and-ride facility locations are as illustrated in Table 1-3.

Also recommended, as part of the LPA, is a future (Phase 2) extension of LRT to Gilbert Road. This extension would provide enhanced regional transit connections and opportunity for a larger regional park-and-ride facility. At this time, Phase 2 is not identified in the MAG RTP, is not funded, and is not evaluated in the EA. However, the

Phase 2 recommendation has been forwarded to MAG and has been identified as an "illustrative project" for inclusion in the RTP. Should the Phase 2 project move forward as a federal project, it will be subject to NEPA compliance. Note that the Phase 1 project (the subject of this EA) connects logical termini and has independent utility meaning that the project is a reasonable expenditure even if no additional transportation improvements are made in the area.

**TABLE 1-3: STATION AND PARK-AND-RIDE LOCATIONS**

| Station/Stop | Park-and-Ride | Location[1] |
|---|---|---|
| **LRT Facilities (Stations)** | | |
| Sycamore/Main St. (LRT Starter Line End-of-Line Station) | Yes | East of intersection<br>Existing facility and not attributable to LRT extension |
| Alma School/Main St. | No | East of intersection |
| Country Club/Main St. | No | East of intersection |
| Center/Main St. | No | East of intersection |
| Mesa Dr./Main St. | Yes | Station—East of intersection<br>Park-and-Ride—Northeast of intersection. A 6.7-acre area of interest identified. Park-and-ride would accommodate approximately 500 vehicles and will not likely require the entire 6.7-acre site. Layout to be determined during final design. The park-and-ride site may have potential market value for transit-oriented development sometime in the future. |
| **Valley Metro Link BRT Facilities (Existing Stops—Facilities not attributable to LRT extension)** | | |
| Stapley/Main St.[2] | No | East of intersection |
| Gilbert/Main St.[2] | No | West/east of intersection |
| Lindsay/Main St.[2] | No | East of intersection |
| Val Vista/Main St.[2] | No | West/east of intersection |
| Greenfield/Main St.[2] | No | West/east of intersection |
| Higley/Main St.[2] | No | East of intersection |
| Recker/Main St.[2] | No | West/east of intersection |
| Power/Main St.[2] | No | West of intersection |
| Broadway/Power[2] | No | North of intersection |
| U.S. 60/Power (Superstition Springs Center)[2] | Yes | North of intersection |

[1]All LRT stations have a center platform configuration.
[2]Station locations as part of existing Valley Metro LINK BRT project. Station locations and amenities would remain.
Source: METRO, 2010.

### 1.3.2 Characteristics of Light Rail Transit

LRT has several features that are characteristic of this transportation mode as displayed in Table 1-4.

### 1.3.3 Background Bus Network

The background bus network is to provide riders with convenient connections between buses and the LRT extension. The local and express buses planned to operate in the Central Mesa Study Area are shown in Table 1-5, and the specific routes are illustrated in Figure 1-14. Each of the LRT stations would serve one or more existing or planned bus routes in the area.

In comparison to existing service, Valley Metro LINK Route 4112 would be scaled back from the current interface with LRT at the Main Street/Sycamore LRT Station to the planned Main Street/Country Club Drive LRT Station to avoid duplicative service. A new route, 930 Fiesta Mall Circulator will be added to provide a connection between LRT at Sycamore/Main and the Fiesta Mall near Alma School/US 60. In addition, frequency of service will increase from 30 to 15 minutes on the following routes: 30-University, 104-Alma School, 112-Country Club, 120-Mesa Drive, 128-Stapley, and 136-Gilbert.

**TABLE 1-4: MAJOR LRT FEATURES**

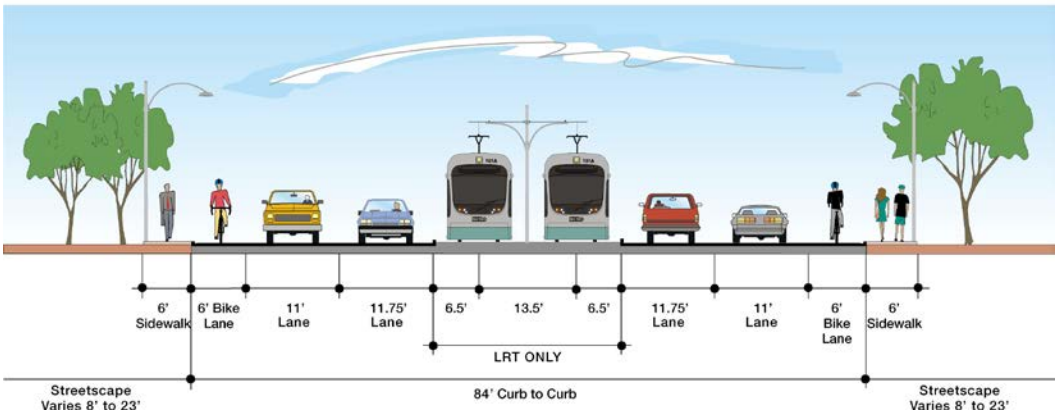
| Feature | Additional Information |
|---|---|
| Trackwork | • Continuously welded steel rails for a smooth ride and minimizes the "clackety-clack" noise of the wheels as they pass over each individual track segment.<br>• Track rails embedded in a concrete slab for aesthetic purposes and provides level and smooth crossings for autos and pedestrians where such crossings are allowed. |
| Stations | • Platforms approximately 270 feet in length by 25 feet in width. All platforms for this project to be located in the center of the street. Specific station design to be determined during final design. |
| Light Rail Vehicles | • Manufacturer: Kinkisharyo International/Mitsui—same vehicles as used on LRT Starter Line.<br>• Vehicle dimensions: Length=93 feet; Width=12 feet: Height=12 feet 8 inches<br>• Carries 150 passengers per vehicle.<br>• Operating speed in corridor=same as posted speed limit. Maximum speed=55 mph. |
| Overhead Catenary System (OCS) | • Distributes electricity to LRT vehicles, traction power substations, and signaling and communication systems.<br>• Steel or concrete poles support power line. Poles about 25 feet tall and typically installed at intervals from 90 to 170 feet.<br>• Poles normally located between the two bi-directional tracks. Sometimes located on the side of the LRT trackway with the overhead electrical line suspended over the LRT tracks. |
| Traction Power Substation (TPSS) | • Supplies electricity for LRT operations.<br>• An enclosed structure about 20-by-40 feet (30-by-60 feet including the grounding mat around the substation).<br>• TPSSs are typically spaced about 1 to 1½ mile along the trackway. Specific locations will be determined as design is further refined. |

TPSS building at 3rd St./Mill Ave. in Tempe

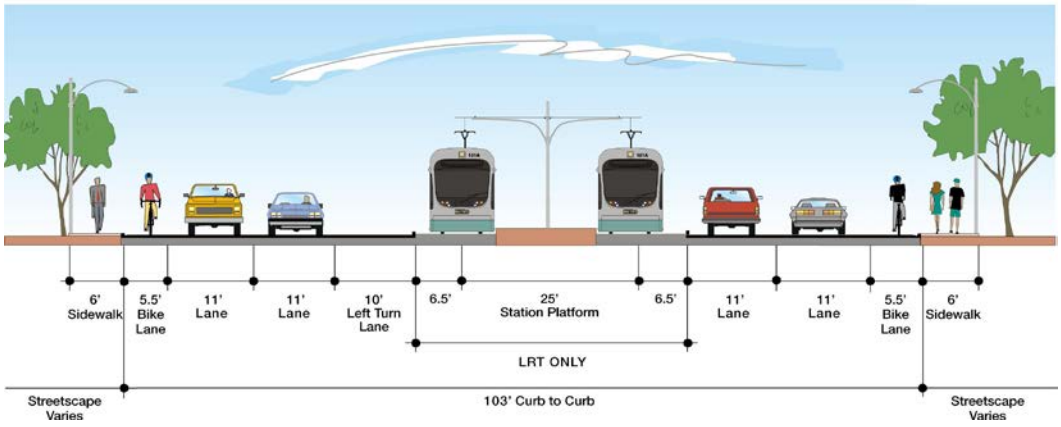
Example OCS with center poles between tracks

## FIGURE 1-11: BUILD ALTERNATIVE, SYCAMORE TO COUNTRY CLUB DRIVE

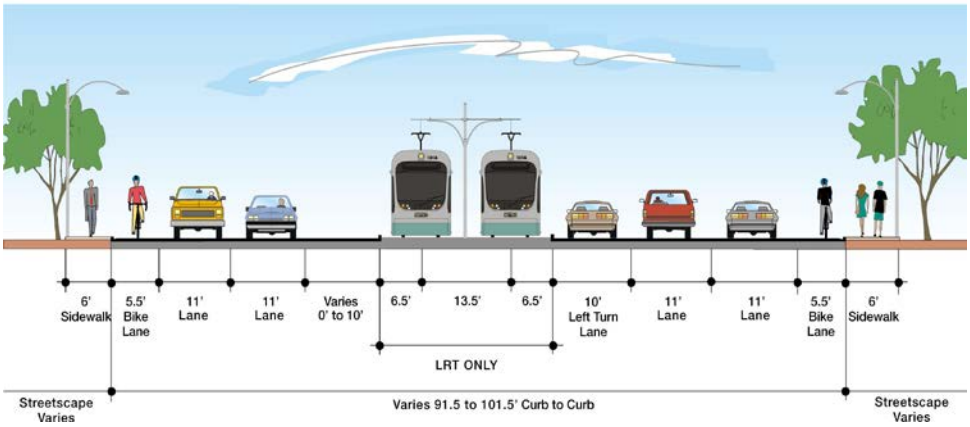
Main Street Typical Section



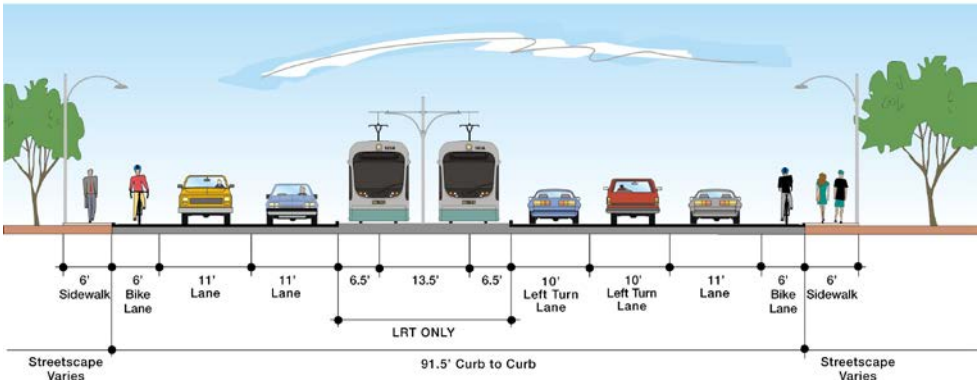

Main Street Typical Section at Station



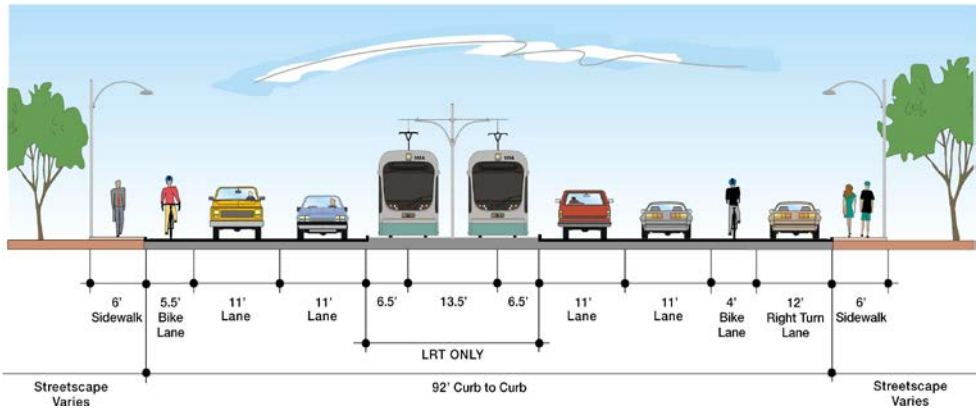

Main Street Typical Section EB Left Turn



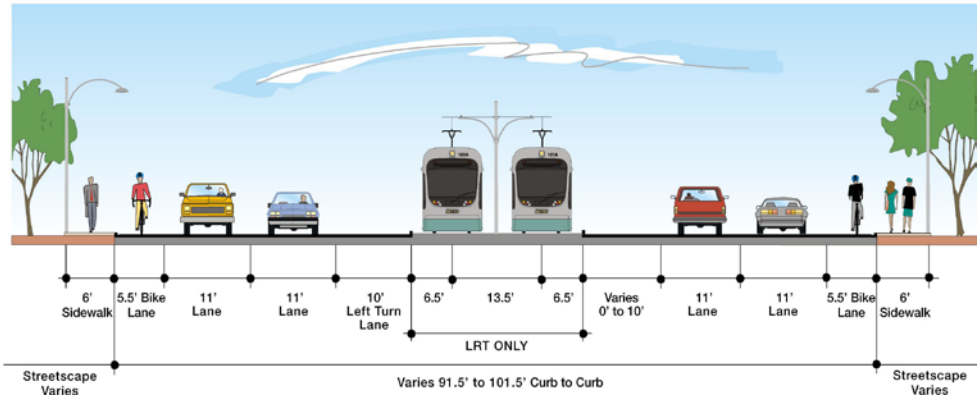
Main Street Typical Section EB Left (Country Club Drive West Leg)




Main Street Typical Section EB Right Turn

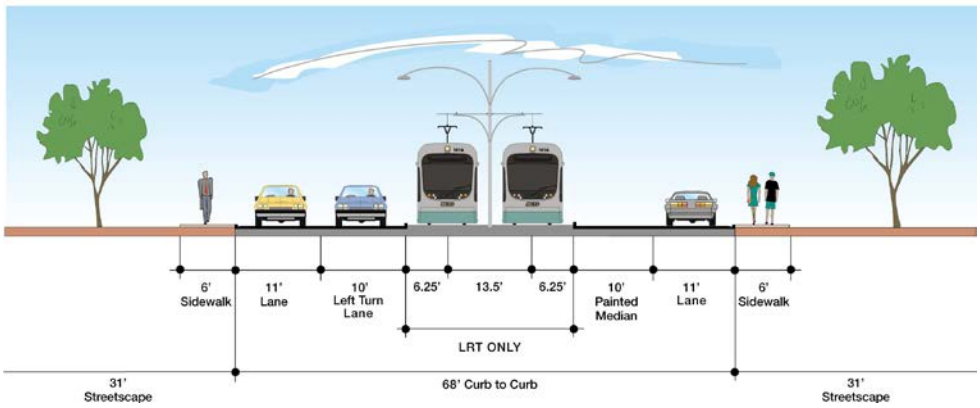



Main Street Typical Section WB Left Turn

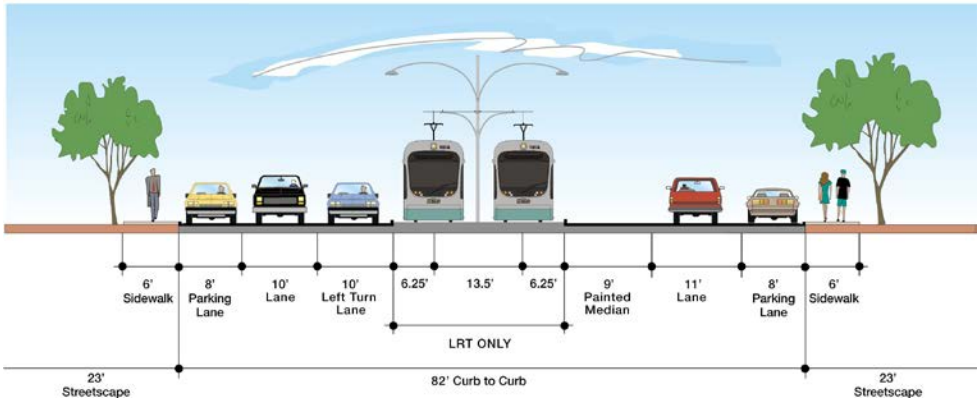


# FIGURE 1-12: BUILD ALTERNATIVE, 2-LANE OPTION COUNTRY CLUB DRIVE TO HOBSON

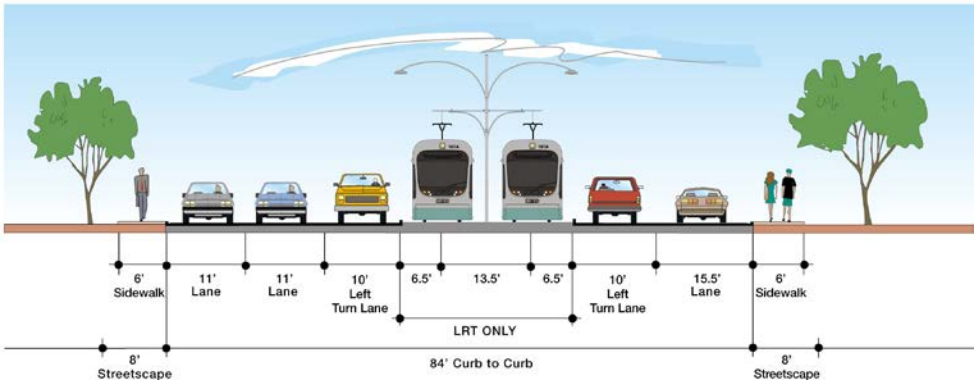
Main Street 2-lane Typical Section Without Parking Lane



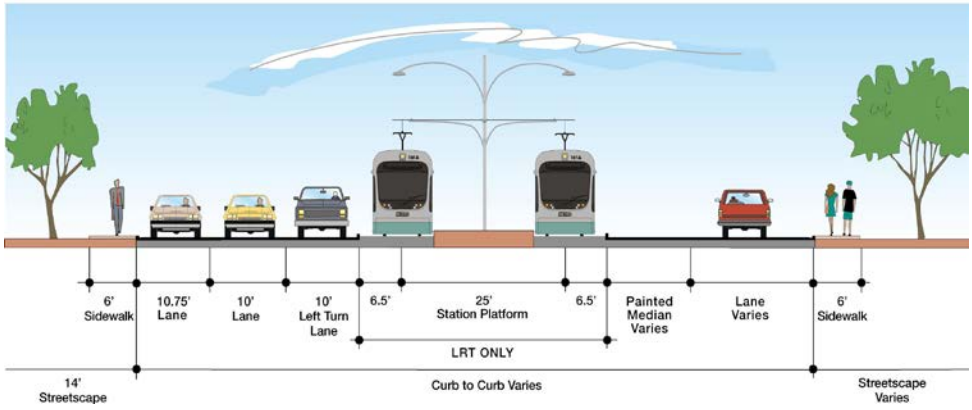

Main Street 2-lane Typical Section with Parking Lane



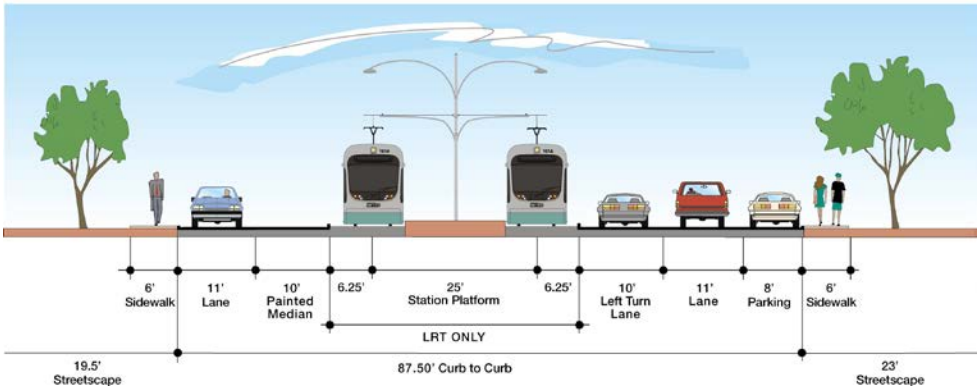

Main Street 2-lane Typical Section (Between Lesueur and Hobson)



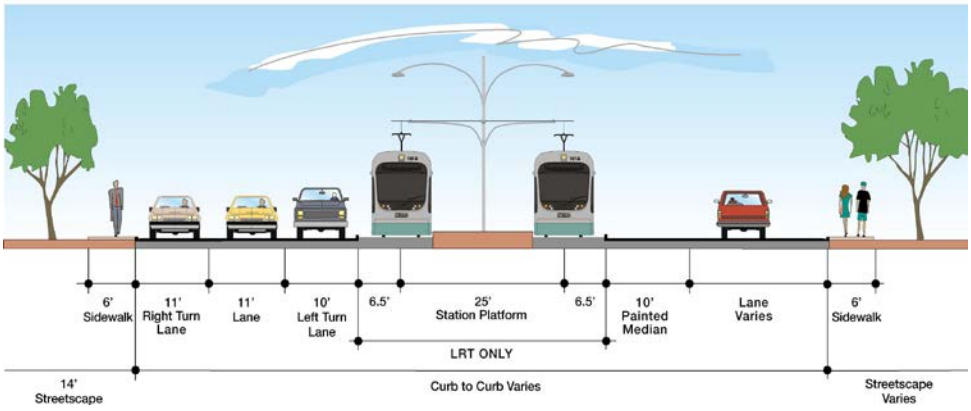
Main Street 2-lane Typical Section at Country Club Drive Station



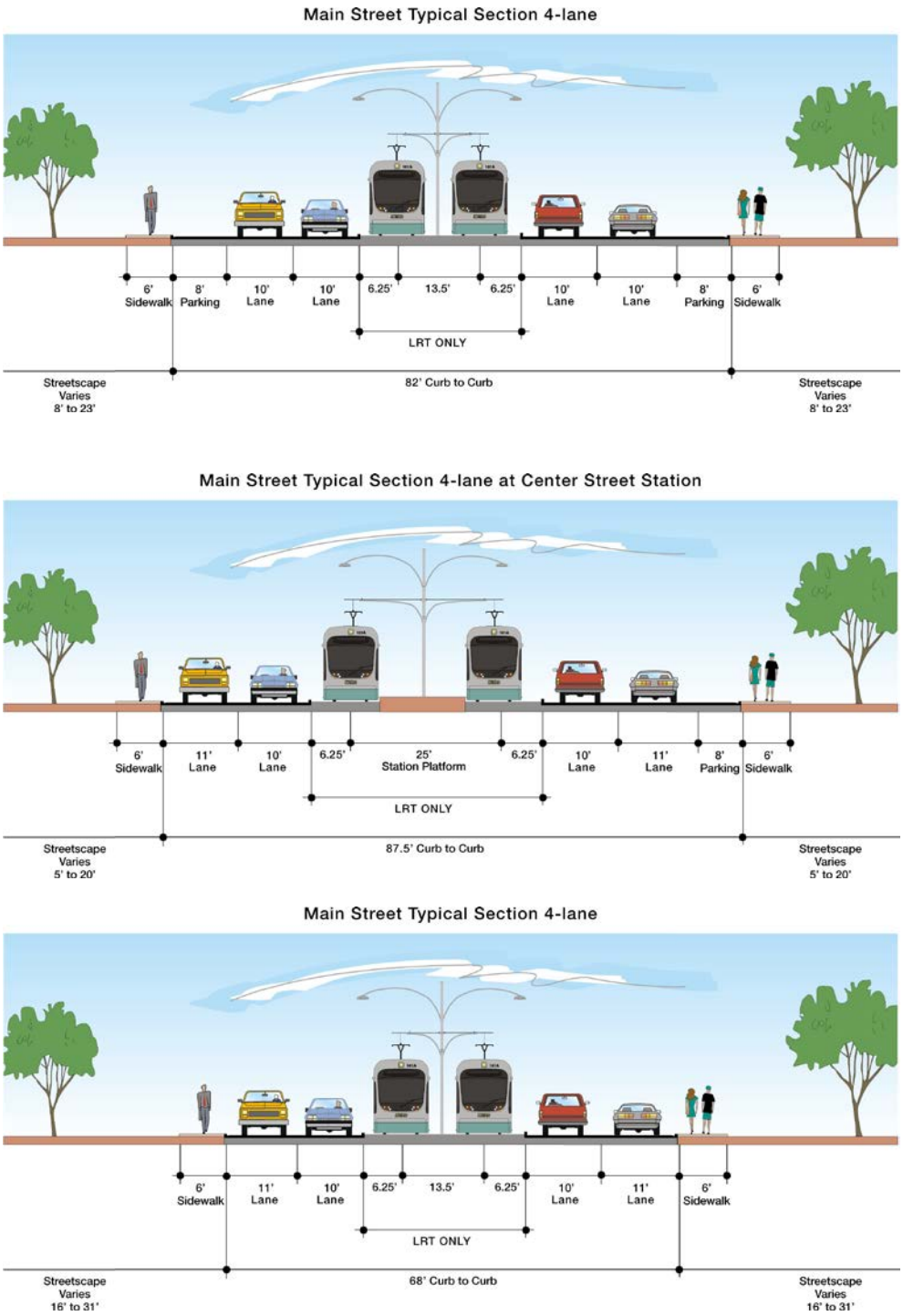

Main Street 2-lane Typical Section at Center Street Station




Main Street 2-lane Typical Section at Mesa Drive Station



## FIGURE 1-13: BUILD ALTERNATIVE, 4-LANE OPTION COUNTRY CLUB DRIVE TO HOBSON

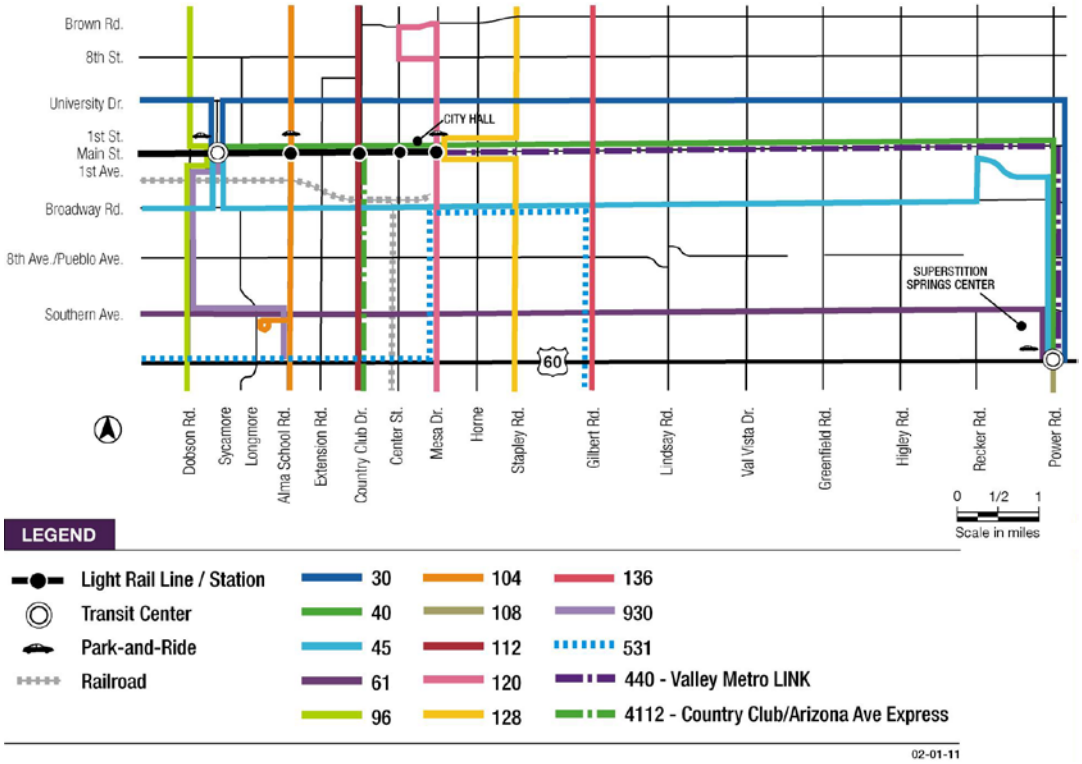


## TABLE 1-5: CENTRAL MESA – TRANSIT NETWORK – BUILD (2015)

| Route | Mode | Within Study Area | Within High Capacity Corridor | Peak Headway (Minutes) | Off-Peak Headway (Minutes) |
|---|---|---|---|---|---|
| LRT Starter Line and Central Mesa Extension | LRT | ✓ | ✓ | 10[1] | 20[1] |
| 30 – University | Local | ✓ | ✓ | 15 | 30 |
| 40 – Main St. | Local | ✓ | ✓ | 30 | 30 |
| 45 – Broadway | Local | ✓ | ✓ | 15 | 30 |
| 61 – Southern | Local | ✓ | | 15 | 30 |
| 96 – Dobson Rd | Local | ✓ | ✓ | 30 | 30 |
| 104 – Alma School | Local | ✓ | ✓ | 15 | 30 |
| 108 – Elliot | Local | ✓ | | 60 | 60 |
| 112 – Country Club Drive | Local | ✓ | ✓ | 15 | 30 |
| 120 – Mesa Dr. | Local | ✓ | ✓ | 15 | 30 |
| 128 – Stapley | Local | ✓ | ✓ | 15 | 30 |
| 136 – Gilbert Rd | Local | ✓ | | 15 | 30 |
| 531 – Mesa\Gilbert | Express | ✓ | | 20 | NA |
| 440 – Valley Metro LINK | Express | ✓ | ✓ | 15 | 15 |
| 4112 Country Club/Arizona Ave. | Express | ✓ | ✓ | 15 | NA |
| 930 – Fiesta Mall Circulator | Circulator | ✓ | ✓ | 15 | 15 |

[1]LRT weekday headways (service frequencies) are 10 minutes all day and 20 minutes in late evening.
Source: MAG Regional Transportation Plan. Headway frequencies provided by METRO, 2009.

## FIGURE 1-14: BUILD ALTERNATIVE TRANSIT SERVICE (2015)



# 2.0 ALTERNATIVES TO THE PROPOSED PROJECT

## 2.1 NO-BUILD ALTERNATIVE—WHAT HAPPENS IF WE DO NOTHING?

The No-Build Alternative evaluates what conditions will be like in the year 2015 if the Central Mesa LRT extension is not built. Year 2015 is the closest year for available planning data to the proposed opening year of 2016. This alternative provides a point of comparison to the proposed project or LPA. The No-Build Alternative consists of the transit service levels, highway networks and traffic volumes, and forecasted demographics for year 2015 that are assumed in the Maricopa Association of Governments (MAG) constrained Regional Transportation Plan (RTP). It consists of the existing highway and transit network, as well as planned and programmed (committed) improvements.

### 2.1.1 Freeway/Highway and Roadway Improvements

The Central Mesa Study Area is nearly built out in terms of opportunities for at-grade vehicle capacity and cannot accommodate major highway widening without substantial right-of-way acquisitions. Planned roadway improvements in the study area are summarized in Table 2-1 and illustrated in Figure 2-1.

**TABLE 2-1: ROADWAY PROJECTS BY 2015—CENTRAL MESA (NO-BUILD)**

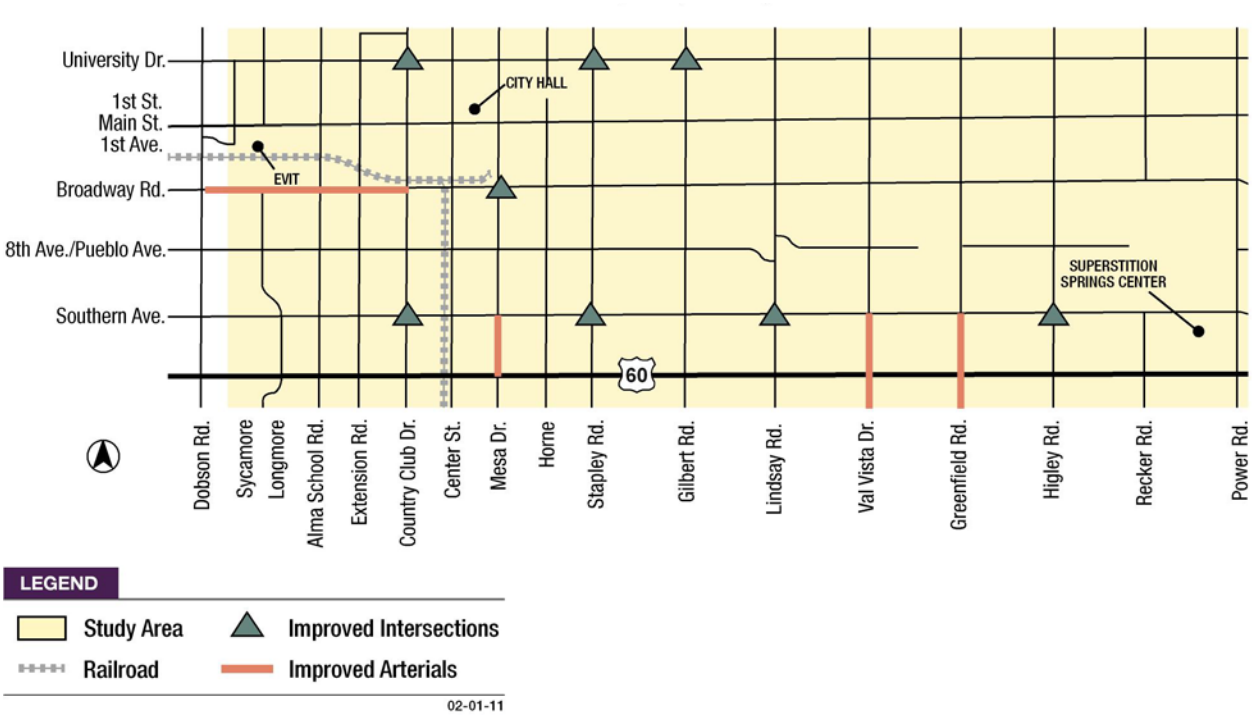
| Roadway Segment | Project | Length (miles) |
|---|---|---|
| Broadway Road: Dobson Road to Country Club Drive | Design and construct arterial roadway capacity improvement | 2 |
| University Drive/Gilbert Road | Design and construct intersection improvements | N/A |
| University Drive/Country Club Drive | Design and construct intersection improvements | N/A |
| University Drive/Stapley Road | Design and construct intersection improvements | N/A |
| Greenfield Road: Southern Avenue to Baseline Road | Design and construct arterial roadway capacity improvement | 1 |
| Mesa Drive / Broadway Road | Design and construct intersection improvements | N/A |
| Mesa Drive: Southern Avenue to U.S. 60 | Design and construct arterial roadway capacity improvement | 0.5 |
| Southern Avenue/Country Club Drive | Design and construct intersection improvements | N/A |
| Southern Avenue/Stapley Road | Design and construct intersection improvements | N/A |
| Southern Avenue/Lindsay Road | Design and construct intersection improvements | N/A |
| Southern Avenue/Higley Road | Design and construct intersection improvements | N/A |
| Val Vista Drive: Southern Avenue to Baseline Road | Design and construct arterial roadway capacity improvement | 1 |

Source: *MAG Regional Transportation Plan*, 2007 and City of Mesa 2009.

### 2.1.2 Transit Facilities and Improvements

The regional transit system currently serving the MAG area consists of local bus service, express bus service, circulator/shuttle services, and the 20-mile LRT Starter Line (Figure 1-1 in Chapter 1) that serves portions of Phoenix, Tempe, and west Mesa. These services operate primarily on arterial streets and serve a range of travel needs.

## FIGURE 2-1: PLANNED ROADWAY PROJECTS BY 2015 (NO-BUILD)




Source: *MAG Regional Transportation Plan*, 2007.

Current bus service in the study area is shown in Table 2-2 and Figure 2-2. Local routes generally operate in a grid pattern on the arterial street network, with several routes deviating to Downtown Mesa. The Valley Metro Main Street LINK operates as a limited stop express service throughout the day along Main Street from the LRT Starter Line at Sycamore/Main to Power Road where it turns south and continues to the Superstition Springs Shopping Center near US 60. The Valley Metro Arizona Avenue LINK operates as a limited stop service throughout the day along Main Street from the LRT Starter Line at Sycamore/Main to Country Club, and south on Country Club/Arizona Avenue to Chandler. The 531 Mesa/Gilbert Express operates between these two cities during peak periods only. Transit service in the 2015 No-Build condition is presented in Table 2-2 and Figure 2-3. There are a few differences between existing service and that provided in the No-Build scenario. Service frequencies during peak periods increases from 30 to 15 minutes on three routes: 30—University, 104—Alma School, and 112—Country Club. However, service frequencies decrease from 15 to 30 minutes on route 96—Dobson.

Several transit facilities, including two transit centers and two park-and-rides, are located within the Central Mesa Study Area as displayed in Table 2-3. One additional bus interface location is programmed in the RTP and is also shown in the table.

## TABLE 2-2: CENTRAL MESA - TRANSIT NETWORK (EXISTING AND NO-BUILD)

| Route | Mode | Within Study Area | Within High Capacity Corridor | Existing | | No-Build | |
|---|---|---|---|---|---|---|---|
| | | | | Peak Headway (Minutes) | Off-Peak Headway (Minutes) | Peak Headway (Minutes) | Off-Peak Headway (Minutes) |
| LRT Starter Line | LRT | ✓ | ✓ | 12[1] | 20[1] | 10[1] | 20[1] |
| 30 – University | Local | ✓ | | 30 | 30 | 15 | 30 |
| 40 – Main | Local | ✓ | ✓ | 30 | 30 | 30 | 30 |
| 45 – Broadway | Local | ✓ | | 15 | 30 | 15 | 30 |
| 61 – Southern | Local | ✓ | | 15 | 30 | 15 | 30 |
| 96 – Dobson Rd | Local | ✓ | ✓ | 15 | 30 | 30 | 30 |
| 104 – Alma School | Local | ✓ | | 30 | 30 | 15 | 30 |
| 108 – Elliot | Local | ✓ | | 60 | 60 | 60 | 60 |
| 112 – Country Club Drive | Local | ✓ | | 30 | 30 | 15 | 30 |
| 120 – Mesa Dr. | Local | ✓ | | 30 | 30 | 30 | 30 |
| 128 – Stapley | Local | ✓ | | 30 | 30 | 30 | 30 |
| 136 – Gilbert | Local | ✓ | | 30 | 30 | 30 | 30 |
| 440 – Valley Metro LINK | Express | ✓ | ✓ | 15 | 30 | 15 | 30 |
| 4112 – Country Club/ Arizona Ave. | Express | ✓ | ✓ | – | – | 15 | NA |
| 531 – Mesa/Gilbert | Express | ✓ | ✓ | 20 | NA | 20 | NA |

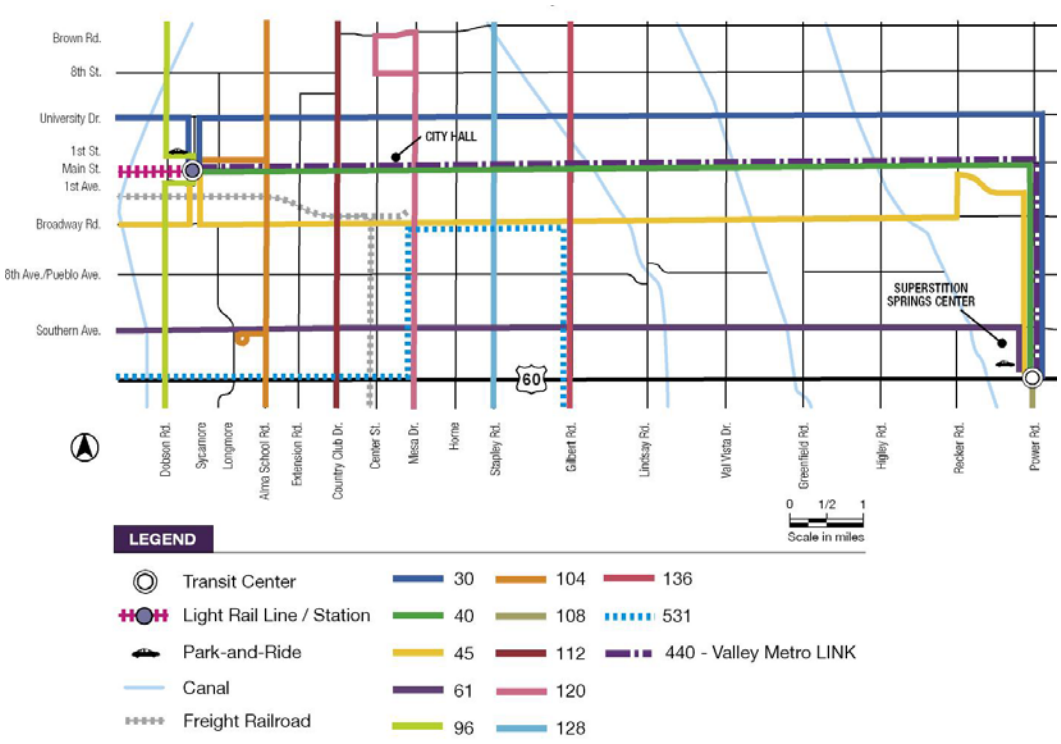
[1]LRT weekday headways (service frequencies) are currently 12 minutes all day and 20 minutes in late evening. By 2015, the No Build LRT headways will be 10 minutes all day and 20 minutes in late evening.
Source: Valley Metro Transit Book, July 2009 and METRO 2011.

## TABLE 2-3: EXISTING AND PLANNED TRANSIT FACILITIES

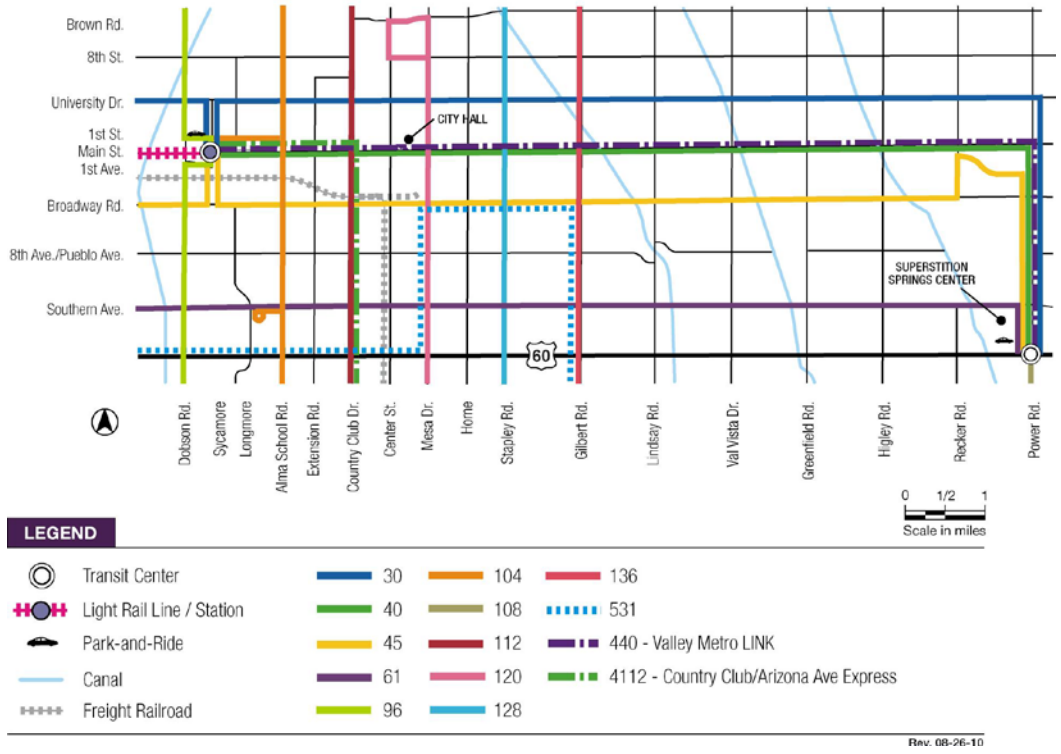
| Facility | Comments |
|---|---|
| **Existing Facilities** | |
| Stops – Fixed Route Bus | Spaced about every 1/8 to 1/4 mile |
| Stops – Valley Metro LINK BRT | Stops with shelters spaced about every 1 mile. |
| Transit Center—Sycamore | Main St./Sycamore. Located at western boundary of Central Mesa study area. Serves the LRT Starter Line, Valley Metro LINK BRT, and several other bus routes. |
| Transit Center—Superstition Springs | Superstition Springs Center, Power Rd near US 60. Serves Valley Metro LINK BRT and local routes 30, 40, 45, 96, and 104. |
| Park-and-Ride—Sycamore | Main St./Sycamore. Serves transit center at this location. |
| Park-and-Ride—Superstition Springs | Power Rd near US 60. Serves transit center at this location. |
| **Planned Facilities** | |
| Downtown Bus Interface | Planned for completion in 2016. |

Source: METRO, 2010.

## FIGURE 2-2: CENTRAL MESA - TRANSIT SERVICE (EXISTING)

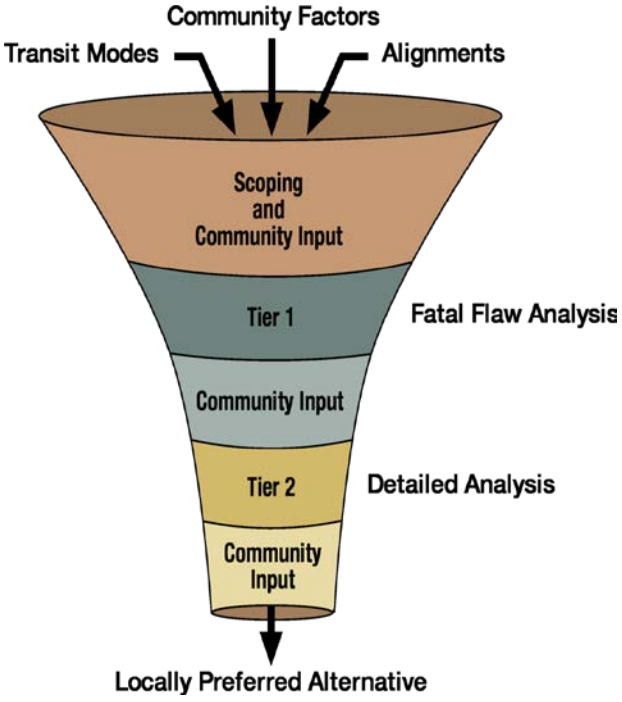



## FIGURE 2-3: CENTRAL MESA – NO-BUILD TRANSIT SERVICE (2015)



## 2.2 BUILD ALTERNATIVE—WHAT ALTERNATIVES HAVE BEEN CONSIDERED AND HOW DID WE GET TO THE LOCALLY PREFERRED ALTERNATIVE?

The development of alternatives has been an innovative process involving technical evaluation led by METRO and the City of Mesa and their project study team, with input from the public and from a range of agencies. Public input and interaction has occurred through a variety of sources, including periodic workshops, meetings with individual community and business associations and other stakeholders, as well as through written and website correspondence. Refer to Chapter 4 for additional information about public outreach.




**Alternatives Development Process**

A two-tiered alternatives development process was used to evaluate conceptual alternatives. The first phase (Tier 1) included a conceptual level evaluation that analyzed the advantages and disadvantages of the initial list of potential alternatives to address the transportation needs of the corridor (see separate Tier 1 Evaluation of Alternatives Report, October 2007, for more information). The initial alternatives were subject to a "fatal flaw" screening at the Tier 1 phase; the most feasible alternatives were identified, and retained for further analysis, and the alternatives deemed unresponsive to Tier 1 evaluation criteria were eliminated from continued study. The Tier 1 evaluation criteria were primarily qualitative in nature, and intended to eliminate alignment and/or technology options that did not support project goals or that were considered to be "fatally flawed".

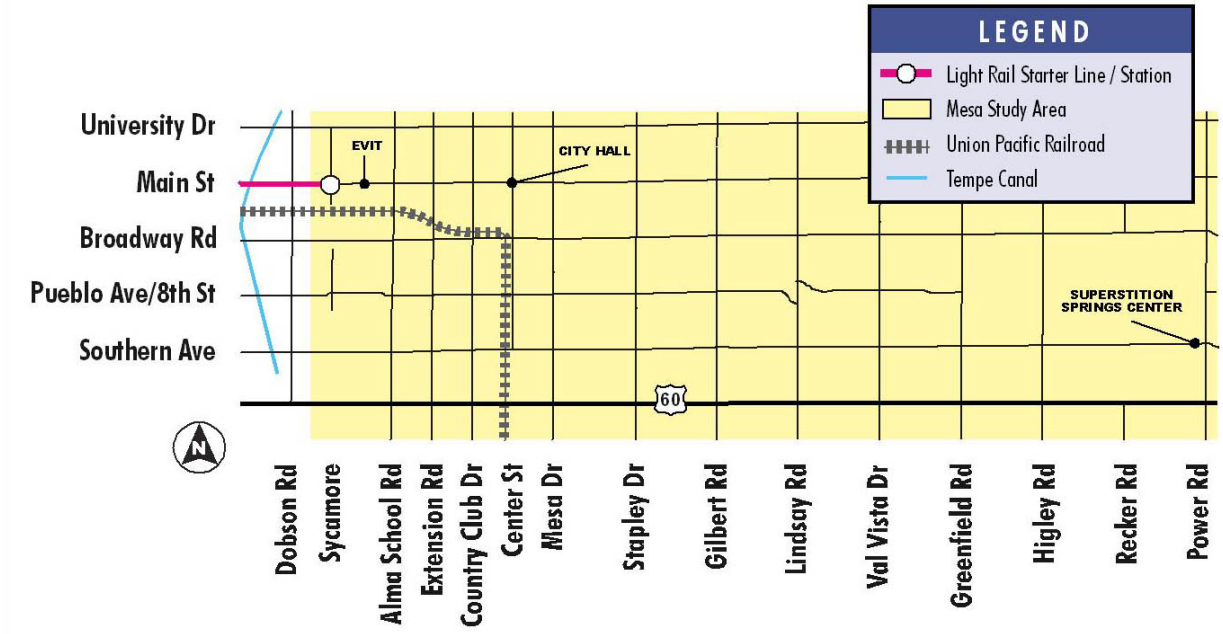
The Central Mesa study area alternatives that were retained after the Tier 1 evaluation were then subjected to a more comprehensive evaluation in Tier 2 (see separate Tier 2 Evaluation of Alternatives Report, February 2009). The Tier 2 evaluation criteria quantify ridership potential, capital costs, land use and economic development impacts, traffic issues, major environmental factors, conceptual engineering, and community goals and desires. As a result of the Tier 2 evaluation and continued public input, the LPA, described in Chapter 1, has been selected as the proposed project and is the subject of this EA. The remainder of this section discusses the alternatives considered and the process used to select the LPA.

### 2.2.1 Alternatives Analysis – Tier 1

Within the Central Mesa Study Area (Figure 2-4), three BRT alternatives and five LRT alternatives were developed and analyzed for the Tier 1 evaluation:

- BRT 1A—Main Street Guideway to Horne
- BRT 1B—Main Street Guideway to Country Club Drive/Bus Operates in Mixed Traffic Through Downtown Mesa
- LRT 1—Main Street with 2 Through Traffic Lanes
- BRT 2—1st Street Guideway Through Downtown Mesa
- LRT 2—Main Street with 4 Through Traffic Lanes
- LRT 3—Main Street/1st Street Couplet[1]
- LRT 4—1st Street Double Track Through Downtown Mesa
- LRT 5—1st Avenue Double Track Through Downtown Mesa

**FIGURE 2-4: CENTRAL MESA STUDY AREA**




The major differences between the BRT and LRT modes, or technologies, are shown in Figure 2-5.

All alternatives began at the LRT Starter Line end-of-line station at Sycamore and Main Street in Mesa and had the Downtown Mesa area as a major western destination (using

[1] Couplet includes one-way tracks down both Main and 1st Streets through downtown Mesa.

LRT and/or BRT high capacity transit). BRT was the only mode considered east of Downtown Mesa to the Superstition Springs Center. It was assumed that the end-of-line for the high capacity transit (HCT) alternatives within Downtown Mesa could be either Mesa Drive or Horne (between Mesa and Stapley Drives) depending on a variety of factors such as land use, right-of-way impacts, ridership, park-and-ride demands, development potential and cost. However, Horne, being the lengthier alignment, was used for the Tier 1 evaluation in order to adequately measure the potential impacts of high capacity transit through Downtown Mesa. East of Horne to Superstition Springs Center, BRT would operate in mixed traffic as a limited stop express service similar to the Valley Metro LINK BRT which began operating in December 2008.

**FIGURE 2-5: COMPARISON OF LRT AND BRT MODES**

| Transit Mode Comparison |  Bus Rapid Transit |  Light Rail Transit |
|---|---|---|
| Exclusive Guideway Operations | x | x |
| Able to Share Auto Travel Lanes | x | |
| Flexible Routing | x | |
| Frequency of Stops: | | |
| 1/8 to 1/2 mile | x | |
| 1/2 to 2 miles | x | x |
| 2 to 5 miles | x | |
| Typically Operates Throughout Day | x | x |
| Travel Speeds: | | |
| Higher(Fixed Guideway) | x | x |
| Slower(Mixed Traffic Lanes) | x | |
| High Capacity Vehicles | | x |
| High Economic Development Potential | | x |

Note: Both modes have valid applications depending on operating environment and passenger demand.
Source: METRO, 2009.

All of the Tier 1 alternatives used Main Street along the initial portion of the route from Sycamore to Country Club Drive. No other route for this initial segment was considered because no other alignments would attract sufficient ridership, and Main Street is the only roadway near Sycamore that directly serves downtown Mesa, which is a major purpose and need for the project. Using other major streets in the area would require out of direction travel (at least one-half mile) to get to downtown Mesa resulting in added travel times for riders and higher costs to build the additional project length. There are no closer local streets that parallel Main Street for the distance between Sycamore and Country Club Drive. East of Extension to Country Club, parallel local

streets exist, but they are not as wide as Main Street, and most require light rail to traverse through neighborhoods.

The alternatives from Sycamore to Country Club Drive only considered accommodating the existing four traffic lanes (two in each direction). There was no detailed evaluation of eliminating through travel lanes in this area to one lane in each direction for the following reasons:

- Reducing travel lanes would result in traffic diverting to corridors north and south of Main Street potentially increasing congestion on the other east-west travel corridors.
- Reducing travel lanes may also increase congestion along Main Street due to reduced capacity. This reduced capacity would result in "less vehicles" traveling along Main Street avoiding downtown Mesa.
- Less vehicles traveling Main Street may result in a decrease in vehicles going to downtown potentially resulting in an impact to the businesses as they rely on vehicular "drive-by" traffic. One Purpose and Need for the project is to enhance access to downtown Mesa. Taking traffic away from downtown would be in direct conflict with this objective.
- Providing one travel lane in this area of Main Street, a major arterial street, would increase emergency vehicle response times.
- Increasing vehicle travel time would not only be inconvenient, it could result in increased emissions.
- Reducing travel lanes would require additional construction activities to relocate the existing curbs, sidewalks, driveways, landscaping, utilities, lighting, traffic signals, etc. This would also substantially increase project costs.
- Reducing travel lanes would conflict with Mesa's 2025 General Plan and West Main Street Area Plan which identify this section of Main Street as a 4-lane arterial with the median accommodating a future light rail alignment.

East of Country Club Drive, the alternatives used Main Street, 1st Street, or 1st Avenue to travel through the downtown area since 1st Street and 1st Avenue are wide streets that are close to Main Street and parallel Main Street in the downtown area. The 1st Street and 1st Avenue alignments returned to Main Street further east near Mesa Drive to continue east to a station at Horne. East of Country Club Drive, both two-lane and four-lane travel lane options were considered because of the limited right-of-way width in the downtown core and to determine if it may be possible to reduce the numbers of travel lanes to minimize right-of-way impacts without causing other adverse impacts. This is the area where the evaluation was focused because of the differences in alignments and traffic lane configurations.

At the conclusion of Tier 1, all but two of the eight alternatives were recommended for further consideration. BRT 2 (1st Street Guideway through Downtown Mesa) and LRT 3 (Main Street/1st Street couplet) were eliminated because they least supported the project's goals and objectives (Table 2-4). Table 2-5 summarizes the rationale for retaining the other six alternatives.

**TABLE 2-4: TIER 1 ALTERNATIVES ELIMINATED**

| |
|---|
| **BRT 2 – 1st Street Guideway Through Downtown Mesa** |
| • Downtown diversion to 1st Street is not a direct route of travel from Sycamore to Horne<br>• Out-of-direction travel increases travel times over Main Street alternatives through downtown<br>• Increases project costs and right-of-way needs for guideway to divert to 1st Street<br>• Forces a transfer from LRT to BRT at Sycamore to get to downtown Mesa, a major purpose and need for the project |
| **LRT 3 – Main Street/1st Street Couplet[1]** |
| • Increases impacts on commercial properties and right-of-way needs over other alternatives<br>• Increases impacts on bike lanes, on-street parking, streetscape, and landscaping<br>• Many stakeholders opposed to a couplet operation that spreads construction period impacts over a larger area |

[1]Couplet includes one-way tracks down both Main and 1st Streets through downtown Mesa.
Source: *Tier 1 Evaluation of Alternatives Report, Central Mesa*, October, 2007, METRO.

### 2.2.2 Alternatives Analysis – Tier 2

Following considerable public and stakeholder input on the findings of Tier 1, the alternatives that remained were further refined. The alternatives (Figure 2-6 and Table 2-6) were renamed to be simpler and yet descriptive:

BRT Alternatives
- BRT Main Street 2-Lane (previously BRT 1A)
- BRT Main Street 4-Lane (previously BRT 1B)

LRT Alternatives
- LRT Main Street 2-Lane (previously LRT 1)
- LRT Main Street 4-Lane (previously LRT 2)
- LRT 1st Street (previously LRT 4)
- LRT 1st Avenue (previously LRT 5)

All Tier 2 LRT and BRT alternatives operate from Sycamore to Horne and include stations in the same general locations as shown in Table 2-6. As with the Tier 1 Alternatives, all Tier 2 alternatives would operate east of Horne to Superstition Springs Center as a limited stop BRT express service in existing traffic lanes similar to the existing Valley Metro LINK.

For the segment from Sycamore to Country Club Drive, all alternatives maintain the existing four traffic lanes on Main Street and offer bike lanes and streetscape elements in this western segment. This is because the right-of-way is more generous than east of Country Club Drive and allows four lanes of traffic from Sycamore to Country Club Drive with minimal additional property acquisition. In addition, the reasons for maintaining four lanes, as previously stated in the discussion of the Tier 1 alternatives, also apply. The only difference in this segment is whether the technology is BRT or LRT, and all are assumed to operate in the median of Main Street in fixed guideway (i.e., in exclusive right-of-way as a track or roadway depending on mode).

## TABLE 2-5: TIER 1 ALTERNATIVES RETAINED FOR TIER 2

**BRT 1A – Main St. Guideway to Horne**

- Lower capital cost relative to other alternatives
- Easy to implement
- Consistent with local plans
- Capable of expansion
- Directness of travel through Central Mesa
- Good proximity to activity centers
- Aesthetics
- Minimal impacts on roadways, bike lanes, on-street parking, curbs, sidewalks, landscaping and streetscape within Downtown Mesa
- Minimal residential impact
- Only disadvantage is necessary transfer from BRT to LRT at the current Sycamore/Main LRT station

**BRT 1B – Main St. Guideway to Country Club/Mixed Traffic Through Downtown Mesa**

- Has same advantages and disadvantages as BRT 1A
- Also has less impact on number of travel lanes through Downtown Mesa

**LRT 1 – Main St. with 2 Through Lanes**

- Good ridership potential
- Consistent with local plans
- Compatible with existing transit modes
- Capable of expansion
- Good travel times due to LRT exclusive right-of-way
- Directness of travel through Central Mesa
- One-seat ride (no transfer required) from Phoenix through Downtown Mesa
- Good proximity to activity centers
- Good transit-oriented development (TOD)/economic development potential
- No impacts on residential uses
- Minimal impacts on surrounding right-of-way
- Minimal impacts on bike lanes, on-street parking, curbs, sidewalks, landscaping and streetscape within Downtown Mesa
- Disadvantages include elimination of 2 travel lanes, construction impacts on commercial properties and utility relocation within Downtown Mesa, and upfront costs of LRT versus BRT

**LRT 2 – Main St. with 4 Through Lanes**

- Has nearly all advantages of LRT 1
- Also maintains existing number of travel lanes within Downtown Mesa
- Disadvantages include impacts to commercial properties, roadways, right-of-way; utility relocations, and Downtown Mesa bike lanes, on-street parking, existing curbs, sidewalks, landscaping, and streetscape; upfront costs of LRT versus BRT

**LRT 4 – 1st St. Double Track Through Downtown Mesa**

- Has nearly all advantages of LRT 1
- Also maintains existing travel lanes within Downtown Mesa
- Disadvantages include slower travel time due to diversion off Main St., out-of-direction travel, impacts to residential and commercial properties, right-of-way impacts, upfront costs of LRT versus BRT as well as costs to divert LRT off Main St.

**LRT 5 – 1st Ave. Double Track Through Downtown Mesa**

- Has similar advantages to LRT 4
- Also provides high potential for infill of low-density and vacant uses along 1st Ave.
- Disadvantages include slower travel time due to diversion off Main St., out-of-direction travel, proximity to activity centers is least desirable of all alternatives, impacts on residential and commercial properties, right-of-way impacts, upfront costs of LRT versus BRT as well as costs to divert LRT off Main St.

Source: *Tier 1 Evaluation of Alternatives Report, Central Mesa*, October 2007. METRO

## TABLE 2-6: STATIONS—TIER 2 ALTERNATIVES

| Station Location | BRT Main Street 2-Lane | BRT Main Street 4-Lane | LRT Main Street 2-Lane | LRT Main Street 4-Lane | LRT 1st Street | LRT 1st Avenue |
|---|---|---|---|---|---|---|
| Main Street / Sycamore (LRT Starter Line End-of-Line) | ● | ● | ● | ● | ● | ● |
| Main Street / Alma School Road | ● | ● | ● | ● | ● | ● |
| Main Street / Country Club Road | ● | ● | ● | ● | ● | ● |
| Main Street / Centennial Way | ● | ● | ● | ● | ● | ● |
| Main Street / Horne | ● | ● | ● | ● | ● | ● |
| Main Street / Stapley[1] | ● | ● | ● | ● | ● | ● |
| Main Street / Gilbert[1] | ● | ● | ● | ● | ● | ● |
| Main Street / Lindsay[1] | ● | ● | ● | ● | ● | ● |
| Main Street / Val Vista[1] | ● | ● | ● | ● | ● | ● |
| Main Street / Greenfield[1] | ● | ● | ● | ● | ● | ● |
| Main Street / Higley[1] | ● | ● | ● | ● | ● | ● |
| Main Street / Recker[1] | ● | ● | ● | ● | ● | ● |
| Main Street / Power Road[1] | ● | ● | ● | ● | ● | ● |
| Power Road/ Broadway Road[1] | ● | ● | ● | ● | ● | ● |
| Power Road / U.S. 60 (Superstition Springs) [1] | ● | ● | ● | ● | ● | ● |

● = Pedestrian Access
= Park-and-Ride
=Transit Center
[1]Station locations as part of Valley Metro LINK BRT project. Station locations and amenities would remain.
Source: METRO (2009).

The Tier 2 evaluation focused on the segment between Country Club Drive and Horne where there are some additional differences as noted in Figure 2-6. The differences mainly concern the traffic lane configurations in this area. East of Country Club Drive, the numbers of lanes on Main Street were either kept the same or reduced to two lanes (one in each direction) depending on alternative. The two-lane option is being considered downtown due to the limited right-of-way within the downtown core. The downtown businesses and City of Mesa prefer to avoid or minimize impacts on the recently built streetscape and parking along Main Street. Note also that both 1st Street and 1st Avenue run close to and parallel with Main Street in the downtown area. Both

streets have sufficient capacity to accommodate downtown traffic diversion and serve as a convenient bypass route.

## FIGURE 2-6: TIER 2 ALTERNATIVES

### All BRT and LRT Main Street Alternatives


**BRT Main St. 2-Lane and LRT Main St. 2-Lane:** Each alternative includes median-running fixed guideway (roadway or track) on Main St. from Sycamore to Horne. Traffic lanes from Country Club to Horne are reduced to 2 (one each direction), and bike lanes, on-street parking, and streetscape elements are included.

**BRT Main St. 4-Lane:** Includes median-running fixed guideway on Main St. from Sycamore to Country Club only. East of Country Club, alternative operates in existing traffic (no lane reductions), and bike lanes, on-street parking, and streetscape elements are included.

**LRT Main Street 4-Lane:** Includes median-running fixed guideway on Main Street from Sycamore to Horne. From Country Club to Horne, Main Street maintains its 4 travel lanes, and bike lanes, on-street parking, and streetscape elements are included.

### LRT 1st Street


**LRT 1st St.:** Includes median-running fixed guideway from Sycamore to Horne. East of Country Club, route turns from Main St. north to 1st St. and continues east turning south on Hibbert to return to Main St. where it continues east to Horne. Along 1st St., 2 travel lanes (one each direction), on-street parking, and streetscape elements are included.

### LRT 1st Avenue


**LRT 1st Ave.:** Includes median-running fixed guideway from Sycamore to Horne. East of Country Club, route turns from Main St. south to 1st Ave and continues east turning north on Hibbert to return to Main St. where it continues east to Horne. Along 1st Ave. 2 travel lanes (one each direction), on-street parking, and streetscape elements are included.

As a result of the findings of the Tier 2 evaluation and further community input, the recommended alternative was to advance LRT as the preferred technology and Main Street as the preferred alignment for the reasons presented in Table 2-7.

**TABLE 2-7: MODE AND ALIGNMENT SELECTED AS RECOMMENDED ALTERNATIVE**

| |
|---|
| **LRT selected as preferred mode or technology** |
| • Lower long term life cycle costs<br>• Provides up to five times the passenger carrying capacity<br>• Reduces passenger travel times<br>• Eliminates a bus to rail transfer at Main and Sycamore<br>• Offers greater economic development opportunities<br>• Better serves the documented travel demand |
| **Main Street selected as preferred route** |
| • Closest proximity to major Downtown Mesa activity centers (closest to Downtown Mesa retail activities, Mesa Arts Center, City Hall)<br>• Lower capital costs<br>• Reduces property acquisition requirements<br>• Reduces passenger travel times<br>• Offers the greatest economic development opportunities<br>• Best opportunity to meet FTA criteria for cost effectiveness.[2]<br>• Forecasted daily riders. Although this was not a deciding factor because the alternatives on 1st Street and 1st Avenue also have high predicted ridership, it is important to note that the Main Street alignment would have good ridership. |

Table 2-8 summarizes the advantages and disadvantages of each of the Tier 2 build alternatives. Note that the No-Build Alternative will continue to be considered as specified by the National Environmental Policy Act (NEPA) regulations.

It was further recommended to carry forward evaluation of both the 2-lane and 4-lane options on Main Street downtown and to consider moving the eastern terminus from Horne west to Mesa Drive. The purpose of relocating the terminus was to reduce project costs for a shorter alignment. In addition, there was concern about adverse impacts on surrounding neighborhoods from constructing a large park-and-ride facility at Horne. The preference was to have a park-and-ride at Gilbert Road, but no funding is currently available to build LRT further east to Gilbert Road. Therefore, the LPA includes a light rail extension on Main Street east to an interim end-of-the-line east of Mesa Drive as Phase 1. The LPA recommendation, as adopted in May 2009, is the proposed project and the subject of this EA. A decision on lane configuration (i.e., 2-lanes or 4-lanes downtown) still needs to be made and will occur after the EA evaluation is completed, and the community input received is given adequate consideration. The unfunded Phase 2 project to Gilbert Road may be considered later should funding become available and would be a separate project also subject to NEPA regulations if

[2] At the time the Tier 2 evaluation was conducted, FTA's criteria for cost effectiveness was the major criteria used to determine a major transit investment's eligibility for federal funding under the New Starts program. Recent FTA guidance indicates that, although cost effectiveness is still an important criteria, other criteria are also important.

federal funding is sought for it. Further discussion of the LPA may be found in Chapter 1.

**TABLE 2-8: SUMMARY OF FINDINGS OF THE TIER 2 ANALYSIS[1]**

| Alternative | Advantages | Disadvantages |
|---|---|---|
| **BRT Main Street 2-Lane (Recommended for Elimination)** | • Maintains bike lanes<br>• Creates opportunities for transit oriented development<br>• Lower start up costs<br>• Reduces or eliminates construction<br>• Good predicted ridership | • Lower passenger capacity of buses vs. light rail vehicles means buses may require more operations to handle forecasted passengers<br>• More expensive to operate in the long term<br>• Consumes fossil fuel, and does not improve air quality<br>• Eventual upgrades will cost more |
| **BRT Main Street 4-Lane (Recommended for Elimination)** | • Preserves existing traffic flow<br>• This is the best BRT alternative<br>• Has the least impact on businesses<br>• Good predicted ridership | • Lower passenger capacity of buses vs. light rail vehicles means buses may require more operations to handle forecasted passengers.<br>• More expensive in the long term to operate<br>• Consumes fossil fuel, and does not improve air quality<br>• Loss of parallel parking |
| **LRT Main Street 2-Lane (Recommended as LPA)[1]** | • Direct connection to existing system<br>• Creates a walkable downtown<br>• Higher projected ridership<br>• No transfers<br>• Most likely to bolster business downtown once operational<br>• Good predicted ridership | • Decreased auto capacity downtown may result in congestion.<br>• Longer construction time than BRT<br>• New transit mode and loss of 2 through travel lanes may change character of Downtown Mesa |
| **LRT Main Street 4-Lane (Recommended as LPA)[1]** | • Maintains traffic flow<br>• Higher projected ridership<br>• No transfers<br>• Most likely to bolster business downtown once operational<br>• Good predicted ridership | • Likely longer construction period than LRT Main St 2-Lane<br>• Design has to be careful to maintain enhanced streetscape<br>• No bike lanes<br>• New transit mode may change character of Downtown Mesa |
| **LRT 1st Street (Recommended for Elimination)** | • Gives easy access to city hall, post office, and library<br>• Will likely reduce traffic congestion on Main Street over other alternatives on Main Street<br>• Good predicted ridership | • Higher capital costs<br>• Removes parking on Morris<br>• Transit service to riders south of Main Street is not convenient<br>• Turns on and off Main Street slow down travel through downtown<br>• Does not help to enhance Main Street |
| **LRT 1st Avenue (Recommended for Elimination)** | • Will likely reduce traffic congestion on Main Street over other alternatives on Main Street<br>• Likely to encourage in-fill of vacant parcels along 1st Avenue<br>• Good predicted ridership | • Too expensive<br>• Turns on and off Main Street slow down travel through downtown<br>• Does not help to enhance Main Street<br>• There are not enough businesses along this route to justify the cost<br>• Impacts on residential property<br>• High capital costs<br>• Does not serve Downtown Mesa and government buildings |

Source: *Recommended Alternative Report*, July 2009.
[1]The recommendation is to carry forward for further evaluation both the 2-lane and 4-lane options on Main Street downtown. A decision on lane configuration will occur after the evaluation and additional community input.

### 2.2.3 Recommended Design for the Downtown Area

An official decision on traffic lane configuration in Downtown Mesa will occur after the EA is completed and all community input has been considered. Based on current findings and the considerable stakeholder input to date, the 2-lane traffic option (one lane in each direction with protected left turn lanes) is recommended for implementation. However, the roadway would be constructed to allow for the future conversion to a 4-lane traffic operation utilizing a split phase signal operation (no dedicated left turn lanes) in the future if the city of Mesa desired. The stakeholders wanted to have the flexibility of a 4-lane configuration in the event that the 2-lane vehicular traffic is desired. This could occur by utilizing the median and left turn bays for through traffic operation. For additional information on split phase signal operation, refer to Section 3.6.

### 2.2.4 Additional Alternatives Proposed During Public Review of the Draft EA

The Draft EA was released for public comment during the period from November 24, 2010 to January 7, 2011. Several of the comments received proposed additional alternatives for consideration. The recommendations and responses to each recommendation are displayed in Table 2-9. For additional information, please refer to Appendix O, Responses to Public Comments Received on the Draft Environmental Assessment.

## TABLE 2-9: SUMMARY OF ADDITIONAL ALTERNATIVES PROPOSED FOR CONSIDERATION[1]

| Suggestion | Response |
|---|---|
| Extend LRT south to Fiesta Mall area and then southeast through Gilbert to Phoenix-Mesa Gateway Airport and southwest through Phoenix paralleling I-10 and Loop 101. | The Central Mesa corridor to Mesa Drive is part of the 57 miles of high capacity transit approved by Maricopa County voters in 2004. This project is also included in MAG's Regional Transportation Plan. As a result of an extensive alternatives analysis process that evaluated several alignment and transit mode alternatives and included considerable public input, a locally preferred alternative (LPA) was selected that include light rail on Main Street from Sycamore to Mesa Drive. See also response to next suggestion. |
| Serve areas south to serve higher populations in Chandler and Gilbert instead of east to Mesa Drive. | See response to above suggestion. In addition, note that diverting the project to the south as suggested would miss the opportunity to serve the downtown area which is a major purpose and need for the project to enhance access and help spur business activity in the downtown area of Mesa. The regional travel demand model was used to evaluate ridership in the area. The model predicted higher ridership for an alignment traveling east of Mesa Drive rather than south of Main Street. |
| Provide high speed rail from Phoenix to Tucson with 3 stops. | ADOT, MAG, and other agencies are currently studying the feasibility of commuter rail in the Valley as well as throughout the state, and the Southwest Rail Coalition is looking at the potential for commuter rail throughout the southwest. Commuter rail is not a part of this project. |
| Close Main Street and convert it into a pedestrian mall with trees and so shops get more exposure. | The City of Mesa and METRO have reached out to the business owners to solicit their input in the design of the project. The majority of the business owners indicated they would like auto traffic to be maintained on Main Street along with LRT to increase exposure to both transit passengers and auto drivers alike. |
| Make the alignment elevated to allow cars to continue to operate as they do now. An at-grade alignment will result in congestion and create air quality impacts. | Because of the high additional costs associated with an elevated guideway, this was not considered. In addition, an elevated guideway is often considered to have higher adverse visual impact than an at-grade guideway. The traffic and air quality studies conducted for the Draft EA did not identify any adverse impacts. |

[1]For additional information, refer to Appendix O, Responses to Public Comments Received on the Draft Environmental Assessment.

# 3.0 ENVIRONMENTAL IMPACTS—WHAT IMPACTS ARE LIKELY TO OCCUR AND HOW WILL MAJOR ADVERSE IMPACTS BE AVOIDED OR MINIMIZED?

The purpose of this chapter is to compare the potential environmental impacts, both beneficial and adverse, of the No-Build Alternative to those expected to occur as a result of construction and operation of the LRT extension into Central Mesa (the Build Alternative, or LPA). The chapter also evaluates any differences in environmental impacts between the two design options east of Country Club Drive: Build Alternative, 2-Lane Option and Build Alternative, 4-Lane Option (See Chapter 1 for specific information about the design options). The base year for comparison of the alternatives is 2015 since this is the closest year with available regional travel demand model data to the proposed project's opening date of 2016.

The information contained in this chapter has been used to help support the decision-making process toward formal adoption of the LPA and selection of the design option for implementation as part of the LPA. The environmental features analyzed include the following:

3.1 Land Acquisition and Relocation
3.2 Existing Land Use
3.3 Consistency with Local Plans
3.4 Economic Impacts
3.5 Secondary Development
3.6 Traffic/Parking/Pedestrians/ Bicycles
3.7 Air Quality
3.8 Noise and Vibration
3.9 Energy Requirements and Potential for Conservation
3.10 Historic and Cultural Properties
3.11 Parklands and Section 4(f) Resources
3.12 Visual and Aesthetics
3.13 Community Disruption
3.14 Environmental Justice
3.15 Hazardous Materials
3.16 Safety and Security
3.17 Water Quality
3.18 Ecologically Sensitive Areas/Endangered Species
3.19 Wetlands/Flooding/Navigable Waterways and Coastal Zones
3.20 Construction
3.21 Cumulative Impacts

Based on the technical analysis conducted for this EA, the following resources either are not present within the Study Area, or the project will not have any adverse impacts.

- Consistency with Local Plans
- Economic Impacts
- Air Quality
- Energy
- Historic and Archaeological Resources
- Ecologically Sensitive Areas/ Endangered Species
- Parklands
- Community Disruption (Long Term)
- Safety and Security
- Cumulative Impacts
- Wetlands/Flooding/Navigable Waterways and Coastal Zones
- Noise and Vibration

Where potential adverse impacts have been identified, mitigation measures are listed near the end of the specific environmental category requiring mitigation. Section 3.22 of this chapter is a comprehensive list of potential impacts and mitigation measures that will be implemented as part of the project. For those resources that are impacted, the proposed mitigations will reduce the impacts to levels that are below significant.

Note that technical reports or memorandums have been prepared to provide more detailed analysis for several of the categories listed above where needed. The reports and memos are contained in the appendices of this EA.

## 3.1 LAND ACQUISITION AND RELOCATION

### *No-Build Alternative*

The No-Build Alternative would require minimal to no additional property acquisition to accommodate the planned roadway and transit improvements discussed in Section 2.1 of this EA.

### *Build Alternative*

#### 3.1.1 What Properties Will Need to be Acquired for the Build Alternative?

The Central Mesa LRT extension is located almost entirely within the existing public street rights-of-way. Exceptions to this are at locations where the proposed project needs additional property to accommodate automobile turning movements at four intersections, two LRT station platforms, reconstruction of a driveway at the East Valley Institute of Technology, and a park-and-ride facility. Full and partial acquisitions are detailed in Table 3-1 (western segment between Sycamore and Country Club Drive), Table 3-2 (east of Country Club Drive—4-lane option), and Table 3-3 (east of Country Club Drive—2-lane option). Appendix M, Conceptual Engineering Plans, displays locations of the planned acquisitions.

For the LRT segment west of Country Club Drive, the Build Alternative will require full acquisitions and relocations of four commercial properties containing three small businesses to accommodate a left turn lane and station platform at Alma School Road as well as a left turn lane at Date. Partial acquisitions of about 29,950 square feet from 29 commercial, educational (EVIT), apartment complex, and vacant parcels will also be required. A small portion of ten

commercial buildings will be impacted. At this stage of design, it is anticipated that these buildings would not need to be demolished nor would the businesses be relocated. For the LRT Starter Line, buildings with similar impacts were refaced thus eliminating the need to relocate the businesses. However, the final disposition of these properties will be determined as design advances and right-of-way (ROW) negotiations with the affected property owners are undertaken. The Draft EA discussed the possibility of requiring relocation of three mobile homes to avoid potential adverse vibration impacts pending further investigation. Since the Draft EA has been completed, more detailed vibration propagation tests were conducted. The findings indicate that there will be no adverse vibration impacts; thus the mobile homes will not need to be relocated (see Section 3.8 and Appendix E-2 for additional information).

**TABLE 3-1: PROPERTY ACQUISITIONS (SYCAMORE TO COUNTRY CLUB DRIVE)[1]**

| Address Partial Acquisitions/No. Bldgs. Refaced | Land Use | Parcel (SF) | ROW Required For Part Takes (SF) | % of Total Parcel | Reason[2] |
|---|---|---|---|---|---|
| 1601 W. Main St./0 EVIT | Educational | 2,648,186 | 780 | 0.3% | Reconstruct driveway |
| 1600 W. Main St./0 Vacant | Commercial | 43,564 | 9 | 0.02% | LT into EVIT |
| 1560 W. Main St./0 Circle K | Commercial | 11,604 | 398 | 3% | LT into EVIT |
| 1554 W. Main St./2[4] American Executive Inn | Commercial – Motel | 40,863 | 579 | 1% | LT into EVIT |
| 1540 W. Main St. /1[4] Rodriguez Auto Body | Commercial | 2,975 | 103 | 3% | LT into EVIT |
| 1520 W. Main St./0 | Commercial | 18,750 | 66 | 0.3% | LT into EVIT |
| 1212 W. Main St./0 McDonalds | Commercial – Restaurant | 63,198 | 498 | 0.8% | LT at Alma School |
| 1120 W. Main St./0 Big Two Body Shop | Commercial | 56,193 | 5,681 | 10% | LT and Station at Alma School |
| 1104 W. Main St./1[4] Fracture Fiberglass | Commercial | 12,632 | 1,890 | 15% | LT and Station at Alma School |
| 1050 W. Main St./0 Aspen Optical Labs | Commercial | 41,382 | 1,848 | 4% | LT and Station at Alma School |
| 1024 W. Main St./0 Mesa Gardens Mobile Home Park | Residential | 161,172 | 1,699 | 1% | LT and Station at Alma School |
| 944 W. Main St./0 Epernay Apartment House | Residential – Apartment Complex | 587,965 | 2,510 | 0.4% | LT at Extension |
| 836 W. Main St./1[4] Traveleers Motel | Commercial – Motel | 51,836 | 1,636 | 3% | LT at Extension |
| 810 W. Main St./1[4] Hi Fi Sales | Commercial | 19,907 | 1,707 | 8% | LT at Extension |
| 764 W. Main St./2[4] Vacant | Commercial – Retail | 18,905 | 1,440 | 7% | LT at Extension |
| 760 W. Main St./1[4] Appliance Exchange | Commercial | 17,119 | 780 | 4% | LT at Extension |

| Address<br>Partial Acquisitions/No. Bldgs. Refaced | Land Use | Parcel (SF) | ROW Required For Part Takes (SF) | % of Total Parcel | Reason[2] |
|---|---|---|---|---|---|
| 734 W. Main St./1[4]<br>CF Capital Finance | Commercial | 13,125 | 310 | 2% | LT at Extension |
| 630 W. Main St./0<br>Knights Inn (formerly Motel 6) | Commercial – Motel | 30,000 | 136 | 0.4% | LT at Date |
| 617 W. Main St./0<br>PMT Ambulance Station | Commercial | 146,967 | 992 | 0.6% | LT at Date |
| 606 W. Main St./0<br>Rolberto's Taco Shop | Commercial – Restaurant | 16,640 | 39 | 0.2% | LT at Date |
| 545 W. Main St./0 | Commercial – Parking | 12,050 | 425 | 3% | LT at Date |
| 535 W. Main St./0<br>Top Notch Upholstery | Commercial | 6,025 | 93 | 1% | LT at Date |
| 530 W. Main St./0<br>Smart Move Auto | Commercial | 65,300 | 1,092 | 1% | LT at Date |
| 554 W. Main<br>Main Street Motors | Commercial | 20,873 | 438 | 2% | LT at Date |
| 424 W. Main St./0 | Vacant | 7,896 | 21 | 0.3% | LT at Country Club |
| 416 W. Main St./0 | Vacant | 7,980 | 1,206 | 15% | LT at Country Club |
| No Address[3] | Vacant | 2,309 | 575 | 25% | LT at Country Club |
| No Address[3] | Vacant | 3,652 | 1,082 | 30% | LT at Country Club |
| 402 W. Main St./0 | Commercial | 7,851 | 1,911 | 24% | LT at Country Club |
| **Total Parcels=29**<br>**Total Bldgs Refaced=10** | | **4,136,919** | **29,944** | | |
| Full Acquisitions | | | | | |
| 1144 W. Main St.<br>MCJ's Tires & Wheels | Commercial | 915 | 915 | 100% | LT and Station at Alma School |
| 1130 W. Main St.<br>MCJ's Tires & Wheels | Commercial | 13,329 | 13,329 | 100% | LT and Station at Alma School |
| 1126 W. Main St.<br>Del Valle Motors Tires & Wheels | Commercial | 12,197 | 12,197 | 100% | LT and Station at Alma School |
| 555 W. Main St.<br>Mesa Muffler | Commercial | 10,442 | 10,442 | 100% | LT at Date |
| **Total Parcels = 4** | | **36,883** | | | |

[1]Does not include any property required for traction power substations since several options are under consideration.
[2]LT = Accommodate left turn lane.
[3]Maricopa County Assessor website did not include an address for these parcels.
[4]A small portion of the building on property would be impacted.

East of Country Club Drive to the eastern terminus of the LRT extension, the project will include construction of a park-and-ride facility on the north side of Main Street between Mesa Drive and Lesueur. A 6.7-acre study area for the park-and-ride is being evaluated (Figure 3-1) for both the Build Alternative, 2-Lane Option and the Build Alternative, 4-Lane Option. The study area includes eight parcels (including three commercial, three vacant, and two residential properties). The specific design plan for the park-and-ride facility will be determined during final design. However, the facility will be built to accommodate about 500 vehicles and will not likely require the entire 6.7-acre site. The

park-and-ride site may have potential market value for transit-oriented development sometime in the future. Assuming a worst-case analysis that the layout will require the entire site would result in acquisition of three vacant parcels and acquisition and relocation of three small businesses and two residences. In addition to the property needed for the park-and-ride, the Build Alternative, 4-Lane Option, would require partial acquisition of just over 2,000 square feet from a commercial property to accommodate the station platform at Mesa Drive/Main Street. This property would not be required for the 2-Lane Option.

**TABLE 3-2: PROPERTY ACQUISITIONS (EAST OF COUNTRY CLUB DRIVE, 4-LANE OPTION)[1]**

| Address | Land Use | Parcel (SF) | ROW Required For Part Takes (SF) | % of Total Parcel | Reason |
|---|---|---|---|---|---|
| **Full Acquisitions[2]** | | | | | |
| 410 E. Main St. Wilky's Performance Center & Auto Parts and Wilky's Auto Machine Shop | Commercial | 42,840 | | 100% | Park-and-Ride |
| 420 E. Main St Gunnell Tire and Service | Commercial | 80,960 | | 100% | Park-and-Ride |
| 440 E. Main St. Sentinel Mini Storage | Commercial | 52,540 | | 100% | Park-and-Ride |
| 456 E. Main St. | Vacant | 87,104 | | 100% | Park-and-Ride |
| No Address[3] | Vacant | 14,875 | | 100% | Park-and-Ride |
| No Address[3] | Vacant | 12,674 | | 100% | Park-and-Ride |
| 29 N. Mesa Dr. | Residential | 12,393 | | 100% | Park-and-Ride |
| 37 N. Mesa Dr. | Residential | 12,546 | | 100% | Park-and-Ride |
| **Total Parcels = 8** | | **315,932** | | | |
| **No. Businesses Relocated =3** | | | | | |
| **No. Residences Relocated =2** | | | | | |
| **No. Other Relocated=0** | | | | | |
| **Partial Acquisitions/ No. Bldgs. Partially Impacted** | | | | | |
| 405 E. Main St. Quality Bumper | Commercial | 36,670 | 2,025 | 6% | Accommodate Station at Mesa Dr. |
| **Total Parcels=1** | | | | | |
| **Total Buildings Partially Impacted 0** | | **36,670** | **2,025** | | |

[1]Does not include any property required for traction power substations since several options are under consideration.
[2]Shows worst-case acquisition. The specific park-and-ride layout will be determined during final design. However, the facility would be built to accommodate about 500 cars and would not likely require the entire square footage shown above. The park-and-ride may have potential market value for transit-oriented development sometime in the future.
[3]Maricopa County Assessor website did not include an address for these parcels.
Source: METRO, August 2010.

### 3.1.2 What Options Are Available to Minimize Impacts on Adjacent Properties?

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 (Public Law 91-646, 84 Stat.1894), as amended by the Uniform Relocation Act Amendments of 1987, Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17, 101 Stat. 246-256). The Uniform Relocation Act and its amendments provide protection and assistance for residents and businesses affected by the acquisition or demolition of real property during construction of federally funded projects.

As previously noted, the project will require full acquisition and relocation of as many as six small businesses (five auto parts/repair shops and one storage facility) and two residences as well as full acquisition of three vacant parcels. In addition, partial acquisitions of a number of other properties will also be required.

**TABLE 3-3: PROPERTY ACQUISITIONS (EAST OF COUNTRY CLUB DRIVE, 2-LANE OPTION)[1]**

| Address<br>Full Acquisitions[2] | Land Use | Parcel (SF) | ROW Required For Part Takes (SF) | % of Total Parcel | Reason |
|---|---|---|---|---|---|
| 410 E. Main St.<br>Wilky's Performance Center & Auto Parts and Wilky's Auto Machine Shop | Commercial | 42,840 | | 100% | Park-and-Ride |
| 420 E. Main St<br>Gunnell Tire and Service | Commercial | 80,960 | | 100% | Park-and-Ride |
| 440 E. Main St.<br>Sentinel Mini Storage | Commercial | 52,540 | | 100% | Park-and-Ride |
| 456 E. Main St. | Vacant | 87,104 | | 100% | Park-and-Ride |
| No Address[3] | Vacant | 14,875 | | 100% | Park-and-Ride |
| No Address[3] | Vacant | 12,674 | | 100% | Park-and-Ride |
| 29 N. Mesa Dr. | Residential | 12,393 | | 100% | Park-and-Ride |
| 37 N. Mesa Dr. | Residential | 12,546 | | 100% | Park-and-Ride |
| **Total Parcels = 8** | | **315,932** | | | |
| **No. Businesses Relocated =3**<br>**No. Residences Relocated=2**<br>**No. Other Relocated=0** | | | | | |

[1]Does not include any property required for traction power substations since several options are under consideration.
[2]Shows worst-case acquisition. The specific park-and-ride layout would be determined during final design. However, the facility would be built to accommodate about 500 cars and would not likely require the entire square footage shown above. The park-and-ride may have potential market value for transit-oriented development sometime in the future.
[3]Maricopa County Assessor website did not include an address for these parcels.
Source: METRO, August 2010.

The Uniform Relocation Act mandates that relocation services and payments be made available to eligible residents and businesses. An offer of just compensation, which will not be less than the approved appraisal, will be made to each property owner. Equivalent, safe, and sanitary replacement housing, which is within the displaced person's financial means, will 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.

**FIGURE 3-1: PARK-AND-RIDE STUDY AREA**


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, then 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 Central Mesa Corridor is highly urbanized and located within the Phoenix metropolitan area which has a large population with a rich variety of business opportunities. Adequate reasonable, safe, and sanitary development sites are anticipated to be available to accommodate businesses and residences that may be displaced as a result of the project. Sufficient property within the study area is available for businesses to relocate within the study area if they so desire so they would not need to develop a new clientele in a different service area.

### *Mitigation*

- All full and partial acquisitions of properties and potential relocations of businesses and residences will conform to provisions of the Uniform Relocation and Real Property Acquisition Policies Act of 1970, as amended.

### 3.1.3 Any Differences Between the Downtown 2-Lane and 4-Lane Options?

Yes. As shown in Table 3-4, the Build Alternative, 4-Lane Option requires partial acquisition of one additional commercial parcel comprising an increase of about 2,025 square feet. The additional property is needed to accommodate the LRT station at Mesa Drive/Main Street. The provisions of the Uniform Relocation Act and its amendments will apply regardless of which option is selected for implementation.

**TABLE 3-4: PROPERTY ACQUISITIONS COMPARISON[1] (SYCAMORE TO END-OF-LINE)**

| Alternative/Option | Number Parcels | Total Parcel Size (SF) | ROW Required (SF) | Number Buildings Partially Impacted |
|---|---|---|---|---|
| **Build Alternative With 4-Lane Option** | | | | |
| Full Acquisitions | 12 | 352,815 | 352,815 | |
| Partial Acquisitions | 30 | 4,173,589 | 31,969 | 10 |
| Total ROW (SF) Required | | | **384,784** | |
| No. Businesses Relocated = 6<br>No. Residences Relocated = 2<br>No. Other Relocated = 0 | | | | |
| **Build Alternative With 2-Lane Option** | | | | |
| Full Acquisitions | 12 | 352,815 | 352,815 | |
| Partial Acquisitions | 29 | 4,136,919 | 29,944 | 10 |
| Total ROW (SF) Required | | | **382,759** | |
| No. Businesses Relocated[2] = 6<br>No. Residences Relocated = 2<br>No. Other Relocated = 0 | | | | |

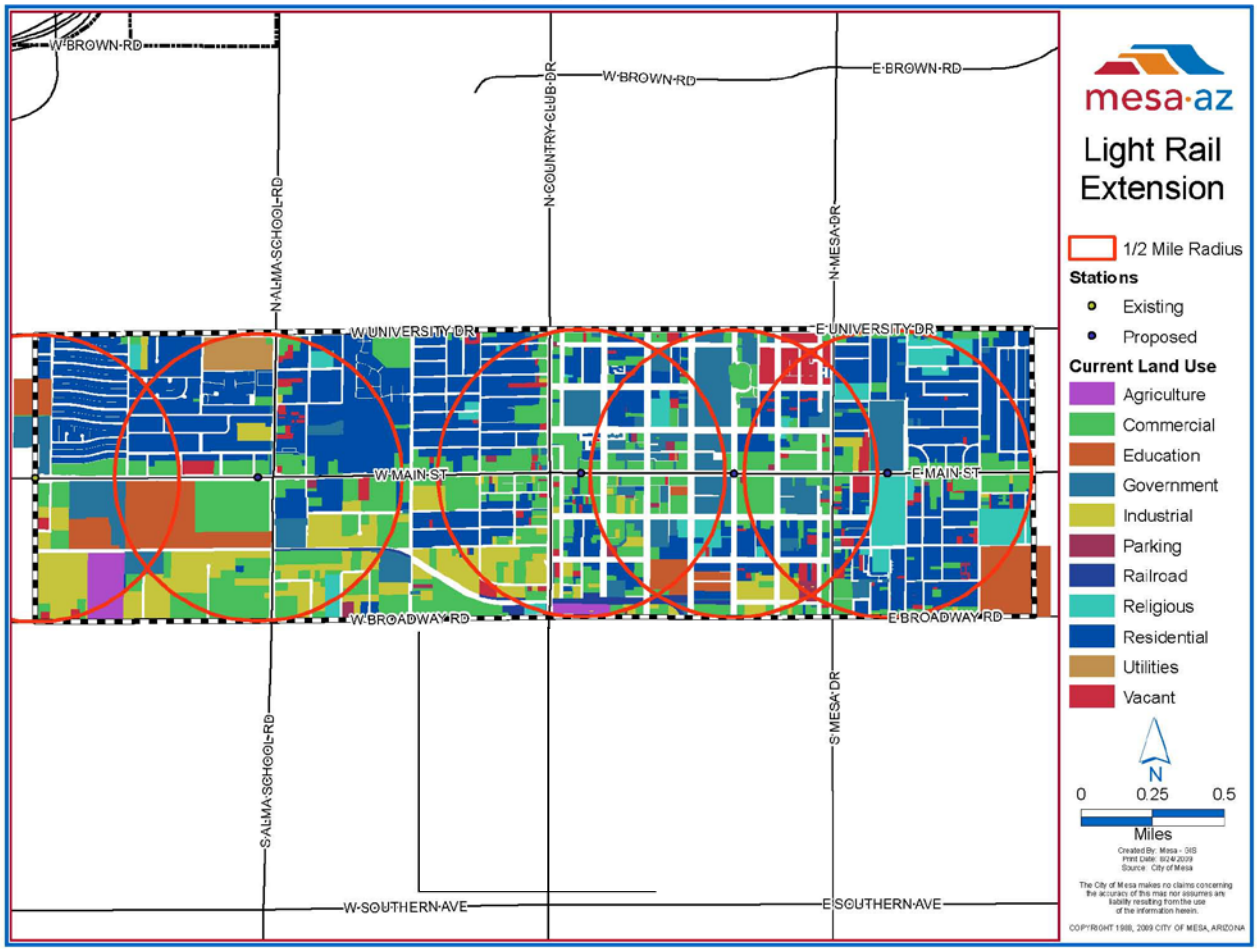
[1]Does not include any property required for traction power substations since several options are under consideration.
[2]Assumes worst case analysis. Assumes 3 businesses relocated west of Country Club and up to 3 businesses east of Country Club if the entire 6.7-acre site is needed for park-and-ride. As many as two residences could be acquired and residents relocated if the entire site is needed for park-and-ride. Actual relocations for the park-and-ride facility will likely be less once the final layout is determined during final design.

## 3.2 EXISTING LAND USE

### *No-Build and Build Alternatives*

The No-build and Build Alternatives are located almost entirely within the existing public streets ROW and is generally compatible with adjacent uses which are primarily commercial (retail/restaurants/motels/offices/services), government, and entertainment. The Build Alternative also contains pockets of mobile homes and high density residential buildings as well as two city parks, the Mesa Arizona Mormon Temple, and the East Valley Institute of Technology along the alignment. Existing land use within ½ mile of the proposed alignment is shown in Figure 3-2. Within ½ mile, the predominant land uses include residential and commercial, comprising 38% and 23% of the total land area, respectively. Government and industrial uses comprise the next highest land uses each making up about 10% of the area. The No-build and Build Alternatives would not result in any impacts to the existing land use.

**FIGURE 3-2: EXISTING LAND USES WITHIN ½ MILE OF LRT ROUTE**




## 3.3 CONSISTENCY WITH LOCAL PLANS

### *No-Build Alternative*

The No-Build Alternative maintains the status quo and, therefore, would not address the stated goals and objectives for the community as outlined in Table 3-5.

### *Build Alternative*

The Central Mesa LRT extension Build Alternative is consistent with the major local and regional plans related to the corridor as shown in Table 3-5. Note that many of these plans have been developed by the City of Mesa to encourage smart growth in the project area, thereby increasing the project's potential to enhance livability in the City of Mesa. These planning documents and regulatory ordinances include objectives, goals, and policies intended to endorse land use development consistent with high capacity transit use. These land use concepts, intended to enhance livability through transit use, include mixed-use, high density development; pedestrian-friendly environments; dense

development standards near station areas; and persons with disabilities access. Additional discussion about the specific policies and regulations to encourage smart growth may be found in the FTA Small Starts Land Use and Economic Development Template, Appendix P to this Final EA.

### 3.3.1 Any Differences Between the Downtown 2-Lane and 4-Lane Options?

No. Both the Build Alternative, 2-Lane Option and the Build Alternative, 4-Lane Option are consistent with local plans.

**TABLE 3-5: CONSISTENCY WITH LOCAL PLANS**

| Plan | Lead Agency/ Plan Date | Is Proposed Project Consistent with Plan? |
|---|---|---|
| Vision Plan for Downtown Mesa | Mesa/ 1994 | **Yes**. The plan's purpose is to outline land use recommendations, transportation and traffic improvements, linkage of anchor districts, urban design guidelines, marketing recommendations for attraction and facilities, programs for arts, culture and education, initial projects to be accomplished, and financing strategies. The plan identified a tram or trolley to move people between activity centers within downtown Mesa. |
| Connections Restoring Town Center's Place | Mesa/ 1995 | **Yes**. The purpose of the Connections is to take the goals and objectives outlined in the Vision Plan for Downtown Mesa and to refine the directives into more detailed tasks for implementation of the vision. |
| MAG Fixed Guideway System Study | MAG/ 1999 | **Yes**. The plan's purpose is to analyze fixed guideway system options for the region including evaluation of corridors and technologies. The plan recommended a 39-mile light rail system which included a line continuing east to downtown Mesa. |
| Mesa Town Center Redevelopment Plan | Mesa/ 1999 | **Yes**. Consistent with plan's intent to consider light rail routes on either Main St., 1st Ave., or 1st St. in the Mesa Town Center (downtown). |
| Mesa Town Center Concept Plan | Mesa/ 1999 | **Yes**. Plan supports establishment of downtown as an "urban village" to promote residential development; encourage governmental and office development; and develop a first-class cultural and entertainment center to create a setting that encourages live, work, and play. LRT spurs redevelopment and encourages transit-oriented development which generally supports the types of mixed uses that the plan promotes. |
| Mesa General Plan | Mesa/ 2002 | **Yes**. The Transportation Element promotes a balanced multi-modal system which includes transit. Transit should focus on serving mixed-use activity centers and provide frequent connections to major employment. The General Plan supports high capacity transit by providing a policy for density credits and an infill incentive program. The plan also requires zoning and design guidelines to complement light rail station areas. |
| Central Phoenix/East Valley | METRO/ | **Yes**. The FEIS considered downtown Mesa LRT |

| Plan | Lead Agency/ Plan Date | Is Proposed Project Consistent with Plan? |
|---|---|---|
| LRT Final Environmental Impact Statement (FEIS) | 2002 | alignment options even though the Build Alternative alignment for the FEIS terminated prior to serving the downtown area. |
| MAG High Capacity Transit Study | MAG/ 2003 | **Yes**. Plan's purpose is to develop an integrated high capacity transit system for the region. The plan includes potential LRT and dedicated BRT from the eastern terminus of the LRT Starter Line at Sycamore along Main Street to Power Road. |
| West Main Street Area Plan | Mesa/ 2007 | **Yes**. Plan's purpose is to reflect potential for redevelopment with opening of the LRT Starter Line in late 2008. The study area for the plan extends as far east as Country Club Drive in the Central Mesa Study Area. Although plan does not specifically address the Central Mesa LRT extension, this project will promote many objectives of the Transit Element of plan including: 1) improving mobility and accessibility; 2) enhancing connectivity with the 20-mile LRT Starter Line regional system; and 3) establishing opportunities to extend/reroute transit service to develop an efficient neighborhood transit service. In addition, rail projects like this enhance potential for redevelopment and transit-oriented development. |
| MAG Commuter Rail Strategic Plan | MAG/ 2008 | **Yes**. The plan shows various potential commuter rail alignment alternatives in the region. Within the study area is an alternative for commuter rail that extends east-west along the UPRR alignment to the south of Main Street. METRO and Mesa have coordinated the proposed project with MAG and will continue to do so to ensure the projects do not conflict. |
| Regional Transportation Plan (RTP) | MAG/ 2007 Final and Draft 2010 Update | **Yes**. The RTP includes a high capacity transit alignment extending east from the current LRT Starter Line station at Sycamore to about Mesa Drive. RTP shows a scheduled opening in 2016. |
| Central Main Street Plan | Mesa/ Being Drafted | **Yes**. The plan facilitates redevelopment of property along the extension of light rail into a mixed-use, higher intensity, transit-oriented development pattern creating a greater sense of place for current and future residents, achieving greater energy efficiency, and improving sustainability; Update and extend the Town Center Concept Plan to help create a more active and viable downtown area for Mesa; Address issues related to the health, safety, and welfare of the adjacent neighborhoods in order to maintain positive aspects of these neighborhoods, improve upon aspects that are not fully realized, and plan for transition to new uses/forms of development where needed to achieve strong and viable neighborhoods into the future; and, target capital improvement needs in this area to provide the infrastructure necessary to achieve plan goals. |

## 3.4 ECONOMIC IMPACTS

### *No-Build Alternative*

The No-Build Alternative would have no impacts on employment because it only includes improvements to the transportation network that have already been approved and funded. By maintaining the status quo, the No-Build Alternative would not stimulate employment within the study area, generate fiscal impacts, or create the need for additional government services, such as fire and police. Although the No-Build Alternative would require little, if any, property acquisitions that would reduce property tax revenues over the short term, it also would not encourage other development that would have the longer term benefits of increasing both sales and property taxes.

### *Build Alternative*

Once operational, the Build Alternative is likely to have a positive influence on property values, tax revenues, and employment as well as commercial, retail, and residential development. A separate technical memo on potential economic impacts is attached as Appendix B. Discussion of potential impacts during construction is presented in Section 3.20, Construction.

### 3.4.1 How Can the Project Influence Property Values?

The potential that the Central Mesa LRT extension will increase property values in the vicinity of the stations is high, based on experiences in other cities with similar rail systems (Table 3-6).

**TABLE 3-6: EXAMPLES OF EFFECTS OF RAIL PROJECTS ON PROPERTY VALUES**

| City/Project | Added Value |
|---|---|
| Atlanta/MARTA East Line[1] | Homes: +$1,000 for each 100 feet closer to station (working class neighborhoods).<br>Accessibility offsets potential noise issues. |
| Dallas/DART[2] | Homes: 1997-2001: Median value +32.1% near stations compared to +19.5% in areas not served by rail.<br>Offices: 1997-2001: Median value +24.7% near stations compared to +11.5% in areas not served by rail. |
| DC and Atlanta[1] | Office rent: +$3 per gross square foot. Vacancy rates were lower and average density higher. |
| Portland/MAX Eastside Light Rail Line[1] | Homes: +10.6% for homes within 1,500 feet of light rail stations. |
| Santa Clara County (San Jose)/LRT[3] | Commercial: +$4/SF within ¼ mile of stations. |

Sources:
[1]*Light Rail Pumps Up Values*, Personal Real Estate Investor, July-August 2007.
[2]*An Assessment of the DART LRT on Taxable Property Valuations and Transit Oriented Development*, University of North Texas, September 2002.
[3]*Transit's Value-Added: Effects of Light Rail and Commuter Rail Services on Commercial Land Values*, University of California, Berkeley, November 2001.

### 3.4.2 How Has LRT Already Influenced New Development?

Tables 3-7 and 3-8 illustrate the amount of development that has been completed, is under construction, or is in the planning stages along METRO's LRT Starter Line (within ½ mile of stations) as of December 2008. Table 3-7 covers the entire 20-mile alignment, while Table 3-8 focuses on the portion of the existing route in Tempe and Mesa.

**TABLE 3-7: DEVELOPMENT ALONG ENTIRE EXISTING LRT ROUTE[1]**

| | Complete or Under Construction | Proposed |
|---|---|---|
| Number of Projects | 110 | 70 |
| Residential Units | 13,059 | 8,566 |
| Commercial (SF) | 9,589,931 | 1,170,389 |
| Hotel Rooms | 2,142 | 1,118 |
| Dollars Invested | $5.4 billion | $2 billion |
| **Total Investment** | **$7.4 billion** | |

[1]Data as of December 2008.
Source: *Transit Supportive Development Analysis*, Central Mesa Light Rail Extension, METRO, September 2009.

The private development along the entire route has been supported by an additional 500,000 square feet of government and educational space. Over 275,000 square feet of government and educational facilities are proposed in addition to that shown in Table 3-7. While the current economic climate has certainly slowed the realization of these projects, they remain poised for development as the economy recovers.

**TABLE 3-8: DEVELOPMENT ALONG TEMPE/MESA SEGMENT OF EXISTING LRT LINE[1]**

| | Complete or Under Construction | Proposed |
|---|---|---|
| Number of Projects | 30 | 30 |
| Residential Units | 7,478 | 3,757 |
| Commercial (SF) | 3,109,710 | 1,008,167 |
| Hotel Rooms | 377 | 833 |
| Dollars Invested | $1.2 billion | $1.1 billion |
| **Total Investment** | **$2.3 billion** | |

[1]Data as of December 2008.
Source: *Transit Supportive Development Analysis*, Central Mesa Light Rail Extension, METRO, September 2009.

The Tempe/Mesa portion of the existing LRT Starter Line (Table 3-8) is likely to be a good indicator of how future development may proceed along the Central Mesa LRT extension since developments will draw from some of the same or similar markets as new station areas open and transit supportive development continues eastward. Along this portion of the route, approximately $1.2 billion in development has occurred since December 2008. Proposed projects would nearly double this total.

Development at Tempe Town Lake

Section 3.5, Secondary Development, provides additional information about development already completed, under construction, and planned along the LRT Starter Line in the one-mile segment in west Mesa as well as along the proposed LRT extension into Central Mesa. That discussion provides further evidence of the potential for the proposed project to spur additional development.

### 3.4.3 How is the Proposed Project Expected to Affect Tax Revenues, Employment, and Overall Economic Growth?

Table 3-9 summarizes the proposed LRT extension's potential impacts on tax revenues and employment, and points to the many anticipated benefits that the project will provide.

To further exemplify the proposed project's overall expected impact on the economy, a report prepared for the American Public Transit Association (APTA) cites the findings summarized in Table 3-10 regarding public transportation's effects on the economy.

Since the overall impact of the project on the economy is expected to be positive, no mitigation measures are required.

**TABLE 3-9: EFFECTS OF PROPOSED PROJECT ON TAX REVENUES AND EMPLOYMENT**

| Factor | Anticipated Effects |
|---|---|
| Tax Revenues | • Property taxes—full acquisition of as many as nine parcels including six businesses and two residences[1] would result in a small but temporary reduction in Maricopa County's and the City of Mesa's tax bases. In the long term, the additional development spurred by the presence of rail would likely result in an overall increase in these tax bases.<br>• Sales taxes—Potential losses due to relocation of as many as six businesses[1]. If the businesses choose to relocate within the service area, then losses would be minimized or non-existent. Losses are expected to be offset by gains in new business relocating to station areas along the alignment as well as anticipated increases in sales revenues from current area businesses. |
| Employment | • Direct employment—New jobs will be created to operate and maintain the additional length of the system.<br>• Indirect employment—New jobs will be created in retail, services, and municipal services sectors due to the development spurred by both the proposed project as well as anticipated growth that is expected to occur in the corridor with, or without, the project. |

[1]Assumes worst case analysis. See Section 3.1 for additional information.
Source: METRO, 2010.

**TABLE 3-10: TRANSIT PROJECTS EFFECTS ON THE ECONOMY**

| APTA Findings |
|---|
| • In the year following the transit capital investment, 314 jobs are created for each $10 million invested in transit capital funding.<br>• Over 570 jobs are created for each $10 million invested in transit operations in the short run.<br>• Business sales increase $32 million for each $10 million in transit operations spending.<br>• Business sales increase 3 times the public sector investment in transit capital, i.e., a $10 million investment results in $30 million gain in sales.<br>• For every $10 million invested in transit in a major metropolitan area, over $15 million is saved in transportation costs (operating, fuel, congestion costs) to both highway and transit users.<br>• A typical state/local government could realize a 4 to 16% gain in revenues due to increases in income and employment generated by transit investments. |

Source: *Public Transportation and the Nation's Economy, A Quantitative Analysis of Public Transportation's Economic Impact*, Cambridge Systematics, Inc. with Economic Development Research Group for APTA, October 1999.

### 3.4.4 Any Differences Between the Downtown 2-Lane and 4-Lane Options?

No. The overall impact of the project, regardless of which downtown option is selected, is expected to be similarly positive.

## 3.5 SECONDARY DEVELOPMENT

### *No-Build Alternative*

The No-Build Alternative is not expected to promote secondary development. The No-Build Alternative contains only those transportation improvements reflected in the MAG Regional Transportation Plan that have been funded and approved for development by 2015. Much of the project area is characterized by urban streets and dense land uses. Past trends would likely continue and a substantial permanent change to the physical environment of the project area would not occur.

### *Build Alternative*

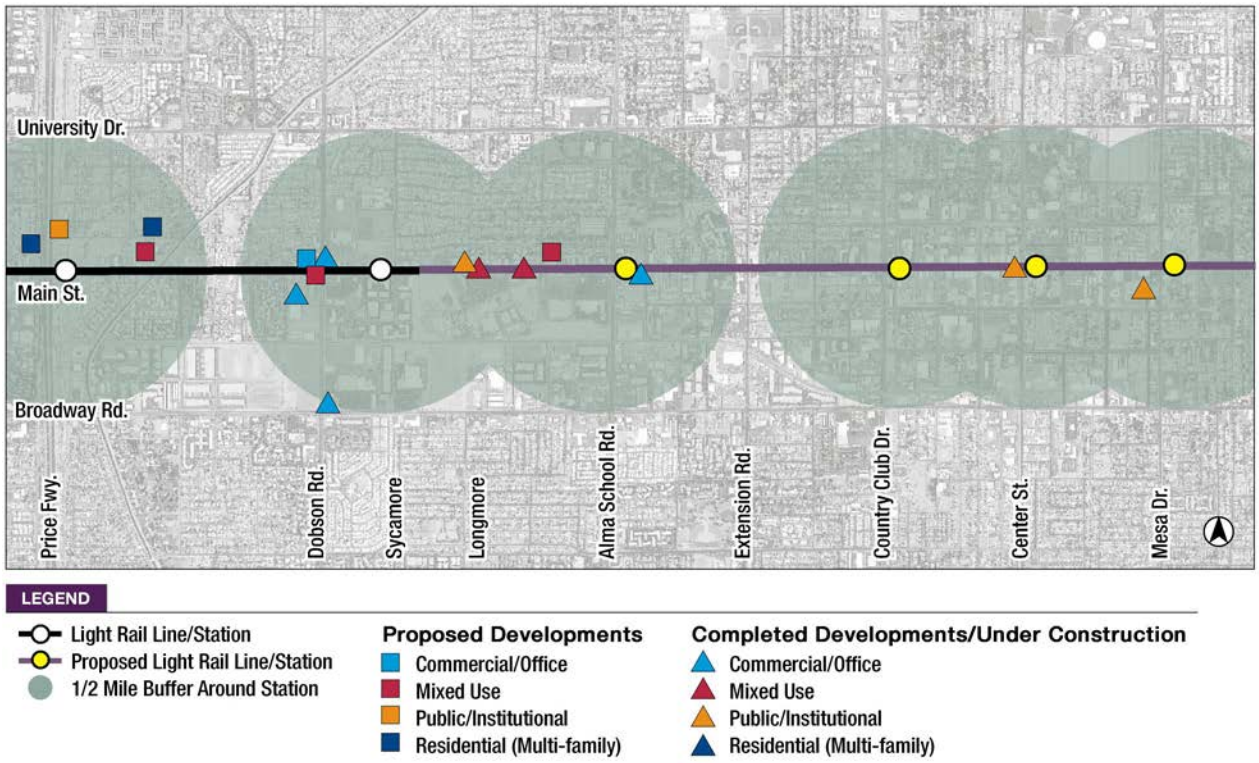
The City of Mesa, as well as many community stakeholders, anticipates that the Central Mesa LRT Extension will promote transit supportive development and considers this to be a key element in the long term growth of transit ridership and system sustainability. For secondary development to occur requires both available land near the proposed project as well as policies to promote development.

According to information obtained from the Maricopa County parcel database, there are 288 acres of vacant land within one-half mile of the proposed stations. It is estimated that approximately 50% of this land will be available for development by 2030. The remaining 50% is assumed to remain unavailable until after 2030 due to current use for surface parking for adjacent development, parcel size/adjacencies, ownership and other issues. This leaves 144 acres of vacant land available for development within one-half mile of the proposed stations by 2030. Much of this developable property exists near

the stations in areas substantially removed from any proximate single family residents, which sometimes oppose new development.

Figure 3-3 displays development (recently completed, under construction, and planned) along the LRT Starter Line in the one mile segment in west Mesa as well as along the proposed LRT extension into Central Mesa. The figure shows the considerable development along the recently completed LRT line further pointing to the high potential for LRT to spur additional development along the planned extension.

**FIGURE 3-3: DEVELOPMENT ALONG EXISTING AND PROPOSED MESA PORTION OF LRT LINE**




The City continues to enact policies and actions to increase sustainable and urban mixed use. Mesa's General Plan, approved through voter referendum, includes objectives and policies that encourage transit-supportive development. The City adopted the Town Center Concept Plan and Action Plan. This plan describes future land uses, densities, transportation facilities, and development design components for future growth in the 1,300 acre Town Center Redevelopment Area, which includes most of the areas within ½ mile of the three eastern most proposed LRT stations. The City's West Main Street Area Plan covers the western segment of the LRT extension from Sycamore to Country Club Drive. The plan emphasizes transit oriented development with the following elements: mixed use, transit supportive densities, pedestrian oriented design, denser development in close proximity to transit stations and well designed inter-modal transfer facilities.

The City has begun to update its Zoning Ordinance to implement the planning efforts contained in these and other plans. Regulations under review include requirements for mixed use development, minimum development densities within station areas, provisions for shared parking, urban design recommendations and other elements aimed at ensuring new development or redevelopment occurs within the context of the community's transit supportive development concepts.


In addition to City initiatives, a private non-profit organization, Downtown Mesa Association, is focused on economic growth downtown. The organization includes business and property owners as well as other community stakeholders. In 2009, the organization published their vision for downtown Mesa. A key element of their vision is an emphasis on creating a pedestrian friendly downtown and building upon mass transit, specifically LRT. The visions element of their plan are consistent with Mesa's General Plan and indicates support and "buy-in" from the business community for transit supportive development ideas.

For additional information on this topic, please see Section 3.4, Economic Impacts, and also the separate report, *Transit Supportive Development Analysis, Mesa LRT Extension*, September 2009, METRO. The report is available at the offices of Valley Metro Rail, 101 North 1st Avenue, Suite 1300, Phoenix, AZ.

### 3.5.1 Any Differences Between the Downtown 2-Lane and 4-Lane Options?

Possibly. Any differences will be minor and only to the extent that a potentially somewhat less pedestrian-friendly downtown associated with the slightly wider 4-lane cross section may have the potential to affect the attractiveness of additional development.

## 3.6 TRAFFIC/PARKING/PEDESTRIANS/BICYCLES

### *No-Build Alternative*

The No-Build Alternative would have no adverse impacts on traffic (as discussed in more detail in Section 3.6.1 and Table 3-11 which directly compares all alternatives). The No-Build Alternative also would have no adverse impacts to on-street or off-street parking; sidewalks or the pedestrian environment; or existing or planned bicycle facilities in the corridor.

***Build Alternative***

### 3.6.1 How Will the Project Affect Traffic?

The *Transportation Technical Report* in Appendix C evaluated whether the proposed project will increase congestion and motorist delay at the signalized intersections on Main Street along the alignment.

The report considered the City of Mesa Transportation Department's criteria for acceptable congestion as Level of Service (LOS) E with intersection delay of 80 seconds per auto or less. The City considers LOS F with signalized intersection delay of greater than 80 seconds as unacceptable congestion. LOS is a quantitative measure and is frequently expressed in qualitative terms as LOS A (free-flow) to LOS F (congested). For purposes of this study, LOS E with intersection delay of 80 seconds per auto or less is considered acceptable during the PM peak hour by the City of Mesa Transportation Department. LOS F with signalized intersection delay of greater than 80 seconds is considered unacceptable congestion.

Main Street at Country Club Drive Looking West

The results for the No-Build Alternative; Build Alternative, 2-Lane Option; and Build Alternative, 4-Lane Option all indicate that the intersections will operate at overall acceptable LOS (Table 3-11). Although both options operate at acceptable LOS, the Build Alternative, 2-Lane Option will have less approach delay overall than the Build Alternative, 4-Lane Option. At this conceptual level of engineering and design study, it appears that the turning lanes storage lengths currently shown in the drawings (Appendix M) are sufficient to accommodate anticipated traffic during the 2015 PM peak period with the exception of the eastbound left turn lane at Country Club Drive for the Build Alternative, 2-Lane Option. At this location, dual left turn lanes, similar to what is now provided, are recommended. The length of the dual left turn lanes will be determined in final design.

Note that the Build Alternative 4-Lane Option uses split-phase traffic signal operations along Main Street from Country Club Drive to Hobson. This would allow left turns to occur from shared left/through lanes instead of designated left turn lanes. The split phase means that individual phases will be established for eastbound, westbound, and combined northbound and southbound movements. A separate phase would also be required for LRT operations. No separate left turn lanes are proposed except at Country Club Drive and Mesa Drive. At these two intersections the signal phasing would also include a protected left turn phase. The use of split-phase traffic signals, in

general, is typically not an efficient form of traffic operation because it requires more time for each signal cycle to move traffic through all legs of an intersection because of the added signal phases required.

## TABLE 3-11: LOS RESULTS AT MAIN STREET STUDY AREA INTERSECTIONS

| Main Street Intersection at | 2009 No-Build | | 2015 No-Build | | 2015 Build 2-Lane Option | | 2015 Build 4-Lane Option | |
|---|---|---|---|---|---|---|---|---|
| | HCM LOS [1&1] | Delay (sec) | HCM LOS [1&1] | Delay (sec) | HCM LOS [1&1] | Delay (sec) | HCM LOS [1&1] | Delay (sec) |
| Station 1 Crosswalk | N/A | N/A | N/A | N/A | B | 11.6 | B | 13.3 |
| Station 2 Crosswalk | N/A | N/A | N/A | N/A | B | 16.2 | C | 21.3 |
| Sycamore | B | 16.3 | B | 16.6 | B | 15.8 | B | 15.5 |
| Longmore | A | 8.2 | B | 10.0 | B | 13.5 | B | 13.4 |
| Alma School Road | E | 58.9 | D | 48.6 | D | 48.2 | D | 49.3 |
| Extension Road | C | 20.3 | C | 26.7 | C | 31.3 | C | 31.8 |
| Date[2] | D[2] | 28.9 | E[2] | 44.0 | B | 18.6 | B | 12.7 |
| Country Club Drive | C | 33.5 | D | 44.8 | E | 62.4 | D | 47.9 |
| Robson | A | 6.3 | A | 6.4 | B | 12.2 | C | 34.2 |
| W150B X-Walk | A | 4.0 | A | 4.2 | B | 13.5 | A | 2.4 |
| Macdonald | B | 11.1 | B | 10.6 | B | 17.1 | D | 41.2 |
| W50B X-Walk | B | 14.9 | B | 14.4 | A | 8.5 | A | 2.4 |
| Center Street | A | 7.8 | A | 8.3 | C | 33.4 | E | 66.1 |
| Lewis X-Walk | B | 10.2 | B | 10.4 | A | 8.9 | A | 4.6 |
| Centennial Way | A | 8.7 | A | 8.9 | B | 15.4 | D | 44.7 |
| Hibbert | A | 9.6 | A | 9.8 | B | 19.3 | D | 50.9 |
| Mesa Drive | C | 32.9 | D | 44.2 | D | 46.4 | D | 54.0 |
| Lesueur | D[2] | 25.7 | D[2] | 30.9 | B | 14.6 | E | 56.4 |
| Hobson | B | 11.7 | B | 12.1 | B | 14.9 | D | 39.3 |
| Horne Street | B | 11.7 | B | 13.5 | C | 24.1 | B | 17.8 |

[1]Level of service for signalized intersections based on average control delay per vehicle, according to the Highway Capacity Manual (HCM), Transportation Research Board, 2000.
[2]Side street stop controlled intersection LOS based on average control delay in seconds per vehicle for the worst approach, based on the methodology in the HCM, Transportation Research Board, 2000.

The Build Alternative 2-Lane Option includes separate left turn lanes at all signalized Main Street intersections, and the signals will include a protected left turn phase similar to the current operations along the LRT Starter Line. LRT and east-west through traffic could move simultaneously through the same signal phase. Because four through lanes will be reduced to two through lanes in the downtown, traffic diversion is anticipated. Traffic will divert to other streets in the area, such as 1st Street and 1st Avenue which are one block north and one block south, respectively, of Main Street through the entire downtown area and to University Drive and Broadway Road. Available roadway capacity currently exists on these two wide parallel streets as well as other possible diversion routes, so no adverse impact on these other streets is anticipated.

### 3.6.2 How Will the Project Affect Parking?

The Build Alternative will remove parking spaces as shown in Table 3-12. All of the existing parking (122 spaces) from Sycamore to Country Club Drive will be displaced. In the downtown area, the 2-Lane Option will displace about 7 or 8 spaces while the 4-Lane Option will displace an estimated 17 to 19 spaces. East of downtown, all 60 parking spaces will be displaced regardless of option.

**TABLE 3-12: ESTIMATED PARKING IMPACTS**

| Road Segment | Existing Parking[1] | Estimated Parking Displaced/Retained 2-Lane Option | Estimated Parking Displaced/Retained 4–Lane Option |
|---|---|---|---|
| **Sycamore – Country Club Dr.** | **122** | **122/0** | **122/0** |
| **Country Club Dr. – Mesa Dr. (Downtown)** | | | |
| Country Club – Robson | 22 | 3-4/18-19 | 3-5/17-19 |
| Robson – MacDonald | 23 | 0/23 | 0/23 |
| MacDonald – Center | 25 | 4/21 | 4/21 |
| Center – Centennial | 20 | 0/20 | 6/14 |
| Centennial – Hibbert | 23 | 0/23 | 0/23 |
| Hibbert – Mesa | 32 | 0/32 | 4/28 |
| **Subtotal – Downtown** | **145** | **7-8 Displaced<br>138 – 139 Retained** | **17-19 Displaced<br>126 – 128 Retained** |
| **Mesa Dr. – Horne** | **60** | **60/0** | **60/0** |
| **Total – Alignment Sycamore to Horne** | **327** | **185 – 186 Displaced<br>141 – 142 Retained** | **195 – 197 Displaced<br>130 – 132 Retained** |

[1]Existing parking determined from Google Maps (2010) and field observation February 2010.

The removal of all on-street parking from Sycamore to Country Club Drive and from Mesa Drive to Horne is not anticipated to result in adverse impacts since on-street parking in these areas is consistently underutilized. Many of the businesses currently provide off-street parking. In addition, on-street parking is available along the north/south cross streets that intersect Main Street as well as parallel streets.

Most of the parking is retained in the downtown area (Country Club Drive to Mesa Drive). No mitigation is proposed for displaced on-street parking along downtown Main Street as the primary parking in off-street surface lots behind the commercial buildings that front on Main Street will still be available, and additional on-street parking is located on parallel streets and north/south cross streets.

### 3.6.3 How Will the Project Affect Pedestrians?

Sidewalks exist on Main Street along its entire length within the study area, and these are planned to be maintained. In some locations, especially near the stations, sidewalks will be widened and improved with the development of LRT and LRT Stations. New pedestrian crossings with signals will be installed at the Beverly entry to the Alma School Road Station and near the Robson entry to the Country Club Drive Station. The existing pedestrian signal and crossing at Lewis (near the City Hall) will remain. In addition, the project will include new traffic/pedestrian signals at Date and

Lesueur. No permanent impacts to pedestrian facilities are anticipated. See Section 3.20 for discussion of impacts during construction.

METRO has developed a Design Criteria Manual that identifies landscaping requirements 350 feet on either end of the station platform to provide an enhanced streetscape and shade for pedestrians along the alignment. The Design Criteria Manual also identified criteria for station design for pedestrian comfort. METRO has also developed urban design guidelines that apply to the entire METRO system and has recently completed, as a companion piece, additional guidelines that apply to the Central Mesa LRT extension. That document includes measures to enhance pedestrian comfort and safety to those walking in the vicinity of the stations from the surrounding community as well as from the park-and-ride facilities. Shading techniques are included in those guidelines as well.

METRO also coordinated with the City of Mesa and a Technical Advisory Committee developed to seek their input on how to improve the pedestrian environment along the route of the Central Mesa LRT extension. The City of Mesa is currently developing a Central Main Street Neighborhood Area Plan that identifies pedestrian improvements within the project corridor.

### 3.6.4 How Will the Project Affect Bicyclists?

Bicycle lanes currently exist on Main Street between Sycamore and Mesa Drive, with bicycle lanes planned ultimately between the Mesa western city limits and Gilbert Road, according to the Bicycle Plan within the Mesa 2025 Transportation Plan approved in 2002. A bicycle route is designated on 1st Street between Extension and Horne.

The Build Alternative will maintain the existing dedicated bicycle lanes on Main Street west of Country Club Drive, however the dedicated bicycle lanes between Country Club Drive and Bellview will be removed. In this section of the alignment bicyclists will ride in mixed traffic along Main Street in a shared travel lane with general purpose traffic. The travel lane between Country Club Drive and Bellview will be 16 feet (4-5 feet wider than the typical travel lane) in width providing ample room for bicyclist and vehicles to travel safely together. In addition, the posted speed limit within the downtown area is 25 miles per hour. With the close distance between traffic signals, their timing, and the signalized pedestrian crossings vehicular speeds in the downtown area are approximately 19 miles per hour providing additional safety to bicyclist using the shared travel lane. Signage and pavement markings will be placed in advance of where the lanes will end and will clearly advise bicyclists and motorists that they will share the

travel lane. The signage and pavement markings will be placed per City of Mesa standards and in accordance with the Manual of Uniform Traffic Control Devices (MUTCD), latest edition. In addition, a bicycle route is designated on 1st Street between Extension and Horne that can be used by bicyclists.

Note that the Mesa City Council adopted the Mesa 2025 Transportation Plan in 2002, which included individual plan elements addressing bicycles. The bicycle element of the 2025 Mesa Transportation Plan provides overall guidance in five key areas, which includes the following; supporting the implementation of the Transportation Element of the Mesa General Plan; identifying a preferred future network of bikeways; identifying vital end-of trip facilities; integrating the bicycle network with transit service; and promoting bicycling through education, enforcement and encouragement. The 2025 Mesa Transportation Plan addressed the importance of bicycling throughout the community, assessed current conditions, addressed a future bicycle system, bikeway maintenance, and provided general information on bicycle safety, education and enforcement. The City of Mesa is currently developing a Bicycle Master Plan that promotes access and amenities for bicyclists in the downtown area. Identified facilities include a downtown bike facility with bicycle valet service at a rail station, restrooms, and shower facilities. The design of the LRT project's traction power substation downtown will include bicycle and pedestrian amenities such as racks, lockers, seats, benches, water, and public art.

***Mitigation***

- Where the segment of dedicated bicycle lanes (Country Club Drive to Bellview) is removed, signage and pavement markings will be placed in advance of where the lanes will end and will clearly advise bicyclists and motorists that they will share the travel lane. Signage will be placed per City of Mesa standards and in accordance with the Manual of Uniform Traffic Control Devices (MUTCD), latest edition.

### 3.6.5 Any Differences Between the Downtown 2-Lane and 4-Lane Options?

Yes, there will be differences in traffic operations and in on-street parking. Regarding traffic, the Build Alternative, 2-Lane Option will likely require a dual left turn lane in the eastbound direction, similar to what is there today, at Country Club Drive. Although this option is more likely to result in traffic diversion, sufficient roadway capacity exists on nearby streets to accommodate the diversion. The Build Alternative, 2-Lane Option will include left turn lanes at all signalized intersections east of Country Club Drive which will result in a more progressive and efficient operation. The split-phased traffic signal operation that will be implemented with the Build Alternative, 4-Lane Option is not typically an efficient way to move traffic through intersections.

The Build Alternative 4-Lane Option will require slightly more (about ten) parking spaces to be removed downtown than the Build Alternative 2-Lane Option. However, sufficient parking exists behind many of the downtown commercial buildings and along cross and

parallel streets downtown to offset the additional losses. Impacts on pedestrians and bicyclists would be the same regardless of option.

## 3.7 AIR QUALITY

The federal and state ambient air quality standards are applicable to the Maricopa County region. The National Ambient Air Quality Standards (NAAQS) were established by the federal Clean Air Act (CAA) of 1970, as amended in 1977 and 1990. The NAAQS represent the maximum levels of pollution considered safe, with an adequate margin of safety, to protect public health and welfare. The six primary air pollutants of concern for which NAAQS have been established are carbon monoxide (CO), ozone ($O_3$), particulate matter (PM) equal to or smaller than 10 microns (PM-10) or 2.5 microns (PM-2.5) in diameter, sulfur dioxide ($SO_2$), nitrogen dioxide ($NO_2$), and lead (Pb). The State of Arizona's ambient air quality standards are identical to the federal NAAQS. The Maricopa County area is currently designated as a federal nonattainment area for 8-hour $O_3$ and PM-10, maintenance area for CO, and unclassifiable/attainment for $SO_2$, Pb, $NO_2$, and PM-2.5.

### *No-Build and Build Alternatives*

The Clean Air Act requires that Federal agencies and Metropolitan Planning Organizations (MPOs) not approve any transportation project, program, or plan which does not conform with the approved State Implementation Plan (SIP). The Federal Transportation Conformity Rule requires that FHWA/FTA projects must be found to conform before they are adopted, accepted, approved, or funded. The rule requires both a regional and project-level hot-spot analysis.

- Regional Analysis: The No-Build and Build Alternatives, including the park-and-ride facility of the Build Alternative, is included in the FY 2008-2012 MAG Transportation Improvement Program (TIP) and Regional Transportation Plan - 2007 Update (RTP) and corresponding 2007 Conformity Analysis. PM-10 from road construction-related fugitive dust was included in the regional PM-10 emissions analysis.

- Hot-Spot Analysis: The EPA Guideline for Modeling Carbon Monoxide was followed at five intersections identified for screening. Two of these intersections are identified for improvements in the No-Build Alternative. The other three intersections are within the Build Alternative, including the park-and-ride facility. The carbon monoxide screening resulted in detailed intersection analysis which demonstrated that the estimated total concentrations for both the No-Build and Build Alternatives are approximately 50 percent below the standard.

The PM-10 screening documented that the project was determined NOT to be a Project of Air Quality Concern; therefore, no further PM-10 analysis was necessary. Construction-related activities were not included in the hot-spot analysis because the

construction period is less than five years and considered temporary under the Federal Transportation Conformity Rule.

Both the regional and hot-spot analysis complies with the Federal Transportation Rule and indicates that the No-Build and Build Alternative, including the park-and-ride facility of the Build Alternative, will not (i) cause or contribute to any new violation of any standard in any area; (ii) increase the frequency or severity of any existing violation of any standard in any area; or (iii) delay timely attainment of any standard or any required interim emission reductions or other milestones in any area. Refer to the *Air Quality Technical Report*, contained in Appendix D, for more detailed information on the air quality analysis. The report has been submitted to MAG for review. Minor comments were received and have been incorporated into the technical report and this EA.

### 3.7.1 Any Differences Between the Downtown 2-Lane and 4-Lane Options?

No. Neither option is expected to have an adverse impact on air quality.

## 3.8 NOISE AND VIBRATION

The Noise and Vibration Technical Report and the Addendum to the Noise and Vibration Technical Report, included as Appendices E-1 and E-2, follow the guidelines of FTA's manual, *Transit Noise and Vibration Impact Assessment*, May 2006.

### *No-Build Alternative*

The No-Build Alternative may result in increased traffic volumes in the study area as growth occurs as projected and the traffic projects, discussed in Chapter 1, are implemented by 2015. For traffic noise levels to increase by 3 decibels, the point at which a change is typically discernible to the human ear, this would require traffic volumes to double by 2015. This is not likely to occur.

### *Build Alternative*

### 3.8.1 How Was the Noise Analysis Conducted and Will the Project Cause Adverse Impacts?

**Existing Conditions**. The primary existing noise source along the proposed alignment is vehicular traffic on Main Street. FTA's noise guidelines define three land use categories that are used to decide which noise metric should be used and what the threshold for impact should be. Land Use Category 1 is reserved for lands where quiet are an essential element of their intended purpose. FTA includes concert halls in Category 1. The Ikeda Theater (concert hall) of the Mesa Arts Center is the only such building along the proposed alignment. Land Use Category 2 land uses include residences, hospitals, and hotels where nighttime sensitivity to noise is important. Land uses that fall into this category along the alignment include single- and multi-family

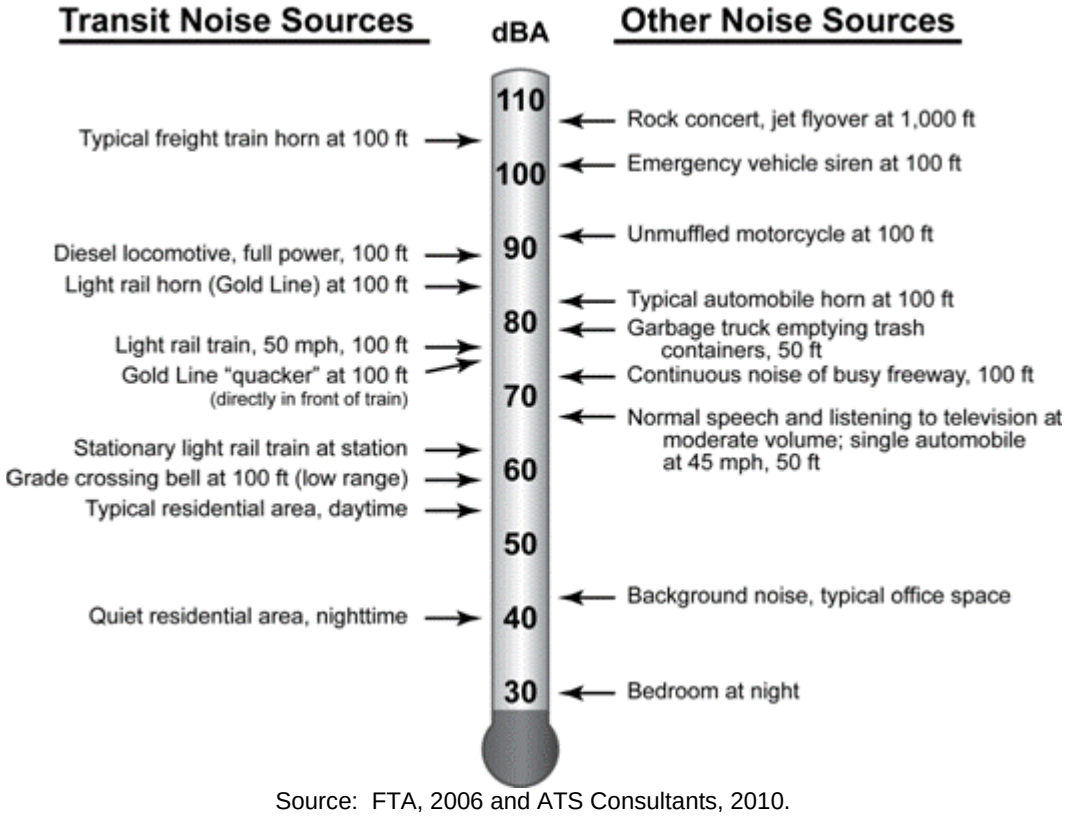
Mesa Arts Center

residences, motels, hotels, and trailer and mobile home parks. Category 3 includes institutional land uses with mostly daytime use. Institutional uses adjacent to the project area include: East Valley Institute of Technology (EVIT), City Hall, Lamaze childbirth education, Tri-City Community Center, Pioneer Park, and the Mormon Temple. Noise monitoring was conducted at ten locations along the alignment as part of the noise study (Figure 3-4). The location numbers preceded by "LT" indicates that long-term (24 hour) monitoring was conducted. Where "ST" precedes the location number, short-term (15-minute) measurements were taken. Refer to Appendix E-1 for additional information on the locations of the measurements. The daytime noise levels varied from 61 to 69 dBA Leq. Figure 3-5 provides a point of reference by illustrating typical noise levels from various sources.

**FIGURE 3-4: NOISE MONITORING LOCATIONS**


**Approach to Evaluation**. The approach to evaluating noise impacts is presented in Table 3-13.

## FIGURE 3-5: TYPICAL NOISE LEVELS




Source: FTA, 2006 and ATS Consultants, 2010.

## TABLE 3-13: NOISE EVALUATION APPROACH

| General Approach Per FTA Guidelines |
|---|
| • Determine existing noise environment without the project by measuring noise levels at representative sensitive receptors (e.g., houses, motels, concert halls).<br>• Predict, through use of FTA's noise model, noise levels created by the project at sensitive receptors based on the proposed technology (i.e., LRT), LRT operating schedule, and conceptual design of project alignment.<br>• Compare predicted project noise levels to FTA's noise impact criteria as shown in Appendix E.<br>• For receptors exposed to noise levels exceeding FTA's criteria, determine feasibility of various measures to reduce noise to acceptable levels. |
| **Project-Specific Approach** |
| • Conducted long-term (24 hour) noise measurements at 4 locations spaced approximately equidistant along the alignment.<br>• Conducted short-term (15 minute) noise measurements at 6 additional locations to verify the findings of the long-term measurements. The short-term measurements confirmed the accuracy of the long-term findings.<br>• Used noise measurements to estimate existing noise levels at other sensitive locations along the alignment by applying an adjustment factor for distance based on distance between the specific receiver and the major noise source (LRT fixed guideway/roadway).<br>• Since FTA's thresholds for impact are based on a determination of how much noise the proposed project adds to the existing noise environment, the noise measurements/estimations were used as the baseline for comparison of existing to predicted noise levels.<br>• Predicted noise levels were estimated using the FTA noise model and assuming the specific light rail vehicle noise profile, operating speeds and frequency in the corridor, and the project's distance from specific noise-sensitive receptors along the alignment.<br>• If noise levels exceeded FTA's criteria for impact, then determine feasibility of various measures to reduce levels so they are acceptable. |

**Noise Impact Findings.** As mentioned in Table 3-13, the approach to evaluating adverse impacts, as well as the criteria used to determine noise impacts, are based on FTA's *Transit Noise and Vibration Impact Assessment* manual. The noise sensitive land uses for FTA Categories 1, 2 and 3 along the Central Mesa LRT Extension project were grouped into clusters. These clusters group similar land uses that are about the same distance from the tracks and are small enough that train speeds and other operational parameters are the same for all land uses in the cluster. Noise levels are then determined based on the existing background noise levels, distance to the track, closest cross street, and LRT speed. LRT operations, including use of audible warning bells on the vehicle, are not predicted to exceed the applicable FTA noise impact thresholds at any location along the alignment. The following is a summary of the noise impact assessment of the build alternative:

- No noise impacts are predicted from LRT operations at Category 2 (Residential or other sensitive receptors with both daytime and nighttime use, e.g., hotels, motels, dormitories) land uses.
- No noise impacts are predicted from LRT operations at Category 3 (Institutional with primarily daytime use) land uses.
- No noise impacts are predicted from LRT operations at the Category 1 land use (the Ikeda Theater).

See Appendix E-1 for additional information.

Seven optional locations for traction power substations (TPSS) are being considered for sites of a total of three TPSSs needed to power the light rail vehicles along the alignment. One potential TPSS location could result in noise impacts at sensitive receivers. However, all potential impacts could be mitigated through straightforward measures such as locating the unit so that the ventilation fans face away from the closest residences.

### 3.8.2 How Was the Vibration Analysis Conducted and Will the Project Cause Adverse Impacts?

**Existing Conditions**. Vibration sources in the vicinity of the proposed project primarily consist of vehicular traffic and intermittent construction activities. Vehicular traffic was the only permanent vibration source observed along the project corridor. When vehicular traffic does cause perceptible vibration, the source can usually be traced to potholes, wide expansion joints, or other "bumps" in the roadway surface. Therefore, FTA assessment procedures for vibration from rail transit projects do not require measurements of existing vibration levels. FTA defines three categories of land uses for vibration assessment purposes. Category 1 is typically reserved for buildings that contain vibration-sensitive research and manufacturing equipment. The Health Sciences Building on the EVIT campus is the only building in the project corridor that potentially qualifies for FTA Category 1 land use. Categories 2 and 3 are similar to those described previously for noise assessment. In addition to these three categories,

FTA also has a category of "Special Buildings" for vibration assessment purposes that is applicable to concert halls such as the Ikeda Theater at the Mesa Arts Center.

**Approach to Evaluation**. Table 3-14 summarizes the approach to evaluating potential vibration impacts of the proposed project.

**TABLE 3-14: VIBRATION EVALUATION APPROACH**

| Vibration Approach[1] |
|---|
| • Conduct vibration propagation testing[1] at various points along planned route using state-of-the-art equipment to measure how vibration will be transmitted from the light rail tracks through the ground and into foundations of nearby buildings. One advantage of this testing is the ability to characterize how samples from representative soils along the alignment would affect groundborne vibration levels since soil type is a major factor in determining how well vibration transmits through the ground. The four sites selected for propagation testing included: EVIT; Epernay Apartment Homes (Main Street east of Alma School Road); Downtown Mesa; and the Mesa Arts Center.<br>• Predict, through use of FTA's vibration model, vibration levels that would be created by the project at sensitive receptors along alignment. Test results are used to represent local soil conditions as well as vibration levels of the LRT Starter Line rail vehicle itself, which will be the same vehicle used for the LRT extension.<br>• Compare predicted vibration levels to FTA vibration criteria as shown in Appendix E-1. Because vibration caused by light rail operations is normally well below what is considered necessary to damage buildings, FTA's criteria focuses on potential annoyance of building occupants.<br>• For receptors exposed to vibration levels exceeding FTA's criteria, determine feasibility of various measures to reduce vibration to acceptable levels. |

[1]The vibration analysis used FTA's detailed assessment approach as outlined in FTA's *Transit Noise and Vibration Impact Assessment*, May 2006.

**Vibration Impact Findings**. The results of the evaluation conducted in support of the Draft EA indicated that vibration from train operations could exceed the FTA impact threshold at a total of six second floor units at three motels: American Executive Inn, Motel Rawls, and Knights Inn (formerly Motel 6). That evaluation also concluded that vibration could potentially exceed the FTA impact threshold at one mobile home in each of three mobile home parks: Apache West, Mesa Gardens, and Mesa Royale. The Draft EA reported that the three mobile homes could be mitigated by moving the mobile homes to locations outside the potential impact zone and that more detailed propagation testing would be conducted to better determine the potential for impact. In addition, although no ground-borne noise or vibration impacts were predicted at the Ikeda Theater within the Mesa Arts Center, the Draft EA stated that more detailed evaluation would be performed to confirm these conclusions.

Since the Draft EA was completed, additional vibration propagation testing was conducted at all of these locations. Details of the testing and the findings are included as Appendix E-2 of this Final EA. The conclusions indicate that the predicted ground-borne vibration from train operations does not exceed the FTA impact criterion inside any of the guest rooms of the three motels or the three mobile homes in each of the three mobile home parks. The train generated ground-borne vibration and ground-borne noise levels are also not predicted to exceed the FTA impact thresholds for the use of Ikeda Theater at the Mesa Arts Center. Therefore, the Build Alternative will have no adverse vibration impacts on sensitive uses, and the three mobile homes will not need to be relocated.

### 3.8.3 Any Differences Between the Downtown 2-Lane and 4-Lane Options?

No. Neither option will result in adverse noise or vibration impacts.

## 3.9 ENERGY REQUIREMENTS AND POTENTIAL FOR CONSERVATION

***No-Build Alternative***

The No-Build Alternative does nothing to reduce dependence on oil because this alternative continues to rely on automobiles, motorcycles, and buses as the only motorized transportation modes in the study area and does not provide any new options.

***Build Alternative***

Light rail transit has the potential to conserve energy due to the following factors:

- Shift to a more energy efficient transportation mode since LRT is electrically powered and has a larger passenger capacity than buses.
- Improve transit operations since LRT will consolidate transit service in the project area and could allow for existing bus service hours to be redeployed elsewhere in the system.
- Increase load factors created by consolidating transit service in the project area.


Since the project will not adversely impact energy resources; no specific mitigation measures are warranted. Energy conservation could be achieved in facility planning, construction, operation, and maintenance. Various energy conservation elements are identified in METRO's *Urban Design Guidelines*, June 2001 and include bike racks at stations, bike storage on trains, pedestrian-friendly station access, station design to maximize shade, and use of heat-reflective surfaces to minimize heat gain. All of these elements have been incorporated into the LRT Starter Line project, and it is anticipated they will continue to be incorporated into the proposed project. In addition, the LRT system incorporates modern technology in both its communications and traction electrification systems which are more energy efficient than many of the older LRT systems in operation today. Schedule coordination and modal interface between LRT and local buses will be optimized to conserve energy.

It is METRO's policy to maximize the feasible use of recycled materials in the construction and operation of the LRT system. Conservation will also be obtained through recycling of pavements and various hardware items (guardrails, signals, signs, etc.) and using low water use plants for landscaping.

### 3.9.1 Any Differences Between the Downtown 2-Lane and 4-Lane Options?

No. Neither option is expected to adversely impact energy resources.

## 3.10 HISTORIC AND CULTURAL PROPERTIES

### *No-Build Alternative*

The No-Build Alternative is not expected to have impacts on cultural resources because this alternative only includes improvements to the transportation network that have already been approved and included in the Regional Transportation Plan or improvements will be assessed by others and appropriate avoidance or mitigation treatment, where avoidance cannot be accomplished, will be developed prior to implementation.

### *Build Alternative*

### 3.10.1 Which Properties Were Considered in Determining if They Are Historic and What are the Historic Characteristics of the Project Area?

The study of historic resources evaluates resources built before or by 1966 within the Build Alternative's Area of Potential Effect (APE). The year 1966 was selected as the threshold for study because it is 50 years prior to the planned opening of the proposed project. The National Register of Historic Preservation (or NRHP, the nation's official list of cultural resources worthy of preservation) criteria for Evaluation of Eligibility exclude properties that achieved significance within the last fifty years unless they are of exceptional importance. Fifty years is a general estimate for the time needed to develop historical perspective and to evaluate significance. The properties within the APE have been evaluated for eligibility for listing on the NRHP. The boundary of the APE, as defined through agreement with the State Historic Preservation Office (SHPO) and the City of Mesa historic preservation officer, includes the LRT ROW and encompasses the individual properties and residential subdivisions immediately adjacent to the Build Alternative's alignment and associated facilities.

The City of Mesa began with its founding in 1877 and proceeded through several periods of significance during the 20$^{th}$ century which are represented by surviving historic resources. No such resources from the 19$^{th}$ century appear to have survived within the APE. An historic overview of Mesa is summarized in Table 3-15. Figure 3-6 illustrates the evolution of Main Street from the early 1900s to present day. The full technical report contains additional information and may be found in Appendix F-1.

## TABLE 3-15: HISTORIC OVERVIEW OF MESA

| Period of Significance | Years | Overview |
|---|---|---|
| Founding of Mesa | 1877 | Members of the Church of Jesus Christ of Latter Day Saints (LDS) came to the area and founded the agricultural settlement first known as Utahville and later as Lehi. A second group of LDS members later arrived selecting a flat table land above the Salt River to the south of Lehi for settlement and named the area "Mesa". |
| First 20th Century Boom | 1906-1921 | Construction of Roosevelt Dam as well as the beginning of World War I generated high demand for local agricultural products which could be irrigated using the new dam's water. This all led to high employment and rapid population increase resulting in expansion of Mesa beyond its original townsite. Seventeen residential subdivisions were platted within the townsite, and thirteen were platted just outside this area. |
| Post World War I Slump | 1922-1926 | With the end of World War I came a significant reduction in demand for Arizona agricultural and mining products which produced a "ripple effect" in Mesa's economy and resulted in a decline in sales and profits. During this time only nine new subdivisions were platted. |
| Growth in the Late 20's | 1927-1931 | Initiation of Southern Pacific Railroad service through Phoenix, Salt River Valley, and Mesa and a resurgence of the agricultural economy fueled prosperity. The Arizona Temple was built at its current site just outside the boundaries of the original town. All of this generated a growing demand for residential housing outside the townsite, and subdivisions soon ringed the town. |
| The Great Depression | 1932-1934 | Mesa's diverse economy of the time appears to have spared the area from the worst effects of the depression. However, by 1932, even Mesa was affected, and no subdivisions were platted in 1932 and 1933. |
| The New Deal | 1935-1940 | In the later years of the 1930's, Federal government public works spending and loan guarantee programs began to stimulate Mesa's economy and led to a gradual increase in new construction on Mesa's west side as well as within the townsite. |
| World War II | 1941-1944 | Government military spending led to establishment of two air training bases: Falcon Field and Williams Air Field (later Williams Air Force Base). The economy improved, and population increased as a result. However, restrictions on building construction and materials availability during the war resulted in only three subdivisions being platted. |
| The Great Post World War II Boom | 1945-1966 | Discharged soldiers and war workers decided to stay in Mesa, and many others relocated here. By 1950, Mesa had become the third largest city in Arizona. The housing shortage led to a real estate boom. Between 1945 and 1955, 104 new subdivisions were platted. The downtown, although originally designed for pedestrians, began trying to serve motorist shoppers and by the 1960s parking was becoming a serious problem for convenience, merchandizing, and traffic safety. The unique character of downtown Mesa's Main Street with its storefronts, medians, and streetlights was well established during the 1960s. |

Source: *Central Mesa LRT Extension, Inventory and Evaluation of Historic Properties and Districts*, prepared for METRO by Ryden Architects, Inc., with HDR, March 2010.

The evaluation of resources within the APE identified one building (Landmark Restaurant) and one historic district (Temple Historic District) currently listed on the NRHP. In addition, 24 buildings and ten objects (signs) were also determined to be eligible. Refer to Section 6.2 and Appendix C of the full technical report in Appendix F-1 of this EA for more information.

## FIGURE 3-6: EVOLUTION OF MAIN STREET IN DOWNTOWN MESA


1910's

1920's


1940's

1950's


1960's


Today

Source: Mesa Southwest Museum

### 3.10.2 What Effect Will the Build Alternative Have on Historic Properties?

Table 3-16 summarizes the potential effects on historic properties along the alignment. The project will have no adverse effect on any historic properties within the APE.[1]

Main St. – Looking east from Extension (1968)

West of Country Club Drive, findings of no adverse effect were made with regard to the three signs listed in Table 3-16. Although the buildings associated with these signs are not eligible for NRHP listing, these stand-alone signs are eligible. To be determined no adverse effect will require relocating each sign on the lot relative to the new ROW line since it is the sign's relative position to the street ROW rather than to the non-eligible building that is of importance. METRO will work with SHPO and City historic preservation officer during final design to place the sign on the lot relative to the new ROW line where feasible. Feasibility will require consideration of other factors as well such as whether the new location will obstruct views, compromise safety, or result in other major adverse impacts.

**Effects Between Country Club Drive and Eastern Terminus**. No adverse effect findings were determined for the following properties regardless of option:

- Salsita's Mexican Food Restaurant (311 West Main)
- Mayday Janitorial Supply (261 West Main)

The technical report in Appendix F-1 indicates the proposed project has no adverse effect when it involves features such as a station in the center of the street which does not touch the historic curb alignment. Note that most of the curb line in the downtown area has been extended outward toward the street in recent years to accommodate major streetscape improvements along Main Street. Salsita's and Mayday Janitorial Supply are located close to the Country Club Drive Station platform, but the project will not affect the properties' ROW or the adjacent curb. Although the project will result in no adverse effect, METRO will continue to work with SHPO and City historic

[1] Definitions of effects may be found in Section 2.2 of *Central Mesa LRT Extension, Inventory and Evaluation of Historic Properties and District*, prepared for METRO by Ryden Architects, Inc., with HDR, August 2010. The report may be found in Appendix F-1. The findings presented in the EA are based on this technical report and were forwarded to SHPO for review and concurrence (Appendix F-2).The consultation period expired without comment from SHPO.

preservation officer during final design of the stations to develop and implement design strategies compatible with the surroundings of the station's location.

In addition to the properties listed above, findings of no adverse effect were determined for the following properties if the Build Alternative, 4-Lane Option will be implemented:

- Lamaze Childbirth Classes (228 West Main)
- American Chopper (220 West Main)
- Mickey's Downtown Barber Shop (218 West Main)
- Arizona Master Blind Corporation (212 West Main)

These properties will not be adversely affected by relocating the non-historic curb line back to a location similar to its historic location.

### 3.10.3 What Effect Will the Build Alternative Have on Archaeological Resources?

The project area is in a developed urban setting, and as a result, an archaeological survey was not possible for the most part. However, a portion of the proposed park-and-ride location was surveyed, and no archaeological sites or historically significant resources were observed. A review of past archaeological studies in the area indicated that a few large Hohokam village sites had been documented in the vicinity prior to development in Mesa and that several prehistoric canals were observed crossing through the project area. The current condition and precise location of the canals are unknown. Excavations in the Phoenix Basin have demonstrated that there is potential for deeply buried intact prehistoric features and deposits preserved below the old plow zones and layers of modern development. Nevertheless, if archaeological sites are unexpectedly encountered during the project, any negative impacts could be mitigated through data recovery excavations. Therefore, it is not anticipated that the project will result in significant impacts to archaeological resources.

Based on the results of the records check, field survey, and Native American consultations, there is not sufficient direct evidence of known archaeological sites in the project area to warrant archaeological monitoring during construction. Furthermore, the depth of construction disturbance along the track corridors will only be about 2.5 feet deep, therefore observations of subsurface exposures would be limited. Should unanticipated buried cultural resources be discovered during construction, including prehistoric canals, activities will cease immediately until a qualified archaeologist can be contacted to make an assessment for the proper treatment of those resources. If human remains or associated funerary objects are discovered, the Arizona State Museum will be notified as required by A.R.S. Section 41-865. For further information, refer to the full technical report included as Appendix G.

Mesa Southwest Museum

## TABLE 3-16: FINDINGS OF EFFECT AND RECOMMENDED TREATMENT

| Property Name/ Location[1] | Status/Criteria[2] | Description of Impact | Preliminary Effect Finding[3] | Recommended Treatment |
|---|---|---|---|---|
| **Sycamore to Country Club Drive** | | | | |
| Trava-Leer's Motel **Sign** 836 W. Main St. | Eligible – Criterion C | Curb relocation, partial property acquisition | No adverse effect | To be determined no adverse effect, requires relocating sign on lot relative to new ROW line. METRO will work with SHPO and the City during design to place the sign on the lot relative to the new ROW line where feasible. Feasibility will require consideration of other factors as well as whether the new location will obstruct views, compromise safety, or result in other major adverse impacts. |
| Larada's Army Surplus **Sign** 764 W. Main St. | Eligible – Criterion C | Curb relocation, partial property acquisition | No adverse effect | Same as Trava-Leer's sign. |
| Payless Car Sales **Sign** 530 W. Main St. | Eligible – Criterion C | Curb relocation, partial property acquisition | No adverse effect | Same as Trava-Leer's sign. |
| **Country Club Drive to Hobson 2-Lane Option** | | | | |
| Salsita's Mexican Food 311 W. Main St. | Eligible – Criterion A | Station location | No adverse effect | Although project as now defined will result in No Adverse Effect, METRO will continue to work with SHPO and the City Historic Preservation Office during final design of the station to develop and implement design strategies compatible with the station's surroundings. |
| Mayday Janitorial Supply 261 W. Main St. | Eligible – Criterion A | Station location | No adverse effect | Same as station treatment for Salsita's Mexican Restaurant. |
| **Country Club Drive to Hobson 4-Lane Option[4]** | | | | |
| Salsita's Mexican Food 311 W. Main St | Eligible – Criterion A | Station location | No adverse effect | Same as station treatment for Salsita's Mexican Restaurant. |
| Mayday Janitorial Supply 261 W. Main St. | Eligible – Criterion A | Station location | No adverse effect | Same as station treatment for Salsita's Mexican Restaurant. |
| Lamaze Childbirth Classes 228 W. Main St. | Eligible – Criterion A | Relocation of non-historic curb line | No adverse effect | No Treatment |
| American Chopper 220 W. Main St. | Eligible – Criterion A | Relocation of non-historic curb line | No adverse effect | No Treatment |
| Mickey's Downtown Barber 218 W. Main St. | Eligible – Criterion A | Relocation of non-historic curb line | No adverse effect | No Treatment |
| Arizona Master Blind Corp 212 W. Main St. | Eligible – Criterion A | Relocation of non-historic curb line | No adverse effect | No Treatment |

[1]For map locations, see Section 6.2 and Appendix C of the full technical report; both are contained in Appendix F-1.
[2]Definitions of the criteria listed may be found in Section 2.1 of the full technical report contained in Appendix F-1.
[3]Definitions of effects may be found in Section 2.2 of the full technical report contained in Appendix F-1.
[4]The currrent lane configuration at Country Club includes two left turn lanes. Project design for the 4-lane option would reduce the number of left turn lanes to one.

### 3.10.4 What Steps Is the Project Sponsor Taking to Coordinate and Consult with Parties Interested in Cultural Resources?

Section 106 consultation was initiated in August 2007 when preparation of the Alternatives Analysis (AA) phase of this process began, and the process is continuing. Consulted agencies include the Arizona SHPO and City of Mesa Historic Preservation Office and the Curator of Anthropology. METRO staff has presented the project to the City of Mesa Historic Preservation Committee three times for their input on eligible resources, potential project effects, and recommended mitigation treatments. The historic resources technical report (Appendix F-1) containing the determinations of resource eligibility for NRHP listing and findings of the proposed project's effects as well as the archaeological technical report (Appendix G) have been submitted to the Arizona SHPO for review and concurrence (Appendix F-2). The federal regulatory-determined consultation period expired without comment from the Arizona SHPO. Per 36 CFR 800.3 (regulations for implementing provisions of the National Historic Preservation Act), if SHPO fails to respond, FTA may proceed based on the findings and determinations contained in the technical reports. Several Native American tribes were identified as potentially interested parties and have also been contacted including: Salt River Pima-Maricopa Indian Community, Gila River Indian Community, Fort McDowell Yavapai Nation, Ak-Chin Indian Community, and the Hopi Tribe.

Because the project has no adverse effect on historic and archaeological resources, no Memorandum of Agreement (MOA) with the State Historic Preservation Office (SHPO) and other parties will be required. Should design refinements occur during final design or subsequent phases of project implementation that could result in an adverse effect, a MOA may need to be developed. The MOA would define specific procedures for continued consideration and treatment of historic resources.

#### *Recommended Treatment*

- Although the project has been determined to result in no adverse effect on historic or archaeological resources, METRO will work with SHPO and the City Historic Preservation Office during final design of the Country Club/Main Station to develop and implement design strategies compatible with the surroundings of the station location.
- Should unanticipated cultural resources be discovered during construction excavation, activities will cease immediately until a qualified archaeologist can be contacted to make an assessment for the proper treatment of those resources. If human remains or associated funerary objects are discovered, the Arizona State Museum will be notified as required by A.R.S Section 41-865.
- To avoid an adverse effect finding on three historic signs that are eligible for the National Register (the associated buildings are not eligible), METRO will work with the State Historic Preservation Office (SHPO) and the City of Mesa during final design to relocate the sign on the lot relative to the new right-of-way line where

feasible. Feasibility requires consideration of other factors as well such as whether the new location will obstruct views, compromise safety, or result in other major adverse impacts. The three signs are associated with the following properties along Main: Trava-Leer's Motel, Larada's Army Surplus, and Payless Car Sales.

### 3.10.5 Any Differences Between the Downtown 2-Lane and 4-Lane Options?

Minor. The 4-Lane Option in the downtown area has a few more findings of no adverse effect on historic properties due to relocation of non-historic curb line needed to accommodate the LRT stations as well as the somewhat wider street cross-section in some locations in the downtown area. However, no treatments are required for findings of no adverse effect.

## 3.11 PARKLANDS AND SECTION 4(f) RESOURCES

Pioneer Park Plaza

Section 4(f) of the U.S. Department of Transportation Act of 1966, as amended, states that FTA "may approve a transportation program or project requiring publicly owned land of a public park or recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of a historic site of national, state, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, or site) only if there is no prudent or feasible alignment to using that land and the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife or waterfowl refuge, or historic site resulting from the use" (49 United States Code 303).

The resources subject to Section 4(f) and potential effects/impacts are discussed in this section as well as in Section 3.10 of this EA and also in the *Section 4(f) and 6(f) Technical Report* and the *Central Mesa LRT Extension, Inventory and Evaluation of Historic Properties and Districts*, in Appendices J and F-1, respectively.

### *No-Build Alternative*

The No-Build Alternative would result in no "use" on parklands or other resources subject to protection under Section 4(f).

***Build Alternative***

### 3.11.1 Direct Use of Section 4(f) Properties

Within the project corridor there are two city-owned parks; Gateway Park, located at the southwest corner of Mesa Drive/Main Street; and Pioneer Park, located at the northeast corner of Hobson/Main Street. However, only Pioneer Park qualifies as a Section 4(f) resource. Gateway Park, while it contains benches and sculptures and is a public open space, is located close to other public open spaces, and the City of Mesa Parks, Recreation and Commercial Facilities Department determined that Gateway Park does not meet the Section 4(f) definition of being locally significant and is therefore not considered a Section 4(f) resource. The project will be located entirely within the existing Main Street roadway prism and will not result in the acquisition or conversion of any portion of Pioneer Park into the transit facility or for a non-recreational purpose. In addition, the proposed park-and-ride facility will not result in the acquisition or conversion of any portion of Pioneer Park into the transit facility or for a non-recreational purpose. Therefore, the project will not result in a "direct use" of Pioneer Park.

Within the project corridor there are one NRHP listed historic district, one NRHP listed building, 24 eligible buildings, and ten eligible signs (See Section 3.10). The proposed project will not incorporate any historic property in this transit facility; therefore, the project will not result in a "direct use" of land from any historic property.

### 3.11.2 Constructive Use of Section 4(f) Properties

A constructive use of a Section 4(f) resource occurs when the transportation project does not permanently incorporate land from the resource, but the proximity of the project results in impacts (e.g., noise, vibration, visual, and property access) that are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired.

The LRT project will not result in a "constructive use" of any historic Section 4(f) properties or historic district because the relocation of the non-historic curb line, location of the LRT stations, overhead catenary system, and the proposed park-and-ride lot will not substantially impair the features or attributes that qualify any historic properties for protection under Section 4(f).

Pioneer Park is located along the eastern edge of downtown Mesa and is surrounded by residential and commercial development with Main Street bordering the southern end of the park. The proposed guideway will be located within the middle of Main Street, a major transportation corridor, consisting of a median landscaped with palm trees and other shrubs, streetlights, and utility boxes. In addition, a proposed park-and-ride facility has been identified for the northeast corner of Main Street and Mesa Drive, west of Pioneer Park. The City of Mesa will require the proposed park-and-ride lot to be screened from Pioneer Park and the adjacent neighborhood. The screening is expected to enhance the visual setting of the area since the land closest to the park is now vacant

and bare and contains no landscaping. The park-and-ride will also provide additional parking for park users, especially during those times of the day when commuters are not using the facility. A number of cities have found this to be useful since recreationists often use parks at times when transit is least used and vice versa. Although the guideway will introduce a new element (overhead catenary system, tracks, and park-and-ride facility), Main Street is a major transportation corridor, and these new elements will not substantially impair the aesthetic features that are important contributing elements of the park and will not create a "constructive use" of this property from visual or noise impairment.

### 3.11.3 Temporary Use or Occupancy of Section 4(f) Properties

The project does not include any "temporary use" of Section 4(f) properties, nor do project plans include any temporary occupancy of Section 4(f) properties.

## 3.12 VISUAL AND AESTHETICS

### *No-Build Alternative*

The No-Build Alternative would not involve major physical alteration of the built or natural components of the Central Mesa Study Area other than the few roadway and transit capital improvements included in the Regional Transportation Plan (RTP) which have already been approved for funding. Changes would come about through typical market forces and the implementation of various governmental plans for development and redevelopment. The general character of the project area would be expected to remain relatively constant, with some infill occurring. Therefore, neither the existing character of the corridor nor pending changes would be affected with the decision to implement the No-Build Alternative.

### *Build Alternative*

For the evaluation of the Build Alternative impacts on visual and aesthetics, the study corridor was divided into eight visual units as shown in Figure 3-7. The units each represent a set of land use, vegetation, urban form, scale, and material characteristics.

Table 3-17 summarizes the existing visual resources along the alignment and Table 3-18 summarizes the anticipated impacts on the visual units, the specific visually-sensitive resources along the project alignment and mitigation measures. The Visual and Aesthetics Technical Report in Appendix H provides additional information.

City Hall Plaza and Streetscape

The final design of the project will include adoption of specific aesthetic station and platform elements and reduction of the impact of overhead contact wires and trackway, where possible. The project will conform to the guidance and specifications contained in the following documents: Urban Design Guidelines (June 2001) and METRO Central Mesa LRT Extension Urban Design Guidelines (July 2010) as well as METRO's applicable design criteria for stations, landscape, etc. These documents include methods to enhance and maintain the urban continuity with the project. Methods that could be adopted are listed below:

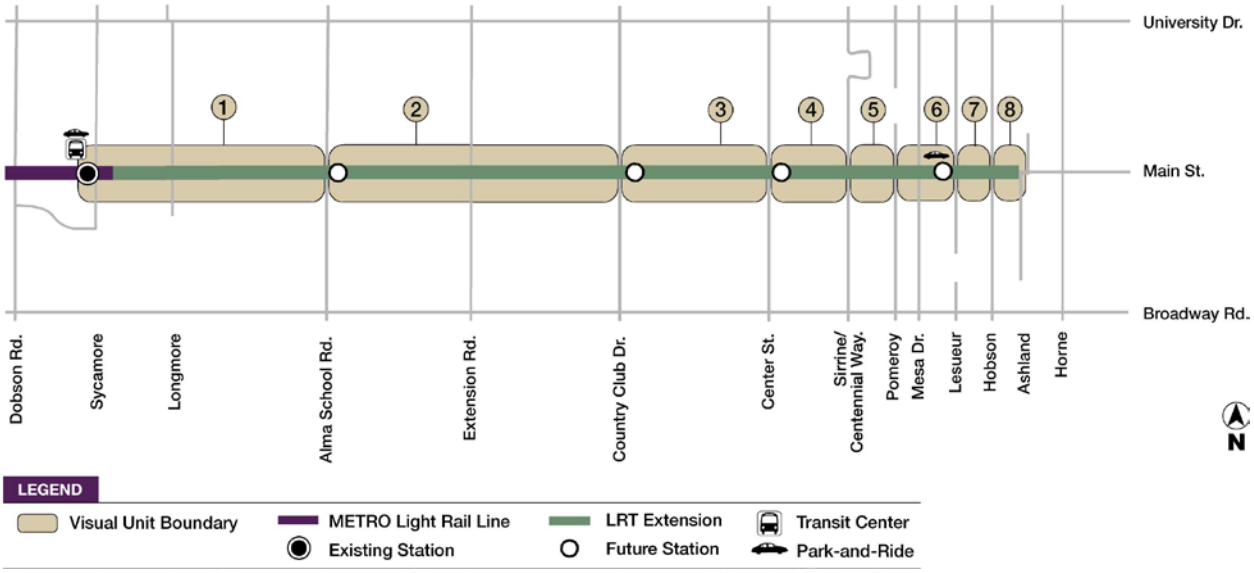
- Addition of decorative pavement such as concrete pavers for pedestrian access at station entries and platforms.
- Aesthetic designs for proposed elements, such as simplified catenary pole design.
- Reduction of the number of catenary poles.
- Careful selection of traction power substation (TPSS) sites, placement of buildings with landscape and wall screening.
- Adaptation of the 'kit of parts' for each LRT station appropriate to the neighborhood context similar to those of the LRT Starter Line.
- Construction of the LRT station area design similar to that constructed for the LRT Starter Line. The station design was developed through an extensive public involvement program and addressed issues such as access requirements (bus, auto, walk, and bicycle); aesthetics; traffic changes volumes and levels of service; safety and security issues; and alternative development/redevelopment scenarios.
- Inclusion of stakeholder meetings for the public art aspect of station design. Each station will include a public art component that will respond to and be unique to that station area, as was done for each of the individual stations of the LRT Starter Line.
- Station area landscaping, including landscape screening of key visual elements and replacement of damaged or removed landscaping.
- Choice of compatible and complementary colors for plant material, retaining walls, catenary poles, and other structural features, including using existing streetscape materials, where appropriate, to incorporate the existing character of an area.

Of specific importance are areas behind newly constructed walkways resulting from full property and/or partial structure acquisitions. Design options to blend with the existing urban setting in the left-over spaces may include:

- Re-landscape to restore landscape buffer to pre-construction condition and enhance arterial streetscape;

- Include trees and wider sidewalks, where feasible, to increase the amount of pedestrian shade and create more significant connectivity to stations from the adjacent neighborhoods.

**FIGURE 3-7: VISUAL UNITS**




Another potential design option to maintain existing pedestrian comfort and connectivity, while also improving visual unit aesthetics, is to develop landscape buffers/esplanades on both sides of the street in some locations, where currently only one side of the street benefits from design improvements.

Public Art in Downtown Mesa

This may be accomplished by the following:

- Collaborate with private or institutional owners to create a landscape easement (e.g. along vacant lots/auto dealerships) and develop a wider buffer.

- Consider reducing the median buffer(s) next to the trackway, thereby allowing expansion of the walkway buffer(s) to a width suitable for one or more rows of trees.

Additional mitigation strategies are discussed in the *Visual and Aesthetics Technical Report* in Appendix H.

## TABLE 3-17: EXISTING VISUAL CONDITIONS

| Unit | Landscape Unit/Distance | Land Use | Natural Landscape Features | Urban Landscape Features |
|---|---|---|---|---|
| 1 | Main Street - Sycamore Station to Alma School Road (0.77 mile) | Technical college (EVIT) campus, surface parking, auto service, strip mall, motor lodges and motels, fast food restaurants | Sparse landscaping (occasional tree, palm or shrub) except for EVIT street trees, far distant view to Superstition Mountains (east) | EVIT campus street frontage of trees and meandering walkway (south side); vintage highway signs, center street lighting |
| 2 | Main Street - Alma School Road to Country Club Drive (1.0 mile) | Mobile home parks, multi-family apartments, mid-size shopping centers, motels/hotels; used auto sales lots | Sparse landscaping (occasional tree, palm or shrub), far distant view to Superstition Mountains (east) | Suburban low-rise building form, center street lighting |
| 3 | Main Street – Country Club Drive to Center (0.47 mile) | Traditional Downtown urban area, small retail shops, banks, public spaces and public art | Distinctive pale green street trees and date palms of the Downtown streetscape, low colorful shrubs/groundcover | Downtown streetscape elements (benches, corner treatment, lighting, public art, decorative paving), traditional downtown building form |
| 4 | Main Street – Center to Sirrine/Centennial Way (0.15 mile) | Performing arts center, multi-story civic and office buildings, public plazas | Tall date palms and pale green street trees of the Downtown Streetscape, mature Evergreen Elms at City Hall, date palms and varieties of trees & landscaping at MAC | Plazas with public art, multi-story contemporary architecture, tensile shade structures and various fountains at MAC, heritage street lighting in median and at walkways |
| 5 | Main Street – Sirrine/Centennial Way to Mesa Drive (0.25 mile) | Auto dealership and multi-story vehicle storage, recreational vehicle sales, commercial strip mall | Downtown streetscape trees and shrubs | Downtown streetscape trees, walkways w/ corner treatment, heritage street lighting in median and at walkways |
| 6 | Main Street – Mesa Drive to LeSueur (0.13 mile) | Small auto-oriented retail, storage facility, vacant land | Sparse landscaping (occasional tree, palm or shrub), far distant view to Superstition Mountains (east) | Suburban low-rise building form, center street lighting |
| 7 | Main Street – LeSueur to Hobson (0.12 mile) | Large city park and religious center (potentially eligible for HP) | Large expanses of turf grass, large variety of mature trees and palms | One to two story buildings with flagpole, low planter wall at property line (Temple); statuary/public art at park in plaza |
| 8 | Main Street – Hobson to Ashland (0.07 mile) | Small retail shopping centers and individual buildings, fast food restaurants | Suburban landscaping, far distant view to Superstition Mountains (east) | Suburban low-rise building form, center street lighting |

Source: A. Dye Design, 2010.

## TABLE 3-18: SUMMARY OF POTENTIAL IMPACTS/MITIGATION TO VISUALLY SENSITIVE RESOURCES

| Visual Unit Along Main St. | Summary of Visual Elements with Potential Impact | Level of Impact of Build Alternative (2-lane/4-lane) Without Mitigation | Mitigation |
|---|---|---|---|
| 1<br>Sycamore to Alma School Rd. | - Modification of curbs may force relocation of historic signs (See Section 3.10) closest to street.<br>- ROW modification could affect defining visual element of entrance to East Valley Institute of Technology.<br>- New street light poles at curb edge and OCS poles in median could contribute to visual clutter.<br>- Existing landscape in median will be removed. | Minimal | - Vintage highway signs will be relocated to have no adverse effect (See Table 3-16).<br>- Retain the existing landscape shrubs, groundcover, and trees at back of the walkway at EVIT to keep its defining visual element.<br>- Paint the new poles the existing green color (or similarly consistent and distinctive color theme) to retain the existing character of this vertical element.<br>- Create, wherever possible, landscape medians at traffic tapers. |
| 2<br>Alma School Rd. to Country Club Dr. | - Modification of curbs may force relocation of historic signs (See Section 3.10) closest to street.<br>- Introduction of trackway and OCS poles and wire may add visual clutter.<br>- Existing landscape in median will be removed. | Moderate | - Vintage highway signs will be relocated to have no adverse effect (See Table 3-16).<br>- Paint the new poles the existing green color (or similarly consistent and distinctive color theme) to retain the existing character of this vertical element.<br>- Create, wherever possible, landscape medians at traffic tapers |
| 3<br>Country Club Dr. to Center | - Introduction of trackway and OCS may add visual clutter.<br>- Existing landscape in median will be removed.<br>- Addition of station at Country Club Dr. may conflict with existing architecture and streetscape theme. | Moderate/ Substantial | - Incorporate heritage-themed (or architecturally compatible) street lighting fixtures with the OCS poles and wire supports consistent with the Main Street and Downtown theme.<br>- Paint new poles the existing green color (or similarly consistent and distinctive color theme) to retain the existing character of this vertical element.<br>- Create, wherever possible, landscape medians at traffic tapers.<br>- Replace in kind, where possible, all trees and streetscape features to restore the Downtown Streetscape. If insufficient area exists to replace trees, consider adding vines on supports or other vegetated shade devices to bring back the green element.<br>- Adapt station architecture to assume an appropriate scale to context.<br>- Adapt station architecture to a low profile, less architecture/more vegetation style throughout Downtown area.<br>- Modify the color of the station supports and tensile structure canopies to be more color compatible with the surrounding architecture in the Downtown area.<br>- Use the Downtown streetscape design and layout as a design precedent for the station area pedestrian enhancement. |

| Visual Unit Along Main St. | Summary of Visual Elements with Potential Impact | Level of Impact of Build Alternative (2-lane/4-lane) Without Mitigation | Mitigation |
|---|---|---|---|
| 4<br>Center to Sirrine/ Centennial Way | - Introduction of trackway and OCS poles and wire may add visual clutter.<br>- Existing landscape in median will be removed.<br>- Addition of station at the MAC may conflict with existing architecture and streetscape theme. | Moderate/Moderate | - Incorporate heritage-themed (or architecturally compatible) street lighting fixtures with the OCS poles and wire supports consistent with the Main Street and Downtown theme.<br>- Paint new poles the existing green color (or similarly consistent and distinctive color theme) to retain the existing character of this vertical element.<br>- Create, wherever possible, landscape medians at traffic tapers.<br>- Replace in kind, where possible, all trees and streetscape features to restore the Downtown Streetscape. If insufficient area exists to replace trees, consider adding vines on supports or other vegetated shade devices to bring back the green element.<br>- Adapt station architecture to assume an appropriate scale and context to the contemporary architecture and dynamic public art features at the MAC.<br>- Modify the color of the station supports and tensile structure canopies to be more color compatible with the surrounding architecture in the Downtown area.<br>- Use the Downtown streetscape design and layout as a design precedent for the station area pedestrian enhancement. |
| 5<br>Sirrine/Cent. Way to Mesa Dr. | - Introduction of trackway and OCS may add visual clutter.<br>- Existing landscape in median will be removed. | Moderate/ Moderate | - Incorporate heritage-themed (or architecturally compatible) street lighting fixtures with the OCS poles and wire supports consistent with the Main Street and Downtown theme.<br>- Paint new poles the existing green color (or similarly consistent and distinctive color theme) to retain the existing character of this vertical element.<br>- Create, wherever possible, landscape medians at traffic tapers.<br>- Replace in kind, where possible, all trees and streetscape features to restore the Downtown Streetscape. If insufficient area exists to replace trees, consider adding vines on supports or other vegetated shade devices to bring back the green element.<br>- Use the Downtown streetscape design and layout as a design precedent for the station area pedestrian enhancement. |
| 6<br>Mesa Dr. to Lesueur | - Introduction of trackway and OCS may add visual clutter.<br>- Existing landscape in median will be removed.<br>- Addition of station at Mesa Dr. may conflict with existing streetscape.<br>- The park-and-ride could create unattractive views to Pioneer Park. | Moderate/ Moderate | - Incorporate heritage-themed (or architecturally compatible) street lighting fixtures with the OCS poles and wire supports consistent with the Main Street and Downtown theme.<br>- Paint new poles the existing green color (or similarly consistent and distinctive color theme) to retain the existing character of this vertical element.<br>- Create, wherever possible, landscape medians at traffic tapers.<br>- Adapt station architecture to assume an appropriate scale to context.<br>- Add landscaping and other screening (including screen walls) along Lesueur between the park-and-ride and Pioneer Park. |

| Visual Unit Along Main St. | Summary of Visual Elements with Potential Impact | Level of Impact of Build Alternative (2-lane/4-lane) Without Mitigation | Mitigation |
|---|---|---|---|
| 7<br>Lesueur to Hobson | - Introduction of trackway and OCS may add visual clutter.<br>- Existing landscape in median will be removed and may alter view of the Temple and the Park.<br>- The park-and-ride could create unattractive views to users of Pioneer Park. | Moderate/ Moderate | - Incorporate heritage-themed (or architecturally compatible) street lighting fixtures with the OCS poles and wire supports consistent with the Main Street and Downtown theme.<br>- Paint new poles the existing green color (or similarly consistent and distinctive color theme) to retain the existing character of this vertical element.<br>- Space OCS poles as far apart as possible to eliminate visual clutter in the Mesa Arizona Temple viewshed.<br>- Create landscape medians in keeping with the Mesa Arizona Temple and Pioneer Park theme.<br>- Add additional landscape and other screening (including screen walls) along LeSueur between the park-and-ride and Pioneer Park. |
| 8<br>Hobson to Ashland | - Introduction of trackway and OCS may add visual clutter. | Minimal/ Minimal | - Incorporate heritage-themed (or architecturally compatible) street lighting fixtures with the OCS poles and wire supports consistent with the Main Street and Downtown theme.<br>- Paint new poles the existing green color (or similarly consistent and distinctive color theme) to retain the existing character of this vertical element. |

Source: A. Dye Design, 2010.

### *Mitigation*

- Table 3-18 summarizes the anticipated impacts and mitigation that will be implemented to minimize adverse visual impacts.

### 3.12.1 Any Differences Between the Downtown 2-Lane and 4-Lane Options?

Yes. Without mitigation, substantial visual impacts are likely for Visual Unit 3 (Country Club Drive to Center Street) for the 4-Lane Option in the vicinity of Main Street and Country Club Drive. However, with implementation of recommended mitigation strategies, the level of impact will be reduced. If the Downtown Streetscape is used as a design guide and precedent, mitigation strategies such as replacement of trees and pedestrian spaces will reduce potential impacts for both options.

## 3.13 COMMUNITY DISRUPTION

### *No-Build Alternative*

The No-Build Alternative (intersection improvements, increased frequency of transit services, and new transit facilities identified in Section 2.1) will not disrupt the following characteristics:

- Neighborhood or community boundaries will not be split or altered.
- Service areas of community facilities will not be reduced by the project.
- Access to community areas will not be reduced.
- Existing circulation patterns will not be disrupted.
- Physical or psychological separation or barriers will not be created.

### *Build Alternative*

As with the No-Build Alternative, the operation of the Build Alternative will not disrupt these same characteristics:

- Neighborhood or community boundaries will not be split or altered.
- Service areas of community facilities will not be reduced by the project.
- Access to community areas will not be reduced.
- Existing circulation patterns will not be disrupted.
- Physical or psychological separation or barriers will not be created.

Temporary disruptions may occur during construction. Impacts during construction are discussed in Section 3.20.

### 3.13.1 Any Differences Between the Downtown 2-Lane and 4-Lane Options?

No. Neither option will result in long term disruption within the community.

## 3.14 ENVIRONMENTAL JUSTICE

Executive Order 12898, *Federal Actions to Address Environmental Justice 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. The technical memo contained in Appendix K of the EA provides a detailed evaluation of the proposed project's potential effects on environmental justice populations. This section of the EA summarizes the major findings.

### *No-Build Alternative*

The No-Build Alternative increases frequency of service on three transit routes and decreases frequency on one route. In addition, the No-Build Alternative identifies several intersection improvements and new transit facilities that will benefit all individuals using these facilities. Therefore, the No-Build Alternative is not anticipated to have disproportionately high and adverse environmental effects to low-income or minority populations. However, the No-Build Alternative would also not provide the benefits to low-income and minority populations that the proposed LRT extension would provide.

### *Build Alternative*

### 3.14.1 Do Any Areas Along the Proposed Project Include High Concentrations of Minorities or Low-Income Populations?

The Council on Environmental Quality (CEQ) provides guidance on identifying minority and low-income populations indicating that the population percentage of the affected area should be meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis and leaves it up to the local jurisdiction to determine the appropriate unit for comparison.

The regional transit service area was selected as the unit of geographic analysis for comparison. In conformance with the City of Phoenix policy (Phoenix is the transit federal grant recipient for the MAG region), locations within the study area with higher percentages of low-income populations and minority populations than the regional transit service area will be considered low-income areas or areas with high concentrations of minority populations. Currently, the regional transit service area percentage for minority populations is 37.6% and for low-income population is 13.1%.

Information to evaluate low-income and minority populations within the project corridor is based on the 2000 US Bureau of the Census data.

Using these definitions, the entire LRT route along Main Street (Sycamore to east of Mesa Drive), with two exceptions, lies entirely within and adjacent to areas with high concentrations of low-income and/or minority populations (Figures 3-8 and 3-9). The two exceptions are each located on the south side of Main Street: 1) between Dobson and Alma School Roads; and 2) between Mesa Drive and Hobson. Note that the census tracts in the area between Dobson and Alma School Roads contain no residences. So, approximately 0.25 mile (Mesa Drive to Hobson) of the total 3.1 mile project alignment (or about 4.0% of the area adjacent to the entire alignment) is comprised of residences on the south side of Main Street having no high concentrations of minority and/or low income populations. However, the area on the north side at that location has high concentrations of both populations.

### 3.14.2 How is it Determined if the Proposed Project Will Have High and Adverse Environmental Effects on These Populations?

In determining whether a project will have "disproportionately high and adverse environmental effects," a number of factors were considered including its potential adverse impacts; mitigation and enhancement measures that will be incorporated into the project; and off-setting benefits. Adverse impacts were examined in these critical areas: 1) displacements and relocations; 2) transportation; 3) noise and vibration; 4) community facilities/parklands; and 5) construction impacts.

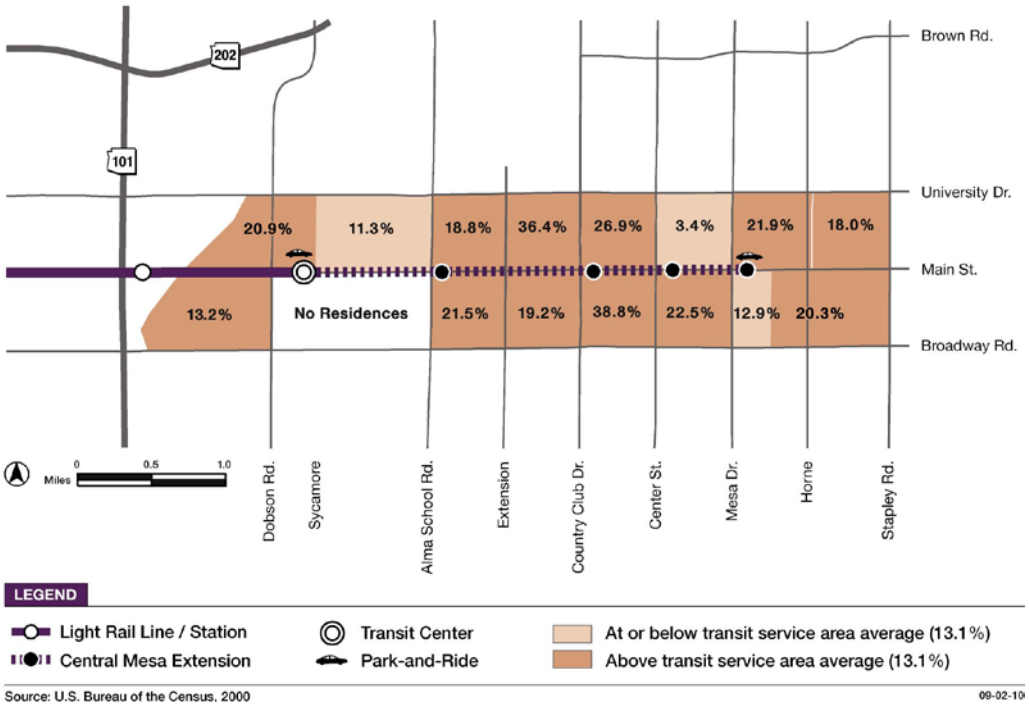
The evaluation summarizes the beneficial and adverse impacts for the Build Alternative, including efforts to solicit input from the public in considering the alternatives. A preliminary determination whether adverse impacts will fall disproportionately on minority and low-income populations is made at the end of the evaluation. FTA will decide if they concur with this determination after having reviewed the Final EA, the alternatives considered, adverse impacts and mitigation measures, any off-setting benefits, public comments, and the public involvement process itself. 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.

Table 3-19 summarizes the potential adverse impacts and mitigation measures, and off-setting benefits.

### 3.14.4 Any Differences Between the Downtown 2-Lane and 4-Lane Options?

No. The adverse impacts and mitigation strategies as well as benefits will be the same regardless of option selected for implementation.

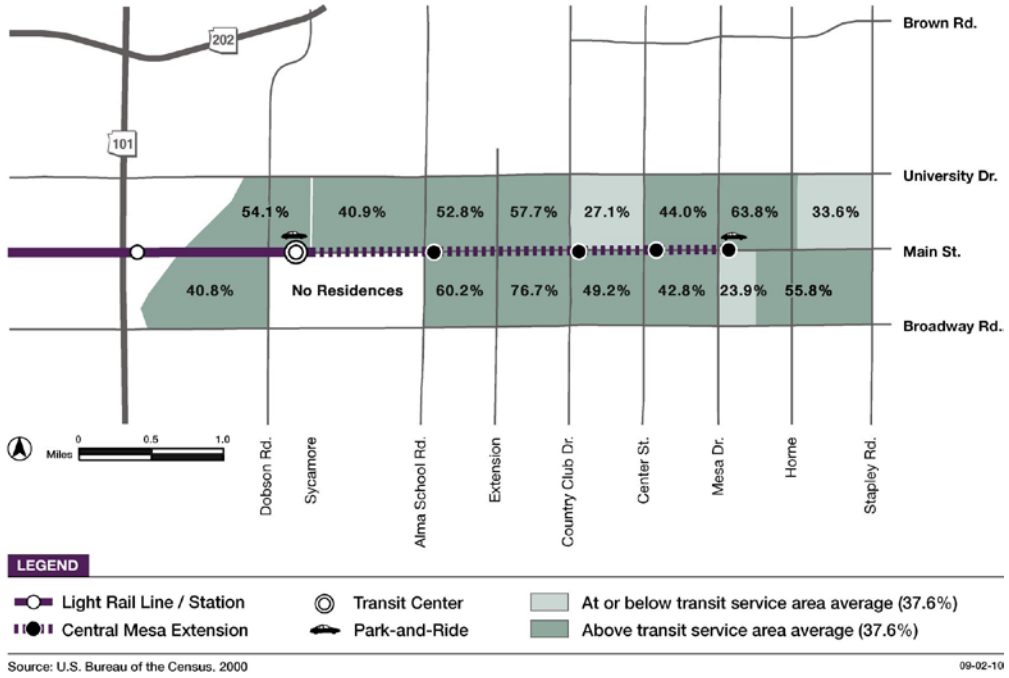
## FIGURE 3-8: LOW-INCOME POPULATION PERCENTAGES




Source: U.S. Bureau of the Census, 2000

09-02-10

## FIGURE 3-9: MINORITY POPULATION PERCENTAGES




Source: U.S. Bureau of the Census, 2000

09-02-10

## TABLE 3-19: ENVIRONMENTAL JUSTICE FINDINGS

**Consideration of Potential Adverse Impacts and Mitigation Measures**[1]

**Business and Residential Relocations**: As many as six small businesses and two residences may be displaced (see Section 3.1). The actual number may be less depending on the final layout for the park-and-ride facility between Lesueur and Hobson. The businesses include five auto parts/repair shops and one storage facility. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, provide protection and assistance to residents and businesses that may be displaced by federally-funded projects. The study area contains opportunities to move to properties within the local area should the residents or businesses choose to relocate within the area. If the businesses relocate within the community, the community will not lose these businesses, and the businesses will not need to develop a new clientele.

**Transportation**:
Traffic—All intersections in the study area will operate at an overall acceptable level of service with the design shown in the conceptual engineering drawings in Appendix M.
Transit—Region-wide transit service will not be reduced, but there will be some changes in local bus service to provide optimal service and connectivity between local bus and the LRT extension. Access and mobility will be increased for transit-dependent persons and others both within the study area as well as throughout the region's transit service area. MAG's RTP, which includes the Central Mesa project, indicates that 97% of the low-income populations in the region are served by the RTP transit improvements compared to only 88% of non-low income communities. Since fare structures for the new transit project will be the same as existing, residents will not be required to pay a higher fare for this improved high capacity transit service. Local funding for this project is derived from the voter-approved Proposition 400 sales tax and is reserved in the RTP for high capacity transit improvements in the Central Mesa LRT Corridor. The funds do not affect other types of transit services and funds in the region.

**Noise and Vibration**: No adverse noise or vibration impacts are anticipated.

**Community Facilities/Parklands**: The project will have no adverse impacts on community facilities, including parklands.

**Construction**: Short-term temporary impacts during construction will be in the areas of air quality, noise, traffic, and community disruption. The impacts will be temporary and last the period of construction. Standard construction practices will be implemented to lessen the severity of the impacts, but some impacts will still exist during the construction period. Section 3.20 provides additional information on the standard practices for these short-term impacts. Note that the construction impacts are expected to be similar at all locations along the alignment regardless of whether low-income or minority populations live nearby. The same standard practices used to minimize adverse impacts during the construction period will be applied along the entire project alignment as needed.

**Benefits**[2]

- Provides a more convenient and reliable transit access to regional destinations through its direct connection (no transfer required) to the 20-mile LRT Starter Line. The Starter Line contains many of the largest employment centers, higher educational institutions, and health care services in the region.
- The enhanced access to reliable transportation could increase employment opportunities that could lead to greater employment stability and a higher quality of life.
- Businesses that choose to locate along the transit corridor will be more competitive in attracting and retaining workers and thus better able to capture local employment growth.
- The project has potential to attract higher density, mixed-use development projects that could lead to more opportunities for employment for low-income and minority populations residing in the area.

[1]For additional information, please refer to the separate sections within this chapter that discuss the specific impact categories and suggested mitigation strategies. Also refer to the Environmental Justice technical memo in the EA appendix.
[2]See the Purpose and Need discussion in Chapter 1 of the EA for additional information.

### 3.14.3 Will Environmental Justice Populations Experience Disproportionately High and Adverse Impacts Compared to Others?

As previously noted, the vast majority of the neighborhoods surrounding the proposed LRT route are considered to be comprised of low-income and/or high minority populations. Therefore, while the project has some adverse impacts affecting people

living in these areas, most of the benefits from the project will also accrue to those living in these same areas. The mitigation options identified in Table 3-19 will minimize the potential adverse impacts.

In view of the considerable project benefits and local support for implementing a high capacity transit alternative in Central Mesa, the adverse impacts on low-income and minority populations will not be disproportionate to the improved consistency and reliability of transit service, increased mobility, regional connectivity, and economic gains that the proposed project will offer. Public input related to project benefits and impacts has been solicited throughout the study and will continue to be sought during subsequent project development phases. METRO and the City of Mesa have advertised public meetings in various ways including sending post cards in English and Spanish to over 6,500 residences and businesses within the study area to ensure that all who may have an interest in the project were individually notified of the upcoming meetings and welcoming their input. Some meetings were also advertised in newspapers having wide circulation including *LaVoz*, a Latin-American publication. The scoping brochure was published in both English and Spanish. The fact sheets and other collateral materials were available in alternative formats upon request.

## 3.15 HAZARDOUS MATERIALS

### *No-Build Alternative*

No adverse impacts are anticipated as a result of the No-Build Alternative because this alternative only includes improvements to the transportation network that have already been approved and included in the Regional Transportation Plan, or improvements will be assessed by others and appropriate measures would be included in those projects to avoid adverse impacts.

### *Build Alternative*

A Phase I Environmental Site Assessment (ESA) was conducted for the Build Alternative, including its two options east of Country Club Drive. Refer to Appendix I for the entire technical report and addendum memorandum to the technical report. This report revealed 26 sites of potential concern located in the project area. Table 3-20 identifies each of the 26 sites of potential concern, with 12 of the sites identified by the American Society of Testing Materials (ASTM) as Recognized Environmental Conditions (REC)[2] sites. The REC sites are shown in bold print on the table. Based on

[2] A recognized environmental condition (REC) is defined by ASTM Practice E 1527-05 as: "The presence or likely presence of any hazardous substances or petroleum products on a project site under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the project site or into the ground, groundwater, or surface water of the project site. The term includes hazardous substances or petroleum products even under conditions of storage and use in compliance with local and state laws and regulations.

the results of the ESA, the remaining sites are also recommended as sites of potential concern. Note that since the ESA was prepared, one station was relocated from Centennial Way to Center Street. This eliminated Sites Q and R (a REC site) as sites of potential concerns since these sites are now outside the distance considered to be a potential risk to the Centennial Way station due to the station's relocation to Center Street. A risk rating was assigned for each and shown in Table 3-20 based on the criteria outlined in the methodology section of the full ESA report contained in the appendix and summarized as follows.

**Low =** Sites with low potential to release hazardous materials. On some occasions, sites that have had a hazardous materials issue in the past but have been remediated with approval of the local state environmental agency (or EPA) may also qualify. Examples include undeveloped or agricultural property, residential property, or benign commercial properties such as office buildings, warehouses, distribution facilities, or municipal facilities with no listed violation.

**Moderate =** Sites with some indications of possible hazardous materials issues. Sites may appear on a database as having a permit to handle hazardous materials, but no violations have been recorded. Also may include sites that are not listed in any environmental data bases, but the site is an auto repair facility with visible surface staining. Examples include auto repair garages, welding shops, or manufacturing facilities with minor listings in the environmental database.

**High =** Sites with high potential for releasing hazardous materials to the soil or groundwater, or have a recorded release issue. Examples include current service stations, bulk fueling terminals, sites listed in environmental databases as having had a release, or a known release that has not been remediated.

**Indeterminate =** Sites which do not include sufficient information to assign a rating. Often require additional file review to determine details of any related environmental issues at the site.

Locations of each of the sites listed in the table are displayed in Figures 3-10 through 3-12. Note that the analysis is not affected by the 2-lane or 4-lane alignment options. Based on the findings and conclusions of the technical report, the following mitigation is recommended:

- Conduct a Preliminary Site Investigation at the Recognized Environmental Condition (REC) sites identified below. A drilling and sampling program will be implemented to verify or refute the existence of potential contamination. A specific and targeted analytical program will be implemented to determine the concentration of residual impacts, if present.
  - Big Two Oldsmobile - 1120 W. Main Street
  - Fractured Fiberglass (Former Chevron) - 1100 W. Main Street

- Chevron (Current Taco Bell) - 310 W. Main Street
- Falcon Cleaners - 15 S. Country Club Drive (If TPSS Option B-1 is selected)
- Pit Stop - 201 W. Main Street (If TPSS Option B-3 is selected)
- Thomas Gulf (Current Quality Bumper) - 405 E. Main Street
- Texaco - 630 E. Main Street (If TPSS Option C-3 is selected)

- In conformance with METRO's Master Specifications, 01.35.30, Unknown Hazardous and Contaminated Substances, METRO's construction contractors will be required to immediately stop all work activities within an area where an abnormal condition or potential indicator or a hazardous or contaminated substance is discovered. The Resident Engineer will be immediately notified, and contractors will be instructed to follow all applicable regulations regarding discovery and response for hazardous materials encountered during the construction process.
- The City of Mesa will conduct site-specific Phase 1 Environmental Site Assessments (ESA) on all properties identified for fee title acquisition as required by the City of Mesa Real Estate Acquisition Management Plan (RAMP), August 2010. The process will be initiated concurrently with the appraisal process.

***Mitigation***

To minimize the potential for encountering hazardous materials during construction and operation, the following measures will be implemented:

- Conduct a PSI at several sites along the LRT line to verify or refute presence of potential contamination. The sites include: Big Two Oldsmobile; Fractured Fiberglass; Chevron (current Taco Bell); and Thomas Gulf (current Quality Bumper). Three other sites should be evaluated if the TPSS option listed is selected for implementation: Falcon Cleaners (B-1); Pit Stop (B-3); and Texaco (C-3).
- Conform with METRO's Master Specifications 01.35.30, Unknown Hazardous and Contaminated Substances, during construction which requires, among other things, that construction stop immediately in an area where potential contamination is discovered and specifies procedures to follow in such an event.
- City of Mesa will conduct site-specific Phase 1 Environmental Site Assessments on all properties identified for fee title acquisition as required by City of Mesa Real Estate Acquisition Management Plan (RAMP), August 2010.

### 3.15.1 Any Differences Between the Downtown 2-Lane and 4-Lane Options?

No. The potential to encounter hazardous materials would be the same regardless of option.

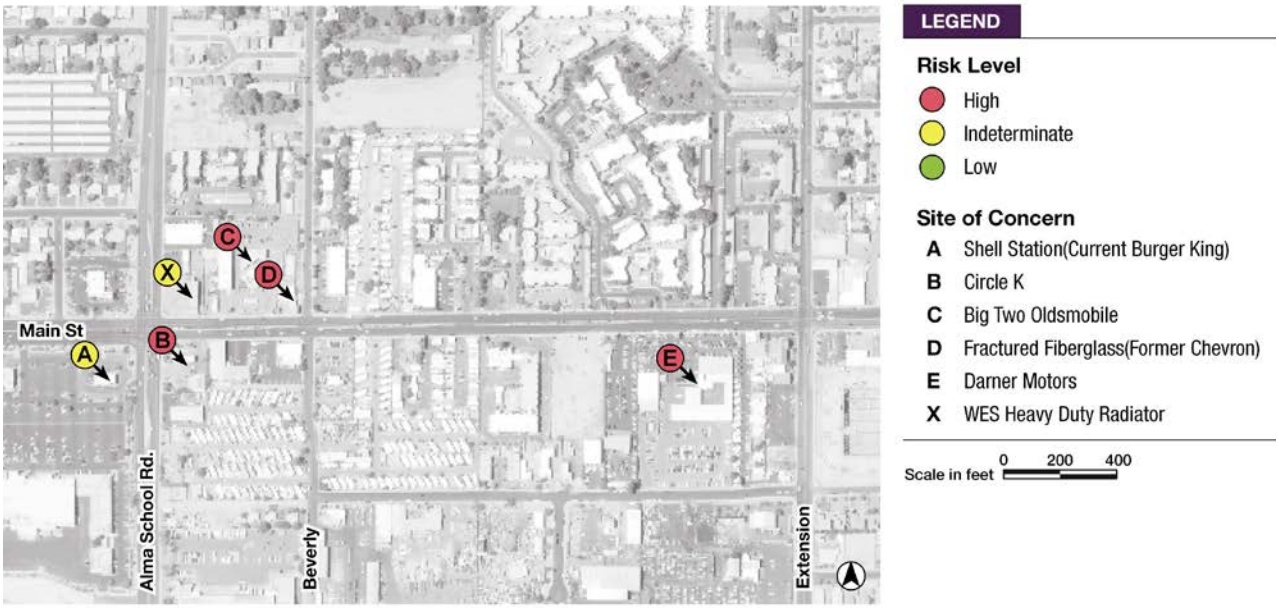
## TABLE 3-20: POTENTIAL SITES OF CONCERN—PROPOSED PROJECT

| Map Code[1] | Site Name | Address[2] | Site Operations Relative to Hazmat Issues[3], Regulatory Listing[4] | Data Source[5] | Impact Onsite L/M/H[6] | PSI[7] Recom-mended | Potentially Impacted Structure[8] |
|---|---|---|---|---|---|---|---|
| A | Shell Station (Current Burger King) | 1165 W. Main Street | HSS, no regulatory listing | R, H | I | | SP, Alma School |
| B | Circle K | 1145 W. Main Street | CSS, 3 USTs onsite. Risk associated with property acquisition only. | R, D, H | H | | SP, Alma School |
| **C** | **Big Two Oldsmobile** | **1120 W. Main Street** | **Auto Body Shop, 1 LUST case closed in 1993, 1 UST removed in 1991** | **R, D, H** | **H** | ✓ | **SP, Alma School; TPSS A-1** |
| **D** | **Fractured Fiberglass (Former Chevron)** | **1100 W. Main Street** | **FSS, LUST case closed in 1996, 5 USTs closed in 1967** | **R, D, H** | **H** | ✓ | **SP, Alma School; TPSS A-1** |
| **E** | **Darner Motors** | **837 W. Main Street** | **Auto dealership, LUST case closed in 1996, 1 UST removed in 1994** | **R, D, H** | **H** | | **TPSS A-4** |
| F | Auto Repair Facility (Current strip mall) | 450 W. Main Street | Historic auto repair facility, No regulatory listing | R, H | L | | SP, Country Club |
| G | MAACO | 434 W. Main Street | Auto body facility, No regulatory listing | R, H | L | | SP, Country Club |
| H | Shell Station (Current vacant lot) | 402 W. Main Street | HSS, no regulatory listing | R, H | I | | SP, Country Club; TPSS B-4 |
| **I** | **Chevron (Current Taco Bell)** | **310 W. Main Street** | **HSS, LUST cases closed in 2002 & 2003, 8 USTs removed between 1992 and 2004** | **R, D, H** | **H** | ✓ | **SP, Country Club; TPSS B-4** |
| J | Service Station (Current Salsitas) | 311 W. Main Street | FSS, no regulatory listing | R, H | I | | SP, Country Club, TPSS B-1, B-4 |
| **K** | **Falcon Cleaners** | **15 S. Country Club Drive** | **Former dry cleaner, 1 UST removed in 1992** | **R, D, H** | **I** | ✓ | **TPSS B-1** |
| L | Auto Repair Facility (Current Lamaze Class Center) | 236 W. Main Street | Former auto repair facility | R, H | L | | SP, Country Club |
| **M** | **Pit Stop** | **201 W. Main Street** | **Auto repair facility, LUST case closed in 2006, 3 USTs removed in 1993** | **R, D, H** | **H** | ✓ | **TPSS B-3** |
| **N** | **AAMCO Transmission** | **27 S. Robson Road** | **Former auto repair facility, SHWS, CERC-NFRAP, RCRA NON-GEN with Violations** | **R, D, H** | **H** | | **None[9]** |
| **O** | **Former Firestone (Current office building)** | **48 E. Main Street** | **Auto repair facility, LUST case closed in 1996, UST removed in 1996** | **R, D, H** | **H** | | **SP, Center Street** |
| P | Zion Bank (Current Jack in the Box) | 62 E. Main Street | HSS, UST removed in 1991 | R, D, H | L | | SP, Center Street |

| Map Code[1] | Site Name | Address[2] | Site Operations Relative to Hazmat Issues[3], Regulatory Listing[4] | Data Source[5] | Impact Onsite L/M/H[6] | PSI[7] Recom-mended | Potentially Impacted Structure[8] |
|---|---|---|---|---|---|---|---|
| Q | Union 76 Station (Current Network Automotive) | 104 E. Main Street | FSS, no regulatory listing | R, H | I | | None |
| **R** | **Brown & Brown Chevrolet** | **145 E. Main Street** | **Auto dealership, LUST case closed in 2000, USTs removed in 1992 & 1998** | **R, D, H** | **H** | | **None** |
| S | Union Oil (Currently Gateway Park) | 361 E. Main Street | HSS, no regulatory listing | R, H | I | | SP, PNR Mesa Drive |
| T | Wilky's Machine Shop | 402 E. Main Street | Auto repair facility, no regulatory listing | R, H | L | | SP, PNR Mesa Drive |
| **U** | **Thomas Gulf (Current Quality Bumper)** | **405 E. Main Street** | **FSS, LUST closed in 1999** | **R, H** | **H** | ✓ | **SP, PNR Mesa Drive** |
| V | Gunnels Tire and Service | 420 E. Main Street | Auto repair facility, no regulatory listing | R | L | | SP, PNR Mesa Drive |
| W | Auto Service | 425 E. Main Street | Auto repair facility | R, H | L | | SP, PNR Mesa Drive; TPSS C-1 |
| **X** | **WES Heavy Duty Radiator** | **1140 W. Main Street** | **Auto repair facility, RCRA Non-Generator with violations** | **R, D** | **I** | | **SP, Alma School Road** |
| Y | Reelee Property | 606 E Main Street | Retail shopping facility, UST removed in 2003 | R, D | L | | TPSS C-3 |
| **Z** | **Texaco** | **630 E. Main Street** | **FSS, LUST cases closed in 1997. Four USTs removed in 1991** | **R, D** | **H** | ✓ | **TPSS C-3** |

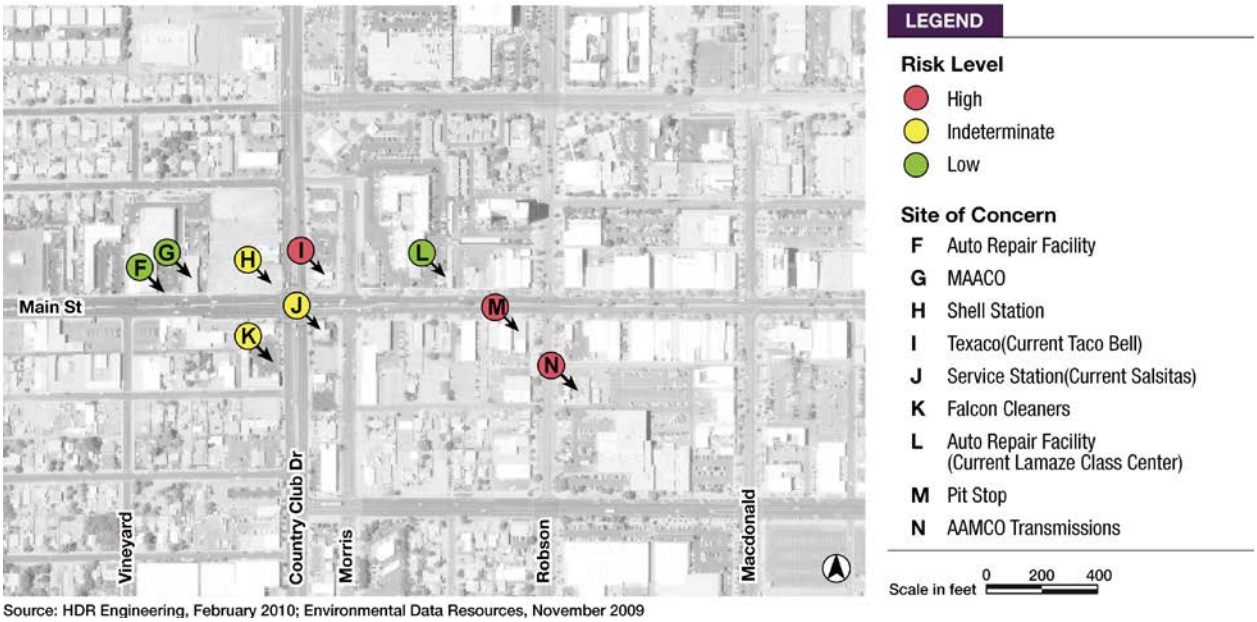
Sites listed in bold print are considered by ASTM to be Recognized Environmental Condition (RECs)
[1]Corresponds to location of site as indicated in Figures 3-10 through 3-12.
[2]Address corresponds to that listed in EDR database search or historical source that identified site in the February 2010 report. Given address may differ slightly from currently listed address.
[3]CSS = Current Service Station, FSS= Former Service Station, HSS = Historic Service Station (no longer present)
[4]LUST=Leaking Underground Storage Tank, UST= Underground Storage Tank. Complete list of acronyms identified in EDR report in Appendix C of the February 2010 report.
[5]Indicates primary information sources for listing: R=Reconnaissance, D=Database, H=Historical Source (city Directories, historical aerial photographs)
[6]Risk of potential impacts onsite, Low / Medium / High / Indeterminate
[7]PSI= Preliminary Site Investigation
[8]SP= Station Platform, PNR= Park-and-Ride, TPSS= Traction Powered Substation. Twelve options for TPSS sites were evaluated. Only three will be selected for actual installation of a TPSS.
[9] Since TPSS Option B-4A is no longer being considered, no structures will be potentially impacted.
Source: *Environmental Site Assessment for the Central Mesa LRT Extension*, HDR, February 2010 and HDR update, August 2010.

## FIGURE 3-10: POTENTIAL SITES OF CONCERN—SYCAMORE TO DATE



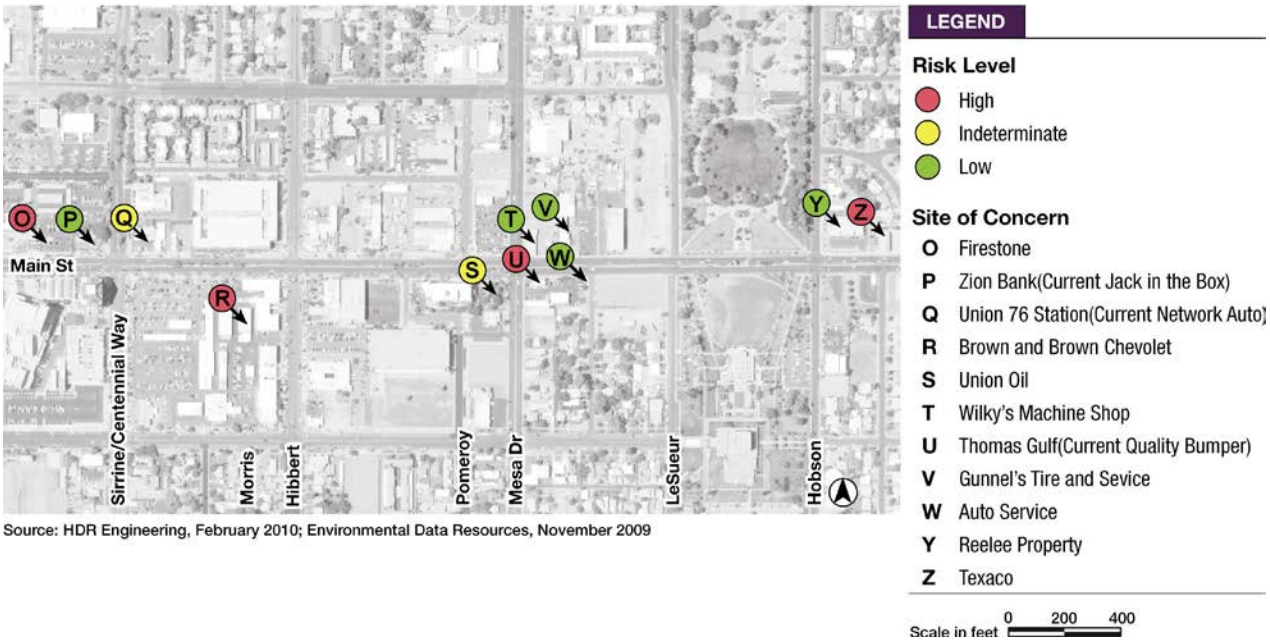

Source: HDR Engineering, February 2010; Environmental Data Resources, November 2009

## FIGURE 3-11: POTENTIAL SITES OF CONCERN—DATE TO CENTER STREET




Source: HDR Engineering, February 2010; Environmental Data Resources, November 2009

**FIGURE 3-12: POTENTIAL SITES OF CONCERN—CENTER STREET TO HORNE**




Source: HDR Engineering, February 2010; Environmental Data Resources, November 2009

## 3.16 SAFETY AND SECURITY

### *No-Build Alternative*

The No-Build Alternative is not expected to have an adverse impact on safety and security since adequate safety and security measures have already been established for the transit services included in this alternative.

### *Build Alternative*

The Central Mesa LRT Extension will employ similar safety and security measures as that currently being done for the LRT Starter Line; thus, the proposed project is not anticipated to result in adverse impacts on safety and security. Refer to Appendix L for additional information on this subject.

### 3.16.1 Any Differences Between the Downtown 2-Lane and 4-Lane Options?

No. Neither option will result adverse impacts on safety or security.

## 3.17 WATER QUALITY

This discussion deals primarily with potential impacts during operations. Water quality impacts anticipated during construction are evaluated in Section 3.20.

### *No-Build Alternative*

The No-Build Alternative would have no adverse operational impacts on floodplain, storm water or irrigation water conveyance, groundwater wells, and water quality conditions.

### *Build Alternative*

The Build Alternative's operations could affect surface water and groundwater. No surface waters occur within the project area; however, the Salt River is located approximately two miles to the northwest. The potential for surface water quality impacts is minimal. Small accidental spills and incidental losses of petroleum grease, fluids, oils, and sediment could occur. Areas exposed to stormwater runoff could contribute small quantities of contaminants to the stormwater conveyance system and ultimately to natural water courses that drain to the Salt and Gila River systems.

Impacts to groundwater resources and groundwater quality will be minimal. Small accidental spill and losses as mentioned above could contribute small quantities of these contaminants to the groundwater aquifer via infiltration. Impacts to functioning groundwater wells will not occur. No designated principal or sole-source aquifer (Section 1424(e) of the Safe Drinking Water Act) is located within the study area (USEPA, 2008). Mitigation measures associated with LRT operations will be limited due to the minimal impacts identified and the following mitigation measures will be implemented:

### *Mitigation*

- Implement Best Management Practices (BMPs) associated with the stormwater collection system.
- Include BMPs such as spill response operations and detention basins to settle and capture pollutants.
- Discharge runoff from project-related impervious surfaces (such as park-and-ride facilities) into storm drains that have a logical conclusion, and/or construct detention basins.

## 3.17.1 Any Differences Between the Downtown 2-Lane and 4-Lane Options?

Minor. The only difference will be due to the additional property (approximately 2,025 square feet) needed for the Build Alternative, 4-Lane Option and the potential that some of this additional ROW may slightly increase the amount of impervious surface that will increase runoff.

## 3.18 ECOLOGICALLY SENSITIVE AREAS/THREATENED AND ENDANGERED SPECIES

### *No-Build and Build Alternatives*

The Central Mesa LRT extension project is not located in or near ecologically sensitive areas that include woodlands, prairies, marshes, bogs, lakes, streams, scenic areas, landforms and geological formations, and pristine natural areas. The U.S. Fish and Wildlife Service lists eleven threatened and endangered species, one proposed as threatened, and five candidate species for Maricopa County. The Arizona Game and Fish Department On-Line Environmental Review Tool does not indicate the presence of any threatened, endangered, or candidate species in a two-mile radius from the project. No threatened, endangered, or candidate species are located in the project area because the project area does not contain habitats required to host these species. Therefore, the No-Build and the Build Alternatives would not affect any ecologically sensitive areas or threatened, endangered, or candidate species.

## 3.19 WETLANDS/FLOODING/NAVIGABLE WATERWAYS AND COASTAL ZONES

### *No-Build and Build Alternatives*

No wetlands, floodplains, navigable waterways or coastal zones occur in the project area. Therefore, neither the No-Build Alternative nor the Build Alternative will have any effect on these resources.

## 3.20 CONSTRUCTION

### *No-Build Alternative*

The No-Build Alternative would not include any construction-related activities since this alternative only includes improvements to the transportation network that have already been approved and funded (See Section 2.1 for additional information). Therefore, no adverse impacts would occur. However, this alternative also would not provide any short-term benefits, such as construction and any residual employment that would be associated with the Build Alternative.

### *Build Alternative*

The construction of the LRT project will include a number of elements including construction of the fixed guideway and trackwork, construction of station platforms, roadway construction, and construction of traction power, communications, and signaling. Temporary impacts are likely to occur at times during the period of construction and all work will conform to industry specifications and standards. This section summarizes the construction activities associated with the project and standard

practices that will be implemented to minimize disruption to the surrounding community during construction. For more information, refer to the construction impacts sections of the various other technical reports and memos in the appendices of this EA.

The key steps (Table 3-21) in the construction process include:

**TABLE 3-21: CENTRAL MESA LRT EXTENSION—CONSTRUCTION ACTIVITIES**

| Step | Activities/Comments |
|---|---|
| Construction preparation | May include removal of landscaping and fencing and relocation of signs and other surface features. |
| Street widening | Needed at some intersections to accommodate the fixed guideway, station locations, and auto turning lanes. |
| Utility relocation | Relocations of underground utilities such as fiber optic cable, sewer storm drains, water lines, irrigation, and electrical cabinets and conduits. |
|  |  |
| Track work and station platforms | Includes installation of drainage structures, signal and communication fiber optics, steel and concrete foundations for the rail, station platforms, overhead catenary system (OCS) foundations, and communications vaults. The track guideway and street pavement are then finalized. |
| Overhead power system | Light rail OCS poles will be placed in the center of the guideway to hold the OCS system that supplies power to the trains. Installation of the traction power substations (TPSS) and signal buildings. |
| Park-and-ride facility | Site preparation work, paving, striping and landscaping for parking facilities. |

### 3.20.1 How Long Will it Take to Construct the Proposed Project?

The timing for the various construction activities will vary depending on how the construction process is implemented. Note that for the LRT Starter Line, the most disruptive construction related to roadway work, took about seven months to complete in the current one-mile section in west Mesa. Several options, as summarized in Table 3-22, are being considered to minimize the period for construction of the Central Mesa LRT extension. The specific options and timing for construction will be determined during final design.

**TABLE 3-22: OPTIONS TO MINIMIZE TIME FOR CONSTRUCTION**

| Option | Details |
|---|---|
| Complete Closure of Main Street in the Downtown Area | • Likely to reduce construction time and costs due to added width of construction zone and minimization of traffic handling activities.<br>• Although alternate access/parking is available behind the businesses at many locations, an estimated 12 businesses would be isolated from access if Main Street was closed in the frontage area of their driveways.<br>• Only portion that could be completely closed while maintaining access to all businesses is the ½ mile segment from Robson to Centennial Drive. This |

| | |
|---|---|
| | small segment would substantially reduce possible benefits to businesses in construction time savings and to METRO and City of Mesa in construction cost savings. |
| Construct Downtown Segment Only During Summer Months | • Seasonal limitations can limit opportunities for contractors to manage means and methods of their work. Examples include:<br>- Market risks—availability of labor and materials, seasonal price variations, long lead items.<br>- Weather risks—extended periods of inclement weather than historically expected. "Summer monsoon" seasons have been mostly minimal for past several years due to extended drought but this may not always be the case.<br>- Changed conditions—potential to encounter unidentified or misidentified utilities or unanticipated subsurface materials.<br>- Third party risks—permitting delays, utility betterments, utility construction windows, political limitations.<br>• Seasonal work, combined with scope of larger project where work options are available throughout the year, may make it possible to mitigate risks. |
| Allow Construction to Occur 24 Hours Per Day | May be desirable in areas with low sensitivity to nighttime activities. In areas with more nighttime sensitivity, restrict activities to those that cause minimal disruptions at night. |
| Use Additional Construction Crews or Allow Use of Overtime Hours | May be an option for specific locations as long as costs for added labor and hourly wages do not dramatically increase overall construction costs. |
| Work with Utility Companies to Minimize Pipeline Relocations | An example includes discussing feasibility of offsetting manholes and allowing the large storm drain approximately 15 feet underneath Main Street to remain in place. |
| Design to decrease construction time | Several design features can be implemented to reduce construction time. Examples include:<br>- Use of unreinforced track slab to decrease or eliminate time to build and install rebar.<br>- Cap existing manholes instead of removing and replacing with offset manholes.<br>- Abandon already abandoned utilities in place in lieu of removal. |

### 3.20.2 What Impacts Are Anticipated During Construction and What Can Be Done to Minimize Impacts?

The temporary impacts anticipated during construction of the Build Alternative and the standard practices that will be implemented to minimize these short-term temporary impacts are summarized in Table 3-23. Additional information may be found in the construction impacts sections of the various other technical reports and memos in the appendices of this EA.

**TABLE 3-23: CONSTRUCTION PHASE IMPACTS/STANDARD PRACTICES**

| Community Disruption/Economic Activity |
|---|
| Construction will provide short-term employment opportunities throughout period of construction. However, it will also result in temporary disruption of residents and businesses along the corridor. Items to aid in any temporary disruptions include:<br>• METRO, its contractor(s), and the City of Mesa will work together on the creation of a construction plan and schedule. The plan and schedule will be developed in coordination with the community, especially those property and business owners most affected so that their major concerns can be addressed.<br>• Implement programs similar to those developed for the LRT Starter Line that included extensive business outreach programs; a Community Advisory Board to evaluate construction contractors; and construction outreach support to help resolve construction-related issues.<br>• The contractor will develop a construction staging plan during final design and identify laydown, staging, and equipment storage areas needed for the period of construction in consultation with METRO and the City of Mesa. |

The contractor will be required to follow standard METRO specifications to minimize adverse impacts on the surrounding community. Options to minimize impacts could include, but may not be limited to:

- Locate laydown, staging, and equipment storage areas away from residential uses.
- Limit unnecessary idling of equipment.
- Use light-shielding if necessary to avoid shining lights into sensitive areas at night.
- Minimize dirt track-out by washing or cleaning trucks before leaving construction sites.
- Sweep and clean roadways regularly.
- Install temporary fencing around material laydown areas.
- Provide security for these areas to prevent unauthorized persons from entering and either hurting themselves or damaging/vandalizing equipment and materials.

- The City of Mesa and METRO will launch a public outreach program prior to construction to notify residents, businesses, and commuters of the upcoming construction activity. Mesa staff has begun working on a parking management plan for the downtown area before and during light rail construction. The businesses in downtown Mesa have an advantage during construction because the majority of their parking is located behind the businesses. A key element of the parking management plan is a marketing and signage program that will direct downtown visitors off Main Street to 1st Street, Pepper Place and 1st Avenue to access parking. As part of the business assistance plan there will be discussions with the downtown merchants regarding marketing the parking and how to easily access it during construction to their customers.

**Utilities**

The project will require relocation, modification, or protection in place of many utilities. The contractor will adhere to METRO and the City of Mesa standard requirements for utility work that includes but is not limited to:

- Use advance planning to minimize utility service interruptions. Notify affected properties of planned temporary service cut-offs in advance of the interruptions.
- Coordinate with utility providers during final design and construction to identify issues/conflicts and provide opportunities to resolve them prior to occurrence.
- Develop and implement emergency response procedures to ensure quick and effective repair in the event of accidental service cuts.

**Debris and Soil**

- Transport debris and soil generated by construction to approved disposal sites and obtain the necessary state and local permits.

**Traffic, Pedestrians, Bicycles**

The project will result in temporary disruptions to automobile, trucks, buses, pedestrian, and bicycle traffic along Main Street. A traffic control plan will be developed in concert with the City of Mesa as well as those property and business owners most affected and will conform with local, state, and federal policies to minimize traffic impacts and maintain access to residences, business, community facilities and services, and local streets. The traffic control plan will include measures per City of Mesa, METRO master specifications, and MAG standards such as:

- Maintain a minimum of one traffic lane in each direction on Main Street and on intersecting streets where construction activities may also occur near Main Street. There may be short duration (weekend) full closures for construction of trackwork at intersections. Evaluation of such full closures versus longer construction in stages at each intersection will be evaluated during project development.
- Temporary closure of sidewalks and crosswalks are possible. Detours will be established to safely guide pedestrians until the sidewalks and crosswalks are restored per ADA accessibility guidelines.
- Establish temporary bicycle routes that run parallel to Main Street on 1st Street (westbound) and 1st Avenue (eastbound). These streets have low traffic volumes and are wide enough to accommodate bicycles. Provide wayfinding signs and pavement markings to mark the temporary routes.
- Include methods to minimize adverse impacts on bus travel. Methods to minimize impacts could include: install alternative temporary bus stop locations where needed; avoid construction during peak transit travel times; and implement community outreach to notify transit providers and passengers of upcoming changes to bus stop locations or detours.

**Noise**

Construction activity has the potential to result in adverse, yet temporary, increases in local noise levels along the corridor. The contractor will comply with the noise control ordinance for the City of Mesa. Listed below are some typical approaches to reducing noise levels associated with the construction phase of major projects:

- Avoid nighttime construction unless a variance is issued by the City of Mesa as required by their noise ordinance.
- Use specialty equipment with enclosed engines and/or high-performance mufflers.
- Locate equipment and staging areas as far from noise-sensitive receptors as possible.
- Limit unnecessary idling of equipment.
- Install temporary noise barriers. This approach can be particularly effective for stationary noise sources such as compressors and generators.

- Reroute construction-related truck traffic away from local residential streets.
- Avoid impact pile driving where possible. Where geological conditions permit, the use of drilled piles or a vibratory pile driver is generally quieter.

**Air Quality**

Contractors will be required to conform to all applicable local and regional air quality regulations during construction. A dust control plan will be developed and implemented per Rule 310 for Fugitive Dust of the Maricopa County Air Quality Department. The contractor must also conform with MAG's Uniform Standard Specifications for Public Works Construction, Section 225 as well as with METRO's master specifications for dust control, applicable City of Mesa construction specifications, and the approved Erosion and Sediment Control Plan or Program as applicable. These regulations and specifications require implementation of Best Management Practices to control fugitive dust from various activities, such as land clearing, earthmoving, and other construction site activities.

- Specific Best Management Practices that may be implemented include, but are not limited to:
  - Minimize area of land disturbance.
  - Use watering trucks to minimize dust.
  - Cover trucks when hauling dirt or transferring materials.
  - Stabilize surface of dirt piles if not removed immediately.
  - Use windbreaks to prevent any accidental dust pollution.
  - Limit vehicular paths and stabilize these temporary roads.
  - Pave all unpaved construction roads and parking areas to road grade for a length no less than 50 feet where such roads and parking areas exit construction site to prevent dirt from washing onto paved roadways.
  - Use dust suppressants on traveled paths which are not paved.
  - Minimize dirt track-out by washing or cleaning trucks before leaving construction site.
  - Reduce use, trips, and unnecessary idling of heavy equipment.
  - Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained and tuned.
  - Prohibit tampering with engines and require continuing adherence to manufacturer's recommendations.
  - Whenever possible, use alternative fuels such as natural gas and electric.
  - Prepare an inventory of all equipment prior to construction and identify the suitability of add-on emissions control device for each piece of equipment before groundbreaking.
  - Identify where implementation of mitigation measures is rejected based on economic infeasibility.
  - Identify sensitive receptors in the project area, such as daycare centers, senior housing, and hospitals, and specify how impacts to them will be minimized.
- Best Management Practices for post construction that may be implemented include, but are not limited to:
  - Revegetate any disturbed land not used.
  - Remove unused material.
  - Remove dirt piles.
  - Revegetate all vehicular paths created during construction to avoid future off-road vehicular activities.

**Water Quality**

Potential water quality impacts will be confined to those associated with the transport of sediment-laden runoff from excavation activities at the construction site to the stormwater and/or surface water systems. An AZPDES permit will be obtained for ground-disturbing activities exceeding one acre. The project will also conform with the City of Mesa's Stormwater Pollution Control Ordinance. The permit and ordinance require development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) which may include measures such as the following:

- Limiting vegetation removal and soil disturbance to areas required for actual construction, access, and construction staging areas.
- Maintaining a 2:1 slope or less for cut and fill slopes unless engineering analysis demonstrates that steeper slopes can be used in the design, and erosion control measures are in place.
- Diverting storm runoff from construction areas to temporary sedimentation basins to settle silt and sediments before discharging runoff to surface water and storm runoff drainage facilities.
- Designing detention basins to enable silt to settle out before controlled discharge of water from detention basins.
- Sweeping and cleaning roadway to reduce first-flush concentration of pollutants at construction completion.
- Capping, abandoning, or replacing any existing groundwater wells, as necessary, within the project ROW in accordance with Arizona Department of Water Resources regulations.

**General**

A mitigation measure for general construction-related impacts includes:

- Conduct a pre-construction inspection to determine existing conditions of the first row of buildings along Main Street and any important and potentially fragile historic resources that may be located within 200 feet of Main Street.

***Standard Construction Practices:***

Temporary impacts are anticipated during the construction period of the project. The following will be implemented:

- The standard practices listed in Table 3-23 will be implemented to minimize potential adverse impacts that could occur in the following areas: community disruption/economic activity; utilities; debris and soil; traffic, pedestrians, bicycles; noise; air quality; and water quality.
- Conduct a pre-construction inspection to determine existing conditions of the first row of buildings along Main Street and any important and potentially fragile historic resources that may be located within 200 feet of Main Street.

### 3.20.3 Any Differences Between the Downtown 2-Lane and 4-Lane Options?

Possibly. The Build Alternative, 4-Lane Option has the potential to result in slightly more impacts on utilities if any are located underneath the additional ROW needed in the vicinity of the Mesa Drive/Main Street Station and also where the existing curb downtown is affected. For the other categories of impacts, the Build Alternative, 4-Lane Option also has the potential to result in slightly more impacts during construction due to the need to acquire and construct on approximately 2,025 more square feet of property than the 2-Lane Option. Also, the Build Alternative, 4-Lane Option may involve a somewhat longer construction duration than the 2-Lane Option; however the additional time is expected to be minimal.

## 3.21 CUMULATIVE IMPACTS

Cumulative impacts are described as the impacts which result from the incremental impact of the proposed project when added to other past, present, and reasonably foreseeable future actions regardless of whom undertakes such other actions. Other planned development projects in the area were previously discussed in Section 3.5. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time and can result in either beneficial or adverse impacts or both.

If a proposed project's mitigation measures alleviate the adverse cumulative impact caused by the project's contribution, then the project would not result in a cumulatively considerable impact. In addition, a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program (such as a water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, etc.) that provides specific requirements that will avoid or substantially lessen the cumulative problem.

***No-Build Alternative***

The No-Build Alternative would not include any major service improvements or new transportation infrastructure beyond what is shown in the MAG Regional Transportation Plan for 2015. The transit network within the project area would be largely the same as it is now. Therefore, the No-Build Alternative would not contribute to cumulative effects.

***Build Alternative***

The analysis of the proposed project with regard to cumulative impacts is presented in Table 3-24. The evaluation also covers a future proposal to extend LRT out to Gilbert Road (discussed in Chapter 1). This potential future project would be analyzed as part of a separate study, and, if federal funds are sought, would be evaluated in a separate NEPA environmental document. In summary, the Central Mesa LRT extension and the potential future LRT extension to Gilbert Road are expected to contribute to beneficial impacts in a cumulative sense, but not anticipated to contribute to cumulatively considerable negative impacts.

### 3.21.1 Any Differences Between the Downtown 2-lane and 4-lane Options?

No. Both options would contribute similarly to cumulative benefits in the area and would not contribute to cumulative adverse impacts.

## 3.22 MITIGATION MEASURES AND STANDARD CONSTRUCTION PRACTICES

Table 3-25 lists those impacts where mitigation will be provided and the specific mitigation measure to be implemented. Standard construction practices to be implemented for this project are displayed in Table 3-26. For those resources that are impacted, the proposed mitigations and standard construction practices will reduce the impacts to levels that are below significant.

## TABLE 3-24: CUMULATIVE IMPACTS ANALYSIS

| Potential Impacts | Project's Contribution to Cumulative Impacts[1] | Findings |
|---|---|---|
| Land Use/ Economic Development | + | The LRT extension would tend to integrate the community within the corridor and encourage transit-oriented development which would also likely be more pedestrian-friendly. As discussed in Section 3.3, the project would be compatible with local land use plans and policies and, as a result, would further local plan goals and policies within the study area. A future proposed extension to Gilbert Road is expected to continue this trend. The voter-approved Mesa General Plan includes objectives and policies to encourage transit-supportive development. The City has begun to update its zoning ordinance to implement planning efforts contained in Mesa's local plans to ensure that the new development or redevelopment occurs within context of the community's development concepts. |
| Traffic | O | Development could be accelerated within the Central Mesa corridor as a result of the project which would primarily represent decisions of businesses and residents to locate within the corridor, rather than to locate in other areas of the region. However, this could tend to reduce vehicular trips and vehicle miles per capita. The proposed future extension to Gilbert Road would likely further accelerate development near the rail corridor and may also result in reduced vehicular trips and vehicle miles per capita. In any case, the extension to Gilbert Road would require additional traffic studies to be conducted, and measures would be developed to avoid or minimize potential adverse traffic impacts that may be anticipated to occur. |
| Air Quality | O | The project's air quality analysis showed no adverse impacts. Analysis was based on MAG's Regional Transportation Plan (RTP) that includes all reasonably foreseeable transportation projects in the region for the forecast year of 2028. The RTP is based on regionally adopted population and employment forecasts which are consistent with adopted regional and local land use and development plans. Therefore, the project would result in no cumulatively considerable impacts. The future proposed extension to Gilbert Road would require separate air quality studies. While it is unlikely that the Gilbert Road extension would result in adverse impacts, measures would be developed, if necessary, to avoid or minimize potential adverse impacts on air quality. |
| Water Quality | O | Planned and approved projects, including the LRT extension, have potential to result in short-term construction-related impacts on surface waters and groundwater. Because all facilities will be constructed pursuant to requirements of Sections 401, 402, and 404 of the Clean Water Act and will follow the most current guidance within the NPDES program, the project is not expected to result in cumulatively considerable impacts. Any proposed future extension to Gilbert Road also would require conformance with these requirements. |
| Energy | + | As previously discussed in Section 3.9, LRT has the potential to conserve energy; therefore, the Central Mesa LRT extension, as well as any future extension to Gilbert Road, would not result in cumulatively considerable adverse impacts and is likely to provide benefits. |

[1] **+ = Beneficial O = No Effect — = Adverse**

## TABLE 3-25: MITIGATION MEASURES

| Impact | Mitigation |
|---|---|
| **Land Acquisition and Relocation** | |
| - Full and partial acquisitions and relocations, as needed, of businesses and residences. | - All full and partial acquisitions of properties and potential relocations of businesses and residences will conform to provisions of the Uniform Relocation and Real Property Acquisition Policies Act of 1970, as amended. |
| **Bicycles** | |
| - The bicycle lanes between Country Club Drive and Bellview will be removed. | - Signage and pavement markings will be placed in advance of where the lanes will end and will clearly advise bicyclists and motorists that they will share the travel lane. Signage will be placed per City of Mesa standards, and in accordance with the Manual of Uniform Traffic Control Devices, latest edition. |
| **Historic and Cultural Properties** | **Recommended Treatment:** |
| - No adverse effect identified. | - Although no adverse effects are anticipated, METRO will work with SHPO and the City Historic Preservation Office during final design of the Country Club/Main Station to develop and implement design strategies compatible with the surroundings of the station location. |
| - Potential discovery of cultural resources during construction excavation. | - Should unanticipated cultural resources be discovered during construction excavation, activities will cease immediately until a qualified archaeologist can be contacted to make an assessment for the proper treatment of those resources. If human remains or associated funerary objects are discovered, the Arizona State Museum will be notified as required by A.R.S. Section 41-865. |
| - 3 signs are eligible for listing on the National Register (the associated buildings are not eligible). Signs are associated with the following properties: Trava-Leer's Motel, Larada's Army Surplus, and Payless Car Sales. | - METRO will work with SHPO and the City of Mesa during final design to relocate the signs on the lots relative to the new right-of-way line where feasible. |
| **Visual and Aesthetics** | |
| - Introduction of trackway and OCS may add visual clutter. | - Paint the new OCS and street light poles the existing green color (or similarly consistent and distinctive color theme) to retain the existing character of the vertical element.<br>- Incorporate heritage-themed (or architecturally compatible) street lighting fixtures with the OCS poles and wire supports in the area east of Country Club Drive consistent with the Main Street and Downtown theme.<br>- Space OCS poles as far apart as possible to eliminate visual clutter in the Mesa Arizona Temple viewshed. |
| - Existing landscape in median will be removed. | - Create, wherever possible, landscape medians at traffic tapers.<br>- Replace, in kind, where possible, all trees and streetscape features to restore the Downtown Streetscape. If insufficient area exists to replace trees, consider adding vines on supports or other vegetated shade devices to bring back the green element. |
| - Removal of landscaped median may alter view of the Mesa Temple and Pioneer Park. | - Create landscape medians in the vicinity of the Mesa Temple and Pioneer Park consistent with the theme of these two resources. |
| - The park-and-ride may create unattractive views to Pioneer Park users. | - Add landscape and other screening (including screen walls) along Lesueur between the park-and-ride and Pioneer Park. |

| Impact | Mitigation |
|---|---|
| - ROW modification could affect defining visual element of entrance to East Valley Institute of Technology (EVIT).<br>- LRT stations could conflict with existing streetscape. | - Retain the existing landscape shrubs, groundcover, and trees at back of the walkway to keep EVIT's defining visual element.<br>- Adapt the station architecture to assume an appropriate scale to context.<br>- In the downtown area, adapt the station architecture to a low profile, less architecture/more vegetation style.<br>- In the downtown area, modify the color of the station supports and tensile structure canopies to be more color compatible with the surrounding architecture.<br>- In the downtown area, use the downtown streetscape design and layout as a design precedent for the station area pedestrian environment. |
| **Hazardous Materials** | |
| - Potential concern for release of contaminated materials that have been identified at 7 sites and should be further investigated. Sites include: Big Two Oldsmobile; Fractured Fiberglass; Chevron (now Taco Bell); Falcon Cleaners; Pit Stop; Thomas Gulf (now Quality Bumper); and Texaco (only if TPSS Option C-3 is selected). | - Conduct a Preliminary Site Investigation of these sites. |
| - Potential discovery of hazardous or contaminated substances during construction. | - METRO's construction contractors will be required to stop work immediately within an area where an abnormal condition or potential indicator of a hazardous or contaminated substance is discovered. The Resident Engineer will be notified immediately, and contractors will be instructed to follow all applicable regulations during discovery and response for hazardous materials encountered. |
| - Properties to be acquired in fee title could potentially be contaminated. | - City of Mesa will conduct site-specific Phase 1 Environmental Site Assessments on all properties identified for fee title acquisition as required by the City of Mesa Real Estate Acquisition Management Plan. Process will be initiated concurrently with the appraisal process. |
| **Water Quality** | |
| - LRT operations could result in small accidental spills and incidental losses of petroleum grease, fluids, oils, and sediment. Areas exposed to stormwater runoff could contribute small quantities of contaminants to the stormwater conveyance system. | - Implement Best Management Practices (BMPs) associated with the stormwater collection system.<br>- Include BMPs such as spill response operations and detention basins to settle and capture pollutants.<br>- Discharge runoff from project-related impervious surfaces (such as park-and-ride facilities) into storm drains that have a logical conclusion, and/or construct detention basins. |

## TABLE 3-26: STANDARD CONSTRUCTION PRACTICES

| Impact | Standard Construction Practice |
|---|---|
| **<u>Construction</u>-Short term impacts are possible with regard to the following:** | |
| - Community disruption/economic activity | - METRO, its contractor(s), and the City of Mesa will work together on the creation of a construction plan and schedule. The plan and schedule will be developed in coordination with property and business owners most affected so that their major concerns can be addressed.<br>- Implement programs similar to those developed for the LRT Starter Line that included extensive business outreach programs; a Community Advisory Board to evaluate construction contractors; and construction outreach support to help resolve construction-related issues.<br>- The contractor will develop a construction staging plan during final design and identify laydown, staging, and equipment storage areas needed for the period of construction in consultation with METRO and the City of Mesa. The contractor will be required to follow standard METRO specifications to minimize adverse impacts on the surrounding community. Options to minimize impacts could include, but may not be limited to:<br>  - Locate laydown, staging, and equipment storage areas away from residential uses.<br>  - Limit unnecessary idling of equipment.<br>  - Use light-shielding if necessary to avoid shining lights into sensitive areas at night.<br>  - Minimize dirt track-out by washing or cleaning trucks before leaving construction sites.<br>  - Sweep and clean roadways regularly.<br>  - Install temporary fencing around material laydown areas.<br>  - Provide security for these areas to prevent unauthorized persons from entering and either hurting themselves or damaging/vandalizing equipment and materials.<br>- The City of Mesa and METRO will launch a public outreach program prior to construction to notify residents, businesses, and commuters of the upcoming construction activity. Mesa staff has begun working on a parking management plan for the downtown area before and during light rail construction. The businesses in downtown Mesa have an advantage during construction because the majority of their parking is located behind the businesses. A key element of the parking management plan is a marketing and signage program that will direct downtown visitors off Main Street to 1st Street, Pepper Place and 1st Avenue to access parking. As part of the business assistance plan there will be discussions with the downtown merchants regarding marketing the parking and how to easily access it during construction to their customers. |

| Impact | Standard Construction Practice |
|---|---|
| - Utilities-project will require relocation, modification, or protection in place of many utilities. | - Contractor will adhere to METRO and the City of Mesa standard requirements for utility work that includes but is not limited to:<br>  - Use advance planning to minimize utility service interruptions. Notify affected properties of planned temporary service cut-offs in advance of the interruptions.<br>  - Coordinate with utility providers during final design and construction to identify issues/conflicts and provide opportunities to resolve them prior to occurrence.<br>  - Develop and implement emergency response procedures to ensure quick and effective repair in the event of accidental service cuts. |
| - Debris and Soil | - Transport debris and soil generated by construction to approved disposal sites and obtain the necessary state and local permits. |
| - Traffic, Pedestrians, Bicycles | - A traffic control plan will be prepared in conformance with local, state, and federal policies to include measures per City of Mesa, METRO master specifications, and MAG standards to address potential adverse impacts on traffic (including buses), pedestrians, and bicyclists. |
| - Noise | - The contractor will comply with the noise control ordinance for the City of Mesa. |
| - Air Quality | - A dust control plan will be developed and implemented per Rule 310 for Fugitive Dust of the Maricopa County Air Quality Department.<br>- Contractors will be required to conform with MAG's Uniform Standard Specifications for Public Works Construction, Section 225, as well as with METRO's master specifications for dust control, applicable City of Mesa specifications, and the approved Erosion and Sediment Control Plan or Program, as applicable.<br>- All of these regulations and specifications will require implementation of BMPs. |
| - Water Quality | - Obtain an AZPDES permit for ground-disturbing activities exceeding one acre.<br>- Conform with the City of Mesa's Stormwater Pollution Control Ordinance which requires development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). |
| - General | Conduct a pre-construction inspection to determine existing conditions of the first row of buildings along Main Street and any important and potentially fragile historic resources that may be located within 200 feet of Main Street. |

# 4.0 WHO ARE THE AGENCIES AND PERSONS CONSULTED?

## 4.1 INTRODUCTION

A comprehensive public involvement program (PIP) for the Central Mesa Corridor project is being conducted to coordinate with and obtain input from public agencies, private interests, community organizations, and the public at-large. The objectives of the PIP are presented in Table 4-1.

**TABLE 4-1: OBJECTIVES OF THE PUBLIC INVOLVEMENT PROGRAM**

| Major Objectives for the Central Mesa LRT Extension Project Include: |
|---|
| • Obtain full and continuous public participation and involvement throughout the project.<br>• Assure that the process is open and fair.<br>• Assure that community concerns are incorporated into the project planning.<br>• Obtain full and continuous public involvement throughout the entire project process.<br>• Respond to local desires and comply with FTA, NEPA, and Section 106 of the National Historic Preservation Act (NHPA) requirements for public participation.<br>• Develop and continue a program for public participation and community involvement in the subsequent phases of the project.<br>• Achieve consensus, to the maximum extent possible, on ongoing project development. |

Community outreach has occurred throughout development of the initial Alternatives Analysis (AA) study phase and continues during this EA phase. The public scoping officially began with the publication in the Federal Register to study LRT and BRT alignments and conduct public scoping meetings. The Notice of Intent (NOI) to prepare an AA and Environmental Impact Statement (EIS) was published on August 3, 2007.[1] Public involvement activities will continue to be offered during subsequent project development phases. This chapter summarizes the coordination and public involvement activities and approaches conducted to date as follows:

- Staff and Agency Meetings
- Public Meetings
- City of Mesa Boards and Committees
- Mesa City Council
- Community Stakeholder Meetings

## 4.2 STAFF AND AGENCY MEETINGS

A summary of the meetings with various agencies and staff is provided in Table 4-2.

[1] Subsequent to publication of the NOI in the Federal Register and as project development continued during the Alternatives Analysis process, FTA determined that an Environmental Assessment would be the appropriate NEPA document to prepare for this project.

**TABLE 4-2: STAFF AND AGENCY MEETINGS**

| Staff/Agency | Additional Information |
|---|---|
| Agency scoping meeting | August 21, 2007. More than 40 federal, state, and local government agencies were afforded the opportunity to help identify important issues and bring fresh ideas for solutions to the table. METRO, City of Tempe, and City of Mesa were represented at the meeting. |
| Alternatives Analysis workshop | September 2007. Purpose to obtain input on initial alternatives to evaluate during the AA process. Nine alternatives using a combination of LRT and/or BRT modes were developed. The agencies attending included: Arizona Dept. of Transportation, Maricopa Association of Governments, Valley Metro (RPTA), City of Tempe, and three departments within the City of Mesa. |
| City of Mesa presentations/briefings | Ongoing since 2007. Occurred during scoping, AA Tier 1, AA Tier 2, and selection of recommended LPA for EA evaluation.<br>Departments briefed include: City Manager, Street Transportation, Planning, Engineering, Finance, Real Estate, Developmental Services, Parks and Recreation, Economic Development, Police, Fire. |
| Agencies with an interest in the project | 2007-2009. Several federal, state, and local agencies with an interest in the project were afforded the opportunity to provide comment on each of the following draft reports prior to finalization: Purpose and Need Statement, AA Tier 1 Evaluation Report, AA Tier 2 Evaluation Report.<br>Agencies expressing interest include: U.S. Department of Army, Corps of Engineers; U.S. Department of Housing and Urban Development; U.S. Department of Interior; U.S. Environmental Protection Agency; Federal Highway Administration; Federal Aviation Administration; U.S. Federal Railroad Administration; U.S. Fish and Wildlife Service; Arizona Department of Environmental Quality; Maricopa Association of Governments; RPTA; City of Tempe. |
| State Historic Preservation Office (SHPO)/ City Historic Preservation Office (CHPO)/ City Curator of Anthropology | Ongoing process since 2007. METRO is the delegated representative for FTA in coordination of Section 106 of the National Historic Preservation Act. SHPO, CHPO, and the City of Mesa Curator of Anthropology have been actively involved in the alternatives selection process; developing an historic preservation identification and evaluation methodology; identification of the Area of Potential Effect; identification of eligible resources; evaluation of effects on resources; and development of appropriate mitigation treatments for unavoidable adverse effects. |
| Consultation/coordination with other agencies | Ongoing. Among items for which input was sought include: existing environmental conditions; quality of resources with potential to be affected; extent or severity of potential impacts; review of mitigation strategies proposed to offset project-related impacts.<br>Agencies contacted include U.S. Fish and Wildlife Service, Arizona Game and Fish Department, Ak-Chin Indian Community, Fort McDowell Yavapai Nation, Gila River Indian Community, Hopi Tribe, Inter-tribal Council of Arizona, Salt River-Pima-Maricopa Indian Community. |

## 4.3 ALTERNATIVES ANALYSIS PUBLIC MEETINGS

Table 4-3 summarizes the public meetings held in Mesa during AA. For the scoping meetings, 48,600 postcards were mailed to every government agency, resident, and business in the 10-square mile of the Central Mesa Corridor Study Area. In addition, public meeting notices and articles regarding the study and public meetings were published in the community sections of the Arizona Republic, the East Valley Tribune,

the East Mesa Independent, and La Voz (Latin American Publication). For the AA Tier 1, AA Tier 2, business outreach, and LPA meetings, approximately 6,500 postcards were mailed to residents and businesses within the study area from Sycamore to Mesa Drive, and from Broadway Road to University Drive. Prior to each meeting, the Project Team canvassed each business on Main Street from Sycamore to Mesa Drive with additional efforts within the downtown area between 1st Street and 1st Avenue. Notification for each meeting was also published on the Central Mesa page on METRO's web site (www.valleymetro.org/metro_light_rail/future_extensions/mesa).

**TABLE 4-3: PUBLIC MEETINGS DURING ALTERNATIVES ANALYSIS**

| Public Meeting | Additional Information |
|---|---|
| Scoping-2 meetings | August 23 and 30, 2007. 51 attended |
| AA Tier 1 | November 13, 2007. 78 attended |
| Business Outreach Forum | June 12, 2008. 54 attended |
| AA Tier 2 | October 2, 2008. 59 attended |
| LPA | April 16, 2009. 59 attended |

Overall, a total of 301 residents, businesses, and property owners attended the meetings during the early phases of the project. Those who attended provoked meaningful discussion and valuable input regarding the alignment alternatives that were being studied and the transit technologies under consideration. Additionally, the business outreach forum provided the opportunity for local property and business owners to further understand the potential issues that typically arise from construction of transit projects. Furthermore, stakeholders who could not attend the public meetings contacted METRO through telephone and email inquiries, allowing METRO to assist and provide them with information over the telephone and via the internet.

## 4.4 BOARDS/COMMITTEES/CITY COUNCIL

This section summarizes meetings with various committees and boards with an interest in the Central Mesa LRT Extension project (Table 4-4). It also discusses the several briefings with City Council members, vice mayor, and mayor culminating in the unanimous City Council approval (7-0) of the recommended LPA for further evaluation in the EA.

## 4.5 COMMUNITY STAKEHOLDER MEETINGS

The METRO Project Team has made an effort to meet with interested businesses, residents, community groups, civic associations, and transportation groups. Table 4-5 lists the stakeholders the Project Team has visited between July 2007 and October 2009.

## TABLE 4-4: BOARDS AND COMMITTEES MEETINGS

| Board/Committee | Description | Dates |
|---|---|---|
| Downtown Mesa Association | Formerly Mesa Town Center Corp. is a private, non-profit organization dedicated to economic growth and business development of downtown Mesa, the city's CBD, and original square-mile town site. Provide policy, advocacy, and program management functions.for downtown property and business owners, and in cooperation with public and other private-sector partners. | Scoping—July 12, 2007<br>AA Tier 2—Sept. 24, 2008 |
| Economic Development Advisory Board | Comprised of nine members and up to six ex-officio members who advise City Council on economic development issues, including goal setting, strategic planning, marketing and business recruitment, retention, and expansion. | Scoping – Sept. 4, 2007<br>AA Tier 1 – May 6, 2008<br>AA Tier 2—Oct. 7, 2008<br>LPA—April 7, 2009 |
| Downtown Development Committee | A nine-member citizen advisory committee appointed by City Council to provide input and direction regarding revitalization of Mesa's Town Center Redevelopment Area.<br><br>The City Council has elected to discontinue this committee and has transferred the responsibilities to the Planning and Zoning Board. | Scoping—July 19, 2007<br>AA Tier 1 – April 17, 2008<br>AA Tier 2—Sept. 18, 2008<br>LPA—April 16, 2009 |
| Planning and Zoning Board | Comprised of seven members who conduct hearings and make recommendations to City Council on requests for changes in zoning and on required site plans. Also consider and recommend changes in City long-range plans and in the Municipal Code concerning planning and zoning matters. | LPA – May 20, 2009 |
| Museum & Cultural Advisory Board | Comprised of ten members who advise City Council on policies relating to arts and cultural facilities and services; advise City Council on policies relating to Public Art; make recommendations to City Council on fees and charges; attend programs and events of the Arts and Cultural Division and of the greater arts and cultural community; advocate as individuals, as appropriate, on behalf of arts and culture. | AA Tier 1 – May 28, 2008<br>LPA – April 8, 2009 |
| Transportation Advisory Board | Comprised of 11 citizen volunteers who meet monthly to consider traffic and transit transportation matters of importance to the City. The Board hears from citizens and other affected property owners, reviews reports and recommendations of Transportation staff, and makes recommendations to City Council. | AA Tier 2—Sept. 2, 2008<br>LPA—April 21, 2009 |
| Parks and Recreation Board | Comprised of 11 members who meet bi-monthly to advise the Council on the operation and development of all City parks and recreational facilities and on the recreational program of the City. | Scoping – Oct. 30, 2007<br>AA Tier 1 – Nov. 12, 2008 |
| Mesa City Council and Mayor | Briefings with individual members and mayor<br><br>Council Study Sessions<br>Council unanimously approves recommended LPA | Scoping – Aug. 20, 2007<br>AA Tier 2—Aug 18, Sept 9, 15, 2008<br>LPA—March 16, 23, 25, 2009<br>LPA – March 26, 2009<br><br>LPA—May 18, 2009 |

**TABLE 4-5: STAKEHOLDER MEETINGS**

| Date | Stakeholder |
|---|---|
| July 24, 2007 | Mesa Grande Community Alliance |
| August 7, 2007 | Jeff & Heather Gunnell -- Gunnell's Jewelry |
| August 9, 2007 | Sherry Thune -- Old Brick House |
| August 15, 2007 | Susan Tibshraeny – Tibshraeny Investments |
| August 16, 2007 | Kim Johnson -- Mystic Paper |
| August 16, 2007 | Marcee Edwards -- Vintage Charm |
| August 16, 2007 | Kristin/Dan Alber -- Domestic Bliss |
| August 16, 2007 | Christy Glover -- Bella Fine |
| August 16, 2007 | Donna Thornton -- Grandma's Kitchen |
| August 16, 2007 | Marlene Dunn -- M & Co. Papery |
| August 16, 2007 | Terri McCook/Susan Clark -- Fiber Factory |
| August 16, 2007 | Barbara Mortensen -- Glitter Box |
| August 17, 2007 | John Linton -- Milano's Music |
| August 21, 2007 | Wayne Pomeroy -- Pomeroy's Men's Clothing |
| August 28, 2007 | John Morehouse – Pied Piper Pest Control |
| September 2007 | Sweet Cakes- Kellie Huntington |
| September 2007 | Stephanie Rogers -- Posh Nosh |
| November 6, 2007 | Mesa Baseline Rotary Club |
| January 29, 2008 | Carlton Werner, GM – Marriott |
| January 31, 2008 | Ralph Larson -- One McDonald Building |
| February 13, 2008 | Troy Wicker & Trent Powell -- The Cardon Group |
| February 15, 2008 | Scott McKee -- Scott Blue Reprographics |
| February 15, 2008 | Laurent Tiechman – Property owner |
| February 16, 2008 | Ken Lenhart -- Lenhart's Hardware |
| August 4, 2008 | Mesa Community College -- Leadership Committee |
| September 23, 2008 | Frazier Fields Neighborhood |
| March 25, 2009 | Media Briefing on LPA |
| April 13, 2009 | East Valley Institute of Technology Board |
| April 14, 2009 | Mesa Baseline Rotary Club |
| April 22, 2009 | Mesa Chamber of Commerce |
| April 28, 2009 | Mesa Grande Community Alliance |
| May 5, 2009 | West Mesa Community Development Corporation |
| May 6, 2009 | Mesa Rotary |
| May 27, 2009 | Downtown Mesa Association |
| October 28, 2009 | Sunrise Rotary |
| October 28, 2009 | Mesa Life Options |

To meet the objectives for the public involvement program, METRO's intent is to meet with every potentially impacted property owner abutting the alignment during the development of the EA. Furthermore, the METRO Project Team will provide updates to all business and residential stakeholders, civic associations, and community groups within the Central Mesa corridor throughout the duration of the study and project. To aid in these efforts, the Project Team has implemented a project office along the alignment for stakeholders to learn about and provide input on the extension of light rail on Main Street.

## 4.6 PROJECT DEFINITION

Following the approval of the recommended LPA, the Central Mesa Light Rail Stakeholder Advisory Committee was established in partnership with the City of Mesa.

This ad hoc committee is comprised of 46 members representing property owners, business owners, residents, community groups, and other interested parties. The purpose of the committee is to provide input regarding urban design concepts associated with extending light rail on Main Street. The committee has met monthly from October 2009 to April 2010 and will continue to meet through the project development phase during key milestones. A summary of the Stakeholder Advisory Committee meetings to date is presented in Table 4-6.

**TABLE 4-6: STAKEHOLDER ADVISORY COMMITTEE MEETINGS**

| Date | Topics Discussed |
|---|---|
| October 6, 2009 | Project background, committee goals and purpose, discuss Mesa identity and hopes and concerns for extending light rail on Main Street |
| November 3, 2009 | Presentations from Downtown Mesa Association, City of Mesa Planning Division, Mesa Arts Center, basic design elements of light rail systems, station area location exercise |
| December 1, 2009 | Presentation/input on traffic flow, traffic lane configurations, station locations, bike lanes, on-street parking, and related design criteria |
| January 5, 2010 | Presentation/input on station locations, associated lane configuration, and related design criteria |
| February 2, 2010 | Presentation/input on traffic flow, traffic lane configurations, station locations, and related design criteria |
| March 2, 2010 | Light rail impacts from Alma School to Country Club, traction power substations, Mesa specific urban design criteria, public art |
| April 6, 2010 | Mesa specific urban design criteria, construction and business outreach overview, committee wrap-up |

Additionally, the METRO Project Team provided project definition updates to the City Council, City of Mesa boards and commissions, and community groups. Table 4-7 lists the briefings the Project Team provided. Furthermore, a public open house was held on April 24, 2010 to present the urban design elements to the public for input. Approximately 8,000 postcards were mailed to residents and businesses from Sycamore to Horne, and from Broadway Road to University Drive. Prior to the meeting, the Project Team canvassed each business on Main Street from Sycamore to Mesa Drive. Notification for the meeting was also published on the METRO and City of Mesa web sites.

## 4.7 PUBLIC REVIEW OF THE ENVIRONMENTAL ASSESSMENT

The EA was released for public comment in late November 2010. Because of the Thanksgiving and end of the year holidays, the customary 30-day comment period was extended to January 7, 2011 so that anyone who wished to provide comments had sufficient opportunity to do so. During the comment period, two public meetings were held on December 10, 2010 in downtown Mesa. Notification for this meeting included advertisements in local newspapers including The Arizona Republic (Mesa section), The East Valley Tribune, and La Voz. In addition, approximately 6,500 doorhangers were delivered to residents and businesses within the corridor from Sycamore to Horne and from Broadway Road to University Drive notifying of the document's release and the opportunities to provide comments. The METRO Project Team also delivered

notices to each business along Main Street from Sycamore to Mesa Drive and published the meeting notification on the METRO web site and through METRO's Facebook and Twitter accounts. In addition, the notice/advertisement was sent via a mass email message to all Central Mesa stakeholders in METRO's database.

Copies of the document were also available in the Mesa Main Library and at METRO headquarters. The DEA was also available for download from the METRO web site and sent to affected and interested agencies.

**TABLE 4-7: PROJECT DEFINITION UPDATES**

| Board/Committee | Dates |
|---|---|
| Mesa City Council and Mayor | June 25, 2009, March 22, 25, April 5, 29, June 3, 7, 2010 |
| East Valley Institute of Technology | April 6, 2010 |
| West Mesa Community Development Corporation Board | April 13, 2010 |
| Museum & Cultural Advisory Board | April 14, 2010 |
| Central Main Street Area Plan Project Advisory Committee | April 14, 2010 |
| Historic Preservation Committee | April 15, 2010 |
| Planning & Zoning | April 20, 2010 |
| Transportation Advisory Board | April 20, 2010 |
| Mesa Grande Community Alliance | April 27, 2010 |
| Mesa Chamber of Commerce | April 28, 2010 |
| Economic Development Advisory Board | May 4, 2010 |
| Mesa Sunrise Rotary Club | May 5, 2010 |
| Transportation & Infrastructure Committee | May 6, 2010 |
| Mesa Baseline Rotary Club | May 25, 2010 |
| Downtown Mesa Rotary Club | June 9, 2010 |
| Mesa West Rotary Club | July 15, 2010 |

# 5.0 HOW WILL THE PROPOSED PROJECT BE FUNDED?

This chapter provides the estimated capital and operating costs and also discusses the anticipated federal and local sources to be used to fund the proposed project.

## 5.1 CAPITAL AND OPERATING COSTS/FUNDING SOURCES

The estimated capital cost for the proposed project is approximately $198.5 million (Table 5-1). Approximately 40% of the funds for capital costs are anticipated to come from public transportation funds (proposition 400 half cent sales tax approved by Maricopa county voters in 2004), and the remaining would be derived from federal sources. No funds from the State of Arizona will be used for this project.

**TABLE 5-1: ESTIMATED CAPITAL COSTS AND FUNDING SOURCES (YOE $)[1]**

| | Costs | Funds | Funds as % Of Total |
|---|---|---|---|
| **Capital Costs** | **$198,490,000** | | |
| **Funding Sources** | | | |
| Federal | | | |
| Section 5309 New Starts | | $75,000,000 | 37.8% |
| Congestion Management Air Quality | | $44,649,000 | 22.5% |
| Local Sources | | | |
| Public Transportation Funds (PTF) | | $78,841,000 | 39.7% |
| **Total** | | **$198,490,000** | **100.0%** |

[1]YOE $ = Year of expenditure dollars.
Source: METRO, March 2010.

Table 5-2 displays estimated annual operating costs for the Central Mesa extension project ($4.7 million) as well as the local funding sources expected to fund those costs. Approximately 75% of the funds that will be used for this project are expected to come from local sources while the remaining 25% is anticipated to be derived from farebox revenues.

As part of the process to compete for federal funding under the New Starts program, FTA requires local sponsors to ensure to FTA that sufficient funds will be available to operate the system in the future, otherwise FTA will not approve federal funding for the project. This project, like all transportation projects, is subsidized through a variety of revenue sources. Light rail riders may pay fares in several different ways. Passengers may purchase one-way or round-trip tickets from ticket vending machines located at each LRT station. Employers may purchase monthly platinum cards for their staff. Riders must scan the cards each time they use light rail. Riders may also purchase daily, weekly, or monthly passes. These types of passes do not need to be scanned when used. Many riders transfer from the bus to the rail and are not required to purchase a new pass. To help ensure that all fares are collected so that the appropriate revenue may be used to help pay for operating costs, fare inspectors randomly inspect to verify passengers contain a valid pass or ticket to ride the train.

**TABLE 5-2: ESTIMATED ANNUAL OPERATING COSTS AND FUNDING SOURCES (YOE $)[1]**

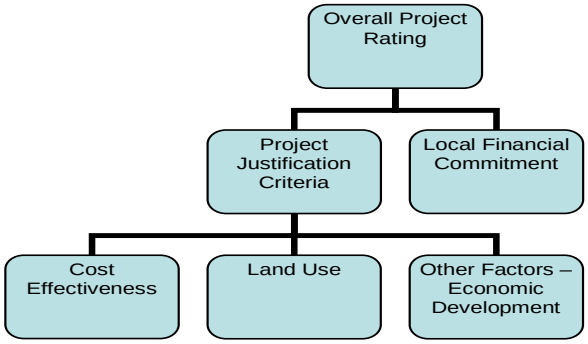
| | Costs | Funds | Funds as % Of Total |
|---|---|---|---|
| **Operating Cost** | **$4,700,000** | | |
| **Funding Sources** | | | |
| Farebox Revenues | | $1,175,000 | 25% |
| Mesa General Fund | | $3,525,000 | 75% |
| **Total** | | **$4,700,000** | **100.0%** |

[1]YOE $ = Year of expenditure dollars based on 10-minute headways
Source: METRO, March 2010.

## 5.2 FEDERAL FUNDING SOURCES

The major source of federal funding being sought is from the Section 5309 Capital Investment Grant program, also known as "New Starts". FTA administers this program which applies to major transit investment projects like the Central Mesa LRT Extension. Congress sets aside funds for this program for each year, and eligible projects may compete for the funds. METRO will seek funding from the "Small Starts" portion of the "New Starts" program.

For a project to qualify as a Small Start, the total project cost must be less than $250 million with no greater than $75 million in requested Section 5309 Capital Investment Grant funding. It must also include fixed guideway (e.g., trackway for LRT) for at least 50% of the project's length during the peak period. If the technology for the proposed project is a bus, it must meet additional requirements if it does not include fixed guideway for at least half of its length during peak travel times.




FTA evaluates Small Starts projects based on local financial commitment as well as certain project justification criteria and assigns a rating for each criterion.[1] Some of the project justification criteria compare the proposed project to a so-called "Baseline Alternative". The Small Starts Baseline Alternative consists of improvements to the transit system that are relatively low in cost and represent the "best that can be done" to improve transit without a major capital investment. As such, it is usually different than the No-Build condition against which environmental impacts are measured in the NEPA document.

[1] FTA is currently in the process of revising guidance for applying for Federal New Starts funding which could change some of the eligibility criteria in the near future. The information cited here is current as of early 2010.

The three project justification criteria include:

- Cost effectiveness. Incremental cost per hour of transportation system user benefits compared to the baseline alternative; using opening year forecast.
- Land use. Evaluates three factors including: 1) existing land use patterns; 2) transit supportive plans and policies; and 3) performance and impact of these policies.
- Other factors. Evaluates economic development benefits of the project and also congestion pricing if the project is a principle element of a congestion management strategy.

FTA will assign a medium rating to the local financial commitment if:

- A reasonable plan is developed to secure funding for the local share of capital costs or sufficient available funds for the local (non-Federal) share.
- The additional operating and maintenance costs of the project are less than 5% of the agency's operating budget.
- The agency is in reasonably good financial condition.

A candidate project is given an overall rating of "High", "Medium-High", "Medium", "Medium-Low" or "Low" based on the individual ratings for the project justification and local financial commitment criteria. FTA will recommend funding for projects rated "Medium" or better. As with all Section 5309 Capital Investment Grants, the rating process is separate from the budget decisions, and a "Medium" or better rating makes a project eligible, but does not guarantee funding.

On August 11, 2010, FTA notified METRO that the Central Mesa LRT Extension meets all requirements for consideration as a Small Starts project, and the project received an overall project rating of "Medium-High" (See Appendix N for FTA letter). This was based on "Medium-High" ratings for project justification and local financial commitment. FTA also determined that the project is ready to proceed into Project Development which allows the project to begin preliminary engineering tasks. Note that project evaluation is an on-going process which occurs annually in support of budget recommendations presented in FTA's *Annual Report on Funding Recommendations* to Congress as a companion document to the annual budget submitted by the President.

Federal funds will also be sought through the Congestion Mitigation and Air Quality Improvement program (CMAQ). The program helps fund regional and local efforts to achieve compliance with national air quality standards set under the Clean Air Act. Each state receives CMAQ funding based on population of local areas in non-

compliance, or seeking to maintain compliance, with ozone and carbon monoxide standards. Most of the funds have traditionally been used for transit projects and for traffic flow improvements.