



US-60/Grand Avenue

Corridor Optimization, Access Management, and System Study (COMPASS)

Loop 303 to Interstate 10

Technical Memorandum 2

Review of Relevant Studies and Projects

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Appendix

Appendix TM2-1 – List of Past Studies

List of Abbreviations

AA	Alternative Analysis
AADT	Average Annual Daily Traffic
ACS	American Community Survey
ADA	Americans with Disabilities Act
ADEQ	Arizona Department of Environmental Quality
ADOT	Arizona Department of Transportation
AZGFD	Arizona Game and Fish Department
AFB	Air Force Base
APS	Arizona Public Service
ARS	Arizona Revised Statutes
BNSF	BNSF Railway
BqAZ	Building a Quality Arizona
BRT	Bus Rapid Transit
CBD	Central Business District
CDOT	Colorado Department of Transportation
CIP	Capital Improvement Program
COMPASS	Corridor Optimization, Access Management, and System Study
D&R	Dial-A-Ride
DAR+	Dial-A-Ride Plus
DCR	Design Concept Report
DDOT	Detroit Department of Transportation
DEUR	Declaration of Environmental Use Restriction
DRCOG	Denver Regional Council of Governments
DU	Dwelling Unit
dnl	decibel noise level
El Mirage	City of El Mirage
FCDMC	Flood Control District of Maricopa County
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FWY	Freeway
FY	Fiscal Year
GAMA	Grand Avenue Merchant’s Association
GARP	Grand Avenue Rail Project
GL	Grand Avenue Limited
Glendale	City of Glendale
GUS	Glendale Urban Shuttle
HCT	High Capacity Transit
HOV	High-Occupancy Vehicle

I-10	Interstate 10 Papago Freeway
I-17	Interstate 17 Black Canyon Freeway
IPaC	Information, Planning, & Conservation System
ITS	Intelligent Transportation System
K&R	Kiss-n-Ride
LOS	Level of Service
LQG	Large Quantity Generators
LRT	Light Rail Transit
L RTP	Long-Range Transportation Plan
MAG	Maricopa Association of Governments
MassDOT	Massachusetts Department of Transportation
Massport	Massachusetts Port Authority
MBTA	Massachusetts Bay Transportation Authority
MCDOT	Maricopa County Department of Transportation
MDOT	Michigan Department of Transportation
MIS	Major Investment Study
MOC	Municipal Operating Center
MP	Milepost
MPO	Metropolitan Planning Organization
NHS	National Highway System
NJDOT	New Jersey State Highway Department
NRHP	National Register of Historic Places
P&R	Park and Ride
P3	Public-Private Partnership
Peoria	City of Peoria
Phoenix	City of Phoenix
RIRO	Right-In Right-Out Only
ROD	Record of Decision
RPTA	Regional Public Transportation Authority
RTD	Regional Transportation District
RTP	Regional Transportation Plan
RTPFP	Regional Transportation Plan Freeway Program
SEMCOG	Southeast Michigan Council of Governments
SEMTA	Southeast Michigan Transit Authority
SHS	State Highway System
SMART	Suburban Mobility Authority for Regional Transportation
SMART	Systematically Managed Arterial
SR	State Route
SR-101L	State Route 101 Loop Agua Fria Freeway
SR-303L	State Route 303 Loop Bob Stump Memorial Parkway
SRP	Salt River Project
S RTP	Short-Range Transit Program
ST-LUIS	Sustainable Transportation and Land Use Integration Study



US-60/Grand Avenue COMPASS

Loop 303 to Interstate 10

TM 2 – Review of Relevant Studies and Projects

STP	Surface Transportation Program
Surprise	City of Surprise
TOD	Transit-Oriented Development
TI	Traffic Interchange
TIGER	Transportation Investment Generating Economic Recovery
TIP	Transportation Improvement Program
TLCP	Transit Life Cycle Program
TRU	Transportation Riders United
UPRR	Union Pacific Railroad
US-60	United States Route 60
USDOT	United States Department of Transportation
USFWS	United States Fish & Wildlife Service
UST	Underground Storage Tank
vpd	Vehicles per Day
WA3	Woodward Avenue Action Association
WSCA	Wildlife of Special Concern in Arizona
Youngtown	Town of Youngtown

1.0 Introduction

The United States Route 60 (US-60)/Grand Avenue Corridor Optimization, Access Management, and System Study (COMPASS) – Loop 303 to Interstate 10 (I-10) is being conducted by the Maricopa Association of Governments (MAG) in order to identify a long-term solution for accommodating travel demand and adjacent property access, establish operating principles to improve the effectiveness of traffic operations, and prepare an Access Management Plan that will provide a detailed milepost-by-milepost description of adjacent property access along the Grand Avenue corridor.

A Partnering Charter was signed on February 22, 2012, by the political leadership of the communities within the US-60/Grand Avenue COMPASS corridor. The outcomes of this technical study will address the following goals that were identified in the charter:

- Cooperatively create an overall vision for the US-60/Grand Avenue Corridor that embraces the important regional function of Grand Avenue as a significant high capacity, multimodal corridor and that can recognize the unique character of different sections of the corridor and the communities it passes through.
- Cooperatively define the operational character for the US-60/Grand Avenue Corridor that will enhance economic development, maintain accessibility to adjacent land uses, improve traffic operations, and reduce highway and rail conflicts.
- Establish an access management system that provides an efficient means to accommodate intersecting roadways and access to and from adjacent properties. After the system is recommended and agreed upon, each stakeholder will incorporate the principles and recommendations into their transportation, economic development and community development.
- Develop guidelines for signage, landscaping and aesthetic treatments along the corridor recognizing the different communities along the corridor.
- Work together to provide the affected stakeholders, including daily commuters, local residents, and adjacent property owners and users with information about the project and opportunity to contribute to the study's outcome and recommendations.

1.1. Purpose of This Paper

This paper is the second Technical Memorandum in a series of US-60/Grand Avenue COMPASS documents. It was prepared to provide background information regarding previous projects and studies within the corridor and identify improvement projects underway. The majority of the research and evaluations performed for this Technical Memorandum were conducted in early 2013, at a time where plans and construction activities were underway in the US-60/Grand Avenue COMPASS corridor, which may affect the content of the information included herein.

1.2. Study Area

The US-60/Grand Avenue COMPASS corridor begins at the traffic interchange (TI) with State Route 303 Loop (SR-303L) in the City of Surprise, Arizona, at US-60 reference marker 138.051 (expressed in miles) and ends at the Willetta Street intersection in the City of Phoenix, Arizona, at US-60X reference marker 161.880 (expressed in miles). The corridor is oriented northwest-southeast, and passes through portions of the City of Surprise, City of El Mirage, Town of Youngtown, City of Peoria, City of Glendale, City of Phoenix, and unincorporated Maricopa County.

US-60/Grand Avenue is a regionally significant six-lane roadway that is part of the National Highway System (NHS). It serves as a vital link connecting four important regional freeways: I-10 Papago Freeway, Interstate 17 (I-17) Black Canyon Freeway, State Route 101 Loop (SR-101L) Agua Fria Freeway, and SR-303L (Bob Stump Memorial Parkway), as shown in **Figure 1**. US-60/Grand Avenue extends north to the community of Wickenburg, where it turns west toward the Arizona and California border. In Wickenburg, US-60/Grand Avenue connects with US-93, which is the primary link to northwestern Arizona and Las Vegas from the Phoenix metropolitan area.

US-60/Grand Avenue corridor includes the BNSF Railway (BNSF). BNSF tracks run the full length of the corridor, parallel and adjacent to the roadway. They are situated along the roadway's southern edge south of Olive Avenue, and the northern edge to the north.

2.0 Relevant Transportation Projects/Studies

2.1. Relevant Completed Projects/Studies

Several projects and studies have been completed that have a direct bearing on the issues and opportunities present in the US-60/Grand Avenue Corridor, referred to hereafter as Grand Avenue. Presented chronologically, these studies, pertinent conclusions, and recommendations are summarized herein; notes have been added in bold to indicate the status of the improvement action, based on available information. This list of past studies are listed as Appendix TMZ-1.

2.1.1. Grand Avenue Corridor Study: Beardsley Canal to 7th Avenue/Van Buren Street

MAG, May 1998

This study resulted in the identification of available options for improvement for the entire 26-mile length of Grand Avenue, from Beardsley Canal west of Sun City West to 7th Avenue and Van Buren Street in downtown Phoenix. The study report presents three improvements options: alternating grade separations, limited expressway, and full expressway. It recommends that a Major Investment Study (MIS) be carried out that fully incorporates highway and transit alternatives, specifically provisions for express bus service, light rail transit, or both. **The Grand Avenue MIS (see Section 2.1.2) evaluated and refined options identified in this report.**

2.1.2. Grand Avenue MIS

ADOT, September 1999

The purpose of this study was to evaluate and refine options presented in the Grand Avenue Corridor Study: Beardsley Canal to 7th Avenue/Van Buren Street (see Section 2.1.1) and select a preferred option. However, the study limits were narrowed to the segment of Grand Avenue between SR-101L and I-17/McDowell Road. The study report presents recommendations to grade separate eight intersections and eliminate access to Grand Avenue with the objective of further upgrading the roadway to expressway standards. Recommended actions are included that would eliminate all existing six-leg intersections and create four new grade separations of Grand Avenue from the BNSF tracks. Three of the grade separations involved reconstructing Grand Avenue; the others involved reconstructing a crossing arterial. **Recommendations developed during conduct of this MIS were subjected to additional study and refinement in a follow-on study (see Section 2.1.19, Grand Avenue MIS Phase II – SR-101L to McDowell).**

2.1.3. Grand Avenue Major Investment Study (MIS), Environmental Overview

ADOT, September 1999

The key environmental concerns highlighted in this document that are relevant to the current planning for transportation improvements in the Grand Avenue corridor are:

- Minority, low-income, and female head of household population groups in some portions of the corridor may represent a greater population percentage when compared to Maricopa County percentages.

- Arizona Game and Fish Department (AZGFD) reported that two Wildlife species of Special Concern in Arizona (WSCA) – the black-bellied whistling duck and the round tail chub – have been documented as occurring within two miles of certain portions of the Grand Avenue corridor. Waterways, e.g., the Grand Canal, offer suitable habitat conditions for both species.
- The Grand Canal is not designed to carry storm flows, although it conveys storm water during precipitation events and may be considered jurisdictional under Section 404.
- Some agricultural lands may be classified as prime farmland.
- A substantial number of listed hazardous materials sites are present within the corridor.
- A large number of cultural resource sites are present within the corridor, and many have been previously documented. Identified cultural resources include: prehistoric villages, compounds, pit houses, platform and trash mounds, a ball court, burials, storage and roasting pits, canals, agricultural features, artifact scatters, and sites of unknown types. Historic sites present within the study corridor include: structures, foundations, farmhouses, historic districts, and the Grand Avenue Streetcar line. Properties/sites listed on National Registrar of Historic Places, eligible for listing, or potentially eligible for listing area located with the corridor.
- There are a number of Section 4(f) – parks and parklands – within the corridor.

2.1.4. White Tank/Grand Avenue Area Plan

Maricopa County 2020 Comprehensive Plan: Eye To The Future, Maricopa County, December 6, 2000

This special plan was intended to prepare for and accommodate growth over the next fifteen to twenty years. It will be reexamined and updated periodically to reflect current conditions and changes. The Plan sought to identify, analyze, and address regional considerations. Transportation-related objectives and policies include:

- Minimize traffic congestion on regional routes, state highways, and urban arterial roads.
- Develop and implement strategies to improve vehicle and pedestrian safety at specific railroad crossings in the Grand Avenue Corridor.
- Promote regional signal coordination through inter-jurisdictional cooperation and the use of intelligent transportation system (ITS) innovations and program advancements.
- Improve the level of service (LOS) on congested roads and promote a minimum stable flow level of LOS D, as defined in this plan, for arterial and major collector roads.
- Support the location of planned distribution and warehouse centers along major highways and roads.

The Plan indicates Grand Avenue from Thunderbird to Greenway roads (in El Mirage) is operating worse than LOS D. The Plan describes Grand Avenue in the following manner:

The economic base in the northwest planning region is centered along Grand Avenue. Grand Avenue initially was constructed in 1888 as a link from Phoenix to the then farming centers of Glendale and Peoria. As urbanization has taken place, Grand Avenue's diagonal orientation creates certain problems for planning area communities. Nonetheless, Grand Avenue remains an important route for statewide travel and commerce. Grand Avenue connects with U.S. Highway 93 in Wickenburg and extends northward to Kingman and Interstate 40. Further, US-93 connects with Interstate 15 in Las Vegas, which is why it is being considered as part of the CANAMEX Corridor for [satisfying stipulations and commitments under] NAFTA [North American Free Trade Agreement]. These strategic advantages mean that Grand Avenue will likely play a key role in the West Valley's future economic prosperity.

Grand Avenue is an integral link within the interim NAFTA route, which will be followed until the official routing via Interstate 8, State Route 85, Vulture Mine Road, and United States Route 93 is constructed to the west of the Phoenix metropolitan area.

During development of this Plan, Community Issue Identification Workshops were held. During these workshops, citizens of Sun City West joined the citizens of Wittmann to the north to identify the following needs: improve/widen Grand Avenue, improve transportation timing, improve traffic control, develop a public transit system, and construct grade separations at the BNSF tracks. Wittmann residents expressed interest in an alternative to the Grand Avenue Expressway concept. Residents also suggested that the BNSF corridor be used for light rail transit (LRT). **Other documents summarized below support Grand Avenue as an Expressway. Since this plan was published, Grand Avenue has been widened along with other improvements from SR-303L in Surprise to North 18th Avenue/West Willetta Street in Phoenix. The subsequent MAG Regional Transit Framework Study (see Section 3.1.11) identified the potential for light rail service extending from the Phoenix Central Business District (CBD) to SR-101L.**

The Plan notes that Sun City and Sun City West residents were concerned that increasing traffic levels, following expansion of the area roadway network, will increase "cut through" traffic, creating a safety hazard and an annoyance.

2.1.5. ITS Strategic Plan Update

MAG, April 2001

The original ITS Strategic Plan and this update provides guidance for the region on a consistent implementation of ITS technologies along freeways and major arterials. The plan designates Grand Avenue as a Systematically Managed Arterial (SMART) Corridor, which involves the use of variable message signs, closed-circuit television cameras, ramp meters and detectors – all integrated by a regional communications network to move traffic more efficiently. **The conversion of Grand Avenue to a SMART Corridor is in various stages of completion.**

2.1.6. The Grand Vision: Grand Avenue Image Improvement Study

City of Glendale, May 2001

This study was initiated to identify design opportunities and concepts for improving Grand Avenue's overall visual image throughout the City of Glendale. Several proposed physical changes are notable:

- Install landscape treatments along the edges of Grand Avenue, such as street trees and shrubs. Landscape the medians along Grand Avenue. **Medians south of Glendale Avenue have been landscaped.**
- Develop uniform streetlights, traffic controls, and light posts, with the possibility of incorporating art into these elements. **Continuing program. See Section 2.2.13, Grand Avenue Limited Expressway Design Concept Study in the Glendale Area, 2003 (Grand Avenue DCR).**
- Create a larger bridge, or deck, at 59th Avenue and Glendale to provide greater pedestrian connections across Grand Avenue to the east and west sides of downtown Glendale. **Project completed.**

2.1.7. West Valley Multi-Modal Transportation Corridor Plan

MAG, July 30, 2001

This plan was developed to provide a basis for implementing a network of multimodal trail types within the New River and Agua Fria River corridors. Trail types were defined as incorporating: bicyclists, pedestrians, equestrians, physically challenged persons and other non-motorized trail uses. Plan documentation includes notes that the proposed trail network will have a conflict at the crossing of Grand Avenue and BNSF rail line. **The New River Trail has been completed as planned, crossing under Grand Avenue and BNSF rail bridges.**

2.1.8. Glendale 2025: The Next Step

City of Glendale, Arizona, December 1, 2002

This General Plan represents a public statement addressing the City’s future expectations. The plan was citizen-driven and conforms to the letter and spirit of "Growing Smarter Plus" legislation established by the State of Arizona to guide municipal planning and growth management.

- A goal of the Circulation Element was to “utilize the transportation system to foster a strong economy.” Toward this end, the plan presents an objective to “enhance road and transit systems to reduce congestion and provide access to employment sites.” It also supports integration of land use and transportation systems to provide convenient access.
- An important economic development policy was associated with recognizing and maximizing access to employment sites via freeways, major arterials, and transit.

2.1.9. Phoenix General Plan 2002

City of Phoenix, December 5, 2001

The General Plan for Phoenix consists of 16 elements adopted by the City Council as a long-range planning guide for the City. Key aspects of the Circulation and Bicycling Elements are summarized below.

Circulation Element: The Circulation Element includes the following observations, proposed improvements, and recommendations that may be applicable to this US-60/Grand Avenue COMPASS:

- Completion of the Grand Avenue Expressway in Phoenix from McDowell to Camelback roads.

- Regarding Grand Avenue as an Expressway, the Circulation Element provides this guidance:
 - “Provide no service to abutting land.
 - Access points are limited to other freeways, expressways, and selected arterial streets with typical minimum spacing of one mile.
 - Opposing traffic flows are physically separated and cross streets are grade separated except that expressways may have at-grade signalized intersections, spaced at least one mile apart.”
- Grand Avenue, west of I-17, is recognized as a through truck route.
- “Grand Avenue is being upgraded with grade separations to increase traffic capacity. Grade separation of streets other than Grand Avenue at some key intersections may be required to remove major bottlenecks and help focus traffic onto key arterial street corridors.” **This process is being undertaken in furtherance of creating a “Super Street,” which may include ITS applications. Currently, grade separations have been constructed at Thomas, Indian School, and Camelback roads, and Grand Avenue is a SMART corridor.**
- “Study the use of congestion pricing to reduce traffic demand on arterials.” Although this is a practice usually applied to limited-access roadways, the plan indicates it could be applied to arterial streets. **Various studies have been conducted to examine congestion pricing alternatives and opportunities in the Valley, but this practice has not been implemented.**
- “Consider design standards that would prohibit commercial uses from having driveway access to residential local streets.”
- “Provide direct high-occupancy vehicle access to Park-and-Ride lots.”
- “...incorporating design features into roadway systems specifically for bicyclists and pedestrians, such as dedicated rights-of-way or controlled-access crossings, further meets goals of increasing bicycle and pedestrian travel.”
- “...residents should have safe, convenient access to an attractive, shared-use, non-motorized transportation system that provides a viable alternative to driving for local trips such as those to work, school, shopping and leisure activities.”

Bicycling Element: The Bicycling Element calls for increasing access to destinations in the City and maximizing connections to other cities and areas controlled by Maricopa County. The recommended bicycle system provides more accessibility within the constraints of natural physical barriers, location of major streets and freeways, and high-traffic areas.

2.1.10. Grand Avenue Northwest Corridor Study: SR-303L to SR-101L, Final Executive Summary

MAG, January 2003

The purpose of this study was to determine long-term (year 2025 planning horizon) travel demand and facility needs for the Grand Avenue corridor and establish a plan for meeting those needs. Key recommendations derived through this study are noted below:

- Construct Grand Avenue to a six-lane cross-section with raised medians and, where possible, 10-foot shoulders to accommodate bicyclists. **Fully implemented.**
- Study the potential for providing emergency vehicle service across the railroad to the two major hospitals. **Status unknown.**
- Further evaluate the proposed connection of El Mirage Road and Thompson Ranch Road via grade separation at the BNSF rail line. **Continuing studies.**
- Commuter rail service is a potential future option of addressing forecast travel demand (see Section 3.1.10, Commuter Rail Strategic Plan).
- It is recommended that the “SMART” Corridor designation of Grand Avenue be moved forward with implementation of ITS components and applications (see Section 2.1.5, ITS Strategic Plan Update. **Grand Avenue has been designated as a SMART Corridor.**
- Provide a continuous detached sidewalk along the east side of Grand Avenue (minimum width of six feet). **Short segments have been completed north of Missouri Avenue, in front of the Sanderson Truck and RV Center, and at the 55th Avenue turn-off.**
- Build pedestrian overpasses at strategic locations along Grand Avenue, specifically Palmaire Avenue, south of Myrtle Avenue, and Lamar Road, west of Glendale Avenue, where Grand Avenue is partially depressed. **These overpasses have not been constructed.**

2.1.11. Northwest Area Transportation Study

MAG, July 2003

This study identified Grand Avenue as an Arterial Roadway Corridor and resulted in recommendations for improvement, including:

- Grade separations or intersections improvements at Northern Avenue, 51st Avenue, and 35th Avenue. **All grade separation projects have been accomplished.**
- High-capacity transit service on: Grand Avenue, 59th Avenue, Glendale Avenue, and Bell Road. **Potential high-capacity service on these facilities is still under consideration.**

- Downtown Phoenix to SR-303L commuter rail and/or BRT service. **Potential commuter and BRT service is still under consideration.**
- LRT and/or BRT on 59th Avenue between I-10 (the proposed Phoenix West LRT) and Bell Road. **Potential commuter and BRT service is still under consideration.**

2.1.12. Design Concept Report, Northern Parkway – Loop 303 to Grand Avenue

City of Glendale Transportation Department, October 1, 2003

The project description calls for reconstructing Northern Avenue from Dysart Road to Grand Avenue. Access would be limited to right turns on and off the parkway between 91st Avenue and Grand Avenue with a barrier or raised curbed median enforcing the access restrictions. The parkway cross-section presented in the Design Concept Report (DCR) consists of three continuous lanes in each direction with paved shoulders on the outside and inside of the travel lanes as well as curbs, gutters, and sidewalks. The intersection of Northern Avenue envisioned at Grand Avenue includes a direct flyover with a single lane in each direction connecting the median of the reconstructed Northern Parkway with the median of Grand Avenue. The ramps would accommodate eastbound-to-southeastbound and northwestbound-to-westbound traffic. Most left turns at the intersection would be eliminated, being accommodated with neighborhood connectors incorporating 65th Avenue (north-south) and August Avenue (east-west). **To date, this intersection has been redesigned to include a flyover of 67th Avenue and extension of Frier Drive to connect at the Grand Avenue/Northern Avenue intersection, retaining the six-leg intersection configuration.**

2.1.13. Grand Avenue Limited Expressway Design Concept Study in the Glendale Area, 2003 (Grand Avenue DCR)

City of Glendale Transportation Department, December 4, 2003

This study was initiated by Glendale for the portion of Grand Avenue between 43rd Avenue/Camelback Road and 71st Avenue/Butler Avenue. In addition to identifying new projects to enhance access control along Grand Avenue, support beautification, and improve downtown access, the City study includes major design features for Grand Avenue; these improvement actions are seen as additions to the five grade separation projects underway by ADOT (**Note: These grade separation projects have been completed**). A summary of the salient recommendations of this study is provided below, as reported in Appendix A – Related Studies, Plans, and Programs prepared for the Grand Avenue Major Investment Study, Phase II, SR-101L to W. McDowell Road:

- Grade separate 51st Avenue over Grand Avenue - **Completed**. Depress Bethany Home Road under Grand Avenue; Grand Avenue will remain at-grade - **Not implemented**. Connector roadways will be constructed to allow access among the three arterials - **A connector for southbound 51st Avenue to northbound Grand Avenue was constructed**. No traffic signals will be required at the junction of the three roadways - **Signal control remains at the intersection of Grand Avenue and Bethany Home Road**.
- Close various intersection streets, alleys, and unused driveway entrances along Grand Avenue to improve access control to the east of Grand Avenue (to the west, the BNSF tracks limit most access except at mile and one-half mile intervals). **Largely not implemented, except in the downtown area.**

- The proposed Grand Avenue underpass at 59th Avenue and Glendale Avenue will substantially alter the manner in which vehicles enter downtown Glendale. 57th Drive and Myrtle Avenue will be used for this access from Grand Avenue, north and south of the underpass. **Implemented.**
- The addition of dedicated right-turn lanes along northwest-bound Grand Avenue. **Implemented only at 55th Avenue and at the QuikTrip (southeast corner of Grand Avenue and Bethany Home Road).**
- Eight existing median openings along Grand Avenue have been identified for closure. **Not implemented.**
- Limiting the movements for streets that intersect Grand Avenue to right-in / right-out only. **Not implemented.**
- Beautification and landscaping along Grand Avenue medians and railroad right-of-way. **Medians have been landscaped south of Glendale Avenue.**
- Purchase of billboards along Grand Avenue for removal. **Not implemented.**
- Underground the existing electrical lines that run along the east side of Grand Avenue. **Implemented south of Maryland Avenue, in relation to the Glendale/59th avenues underpass, and north of Northern Avenue.**
- Install new street lighting along Grand Avenue, both at new grade separations as well as between them to provide for a more uniform appearance as well as improve the aesthetics. **Not implemented.**

2.1.14. Grand Avenue Corridor BNSF Relocation Analysis and Commuter Rail Study

Burlington North Santa Fe Railway, 2003

The study provides an evaluation of vehicular and train traffic information in the Grand Avenue corridor with attention specifically to periods of high congestion. It presents a possible solution to traffic delays that include relocating to the northwest two BNSF freight handling yards: Mobest (19th Avenue and Interstate 10) and Intermodal Hub, a.k.a “Desert Lift” (Grand and Glendale avenues). These potential relocation actions would allow BNSF to eliminate all inbound and outbound trains along the Grand Avenue line during the AM and PM peak periods. **BNSF is investigating possibilities for development of such a regional rail logistics hub at a location approximately ten miles northwest of the SR-303L. BNSF identified a 700-acre site in the vicinity of Grand Avenue, Dove Valley Road, and 211th Avenue, northwest of the community of Wittmann. Considerations of this proposed action are underway.**

2.1.15. Youngtown General Plan, 2003

Youngtown, Arizona 2003 and 2025

Grand Avenue forms the northern boundary of Youngtown, with approximately one-half mile of frontage on Grand Avenue. Several items in the General Plan important to the US-60/Grand Avenue COMPASS are:

- The General Plan identifies 113th Avenue’s connection with Grand Avenue as an opportunity to “...intensify and consolidate scattered commercial uses” and create a Gateway Street for the community. Access to the Town from Grand Avenue is via signalized intersections at 111th and 113th Avenues.
- The General Plan states that access to/from Grand Avenue must be maintained/preserved, “...as it is a fundamental factor in the viability of its commercial frontage on Grand Avenue.”
- The General Plan stipulates the Town is “supportive” of using the BNSF tracks on the east side of Grand Avenue for commuter rail service.
- The Town has invested in the construction of sidewalks on both 111th and 113th Avenues south from Grand Avenue; bus shelters have been installed along 111th Avenue between Grand Avenue and Peoria Avenue. These actions are supportive of the desire of the community to ensure pedestrian and other access to, from, and across Grand Avenue is maintained.
- The Town sees an opportunity to use 113th Avenue from Grand Avenue to Alabama Avenue to “...create an identifying gateway to the Town.”
- The area along Grand Avenue, north of Wisconsin Avenue, is one of three growth areas identified within the Town. Along with greater visibility, desired development consists of “higher intensity retail uses, supermarkets, large retail, strip center, entertainment uses, regional or community retail uses.”
- “Grand Avenue is the primary regional access and visibility for Youngtown. Entries to Youngtown (i.e., 111th and 113th avenues) along Grand Avenue should be made attractive in order to elevate the image of the Town.”
- The Town views enhancements of traffic movement along Grand Avenue, which would include a review of signal timing and phasing, as a key transportation objective.

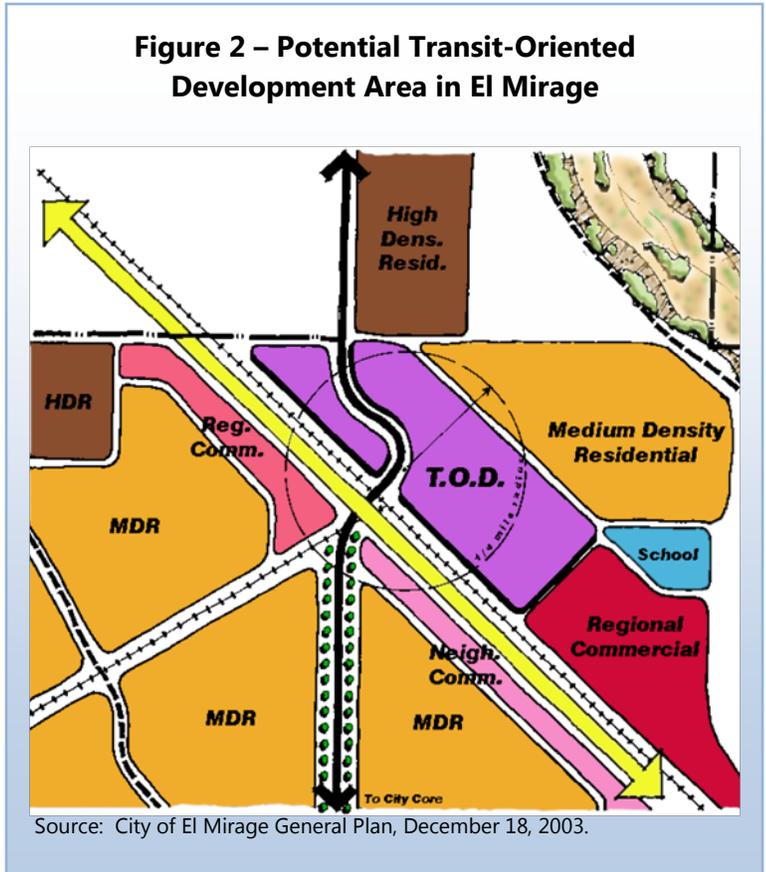
2.1.16. City of El Mirage General Plan

City of El Mirage, December 18, 2003

The City of El Mirage General Plan is a comprehensive document developed to provide guidance and coordination for all interrelated functions and systems of the City and all properties therein. The following items presented in the General Plan may be relevant to the US-60/Grand Avenue COMPASS:

- The General Plan notes the location of a future fire station north of Grand Avenue and east of Thompson Ranch Road. **Not implemented.**
- Most new development in El Mirage is projected to occur in the area south of Peoria Avenue and north of Grand Avenue. Options for retail infill exist along Grand Avenue and Thunderbird Road.

- Grand Avenue offers unique infill opportunities for the City largely related to the MAG High Capacity Transit Plan (see Section 3.1.2) that identifies a commuter rail stop in El Mirage. While commuter rail is still many years from implementation, the General Plan update accounts for this opportunity to capture a unique regional transit service.
- Mixed-use, transit-oriented development (TOD) and regional commercial is planned for the area north of Thunderbird Road and east of Grand Avenue consistent with the MAG High Capacity Transit Plan. This development is associated with the northward extension of El Mirage Road to the Santa Fe Spur with a connection to El Mirage Road at Greenway Road (**Figure 2**).
- Grand Avenue is an important roadway to El Mirage from a regional transportation, local access, and economic perspective.
- The Grand Avenue Northwest Corridor Study (see Section 2.1.10) recommends construction of an enhanced arterial grid network to divert traffic from Grand Avenue. The El Mirage General Plan indicates support for this action, with the following caveats:



- 1) that any changes to Grand Avenue include extension of the current alignment of El Mirage Road north of Grand Avenue to serve the future development of this area,
- 2) access to Thunderbird Road from Grand Avenue is enhanced,
- 3) changes to the service road and roadway design result in improved access and visibility for current and planned businesses located in El Mirage along both sides of the road, and
- 4) changes to the roadway, service roads and associated landscaping and signing are aesthetically appealing.

Specific statements of goals, objectives, and policies relating to non-motorized traffic movements include:

- Encourage safe pedestrian crossings as a part of the redesign of Grand Avenue.
- Provide safe pedestrian and bicycle crossings of collector, arterial, and principal arterial highways or key intersections where high traffic volumes are common or anticipated.

- Provide marked pedestrian crosswalks on all arterial and collector streets and on regional roads.
- Encourage the use of pedestrian and bicycle modes of circulation by developing a designated system of paths and trails.
- Where separation of bicycle and vehicular traffic is not practical, designate residential streets as “bike routes” to link to open space bicycle paths.
- Research the feasibility of extending El Mirage Road across Grand Avenue, connecting the Growth Area north of Grand Avenue to central El Mirage.
- Promote a Gateway concept for Grand Avenue through El Mirage, specifically at Greenway Road and Thunderbird Road.
- Evaluate the potential to improve vehicular access into the commercial properties from Grand Avenue.

In addition, the General Plan identifies the Grand Avenue Character Area, which it defines as a boulevard, with a distinctive landscape and colorful, dominant gateways. Specifically:

- The streetscape should include wide medians with planting and large areas of colorful interlocking pavers.
- The landscape should be simple (due to traffic speeds) but distinctive (to draw attention).
- Sidewalks should be colored, with inlay areas of interlocking pavers, particularly at intersections.
- Light fixtures should be bold and unique to El Mirage.
- A continuous decorative low wall or repetitive bollards could be included.
- The Gateways at Greenway and Thunderbird Road should be substantial and include amenities such as low walls, plazas with formal gardens, the “marker” (as designed in the 1987 General Plan), bollards and bright colors.

2.1.17. Surprise Transportation Plan

City of Surprise Transportation Commission, December 12, 2005

The plan states that “development of state and regional roadways (SR-74, US-60/Grand Avenue, SR-303L, and Sun Valley Parkway) in the Surprise area to their ultimate planned capacity is needed to assure that those facilities can achieve their mission of accommodating through traffic rather than allowing that demand to spillover onto the local roadway network.” It further notes that providing rail passenger service, using the BNSF rail corridor, would “do a great deal to limit the future growth of roadway congestion.” Relevant information available from this document is presented below:

- The plan identifies Grand Avenue as a “Gateway” Road of Regional Significance that is operated and maintained (including signal controls) by the ADOT.

- The Grand Avenue corridor within the Surprise planning area includes access via arterial roadways with at-grade crossings of the BNSF tracks. Six of these crossings are located within the focus area for this current study: R.H. Johnson Boulevard and Meeker Boulevard within Sun City West; and Bell, Dysart, and Greenway roads within Surprise. The sixth at-grade railroad crossing of the Santa Fe Lane Spur affects Grand Avenue traffic directly. The plan notes "...the numerous grade crossings complicate traffic operations at signalized intersections along Grand Avenue, and some traffic delays result from train movements through the corridor."
- The plan notes that Grand Avenue is one of several roadways (along with Bell Road) selected for ITS improvements under the "SMART corridors" program. **These improvements have been installed and are operational; Bell Road is a designated SMART corridor (see Section 2.1.19, Grand Avenue Major Investment Study, Phase II, SR-101L to W. McDowell Road).**
- Although there are no "six-leg" intersections associated with Grand Avenue in Surprise, as in Peoria, Glendale, and Phoenix, "oblique" geometrics characterize the intersections of Bell and Dysart roads at Grand Avenue.
- The plan cites programmed funding in the MAG Regional Transportation Plan (RTP) (2006-2025) for intersection improvements and lane drops along Grand Avenue from SR-101L to SR-303L. The planning, engineering, and environmental for the Bell Rd/US-60/Grand Ave traffic interchange is underway. **These improvements have largely been accomplished (see Section 2.2.1, ADOT Transportation Facilities Construction Program: 2007-2012).**

2.1.18. Transportation Needs Study, Phase I and II Concept Drawings and Cost Estimates, Final Report

City of Peoria, April 2005

This study provides transportation planning, preliminary engineering, capital cost estimating, operation and maintenance cost estimating, and a pavement management system evaluation to assist the City in establishing a multi-year TIP. Two projects were prioritized into Phase I and Phase II.

- The only Phase I project potentially affecting the Grand Avenue Corridor is the construction of 91st Avenue from Grand Avenue to Cactus Road, north of the SR-101L and modification of the 91st Avenue/Cactus Road intersection. **This project has been completed, resulting in connector ramps linking 91st Avenue with SR-101L, approximately 3,000 feet north of Grand Avenue.**
- The only Phase II project potentially affecting the Grand Avenue Corridor is the construction of an 83rd Avenue to Grand Avenue Bypass, beginning at Olive Avenue. **Emphasis was placed on improving 83rd Avenue and constructing this bypass that now crosses Grand Avenue approximately 1,600 feet south of the previous location in downtown Peoria and connects to Peoria Avenue east of Grand Avenue at 80th Lane.**

2.1.19. Grand Avenue Major Investment Study (MIS), Phase II, SR-101L to W. McDowell Road

MAG, February 2006

This study followed the Grand Avenue MIS, completed September 1999 (see Section 2.1.2), which was a follow-up study to the Grand Avenue Corridor Study: Beardsley Canal to 7th Avenue/Van Buren Street (see Section 2.1.1). The three studies present recommendations for:

- Grade Separations,
- Intersection Improvements,
- Access Management,
- Community Mitigation.

Recommended grade separations include:

- W. Bethany Home Road under Grand Avenue and 51st Avenue - **Presently, Bethany Home Road and Grand Avenue form an at-grade intersection with 51st Avenue over-crossing.**
- Grand Avenue under Indian School Road and 35th Avenue - **Although Indian School Road flies over Grand Avenue at the time of this document, left-turn movements are still permitted; therefore, a six-leg intersection still exists.**
- 19th Avenue over Grand Avenue and W. McDowell Road - **Presently, these roadways continue to form a six-leg intersection.**

Study documentation also notes that Northern Parkway Directional Ramps at Grand Avenue and 67th Avenue already are included in the MAG RTP and a project to put Grand Avenue under Peoria Avenue and 83rd Avenue would require further evaluation and discussions with Peoria officials. Other grade separations recommended as a result of these studies are:

- 91st Avenue/SR-101L – **Although direct connectors have been constructed for 91st Avenue to eastbound and from westbound SR-101L, 91st Avenue still has an at-grade intersection with Grand Avenue.**
- 75th Avenue/Olive Avenue – **Presently, Olive Avenue over-crosses 75th Avenue and Grand Avenue, but a local access connection remains for Olive Avenue; thus, there is still a six-leg intersection.**
- 67th Avenue/Northern Avenue – **Presently, 67th Avenue over-crosses Northern Avenue and Grand Avenue, but a local connection remains for 67th Avenue; thus, there is still a six-leg intersection.**
- 59th Avenue/Glendale Avenue – **Presently, these two roadways form a right-angle intersection above Grand Avenue, which is depressed.**
- 55th Avenue/Maryland Avenue – **Presently, Maryland Avenue over-crosses Grand Avenue and a turn-off to 55th Avenue.**

- 43rd Avenue/Camelback Road – **Presently, Grand Avenue over-crosses Camelback Road and 43rd Avenue; all local access has been removed from the intersection.**
- 27th Avenue/Thomas Avenue – **Presently, Grand Avenue over-crosses Thomas Road and 27th Avenue; all local access has been removed from the intersection.**

This study also identified and recommended improvements at seven other major intersections along Grand Avenue and highlighted numerous access management improvements and community mitigation improvements within ten distinct segments of the Grand Avenue corridor between SR-101L and 19th Avenue. It further noted that Grand Avenue, from Van Buren Street to Bell Road, is an AZTech SMART Corridor.

2.1.20. Corridor Improvement Study, El Mirage Road: Northern Avenue to Bell Road

Maricopa Department of Transportation (MCDOT), February, 2007

The study documentation presents the recommendation that a continuous El Mirage Road corridor from Northern Avenue to Bell Road include a grade separation at Grand Avenue. The grade separation project was reported as included in the MAG RTP and phased to begin in 2013 with completion in 2019 in accordance with the MAG Arterial Life Cycle Program (ALCP). The Project Advisory Team supported a recommendation that “...further investigation and evaluation of the Thompson Ranch Road/Thunderbird Road/Grand Avenue connection” be carried out. **Since publication of this MCDOT report, extensive changes to MAG’s Transportation Improvement Program have occurred, as well as adjustments to the MAG RTP and project phasing. While improvements to El Mirage Road to the south have been implemented, a grade separation project at Grand Avenue has not moved forward. See Section 2.2.8, US-60 (Grand Avenue)/Thunderbird Road Intersection.**

2.1.21. Peoria Bicycle Development Plan

City of Peoria, Arizona, 2007

This plan provides the City with a “blueprint” for continuing development of the network of on-street bicycle facilities. Preparation of this plan involved the review and evaluation of various “Bicycle Friendly” practices and policies in use across Maricopa County, Arizona, and the United State. The plan recommends policies and practices that satisfy the goals and objectives articulated by the City Council, General Plan, and other documents. A three-tiered priority list for bicycle facility retrofits is presented. The plan also establishes a bicycle LOS goal of ‘C’ for all streets. **According to the City’s Web page, “Bike Information,” since adoption of the Bicycle Development Plan, “the Engineering Department has made notable progress in the implementation of the Plan. Recommended policy changes have been incorporated into the Circulation Element of the General, Plan, and other planning documents requiring installation of bike lanes on all arterial and collector streets, where feasible, during any street project, whether performed by the City or a developer. When bike lanes are not feasible or practical, additional roadway width is provided for the curb lane to provide additional room for cyclists sharing the roadway with motor vehicles.” The LOS standard was abandoned, due to the difficulty in explaining the concept to the community.**

2.1.22. City of Surprise General Plan 2030

City of Surprise, July 24, 2008

The bulk of the Surprise Planning Area is west of SR-303L, flanking Grand Avenue to a point several miles north of SR-74 (Carefree Highway). There is little emphasis on Grand Avenue in the General Plan. The plan does establish as a key strategy in developing its circulation system the need to work with all appropriate agencies to support use of the BNSF rail corridor directly east of Grand Avenue for future commuter rail service.

2.1.23. Grand Avenue Feasibility Study (Loop 303 to Loop 101)

Arizona Department of Transportation (ADOT), 2008

ADOT, in conjunction with its local municipal partners and the Federal Highway Administration (FHWA) initiated this study to evaluate potential future improvements to Grand Avenue. The study identifies recommended improvement projects consistent with the 20-year MAG RTP and two previous studies: Grand Avenue Northwest Corridor Study, SR-303L to SR-101L (January 2003) (see Section 2.1.10) and the Grand Avenue Major Investment Study Phase II Final Report, SR-101L to W. Mc Dowell Road (February 2006) (see Section 2.1.19). The purpose of this study was to prioritize identified projects within Phase II (2011-2016) of the RTP. Potential projects pertinent to the current study area are:

- Grade separation or interchange at Meeker Boulevard/Reams Road to improve access to the Banner Del E. Webb Hospital Medical Center (formerly Del Webb Memorial Hospital), particularly with respect to the BNSF tracks. **Not implemented.**
- Grade separations at Bell Road, 107th Avenue, and 103rd Avenue. It was noted that grade separation projects would not provide access to Grand Avenue, as would a traffic interchange. **A preliminary design for a grade-separated interchange at Bell Road has been completed and is under review by MAG, ADOT, MCDOT, and the City of Surprise.**
- Intersection improvements at Dysart and Greenway roads. **Status unknown.**
- Conversion of open drainage channel adjacent eastbound Grand Avenue between Dysart Road and Agua Fria River to a closed system. **Not implemented.**
- Frontage road improvements at various locations, particularly in the area of Thunderbird and Thompson Ranch roads. **Not implemented.**
- Landscape and sidewalk improvements at various “key” locations. **The Environmental Assessment study is presently underway.**

2.1.24. Grand Avenue Condominiums, Planned Area Development at 88th and Grand Avenue

SKS Builders and Development LLC, August 2009

This rezoning request seeks to construct a 288-unit (16.1 DUs/acre) multi-family PAD condominium development at the southeast corner of 88th Avenue and Grand Avenue. According to the published rezoning submittal dated August 2009:

The site is located adjacent to the Grand Avenue transit corridor and is designated in the General Plan as part of the Peoria Old Town Growth Area. Synonymous with this growth area, the subject site is one of the last large vacant parcels to be developed in accord with the Central Peoria Revitalization Plan which is a 4.6 square-mile (between Loop 101 to 75th Ave. and Cactus to Olive Ave.) study area that plans to rejuvenate the historic center of the City. The proposed in-fill development is in harmony with the objectives and policies of this revitalization area plan because it provides a transition between existing lower residential densities and non-residential uses. In addition, the site has direct access to the Grand Avenue corridor making it convenient for future residents to shop, work, and enjoy other leisure activities locally. The proposed land use furthers the long-term goals of the General Plan and adopted redevelopment plans due to the projected population and the existing land use within the area which is predominantly single-family homes.

Status unknown. As of 2012, there is no evidence this project went forward; however, aerial photos reveal the parcel has been cleared and graded.

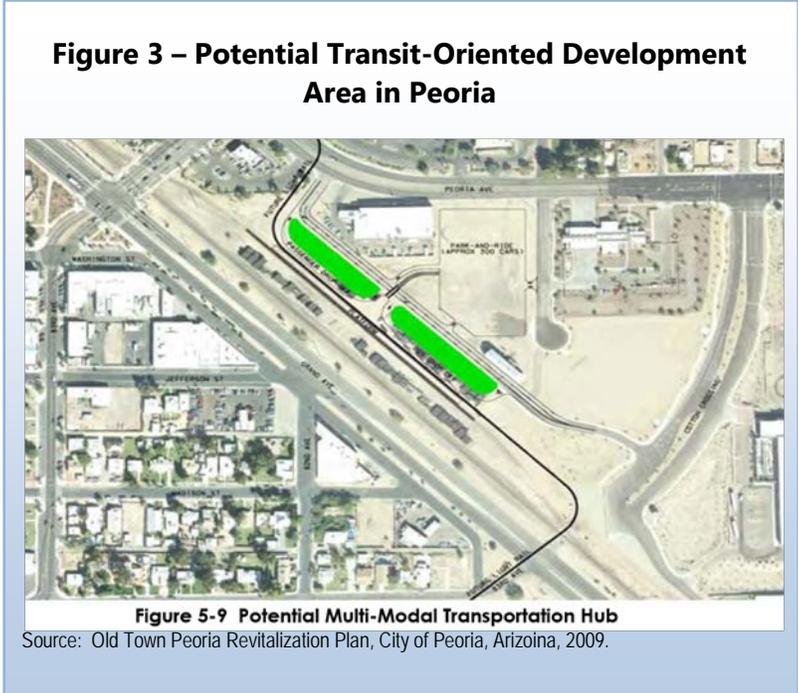
2.1.25. Old Town Peoria Revitalization Plan

City of Peoria, 2009

This plan constitutes a major recalibration of the revitalization strategy for Peoria's Old Town area and its environs. The planning area comprises approximately four square miles, and is bounded by Olive Avenue on the south, Cactus Road on the north, 75th Avenue on the east and SR-101L on the west. The Old Town core is more limited, being bounded by Mountain View Road on the south, 85th Avenue on the west, 81st Avenue on the east and the alignment of Desert Cove Avenue on the north. Grand Avenue and the BNSF tracks bisect Old Town. Key facets of this plan are:

- The Central District of Old Town offers the prospect of a TOD hub in association with a potential commuter rail and transit station and accompanying park and ride lot. **park and ride lots have been developed on the southeast corner of 84th Avenue and Washington Street and the northwest corner of 84th Avenue and Jefferson Street.**
- The Grand Avenue District of Old Town "may support light industrial developments by accommodating coordinated industrial parks with high-tech, low-intensity industrial uses. The planned industrial centers provide an environment for a mix of office, commercial, light industrial, and research uses within a controlled environment."
- The Plan recommends the following:

- Grand Avenue should be depressed below grade with an at-grade public space/deck between Peoria Avenue and 83rd Avenue. The 83rd Avenue vehicular crossing at Grand Avenue should be eliminated, adding a gated pedestrian crossing at the BNSF tracks. **Not implemented.**
- If the depression of Grand Ave. does not occur prior to implementation of commuter rail or other prominent uses on the north [east] side of Grand Avenue, determine an interim solution to the impediment created by the at-grade roadway. Potential solutions include:
 - Create a pedestrian bridge to connect Old Town to the north side of Grand Avenue near Osuna Park.
 - Enhance the Peoria Avenue crossing as a landmark or focal point with enhanced paving, pronounced pedestrian crossings and a mid-block pedestrian refuge. **Pedestrian-friendly improvements were implemented.**
- Create a new multimodal transit station along the north side of Grand Avenue south of Peoria Avenue. **Not implemented.**



The Old Town Peoria Revitalization Plan also anticipates the possibility of linking potential future commuter rail service on the east side of Grand Avenue with METRO Light Rail via the realigned 83rd Avenue (**Figure 3**).

Gateways to the City and to the Old Town are identified in this plan. City Gateways on Grand Avenue are located at SR-101L and Olive Avenue. Grand Avenue gateways to Old Town are identified as being at 85th Avenue and Monroe Street. According to the Plan, the "Gateways should enhance the visitors' experience when entering the project area and Old Town. These features serve as landmarks and shall be of high quality design materials."

2.1.26. General Plan, Peoria, Arizona

City of Peoria, 2011

The 2011 General Plan for the City of Peoria provides the following transportation guidance regarding the portion of Grand Avenue passing through the City:

- Grand Avenue is considered a "major transportation corridor" and a key element of the General Plan because of "the connection and continuity" it provides relative to travel to the Northwest Valley and Greater Phoenix Metropolitan Area.

- Old Town Peoria, the original town site and historic heart of the City, straddles Grand Avenue and the BNSF tracks and exemplifies the characteristics of a small, rural town with a small-block grid system. Old Town Peoria is considered a Growth Area, the revitalization of which is viewed as an opportunity to “...provide the business, shopping, residential, community, education, social and cultural elements that attract the full range of market- and community-oriented interests in the surrounding sub-region.” (Section 2.1.25, Old Town Peoria Revitalization Plan)

2.1.27. Old Town Peoria Specific Area Plan

City of Peoria, 2011

This Plan provided a vision for redevelopment and revitalization of the four square-mile area located in and around Old Town Peoria. It is centered on the intersections of Peoria Avenue and 83rd Avenue with Grand Avenue. This is the same area of focus adopted for the Old Town Peoria Revitalization Plan (Section 2.1.25). A major objective of the plan is to develop connectivity and walkability, particularly with respect to the physical and perceived barriers created by Grand Avenue and the BNSF tracks. The Grand Corridor District is characterized as having a distinct corridor-oriented retail and employment focus. Grand Avenue carries traffic into and through the core area of Old Town Peoria. A design objective for the Old Town District, which is west (or south) of Grand Avenue, is to move and consolidate Park and ride functions to a new multimodal station on the east (or north) of Grand Avenue at 83rd Avenue. **Not implemented.**

The City anticipates TOD around the new multimodal station. TOD design guidelines are expected to facilitate mixed-use developments that provide retail and/or office components and residential uses with a density between 18 and 35 (dwelling units per acre (DU/ac)), target density=30 DUs/ac. The project must be accessible and integrated into nearby public transit facilities.

2.1.28. ADOT Bicycle and Pedestrian Plan Update, Working Papers

ADOT, April 2012

The focus of this Plan Update is bicycling and walking on the Arizona State Highway System (SHS). Several concerns were raised through the public comment process that directly relate to potential improvements along Grand Avenue between SR-303L and downtown Phoenix, which include from Working Paper No. 3:

- Need bicycle lanes (striped shoulders) from 83rd Avenue through Surprise and Sun City to SR-303L.
- Provide shared-use path along US-60/Grand Avenue from Sun City through Glendale.
- Improve shoulder from Sun City to Wickenburg; connect widened shoulder to SR-74; shoulders needed on SR-74.
- Need sidewalks and paved shoulder between Olive Avenue and McDowell Road.
- Need pedestrian/bicycle crossing over US-60/Grand Avenue at 39th Avenue.
- Traffic signal timing inadequate for bicyclists at Loop 303/Grand Avenue.

In addition, El Mirage has identified a shared-use path along both sides of Grand Avenue as a future improvement. Twenty-four strategies are listed for improving/enhancing the operational safety of pedestrian and bicycle facilities. Strategies that may be relevant or beneficial to this current study, as they may be implemented by ADOT, include:

- Provide guidance and technical support to regional and local jurisdictions for developing and implementing bicycle and pedestrian plans that are adopted by local agencies and jurisdictions.
- Install pavement markings or signage to discourage wrong-way bicycle riding.
- Develop a Smart Transportation Guidebook to provide guidance on planning and designing non-limited access roadways, including multi-lane state highways in urban and rural communities.
- Develop an ADOT Pedestrian Policy that requires construction of sidewalks in urban areas as part of major construction or reconstruction highway projects.
- Modify ADOT Design Guidelines.
- Identify opportunities to implement FHWA proven countermeasures to improve pedestrian safety: medians and pedestrian crossing islands, pedestrian hybrid beacon, and road diets.
- Support local agencies and jurisdictions to establish connectivity and alternative routes to state highways through local jurisdictions.
- Collaborate with local jurisdictions to implement infrastructure along and crossing state highways consistent with local bicycle and pedestrian plans.
- Configure traffic signals to detect bicycles at intersections.
- Construct and maintain paved and striped shoulders in urban areas; in urban areas, provide as a minimum condition, a four-foot paved shoulder (five-feet from face of curb), with white stripe at the edge of the vehicle lane.

2.2. Relevant Current Projects and Studies

2.2.1. ADOT Transportation Facilities Construction Program: 2007-2012

ADOT, 2007

For construction Fiscal Years 2007 through 2012, ADOT completed 33 improvement projects along Grand Avenue between SR-303L and McDowell Road. These projects are summarized in the **Table 1. Figure 4** shows the general locations of these projects. (Note: projects involving multi-year actions have been combined to reflect the total improvement effort).

Thirty-six other improvement projects were completed in association with SR-101L and SR-303L that may have ramifications for traffic levels on Grand Avenue. Only the Grand Avenue/SR-303L Interim Traffic Interchange has been included for purposes of this corridor study. Reported project actions of ADOT amount to

expenditures for roadway and bridge improvements along Grand Avenue totaling more than \$360 million from 2007 to the present. The following summaries identify improvements implemented:

- **99th Avenue to 83rd Avenue (2006 -2010)** – Add a third general-purpose lane in each direction to create a continuous six-lane arterial roadway
- **SR-303L to 99th Avenue (2006-2010)** – Add a third general-purpose lane in each direction to create a continuous six-lane arterial roadway. This improvement action also included landscaping the medians, completing curbs, gutters and driveways on the eastbound portion, and applying a final layer of rubberized asphalt to the new lanes. Also, new sound walls have also been added in three locations along the south side of Grand Avenue between 99th and 111th avenues.
- **SR-101L to McDowell Road (2011-2015)** – Initiate proposed improvements to traffic flow and other general improvements.

The current ADOT Five-Year Transportation Facilities Construction Program for Highways and Airports (Five-Year Program) reveals the intent to invest transportation dollars. The Five-Year Program includes six projects to improve US-60 that are part of the Regional Transportation Plan Freeway Program (RTPFP). These projects are summarized in the **Table 2** (Refer to **Figure 4**).

The proposed improvement actions through the Year 2016 have an estimated cost of \$87 million. Due to reductions in estimated revenue projected for improvements, MAG has moved these projects to later phases. The two projects listed in the table above will consist of the following:

- **SR-303L to SR-101L (2016-2020)** – Initiate proposed improvements to traffic flow and other general improvements recommended to the MAG as part of a feasibility study for possible inclusion in the MAG RTP.

Table 1 – ADOT Transportation Facilities Construction Program for US-60/Grand Avenue					
Segment ID	Location	Action	Construction Fiscal Year	Funding Source(s)	Estimated Cost (000s)
D-1	SR-303L to 99th Avenue	Design	2007	Regional Area Road Fund (RARF)	\$1,900
D-2	SR-303L to SR-101L (Agua Fria Freeway)	Design roadway	2007	RARF	\$1,320
C-1	99th Avenue - 83rd Avenue (Including New River Bridge)	Widen roadway and bridge	2007	National Highway System (NHS)	\$11,000
D-3	SR-303L to 99th Avenue	Design	2008	State	\$600
ROW-1	SR-303L to 99th Avenue	Right-of-Way	2008	RARF	\$1,000
C-2	99th Avenue - 83rd Avenue (Including New River Bridge)	Widen roadway and bridge	2008	NHS	\$10,000
D-4	SR-101L to McDowell Rd	Design roadway	2009	RARF	\$9,475

US-60/Grand Avenue COMPASS

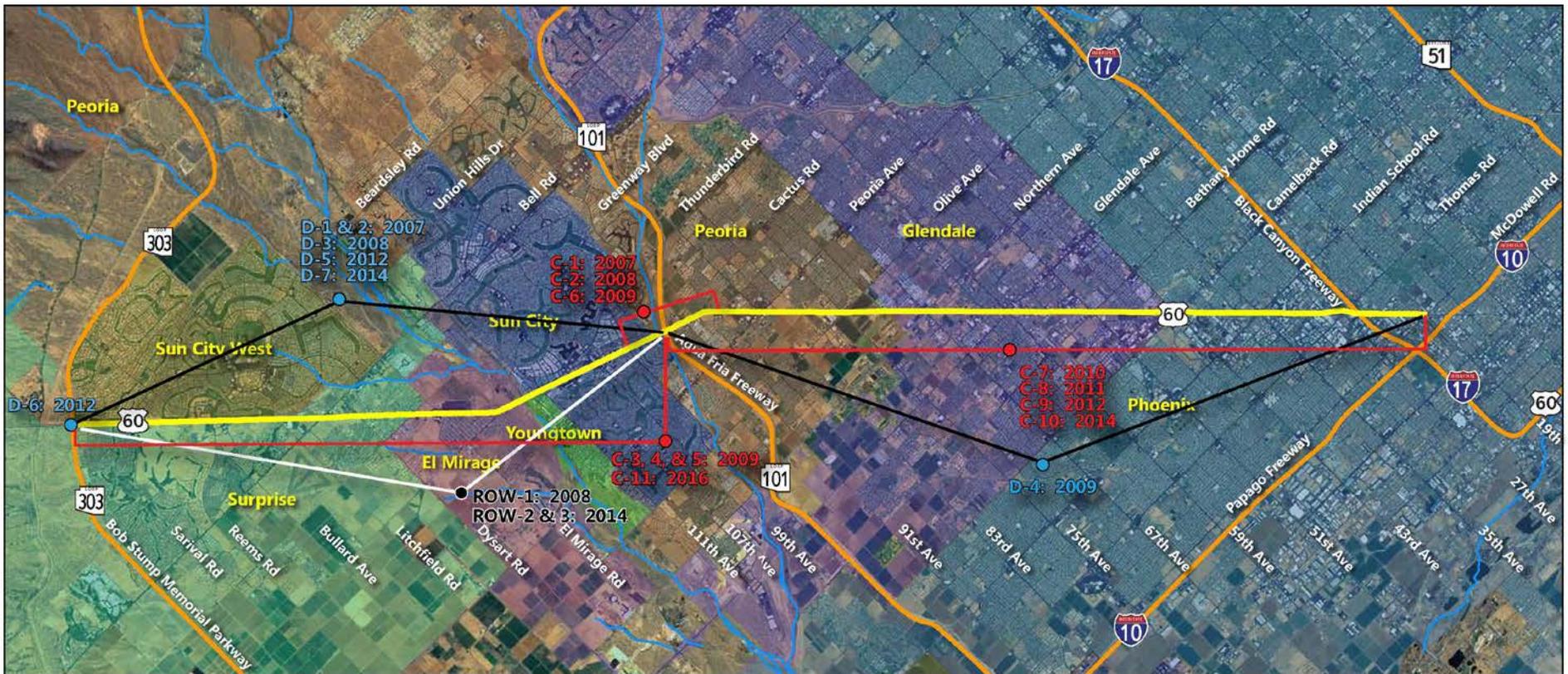
Loop 303 to Interstate 10

TM 2 – Review of Relevant Studies and Projects

C-3	SR-303L to 99th Avenue	Widen roadway	2009	RARF	\$24,000
C-4	SR-303L to SR-101L	Widen roadway	2009	RARF	\$24,000
C-5	SR-303L to 99th Avenue	Widen roadway	2009	RARF, NHS, Hazard Elimination Safety (HES)	\$70,000
C-6	99 th Avenue - 83rd Avenue (Including New River Bridge)	Widen roadway and bridge	2009	NHS	\$10,000
C-7	SR-101L to McDowell Rd	Widen roadway	2010	RARF, NHS	\$140,895
C-8	SR-101L to McDowell Rd, Phase 1	Widen roadway	2011	RARF, NHS	\$21,300
D-5	SR-303L to 99th Avenue	Design	2012	State	\$7,260
D-6	US-60 (Grand Ave)/SR-303L Traffic Interchange (TI), Interim	Design Interim TI	2012	RARF	\$6,800
C-9	SR-101L to McDowell Rd, Phase 1	Widen roadway	2012	RARF, NHS	\$21,300

Source: Extracted from [History Excel Spreadsheet \(From Program Fiscal Years 2001 to 2013, updated annually\)](#) at http://tpd.azdot.gov/mpd/priority_programming/Five_Year_Programs.asp.

Figure 4 – General Location of ADOT Transportation Projects in the US-60/Grand Avenue Corridor (2007-2012)



Legend

- US-60/Grand Ave COMPASS Corridor
- Freeway
- Streams/Washes

Project Action

- Right-of-Way
- Design
- Construct

US-60/Grand Avenue: Loop 303 to Interstate 10



9-25-2014





Table 2 – ADOT Five-Year Transportation Facilities Construction Program for US-60/Grand Avenue

Segment ID	Location	Action	Construction Fiscal Year	Funding Source	Estimated Cost (000s)
D-7	SR-101L (Agua Fria Freeway) to Van Buren Street, Phase 2	Design	2013	Regional Area Road Fund (RARF)	\$1,500
C-10		Construct Roadway Improvements	2014	RARF	\$20,500
ROW-2	SR-303L to SR-101L (Agua Fria Freeway), Phase 2	Right-of-Way Acquisition	2014	RARF	\$4,700
D-8		Design	2014	RARF	\$3,480
ROW-3		Right-of-Way	2014	RARF	\$6,500
C-11		Construct Roadway Improvements	2016	National Highway System (NHS)	\$50,320

Source: 2013-2017 Excel Spreadsheet: Highway Programs at http://tpd.azdot.gov/mpd/priority_programming/Five_Year_Programs.asp.

- SR-101L to Van Buren Street (2026-2031)** – Initiate construction of grade separations (i.e., underpasses or overpasses) in various locations to improve traffic flow. Although some grade separation actions already have been constructed at Olive Avenue, Northern Avenue, Glendale Avenue, Maryland Avenue, Bethany Home Road, Camelback Road, Indian School Road, and Thomas Road, the 2006 Grand Avenue Phase II includes numerous recommendations for full grade separation of several arterials, as noted earlier.

2.2.2. MAG Regional Transportation Plan

MAG, July 2010

The Regional Freeway/Highway System Program contained in the MAG RTP identifies improvements for the Grand Avenue Corridor. These improvements are listed in **Table 3. Figure 5** shows the generalized location of the highway improvements.

The MAG RTP indicates the organization is in the process of preparing Commuter Rail Corridor Development Plans for the Grand Avenue Corridor and the Union Pacific/Yuma West Corridor. MAG also is preparing a Commuter Rail System Study. **Both of these studies have been completed (see Section 3.1.14 and Section 3.1.15, respectively).**

The MAG RTP notes that METRO, the operator of Valley Metro Light Rail service, expects to provide assistance to the City of Peoria for future transit oriented design initiatives, subsequent to completion of the Regional Transit Framework Study and the Grand Avenue Commuter Rail Corridor Development Plan. **The results of these studies and their relevance to the current study are presented in Section 3.1.13 and Section 3.1.14, respectively.**

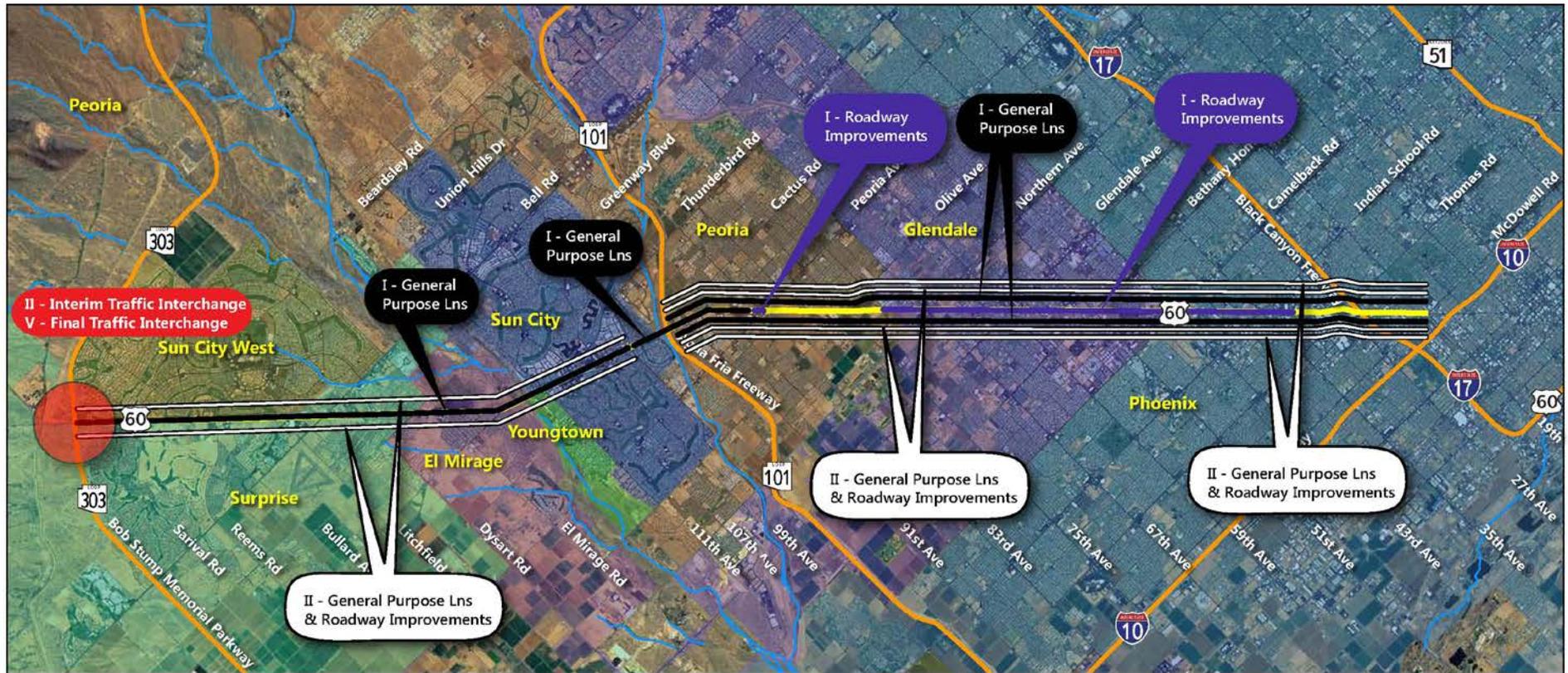
Table 3 – Regional Freeway/Highway System Program

(Thousands of Year of Expenditure and 2010 \$'s)

Project Type	Plan Construction Phase	Project Description	FY 2006-2010	FY 2011-2031	Total	Status
Roadway Improvements	I (FY 2006 – FY 2010)	71st Avenue - Grand Canal Bridge	\$3,979	--	\$3,979	Complete
Roadway Improvements	I	83rd Avenue/Peoria Avenue	\$2,060	--	\$2,060	Complete
General Purpose Lanes	I	99th Ave - 83rd Ave, Including New River Bridge	\$8,205	--	\$8,205	Complete
General Purpose Lanes	I	SR-303L - 99th Ave	\$27,071	--	\$27,071	Complete
General Purpose Lanes	I	SR-101L, Agua Fria - McDowell Rd	\$36,200	--	\$36,200	Complete
General Purpose Lanes and Roadway Improvements	II (FY 2011- FY 2015)	SR-101L, Agua Fria - McDowell Rd	--	\$22,000	\$22,000	Complete
General Purpose Lanes and Roadway Improvements	II	SR-303L - 99th Ave	--	\$65,000	\$65,000	Complete
General Purpose Lanes and Roadway Improvements	V (FY 2026 – FY 2031)	SR-101L, Agua Fria - McDowell Rd (Originally Phase 3)	--	\$86,200	\$86,200	Future
Traffic Interchange	II	SR-303L/US-60 Grand Avenue Interim TI (Segment G)	--	\$76,800	\$76,800	Future
Traffic Interchange	V	SR-303L/US-60 Grand Avenue Final TI (Segment G)	--	\$124,600	\$124,600	Future
TOTAL			\$77,515	\$374,600	\$452,115	

Source: Regional Transportation Plan – 2010 Update, Maricopa Association of Governments, July 2010.

Figure 5 – Generalized Location of Regional Freeway/Highway System Program Improvements (2006-2031)



Legend

- US-60/Grand Ave COMPASS Corridor
- Freeway
- Streams/Washes

Planned Construction Phase

- I FY 2006 - 2010
- II FY 2011 - 2015
- V FY 2016 - 2031

US-60/Grand Avenue: Loop 303 to Interstate 10



9 25 2014



The MAG RTP notes that METRO will initiate an Alternative Analysis (AA) to evaluate two corridor options for serving the Glendale High Capacity Transit Corridor. The AA will include a preliminary assessment of alignment opportunities and selection of a priority corridor. **Status unknown.**

Transit services funded through adoption of the updated MAG RTP include:

- GL Express Bus – funded under Phase II (FY 2011-FY 2015) at a level of \$7.7 million for the operating period 2011-2031. **The Surprise Express (Route 571) is not listed in the MAG RTP, which may affirm the conversion of this service to an extension of the GL route into Surprise (see Section 3.1.12, RPTA Comprehensive Arterial Bus Rapid Transit Planning Study, Final Report, in Relevant Completed Projects/Studies above regarding recommendations for express transit service in the Grand Avenue Corridor.)**
- Peoria Express – funded under Phase V (FY 2026 – FY 2031) at a level of \$1.2 million for the operating period 2011-2031.
- In the future, planned Supergrid Routes will cross the Grand Avenue Corridor and serve, or eventually serve, the transit centers and PARK AND RIDE facilities in Glendale and Peoria:
 - Bell Road – funded under Phase IV (FY 2021 – FY 2025) at a level of \$52.2 million for the operating period 2011-2031.
 - Glendale Avenue –funded under Phase I (FY 2006 – FY 2010) at \$123.2 million for the operating period 2011-2031. **This service was funded under Phase I at a level of \$18.6 million for the operating period 2006-2010.**
 - Camelback Road – funded under Phase IV (FY 2021 – FY 2025) at a level of \$32.7 million for the operating period 2011-2031.
 - 59th Avenue – funded under Phase II (FY 2011 – FY 2015) at a level of \$32.3 million for the operating period 2011-2031.
 - Peoria/Shea Avenue – funded under Phase V (FY 2026 – FY 2031) at a level of \$17.2 million for the operating period 2011-2031.
 - Dunlap/Olive Avenue – funded under Phase V (FY 2026 – FY 2031) at a level of \$2.1 million for the operating period 2011-2031.
 - Indian School Road – funded under Phase V (FY 2026 – FY 2031) at a level of \$4.5 million for the operating period 2011-2031.
 - Thomas Road – funded under Phase V (FY 2026 – FY 2031) at a level of \$4.0 million for the operating period 2011-2031.
 - 83rd Avenue/75th Avenue - funded under Phase IV (FY 2021 – FY 2025) at a level of \$14.6 million for the operating period 2011-2031.

The MAG RTP recaps Transportation Enhancement Projects accomplished as part of the MAG regional planning effort. The following four projects are in or affect the Grand Avenue Corridor (information extracted from study documents):

- **Grand Avenue Frontage Road Enhancement** – Construction of 15,000 linear feet of sidewalk and landscaping within the cities of El Mirage and Surprise.
- **US-60 Peoria Grand Avenue Pedestrian Crossings** – Establishment of four pedestrian crossings on Grand Avenue at 83rd Avenue and Peoria Avenue to allow safe pedestrian access from the north and south sides of Grand Avenue. Refuge areas include landscaping, park benches, decorative brick paving, concrete, and lighting to match Old Town Peoria landscape.
- **SR-101L Trail: Peoria Avenue to Grand Avenue** – This project, identified in the Peoria Rivers and Trails Plan, West Valley Multi-Modal Transportation Corridor Plan, created a one mile multi-use path along New River. The trail is part of the Sun Circle Trail.
- **Grand Canal Pedestrian Pathway Between SR-101L and 107th Avenue** – The Grand Canal Pedestrian Pathway is a 10-foot wide, 1.3-mile long multi-use path developed along the existing canal maintenance roads on the W. Bethany Home Road alignment, between Loop 101 and North 107th Avenue. The new pathway includes pedestrian and bicycle amenities, lighting and landscaping, and links to the Western Glendale trail system.

2.2.3. What Moves You Arizona – Arizona Long Range Transportation Plan, 2010-2035

ADOT, November 2011

This plan defines visionary, yet pragmatic, investment choices Arizona will make over the next 25 years to maintain and improve its multimodal transportation system. There are not specific references to Grand Avenue in the document that are relevant to the current study. However, the Plan gives specific focus to accessibility and access management. One of eight Plan Goals is to link transportation and land use. One of the performance measures identified for evaluating satisfaction of this goal is “improved access management.” The plan also indicates that improvement of mobility and accessibility is tied to an ADOT commitment toward modest expansion of the SHS and “funding support for mode choice, non-highway modes, and intermodal connectivity....”

The Plan describes implementation of a Recommended Investment Choice (RIC) and identifies strategies for attaining goals. Access management is a potential policy/strategy for attaining the following goals:

- Mobility, Access, and Connectivity.
- Economic Development.
- Transportation and Land Use.

Access management guidelines for new development are viewed as an important strategy for improving coordination of the transportation and land use issues and providing better support for economic

development. The Plan notes that “retrofit access management guidelines” also will be considered. Measurement of improvements in access management, along with levels of congestion, speed, and travel delay, is identified as indicative of the relationship between land use and the effectiveness and efficiency of the transportation system. However, no specific guidance is provided regarding how to define improvement in access management. Nevertheless, access management or access control is viewed as a key consideration for projects of modernization and upgrading of highway infrastructure.

The ADOT plan specifically recognizes the need to implement actions to accommodate bicycle and pedestrian traffic. The Statewide Bicycle and Pedestrian Plan, originally published in 2003, has been updated to give consideration to “... strengthening existing provisions, determin[ing] needs and funding, as well as recommend[ing] policies associated with non-motorized travel in the State.” The “Complete Streets” concept, designed and adopted to support development of highways that are safe and accommodating for all users, offers a means to accommodate all users of the SHS with a focus on bicycle and pedestrian safety. The plan states, “while a Department Complete Streets policy has not yet been adopted, ADOT continues to explore strategies for a transportation system that serves all users.”

Access management, along with Complete Streets, is viewed as integral to a series of new and/or enhanced policies directed toward increasing the emphasis on preservation and modernization of the transportation infrastructure. Currently, ADOT policies restrict development of access points to/from any State highway and to/from property abutting a State highway without the express permission of ADOT. ADOT is developing Access Management Guidelines (AMG) that will provide better definition to access limitations, requirements, and opportunities. As currently conceived the AMG will introduce new development and access standards for eight categories, including: freeway access, arterial access, urban/rural highway access, and service/frontage road access.

2.2.4. Sustainable Transportation and Land Use Integration Study

MAG, underway, scheduled for completion March 2013

The Sustainable Transportation and Land Use Integration Study (ST-LUIS) is a regional transportation planning effort involving research relating to and evaluation of best practices for integrating land use policy and transportation solutions to evolve a sustainable community infrastructure. Study documentation identifies and evaluates potential mobility priorities and determines how each could contribute to high capacity transit (HCT) solutions in 40 separate travel corridors in the MAG region. The HCT-supportive solutions and defined travel corridors then are molded into three “What If” scenarios – Enhanced Transit, Transit Supply, and Transit Productivity. Definition of these scenarios is aimed at improving transportation efficiency through land use policy directed toward stimulating development and redevelopment that would support HCT initiatives. The primary objective of this study is to give body to a package of policies, programs, investments, and pathways (i.e., tools for effecting municipal, regional, and private sector responses) to effect integration of land use and transportation system development actions.

Forty corridors were assessed to determine the potential for implementing “All-Day” HCT service in the form of BRT or LRT. The ST-LUIS included four types of HCT: Light Rail Transit (LRT), Streetcar, Bus Rapid Transit (BRT), and Commuter Rail. The LRT and Streetcar is all day service with same headways for peak and off-peak (12 minutes for LRT and 15 minutes for Streetcar), the BRT option included different times for peak and off-peak

(15 minutes peak and 30 off peak), and the Commuter Rail was included with (30-minute peak headways). Eighteen of the corridors evaluated met or exceeded threshold criteria for additional consideration in a second screening. The Step 2 screening process includes 24 evaluation criteria in four categories: demographics; land use and corridor conditions; commute conditions; and transit performance and service provision. The intent of the second-level screening is to “...clearly differentiate between the promising corridors and identify those that are supporting of near-term implementation.” The ST-LUIS project identifies six travel corridors that intersect Grand Avenue. One corridor intersecting Grand Avenue, Thomas Road, has the “potential” for near-term HCT investments, specifically investment in improvements to accommodate BRT. The other five travel corridors (59th/51st Avenues, Bell Road, Dunlap/Peoria/Shea, Glendale Avenue, Litchfield Road) require “significant improvements” before they would be HCT-supportive.

2.2.5. Central Phoenix (CPHX) Transportation Framework Study

MAG, underway, scheduled for completion June 2013

This study has been undertaken to develop an environmentally sustainable, multimodal transportation system – a system that likely will be implemented at multiple jurisdictional levels – to serve the core area of the Phoenix metropolitan area well into the future. A principal objective of the study is to examine the existing transportation system to: (1) determine and prioritize potentially feasible operational and safety improvements; and (2) define a framework for attaining efficient and effective regional connectivity under Buildout assumptions, which assumes projected growth over the next 40 to 60 years. The study also will involve: establishment of a database of existing modal operations to provide a foundation for analyses of future travel needs; compilation of an inventory of existing conditions within the study area to aid in understanding future growth impacts; population and employment projections based on review and approval of community growth scenarios and future land use; and updating of the MAG regional travel demand model, as necessary, to accurately reflect existing plus committed roadway and transit network characteristics. Two key aspects of this study and the evaluation of improvement strategies will be: (1) examination of opportunities for grade-separation to support operations of HCT services; and (2) identification of traffic bottlenecks and significant safety challenges in the network of transportation modes. Information developed will be used to complete a Phase I screening of improvement strategies, setting the stage for conducting during Phase II a more detailed, performance-based assessment of three multi-modal network bundles, representing a range of investment levels.

The goal of Phase II will be to develop an environmentally sustainable multimodal transportation network that will form a framework for regional and sub-regional connectivity and support the future social and economic dynamics of the study area at Buildout. This will involve examining the general revenue and expenditure assumptions of affected MAG partners and weighing these assumptions against expected costs to implement each of the three bundles. Applying this information, a preferred implementation scenario will be defined that identifies potential transportation corridors and linkages capable of accommodating and sustaining the future level of travel demand at Buildout. A near-term, Year 2030, implementation strategy will be outlined to provide necessary facilities and services to alleviate transportation deficiencies. A long-term strategy will be defined to assure protection of necessary rights-of-way and establish the foundation for securing future funding to construct and operate the Buildout multi-modal network. An assessment of needs and opportunities will frame future transportation conditions and the role of each transportation mode in supporting the Buildout

community. Specific policy recommendations will be formulated to give guidance to MAG and participating partners with respect to: achieving sustainable land use planning, developing high-capacity highway and transit facilities, securing funding at the local, state, and federal levels, and defining appropriate strategies for implementation.

2.2.6. Old Town Peoria Traffic Study

City of Peoria, Underway

The Old Town Traffic Study has been undertaken to develop a comprehensive circulation plan for linking land use and transportation within Old Town Peoria. It is a follow up to OTPRP discussed earlier and is expected to accomplish the following tasks:

- Identify and recommend transportation infrastructure improvements to accommodate all modes of transportation in this area.
- Study the potential depression of Grand Avenue.
- Study the link between the Old Town and a proposed transit hub across Grand Avenue.
- Study the impacts of 83rd Avenue realignment (Cotton Crossing) from the Old Town area.
- Coordinate the Old Town needs with the improvements and access management along Grand Avenue.
- Study potential closure of 83rd Avenue/Grand Avenue intersection to through traffic.
- Study parking needs in this area.

2.2.7. Interim US-60 (Grand Ave)/SR-303L Traffic Interchange

ADOT, Underway

Design activity for this traffic interchange will lead to its construction in 2014. ADOT plans to complete SR-303L south of Grand Avenue as a six-lane divided freeway with a system interchange (freeway-to-freeway) at SR-303L and I-10. Construction actions were initiated in the summer of 2011. North of Grand Avenue, SR-303L will be expanded from a four-lane divided highway to a six-lane freeway with a folded diamond interchange at SR-303L and US-60 with a likely start date of 2019 (**Figure 6**).



2.2.8. US-60 (Grand Avenue)/Thunderbird Road Intersection

ADOT, Underway

ADOT, in conjunction with the FHWA, is studying potential improvements at the intersection of Thunderbird Road/Thompson Ranch Road with Grand Avenue. This study is moving forward with the recommendation of a 2008 ADOT feasibility study that identified the need to determine an intersection configuration that would meet forecast future traffic volumes in the area. It also is evaluating alternatives that would improve traffic flow, as defined in ADOT's *El Mirage Road, Northern Avenue to Bell Road Final Design Concept Report (DCR)* (**Figure 7**).

The initial Project Assessment and pre-draft environmental assessment should be completed in summer 2012. The current ADOT Five-Year Transportation Facilities Construction Program for Fiscal Year (FY) 2014 includes \$14.7 million in funding for improvements to Grand Avenue between SR-303L and SR-101L. This study will provide a basis for determining if intersection improvements will be funded in FY 2014.

2.2.9. City of Peoria Infrastructure Design Guidelines

City of Peoria, Underway

These guidelines include pertinent information for the planning, design, and development of roadway facilities, including Traffic Engineering, Street Design and Construction, Storm Drainage Facilities Design and Construction, and Access Management Guidelines.

2.2.10. Roadway Improvements – Loop 101 to North 71st Avenue

ADOT – Underway, July 2012 - Early 2013

This \$4.5 million improvement project will result in a new right-turn lane onto 71st Avenue for northwest-bound Grand Avenue traffic (**Figure 8**). The project also includes the addition of sidewalks on the north side of the roadway between 71st and 75th avenues with sidewalk ramps at various locations. Pavement preservation between 71st and 84th avenues also is part of this improvement action. This project is expected to be completed by the end of the 2012.

2.2.11. El Mirage Road Improvements

City of El Mirage, Maricopa County, and MAG, FY 2011 – FY 2015

This project will improve El Mirage Road, which is a Road of Regional Significance, to three lanes in each direction from Northern Avenue to Gateway Park south of Peoria Avenue. El Mirage Road will be widened to accommodate two lanes in each direction from Gateway Park to Grand Avenue with associated improvements to Thunderbird Road. El Mirage Road will have a definitive connection to Grand Avenue, and context sensitive design will be adopted for the Downtown area.

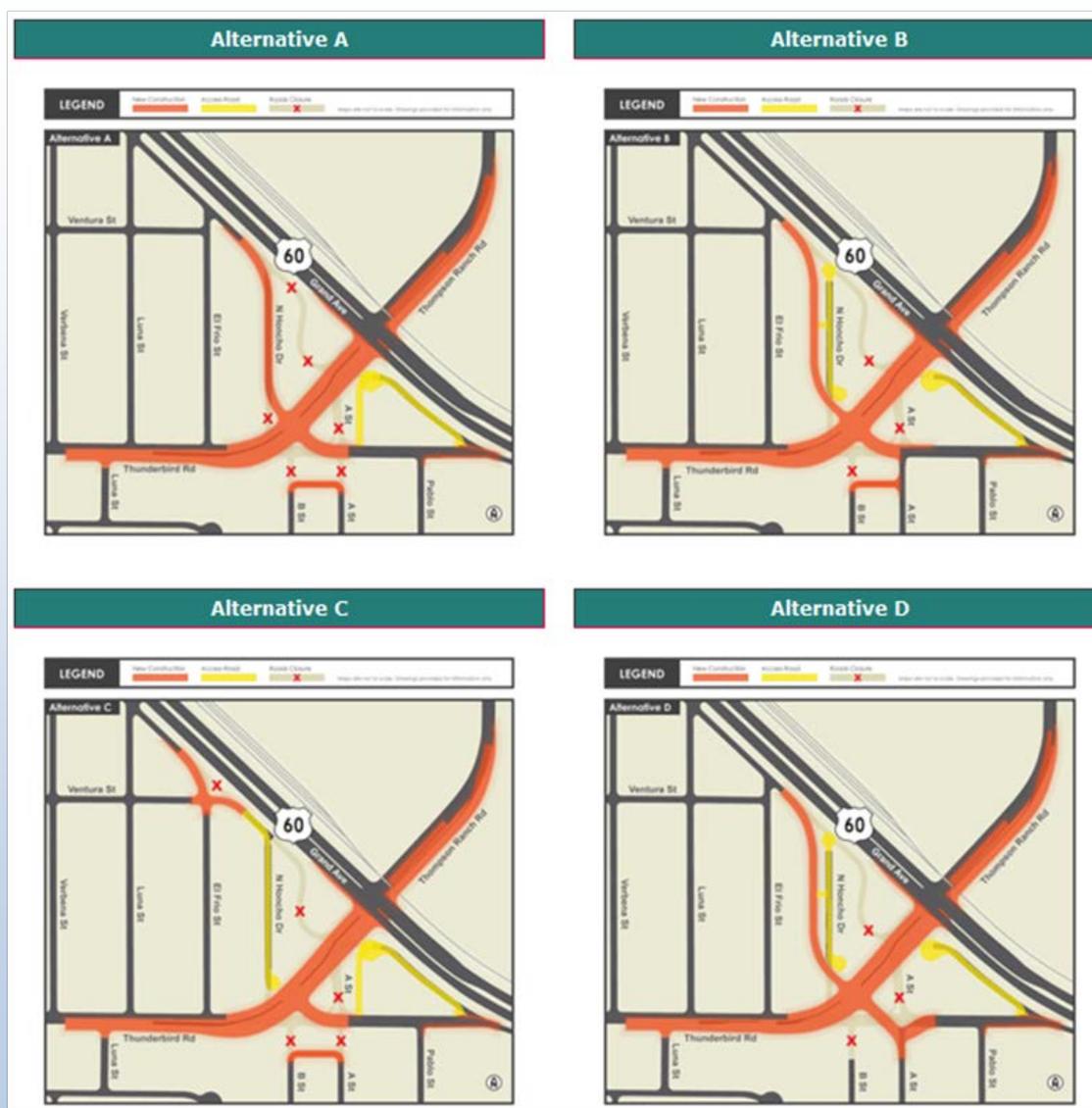


2.2.12. US-60 (Grand Avenue)/Bell Road Interchange

ADOT, Underway

ADOT, in conjunction with the FHWA, is studying potential improvements to the intersection of Bell Road at Grand Avenue (**Figure 9**). This project involves evaluation of alternatives to improve traffic flow and safety, meet current design standards, minimize right-of-way requirements, and minimize business impacts. The initial Project Assessment and pre-draft Environmental Assessment was completed in the summer of 2012. This project is part of the MAG RTP, although additional studies, design, or construction of this project have not

Figure 7 – Possible Intersection Designs at US-60 (Grand Avenue) and Thunderbird Road/Thompson Ranch Road

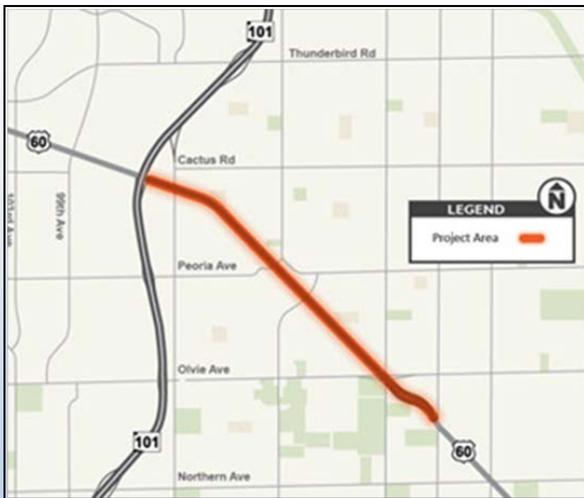


Source: US 60 (Grand Avenue) Thunderbird Road Intersection Project at http://www.valleyfreeways.org/Highways/Valley_Freeways/Freeway_Maps/US60.asp

been scheduled. Nevertheless, the current Five-Year Transportation Facilities Construction Program includes \$45 million for this improvement project

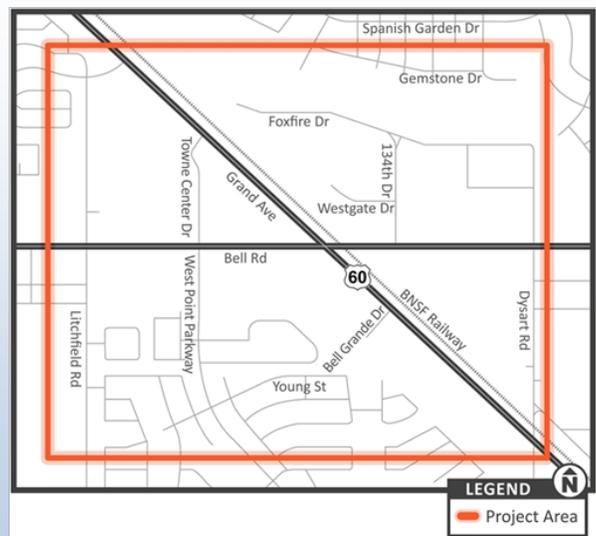
It is anticipated that this project will result in construction of a new traffic interchange at Bell Road with complimentary improvements within a square mile area of the intersections. The next phase of the project will involve preparing an Alternatives Selection Report with an Environmental Overview, a Design Concept Report, and Environmental Assessment. These studies will support evaluation of options and select a preferred alternative that will meet the goals of the MAG RTP, satisfy the requirements of the National Environmental Policy Act (NEPA), and obtain public support.

**Figure 9 – Roadway Improvement
Project Area: Loop 101 to North 71st
Avenue**



Source: US 60 (Grand Avenue) Improvement Project Loop 101 to 71st Avenue at http://www.valleyfreeways.org/Highways/Valley_Freeways/Freeway_Maps/US60.asp

**Figure 8 – Bell Road/Grand Avenue
Interchange Project Area**



Source: US 60 (Grand Avenue) Bell Road Interchange at http://www.azdot.gov/Highways/Valley_Freeways/US60/Grand_Avenue/Bell-Rd-Interchange/index.asp

3.0 Relevant Transit-Related Projects/Studies

3.1. Relevant Completed Projects/Studies

3.1.1. White Tank/Grand Avenue Area Plan

Maricopa County 2020 Comprehensive Plan: Eye To The Future, Maricopa County, December 6, 2000

This special area plan was prepared to provide a framework for accommodating growth over the next fifteen to twenty years. It is reexamined and updated periodically to reflect current conditions and changes. The plan seeks to identify, analyze, and address regional considerations. Transit-related and alternative mode objectives and policies include:

- Identify and evaluate various rapid transit systems as alternatives for meeting long range transit needs, including high-speed elevated transportation, regional commuter rail, LRT, and BRT.
- Consider bus and LRT systems in the future on major roadways, as warranted by demand.
- Continue supporting long-range improvement concepts for Grand Avenue, incorporating transit and alternative modes.
- Develop and implement strategies to improve vehicle and pedestrian safety at specific railroad crossings in the Grand Avenue corridor.
- Pedestrian access across Grand Avenue and adjacent railroad tracks should be considered in future studies and plans regarding this roadway.
- Pedestrian access across Grand Avenue and adjacent railroad tracks should be considered in future studies and plans regarding development of new roads that will provide vehicle crossings over Grand Avenue and the railroad tracks.

3.1.2. High-Capacity Transit Plan

MAG, June 30, 2003

This Plan resulted in the development of a network of new transit services to meet growing travel demand in Maricopa County. The plan documentation incorporates a review of transit services throughout the entire MAG region, but emphasized potential routes for high-capacity transit services, specifically: commuter rail, LRT, dedicated BRT, and express bus. BNSF is identified as a potential route for commuter rail service. The plan also highlights Glendale Avenue and 59th Avenue as potential routes for LRT or BRT service with downtown Glendale being the focus of service connections. It also notes that BNSF is considering relocating and consolidating existing freight handling facilities at the southern end of the Grand Avenue corridor to a site or sites further north and outside of the current study area (see Section 2.1.14, Grand Avenue Corridor BNSF Relocation Analysis and Commuter Rail Study). The Plan identifies six potential high-capacity transit corridors that would affect Grand Avenue directly or indirectly should transit service operations be implemented:

- Short-Term (0-15 years).
 - BNSF – Downtown Phoenix to Bell Road.
 - Glendale Avenue – I-17 to SR-101L.
- Medium-Term (15-30 years).
 - 59th Avenue – Glendale Avenue to I-10 West.
 - BNSF – SR-303L to Bell Road.
- Long-Term (30-40 years).
 - 59th Avenue – Bell Road to Glendale Avenue.
 - Bell Road – 59th Avenue to SR-303L.

3.1.3. Regional Transit System Study

Regional Public Transportation Authority (RPTA)/Valley METRO, July 2003

This study was conducted to investigate the potential for a multimodal transit plan for Maricopa County and northern Pinal County to be implemented by year 2030. Grand Avenue is recognized in this study to be a regional expressway and worthy of consideration for greater transit service, particularly in Phoenix and Glendale. The study includes a recommendation that Grand Avenue be a candidate for local fixed route service, and the study identifies locations for supporting transit facilities. Glendale Avenue is identified as an appropriate location for a transit center and supporting park and ride facility, and a second transit center is recommended for location at Peoria Avenue. **In response to this study, the Grand Avenue Limited (GL) service was initiated, which travels between Peoria and downtown Phoenix. A park and ride facility, occupying the northeast and southwest corners of the 59th Avenue/Myrtle Avenue intersection in Glendale, has been established, and a park and ride facility has been established at the northeast corner of the Jefferson Street and 84th Avenue intersection in Peoria.**

3.1.4. Surprise Transportation Plan

City of Surprise Transportation Commission, December 12, 2005

The 2030 Transit Plan contained in the Surprise Transportation Plan presents a comprehensive set of transit services to satisfy demand in 2030. The following elements focus on Grand Avenue:

- BRT Service on “State Highway Corridors” (e.g., Grand Avenue) and Bell Road. BRT service would constitute the “backbone” of the transit system, providing limited-stop service. Ultimately, the BRT system will operate at 15-minute headways during the peak-hour and 30-minutes in the off-peak. **The GL operated between downtown Phoenix and the Surprise Government Center through June, 2009. This service was curtailed due to funding deficiencies and, as of July 2012, extended only as far north as the 84th Avenue park and ride lots in Peoria. Express Bus service (Route 571) replaced GL,**

operating during peak periods from the Surprise park and ride located at the south side of Bell Road, one block east of 134th Drive.

- Frequent-Stop Local Service connects with BRT service and, in the case, of Bell Road and Grand Avenue, operates parallel with the BRT service. **There is no local transit service operating in Surprise.**
- Transit centers are envisioned at Bell Road/Grand Avenue and on Grand Avenue northwest of SR-303L.
- Commuter Rail service will operate in relation to the BNSF rail corridor adjacent the Grand Avenue corridor. “The Surprise City Council has passed a resolution in support of regional commuter rail, and the Surprise Transportation Commission supports the development of passenger service in this corridor.” **This element is consistent with the Commuter Rail Strategic Plan prepared by MAG.**
- Relative to alternative transportation modes, the Plan specifically makes note of the “barrier effect” of Grand Avenue relative to the continuity and connectivity of bicycle lanes and pedestrian movements. The accompanying map identifies a “Bike Route” on the full length of Grand Avenue with intersecting “Multi-Use Paths” on Bell Road and Sunrise Boulevard and an intersecting “Bike Lane” on Litchfield Road. **The recent widening project along Grand Avenue included installation of 8-foot bicycle lanes in the cross-section.**

3.1.5. Grand Avenue Major Investment Study Phase II, Final Report

MAG, February 2006

Chapter Four, Issues and Needs Identification provides insight into the conditions of and concerns regarding transit services in the Grand Avenue corridor, including:

- Providing commuter rail along the BNSF rail corridor could alleviate traffic congestion.
- Consideration should be given to leasing air rights in the BNSF rail corridor to permit building an elevated transit system.
- In the future, commuter rail will likely be needed in the Grand Avenue corridor from Wickenburg to Phoenix. If commuter rail is put into the corridor, light rail will not be necessary. Commuter and light rail would probably intersect at a station in Glendale.
- It is important that all proposed improvements to Grand Avenue not only accommodate potential future commuter rail, but also do not preclude commuter rail in the corridor.
- If commuter rail is recommended along the BNSF tracks, parking and pedestrian needs will have to be considered. A transit center that accommodates auto / bus / rail / pedestrians should be considered.
- Review high capacity transit options as part of the ultimate concept.
- The MAG RTP identifies the Grand Avenue corridor as eligible for high capacity transit service, using unspecified technology, as part of its ultimate concept.

- This Study will detail the BRT service funded in the MAG RTP as well as review high capacity transit options and their detailed transition program.
- Pedestrian safety must be considered, especially with the potential of additional transit services within the Grand Avenue corridor.
- The Peoria Planning Department would rather see Grand Avenue near Peoria Avenue converted to an enhanced pedestrian corridor that would link their future transit center (east of Grand Avenue, south of Peoria Avenue) with their future park (west of Grand Avenue) and the historic downtown area.
- Pedestrian and bicycle access across Grand Avenue and to transit stops will need to be addressed.
- Grand Avenue is a natural high-capacity corridor, and RAPID transit should be implemented.
- The Yellow Line (bus route) should be brought back. **The Yellow Line operated from 83rd Avenue/Peoria Avenue, down Grand Avenue to the Washington/Jefferson one-way couplet, then down Washington Street to Sun Devil Stadium and the ASU campus in Tempe. This route was discontinued in 2003, as a result of ADOT road improvements along Grand Avenue, which began the transition of Grand Avenue to an expressway-like facility by eliminating seven major at-grade intersections in the cities of Phoenix and Glendale (the new overpasses/underpasses would not accommodate bus stops, making transfers impossible). The part of the route that traveled on Washington was renamed Route 1 – Washington, and the Grand Avenue segment now is served by the "Grand Avenue Limited" (GL) commuter bus route that operates during rush hours and makes only limited stops. (Information obtained from digplanet.com).**
- Alternative methods of transportation, "good" bus service (not just RAPID) and access to bus lines / covered bus stops.
- The BNSF has indicated they are serious about discussing commuter rail in the corridor. It is unclear if a relocation of mainline freight activity is a prerequisite for commuter rail operations. Options such as moving freight off the line, changing freight schedules and double tracking exist.
- Roadway provisions need to accommodate transit service.
- The transit focus is on upgrading local bus service to regional service, including limited stop, express bus, and bus rapid transit.
- Regional transit service and facilities should not interfere with through lanes or block traffic.
- Close attention will be given to the integration and connectivity of transit service including dial-a-ride, shuttles, neighborhood circulators, local buses, bus rapid transit and rail.

3.1.6. City of Surprise General Plan 2030

City of Surprise, July 24, 2008

The Transit Element of the Surprise General Plan states the following regarding future transit services for the City:

The levels of transit service provided in the [MAG] RTP are not adequate to accommodate projected demand given the rate of development in Surprise. In an attempt to bridge the gap for the short term, the Surprise Transportation Commission has recommended that “connector” services should be extended to other West Valley activity centers with higher levels of regional transit connectivity. Destinations include Arrowhead Towne Center, Luke Air Force Base, and Estrella Mountain Community College.

As transit services in these connector corridors are regionalized, the resources saved should be redirected to mobility needs internal to the city of Surprise. Service areas for internal “circulators” or “shuttle” services could include the Original Townsite, the Civic Center Complex, and the Prasada commercial complex. Such routes could offer “route deviations” for those with disabilities who cannot directly access the routes.

The Plan notes that citizen input “...showed a preference for development patterns concentrated around major transportation corridors.” As Grand Avenue is the most significant major transportation corridor in the City, it is the focus of support for passenger service in the adjacent BNSF rail corridor. BRT service is viewed as a viable interim or starter transit service satisfying the perceived need to achieve connectivity with regional destinations, particularly downtown Phoenix via the Grand Avenue corridor. The Plan views commuter rail service in conjunction with BNSF operations as the ultimate transit solution and is establishing transit-supportive land use patterns to assure citywide linkages integrative with regional transit services, such as commuter rail.

3.1.7. Phoenix High-Capacity Transit Corridor Study

City of Phoenix Transit Department, November 2008

This study was conducted to analyze both the City and MAG high-capacity transit corridors – LRT, Commuter Rail, and BRT – and assist City staff in determining priority corridors for inclusion in the regional network. The study recognizes two corridors identify as part of the MAG Regional Transit Framework Study that have a relationship with Grand Avenue: Glendale Avenue West – 59th Avenue to 19th Avenue; and Grand Avenue – Phoenix CBD to SR-101L. Neither of these corridors became the focus of this study; however, documentation for the study reveals that the Glendale Avenue West and Grand Avenue corridor should be considered viable considerations for future development of high capacity transit opportunities.

3.1.8. Park-and-Ride Reprioritization

RPTA/Valley METRO, April 2008

This project reviews and analyzes conclusions of the 2001 MAG Park & Ride (P&R) Site Selection Study in light of transit service improvements identified in the 2003 MAG RTP and passage of Proposition 400. The project revisits the Site Selection Study’s P&R priority rankings to ensure they conform to transit service phasing identified in the MAG RTP and incorporated into Proposition 400, a regional transportation funding provision approved by Maricopa County voters in 2004. The project also addresses three new regional P&R locations included in the MAG RTP.

Documentation in the report reveals the following regarding transit and P&R in the Grand Avenue corridor:

- Anticipates a Grand Avenue BRT high-capacity transit service being initiated in 2013. This service will operate through the Grand/Surprise and Glendale/Grand P&R facilities. **Currently, the park and ride lots at Myrtle and 59th avenues, which was served by Route 570 - Express Bus service is now served by the Grand Avenue Limited.**
- Notes that the P&R facility in the area of Peoria Avenue/Grand Avenue has been relocated to Cactus Road/SR-101L in Peoria, and its development will be delayed until 2023. **Presently, there are two P&R lots in downtown Peoria at the southwest corner of Washington Street and 84th Avenue and the northeast corner of Jefferson Street and 84th Avenue. The scheduling in the report indicates the year of construction for this park and ride facility is 2023. The facility will be served by the Grand Avenue BRT (see note above).**
- A Grand/Surprise park and ride facility is schedule for construction in 2008. **Presently, there is a park and ride facility on the south side of Bell Road, one block east of 134th Drive in Surprise.**

3.1.9. Regional Paratransit Study

MAG, June 2008

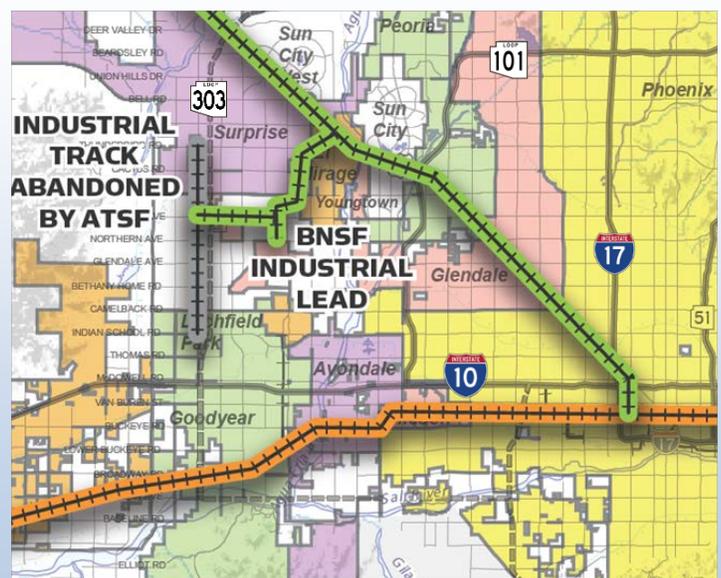
This study consists of an operational review of current Regional Paratransit services. A detailed plan is developed that identifies demand, needs, and specific routes to support the paratransit bus system and routes included in the MAG RTP. The study also addresses coordination of paratransit services with demand needs.

3.1.10. Commuter Rail Strategic Plan

MAG, March 2008

This Plan reflects the latest thinking for development of HCT services in the Phoenix metropolitan area. The Commuter Rail Strategic Plan identified and studied five sub-areas to determine the feasibility for Commuter Rail service. The follow-up Commuter Rail System Study defined an optimized network of rail service corridors and identified key elements needed to implement the system. The evaluation resulted in the Phoenix Subdivision (Southeast) being considered the top candidate for implementation as a “stand alone” project. The Grand Avenue and Tempe/Chandler corridors were considered “middle tier” alternatives, with the Yuma Corridor receiving the lowest appraisal (**Figure 10**). When interlining was considered the top two corridors were the Phoenix Subdivision (SE) and Grand Avenue. Plan documentation provided forecasts

Figure 10 – Potential Commuter Rail Service in the Grand Avenue Corridor



Source: MAG Commuter Rail Strategic Plan, 2008.

for commuter rail service in the corridor, extending from downtown Phoenix to SR-303L. Service forecasts 4,900 total boardings in the initial year of operation (2020) and 16,100 total boardings in the long-term (2040). This represents the highest ridership among four potential commuter rail corridors. Twelve steps were identified to implement the strategic plan. The BNSF/Grand Avenue Corridor is planned to be the subject of coordination and planning involving the BNSF, MAG, and four planning partners (BNSF, ADOT, Metro Light Rail, RPTA/Valley METRO), and local jurisdictions. The objectives of this coordination/planning activity, planned to take place during the period 2008-2009, are stated as:

- Continue coordination between ADOT and BNSF regarding opportunities for passenger rail service in Arizona.
- Develop corridor specific recommendations for the BNSF/Grand Avenue Corridor and provide necessary details for implementation. **Studies are continuing.**

3.1.11. MAG Regional Transit Framework Study (RTFS)

MAG, June 8, 2009

This study was initiated by MAG, Valley Metro Rail (METRO Light Rail), and the RPTA. It identifies and prioritizes regional transit improvements needed to supplement the existing MAG RTP plan through Year 2030. **Table 4** summarizes the findings of this study relative to Grand Avenue and intersecting corridors.

Consideration is given for even longer-range, i.e., through year 2050, transit planning needs. Standards and performance indicators are employed to stratify or prioritize potential transit analysis corridors according to its anticipated performance in serving regional travel needs/demand. Each corridor is classified and ranked relative to a number of factors, and an assessment made regarding its contribution to an overall increase regional mobility.

The Grand Avenue Corridor is among the corridors scored and rated for an overall potential of high, higher, and highest. Recommended service in the Grand Avenue Corridor from Bell Road to Downtown Phoenix, utilizing the BNSF rail corridor, includes:

Table 4 – Rating of High-Capacity Transit Service Potential: Grand Avenue and Intersecting Corridors				
Transit Corridor	From	To	Classification	Rating: Potential to Increase Mobility
Grand Avenue/BNSF	SR-101L (Agua Fria Fwy)	Downtown Phoenix	Regional	Highest
Thomas Road	Dysart Road	SR-101L (Pima Fwy)	Regional	Highest
Bell Road	SR-303L (Estrella Fwy)	SR-101L (Pima Fwy)	Regional	Highest
Peoria Avenue	SR-303L	Interstate 17	Regional	Higher
Grand Avenue/BNSF	SR-303L	SR-101L (Agua Fria Fwy)	Regional	Higher
Glendale Avenue	SR-101L	59th Avenue	Subarea	Higher
Glendale Avenue	59th Avenue	19th Avenue	Subarea	Higher

Source: MAG Regional Transit Framework, Final Report, Maricopa Association of Governments (MAG) with METRO and Valley METRO, January 5, 2010.

- Express Bus Service under Scenario I, the Basic Mobility option, which represents a continuation of the current MAG RTP –
 - Expands service to new areas.
 - Improves service levels within a limited number of high demand transit corridors.
 - Many deficiencies not addressed.
- HCT Service during Peak Periods under Scenario II, the Enhanced Mobility option, which represents concentrated expansion of transit services –
 - Expands regional transit service levels.
 - Improves transit travel speeds in highest priority corridors.
 - Deficient service levels improved.
- HCT Service during Peak Periods under Scenario III, the Transit Choice option, which represents growth and expansion of transit services –
 - Expands regional transit service levels.
 - Provides a more comprehensive regional transit system.
 - Improves transit travel speeds in many more corridors.
 - Nearly all deficiencies are addressed.

3.1.12. RPTA Comprehensive Arterial Bus Rapid Transit Planning Study, Final Report

RPTA/Valley METRO, September 2009

This study identified demand for arterial BRT service and defined the operational characteristics, capital infrastructure needs, and fleet requirements relative to five major travel corridors, including Grand Avenue. The study provides guidance regarding expected changes in operational characteristics and needs of the BRT corridors as the regional transit network develops over the life of the established 20-year transit program. The study concluded that Grand Avenue presents "...a better opportunity for continued commuter-oriented Express Bus services" rather than arterial BRT service. It contains the recommendation that the Grand Avenue Limited route, serving the Grand Avenue corridor, "...continue to operate as a peak-period, peak-direction only, express bus service."

- No recommendations are adopted regarding right-of-way improvements to support GL operations.
- A gradual increase in the level of service provided by the Grand Avenue Limited is recommended to maximize funding support for the service, as shown in the table below, which was extracted from the study report. **Current service consists of two trips inbound during the AM Peak Period and two trips outbound during the PM Peak Period.**
- The study includes the recommendation to coordinate and restructure the operations of the GL with Express Route 571 – Surprise Express (**Table 5**).

Table 5 – Recommended Service: Grand Avenue Limited

	One-way Trips per day	Trips & Direction
Near-term		
Origination		(Peak direction only)
Surprise	8	4 inbound, 4 outbound
Peoria	10	5 inbound, 5 outbound
Mid-term		
Origination		(Peak direction only)
Surprise	10	5 inbound, 5 outbound
Peoria	12	6 inbound, 6 outbound
Long-term		
Origination		Two-way service
Surprise	14	AM: 5 inbound, 2 outbound PM: 5 outbound, 2 inbound
Peoria	16	AM: 6 inbound, 2 outbound PM: 6 outbound, 2 inbound

Source: Table 5 – Service Recommendation for Grand Avenue Limited, RPTA Comprehensive Arterial Bus Rapid Transit Planning Study, Final Report, Valley Metro/RPTA, September 2009.

The following changes have been implemented:

- **Surprise Express – Two primary stops in Surprise at the Surprise park and ride (south side of Bell Road, one block east of 134th Drive) and Walmart park and ride (northwest corner of 129th Avenue and Thunderbird Road) with an additional stop on Thunderbird Road at Primrose Avenue, then non-stop to Central Station in Phoenix and other downtown stops.**
- **Grand Avenue Limited – Two stops in Peoria at 84th Avenue and Peoria Avenue (westbound only) and the Peoria P&R lot at the northeast corner of Jefferson Street and 84th Avenue with an additional stop at the Glendale park and ride at 59th Avenue and Myrtle Avenue, the non-stop to downtown Phoenix.**
- Study documentation reports transit service operating on the following streets that intersect the Grand Avenue Corridor at the time the report was prepared (**Table 6**):

Table 6 – Streets with Transit Service Operations	
East-West Routes	North-South Routes
Route 106 (Peoria Road/Shea Boulevard)	Route 67 (67th Avenue)
Route 70 (Glendale Avenue/24th Street)	Route 59 (59th Avenue)
Route 60 (Bethany Home Road)	Route 51 (51st Avenue)
Route 50 (Camelback Road)	Route 43 (43rd Avenue)
Route 41 (Indian School Road)	Route 35 (35th Avenue)
Route 29 (Thomas Road)	Route 27 (27th Avenue)
Route 17 (McDowell Road)	Route 19 (19th Avenue)
Route 3 (Van Buren Street)	

- Study documentation points out that there is little interaction between these routes and the two express bus routes operating in the Grand Avenue corridor. **Route 106 operates on Peoria Avenue, one block north of the park and ride lots in Peoria located on 84th Avenue between Washington and Jefferson streets. The GL operates through these park and ride lots. The GL also operates through the Glendale park and ride lots on 59th Avenue (Route 59) at its intersection with Myrtle Avenue.**

3.1.13. MAG Regional Transit Framework, Final Report

MAG, January 5, 2010

The MAG Regional Transit Framework is one of several studies developed for specific modes or areas throughout the State of Arizona to identify future transportation needs. Each framework study has been integrated with the Building a Quality Arizona (BqAZ) planning process, the outcome of which has served as input for developing a comprehensive statewide multimodal transportation planning framework. The MAG Regional Transit Framework focuses on understanding the region’s transit needs and deficiencies to support identification of appropriate high-leverage transit investments capable of attracting a significant number of new passengers while improving transit service for existing patrons.

The report identifies six transit modes selected for analysis as service options and evaluation to determine how each could meet future regional transit needs. Three bundles of regional transit service options are formulated for the Year 2030 to provide a basis for evaluating opportunities for improving regional transit service. Each bundle or scenario represents a distinct approach to the provision of improved and new transit services: Basic Mobility; Enhanced Mobility; and Transit Choice. Each scenario is defined by a given level of financial investment ranging from approximately \$2 billion for the Basic Mobility Scenario to more than \$21 billion for the Transit Choice Scenario. The scenarios are constructed from planned transit investments identified in the 2007 MAG RTP Update. Each is the subject of evaluation for planning purposes only without regard to sources of revenue under the assumption that all projects could be implemented.

Potential corridors are identified from previous regional planning efforts. The corridors include existing and future major roadways, highways, and freight rail corridors. Potential transit corridors are screened using performance standards. The Grand Avenue/BNSF corridor from Downtown Phoenix to SR-101L and SR-101L to SR-303L are two of corridors (or segments of corridors) selected for analysis during this process. Crossing or connecting corridors are identified as: Bell Road; SR-101L, Peoria Avenue, Glendale Avenue, 51st Avenue, 59th Avenue, and Thomas Road.

Planned transit service on Grand Avenue in the 2007 MAG RTP is Express Bus from Downtown Phoenix to Bell Road. Eight conceptual transit scenarios for the Year 2030 are identified that go beyond Express Bus service. These are summarized below:

- *Scenario I - Supergrid Bus and Regional Connector Network*, assumes only local service on Grand Avenue from 99th Avenue and Thunderbird Road/Thompson Ranch Road and from Bell Road to SR-303L and on to Wickenburg.
- *Scenario I - HCT, Arterial BRT, and Express Bus Network*, assumes Express Bus service on Grand Avenue from Downtown Phoenix to Bell Road with local service connections to SR-303L and Wickenburg with new park-and-ride facilities at Sunrise/W. R. H. Johnson Road and Thunderbird Road.
- *Scenario II - Supergrid Bus and Regional Connector Network*, includes the Scenario I service and adds an upgrade to Regional Connector for the Wickenburg to Arrowhead Mall route via Grand Avenue and along Bell Road.
- *Scenario II - Supergrid and Express Bus Network*, assumes the service from 99th Avenue and Thunderbird Road/Thompson Ranch Road and from Bell Road to SR-303L is integrated with the Supergrid service.
- *Scenario II - HCT, Arterial BRT, & Express Bus Network*, assumes all-day HCT service along Grand Avenue from Downtown Phoenix to SR-303L and new P&R facilities at Sunrise/W. R. H. Johnson Road and Thunderbird Road in addition to integrating Supergrid Bus service on a segment of Grand Avenue.
- *Scenario III - Supergrid Bus and Regional Connector Network*, assumes an increase in the level of service provided by Scenario II.
- *Scenario III Supergrid and Express Bus Network*, did not change any service along Grand Avenue beyond what is defined for Scenario II.

- *Scenario III HCT, Arterial BRT & Express Bus Network*, changes the all-day HCT service on Grand Avenue defined for Scenario II to peak service only.

In addition, the traffic interchange area of Grand Avenue with SR-303L is identified as a potential Intermodal Interface Location. The Framework document defines this type of location in the following manner:

Intermodal transit facilities will play an increasingly important role in the region's future as more modes (intercity or high-speed rail) are introduced. These facilities should include amenities such as connected passenger platforms for easy transfers between transportation modes, parking, and services such as information, ticket sales and security. In addition, direct auto access to facilities next to or within regional freeway corridors may increase their usability and accessibility.

3.1.14. Grand Avenue Commuter Rail Corridor Development Plan

MAG, July 6, 2010

The plan determined the feasibility of implementing commuter rail service within the BNSF rail corridor between Phoenix and Wickenburg. The final product describes the elements necessary to successfully implement commuter rail transit service in the Grand Avenue/BNSF Corridor. This plan included a review of existing documentation, documentation of public involvement actions, an inventory of the existing BNSF rail corridor, development of a conceptual commuter rail operating plan, identification of infrastructure improvements necessary for the implementation of commuter rail service, development of capital cost estimates, and development of annual operating cost estimates for commuter rail service. Initiated in 2008, the findings and recommendations of this study have been integrated into the Commuter Rail System Study completed in May, 2010 (see Section 3.1.15).

3.1.15. Commuter Rail System Study

MAG, May 2010

The purpose of this study was to define an optimized network of commuter rail corridors and identify the necessary elements needed to implement a regional commuter rail system. This study incorporates the vision introduced in the Commuter Rail Strategic Plan and the findings of the Grand Avenue Commuter Rail Corridor Development Plan (see Section 3.1.14) and the Yuma West Commuter Rail Corridor Development Plan, which were conducted in conjunction with this study. The Commuter Rail System Study compared a set of Stand-Alone Alternatives (single corridors) and a set of Interlined Alternatives (combined corridors). The evaluation accounts for a number of factors, including: ridership forecasts, travel time savings, cost-effectiveness, and ease of implementation (or constructability).

The comparison process reveals three distinct operational tiers based on the performance of alternatives relative to the set of evaluation factors established for the study. The study recommendations support a phased approach to implementation of regional commuter rail service. It also identified steps for implementing a commuter rail system. Unlike the previous Commuter Rail Strategic Plan, boardings forecast for the Year 2030 in the Grand Avenue/BNSF Corridor (2,830) were considerably lower than the forecast (6,450)

for the Union Pacific Railroad (UPRR) Phoenix Subdivision Corridor (or Southeast Corridor), which runs through Tempe, Mesa, Gilbert, and Queen Creek.

However, when the Grand Corridor/BNSF was evaluated as interlined with the Southeast Corridor, this combination showed the highest boarding per mile with the lowest operating and maintenance cost per passenger trip. But, developing these two corridors as an interlined system represents the highest capital cost per mile. Evaluators also note: “While the Grand Avenue Corridor may have the most freight railroad facilities to contend with, it may also provide the greatest benefit to adjacent roadway infrastructure.” The recommendation derived from this study highlights the fact that the Southeast Corridor “...offers the highest ridership by a significant margin, offers substantial travel time savings, and is cost-effective.” Thus, the Southeast Corridor is identified as the best choice for a Start-Up Service.

Nevertheless, use of the UPRR Corridor for commuter rail services represents a potential “...fatal flaw due to costs and/or agreements to get through rail yards in Central Phoenix.” Therefore, the conclusion of evaluators is that the Grand Avenue/BNSF Corridor is the second best option for a start-up commuter rail system. The report points out “the Grand Avenue Corridor offers ridership that is on par with other commuter rail systems in operation throughout the Western US, offers substantial travel time savings, and is moderately cost-effective. Implementation of commuter rail may result in the relocation of some freight facilities, consistent with BNSF Railway Company long-range plans.” In any case, the Grand Avenue/BNSF Corridor is seen as the first or second leg of the commuter rail system when it is implemented.

3.1.16. Peoria Multimodal Transportation Plan

City of Peoria, March 2011

The Peoria Council adopted Resolution No. 2-26, which established the Multi-Modal Transportation Plan as the City’s guiding document for future transit services. This Plan provides guidance for orderly expansion of Peoria’s transit services and includes all modes of transit, including: local bus routes and high-capacity transit options, such as BRT, LRT and commuter rail service. **Table 7** shows the recommended improvements identified in the Plan.

The Plan is constrained according to the availability of the local and regional transportation funding. It frames transit service development in three periods: Short-Term (2011-15), Mid-Term (2016-26), and Long-Term. Long-term extends beyond December, 2026, when Prop 400 funding expires and new funding must be secured.

The Plan also creates new standards for bus stops, transit centers, and P&R lots. A hierarchy of different stops is identified to account for different trip purposes and passenger volumes. The Plan also identifies amenities to be provided at each type of stop, including the addition of art unique to the specific areas served.

Table 7 – Improvements Recommended in the Peoria Multimodal Transportation Plan

Short-Term (2011-15)

Provide additional service on Peoria Avenue Route 106, including Saturday service and improved frequency of service - 30 minutes v. one hour
 Maintain Grand Avenue Limited service to downtown Phoenix
 Improve bus stops at higher ridership/visibility stops for existing routes

Mid-Term (2016-26)

Develop Old Town Transit Center and P&R
 Extend Thunderbird Road Route 138, through Peoria
 Develop new 83rd Avenue route through Peoria, between Phoenix and the existing Arrowhead Transit Center
 Continue to improve bus stops for the Thunderbird Road and 83rd Avenue routes

Long-Term (2027+)

Add additional local bus service by extending the Valley METRO fixed-route bus system into all parts of Peoria
 Add new P&R Lots
 Add new express routes in the northern areas of Peoria
 Add a new Grand Avenue Commuter Rail line from Phoenix to Wittmann

Source: The Peoria Multimodal Transportation Pan at PeoriaAZ.Gov.

3.1.17. Valley METRO Short-Range Transit Program

RPTA/Valley METRO, 2012

The Short-Range Transit Program (SRTP) is an annual publication developed by RPTA/Valley METRO identifies transit service and capital improvements in the region that are programmed in the Transit Life Cycle Program (TLCP) for FY 2012 to 2016. It also provides supporting documentation for regional transit projects included in MAG RTP. Objectives of the SRTP include:

- Document transit service performance from the previous fiscal year.
- Maintain an inventory of the region’s transit capital infrastructure.
- Identify considerations for service adjustments and capital facility needs based on the programmed regional transit investments identified in the MAG RTP and TLCP.

Two transit facility development projects area identified for Peoria in the Grand Avenue Corridor:

- An MAG RTP-funded transit center is planned for the area of Glendale and 59th avenues at Grand Avenue in Glendale. Development of this facility is programmed for the period 2010-2014.

- A MAG RTP-funded park-and-ride is planned for the Glendale downtown area with implementation during the period of 2020-2029. **This facility will complement, augment, or replace existing publicly-owned park and ride lots at the northeast and southwest corners of 59th Avenue and Myrtle Avenue.**
- A transit center is planned for the area of Peoria Avenue and Grand Avenue to provide access to Route 106 – Peoria/Shea and the GL. Implementation of this project to be financed with Proposition 400 funds is scheduled for implementation during the period 2016-2037, but currently is programmed for FY 2015.
- A publicly-owned P&R facility is planned for construction in the area of Peoria Avenue and Grand Avenue to complement the new transit center described above. Implementation of this project to be financed with Proposition 400 funds is scheduled for FY 2018. **This facility will complement, augment, or replace existing park and ride lots at the southwest corner of 84th Avenue and Washington Street and the northeast corner of 84th Avenue and Jefferson Street.**

3.1.18. Greening Lower Grand Avenue, Phoenix, Arizona: Final Report

U.S. Environmental Protection Agency (USEPA), 2012

Phoenix was one of five state capitals selected by the USEPA to participate in a federally-funded study project referred to as “Greening America’s Capitals.” Phoenix received grant assistance for the development of environmentally and economically sustainable designs that would support revitalization of Lower Grand Avenue. The study is intended to serve as an example for other streetscape improvements in arid regions and encompasses Grand Avenue from I-10 to Van Buren Street. Interested community participants have offered complimentary improvement concepts for Van Buren Street east to Central Avenue.

The objective of the study is creation of a plan that would provide the basis for finding and securing appropriate funding. Public “community design workshops” were held in February and March of 2012 to get community and business input regarding the long-term revitalization needs of the study area.

The Final Report presents short-, mid-, and long-term strategies for redevelopment of Lower Grand Avenue. The intent of the USEPA project is to derived plans for making nation’s capitals more attractive and inviting for businesses, residents, and visitors alike. Final design concepts incorporate streetscape and public area improvements to encourage safer pedestrian and bicycle activity (**Figure 11**).

The concepts also include on-street parking areas, while providing space for a future streetcar or trolley system. These adopted improvement concepts would not require changes to the existing street cross-section or curb line. Outside (or curbside) travel lanes would be converted to include some parking and rain gardens. The two inside lanes would be narrowed. Well-defined, prominent crosswalks would be created and combined with widen sidewalks, where needed, and curb “bulb-outs.” These design elements would increase safety of movement for pedestrians along Grand Avenue as well as when crossing Grand Avenue and intersecting streets.

Figure 11 – Streetscape Redesign Option for Lower Grand Avenue



Existing Grand Avenue
 – looking south from
 Fillmore Street



Design Option for Grand Avenue – looking south from Fillmore Street

NOTE:
 The Design Option foresees the 11-foot-wide center turn lane repurposed in the future as a bus lane or a streetcar or trolley line.

Source: Greening Lower Grand Avenue – Phoenix, Arizona, Greening America’s Capitals – A project of the Partnership for Sustainable Communities between the U.S. Environmental Protection Agency (EPA), the U.S. Department of Housing and Urban Development (HUD), and the U.S. Department of Transportation (DOT), U.S. EPA, 2012.

3.2. Relevant Underway/Current Projects/Studies

3.2.1. Grand Avenue Rail Project – Phoenix, Arizona

Grand Avenue Merchant’s Association (GAMA), 2009; Continuing Studies

The Grand Avenue Rail Project (GARP) seeks to return a historic streetcar line to Lower Grand Avenue in downtown Phoenix. The Grand Avenue Merchants’ Association (GAMA) seeks to revitalize the business climate along Lower Grand Avenue and the Arizona Street Railway Museum (ASRM) has the goal of restoring historic streetcars on Grand Avenue. The large swath of unused land controlled by ADOT beneath the I-10 overpass at Grand Avenue is a targeted area for relocation of the Street Railway Museum. According to the GARP website (www.garpaz.org):

The GARP system would be developed over a number of years in a phased manner. The first phase would be to relocate the Trolley Museum and Trolley Shed to its Grand Avenue base, to provide facilities at least equal to those currently occupied by the museum. The tracks, power system, and stations would be added as funding becomes available, with the first leg to the 15th Avenue/Roosevelt intersection and the second leg to the 7th Avenue/Van Buren intersection. It may be possible to extend the rail line an additional half mile along Van Buren in order to connect it to the Central Station traffic node at 1st Avenue, which would enhance GARP by linking it with the entire city bus network as well as the Metro light rail station there.

3.2.2. Grand Avenue Commuter Rail Development Plan

MAG, 2010; Continuing Studies

This study asserts the Grand Avenue corridor is expected to experience a 41 percent increase in population and 52 percent increase in employment by 2030. Planners have concluded that planned roadway improvements and programmed transit service incorporated in the MAG RTP will not forestall worsening congestion in the Grand Avenue Corridor. It is thought that Commuter Rail service in the corridor would improve mobility, particularly for peak period trips. Such a service would provide a reliable and consistent alternative to automobile travel and, thereby, aid in reducing congestion and travel times. **Figure 12** shows the developmental phases defined by planners for Commuter Rail service in the corridor through 2040.

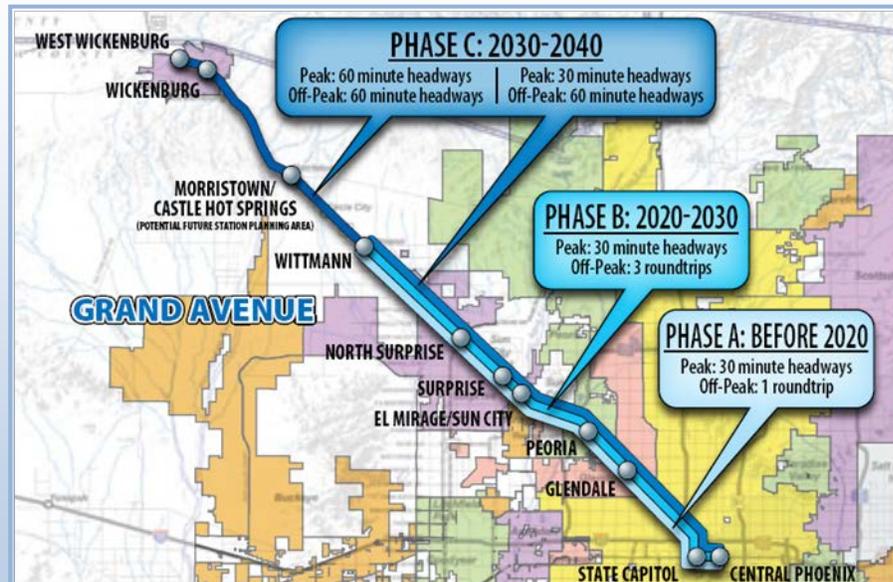
3.2.3. Glendale General Plan 2025: The Next Step

City of Glendale, Arizona, December 1, 2002

The City of Glendale General Plan recognizes that a transit center would improve Downtown access for all people. With regard to ensuring land use and transportation compatibility, the plan includes the objective to “encourage transit-oriented development around transit stations and establish standards for new developments to promote ridership.” The following summarizes the essence of the City’s Transit Plan:

Its focus is on serving transit dependent populations and reducing automobile trips in peak periods. Local bus service is planned to match the level of local bus service being provided on connecting routes to Phoenix including evening and weekend services as well as minimum of 30-minute service. Over the planning period, bus coverage will be expanded to most mile streets in the currently incorporated area and the frequency will be increased on selected routes as demand

**Figure 12 – Proposed Commuter Rail Developmental Phases:
Grand Avenue Corridor**



Source: MAG Grand Avenue Commuter Rail Corridor Development Plan, 2010

and resources permit. Bus shelters with seating and shade, a centrally located transit center and three park-and-ride lots will be constructed to support light rail and express bus service.

- The plan anticipates local bus service on every arterial mile-road in the City east of SR-101L including Grand Avenue.
- The plan identifies four types of transit service with an orientation/relationship to Grand Avenue:
 - Neighborhood Circulators operating east-west on Glendale Avenue from Grand Avenue to the Glendale Municipal Airport and north-south on 59th Avenue from Grand Avenue to Peoria Avenue.
 - LRT service in a corridor east of Downtown bordered by Northern Avenue on the north and Bethany Home Road on the south. **The Glendale Long Range Transportation Plan includes an extension of this starter corridor from Spectrum Mall to Downtown Glendale.**
 - Express Bus service extending eastward along Northern Avenue from Grand Avenue.
 - A Park-and-Ride/Transit Center at or near the Glendale Avenue/59th Avenue intersection. **As noted above, the Glendale City park and ride Lot is located at the northeast and southwest corners of the intersection of 59th and Myrtle avenues; It is served by Route 59, Glendale Urban Shuttle (GUS) I & II, the Grand Avenue Limited (GL).**
- The plan commits the City to supporting alternative modes of travel with the following objectives:

- Operating a multimodal transit system, including bus, LRT, and Dial-a-Ride service.
- Enhancing road and transit systems to reduce congestion and provide access to employment sites.
- Identifying projects to improve bicycle safety and access, including connections with transit service.
- The plan also calls specifically for analyzing transit service options for stimulating growth at Glen Harbor Business Park and the Glendale Municipal Airport as well as planning and funding transit connections to other growth areas, employment centers, and municipal service areas.

3.2.4. General Plan for Phoenix

City of Phoenix, 2002

An overarching goal of the Phoenix General Plan relating to transit is to “expand bus service, construct high-occupancy vehicle (HOV) lanes and build LRT to link village cores, employment centers and major destinations in high demand corridors.” The Circulation Element includes the following observations, proposed improvements, and recommendations may be applicable to this current study:

- “Improved traffic flow on arterials benefits the transit system through higher bus speeds and safer, more convenient travel for passengers.”
- “Provide direct high-occupancy vehicle access to Park-and-Ride lots.”
- “Light rail transit service should be provided in corridors where demand for transit service exceeds that which can reasonably be provided with buses.”
- “Reserve exclusive transit rights of way along the Central Avenue corridor, in primary and secondary cores, and in other locations targeted for fixed-guideway transit.” **Note: The Phoenix High Capacity Transit Study and MAG Regional Transit Framework Study have identified Grand Avenue from the Phoenix CBD to SR-101L as a potential light rail transit corridor.**
- “Create exclusive bike lanes along appropriate arterial and connector streets to supplement the use of local streets for access to transit.” **This is consistent with plans for Grand Avenue developed for other communities to the north.**

This Plan notes that successful development of commuter rail service “will require a collaboration of all participants – primarily the local governments as the development regulator and financial partner, the transit agency as the transit infrastructure builder, and the BNSF Railway Company as the railroad right-of-way owner.” It adds that planned roadway projects to upgrade safety and automobile travel efficiency in the corridor should be pursued, such as additional general purpose lanes and grade separation as well as other improvements that would minimize auto/train conflicts and advance the implementation of a commuter rail system in the corridor.

3.2.5. City of Glendale High Capacity/Light Rail Transit Project

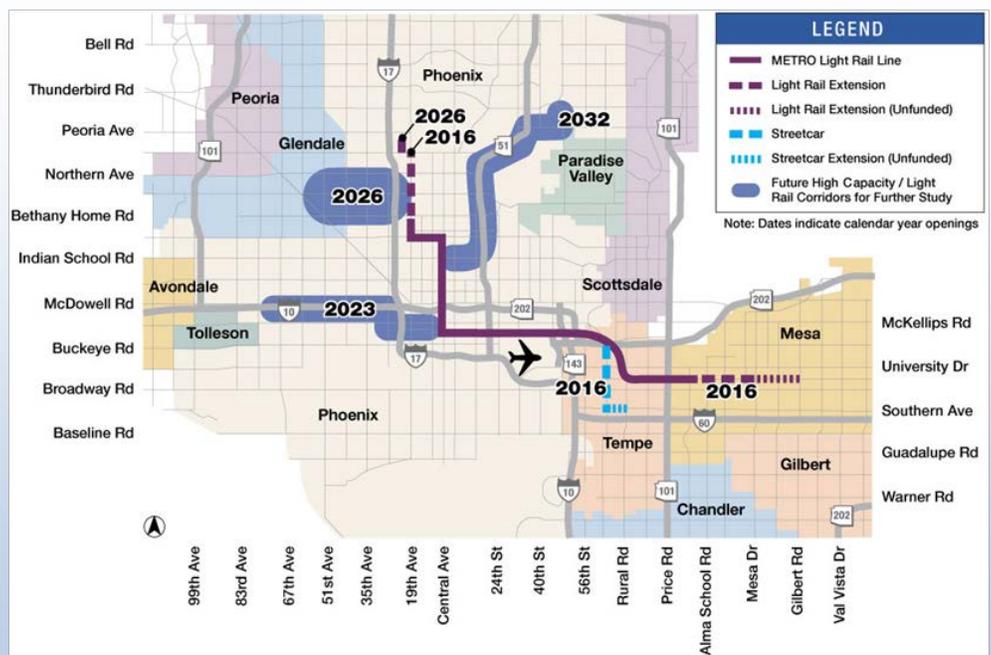
City of Glendale, Underway

Planning is underway for the Glendale High-Capacity/Light Rail Transit Project, as reported by Valley METRO. Current thinking is for the transit service to travel westbound through Phoenix to Glendale with a projected opening date of 2026. Phase I of the Glendale Corridor Alternative Analysis (AA) entails a feasibility assessment and funding analysis of such a service within the corridor centered on Glendale Avenue. The AA will evaluate five potential route options to better understand whether HCT performs better in a freeway or arterial street corridor, or some combination of both. Routes for serving the City include:

- Direct travel through Downtown Glendale, as currently defined in the MAG RTP.
- Other corridors/routes incorporating I-10 and SR-101L freeways.
- Other West Valley arterials.

Phase I will produce a preferred corridor or alignment, which will be subject to further more detailed alignment and mode studies during Phase II of the AA. The Glendale extension is part of Valley METRO’s regional, HCT plan that envisions a total of 57 miles by 2031 (**Figure 13**). The Glendale extension will rely on a mix of federal, regional, and local funding and is supported locally through Phoenix and Glendale transportation sales tax measures and regional Proposition 400 funds.

Figure 13 – Valley METRO’s High-Capacity Transit Plan



Source: Projects and Planning at Valley METRO (www.valleymetro.org)



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Any changes to the planned extension already defined in the MAG RTP must go through a process outlined in Arizona Revised Statutes (ARS) 28-6353 that calls for proposals to be considered by local, county, regional, and state agencies. Consideration of any changes will include representation from elected officials, business interests, and citizen groups as well. Any changes to the MAG RTP then must be approved by the MAG governing Board.

4.0 Transportation System Improvement Programs

4.1. Transportation Improvement Programs (TIPs)

4.1.1. MAG

Transportation projects throughout the region are identified in the MAG TIP. Projects relevant to this current study of the Grand Avenue Corridor are noted below:

- **Multiuse Path (FY 2012-14):** Design, acquire right-of-way for, and construct a multiuse path from Grand Avenue/111th Avenue to Olive Avenue at Agua Fria Ranch Parkway (approximately 117th Avenue).
- **Thunderbird Road – El Mirage Road to Grand Avenue (FY 2013):** Acquisition of right-of-way for roadway widening.
- **Thunderbird Road – El Mirage Road to Grand Avenue (FY 2014-16):** Reconstruct/widen Thunderbird Road.
- **El Mirage Road – Cactus Road to Grand Avenue (FY 2016-21):** Acquire right-of-way and widen to four lanes compared to previous plan for six-lane roadway.

4.1.2. Maricopa County Department of Transportation (MCDOT)

The MCDOT TIP includes the following projects that are within the Grand Avenue Corridor or may have an impact of traffic operations in the corridor:

- **99th Avenue - Olive Avenue to Bell Road ITS (FY 2012):** This project involves installation of a fiber optic cable and wireless technology to provide connectivity for existing traffic signals, mid-block detection, and CCTV cameras, and future ITS devices. The improved system will connect to the MCDOT backbone and provide redundant communication capabilities for other agencies for traffic management applications.
- **Bell Road – SR-303L to 75th Avenue ITS (FY 2012):** The project involves installation of fiber optics and conduit to connect to the existing ITS infrastructure and will result in construction of five dynamic message signs along Bell Road from 114th Avenue to 53rd Avenue.

4.2. Capital Improvement Programs (CIPs)

4.2.1. City of El Mirage

The El Mirage CIP includes the following projects that are within the Grand Avenue Corridor or may have an impact of traffic operations in the corridor:

- *Project Assessment and Environmental Review for Grand Avenue Improvements (Thunderbird and Thompson Ranch roads):* This project is being accomplished by ADOT with an estimated completion

date of 2015. This project is focused on determining the ultimate design for the intersection of Thunderbird Road/Thompson Ranch Road with Grand Avenue.

- *El Mirage Road – Phase 2, Cactus Road to Grand Avenue*: A Concept Summary Report that identifies a preferred alternative for making El Mirage Road a four-lane thoroughfare between Gateway Park and Grand Avenue has been provided to the City for review. Projected completion of this phase is June, 2013. This project, which will include improvements to Thunderbird Road and connection with Grand Avenue, is projected to be completed in 2015.

4.2.2. City of Glendale

No project listed in the current CIP has relevance to the current evaluation of Grand Avenue.

4.2.3. Maricopa Department of Transportation

The MCDOT CIP lists project recently completed and underway through the upcoming five-year period. A review of this document revealed two projects that may impact this current evaluation of Grand Avenue:

- El Mirage Road Improvements from Northern Parkway to Bell Road schedule for FY 2015-FY 2016 are designed to improve traffic flow and accessibility.
- Thunderbird Road between El Mirage Road and Grand Avenue will better accommodate pedestrian and bicycle movements and provide additional turning capacity to/from Grand Avenue, thereby establishing a vital link between El Mirage Road and Grand Avenue.

4.2.4. City of Peoria

One project listed in the CIP Project Update Report of the City of Peoria, dated March 26, 2012, has slight relevance to the current evaluation of Grand Avenue:

- *Grand Avenue Landscaping: Loop 101 to Peoria Avenue* – This is a joint partnership project with ADOT is expected to begin in the Fall 2013. Improvements include: landscaping, street lighting, fencing, sidewalks, and painting of bridge.

The FY 2012-2021 CIP contains two projects relevant to the current study:

- *Grand Avenue Improvements* – Conduits and sleeves to be utilized for future landscape irrigation, electrical system, lighting system, traffic signal interconnect conduits, and sidewalk improvements (at 91st Avenue) have been added to Grand Avenue at City expense as part of the ADOT-funded roadway widening project. These additional improvements are expected to be implemented in the next phase of projects identified in the Grand Avenue MIS Phase II.
- *83rd Avenue/BNSF Railway Crossing Removal* – This is a proposed or potential project that will involve design, utility relocation, extensions, and burying overhead lines (as determined necessary), as well as construction and construction management associated with removing the existing 83rd Avenue/BNSF crossing and traffic signal. The plan calls for the existing 83rd Avenue/Grand Avenue intersection (from

the west) to become a 'T' intersection. 83rd Avenue on the east side of Grand Avenue will be converted to a cul-de-sac.

4.2.5. City of Phoenix

- *Public Transit:* Aside from general expenditures to improve various components of the public transit system (e.g., bus stops, bus pull outs, new buses), there are no public transit projects scheduled for the Grand Avenue Corridor.
- *Street Transportation and Drainage:* The CIP includes general expenditures for various projects, such as bridge inspection, right-of-way, acquisition, and annual guard rail and barrier program, that may or may not affect the Grand Avenue Corridor. The following projects are located in or may impact the Grand Avenue Corridor:
 - General expenditures to improve railroad crossings, as needs are determined (FY 2012-16).
 - Construct upgrade improvements at the Thomas Road and I-17 Traffic Interchange (FY 2016-17).
 - 29th Avenue, south of Thomas Road, Railroad Crossing Improvements (FY 2012-13).
 - Indian School Road retrofit landscaping project between 43rd and 27th avenues (FY 2012).
 - Greening of Lower Grand Avenue is a project to install retrofit landscaping (FY 2012).

4.2.6. City of Surprise

One project listed in the FY 2013 CIP has slight relevance to the current evaluation of Grand Avenue: *Bell Road Pedestrian Enhancements* – Install sidewalks along Bell Road east of Grand Avenue to Avenue of the Arts.

4.2.7. Town of Youngtown

The FY 2011-12 Budget Summary includes no street/roadway improvements.

5.0 Conclusion

This literature review examined numerous previous projects/studies conducted within the US-60/Grand Avenue corridor, as well as several that are currently underway or continuing iterations of past studies. An example of the latter regards commuter rail, which has been addressed at different levels in several studies, each building on the previous. During the course of this examination, an attempt has been made to identify the status of recommended actions in the various studies, relying on readily available information.

Since 1998, there have been 54 completed projects or studies on this section of US-60/Grand Avenue, including 40 roadway related projects/studies and 24 transit related projects/studies. The significant number of studies along US-60/Grand Avenue has created an environment that has not provided consistent direction on addressing corridor needs and values. However, the theme of US-60/Grand Avenue has consistently migrated over time:

- During the 1980's - 1990's, the consistent view of US-60/Grand Avenue was related to freeway type mobility focusing on auto oriented travel behavior.
- During the 1990's - 2000's, the view shifted from freeway oriented traffic movement to expressway oriented traffic movement, still focusing on auto oriented travel behavior.
- During the 2000's – present, US-60/Grand Avenue shifted to an arterial focus, providing an environment to accommodate person mobility which includes transit and auto related mobility options.

The description of projects/studies presented herein provides insight on past and current efforts to attain high capacity and safe operations within the corridor, and for advancing the current discussion of corridor mobility and access management. This historical information base will support a greater understanding of issues impacting achievement of an ultimate vision for the US-60/Grand Avenue corridor and aid in adjusting/refining design treatments, defining opportunities of solutions, and setting realistic expectations.

The shift in focus over time for US-60/Grand Avenue to function as an arterial type of corridor heightens the importance of each access management decision made on the corridor, and how transit can ultimately be folded into the functionality to improve upon person-moving capacity and quality.



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List of Past Studies



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APPENDIX TM2-1

List of Past Studies

**US-60/Grand Avenue COMPASS
Past Studies Summary Table**

ID	Document				Source	
	Title	Description	Author	Dated	Provider	Collected By
B-002	Phoenix West High Capacity Transit Study		Valley Metro	Jul-11	B&N	JB
B-003	El Mirage Road - Northern to Bell Road	DCR, Plans, Environmental	MCDOT / Baker / Wilson / AMEC	Dec-09	B&N	JB
B-004	Grand Avenue Feasibility Study - Loop 202 to Loop 101		ADOT	2008	B&N	JB
B-005	2007 MAG Regional Travel Time & Travel Speed Study		MAG / Jacobs	Apr-08	B&N	JB
B-006	2010 City of Peoria Access Management Guidelines		City of Peoria	2010	B&N	JB
B-007	MAG Access Management Primer		MAG / B&N		B&N	JB
B-008	Access Management Primer & Concepts		MAG & B&N	Nov-11	B&N	JB
B-009	2011 City of Peoria Access Management Guidelines (Also See B-006)		City of Peoria	2011	B&N	JB
B-010	2011 Sustainable Transportation and Land Use Integration Study		MAG	Jul-05	B&N	JB
B-011	Grand Avenue Commuter Rail Corridor Development Plan					
B-012	Commuter Rail		MAG		B&N	JB
B-013	Grand Avenue MIS - Phase II Final Report	02/06 Recommended Improvements		Feb-13	B&N	JB
B-015	NCHRP Synthesis 271 - Traffic Signal Operations Near Highway Rail Grade Crossings					
B-016	Grand Avenue (US 60) Traffic Signal Coordination Timing		Kimley-Horn	Mar-13	B&N	JB
B-018	35th Avenue/Indian School/Grand Avenue At-Grade Railroad Crossing Safety and Improvement Analysis		Lee Engineering	Nov-08		JB
B-019	27th Avenue/Thomas Road/Grand Avenue At-Grade Railroad Crossing Safety and Improvement Analysis		Lee Engineering	Nov-08		JB
W-001	US-60/Grand Ave Access Mgmt Plan SR-303L/Estrella Frwy to SR-74	Access Management Plan	MAG	Jan-10	Wilson	DM
W-002	Reducing Congestion in Lee County, Florida	Queue Jumpers	Reason Policy Study 374 - C. Swenson & R. Poole	Feb-09	Wilson	JT
W-003	Widening of Grand Avenue to a Continuous Six-Lane Arterial Street	Final DCR - SR 303L to 99th Ave	ADOT / DMJM Harris / AECOM	Jan-07	Wilson	JT
W-004	Grand Avenue Major Investment Study - Phase II	SR 101L to McDowell Road	MAG	Feb-06	Wilson	JT
W-005	Grand Avenue Corridor Study	Beardsley Canal to 7th Avenue/Van Buren	MAG	May-98	Wilson	JT
W-006	Grand Avenue Limited Expressway Design Concept Study for the Glendale Area		Glendale / URS	Dec-03	Wilson	JT
W-007	Grand Avenue Major investment Study (MIS) Environmental Overview		ADOT / Logan Simpson	Sep-99	Wilson	JT
W-008	The Grand Vision - Grand Avenue Image Improvement Study		Glendale / Todd & Associates	May-01	Wilson	JT
W-009	US 60, Grand Avenue - 43rd Avenue to McDowell Road	Final DCR	ADOT / DMJM Harris / AECOM	Oct-08	Wilson	JT
W-010	US 60, Grand Avenue - 71st Avenue to 43rd Avenue	Final DCR	ADOT / DMJM Harris / AECOM	Oct-08	Wilson	JT
W-011	US 60 Grand Avenue - 99th Avenue to 83rd Avenue	Final PA	ADOT / Stanley Consultants	Sep-05	Wilson	JT
W-012	US 60, Grand Avenue - SR 101L to 71st Avenue (Peoria Segment)	Utility Report Stage V (100%) Design	ADOT / Kimley-Horn	Nov-11	Wilson	JT
W-013	US 60, Grand Avenue - SR 101L to 71st Avenue	Final DCR	ADOT / DMJM Harris / AECOM	Dec-08	Wilson	JT
W-014	US 60 - Grand Avenue: SR 101L to McDowell Road	Final Drainage Report	ADOT / Kimley-Horn	Aug-11	Wilson	JT
W-015	US 60, Grand Avenue - SR 101L to McDowell Road	Utility Report State III (60%) Design	ADOT / Kimley-Horn	Sep-09	Wilson	JT
W-016	US 60, Grand Avenue - SR 303 to 99th Avenue, Segment 1	Final Drainage Report	ADOT / Dibble Engineering	Nov-08	Wilson	JT
W-017	US 60, Grand Avenue - SR 303L to SR 101L	Revised - Draft US 60 Imp. Feasibility Rpt.	ADOT / DMJM Harris / AECOM	Nov-08	Wilson	JT
W-018	NCHRP State of the Practice in Highway Access Management		Transportation Research Board	2010	Wilson	JT
W-019	ADOT Highways Program, 2013-2017	5-Yr Transportation Facilities Const. Program	ADOT	Jun-12	Wilson	LS
W-020	MAG Regional Transit Framework, Final Report and Executive Summary	Prioritized transit needs through 2030	MAG/Valley Metro/BQAZ	Oct-09	Wilson	LS
W-021	Northern Parkway DCR, Dft Chapter 1	Design Concept Report for Northern Pkwy	Glendale/URS	Jan-08	Wilson	LS
W-022	El Mirage Road, Northern Avenue to Bell Road, Final Report	Corridor Improvement Study	MCDOT/Kirkham Michael	Feb-07	Wilson	LS
W-023	El Mirage Road Improvements, Northern Ave to Grand Ave	Project Activities Review FY11-Fy15	MCDOT	Nov-12	Wilson	LS
W-024	El Mirage Road, Grand Avenue Linkage at Thunderbird Road	Project Listings FY 2012-2016	MCDOT	Jun-12	Wilson	LS
W-025	US 60 (Grand Avenue)	Fact Sheet, May 2010	ADOT	May-10	Wilson	LS
W-026	Comprehensive Arterial Bus Rapid Transit Planning Study, Final Report	Final Recommendations, BRT Planning	Valley Metro/RPTA & Parsons Brinckerhoff	Sep-09	Wilson	LS
W-027	Regional Paratransit Study, Final Report	Comprehensive Study of Paratransit Services	Valley Metro/RPTA & TranSystems Corp, et al	Jun-08	Wilson	LS
W-028	Short Range Transit Plan, FY 2012-2016	Identifies Transit Svc and Capital Needs for 5 Yrs	Valley Metro/RPTA	May-12	Wilson	LS
W-029	US 60 (Grand Avenue) Frontage Road	Maintenance Alert: Through May 2011	ADOT	May-11	Wilson	LS
W-030	Grand Manor Condominiums, SE Corner of 88th Drive & Grand Avenue	Planned Area Development Approval	SKS Grand Manor, LLC, et al	Aug-09	Wilson	LS
W-031	Greening Lower Grand Avenue, Phoenix, Arizona	Greening Amreica's Capitals	US Environmental Protection Agency	2012	Wilson	LS
W-032	Transportation Improvement Program, FY 2012-20176	5-Yrs of Capital Improvements to Cnty Rdwys	MCDOT	2012	Wilson	LS
W-033	Old Town Peoria Revitalization Plan	Revitalization Strategy for Peoria's Old Town	City of Peoria	No Date	Wilson	LS
W-034	Park-and-Ride Reprioritization Plan, Final Report	Alignment of P&R Projects with RTP	Valley Metro/RPTA & Parsons Brinckerhoff	Apr-08	Wilson	LS
W-035	Peoria Avenue FY 2012-2021 Capital Improvement Program	83rd Avenue & BNSF Railroad Crossing Removal	City of Peoria	No Date	Wilson	LS

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Past Studies Summary Table**

ID	Document				Source	
	Title	Description	Author	Dated	Provider	Collected By
W-036	Peoria Avenue FY 2012-2021 Capital Improvement Program	Grand Avenue Landscaping: L101 to Peoria Av	City of Peoria	No Date	Wilson	LS
W-037	Peoria Multi-modal Transportation Plan, Final Report	Development of a Balanced Transportation Sys	City of Peoria & Nelson\Nygaard, et al	Mar-11	Wilson	LS
W-038	Old Town Specific Area Plan, 2011	Vision for Redvelopment & Revitalization	City of Peoria	2011	Wilson	LS
W-039	General Plan Circulaton Element	Discusses Alternatives to SOV travel	City of Phoenix	Aug-10	Wilson	LS
W-040	General Plan Circulaton Element Appendix	Background Information for Circulaton Element	City of Phoenix	Aug-10	Wilson	LS
W-041	US 60-Grand Avenue_SR 101L to McDowell, Glendale Segment Maps, 061108	ADOT Fact Sheet: DCR & Environmental Study	ADOT	Jun-08	Wilson	LS
W-042	US 60-Grand Avenue_SR 101L to McDowell, Glendale Segment Projects, 061108	ADOT Fact Sheet: DCR & Environmental Study	ADOT	Jun-08	Wilson	LS
W-043	US 60-Grand Avenue_SR 101L to McDowell, Peoria Segment Projects, 061108	ADOT Fact Sheet: DCR & Environmental Study	ADOT	Jun-08	Wilson	LS
W-044	US 60-Grand Avenue_SR 101L to McDowell, Peoria Segment Projects, 061108	ADOT Fact Sheet: DCR & Environmental Study	ADOT	Jun-08	Wilson	LS
W-045	US 60-Grand Avenue_SR 101L to McDowell, Phoenix Segment Projects, 061108	ADOT Fact Sheet: DCR & Environmental Study	ADOT	Jun-08	Wilson	LS
W-046	US 60-Grand Avenue_SR 101L to McDowell, Phoenix Segment Projects, 061108	ADOT Fact Sheet: DCR & Environmental Study	ADOT	Jun-08	Wilson	LS
W-047	Transportation Needs Study, Phase I and II, Drawings and Cost, Final Report	Preliminary Engineering & Costs for City TIP	City of Peoria/URS	Apr-05	Wilson	LS
W-048	US 60 Corridor Bus Service	Valley Metro System Map	Valley Metro	Jul-12	Wilson	LS
W-049	US 60-Downtown Phoenix Service Links	Valley Metro System Map	Valley Metro	Jul-12	Wilson	LS
W-050	US 60/Grand Avenue Planned Improvements	Projects: Phoenix Metro Area	ADOT Projects Web Site, Vly Fwys, US60/Grand Ave	Oct-12	Wilson	LS
W-051	Youngtown General Plan	Guidance for Future Land Use & Development	Town of Youngtown/HDR Engineering, Inc.	2003	Wilson	LS
P-001	Are We There Yet? The Role of Transp. In Driving AZ's Global Economy		Arizona Forward	Oct-12	PSA	PF
P-002	Land Use and Traffic Congestion	Final Report 618	ADOT Research Center	Mar-12	PSA	PF