



**US-60/Grand Avenue**  
Corridor Optimization, Access Management, and  
System Study (COMPASS)

Loop 303 to Interstate 10

**Work Plan**

**FINAL**

Prepared for:



Maricopa Association of Governments

Prepared by:

**BURGESS & NIPLE**

**December 2012**



**Table of Contents**

1.0 Project Introduction ..... 1

2.0 Project Scope, Schedule, and Budget ..... 1

3.0 Deliverables..... 2

4.0 Communications Plan ..... 3

5.0 QA/QC Plan..... 4

**List of Tables**

Table 1 – Project Deliverables ..... 2

Table 2 – Key Team Contact Information ..... 3

Table 3 – Project Staff Contact Information..... 3

**Appendices**

- Appendix WP-1 Contract Scope, Schedule, and Budget
- Appendix WP-2 Detailed Schedule



## 1.0 Project Introduction

The purpose of the US-60/Grand Avenue Corridor Optimization and Access Management Plan, and System Study (COMPASS) is to develop a vision that embraces the important regional function of US-60/Grand Avenue, along with defining the operational character, establishing an access management system, developing guidelines, and outlining a process for moving forward with improvements. This corridor begins at the traffic interchange with State Route 303 Loop (SR-303L) in the City of Surprise at US-60 reference marker 138.051 and ends at the Willetta Street intersection in the City of Phoenix at US-60X reference marker 161.880. The corridor 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.

A Partnering Charter was signed on February 22, 2012 by the political leadership of the communities within the 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.

## 2.0 Project Scope, Schedule, and Budget

The project is scheduled to be completed by May 31, 2014, with an \$850,000 budget. The project scope, contracted schedule, and budget are included in **Appendix WP-1**. A detailed, target project schedule is included as **Appendices WP-2**.

### 3.0 Deliverables

The project deliverables are outlined by task in **Table 1**. The deliverables are due by the completion of the associated task.

<b>Table 1 – Project Deliverables</b>	
<b>Task</b>	<b>Associated Deliverables</b>
Initiate Project	<ul style="list-style-type: none"> <li>▪ Final Scope of Work, Schedule, and Budget</li> <li>▪ Work Plan</li> <li>▪ SharePoint Website</li> <li>▪ Operating Principles, Mission Statement, Goals, and Objectives</li> </ul>
Develop Stakeholder Involvement Plan	<ul style="list-style-type: none"> <li>▪ Stakeholder Involvement Plan</li> </ul>
Perform Existing Conditions Analysis	<ul style="list-style-type: none"> <li>▪ Compilation of Traffic Data</li> <li>▪ TM 1: Existing Conditions Findings</li> <li>▪ Map Series</li> </ul>
Review Past Studies and Identify Recurring Themes	<ul style="list-style-type: none"> <li>▪ TM 2: Grand Avenue Literature Review</li> <li>▪ TM 3: National Case Study Review</li> <li>▪ TM 4: State of the Practice Assessment</li> </ul>
Formulate Corridor Goals and Visions	<ul style="list-style-type: none"> <li>▪ Memorandum of Understanding Documenting Consensus Items</li> </ul>
Establish Alternatives	<ul style="list-style-type: none"> <li>▪ TM 5: Corridor Alternatives</li> </ul>
Analyze Alternatives and Develop Corridor Optimization Recommendation	<ul style="list-style-type: none"> <li>▪ TM 6: Alternatives Analysis and Recommendations</li> </ul>
Establish Access Management Plan and Policies	<ul style="list-style-type: none"> <li>• US-60/Grand Avenue Corridor Access Management Plan</li> </ul>
Develop COMPASS Implementation Plan	<ul style="list-style-type: none"> <li>▪ US-60/Grand Avenue Corridor Optimization Implementation Plan</li> <li>▪ Local Access Management Decision-Making Tool</li> <li>▪ Access Management Plan Ordinance Template</li> </ul>
Document Project	<ul style="list-style-type: none"> <li>▪ Executive Summary and Final Report</li> <li>▪ Illustrative Poster of Study Findings</li> </ul>

TM=Technical Memorandum

## 4.0 Communications Plan

This project includes a tiered approach to communication. Three key groups have been identified: Project Team, Planning Partners, and Stakeholders.

The Project Team includes staff from the Maricopa Association of Governments (MAG), prime firm Burgess & Niple (B&N), and subconsultants Wilson & Company (Wilson), Phil Demosthenes (PBD), Partners for Strategic Action (PSA), and ESI Corporation (ESI).

Bob Hazlett, PE, is the MAG project manager. Jason Pagnard, PE, is the consultant team project manager. He will lead efforts contributed by B&N, as well as the entire consultant team. Key team members, and their respective contact information, is listed in **Table 2**.

<b>Table 2 – Key Team Contact Information</b>			
<b>Contact</b>	<b>Firm</b>	<b>Phone</b>	<b>Email</b>
Bob Hazlett	MAG	(602) 452-5026	bhazlett@azmag.gov
Jason Pagnard	B&N	(602) 244-8100 ext. 5332	Jason.Pagnard@burgessniple.com
Dan Marum	Wilson	(602) 283-2702	Dan.Marum@wilsonco.com
Phil Demosthenes	PBD	(303) 349-9497	pdemos@ecentral.com
Peggy Fiandaca	PSA	(480) 816-1811	peggy@psaplanning.com
Judie Scalise	ESI	(602) 265-6120 ext. 160	jascalise@esicorp.net

Additional US-60/Grand Avenue project staff includes the individuals listed in **Table 3**:

<b>Table 3 – Project Staff Contact Information</b>			
<b>Contact</b>	<b>Firm</b>	<b>Phone</b>	<b>Email</b>
Jamie Blakeman	B&N	(602) 244-8100 ext. 5321	Jamie.Blakeman@burgessniple.com
Brian Toombs	B&N	(602) 244-8100 ext. 1543	Brian.Toombs@burgessniple.com
Todd Cencimino	B&N	(602) 244-8100 ext. 5324	Todd.Cencimino@burgessniple.com
Steve Thieken	B&N	(602) 244-8100 ext. 1356	Steve.Thieken@burgessniple.com
Ravi Ambadipudi	B&N	(602) 244-8100 ext. 1440	Ravi.Ambadipudi@burgessniple.com
Kris Popovich	B&N	(602) 244-8100 ext. 1501	Charles.Popovich@burgessniple.com
Jim Townsend	Wilson	(816) 701-3108	Jim.Townsend@wilsonco.com
Alan Ferreira	Wilson	(602) 283-2718	Alan.Ferreira@wilsonco.com
Amy Moran	Wilson	(602) 283-2722	Amy.Moran@wilsonco.com
Audra Thomas	PSA	(480) 816-1811	audra@psaplanning.com



The involvement and active participation of the Planning Partners is vital to the success of the project. The Project Team will engage the PPG throughout, and to enhance communication efforts between the Project Team and Planning Partners, a project SharePoint site will be developed. The Planning Partners include:

- City of Surprise
- City of El Mirage
- Town of Youngtown
- City of Peoria
- City of Glendale
- City of Phoenix
- Maricopa County
- Arizona Department of Transportation

Project stakeholders include property owners, commuters, businesses, residents, and other affected parties. B&N will develop a Stakeholder Involvement Plan (Task 2) to address communication with stakeholders.

General communication practices for the Project Team are outlined below:

- Meeting summaries will generally be issued within seven days after a meeting.
- Project Team meetings will be scheduled as necessary, beginning with an internal kickoff meeting.
- Contact with MAG will go through Jason Pagnard. Direct MAG contact will include cc to Jason Pagnard.

## **5.0 Quality Assurance/Quality Control (QA/QC) Plan**

Assuring quality is the responsibility of the consultant project manager, Jason Pagnard, and the project principal, Ed Muccillo (designated QA/QC manager). To maintain appropriate perspective, Ed Muccillo will not be involved in the day-to-day development of materials. Ed may delegate the QA/QC review of documents/deliverables to other technical staff, depending on appropriate expertise.

Jason will coordinate both B&N and subconsultant staff to assure continuity between work products. Review of documents will be as follows. Subconsultant work products will be reviewed by a staff member, who specializes in the relevant field, not directly engaged in developing the work product. The subconsultant work product will then be transmitted to B&N for review by Jason and/or Ed. B&N work products will be reviewed by a staff member not directly involved in the preparation of the work product, before final review by Jason Pagnard and/or Ed Muccillo.

Primary work products, in final draft form, will be circulated to the Planning Partners via the SharePoint website. Once documents are posted for Planning Partner review, an e-mail notification will be sent stating a document is available for review. The Planning Partner review period will typically be two weeks. The e-mail notification will state the review period and request all comments be sent prior its close. Comments will be addressed within a reasonable timeframe, typically two weeks of their receipt, and then the document will be finalized.



# **APPENDIX WP-1**

## **Contract Scope, Schedule, and Budget**

## APPENDIX A

### SCOPE OF SERVICES

#### MARICOPA ASSOCIATION OF GOVERNMENTS (MAG)

#### US-60/GRAND AVENUE CORRIDOR OPTIMIZATION, ACCESS MANAGEMENT PLAN, AND SYSTEM STUDY (COMPASS)

##### I. WORK PLANS AND TASKS

For the purposes of this study, the CONSULTANT will be conducting a COMPASS project for the US-60/Grand Avenue corridor. This corridor begins at the traffic interchange with State Route 303 Loop (SR-303L) in Surprise, Arizona at US-60 reference marker 138.051 (expressed in miles) and ends at the Willetta Street intersection in Phoenix, Arizona at US-60X reference marker 161.880 (expressed in miles). The corridor passes through portions of Surprise, Arizona, El Mirage, Arizona, Youngtown, Arizona, Peoria, Arizona, Glendale, Arizona, Phoenix, Arizona, and unincorporated Maricopa County, Arizona.

The corridor under study, US-60/Grand Avenue, is operated and maintained by the Arizona Department of Transportation (ADOT). The purposes of this COMPASS project are for developing a long-range plan of the roadway for the limits described above.

A Partnering Charter was signed on February 22, 2012 by the political leadership of the communities within the COMPASS corridor. The outcomes of this technical study will meet the goals 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.

**Task 1: Initiate Project**

**Purpose**

To set the administrative framework for initiating the project for developing project vision, goals, and objectives.

For purposes of this project, a Planning Partners team has been established by MAG to oversee project development. Representatives to this team are from the following agencies:

- City of Surprise, Arizona
- City of El Mirage, Arizona
- City of Youngtown, Arizona
- City of Peoria, Arizona
- City of Glendale, Arizona
- City of Phoenix, Arizona
- Maricopa County Department of Transportation
- Arizona Department of Transportation

MAG will maintain membership for this team. All communications by the CONSULTANT to this team will be accomplished through the MAG project manager or designee.

The CONSULTANT will conduct a team kickoff meeting following a notice to proceed from MAG. Following the team kickoff meeting, the CONSULTANT and MAG staff will conduct the first Planning Partners meeting to review and discuss the final project scope of work and schedule. The initial project operating principles, mission statement, goals, and objectives to guide the planning process will be discussed at this meeting.

The CONSULTANT will develop a SharePoint project website in order to facilitate communication between the CONSULTANT and MAG staff.

The CONSULTANT will develop a Work Plan that will contain of the following sections:

- Basic Project Information
- Scope of Services, Schedule, Budget (final)
- Communications Plan
- Goals and Objectives
- Deliverables
- QA/QC Plan

As part of the QA/QC Plan, the CONSULTANT will identify a process by which this project's technical memorandum, documents, and mapping can be reviewed. This process must account for working with the members of this project's Planning Partners, and a schedule for review and comment resolution.

## **Task 2: Develop Stakeholder Involvement Plan**

### **Purpose**

To develop a tiered approach to stakeholder outreach based on project issues.

The CONSULTANT will develop the stakeholder involvement plan following coordination with MAG staff to determine project engagement goals and constituencies and also to take into consideration other relevant planning efforts underway in the region impacting the corridor.

The engagement effort will take a “tiered approach” for outreach based on the project issues identified. The CONSULTANT will use available assets and focus on electronic media, when practical, to transmit project information and education at multiple points throughout the process. The outreach approach will be broad and inclusive, focused on providing a variety of ways to provide input and involving several levels of groups. However, information about the project and process will be available to the public. The following toolbox of activities are proposed:

*Working Group Structure* – The CONSULTANT will work closely with the Planning Partners and the Study Review Team (“SRT”) who will be determined after the project begins throughout the process. An electronic questionnaire will be distributed to solicit input and track consensus, and will be distributed to the Planning Partners following every meeting. Electronic questionnaires will be used to solicit input from the SRT at key points in the process.

*Stakeholder Focus Groups/Interviews* – The CONSULTANT will organize and facilitate stakeholder focus groups in an effort to understand issues and work toward consensus solutions. Potential stakeholder focus groups may include businesses, economic development interests, property owners, and transportation service providers. At least one round of focus groups is anticipated. The CONSULTANT will also work with MAG to set up one-on-one presentations with key leaders within the study area.

*Corridor Subarea-Based Dialogues* – The CONSULTANT will organize and conduct up to four corridor subarea-based dialogues to identify and discuss issues related to a specific area. These dialogues will be held early in the process. The intent of the dialogues is to focus on the issues and opportunities within a specific geographic subarea along the US-60/Grand Avenue corridor. Invitations will be sent to individuals (landowners, agency representatives, businesses, officials) with a specific interest in the particular area of US-60/Grand Avenue. It is anticipated that US-60/Grand Avenue will be divided into four areas for this purpose. These differ from the focus groups/interviews because they are geographic-based (e.g. northern corridor area) instead of interest-based (e.g. service providers).

*Corridor Vision/Design Workshop* – The CONSULTANT will organize and conduct a workshop to finalize the corridor vision, goals and objectives and identify a set of refined multimodal alternatives. The goal is for participants to work cooperatively to find innovative solutions to an issue(s) in a setting where the time limit encourages quick, open, and candid discussion. The charrette outcome will be the consensus vision framework and refined multimodal transportation alternatives that will be evaluated. The workshop will also include an educational component on the benefits and techniques of access management.

*Presentations* – The CONSULTANT will work closely with MAG in preparation for formal committee, city council and agency presentations that might be conducted during the process or at the approval stage.

*Communication Efforts* – The CONSULTANT will utilize the following recommended activities:

- *Project Database* – A database of stakeholders, landowners, citizens and interested parties within the study area will be developed to notify people about the project and upcoming events.
- *Project Website* – Project information will be provided for upload to the MAG project website.
- *Educational Materials* – These will include a project fact sheet, informational materials, presentations and graphics.

*Comprehensive Engagement Matrix* – The CONSULTANT will maintain a comprehensive engagement matrix/table that tracks all outreach efforts, input received, and the group/interest represented and their approximate geographic location. Information in the matrix will be collected in anticipation of future National Environmental Protection Act (NEPA) environmental projects resulting from this project's outcomes and recommendations.

### **Task 3: Perform Existing Conditions Analysis**

#### Purpose

To identify, collect, and analyze existing conditions/information to assess the study area issues, opportunities, and constraints.

The CONSULTANT will review available existing data from MAG, Planning Partners, and other sources; and create an inventory including the date, type, quality, and usefulness of the data. The findings will be summarized into a database/table for review and discussion. Visual depictions of existing conditions will be developed and provided in pdf format. A regression analysis will be performed to review the variables that cause congestion and safety issues. Information from the access inventory and crash analysis below will become independent variables in the regression analysis of safety and congestion in the corridor. Travel time and delay will become dependent variables in the regression analysis of corridor factors that influence these measures.

*Field Observation* – The CONSULTANT will perform a project area tour along the corridor in both directions, including stops at key locations.

*Access Inventory* – An inventory will be prepared of existing access points to US-60/Grand Avenue. The inventory will include location, geometric design characteristics, traffic control, allowable traffic movements, median types, parcel/property type served, and other access related features. Parcel information will include ownership, current land use, and zoning of abutting parcels. Access conditions will be compared to state of the practice access management guidelines and recommendations, and areas of deficient access design will be identified. This includes identifying ownership that currently or in the future will require direct access to US-60/Grand Avenue due to the lack of reasonable alternative access to a different road. The inventory will document and incorporate the planned improvements by ADOT to consolidate and remove access in the near term. This inventory will include all local, collector, and arterial facilities that access the corridor.

*Geometric Design Inventory* – The current and planned geometric design characteristics of the corridor will be inventoried from available existing information. This includes existing lane widths, shoulder widths, design speeds, vertical clearances, right-of-way widths, and other pertinent data for the corridor. This effort will also include basic, pertinent railroad crossing information.

*Red Flag (ATLAS) Data Gathering* – The CONSULTANT will perform a generalized overview based on available existing data to provide a background for the evaluation of potential impacts of alternative improvement recommendations. Topics will include, but not necessarily be limited to: environmental

features; socioeconomic characteristics; land ownership, zoning, physical elements including drainage and utilities; and sensitive natural environment qualities of the corridor. MAG will provide the CONSULTANT the most recent aerial database/photography.

*Traffic Operations* – A microsimulation model in TransModeler will be developed to assess current traffic operations and to establish base case conditions. Analysis will consist of a variety of measures of effectiveness. Typical measures based on Highway Capacity Manual (HCM) methods to document performance are anticipated to provide a common and consistent language for communication between agencies. Two-dimensional visualizations of the TransModeler results will be reviewed to verify that the model is producing reasonable simulations of current conditions.

To evaluate complex areas of traffic operations within the corridor, such as intersections, interchanges, and weaves, the CONSULTANT will use the recently developed and completed Inner Loop TransModeler Model provided by MAG. The CONSULTANT assumes that this MAG model network includes US-60/Grand Avenue east of 99th Avenue, leaving a significant portion of the COMPASS study area outside of those limits. The CONSULTANT will create a subarea network for the COMPASS study corridor from the MAG TransModeler model. Enhancements to the subarea network extracted from this model will be made to include the remaining COMPASS study limit to SR-303L. The enhancements will be limited to include just the signalized intersections and interchanges on US-60/Grand Avenue and will not include microsimulation of adjacent intersections on side streets or “parallel” routes to Grand Avenue.

Depending on the nature of the analysis to be performed, the CONSULTANT will identify areas of the subarea network to be modeled in a microscopic setting and areas to be modeled in a mesoscopic setting. Microscopic areas will consist of specific operations of intersections and interchanges on Grand Avenue, and mesoscopic areas will consist of traffic impacts to areas at a minimum one-half mile beyond of US-60/Grand Avenue itself.

It is assumed that traffic counts from recent years will be available from MAG at intersections/interchanges to be modeled within the study limits. MAG will provide field signal timing plans for use with the model development. If the field timing plans cannot be imported into TransModeler, optimized timing plans will be incorporated into the models.

*Crash Analysis* – GIS based crash data, for the most recent three year period, provided by the Arizona Department of Transportation and/or MAG will be utilized to develop a basic “hot spot” analysis summary for the study area. Emphasis will be placed on identifying the correlation between geometric and access characteristics and crashes in the corridor. Tabular summaries and maps will be produced to summarize data and highlight problem areas.

*Socioeconomic Conditions* – The CONSULTANT will identify and coordinate land use and economic scenarios with MAG staff that might be realized in order to fine-tune the MAG transportation model.

A summary of the Existing Conditions Analysis will be provided in Technical Memorandum 1.

#### **Task 4: Review Past Studies and Identify Recurring Themes**

##### **Purpose**

To review the study corridor, identify best practices from around the country, and compare and contrast those with the study corridor.

*Literature Review* – The CONSULTANT will work with MAG staff and the Planning Partners to identify and collect past studies of the corridor. From these documents, the CONSULTANT will perform a

literature review and document the findings in Technical Memorandum 2. The literature review will create a record of planning activities and address common themes and solutions, as well as fatal flaws identified in the previous studies. In support of this effort, the CONSULTANT will prepare an inventory of relevant information from relevant studies that have been completed over the past ten years.

*Case Study* – The CONSULTANT will develop a list of potential candidates for a case study review to compare the US-60/Grand Avenue study area to other corridors and research strategies and techniques. Working in conjunction with the MAG Project Manager, two to four candidates will be selected. The selected corridors will be studied for elements to be defined in conjunction with MAG staff. Elements may include how urban and suburban areas are treated, corridor operations, interagency coordination roles and efforts, and/or lessons learned. Findings from these case studies will be documented in Technical Memorandum 3.

*State of Practice Assessment* – The CONSULTANT, building on the access inventory efforts under Task 3, will develop a state of the practice assessment for the US-60/Grand Avenue corridor, based on direction from the MAG Project Manager and the Planning Partners. The contents will likely be a combination of legal issues and practice review at the state, regional, and local levels. Findings from this State of the Practice Assessment will be documented in Technical Memorandum 4.

### **Task 5: Formulate Corridor Goals and Visions**

#### **Purpose**

To refine corridor vision, goals, and objectives identified in the first task to direct alternatives development.

**Define Corridor Goals and Visions** – The CONSULTANT will work through the outreach efforts defined under Task 2 to create the corridor vision that will drive the identification of alternatives and guide the initial screening process. The outreach effort that will be used to define the Corridor Goals and Visions includes the Development Forums, Stakeholder Focus Group/Interviews, Corridor Subarea-Based Dialogues, and Corridor Vision/Design Charrette. Each of these facilitated efforts, in addition to the committee structure, will be designed to ensure a consensus on the Corridor Goals and Visions. This effort will include a definition of items such as:

- Functional classification
- Access classifications
- Access control
- Operations
- Multi-modal corridor characteristics

**Refine Objectives** – The CONSULTANT will conduct outreach efforts developed under Task 2 to create the comprehensive list of objectives. The objectives and guiding principals will be drafted into a memorandum of understanding to be agreed upon by Planning Partners prior to the development of alternatives.

## **ESTABLISH CORRIDOR OPTIMIZATION RECOMMENDATION**

### **Task 6: Establish Alternatives**

#### **Purpose**

To develop up to three alternatives, in addition to a no-build alternative, for detailed analysis. The need for three alternatives will be a function of the project's final goals and objectives identified in the previous task.

The CONSULTANT will begin by developing potential access and facility alternatives, consistent with the vision, goals, and objectives. This will be accomplished using a wide range of possible access management and roadway design/operation techniques. Access to each abutting parcel and ownership will be addressed, as well as any adjacent ownerships affected by project alternatives and recommendations.

Using results from the travel model runs completed by MAG, the CONSULTANT will conduct planning level evaluations of network performance within an area of influence, to be adopted for the study. It is anticipated that the analysis of forecast travel conditions incorporate the full system grid network bounded by Interstate 10 in the south, SR-303L in the west and north, and 7th Avenue in the east. This planning level evaluation will be based on measures of effectiveness (MOE) derived from the MAG model for up to four (no-build plus up to three alternatives) distinct multimodal facility and network connectivity alternatives for the corridor. Additionally, it is anticipated that peak-hour, peak-directional volume-to-capacity analysis within the area of influence will be conducted based on the methodology developed, approved, and implemented in the Central Phoenix Framework Transportation Study. These evaluations will also include a review of person mobility levels to account for potential transit investments.

Following the initial CONSULTANT effort, a workshop will be used to review and further refine these alternatives with the objective of selecting three alternatives. Each alternative will be processed through screening and a red flag analysis in order to identify the alternatives for detailed analysis in Task 7.

The outcome(s) of Task 6 will be documented in Technical Memorandum 5, Corridor Alternatives. This document will outline preliminary facility characteristics, such as concept level cross sections and outline basic intersection/interchange improvements at key locations.

### **Task 7: Analyze Alternatives and Develop Corridor Optimization Recommendation**

#### **Purpose**

To analyze the alternatives and develop the corridor optimization recommendation.

The alternatives from Task 6 will be analyzed using an evaluation matrix comparing benefits and impacts to US-60/Grand Avenue. Evaluation criteria will be based on the corridor vision statement, goals, and objectives, and will include at a minimum traffic operations, economic impacts, and access changes.

As part of the alternatives evaluation, the CONSULTANT will use the TransModeler model developed under Task 3 as the basis. Traffic assignments for the three alternatives will be developed utilizing the mesoscopic and potentially microscopic assignment capabilities in TransModeler, depending on the judged appropriateness of those assignments for a given alternative (e.g. microscopic assignments

in a supersaturated network, by definition, are not possible). Depending on the nature of the alternative analysis to be performed, the CONSULTANT will identify areas of the subarea network to be modeled in a microscopic setting and areas to be modeled in a mesoscopic setting. This hybrid approach to modeling provides an efficient screening of alternatives while providing detailed metrics at key locations. The microscopic analysis would consist of specific intersections or interchanges on US-60/Grand Avenue and the mesoscopic analysis would consist of impacts on other roadways in the area.

Analysis of alternatives will consist of a variety of measures of effectiveness. Typical measures based on HCM methods to document performance are anticipated to provide a common and consistent language for communication between agencies and for equal comparisons of options. For situations too complex to use HCM measures of effectiveness, or to aid a better understand the operations, measures from TransModeler, including visualization/simulation, will be utilized to compare options. The CONSULTANT will work with the MAG Project Manager to determine the extent of this effort that can be performed within the allotted budget.

An analysis of possible economic impacts will be conducted for the three alternatives. This will entail creating an evaluation matrix in which the CONSULTANT will forecast whether the corridor improvements/modifications are "positive," "negative," or "neutral" with respect to economic impact. Evaluation of impacts will be based on a mile-by-mile post analysis along the US-60/Grand Avenue corridor for each of the three proposed alternatives identified in Task 6. This analysis will consist of a variety of measures such as traffic congestion, increased mobility, access, and changes in land use, as an example.

It will be important to not only focus on the local operations of the alternative (along US-60/Grand Avenue itself), but to also evaluate the "system" impacts of each alternative through a review of the daily Travel Demand Forecasts generated by the MAG Travel Demand Model. For example, evaluations of the impacts of an alternative on traffic volumes on SR-101L, SR-303L, Interstate 10, Interstate 17, and major arterials within the influence area will be important to identify benefits or impacts a particular alternative may have on other roads of regional significance.

Included in this task will be a benefit/cost analysis of the alternatives. This will consider project costs, traffic volumes, travel time savings, fuel savings, and the prevailing wage.

Resulting evaluations will provide input to the criteria-based evaluation matrix, which will be used by the CONSULTANT, MAG staff, and Planning Partners to identify the corridor optimization alternative recommendation. The CONSULTANT will be available for discussions with MAG staff and the Planning Partners to identify potential refinements to the corridor optimization alternative. The CONSULTANT will document corridor recommendations for the preferred concept in Technical Memorandum 6.

## **ESTABLISH ACCESS MANAGEMENT PLAN**

### **Task 8: Establish Access Management Plan and Policies**

#### **Purpose**

To develop an Access Management Plan for the US-60/Grand Avenue corridor based upon the Corridor Optimization Alternative Recommendation.

The CONSULTANT will develop an Access Management Plan based on the information gathered in Tasks 2 through 7, including the identification of the preferred facility concept. The definition of the preferred facility will be outlined in terms of necessary access improvement recommendations tailored to the functional classification of the ultimate improvement vision US-60/Grand Avenue facility. This plan will include a description of the disposition of every access point in the corridor referenced to the US-60 and US-60X mileposts. This document will include a detailed matrix summarizing the current and future status of each access point. This document will be reviewed with MAG staff and the Planning Partners prior to developing the COMPASS Implementation Plan in Task 9.

## **ESTABLISH SYSTEM STUDY FOR IMPLEMENTATION**

### **Task 9: Develop COMPASS Implementation Plan**

#### **Purpose**

To provide direction for affected agencies to implement COMPASS findings and recommendations.

The implementation plan for the project will be a compilation of findings, recommendations, and agreements that were developed through the COMPASS planning process. The CONSULTANT will develop an implementation plan that will:

- Determine agency operations coordination agreements and schedules
- Determine needed infrastructure improvements, funding requirements, and schedules
- Determine Access Management Plan and Policies adoption schedules, needed agreements (e.g. intergovernmental agreement - IGA), and templates
- Identify the future roles of each agency improving and maintaining the corridor

The CONSULTANT will develop a decision-making tool to assist with permit request reviews and approvals. Issues such as access, lot splits, median breaks, and signal locations will be addressed with the tool. The CONSULTANT will coordinate with MAG staff on the development of an appropriate, user-friendly tool based on the outcomes of the previous tasks.

The CONSULTANT will work MAG and the Planning Partners through Task 5 processes to develop an access management ordinance template.

MAG, with the support from the CONSULTANT, will present the IGA and Access Management Plan package to the local agencies for their consideration and adoption.

### **Task 10: Document Project**

#### **Purpose**

To document all project activities and findings.

Throughout the schedule of this COMPASS project, the CONSULTANT will provide material for publication on the MAG website. This material will include, but not be limited to, the project's deliverables, Planning Partner meeting agendas and minutes, Study Review Team comments, and supporting material developed by the CONSULTANT in development of the project's Technical Memoranda, Access Management Plan, and Final Report. The CONSULTANT will coordinate

delivery of this material to the MAG Webmaster subject to review by the MAG project manager or designee.

The CONSULTANT will document the project activities and findings in an executive summary and final report. An illustrative poster of the study findings will be developed to facilitate continued stakeholder outreach during implementation. The CONSULTANT will work with the MAG Project Manager to determine the deliverables that can be performed within the allotted budget.

## II. DELIVERABLES

	<u>TASK</u>		<u>DELIVERABLES</u>
1.	Initiate Project	A.	Work Plan
		B.	SharePoint website
		C.	Operating Principles, Mission Statement, Goals and Objectives
2.	Develop Stakeholder Involvement Plan	A.	Stakeholder Involvement Plan
3.	Perform Existing Conditions Analysis	A.	Compilation of Traffic Data
		B.	Tech Memo 1: Existing Conditions Findings
		C.	Map Series
4.	Review Past Studies and Identify Recurring Themes	A.	Tech Memo 2: Grand Avenue Literature Review
		B.	Tech Memo 3: National Case Study Review
		C.	Tech Memo 4: State of the Practice Assessment
5.	Formulate Corridor Goals and Visions	A.	Memorandum of Understanding documenting Consensus Items
6.	Establish Alternatives	A.	Tech Memo 5: Corridor Alternatives
7.	Analyze Alternatives and Develop Corridor Optimization Recommendation	A.	Tech Memo 6: Alternatives Analysis and Recommendations
8.	Establish Access Management Plan and Policies	A.	US-60/Grand Ave Corridor Access Management Plan

- |     |                                     |    |   |
|-----|-------------------------------------|----|---|
| 9.  | Develop COMPASS Implementation Plan | A. | US-60/Grand Ave Corridor Optimization Implementation Plan |
|     |                                     | B. | Local Access Management Decision-Making Tool              |
|     |                                     | C. | Access Management Plan Ordinance Template                 |
| 10. | Document Project                    | A. | Executive Summary   |
|     |                                     | B. | Final Report  |
|     |                                     | C. | Illustrative Poster of Study Findings                     |

### III. SCHEDULE

It is anticipated that the project will commence on or about July 16, 2012, and be completed by May 31, 2014.

	<u>TASK</u>	<u>SCHEDULE FOR COMPLETION</u>
1.	Initiate Project	October 31, 2012
2.	Develop Stakeholder Involvement Plan	October 31, 2012
3.	Perform Existing Conditions Analysis	December 31, 2012
4.	Review Past Studies and Identify Recurring Themes	December 31, 2012
5.	Formulate Corridor Goals and Visions	January 31, 2014
6.	Establish Alternatives	May 31, 2013
7.	Analyze Alternatives and Develop Corridor Optimization Recommendation	December 31, 2013
8.	Establish Access Management Plan and Policies	January 31, 2014
9.	Develop COMPASS Implementation Plan	January 31, 2014
10.	Document Project	May 31, 2014

**IV. CONSULTANT WORK TEAM**

The CONSULTANT will form a work team of key personnel (as named below) to perform the project. Other labor requirements will be filled by other staff members of the CONSULTANT and associated subconsultants.

Edwin Muccillo, P.E., will serve as Principal-in-charge. He will be primarily responsible for overseeing the project and ensuring quality control. Jason Pagnard, P.E., is the project manager. He will have the primary responsibility for the preparation of the project documents and managing all subordinate associates. He will be assisted by Steve Thieken, P.E., and Brian Toombs, P.E.

The CONSULTANT team will be supplemented by staff from Wilson & Company, Inc., Partners for Strategic Action, Inc., Philip B. Demosthenes, LLC, and ESI Corporation. Dan Marum will lead efforts contributed by Wilson & Company, Inc. Peggy Fiandaca, AICP will lead efforts contributed by Partners for Strategic Action, Inc. Phillip Demosthenes will lead efforts contributed by Phillip B. Demosthenes, LLC. Judie Scalise will lead efforts contributed by ESI Corporation.



# **APPENDIX WP-2**

## **Detailed Schedule**

# US-60/Grand Avenue COMPASS

Loop 303 to Interstate 10

## Project Schedule

	2012					2013												2014				
	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	
Task 1 - Initiate Project	█	█																				
Task 2 - Develop Public Involvement Plan	█	█																				
Task 3 - Perform Existing Conditions Analysis		█	█	█	█																	
Task 4 - Review Past Studies and Identify Recurring Themes		█	█	█	█																	
Task 5 - Formulate Corridor Goals and Visions		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Task 5a - Define Corridor Goals and Visions		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Task 5b - Refine Objectives		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Task 6 - Establish Alternative Schematics					█	█	█	█	█	█												
Task 7 - Analyze Alternatives and Develop Recommendations								█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Task 8 - Establish Access Management Plan and Policies					█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Task 9 - Develop Implementation Plan																					█	█
Task 10 - Document Project																						█

### Deliverables

