



FINAL FEASIBILITY REPORT / PREPARED FOR ADOT

I-40/US 93

WEST KINGMAN TI

Final Feasibility Report

ADOT Project No. 040 M0 48 H732301L

FEDERAL PROJECT NO. NH-040-A(AVJ)

Topock-Kingman Highway

I-40

October 2009
Prepared By



Kimley-Horn
and Associates, Inc.

ARIZONA DEPARTMENT OF TRANSPORTATION

OFFICE MEMO

INTERMODAL TRANSPORTATION DIVISION

August 6, 2009

TO: THOR ANDERSON, ENVIRONMENTAL & ENHANCEMENT GROUP, EM02
MICHAEL KONDELIS, KINGMAN DISTRICT, K600
LARRY DOESCHER, PROJECT MANAGER, 614E
MARY VIPARINA, ASSISTANT STATE ENGINEER, 611E

FROM: PAUL O'BRIEN, ROADWAY PREDESIGN, 605E

SUBJECT: DESIGN MEMORANDUM

40 MO 48.00 H732301L

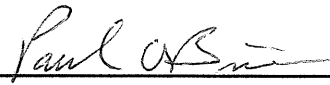
I-40/US 93 WEST KINGMAN TI

TOPOCK-KINGMAN HWY

I 40

This memorandum is prepared pursuant to Section 3.3 of the ADOT Action Plan for Federal-Aid Highway projects. The proposed major design features for this project are described in the attached Final Feasibility Report.


Your concurrence/approval on the proposed major design features is requested.



PAUL O'BRIEN, ROADWAY PREDESIGN MANAGER, 605E

Concurrence: 
THOR ANDERSON, ENVIRONMENTAL & ENHANCEMENT GROUP,

8.25.09
Date

Concurrence: 
MICHAEL KONDELIS, KINGMAN DISTRICT, K600

09-10-09
Date

Concurrence: 
LARRY DOESCHER, PROJECT MANAGER, 614E

09/23/2009
Date

Approved: 
MARY VIPARINA, ASSISTANT STATE ENGINEER-ROADWAY, 611E

10/1/09
Date

Final Feasibility Report

I-40/US 93 West Kingman TI

ADOT PROJECT NO. 040 MO 48 H732301L
FEDERAL PROJECT NO. NH-040-A (AVJ)
TOPOCK – KINGMAN HIGHWAY
I-40

Prepared for
Arizona Department of Transportation

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Executive Summary

Background

This study for the I-40/US 93 West Kingman TI, ADOT Project Number 040 MO 48 H732301L, identifies possible corridor alternatives for a new system-to-system directional interchange connecting Interstate 40 (I-40) to United States Route 93 (US 93) near Kingman, AZ. The general location for the various alternative corridors is along I-40 between the Shinarump Drive traffic interchange (TI) and Stockton Hill Road TI (approximate MP 44 to MP 52) and along US 93 between the State Route (SR) 68 TI, near the Kingman Port of Entry, and the existing Beale Street interchange, where US 93 connects with I-40 (approximate MP 67 to MP 71).

US 93 is part of the CANAMEX Corridor. The Beale Street interchange between I-40 and US 93 is the third of three “bottleneck” locations along US 93 identified from the previous CANAMEX Corridor study. The first location is Hoover Dam and that area is being addressed with the Hoover Dam Bypass construction. The second location is Wickenburg and that area is being addressed with an interim bypass that began construction in February 2008.

The Kingman area is growing rapidly, resulting in increased traffic volumes. During peak demand periods, the existing traffic interchange at Beale Street cannot handle the predominant flow of traffic from westbound (WB) I-40 to northbound (NB) US 93. The traffic backs up on WB I-40. The Beale Street interchange does not have the capacity to handle traffic volumes at crucial times. The Arizona Department of Transportation (ADOT) Kingman District stated that they have to use their own staff to conduct traffic control along the interstate and at the interchange for these times of heavy traffic flow.

A direct access route between I-40 and US 93 would improve regional traffic flow efficiency and enhance safe travel.

Preliminary discussions and strategies for the I-40/US 93 connection are documented in various reports starting in the mid-1990s. The *Final Project Assessment* for the West Kingman TI Project 040 MO 48 H358001C (July 1993) identified operational concerns for the I-40/US 93 area indicating that there was significant queuing for southbound US 93 traffic turning onto the I-40 eastbound on-ramp and queuing for the I-40 westbound off-ramp turning onto northbound US 93. The project scope was only based on “interim” improvements that solely consisted of widening improvements to the existing Beale Street TI. However, the Project Assessment documents discussions and preliminary strategies for “ultimate” improvements including a “free-flow US 93 southbound to eastbound I-40 and westbound I-40 to US 93 northbound connection.”

The *US 93 Multi-Modal Corridor Profile Study*, prepared by Gannett Fleming for ADOT in July 1996, included a recommendation for a new connection between I-40 and US 93. The study reports that the following issues were raised at public meetings held in Wickenburg and Kingman in November 1995:

- “A short bypass was suggested for US 93 at I-40 in Kingman.”
- “Traffic congestion at the ramps and on US 93 between I-40 and SR 68 is a significant problem.”
- “Realign US 93 to interchange with I-40 at a new location east or west of the Beale Street interchange.”

A very basic and schematic “traffic desire line” was presented in the corridor profile study. The I-40 terminus was depicted midway between the Beale Street and Stockton Hill Road interchanges. The connection then headed in a westerly direction where it tied into US 93 north of the commercial developments along US 93 (Beale Street).

The concept for the realignment of US 93 arose as part of the Multi-Modal Corridor Profile Study for US 93 and US 60. It was first discussed at the November 1995 public meeting in Kingman. It was subsequently presented at another public meeting in June 1996. Public responses comprised of a mixture of both positive and negative feedback. There was a definite consensus that safety and congestion were significant problems along US 93 (Beale Street) north of I-40. No other long term solutions were suggested from the public meetings.

The *I-40 Multi-Modal Corridor Profile Study*, prepared by Lima & Associates in December 1999, also includes discussions and strategies for I-40/US 93 improvements. A public meeting was held in Kingman in October 1999. Responses included the need and consideration of a new “bypass” or “freeway type interchange.”

The preferred option included in the I-40 study consisted of realigning US 93 to the interchange with I-40 at a new location east or west of the Beale Street interchange in west Kingman and constructing a fully directional interchange. The study also reported that the City of Kingman and the ADOT Kingman District identified the need of a new directional interchange connection between I-40 and US 93 as part of their “Identified Deficiencies” for the corridor. The study also reported that the growth in the Kingman Area, Golden Valley area, Mohave County, and the new bridge across Hoover Dam would put significant traffic pressure on the already congested I-40/US 93 interchange as well as the I-40 mainline. In addition to providing a direct connection interchange between I-40 and US 93, the major capital improvement recommendations for the Kingman area also included widening of I-40 through Kingman to six lanes.

The vision for the new free flow system interchange and connecting corridor is to develop the most feasible, access-controlled route that allows through traffic between I-40 and US 93 to flow without hindrance or delay making travel safer and easier, while at the same time minimizing impacts to local businesses, residences, and recreation areas. The new system interchange and connecting corridor would better facilitate regional traffic flow by reducing traffic congestion and would enhance safety for the traveling public.

This Feasibility Study is the first step in the process to identify potential corridors and solutions for the current and anticipated future issues. A more detailed Design Concept study and environmental study will be required to evaluate design level alignments of the preferred corridor alternatives and will narrow the recommended alignment down to one for the ultimate design and construction.

Project Progress

This study was conducted by the Arizona Department of Transportation (ADOT) in coordination with the Federal Highway Administration (FHWA), the Bureau of Land Management (BLM), Mohave County and the City of Kingman. The project development process was further extended to include participation and input from other State and Local Government Agencies. A multi-agency team consisting of ADOT, FHWA, BLM, Mohave County, City of Kingman, and other State and Local Agencies was developed to guide the development of corridor alternatives and recommendations for the preferred corridors. This study was consistent with the principles of linking the transportation planning to the National Environmental Policy Act (NEPA) processes.

Scoping Meetings

Agency Scoping Meetings were conducted in November 2007 and March 2008, and a Public Scoping Meeting was conducted in March 2008 in Kingman. The meetings had identified various concerns of the residents and businesses in the vicinity of the project, ranging from impact to the Cerbat Foothills Recreational Area (CFRA) to impacts to residential neighborhoods and businesses.

A follow-up Agency Meeting was conducted in August 2008 to review the preliminary results of this Feasibility Study and its recommendations and to solicit any further comments and concerns that the

agencies might have regarding the recommendations contained within this Feasibility Report. Based upon the comments from the public and the agencies, the recommendations of this Feasibility Report were presented in a public meeting on November 13, 2008.

Corridor Development

A significant amount of data for the project area was collected from ADOT, Mohave County, BLM, City of Kingman, and various environmental resource databases among others. The corridor development process started with a general analysis of the area along with input from the agency and public scoping meetings. Several of the major challenges related to the development of the corridors included the mountainous terrain, close proximity to the BLM CFRA 4(f) lands, and various conflicting features including archaeological resources, wells, recreation and historic trails, and private and commercial properties in the area. The corridors were evaluated to minimize impacts with the evaluation measures and conflicting features. Pros and cons for each corridor alternative were identified. Most conflicts were avoided; however, every corridor alternative has various pros and cons. Geographic feasibility was imperative in the construction viability as major earthwork including rock blasting can be cost prohibitive. Hence, major consideration was given to the terrain through which each corridor runs including the tie in points at I-40 and US 93.

Corridor Evaluations

The potential corridors within the study area were identified early in the study process with agency and public input. The corridors were developed to avoid the steepest terrain while providing a direct connection between I-40 and US 93. Data was collected for each of the corridors and compiled onto various maps. The corridors were then evaluated against various evaluation criteria including but not limited to: constructability, environmental and socio economic impacts, right-of-way (R/W) requirements, land use, anticipated utilization of the corridor based on the ease and practicality of use, travel distance, proximity to adjacent interchanges, potential visual and noise impacts, highway geometric layout, traffic operations, safety and impacts on existing residential and commercial properties. Each alternative had some associated impacts that can be generally classified as impacts to local businesses, residences, natural landscape, and other environmental resources.

Corridor Recommendations

Public and Agency input was a major factor in the evaluation process. The preferred alternatives from all sources were noted. There was some opposition for each potential area considered. Corridor Alternatives D, E and F, north of the existing Beale Street TI, received some opposition from residents located in the area. Corridor Alternatives A, B, G and H, all located south of the existing Beale Street TI, received the most opposition from both area residents and the BLM based on the impacts to the Cerbat Foothills Recreation Area. In addition, it was expressed by both agency and public entities that Corridor Alternative H would be underutilized by the major traffic movement (WB I-40 to NB US 93) since travel time and cost would be higher. Corridor Alternative C, along the existing Beale Street alignment would potentially require acquisition of R/W in a commercially developed area and traffic control measures during construction would be extensive.

Preferred corridor segments were based on the evaluation criteria and agency and public input. Corridor Alternatives C and D were identified as the preferred corridors since they have the least impact to the Cerbat Foothills Recreation area, have less overall environmental impact, are the shortest in length, and are closest to the existing Beale Street TI and are therefore anticipated to have the highest utilization when compared to each of the other corridors. It is recommended that feasible alignment alternatives be developed and evaluated for each of these preferred corridors in the future Design Concept study.

Each of these preferred corridors provide a more direct system-to-system connection, minimizing economic impacts to the area. These corridors would provide a network of collector distributor roads that would maintain access to the existing Beale Street TI where access would still be available to the local businesses along Beale Street (US 93).

The Feasibility Study preferred corridors consist of Corridor Alternatives C and D as shown in **Figure ES-1**. Corridor Alternatives C and D should be carried forward for further consideration of alignment alternatives during the future Design Concept and Environmental studies that follow the National Environmental Policy Act (NEPA) process. Also, the no-build alternative is considered a viable alternative and will remain so during the future studies.

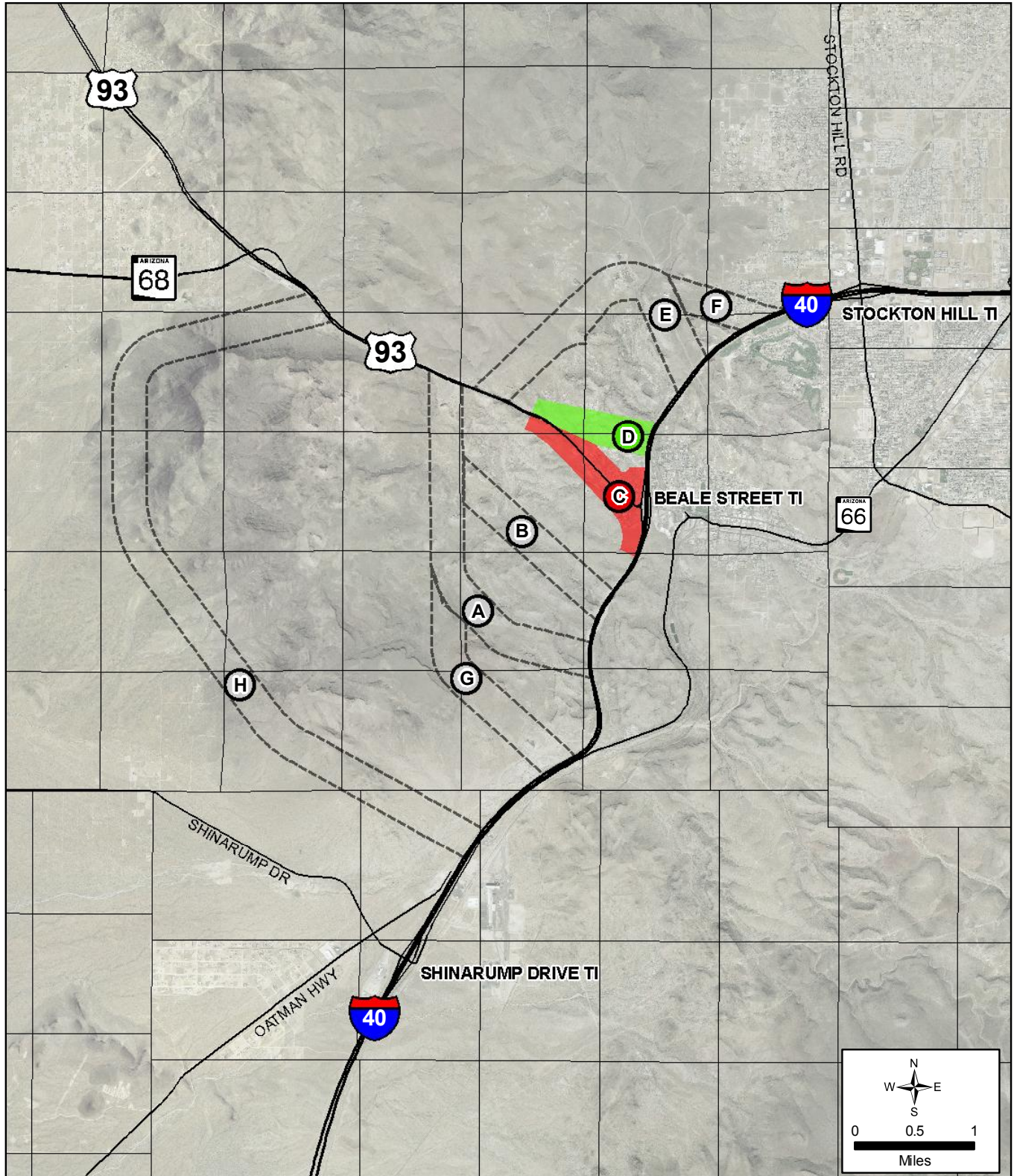


Figure ES-1 Preferred Corridor Alternatives C and D

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1.0 Introduction

The Arizona Department of Transportation (ADOT), in coordination with the Federal Highway Administration (FHWA), the Bureau of Land Management (BLM), Mohave County and the City of Kingman has completed a study to evaluate possible corridor alternatives for improving traffic flow at the I-40/US 93 West Kingman Traffic Interchange (TI). Alternatives include a new system-to-system interchange and an access-controlled direct connection route between I-40 and US 93. The general project vicinity is shown on the Project Location Map on **Figure 1**.

This report summarizes and documents the data collection, the corridor alternatives analyzed, and recommends the most feasible corridor alternative(s) for the new system TI and connection between I-40 and US 93. This report also includes an initial evaluation of environmental constraints associated with the proposed corridor location alternative(s).

1.1. Study Overview and Description

The study area for this project is in Mohave County, Arizona in the vicinity of the I-40/Beale Street TI, also known as the West Kingman TI. The study area lies to the west of I-40 between the Shinarump Drive TI and the Stockton Hill TI (approximate MP 44 to MP 52) and extends north along US 93 to just south of the SR 68 interchange (approximate MP 67 to MP 71). The Study limits are illustrated in **Figure 2**. The land ownership status and corridor alternatives evaluated within the study area, A through H, are shown in **Figure 3**.

A majority of the study area lies within the Cerbat Foothills Recreational Area, owned and managed by the BLM. The remainder of the study area is located in the limits of the City of Kingman and various privately owned commercial, agricultural and residential properties. The major traffic movements for the connection of I-40 and US 93 are from WB I-40 to NB US 93 heading to Las Vegas, Nevada and from SB US 93 to EB I-40. During certain peak periods, traffic volumes overwhelm the existing signalized diamond interchange (Beale Street TI) causing bottlenecks, congestion, and traffic delays and compromising safety. Future improvements are recommended to mitigate the current and future capacity and safety issues.

The proposed action is the construction of a new free flow system-to-system interchange and access-controlled direct connection route from I-40 to US 93, providing for a contiguous route that would make travel in this area easier and safer. Access would be limited to through traffic along the new corridor while the local traffic would still be able to access the business and commercial district along US 93 (Beale Street) via the existing Beale Street Interchange. Construction of a new system TI and access-controlled direct connect route would facilitate regional traffic flow, reduce travel time, and reduce traffic congestion while still providing the opportunity for local access to the existing Beale Street TI and along the existing US 93 alignment.

The initial phase of the project is this Feasibility Study to determine what corridor alternatives are to be considered for the new interchange and access-controlled connection between I-40 and US 93. The corridor alternatives that are under consideration are shown in **Figure 4**. These corridor alternatives would provide free-flow traffic movements and route regional traffic away from the signalized and congested Beale Street TI.

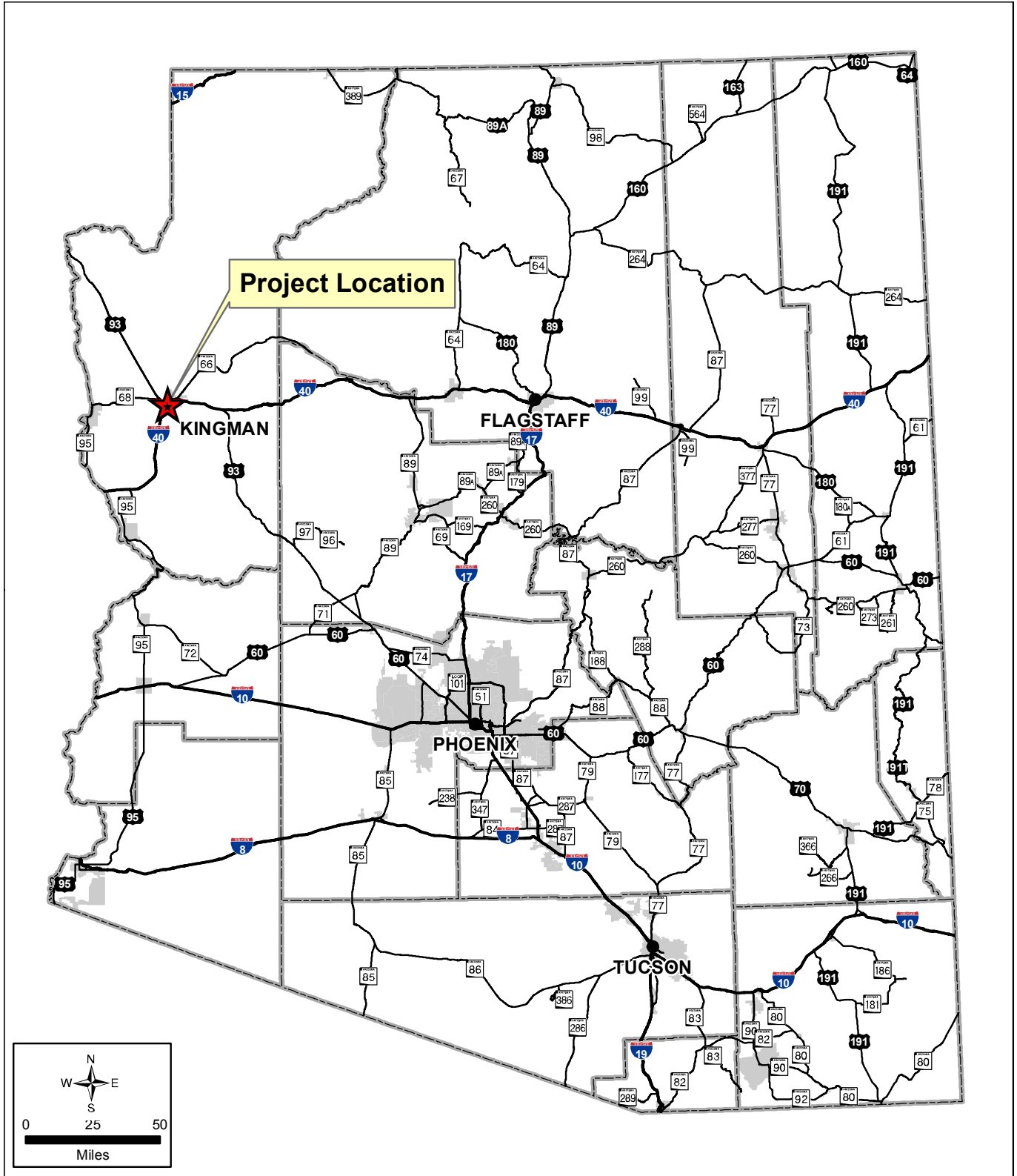


Figure 1 Project Location Map

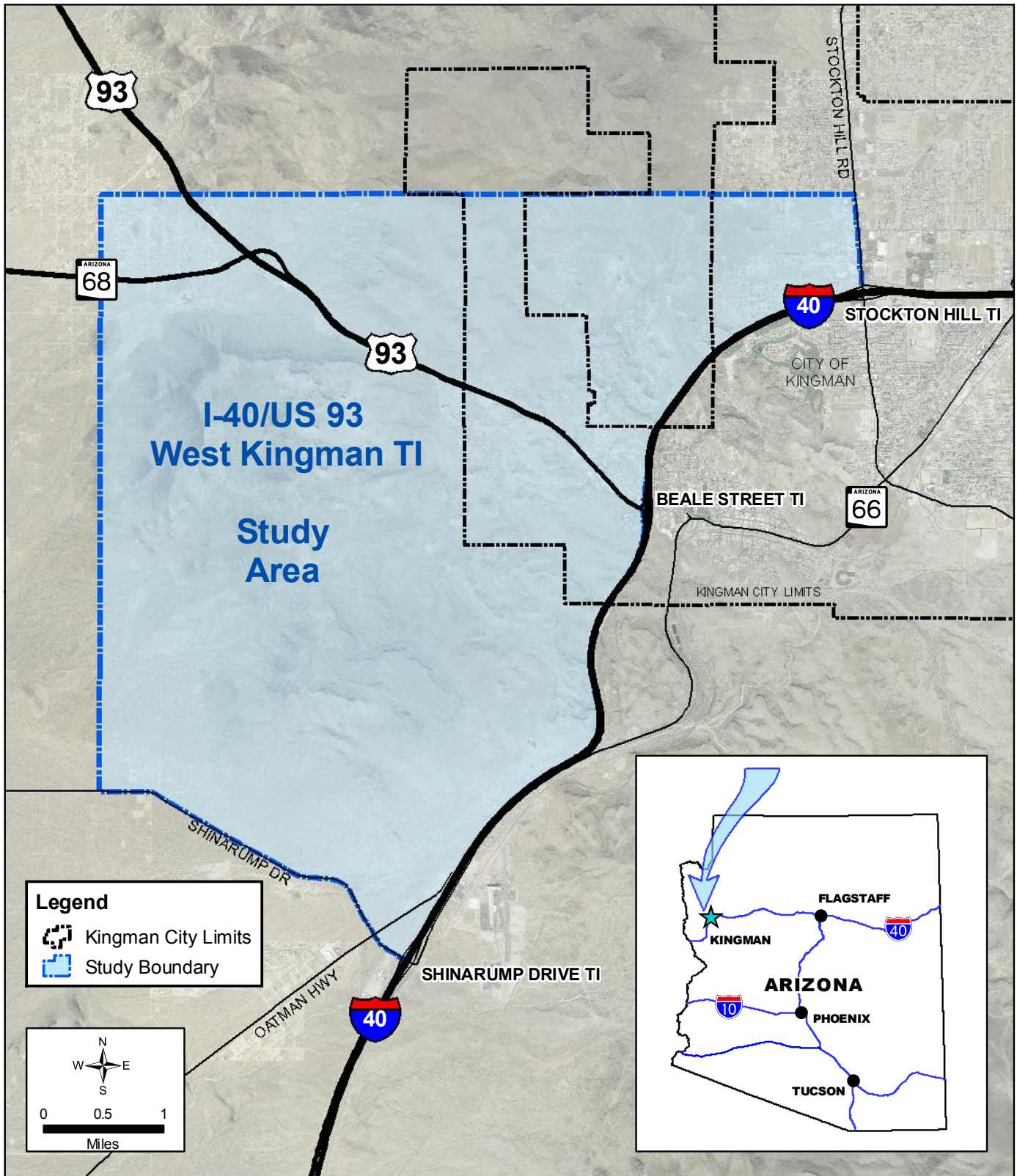


Figure 2 Project Study Area

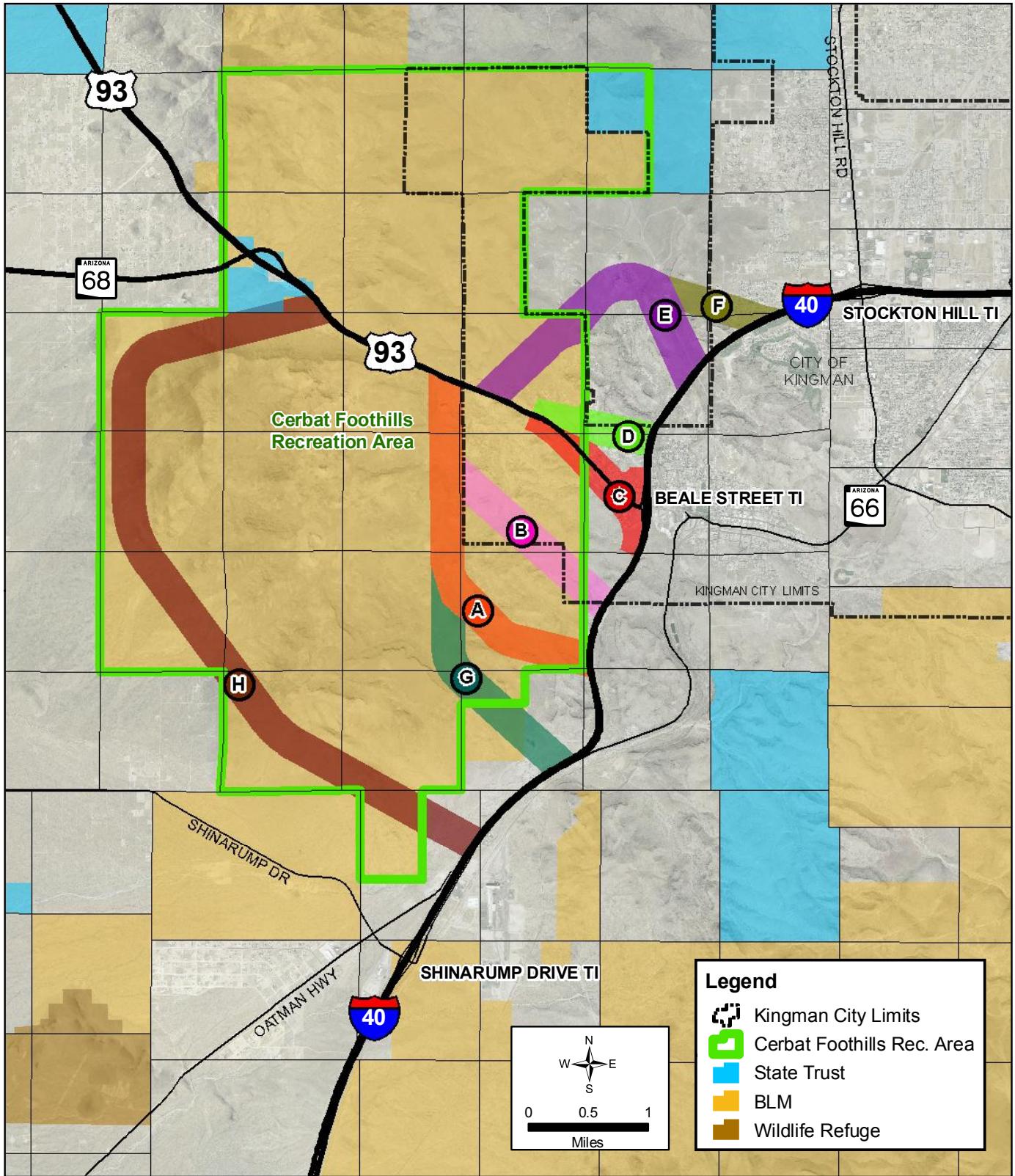


Figure 3 Land Ownership Status and Alternative Corridors

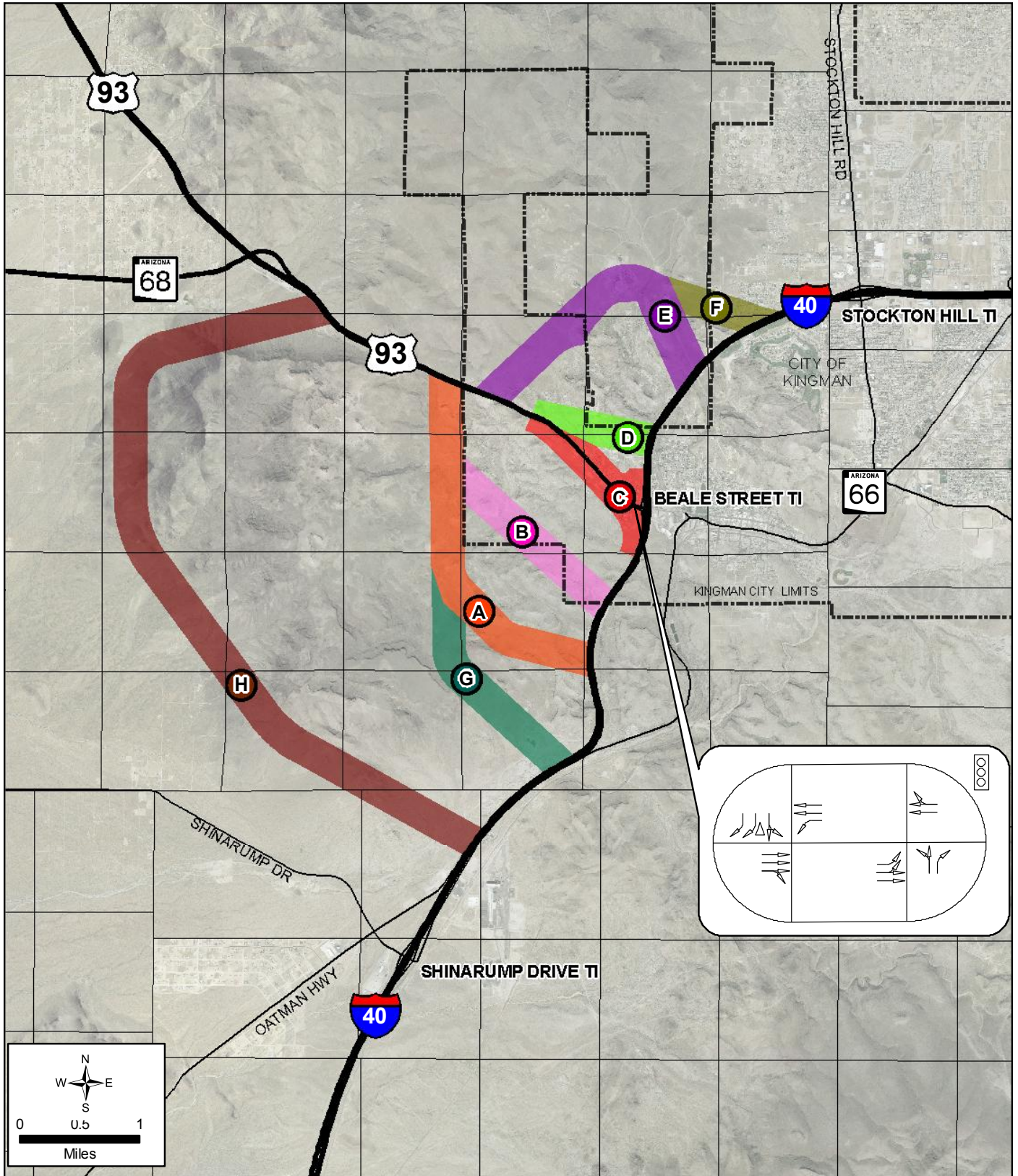


Figure 4 Existing Beale Street Interchange Lane Configuration

1.2. Purpose and Need

The I-40/US 93 West Kingman Traffic Interchange is strategically located along the I-40 corridor at the junction with US 93. US 93 is the most direct connection between I-40 and I-15 located in Nevada and serves as an important corridor for the movement of people and goods to the Las Vegas, Nevada area and areas to the north along I-15. Hoover Dam and Las Vegas are important travel destinations and generate a significant amount of traffic along this corridor.

The I-40/US 93 West Kingman TI also experiences significant seasonal and day of the week fluctuations in traffic volumes as a result of weekend travel in general, and holiday weekend travel in particular. District personnel report that during peak demand, the existing traffic interchange at Beale Street cannot handle the predominant flow of traffic from WB I-40 to NB US 93. The traffic backs up on WB I-40, resulting in both operational and safety concerns. The interchange does not currently have the capacity to handle traffic volumes at crucial times. The Kingman District has indicated that they have to use their own staff to conduct traffic control along the interstate and interchange for these times of heavy traffic volumes. The Kingman Area Transportation Study (KATS), dated January 2005, projected future daily traffic volumes through the year 2023, and the travel demand model projects continued growth in traffic volumes at the I-40/US 93 West Kingman TI. As traffic volumes increase in future years, the operational issues and safety concerns associated with the traffic interchange will only increase in severity and complexity without improvements to the interchange.

The operational and safety concerns are not limited to the West Kingman TI, but also exist on US 93 on both approaches to I-40. US 93 is currently not a free-flow through highway within the study area due to, among other things, the presence of traffic signals, un-signalized intersections, and numerous business accesses along the existing route. Traffic backups on US 93 result in safety concerns as motorists who make use of area truck stops, restaurants, motels and gas stations, find it difficult to safely turn onto US 93 during certain periods of the week.

Operational and safety concerns at the I-40/US 93 West Kingman TI and adjacent portions of US 93 are not a recent development. Preliminary discussions and strategies for the I-40/US 93 connection are documented in various reports dating back to the early to mid-1990s. The *Final Project Assessment* for the West Kingman TI Project 040 MO 48 H358001C (July 1993) identified operational concerns for the I-40/US 93 area indicating that there was significant queuing for southbound US 93 traffic turning onto the I-40 eastbound on-ramp and queuing for the I-40 westbound off-ramp turning onto northbound US 93. The project scope was only based on “interim” improvements that solely consisted of widening improvements to the existing Beale Street TI. However, the Project Assessment documents discussions and preliminary strategies for “ultimate” improvements including a “free-flow US 93 southbound to eastbound I-40 and westbound I-40 to US 93 northbound connection.”

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- “A short bypass was suggested for US 93 at I-40 in Kingman.”
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- “Realign US 93 to interchange with I-40 at a new location east or west of the Beale Street interchange.”

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subsequently presented at another public meeting in June 1996. Public responses comprised of a mixture of both positive and negative feedback. There was a definite consensus that safety and congestion were significant problems along US 93 (Beale Street) north of I-40. No other long term solutions were suggested from the public meetings.

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US 93 is part of the CANAMEX Corridor. The Beale Street interchange between I-40 and US 93 is the third of three “bottleneck” locations along US 93 identified from the previous CANAMEX Corridor study. The first location is Hoover Dam and that area is being addressed with the current Hoover Dam Bypass construction. The second location is Wickenburg and that area is being addressed with an interim bypass that started construction in February 2008.

The Kingman area has experienced rapid growth due to local and regional development, resulting in increased traffic volumes. Coupled with the rapidly growing development, R/W costs are escalating resulting in higher costs for future project implementation. Available land and associated costs are creating smaller and smaller windows of opportunity for potential future improvements of a new direct connection corridor.

The purpose of the I-40/US 93 West Kingman TI Feasibility Study is to evaluate the feasibility of constructing a free-flow system interchange and access-controlled highway connection to enhance mobility and traffic operations between I-40 and US 93. The primary goals for the proposed project are to relieve congestion, increase roadway capacity and improve regional traffic flow while improving local access and improving safety.

1.3. Existing Roadway System

The study area includes the area along I-40 between the Shinarump Drive TI and the Stockton Hill Road TI, and the area along US 93 (Beale Street within the City of Kingman) between I-40 and SR 68. Access between I-40 and US 93 is currently provided by the Beale Street TI.

I-40 between the Shinarump Drive TI and the Stockton Hill TI is a 4-lane divided interstate. US 93 from the Beale Street TI extending north to the end of the commercial district is a five lane urban principal arterial. It transitions to a rural 4-lane divided highway about 1.5 miles north of the TI and continues north past the SR 68 TI.

The intersection of I-40 and US 93 currently exists as a full diamond interchange with signalized intersections at the ramps. For description purposes, the interchange is divided into the west half and the east half of the interchange. The west half of the interchange is described as follows. The I-40 WB off-ramp consists of dual right-turn lanes with a through-left shared lane. The SB approach of US 93 at the

intersection of the WB I-40 on and off ramps consists of two through lanes with a through-right shared lane. The NB approach of US 93 at the intersection of the WB I-40 on and off ramps has two through lanes with a left-turn lane.

The east half of the interchange is described as follows. The I-40 EB off-ramp consists of a through-left shared lane and a right-turn lane. The NB approach of US 93 at the intersection of the EB I-40 on and off ramps has a through lane and a through-right shared lane. The SB approach of US 93 at the intersection of the EB on and off ramps has a left-turn lane, a through-left shared lane, and a through lane. The existing lane configuration at the Beale Street TI was shown previously in **Figure 4**.

Table 1 lists previous projects occurring on both I-40 and US 93 within the project limits.

Table 1 – Previous Projects Within the Study Area

Project No.	Begin MP	End MP	As-Built Date	Description
I 40-1(30)	45.5	49.5	1981	2-38' AC
I 40-1(33)	48.88	52.32	1981	2-38' AC
FIR 40 -1(76)	45.27	53.98	1992	Mill, Replace Overlay & ACFC
I 040-A-514	46.55	48.0	N/A	Mill and Replace AR-ACFC
N 900-573	46.7	49.12	1995	Upgrade Guardrail
F-039-1(1)	68.59	71.15	1959	64' Curb to Curb
F-039-1-921	70.1	75.67	1988	Safety/Guardrail
F-039-1(25)	70.31	71.09	1992	Reconstruct and Pave
S 581-507	70.1	75.01	1994	Sidewalk and Sidewalk Ramps

1.4. Drainage

A high level preliminary drainage analysis was prepared as part of this Feasibility Study to aid in establishing and evaluating alternatives for a new system-to-system directional interchange between I-40 and US 93 and evaluating the corridor alternatives for the roadway connecting these two routes. The following tasks were part of the drainage analysis:

- Identify existing floodplains and their impacts to the proposed alternative corridors;
- Determine existing flow patterns within the study area;
- Analyze the existing hydrologic conditions;
- Analyze hydraulic capacity and determine preliminary sizes of potential major culvert crossings.

Existing Federal Emergency Management Agency (FEMA) floodplains within the study area were identified. The floodplains are presented in **Figure 5** and are classified as Zone A. Floodplains classified as Zone A are where the base floodplain has been mapped by approximate methods. Base Flood Elevations have not been determined in these floodplains.

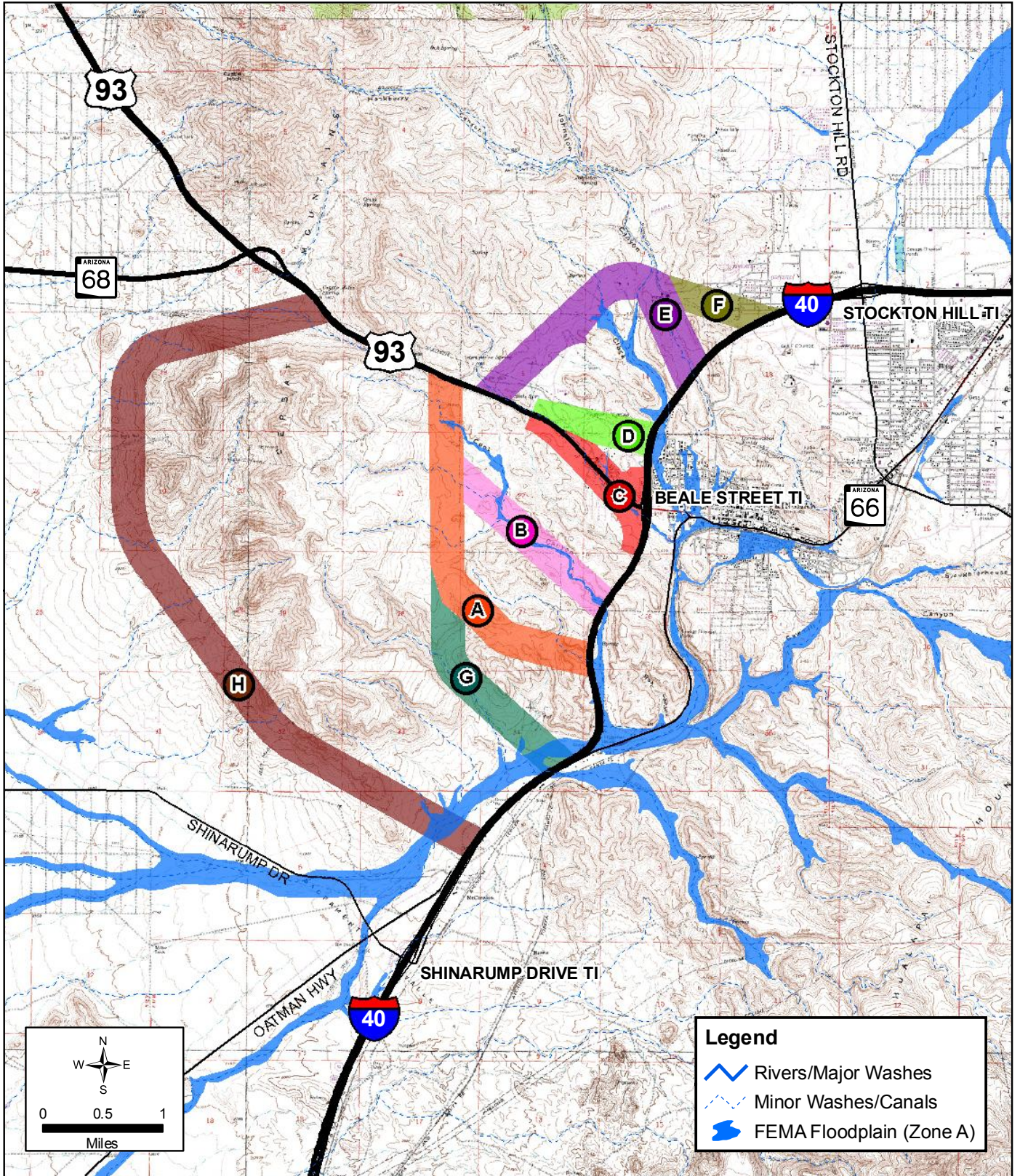


Figure 5 FEMA Zone A Floodplains

Existing flow patterns within the study area were determined so that major drainage basins could be determined. These basins were delineated using ESRI ArcGIS Desktop 9.0 (ArcGIS) software and topographic maps from the 7.5 Minute USGS quadrangle maps for Cerbat, Hualapai Peak, Kingman, Kingman Airport, Kingman NW, Kingman SE, Kingman SW, Rattlesnake Hill, and Stockton Hill. A stream network was created in ArcGIS to determine the major drainage crossings for the corridor alternatives. The basin delineations were then modified to tie to the boundaries of the corridor alternatives at major crossings. The basin delineations at the major crossings for the corridors are presented in **Figure 6**.

The discharges at the major crossings for the corridor alternatives were calculated by ADOT Regression equations for Region 10. The discharges for the 50-year storm frequency were calculated since drainage improvements for the selected interchange will most likely be required to pass the 50-year storm.

1.5. Existing and Future Land Uses

The Kingman General Plan 2020 Projected Land Use Map generally projects increased development and density expanding to the north and east as shown in **Figure 7**. The Kingman General Plan includes two future traffic interchanges along I-40 east of the Andy Devine Avenue TI, also known as the East Kingman TI. One is the Rattlesnake TI project located near MP 56.5 and is planned for Fiscal Year (FY) 2013. The other project is a privately funded Kingman Crossing TI that is proposed to be located near MP 55 between the existing East Kingman TI and the future Rattlesnake TI. These future interchanges are considerably east of the project area for this Feasibility Study and no significant impact is anticipated on these interchanges as a result of the corridors being considered in this study. **Figure 8** depicts the location of the Kingman Crossing TI and the Rattlesnake TI relative to the West Kingman TI.

The majority of the area along I-40 within the City of Kingman Limits is shown as rural residential and parks/open space. There is a concentration of highway service commercial and community commercial land use shown along the existing portions of US 93 from the Beale Street TI extending north to the Cerbat Foothills Recreation Area boundary (approximately 1 mile).

1.6. Description of Project

Operational and safety concerns at the I-40/US 93 West Kingman TI have existed for some time. Travelers on their way to the Hoover Dam and Las Vegas areas via I-40 to US 93 experience significant traffic backups and delays at the Beale Street TI. It is not unusual for traffic exiting WB I-40 to be backed up onto the mainline freeway during heavy travel times, creating a significant safety concern for vehicles stopped in the outside lane, while through traffic, including a significant number of trucks, barrels past in the adjacent lane at or near the posted speed limit of 75 mph. The Arizona Department of Transportation is eager to address this safety concern by evaluating alignment alternatives for a direct system-to-system connection between I-40 and US 93 that could help alleviate this concern.

This Feasibility Study for the I-40/US 93 West Kingman TI identifies possible locations for a new system-to-system directional interchange and new corridor connecting I-40 to US 93 near west Kingman, Arizona. The general location for the various alternative corridors is along I-40 between the Shinarump Drive TI and the Stockton Hill Road TI (approximate MP 44 to MP 52) and along US 93 between the SR 68 TI, near the Port of Entry, and the existing Beale Street interchange, where US 93 connects with I-40 (approximate MP 67 to MP 71).

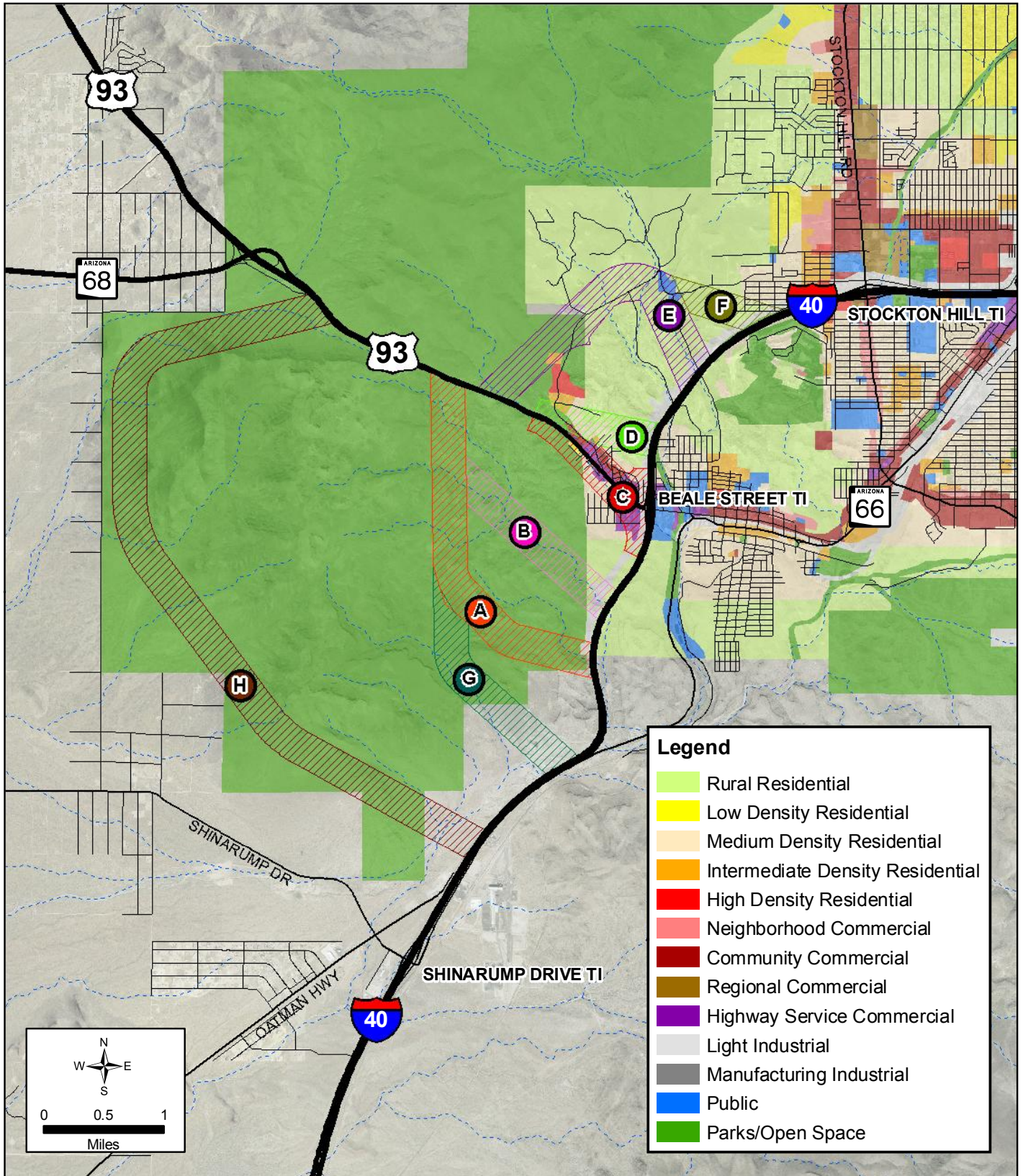


Figure 7 Kingman General Plan 2020 Projected Land Use Map



Figure 8 Location Map for Kingman Crossing and Rattlesnake Wash TI

The vision for the new free flow system interchange and connecting corridor is to develop the most feasible, access-controlled route that allows through traffic between I-40 and US 93 to flow without hindrance or delay making travel safer and easier, at the same time minimizing impacts to local businesses, residences, and recreation areas. Making this vision a reality would require a new access controlled corridor for a connector roadway from I-40 to US 93 while maintaining access to the existing Beale Street TI and local businesses.

As a result of this vision, a Feasibility Study was undertaken to evaluate new potential corridors to connect I-40 to US 93 in the general area of the Beale Street TI. Access along the new highway would be controlled and construction of a new interchange would be required along with potential upgrades and improvements to the existing Beale Street TI to better facilitate regional traffic flow, and to help reduce traffic congestion and enhance safety for the traveling public. Access to the existing Beale Street TI will be maintained and will not be eliminated regardless of the corridor alternatives considered.

This stage of project development (Feasibility Study) will review a range of corridors and identify and recommend one or more corridors that are considered most feasible for further study. No detailed highway alignment alternatives will be studied within this corridor-level analysis. The next stage of in-depth study and environmental documentation will look at reasonable alternatives following the National Environmental Policy Act (NEPA). This future detailed engineering study document is known as a Design Concept Report (DCR). The class of NEPA document will be determined in the environmental process in consultation with the FHWA.

2.0 Agency and Public Involvement

2.1. Agency Involvement

The I-40/US 93 West Kingman TI Feasibility Study was funded by ADOT, with the FHWA and BLM partnering in the direction and decisions made regarding the study. Other key agencies and their primary contacts involved during the agency scoping/study process included:

- ADOT Communication and Community Partnerships – Michele Beggs
- ADOT EPG – Jessica Walsh
- ADOT Kingman District – Mike Kondelis, Mick Hont, and Kara Hinker
- ADOT Predesign – Shahid Bhuiyan
- BLM - Kingman – John Reid
- City of Kingman Development Services – Gary Jeppson
- City of Kingman Engineering – Debbie Casson
- FHWA – Steve Thomas
- FHWA – Aryan Lirange
- Mohave County – Steve Latoski

2.2. Agency Scoping Meetings

An Agency Scoping Meeting was held on November 27, 2007 early in the study process with partner agencies identified for involvement in the project. The purpose of this initial Agency Scoping Meeting was to review preliminary data and findings and to receive comments and input from the agencies. Specific input received at the initial Agency Scoping Meeting in November 2007 included decisions that the access to the existing Beale Street TI will be maintained for all alternatives, and that all merge and diverge lanes should occur on the right hand side of existing lanes. FHWA supports the idea that left hand entrances and exits should be avoided unless there are extreme circumstances that preclude the use of traditional right hand entrances/exits.

This Agency Scoping Meeting identified several items for further study. Further coordination with the BLM on the status of the Cerbat Foothills Recreation Area was suggested, particularly as it relates to the overall limits of the recreation area and the portions that are within the City of Kingman City limits, as well as the visual classification of the Cerbat Foothills Recreation Area. In addition, the agencies requested that additional alternative(s) nearer the Shinarump Drive TI be developed for further consideration.

A second Agency Scoping Meeting was held on March 31, 2008. Again, the purpose of this Agency Scoping Meeting was to review the additional corridor alternatives that had been developed, along with the additional data that had been assembled since the first Agency Scoping Meeting.

An Agency Progress Meeting was held on August 25, 2008 to review the project development process, including the findings of this Initial Feasibility Report. Existing and future traffic conditions were reviewed in detail, along with the evaluation criteria and measurements that were considered for Corridor Alternatives A through H. The environmental constraints for each of the corridors were discussed, particularly as it relates to Section 4(f) and Section 6(f) resources. The corridors recommended for further study were identified and discussed with the Agencies to solicit their comments and to gain consensus that the agencies agreed with the recommended corridors.

2.3. Public Scoping Meeting/Open House

The partnership agencies recognize the value of public input and are committed to involving the public in the study process. The study and public involvement process is shown in **Figure 9**. The public involvement process has included one public scoping meeting on March 31, 2008. A second public meeting was held on November 13, 2008. The major objective of these meetings is to inform the public about the project and receive comments from the public regarding:

- Input on evaluation factors that should be considered
- Concerns related to the study
- Suggestions on potential corridor alternatives

Public Meeting notifications followed the NEPA process. Prior to the first open house on March 31, 2008, meeting notification cards were mailed to residents and businesses in Kingman area on March 14, 2008. The open house was advertised in area newspapers including The Standard on March 19 and 26, 2008 and in the Kingman Daily Miner on March 16 and 23, 2008.

Pre and post open house press releases were sent to the above mentioned newspapers as well as to area radio stations KFLG AM, KLUK FM, KNKK FM, KLPZ AM, KNLB FM, KWFH FM, KAAA AM, KZZZ AM, KGMN FM and television stations K02HR in Bullhead City and K25AL in Lake Havasu City. The project team answered all media inquiries as they arose and responded to media requests in a timely manner. The same approach for public meeting notification was used for the second public meeting.

2.3.1. Summary of Public Open House

A public open house was held on March 31, 2008 to provide information about the project and the study process to the general public and to give them an opportunity to provide input on issues, concerns and opportunities to be addressed during development and evaluation of the project corridor alternatives. A total of 83 people (not including agency and consultant representatives) attended the meeting.

Informational handouts, copies of the PowerPoint slide presentation, comment sheets, and question cards were distributed to the meeting attendees. The meeting consisted of an open house with a PowerPoint slide presentation. After the presentation, a question-and-answer session was held.

Comments generally focused on the following topics:

- Impact to businesses along existing highway
- Impact to trails and recreation areas
- Impacts to private property
- Impacts on residential areas along project area
- Concerns for project funding
- Environmental impacts such as wildlife and water quality
- Specific details of the roadway, such as the TI
- Requests for contact information

As listed above, the comments and concerns expressed by the attendees during the meeting included impacts to CFRA, businesses and residences. There were a few inquiries about the traffic patterns. Questions about particular impacts were asked. The 17 comment cards, 10 surveys and 22 emails collected and received after the meeting stated similar concerns and comments.

Suggestions and comments from the open house were considered and the ones applicable to the scope of this study were incorporated in the study process for determining study conclusions.

Figure 9 shows the public involvement process that has been followed during the Feasibility Study.

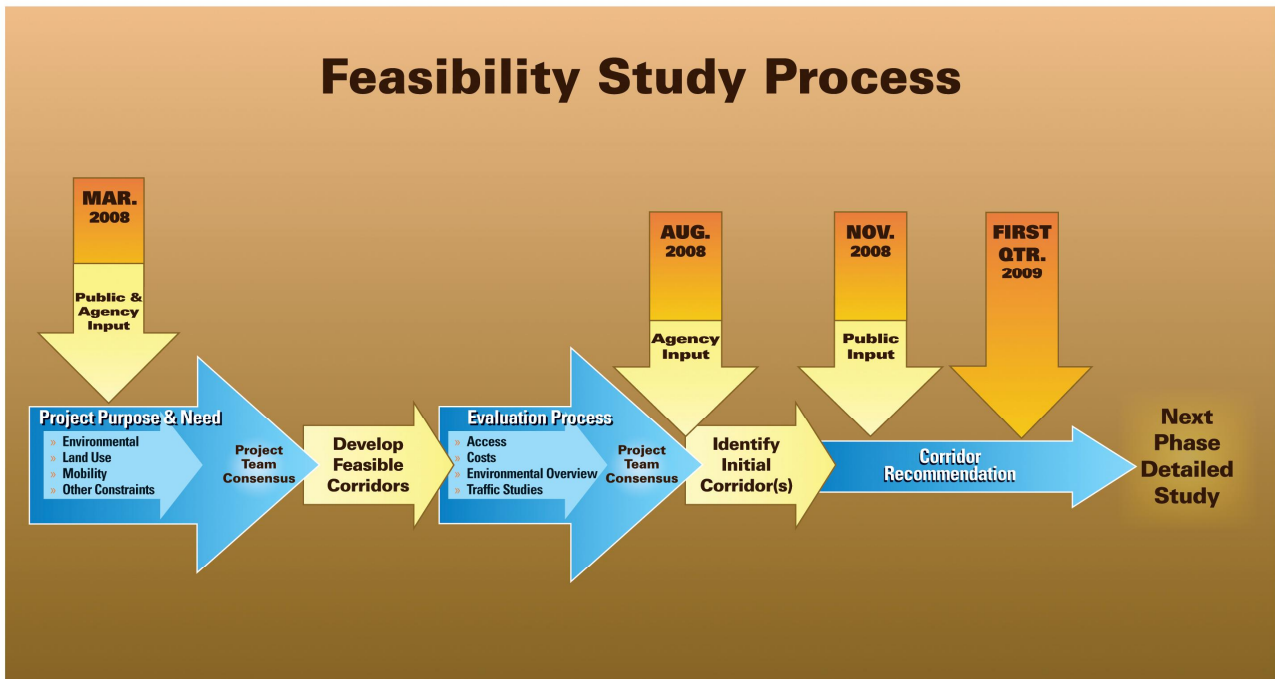


Figure 9 Feasibility Study / Public Involvement Process

3.0 Traffic and Interchange Data

3.1. Existing Conditions

A Preliminary Traffic Report was prepared to supplement this study. The traffic report is available in the ADOT Predesign Portal (<http://primaweb/pddmp/>). The following sections summarize the evaluation and findings of the traffic report.

Data was collected and analyzed relative to existing conditions such as roadway geometry, traffic volumes, and traffic signal operations at the existing I-40/US 93 interchange (Beale Street TI). Historical trends related to traffic volume growth and the distribution of traffic on the roadways were also noted.

3.1.1. Data Collected

A site visit to the study area was conducted in November 2007 to gather information on existing traffic conditions and the existing interchange configuration, and to observe current operations.

Existing (2006) daily traffic volume data was obtained from previously conducted June and September 2006 ADOT traffic counts. The data obtained from ADOT consisted of daily directional volumes on the I-40 mainline and on US 93 northwest of the Beale Street TI, as well as daily ramp volumes at the interchange. No volume data was available along Beale Street south and east of the interchange. Conducting peak hour intersection movement traffic counts was not within the scope of work.

The *US 93 and I-40 Multi-Modal Corridor Profile Studies* were obtained and reviewed. Although the documents do not identify lane requirements or specific interchange locations, they do acknowledge that an alternative connection between I-40 and US 93 is needed in the west Kingman area. These studies are referenced to document previous planning efforts that show the same vision and consistency with this current feasibility study.

Other pertinent documents from previously conducted studies in the area were reviewed. Information from two of these documents was utilized to develop existing and future peak hour intersection movement volumes.

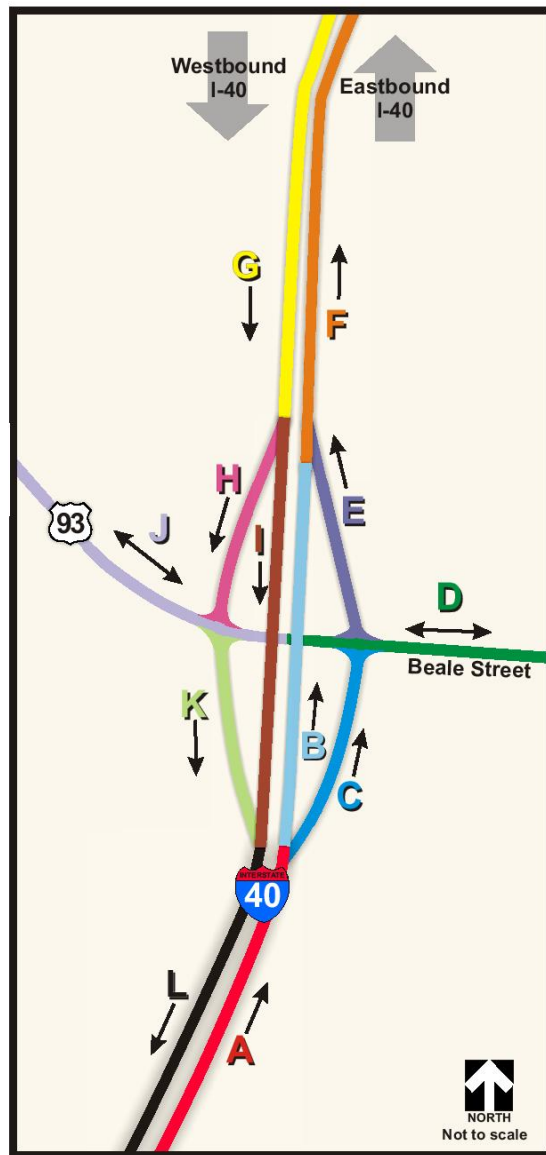
The first pertinent document, the *Kingman Area Transportation Study (KATS)*, prepared by Parsons Brinckerhoff in January 2005, provided existing (2003) and projected future (2008, 2013, and 2023) daily traffic volumes for numerous roadway segments in the Kingman area, including some of the roadways in the vicinity of the I-40/US 93 interchange. As part of that study, a KATS travel demand model was developed to assist in projecting future traffic volumes. The KATS model utilized existing and projected socioeconomic data to estimate traffic volumes in the Kingman area. The daily volume outputs from the KATS 2023 model at the I-40/US 93 interchange were obtained from Parsons Brinckerhoff.

The second pertinent document, the *West Kingman T.I. Operations Study*, prepared by Catalina Engineering, Inc. in October 1996, provided August 1996 peak hour intersection movement counts. While it is recognized that the 1996 volumes are not relevant to this study due to their age, the distribution of those volumes (i.e., how many vehicles turned left versus going through or turning right on a given approach) is believed to be relevant based on observed field conditions.

Existing and projected average daily traffic volumes are shown in **Figure 10**.

3.1.2. Crash Analysis

Crash data for I-40 between mileposts 46.5 and 49.5 were gathered and analyzed in order to evaluate the number and type of crashes and the frequency of occurrence. An evaluation of the crash data provided by ADOT Traffic Records was conducted for the five-year period from June 1, 2001 through May 31, 2006.



AVERAGE DAILY TRAFFIC			
SECTION	2006	2040	LOCATION
A	8,513	29,507	Eastbound I-40 to Off-Ramp
B	-	22,933	Eastbound I-40 before Ramp Traffic
C	2,347	6,574	Eastbound I-40 Off-Ramp to Beale Street/US 93
D	-	41,541	Beale Street, Combined Directional Traffic
E	12,457	24,340	On-Ramp to Eastbound I-40
F	16,603	47,273	Eastbound I-40
G	16,132	45,060	Westbound I-40 to Off-Ramp
H	12,433	22,627	Westbound Off-Ramp to US 93/Beale Street
I	-	22,433	Westbound I-40 before Ramp Traffic
J	21,500	56,823	US 93, Combined Directional Traffic
K	1,830	6,510	On-Ramp to Westbound I-40
L	6,863	28,943	Westbound I-40

Figure 10 Traffic Volumes

Of the 106 crashes that occurred in the past five years, there were three fatal crashes (all in the eastbound direction) resulting in three fatalities and four injuries. There were 30 injury crashes with a total of 45 persons injured. All other crashes resulted in only property damage. Predominant collision manners were single vehicle crashes (50 percent), rear-end crashes (24 percent), and sideswipe crashes (19 percent). Just under half (48 percent) of the crashes involved collisions with other vehicles while 13 percent involved collisions with fixed objects and 10 percent involved overturning vehicles. No obvious crash patterns were identified that are subject to correction by typical countermeasures. The fatal crashes consisted of two collisions of pick-up trucks with truck tractor/semi-trailers and one single-vehicle crash that involved a pick-up colliding with a fence. In all three fatal crashes, the driver at fault was reported to be traveling at speeds too fast for the roadway conditions. **Table 2** provides a summary of the data available on the three fatal crashes.

Table 2 – Summary of Fatal Crashes

Location	Collision Manner	Type of Crash	Cause	Date
MP 46.9 (I-40 EB)	Rear-End	Collision with truck tractor and semi-trailer	Speed too fast for conditions	05/15/2004
MP 47.9 (I-40 EB)	Rear-End	Collision with truck tractor and semi-trailer	Speed too fast for conditions	06/25/2002
MP 49.3 (I-40 EB)	Single Vehicle	Collision with fence	Speed too fast for conditions	01/02/2006

A fatality crash rate was calculated using the total number of fatal crashes and a weighted segment 2006 ADT (based on the 2006 ADT counts provided by ADOT) for the eastbound direction of the three-mile segment analyzed during the five-year study period. The 2006 ADT values were used because ADT data was not available for prior years. The following formula was used to calculate the fatality rate as crashes per 100 million vehicle miles traveled (MVMT).

$$\frac{100,000,000 \times (3 \text{ fatal crashes})}{\text{Weighted ADT of } 10,067 \times (3 \text{ mile segment length}) \times 365 \text{ days} \times (5 \text{ years})}$$

A fatality crash rate of 5.4 crashes per 100 MVMT was calculated for the three-mile eastbound segment. If the eastbound and westbound roads are considered as one segment and the weighted ADTs for both directions are summed, the fatality crash rate is 2.93. These fatality crash rates are considerably higher than the 2002-2006 average Arizona and U.S. fatality crash rates of 2.07 and 1.46, respectively (per the *2006 Arizona Crash Facts Summary* prepared by ADOT Motor Vehicle Division). Crash data for this segment of roadway should be monitored regularly to determine if fatal crash patterns emerge that are subject to correction.

Average annual total crash rates were calculated for both the eastbound and westbound directions of the three-mile segment using the total number of crashes over the five-year period and the weighted 2006 ADT volumes. The following formula was used to calculate the total crash rate as crashes per MVMT.

$$\frac{1,000,000 \times (\# \text{ of crashes})}{\text{Weighted ADT} \times (3 \text{ mile segment length}) \times 365 \text{ days} \times (5 \text{ years})}$$

Table 3 summarizes the average annual total crash rates for the three-mile segment of I-40. These crash rates are considerably lower than the 2006 average Arizona and U.S. crash rates of 2.2 and 2.0, respectively (per the *2006 Arizona Crash Facts Summary* prepared by ADOT Motor Vehicle Division and the *Traffic Safety Facts 2006* prepared by NHTSA). More detailed analysis should be conducted in the future if crash rates increase dramatically from their current levels.

Table 3 – Average Annual Total Crash Rates

Direction	Weighted 2006 ADT	Total Number of Crashes	Crash Rate (per MVMT)
I-40 EB	10,067	51	0.93
I-40 WB	8,608	55	1.17
Total (EB + WB)	18,675	106	1.04

Crash data was also analyzed for number and types of crashes for US 93 between mileposts 67.0 and 71.0. The crash data was provided by the ADOT Highway Enhancements for Safety Section for the five-year period from June 1, 2001 through May 31, 2006.

There were 268 reported crashes during this five-year period. Of the 268 reported crashes during this five-year period, there were zero fatal crashes and 87 injury crashes. Predominant collision manners were rear-end crashes (44 percent), angle crashes (19 percent), single vehicle crashes (18 percent), and same-direction sideswipe crashes (16 percent). The majority of crashes involved collisions with other vehicles (81 percent). Of the 268 reported crashes, the ramps at the West Kingman Traffic Interchange comprised 42 of the crashes (16%). 172 (64%) of the crashes were located at intersections within the four miles of US 93 for which data was obtained. 76 (28%) of the crashes occurred at Lampton Avenue (milepost 70.93), which is less than 200 feet west of the I-40 WB off-ramp terminus with Beale Street. Of these 76 crashes, 37 were rear-end collisions. While the specifics of these crashes is not known, it is reasonably safe to conclude that the majority of the crashes at Lampton Avenue are likely related to the operational characteristics of the I-40/US 93 West Kingman TI. The remaining intersections in the study area are located far enough away from the I-40/US-93 Traffic Interchange to have any conclusive impact on this study. No further information was available about the location of the remaining 54 crashes reported within the study area.

3.1.3. Existing Traffic Conditions along the US 93 Corridor

The existing corridor experiences high traffic volumes and long delays. US 93 is not currently access-controlled, and the roadway along US 93 immediately north of I-40 is classified as an urban principal arterial with sidewalks, numerous business accesses and driveways with signalized intersections at the interchange between I-40 and US 93.

The area's existing traffic circulation deficiencies are exacerbated during peak seasons. Las Vegas, Nevada is a premier tourist and recreation destination. Traffic throughout the year includes a high percentage of tour buses and RVs, with many drivers unfamiliar with local road conditions. Current levels of service for the signalized interchange intersections at the Beale Street TI range from LOS B to LOS D.

3.1.4. Geometric Features

The Beale Street TI currently exists as a full diamond interchange with signalized intersections at both I-40 ramp terminals. The existing lane configuration at the Beale Street TI was shown previously in **Figure 4**. This TI is currently the most direct connection between I-40 and US 93.

3.1.5. 2006 Design Hour Traffic Volumes

The aforementioned available existing daily traffic volumes were utilized to develop existing (2006) design hour intersection volumes. Because a review of the existing count data indicated that volumes in both directions are relatively similar throughout both the morning and afternoon peak periods (i.e., the directional split is close to 50%), it was determined that one set of design hour volumes would suffice rather than having separate morning design hour and afternoon design hour volumes.

Through an iterative series of calculations, the daily volumes were converted into design hour intersection movement volumes assuming certain constraints – including K-factors (the percent of daily traffic that occurs in the peak hour) and directional splits, as well as the need for the volumes between the two ramp intersections to balance. For the 2006 design hour volumes, the K-factors and directional splits utilized were those calculated from the daily counts provided by ADOT.

For the Beale Street approach where no existing daily count data was available, a 2006 daily volume of 16,681 was estimated by taking the 2023 KATS model daily volume of 29,667 for the Beale Street approach and factoring it down to represent the estimated 2006 volume. This factoring was accomplished by utilizing a weighted average annual growth rate of 3.33 percent, which was calculated by comparing the change in volumes between the 2023 KATS model daily volumes for other approaches at the interchange and comparing them to the 2006 daily count volumes provided by ADOT for the same approaches.

3.1.6. 2006 Capacity Analysis

Using the 2006 design hour volumes, a capacity analysis was conducted using Synchro to determine the 2006 level of service (LOS) for each of the two signalized ramp terminal intersections at the existing Beale Street TI. The default Synchro parameters were utilized in the capacity analysis with the exception that a heavy vehicle percentage of ten percent was used to reflect the large number of trucks that travel through the interchange.

The LOS corresponds to the amount of delay experienced by drivers. **Table 4** shows the correlation between LOS and delay. The 2006 and delay LOS for each of the intersection approaches and the intersections overall can be seen in **Table 5**. The I-40/US 93 intersection correlating with the WB I-40 on and off-ramp terminals operates at acceptable LOS levels (i.e., LOS C or better) in the 2006 design hour. With an overall intersection LOS value of D, the I-40/US 93 intersection correlating with the EB I-40 on and off-ramp terminals does not operate at acceptable LOS levels in the 2006 design hour, although it is fairly close to operating at the LOS C threshold (which equates to 35.0 seconds of delay).

Table 4 – LOS Criteria for Signalized Intersections

Level of Service	Delay (seconds/vehicle)
A	≤ 10
B	> 10-20
C	> 20-35
D	> 35-55
E	> 55-80
F	> 80

Source: Figure 26-8, Highway Capacity Manual 2000

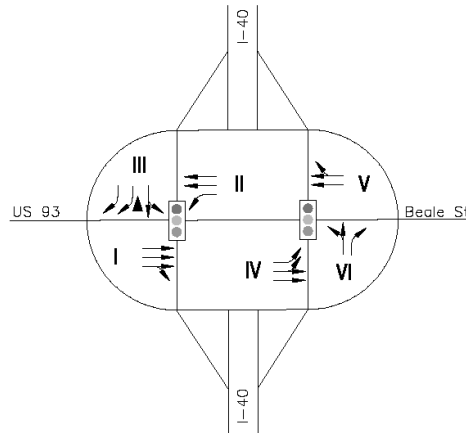


Table 5 – 2006 Beale Street TI Delay and Level of Service

Location	Delay (seconds/vehicle)	Level of Service
<i>I-40/US 93 Intersection @ WB I-40 on and off-ramp terminals</i>		
I SB US 93 (west approach)	18.2	B
II NB US 93 (east approach)	6.1	A
III WB I-40 off-ramp (north approach)	31.2	C
Intersection Overall	18.7	B
<i>I-40/US 93 Intersection @ EB I-40 on and off-ramp terminals</i>		
IV SB US 93 (west approach)	20.4	C
V NB US 93 (east approach)	59.6	E
VI EB I-40 off-ramp (south approach)	38.0	D
Intersection Overall	38.5	D

3.2. 2040 Baseline Conditions

This project has a design year of 2040. 2040 volumes were projected using 2006 ADOT data as well as 2023 daily volumes, which were extracted from the KATS study transportation model. This section discusses traffic operations at the existing interchange under projected 2040 traffic conditions.

3.2.1. 2040 Baseline Traffic Volumes

To determine 2040 baseline traffic volumes, a growth rate was calculated and applied to the aforementioned KATS model 2023 daily traffic volumes. While the weighted average annual growth rate between 2006 and 2023 daily volumes in the vicinity of the interchange was calculated to be 3.33 percent, a closer inspection of the interim 2008 and 2013 daily volumes shown in the KATS report indicated that the average annual growth rate is anticipated to decrease over time – starting out higher than 3.33 percent the first few years and decreasing to approximately 2.00 percent by 2023. This slowing of the growth rate over time is logical given that there are limited growth opportunities in the vicinity of the interchange due to the natural terrain and Cerbat Foothills Recreation Area near the interchange. As such, an annual growth rate of 2.00 percent was assumed between 2023 and 2040 to estimate 2040 baseline daily volumes.

Once 2040 baseline daily volumes were calculated, 2040 baseline design hour intersection movement volumes were developed using a similar iterative process to what was conducted to develop the 2006 design hour volumes, except that a K-factor of 10 percent was assumed on all approaches. The 2040 baseline design hour volumes are more than double the magnitude of the 2006 design hour volumes.

3.2.2. 2040 Baseline Capacity Analysis

A capacity analysis was conducted using Synchro for each of the two intersections at the Beale Street TI using the 2040 baseline design hour volumes and the existing interchange geometry. The 2040 baseline (No-Build) LOS for each of the intersection approaches and the intersections overall can be seen in **Table 6**. Modeling indicates a LOS F, extreme congestion, for both the west half and the east half of the signalized intersection at the Beale Street TI under the No-Build scenario. With overall intersection LOS values of F at both intersections, the Beale Street TI is not anticipated to operate at acceptable LOS levels in the 2040 baseline (No-Build) design hour. In fact, without the implementation of improvements, the LOS is expected to be so poor that queuing on the WB I-40 off-ramp could potentially extend back more than a quarter-mile, which would greatly impact the I-40 mainline traffic and adversely impact safety. Queues at most of the other interchange approaches are also expected to be more than a quarter-mile in length.

The 2040 baseline (No-Build) LOS and delay for each intersection approach are shown in **Table 6**.

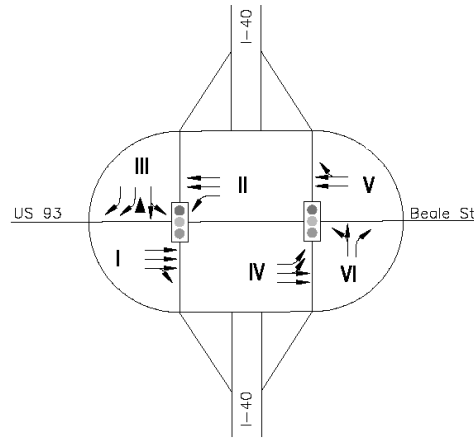


Table 6 – 2040 Baseline Beale Street TI Delay and Level of Service

Route	Delay (seconds/vehicle)	Level of Service
<i>I-40/US 93 Intersection @ WB I-40 on and off-ramp terminals</i>		
I SB US 93 (west approach)	285.9	F
II NB US 93 (east approach)	95.8	F
III WB I-40 off-ramp (north approach)	256.3	F
Intersection Overall	220.6	F
<i>I-40/US 93 Intersection @ EB I-40 on and off-ramp terminals</i>		
IV SB US 93 (west approach)	454.8	F
V NB US 93 (east approach)	522.3	F
VI EB I-40 off-ramp (south approach)	214.2	F
Intersection Overall	454.4	F

3.2.3. Potential Beale Street TI Improvements

An analysis was conducted using Synchro to determine what potential improvements at the Beale Street TI would need to be made so that both the ramp terminal intersections operate at LOS C or better in 2040. The analysis determined that the Beale Street TI would have to be expanded significantly for both ramp terminal intersections to provide acceptable LOS. For example, the WB I-40 on and off ramps intersection would need four right-turn lanes and two left-turn lanes on the north approach, five through lanes on the west approach, and three through lanes on the east approach, while the EB I-40 on and off ramps intersection would need three left-turn lanes on the west approach and five through lanes on the east approach. Such improvements would be costly and would likely be unfeasible given the existing R/W and topographical constraints.

3.3. Potential Higher Capacity Alternatives

Findings from the 2040 baseline capacity (No-Build) analysis indicate that a higher capacity alternative to the existing Beale Street TI will be needed in the future.

3.3.1. Direct Connect Ramps and 2040 Alternate Design Hour Volumes

The KATS report indicates that the 2023 KATS travel demand model included a scenario where direct connect ramps were provided north of the existing Beale Street TI for the heavy WB I-40 to NB US 93 and SB US 93 to EB I-40 movements. The inclusion of these direct connect ramps north of the Beale Street TI resulted in approximately 14,000 vehicles per day (vpd) utilizing each of the two direct connect ramps. The daily volumes on I-40 between the direct connect ramps and the existing Beale Street TI are expected to decrease by approximately 24,000 vpd due to the direct connect ramps while the daily volumes on US 93 between the direct connect ramps and the existing interchange are expected to decrease by approximately 22,000 vpd.

To calculate the potential impacts of the direct connect ramps north of the Beale Street TI on 2040 daily volumes, the aforementioned volume changes in the 2023 daily volumes due to the direct connect ramps were increased at the same annual growth rate of 2.00 percent that was assumed previously to develop the 2040 baseline daily volumes. 2040 alternate design hour intersection movement volumes for the existing interchange were then developed from the 2040 daily volumes that accounted for the direct connect ramps north of the Beale Street TI using the aforementioned iterative process.

The 2023 KATS direct connect scenario did not include direct connect ramps for the SB US 93 to WB I-40 and EB I-40 to NB US 93 movements. To develop volumes for these direct connect ramps, it was assumed that one-third of the 2040 baseline design hour volumes for the SB US 93 to WB I-40 and EB I-40 to NB US 93 movements would utilize the direct connect ramps. The other two-thirds of the 2040 baseline design hour volumes are assumed to have an origin or destination in the vicinity of the existing Beale Street TI and would therefore not use the direct connect ramps. This magnitude of traffic split was assumed because it is expected that the majority of motorists traveling between the area northwest of Kingman (i.e., near Las Vegas) and the area southwest of Kingman (i.e., near Needles) will utilize other more direct routes (e.g., US 95) instead of the US 93/I-40 connection unless they have an origin or destination near the Beale Street TI.

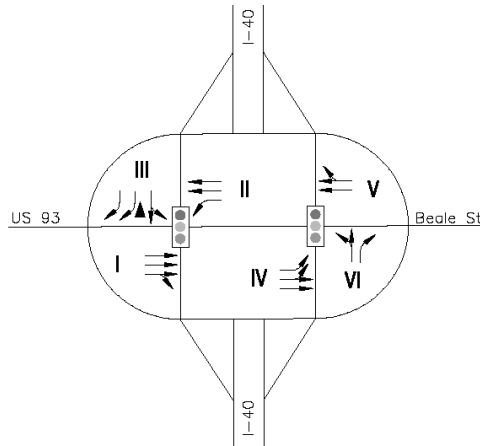
It is anticipated that the amount of traffic utilizing the direct connect ramps would be influenced by the actual location of the direct connect ramps relative to the existing Beale Street TI. If the direct connect ramps were located north of the existing Beale Street TI (i.e. Corridors C, D, E, and F)(as was assumed in the KATS model scenario), they would likely be more utilized for the intended purpose of a free flow interchange and connection between I-40 and US 93 and would divert more traffic from the Beale Street TI than if the direct connect ramps were located south of the existing Beale Street TI (i.e. Corridors A, B, G, and H). This is because travelers making the WB I-40 to NB US 93 and SB US 93 to EB I-40 movements would likely be reluctant to travel south of the Beale Street TI because the more circuitous and longer route would increase their travel time. Having the direct connect ramps south of the Beale Street TI would only become attractive to travelers if delays experienced at the Beale Street TI were of such a magnitude that their overall travel time would be shorter by taking the more circuitous and longer route because it avoided the delay at the Beale Street TI.

3.3.2. 2040 Alternate Capacity Analysis

A capacity analysis was conducted using Synchro for the west half and the east half of the intersection at the existing Beale Street TI using the 2040 alternate design hour volumes and the existing Beale Street interchange geometry. For general analysis purposes, it was assumed that at least 35 percent of the projected 2040 volumes will utilize the direct connection to and from US 93. It is recognized that this percentage may vary depending upon which alternative is ultimately selected. **Table 7** shows the LOS for each of the intersection approaches and the overall intersection assuming at least 35 percent of the projected 2040 volumes utilize the direct connection to and from US 93. Some improvement in LOS is apparent as a result of the direct connection ramps relative to what is shown in **Table 6** under the No-Build Alternative. If direct connect ramps are implemented and the lane configurations of the existing

Beale Street TI for the design year 2040 remain “as-is”, the LOS for the west half of the intersection would be acceptable, while the LOS would remain poor at the east half of the intersection with the EB I-40 on and off-ramps.

FHWA has stated that the goal of a system interchange is to provide for all movements wherever possible, and that this project should consider all directional ramps. The proposed direct connections between I-40 and US 93 and system interchange meet the objective of providing efficient and uninterrupted flow to regional traffic in the area. The direct connection between I-40 and US 93 would alleviate the anticipated congestion, resulting in both time and cost savings for the through traffic, while the collector-distributor roadway system would still provide access to the current Beale Street TI and its associated businesses and other destinations.



**Table 7 – 2040 Existing Beale Street TI Delay and Level of Service
(Accounting for direct connect ramps)**

Route	Delay (seconds/vehicle)	Level of Service
<i>I-40/US 93 Intersection @ WB I-40 on and off-ramp terminals</i>		
I SB US 93 (west approach)	19.9	C
II NB US 93 (east approach)	13.3	B
III WB I-40 off-ramp (north approach)	27.7	C
Intersection Overall	17.7	B
<i>I-40/US 93 Intersection @ EB I-40 on and off-ramp terminals</i>		
IV SB US 93 (west approach)	201.1	F
V NB US 93 (east approach)	280.2	F
VI EB I-40 off-ramp (south approach)	87.4	F
Intersection Overall	229.8	F

3.3.3. Potential Improvements to Existing Interchange (accounting for direct connect ramps)

An analysis was conducted using Synchro to determine what potential improvements at the existing Beale Street TI would need to be made for both the west half and the east half of the existing interchange intersection to operate at LOS C or better in 2040 if the direct connect ramps were provided.

The analysis determined that the intersection of I-40/US 93 correlating with the EB I-40 on and off-ramp terminals could provide acceptable LOS by converting the SB US 93 (Beale Street) through-left shared lane to an exclusive through lane, replacing the SB split phasing with protected/permitted left-turn phasing and permitted through phasing, and adding a NB right-turn lane. The intersection correlating with the WB I-40 on and off-ramp terminals would provide acceptable LOS without any modifications to the existing geometry. These potential improvements are illustrated in **Figure 11**.

3.4. Direct Connect Ramps

An analysis was conducted using HCS+ to determine what roadway geometry will likely be needed in 2040 where the direct connect ramps connect to I-40 and to US 93. The details of this analysis are contained within the Traffic Report prepared for this project. It should be noted that there are operational differences between the various alternatives under evaluation, with their proximity to the existing Beale Street TI being one of the primary factors in how the interchange will operate. More detailed operational evaluations will be required during the Design Concept study for each of the alternatives developed for each of the preferred corridors. General findings from this analysis that are applicable to the various corridor alternatives include:

- I-40 is anticipated to need four mainline travel lanes in each direction between the Stockton Hill Road TI and the direct connect ramps (or, if direct connect ramps aren't provided, four lanes will be needed to the Beale Street TI) to accommodate 2040 traffic;
- I-40 is anticipated to need three mainline travel lanes in each direction to accommodate 2040 traffic on I-40 west of the direct connect ramps (or, if direct connect ramps aren't provided, three lanes will be needed on I-40 west of the Beale Street TI) and on US 93 west of the Beale Street TI;
- The WB I-40 to NB US 93 and SB US 93 to EB I-40 direct connect ramps will likely need to be double-lane ramps to accommodate 2040 traffic;
- The SB US 93 to WB I-40 and EB I-40 to NB US 93 direct connect ramps will likely only need to be single-lane ramps; and
- Adding a collector-distributor roadway system along mainline I-40 to provide a connection to the direct connect ramps and the existing Beale Street TI is expected to accommodate 2040 traffic.

3.5. Traffic Conclusions

The following are the major conclusions for the various corridor alternatives resulting from the findings of the traffic analysis:

- The existing Beale Street TI is not anticipated to be able to accommodate projected 2040 traffic;
- Opportunities to improve the existing Beale Street TI are limited due to R/W and topographical constraints, so a higher capacity alternative to the existing Beale Street TI will likely be needed to accommodate 2040 traffic;
- Providing direct connect ramps for the WB I-40 to NB US 93 and SB US 93 to EB I-40 movements is needed because providing these direct connect ramps significantly improves traffic conditions for these two movements as well as for the remaining movements at the existing Beale Street TI;
- The WB I-40 to NB US 93 and SB US 93 to EB I-40 direct connect ramps will need to be two-lane ramps to accommodate 2040 traffic;

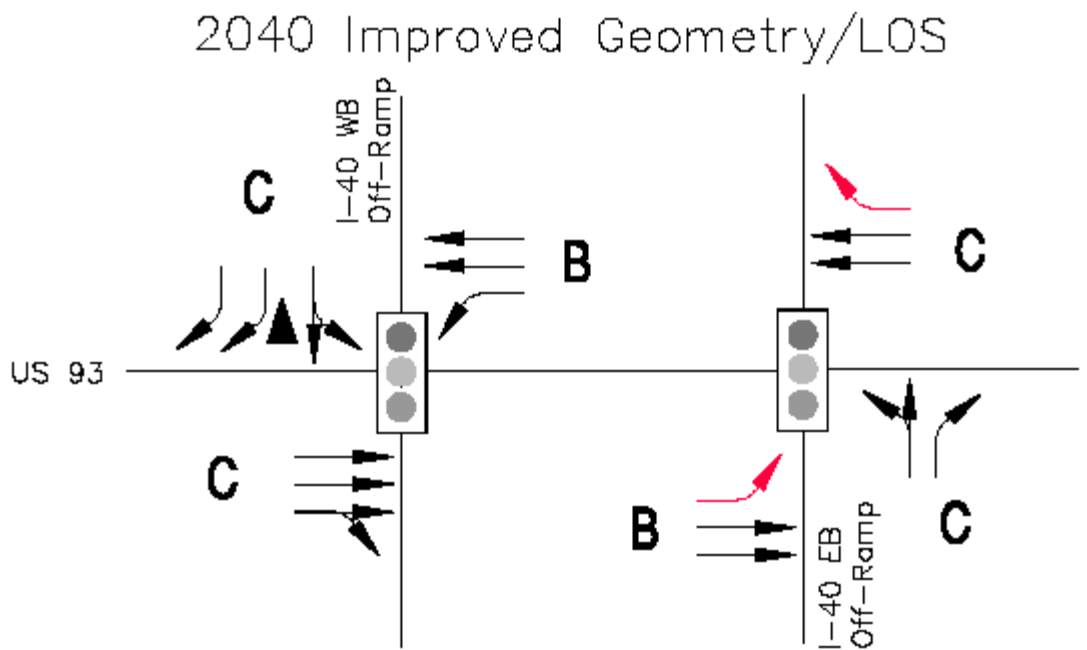
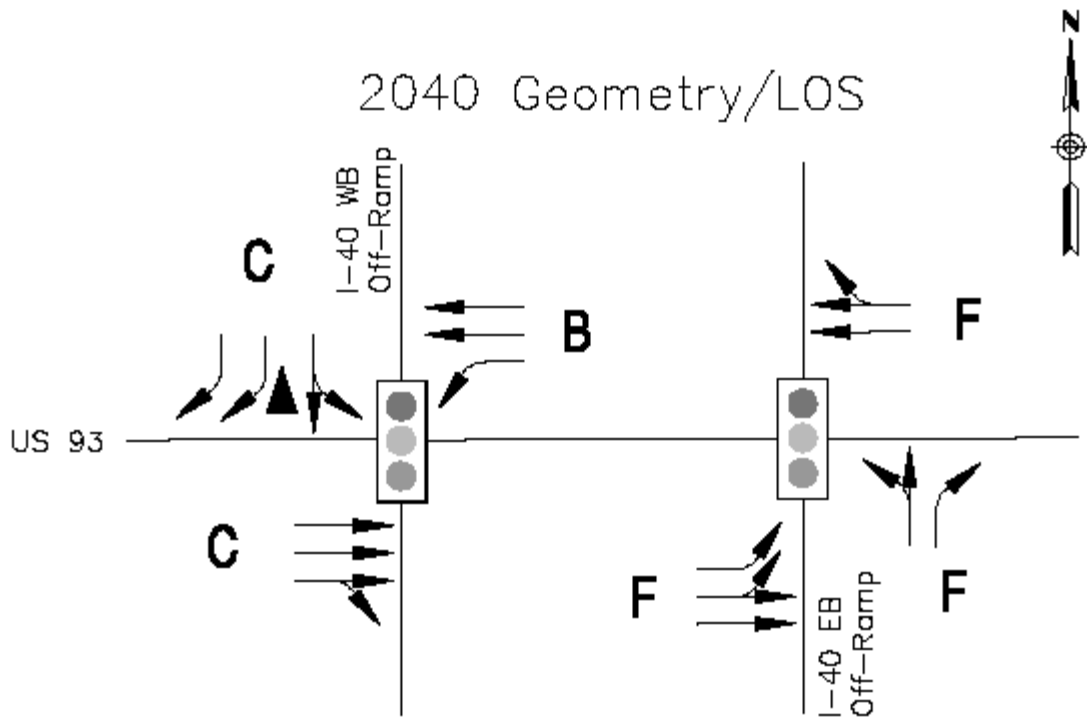


Figure 11 Recommended Intersection Improvements with Direct Connect Ramps

- The SB US 93 to WB I-40 and EB I-40 to NB US 93 direct connect ramps will be at a minimum single-lane ramps;
- I-40 is anticipated to need four mainline travel lanes in each direction between the Stockton Hill Road TI and the direct connect ramps (or, if direct connect ramps aren't provided, four lanes will be needed to the Beale Street TI) to accommodate 2040 traffic. The fourth lane for EB I-40 will not need to extend beyond the Stockton Hill Road TI exit ramp;
- I-40 is anticipated to need three mainline travel lanes in each direction to accommodate 2040 traffic on I-40 west of the direct connect ramps (or, if direct connect ramps aren't provided, three lanes will be needed west of the Beale Street TI) and on US 93 west of the Beale Street TI; and
- Adding a collector-distributor roadway system along mainline I-40 to provide a connection to the direct connect ramps and the existing Beale Street TI is expected to accommodate 2040 traffic.

Table 8 describes the recommended number of lanes for the mainline and each of the direct connect ramps.

Table 8 – 2040 Recommended Number of Lanes

Location	Existing Number of Lanes	Recommended Number of Lanes	
MAINLINE LANE CONFIGURATIONS			
I-40 Westbound	2 Lanes	4 Lanes Between Stockton Hill TI on-ramp and proposed ramp to NB US 93	3 Lanes west of proposed ramp to NB US 93
I-40 Eastbound	2 Lanes	3 Lanes west of proposed ramp to NB US 93	4 Lanes between on-ramp from SB US 93 to Stockton Hill TI exit Ramp
US 93 Northbound	2 Lanes	3 Lanes West of Ramp	
US 93 Southbound	2 Lanes	3 Lanes West of Ramp	
NEW CONNECTING RAMP CONFIGURATIONS			
Eastbound I-40 to Northbound US 93		1 Lane	
Westbound I-40 to Northbound US 93		2 Lanes	
Southbound US 93 to Eastbound I-40		2 Lanes	
Southbound US 93 to Westbound I-40		1 Lane	

While this feasibility report evaluated direct connect ramps between I-40 and US 93, the future design concept and environmental studies should also consider other types of intersections including roundabouts, diverging diamond interchanges, continuous flow, and any other configurations that may have the potential to increase the level of service of the ramp terminal intersections.

4.0 Location Analysis

The study area around the western part of Kingman is situated in very hilly/mountainous terrain and is situated within portions of the Cerbat Foothills Recreation Area (CFRA). I-40 carves through this mountainous terrain in a southwesterly direction with a series of horizontal and vertical curves. US 93 traverses through the Cerbat Mountains and Coyote Pass in a southeasterly direction and provides access to and from Las Vegas, Nevada. US 93 connects to I-40 at the Beale Street TI, a signalized diamond interchange, in west Kingman. The last mile of US 93 approaching the interchange is commercially developed and has approximately 30 access points to various businesses including several un-signalized intersections. The anticipated increase in traffic volumes, the limited capacity of the signalized interchange at Beale Street and I-40, the high number of conflict points with driveways and cross streets within this segment, and the anticipated growth in the area indicates that alternate routes with direct access between the I-40 and US 93 are necessary to serve the future needs of the regional traffic operations.

A number of potential alternative corridors were analyzed to provide a new system interchange and access-controlled connector between I-40 and US 93. The analysis was undertaken to determine the most feasible corridor alternative for the new connection. The following sections provide a description of the alternatives analyzed, the evaluation criteria, and the corridors identified as most preferred at this level of study.

4.1. Alternatives

The corridor alternatives considered were divided into two groups (Northern Corridor alternatives and Southern Corridor alternatives) along with a No Build alternative. The corridors are approximately ¼ mile wide. The Northern Corridor alternatives include the corridors located north of the existing Beale Street TI and the Southern Corridor alternatives include the corridors located south of the existing Beale Street TI. The Southern Corridor alternatives include A, B, G, and H. The Northern Corridor alternatives include C, D, E, and F. The following sections describe the corridor alternatives from **Figure 3**.

4.1.1. No Build Alternative

No Build Alternative: The No Build Alternative was considered for evaluation purposes. Under this alternative, the I-40 and US 93 highways would remain in the present condition. Only regular maintenance activities would be conducted. This alternative provides no improvements to the safety, capacity or operational characteristics of the existing roadway and involves no cost or change to environmental features of the corridor.

The No Build Alternative does not address the inadequate capacity of the West Kingman TI and the resulting delays that motorists encounter at this interchange. The No Build Alternative also does not address the safety concerns related to traffic backing up onto the westbound I-40 travel lanes due to congestion at the traffic interchange. Operational characteristics of the interchange will not be addressed under this alternative either.

4.1.2. Corridor Alternatives South of the Beale Street TI

Corridor Alternative A: This alternative was developed as the initial corridor for alternatives located south of the existing Beale Street TI since it would not impact the existing TI configuration and would still provide a relatively feasible geometric location to tie into I-40. In general, the corridor alignment would

require large earthwork cuts and excavation of the mountainous terrain at the tie-in point with I-40, but then follows the general topography to minimize earthwork cuts and fills. It ties into US 93 approximately 1.5 miles south of the SR 68/US 93 interchange and approximately 1.3 miles north of the businesses on Beale Street (US 93). The approximate length of this corridor alignment is 3.1 miles. The new system TI location on I-40 would be located more than one mile from the adjacent Beale Street TI and would not likely require collector distributor roads to facilitate traffic movements associated with the Beale Street TI ramps. The majority of this corridor runs through the CFRA.

Corridor Alternative B: This corridor alternative was developed as a shorter variation of Alternative A. This alternative would tie into I-40 closer to the existing Beale Street TI. The new system TI would be closer than one mile from the existing TI and would require collector distributor roads and reconfiguration of the existing Beale Street TI ramps. In general, the corridor alignment requires larger earthwork cuts and excavation of the mountainous terrain at the tie-in point with I-40. The alignment then follows the topography and a ridge line along a floodplain to minimize earthwork cuts and fills. It ties into US 93 at the same location as Alternative A, approximately 1.5 miles south of the SR 68/US 93 interchange and approximately 1.3 miles north of the businesses on Beale Street (US 93). The approximate length of this corridor alignment is 2.5 miles. The majority of this corridor runs through the CFRA.

Corridor Alternative G: This corridor was also developed as a variation of Alternative A. It is longer but ties into I-40 farther south where the terrain is less severe. In general, the corridor alignment would require less severe earthwork cuts and excavation at the tie-in point with I-40 due to the flatter terrain in this area. However, the new interchange at the tie-in area with I-40 would lie within a large floodplain area. The corridor then climbs in elevation along the mountain ridge and then eventually follows the topography to minimize earthwork cuts and fills. It ties into US 93 at the same location as Alternative A, approximately 1.5 miles south of the SR 68/US 93 interchange and approximately 1.3 miles north of the businesses on Beale Street (US 93). The approximate length of this corridor alignment is 3.7 miles. The new system TI location on I-40 would be located approximately two miles from both the adjacent Beale Street TI and Shinarump Drive TI and would not require collector distributor roads. The majority of this corridor runs through the CFRA.

Corridor Alternative H: This corridor was developed as an alternative located closer to the existing Shinarump Drive TI. In general, the corridor alignment was developed to avoid major earthwork cuts and fills in the Cerbat Mountains by essentially looping around the mountains and then tying back into US 93 approximately 0.3 miles south of the SR 68/ US 93 interchange and approximately 2.5 miles north of the businesses on Beale Street. The tie-in point with US 93 would likely impact the Port of Entry located near the interchange. Major improvements to the existing SR 68/US 93 system interchange would be anticipated to accommodate the new direct connect interchange. The new system TI location on I-40 would be located more than one mile from the adjacent Shinarump Drive TI and would not likely require collector distributor roads to facilitate traffic movements associated with the Shinarump Drive TI ramps. The approximate length of this corridor alignment is 7.0 miles. The majority of this corridor runs through the outer boundary limits of the CFRA. This corridor begins to encroach on developing communities in Golden Valley and planned development near the Shinarump Drive TI.

4.1.3. Corridor Alternatives North of the Beale Street TI

Corridor Alternative C: This corridor was developed along the existing Beale Street (US 93) alignment as an elevated viaduct alternative within the urbanized section north of the existing Beale Street TI. The

elevated viaduct would extend north past the urban section and businesses along Beale Street and then tie back into the existing grade of US 93 to avoid the numerous accesses in order to provide a free-flow access-controlled connection. The location of the tie-in would be governed by the horizontal and vertical geometric design of the viaduct. The approximate length of the corridor alignment is one mile. The existing Beale Street and adjacent properties would likely require some upgrades and improvements to accommodate the location of the viaduct foundations. The new system TI ramps along I-40 would conflict with the existing Beale Street TI ramps and would require collector distributor roads and associated improvements to the existing ramps.

Corridor Alternative D: This corridor was developed north of the existing Beale Street TI following the least severe terrain and the shortest distance connecting I-40 and US 93 serving the predominant movement (WB I-40 to NB US 93 and SB US 93 to EB I-40). It ties into US 93 approximately 2.3 miles south of the SR 68/US 93 interchange and approximately 0.5 miles north of the businesses on Beale Street. The approximate length of the corridor alignment is one mile. The new system TI ramps along I-40 would conflict with the existing Beale Street TI ramps and would require collector distributor roads and associated improvements to the existing ramps.

Corridor Alternative E: This corridor was developed as a Northern Corridor alternative to loop around the mountains and establish a new system TI location along I-40 that was more than one mile from the existing Beale Street TI and Stockton Hill TI to avoid the need for potential collector distributor roads. In general, this corridor requires large earthwork cuts and fills at the tie-in point with I-40, and then loops around the mountainous terrain to the north to minimize large earthwork cuts and fills and to avoid crossing a large floodplain. It ties into US 93 approximately 1.9 miles south of the SR 68/US 93 interchange and approximately 0.9 miles north of the businesses on Beale Street. The approximate length of this corridor alignment is 2.5 miles.

Corridor Alternative F: This corridor was developed as a variation of Alternative E. In general, this corridor requires large earthwork cuts and fills at the tie-in point with I-40, and then loops around the mountainous terrain to the north to minimize large earthwork cuts and fills and to avoid crossing a large floodplain. It ties into US 93 at the same location as Alternative E, approximately 1.9 miles south of the SR 68/US 93 interchange and approximately 0.9 miles north of the businesses on Beale Street. The approximate length of this corridor alignment is 2.6 miles. The new system TI ramps along I-40 would conflict with the existing Stockton Hill TI ramps and would require collector distributor roads and associated improvements to the existing ramps.

4.2. Evaluation of Corridor Alternatives

4.2.1. Evaluation Criteria

The evaluation criterion is geared to examine the merits of the corridor alternatives under consideration. The criteria were created to provide relative assessments of corridor attributes. Direct evaluations of various criteria such as costs or displacements cannot be accurately developed for corridors up to a quarter mile wide. Therefore, criteria such as corridor length were used to evaluate those criteria to provide a relative measure of comparison. These evaluations were made based on existing information utilizing GIS databases.

The criteria and resulting relative measurements are shown below in **Table 9**.

Table 9 – Evaluation Criteria and Measurements

Evaluation Criteria	Unit of Measure	A	B	C	D	E	F	G	H
City of Kingman & Private Land	acres	5	9	22	20	57	59	14	43
BLM /CFRA w/in City of Kingman Limits	acres	0	44	14	16	36	36	0	0
BLM /CFRA Outside City of Kingman Limits	acres	108	38	0	0	0	0	122	242
State Land	acres	0	0	0	0	0	0	0	90
Length of Corridor	miles	3.1	2.5	1.0	1.0	2.5	2.6	3.7	7.0
Order of Magnitude Total Project Cost	\$ Millions	\$ 62 M	\$ 62 M	\$ 167 M	\$ 51 M	\$57 M	\$ 60 M	\$ 71 M	\$169 M
Traffic									
Distance from Nearest Interchange	miles	1.4	0.9	0	0.5	1.2	0.9	2.0	1.1
Length of Travel from Stockton Hill TI on I-40 to SR 68 TI on US 93 (WB I-40 to NB US 93)	miles	9.4	8.3	6.7	6.1	6.6	5.8	11.3	14.1
Anticipated utilization of the direct connection by through traffic	-	<20%	<20%	35% to 50%	35% to 50%	25% to 35%	25% to 35%	<10%	<10%
Environmental									
Conflicts with known archaeological sites	count	3	3	2	6	4	4	4	3
Number of Facilities with Underground Storage Tanks	count	0	0	9	0	0	0	0	1
Number of Facilities with Leaking Underground Storage Tanks	count	1	0	11	0	0	2	1	1
Number of Hazardous Waste Handling Facilities	count	0	1	1	0	0	0	0	0
Wash Crossings	count	6	6	3	3	4	4	8	13
Potential Number of Residential Parcels	count	0	0	9	13	6	26	1	1
Potential Number of Business Parcels	count	0	0	27	0	1	1	0	0
Potential Number of Vacant/Municipal/Mixed/Other	count	5	6	37	15	9	12	7	7
Major Utility Conflicts	count	1	1	0	1	1	1	1	3
Springs/Wells/Water Tanks	count	0	0	0	1	2	2	0	1

4.2.2. Other Concerns

The following are other major concerns to be considered:

- Impact on local community (residential and business)
- Impact on pristine mountainous recreation areas
- Impact on floodplains and drainage channels
- Impact on local and regional traffic patterns
- Impact on utilities and mines

These concerns are evaluated below as they apply to each corridor alternative.

4.2.2.1 No Build Alternative

Pros:

- No capital cost required since there would be no new construction.
- No impact on the Cerbat Foothills Recreation Area, adjacent floodplains, and private and commercial parcels

Cons:

- The No Build Alternative provides no improvements to the safety, capacity or operational characteristics of the existing roadway and traffic interchange.

4.2.2.2 Corridor Alternative A

Pros:

- The new system TI location along I-40 would be located more than one mile from both the existing Beale Street TI located to the north and the existing Shinarump Drive TI located to the south. Collector distributor roads would not be anticipated and impacts to the existing interchange configuration are anticipated to be minimal.
- Compared to all of the alternatives located south of the existing Beale Street TI, this alternative minimizes impacts to floodplains.

Cons:

- The corridor runs entirely through the Cerbat Foothills Recreation Area.
- New RW would be required for the entire corridor.
- Location is south of the existing Beale Street TI and makes the predominant traffic movement (WB I-40 to NB US 93 and SB US 93 to EB I-40) less appealing, which may make the alternative underutilized.

4.2.2.3 Corridor Alternative B

Pros:

- This corridor is 0.6 miles shorter than Alternative A.

Cons:

- The corridor runs entirely through the Cerbat Foothills Recreational Area.
- New RW would be required for the entire corridor.
- The corridor would potentially impact a floodplain as it runs along a larger wash.
- The new system TI location along I-40 would be less than one mile from the existing Beale Street TI located to the north and would impact the operations of the existing Beale Street TI ramps. This would require collector distributor roads and reconfiguration of the existing ramps due to the close proximity of the TI locations.

- Location is south of the existing Beale Street TI and makes the predominant traffic movement (WB I-40 to NB US 93 and SB US 93 to EB I-40) less appealing, which may make the alternative underutilized.

4.2.2.4 Corridor Alternative G

Pros:

- The new system TI location along I-40 would be located more than one mile from both the existing Beale Street TI located to the north and the existing Shinarump Drive TI located to the south. Collector distributor roads would not be required and there would be no impacts to the existing interchange configuration.
- Impacts the fewest recreational trails along with Alternative C.
- Topography at the tie-in with I-40 would be easier to work with and would require less severe earthwork cuts and excavation.

Cons:

- The corridor is 0.6 and 1.2 miles longer than Alternatives A and B, respectively.
- A greater amount of new R/W would be required for the entire corridor.
- The majority of the corridor runs through the Cerbat Foothills Recreational Area.
- The new system interchange along I-40 would be in a large floodplain area at the southern end of the corridor.
- Location is south of the existing Beale Street TI and makes the predominant traffic movement (WB I-40 to NB US 93 and SB US 93 to EB I-40) longer than Alternatives A and B, which may make the alternative underutilized.

4.2.2.5 Corridor Alternative H

Pros:

- The new system TI location along I-40 would be located more than one mile from the existing Shinarump Drive TI to the south. Collector distributor roads would not be required and there would be no impacts to the existing interchange configuration.
- In general, this corridor would likely require the least amount of severe earthwork cuts and fills at the tie-in with I-40 and for the majority of the corridor length since this alignment would follow a more gradual terrain and, for the most part, avoid the large mountain ridges.

Cons:

- This is the longest corridor at approximately 7 miles in length, and is located the farthest distance away from the existing Beale Street TI.
- Location is south of the existing Beale Street TI and makes the predominant traffic movement (WB I-40 to NB US 93 and SB US 93 to EB I-40) longer than Alternatives A, B, and G, which may make the alternative underutilized.
- New R/W would be required for the entire corridor.
- The majority of the corridor runs through the CFRA and involves the largest R/W impact to the CFRA.
- The alignment would run near the Kingman Region Wild Horse and Burro facility that would need to be avoided.
- The corridor crosses a large floodplain area at its southern tie in point with I-40.
- The northern portion of the corridor is in close proximity to residential development in Golden Valley.
- The tie-in point with US 93 is in close proximity to the existing SR 68/US 93 system interchange and Port of Entry. The new connection with US 93 would impact the geometrics and operations of the existing interchange system and would likely impact the Port of Entry located near the interchange. Major improvements to the existing SR 68/US 93 system interchange would be anticipated to accommodate the new direct connect interchange.

4.2.2.6 Corridor Alternative C

Pros:

- The corridor length is shortest (along with Alternative D) at 1.0 miles.
- The topography is not really a concern as this alternative would construct an elevated viaduct over the existing US 93 alignment.
- This alternative would require the least amount of new R/W since the majority of the corridor follows the existing US 93 alignment.
- The majority of new R/W would only be required for the new flyover ramps along I-40.
- This alternative displaces the least amount of area, has minimal impacts to recreational trails, and requires the least amount of new R/W take from the CFRA.

Cons:

- The elevated viaduct and flyover ramps would impact some of the businesses located along Beale Street (US 93) and would have the greatest impact to utilities.
- The existing Beale Street and adjacent properties would likely require some upgrades and improvements to accommodate the location of the viaduct foundations.
- The new system TI ramps along I-40 would impact the existing Beale Street TI ramps and would likely require collector distributor roads and associated improvements to the existing ramps.
- This alternative could potentially have the largest impact to viewscape.
- Construction costs would be substantial for the elevated viaduct structure.
- Traffic control would be significant.

4.2.2.7 Corridor Alternative D

Pros:

- This is the shortest corridor alternative north of the existing Beale Street TI at 1.0 miles and generally follows the existing terrain to minimize large earthwork cut and fills.
- Less potential to impact the viewscape than other alternatives.
- Minimal impacts to recreational trails.
- Compared to all of the alternatives located north of the existing Beale Street TI, this alternative minimizes the impacts within the CFRA and requires the least amount of new R/W.

Cons:

- The new system TI ramps along I-40 would conflict with the existing Beale Street TI ramps and would require collector distributor roads and associated improvements to the existing ramps.
- New R/W would be required for the entire corridor.

4.2.2.8 Corridor Alternative E

Pros:

- The new TI location along I-40 would be more than one mile from both the existing Beale Street TI to the south and the existing Stockton Hill TI to the north. Collector distributor roads would not be anticipated and there would be no impacts to the existing interchange configurations.

Cons:

- This corridor is 1.5 miles longer than Alternative D.
- New R/W would be required for the entire corridor.
- This alternative impacts more area within the CFRA than Alternative D.
- According to preliminary cultural resource data, Alternatives E and F have the potential to most adversely affect the City of Kingman's historic and recreational areas.

4.2.2.9 Corridor Alternative F

Pros:

- This corridor would have less impact on washes.
- The corridor geometry is smoother than alternative E.

Cons:

- This corridor is 0.1 and 1.6 miles longer than Alternatives E and D, respectively.
- New R/W would be required for the entire corridor.
- This alternative impacts more area within the CFRA than Alternative D and impacts numerous residential and private properties near the east end of the corridor.
- The new system TI along I-40 would be less than one mile from the existing Stockton Hill TI located to the north and the new interchange ramps would conflict with the existing ramps requiring collector distributor roads and associated improvements to the existing ramps.
- According to preliminary cultural resource data, Alternatives E and F have the potential to most adversely affect the City of Kingman's historic and recreational areas.

4.2.3. Evaluation Results

Based on the criteria presented previously, Corridor Alternatives C and D are preferred primarily because both alternatives directly serve the major traffic movement and minimize impacts to the CFRA. Both alternatives would require some system of collector distributor roads to provide and maintain access to the existing Beale Street TI ramps; however, the costs associated with these improvements would likely be offset by the additional pavement, earthwork, and R/W costs, among others, required for the longer corridors. The final alternative selection would need to be determined by a more detailed study and would likely depend on a detailed design and construction cost evaluation of the viaduct alternative (Alternative C) compared to environmental impacts and acquisition of R/W for Alternative D.

4.3. Recommendation

Preferred corridor alternatives were based on the evaluation criteria and agency and public input. Corridors A, B, G, and H could not be endorsed by the BLM due to the amount of impact and disturbance to the CFRA. These corridor alternatives were further deemed undesirable due to their location south of the existing Beale Street TI and the likelihood that they would be underutilized and improvements along these corridors would not serve the purpose and need for the project. The City of Kingman could not endorse Corridors E and F because they would have the greatest adverse impact to the City's historic and recreational areas.

The preferred corridor alternatives for this Feasibility Study are Corridor Alternatives C and D as shown in **Figure 12**. These alternatives provide a direct connection route for the predominant traffic movement (WB I-40 to NB US 93 and SB US 93 to EB I-40). Due to their locations, these would more likely be utilized by the travelling public. These are the shortest corridors and minimize the impacts to the CFRA. All agencies that attended the Agency Scoping meetings, including City of Kingman, Mohave County, ADOT, FHWA and BLM supported Alternative C, Alternative D, or both Alternatives C and D as their preferred corridors. While these corridor alternatives may still impact some residences and businesses, improvements are needed and these corridors warrant further study to determine the best alignment to alleviate the bottleneck effect and improve traffic flow on this regional CANAMEX Corridor route.

It is recommended that the preferred Corridor Alternatives C and D be carried forward for further consideration of alignment alternatives during a future Design Concept Report and Environmental Documentation study following the NEPA process. Also, the no-build alternative is considered a viable alternative and will remain so during the future studies.

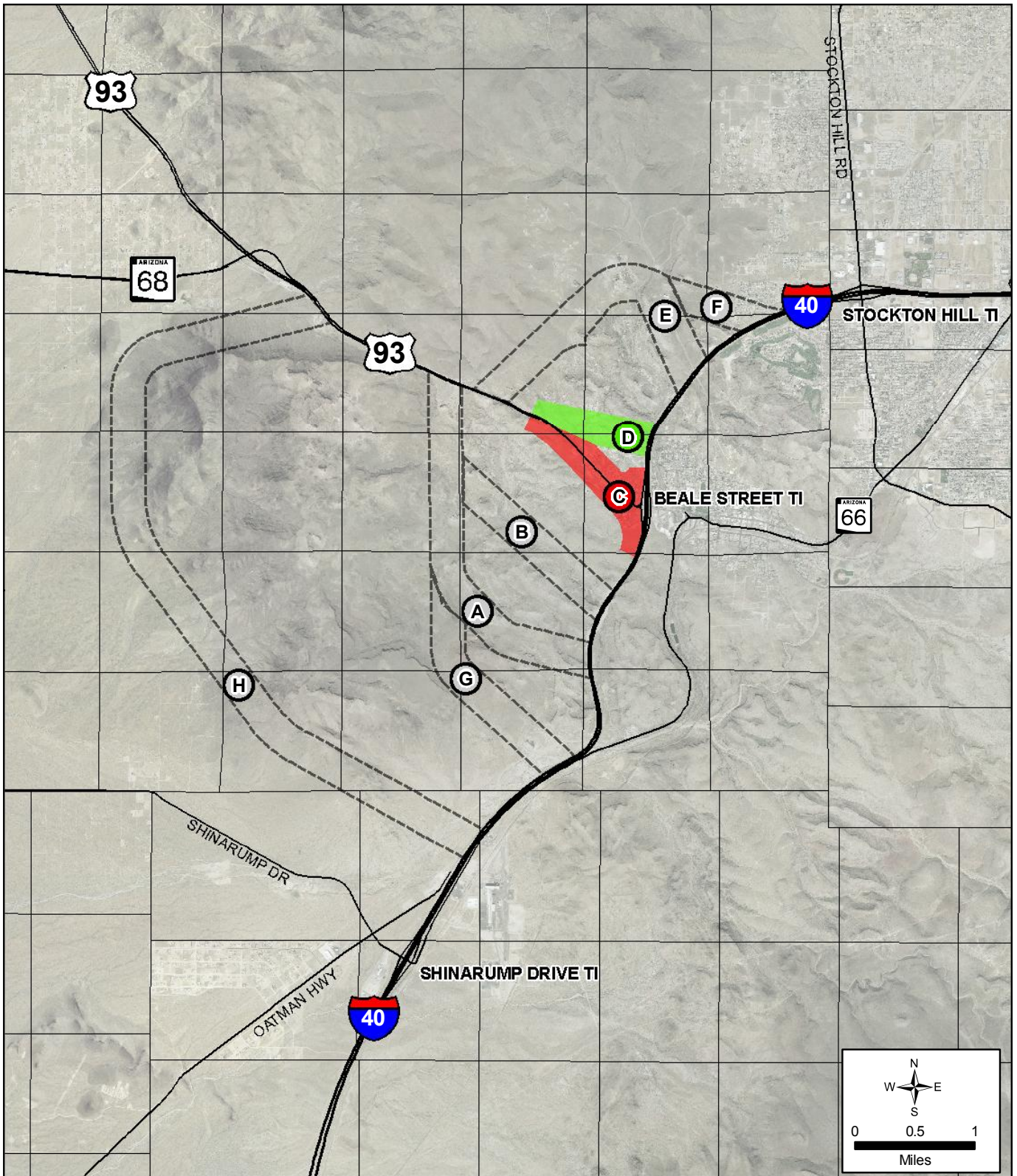


Figure 12 Preferred Corridor Alternatives C and D

5.0 Major Design Features

5.1. Design Controls

The proposed free-flow corridor is meant to act as a new connection to supplement the existing facility that is plagued by limited capacity, break in route continuity, varying design speed elements, and inefficient access for regional through traffic. Therefore, the new corridor is planned to be a high-speed access-controlled highway that will relieve congestion, improve safety and mobility, and would serve capacity needs for future traffic growth.

The design criteria provided in **Table 10** describes the current guidance recommended to be used to design the proposed alignment improvements.

Table 10 – Design Criteria

Design Element	I-40	US 93	Criteria Base
GENERAL			
Functional Classification	Interstate (Urban)	Controlled-access Highway (Urban/Fringe Urban Area)	
Design Speed	65 mph	65 mph	ADOT RDG 101.3
Design Vehicle	WB 67	WB 67	ADOT RDG Table 407.2
TRAFFIC DATA			
Existing ADT	32,735 (North of US 93) 15,537 (South of US 93)	21,500	Preliminary Traffic Report
Design Year ADT (2040)	92,333 (North of US 93) 58,450 (South of US 93)	56,823	Preliminary Traffic Report
SIGHT DISTANCE			
Stopping Sight Distance	Varies – 640 feet on level grade	Varies – 640 feet on level grade	ADOT RDG Table 201.2
Passing Sight Distance	N/A	N/A	
HORIZONTAL			
Maximum Deflection without a Horizontal Curve	0°45'	0°45'	ADOT RDG Section 203.5
Minimum Degree of Curvature	0°15'	0°15'	ADOT RDG Section 203.2
Maximum Degree of Curvature (superelevation)	3°27'	3°27'	ADOT RDG Table 202.3B

Table 10 Design Criteria (continued)

Design Element	I-40	US 93	Criteria Base
Minimum Length of Horizontal Curve	15 x Design Speed = 975'	15 x Design Speed = 975'	ADOT RDG Section 203.5
Maximum Superelevation	6%	6%	ADOT RDG Table 202.1A
Lane Drop Taper Rate	Design Speed (mph) to 1	Design Speed (mph) to 1	ADOT RDG Section 207
Lane Addition Taper Rate	25:1	25:1	ADOT RDG Section 207
VERTICAL			
Maximum Grade	3%	3%	ADOT RDG Table 204.3
Minimum Grade	0% (w/o curb) 0.4% (curb & gutter)	0% (w/o curb) 0.4% (curb & gutter)	ADOT RDG Section 204.3
Maximum Grade Break without a Vertical Curve	0.2%	0.2%	ADOT RDG Section 204.4
Minimum Length of Vertical Curve	800'	800'	ADOT RDG Table 204.4
Minimum Length of Crest Vertical Curve (SSD)	For SDs < L _c $L_c = A(SDs)^2/2158$ For SDs > L _c $L_c = 2(SDs) - 2158/A$	For SDs < L _c $L_c = A(SDs)^2/2158$ For SDs > L _c $L_c = 2(SDs) - 2158/A$	ADOT RDG Figure 204.4A
Minimum Length of Sag Vertical Curve (SSD)	For SDs < L _c $L_c = A(SDs)^2/2800$ For SDs > L _c $L_c = 2(SDs) - 2800/A$	For SDs < L _c $L_c = A(SDs)^2/2800$ For SDs > L _c $L_c = 2(SDs) - 2800/A$	ADOT RDG Figure 204.4C
Vertical Clearance	16.5' Desirable 16.0' Minimum	16.5' Desirable 16.0' Minimum	ADOT RDG Section 206.4
CROSS SECTION			
Number of Lanes	Existing I-40 has 2 lanes in each direction	2 in each direction	Preliminary Traffic Report
Standard Lane Width	12'	12'	ADOT RDG Section 301.3
Inside Shoulder Width	4'	4'	ADOT RDG Table 302.4
Outside Shoulder Width	10'	10'	ADOT RDG Table 302.4
Open/Closed Median	To be determined based on alternatives considered in the DCR		

5.2. Access Control

Full Access Control will be prescribed for the proposed US 93 realignment to be consistent with the *Arizona Department of Transportation Statewide Access Management Plan which is currently being developed*.

Definition: Access Control – The condition where public authority fully or partially controls the right of abutting owner’s access to the highway right of way. Full control of access is exercised to give preference to through traffic by providing access connections with selected public roads only and by prohibiting crossings at grade or direct private driveway connections.

5.3. Right-of-Way

For the feasibility study, the Corridor Alternatives analyzed were about 0.25 miles wide. During the Design Concept Study, the alignments will be refined and actual right-of-way widths for the roadways and ramps will be established.

5.4. Earthwork

The area on which the various alternatives are being analyzed contains six major soil types as classified by the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), formally the Soil Conservation Service (USDA, 1944). The majority of any of the potential alignments would lie within the Tumarion-Nickel family soil type, which covers approximately 89 percent of the area. The current intersection of I-40 and US 93 has predominantly Urban land-Calvista soil type 9 (approximately 3.7 percent in area). Patches of the Alko Family Cobbly Loam soil type also occur near the intersection. Small patches of the Arizo-Franconia-Riverwash complex, and Whitehills very gravelly loam, occur near the SR 68/US 93 interchange. Some other smaller soil patches are found in the area and those have been listed in **Table 11** and noted in **Figure 13**.

Table 11 – Soil Types as shown in Figure 13

Ref. No.	Soil Type
1	Tumarion-Nickel family complex, 8 to 35 percent slopes
2	Urban land-Calvista family complex, 2 to 10 percent slopes
3	Whitehills very gravelly loam, 1 to 5 percent slopes
4	Castaneda extremely gravelly loam, 1 to 7 percent slopes
5	Castaneda extremely gravelly loam, dry, 1 to 7 percent slopes
6	Mutang-Wikieup-Rock outcrop complex, 3 to 30 percent slopes
7	Castaneda extremely gravelly loam, 1 to 7 percent slopes
8	House Mountain family-Calvista family-Rock outcrop complex, 10 to 35 percent slopes
9	Lostman sandy loam, 1 to 4 percent slopes
10	Vekol family-Whitehills complex, 2 to 7 percent slopes

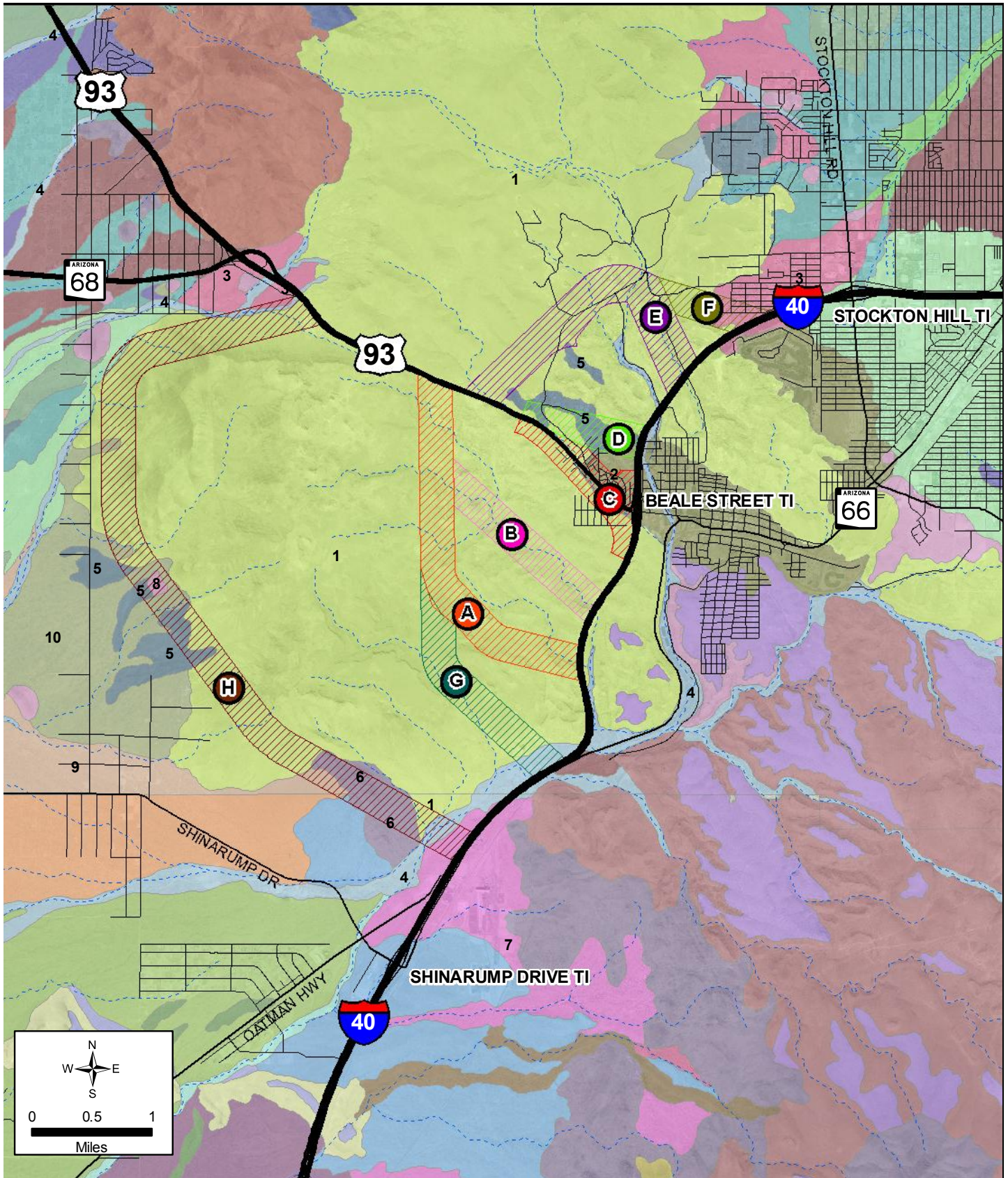


Figure 13 NRCS Soil Types

The major soils found and their potential impacts are described below:

5.4.1. Tumarion-Nickel Family

This soil type is typically found on mesas, hill summits and side slopes. This soil forms typical slopes 8 to 35 percent. The surface is usually covered with cobbles, stones or boulders (5 to 20 percent). The soil texture is extremely cobbly sandy loam. The soil extends 5 to 18 inches to Duripan or cemented alluvial silica and 7 to 20 inches to lithic bedrock. This soil family is well-drained to excessively-drained in the surface layer. Vertical permeability is limited by the shallow depth to bedrock. Excavation under in this soil type would present a challenge to construction due a high probability of encountering coherent igneous rock.

5.4.2. Urban Land-Calvista Family

This soil type is typically found on mountain and hill summits and side slopes. It is an alluvial deposit derived from extrusive volcanic rocks. Typical slopes range from 2 to 10 percent. The soil deposit ranges in depth to lithic bedrock from 4 to 20 inches. This presents an excavation challenge to highway construction. Bedrock likely to be encountered is igneous rock (coherent or fissured basalt, diabase and or andesite).

Surficial deposits range in texture from gravelly loam to cobbly loam and features very low vertical permeability. The soil texture ranges from very fine sand to very fine sandy loam. The material is moderately alkaline and contains 30 percent calcium carbonate.

5.4.3. Whitehills Very Gravelly Loam

This soil type is found on fan terraces. It is an alluvium derived from mixed volcanic rocks. Slopes of 1 to 5 percent are characteristic of the soil type. Good drainage occurs with the first 20 to 40 inches, at which depth the material transitions to a duripan with minimal permeability. The occurrence of the soil on relatively flat slopes and its relatively large depth to bedrock better facilitates excavation operations. The soil material is moderately alkaline and contains 30 percent calcium carbonate.

5.4.4. Arizo-Franconia-Riverwash Complex

This soil is an alluvium derived from mixed volcanic rocks. It typically occurs on flood plains. Typical slopes range from 1 to 3 percent. The material extends to as much as 80 inches below the ground surface. The material can be readily excavated with lower probability of encountering bedrock. This soil type features excessive drainage and is usually flooded as it likely occurs in flood plain areas. Alkalinity is minimal with 10 percent calcium carbonate.

5.4.5. Alko Family Cobbly Loam

This soil typically occurs on alluvial fan terraces. It is derived from mixed volcanic rocks. Typical slopes formed range for 0 to 25 percent. The material is well-drained laterally. Vertical percolation is limited at 10 to 20 inches below ground, at which depth the material transitions to a duripan. Depth to bedrock on this deposit is large. While excavation of the duripan may be difficult, coherent bedrock is much less likely to be encountered than in the other soil types. Texture ranges from cobbly loam to extremely gravelly sand. Alkalinity is moderate with 35 percent calcium carbonate.

5.4.6. Mutang-Wikieup-Rock Outcrop Complex

This well drained alluvial soil is derived from igneous rock. The soil is predominantly found on hills and pediment regions with 15 percent rock outcrops. They form slopes with typically 3 to 30 percent gradients. The profile extends about 22 inches to weathered bedrock and up to 41 inches to unweathered bedrock. Construction across this soil will encounter appreciable rock excavation due to the shallow depth of the rock and presence of igneous rock outcrops.

References

USDA State Soil Geographic database for Arizona, Soil Conservation Service, publication date: 1994

5.5. Geotechnical Considerations

ADOT Materials Geotechnical Design provided a general overview of the approximate site conditions based on available data from previous projects in the area. The general overview applies to corridor alternatives A-H.

Most of the study area is dominated by hilly to mountainous terrain. A great percentage of the proposed corridor alignments are in close proximity to either igneous or volcanic rocks. Published geological reports indicate that granite, basalt, rhyolite, and volcanic tuff rock outcrops make up most of the material in the area. Granite, basalt and rhyolite material types would probably require substantial heavy construction techniques including drilling and blasting. The volcanic tuff would probably range from being rippable to also requiring blasting. The volcanic rocks are locally known as the Peach Springs Tuff and are exhibited in the existing rock cuts on the right side of the west bound I-40 between Stockton Hill Road and Holy Moses Wash. The existing slopes appear to vary between 3/4: 1 to 1.5:1, and may be an approximate guide to slope performance along the proposed alignments, although the slopes have not been studied in detail. The upper half to one third of the exposed volcanic rock exhibit crude columnar jointing, which probably will require some engineering study to avoid creating rock fall hazards during the construction process. The new alignment shoulder widths should be able to accommodate potential rock fall.

Appearance of the new cuts will also be a cost consideration. The uniform cut slope previously constructed in the lower half of the existing alignments of I-40 fortuitously displays a visually attractive series of volcanic tuff layers with contrasting earth tones. This may represent a cost efficient approach to cut slope design in this material. The rock cuts in the granitic and basaltic rock would probably require heavier excavation/ blasting and may not achieve the same degree of uniformity. If a more natural appearance is required in these rock materials, then additional excavation and slope design will be required. Revegetation of the rock slope appears to be difficult and probably will result in only marginal success on fresh cuts.

Existing fill slopes and embankments suggest that the local site conditions are amenable to C Standards design techniques, with the majority of construction performed in accordance with ADOT Standard Specifications.

Most of the local soil material appears to be derived from the erosion of local rock materials and transported alluvial soils. A brief examination of the USDA Natural Resource Conservation Service Website for the Kingman area indicated many varieties of soil material are exposed within the proposed alignment corridors. Unified Classification of surficial soils is reported to range from clay to sandy, with various percentages of coarse grained and over-sized materials. Occasional High Plasticity soils were also reported in the vicinity. Outside of local material suppliers, the nearest known ADOT materials pit is located approximately 30 miles south of the project area in the vicinity of Yucca Arizona.

The proposed scope of services for the next phase of study will require a significant geotechnical investigation to provide the project stakeholders with information relative to design of the pavement, rock cuts, roadway embankments and structures design. Depending on the chosen alignment the

investigation will require access for subsurface investigation via auger drilling, backhoe pits, and rock coring equipment.

5.6. Interchanges

All corridor alternatives would consist of a new system-to-system directional interchange between I-40 and US 93 to where the new realigned direct connect ramps would tie-in to the existing US 93 alignment. Corridor alternatives B, C, D, and F would require a network of collector distributor roads that would serve the extended system-to-system interchange but also maintain access to the existing adjacent Beale Street and Stockton Hill TI ramps for local traffic needs. Alternative H would require possible reconfiguration of the existing SR 68/US 93 system interchange and access to the Port of Entry. Since the new corridor would be an access-controlled highway, no additional access points would be permitted along the new corridor.

This study does not propose that these interchange locations and configurations are final. The final locations will be decided during the next phase of the study, the Design Concept Report.

5.7. Utilities

The following utilities have been identified in the project area.

- | | |
|--|---|
| ▪ Black Mesa Pipeline, Inc. | Type: Coal Slurry (inactive) |
| ▪ Citizens Communications (Frontier Comm.) | Type: Telecom |
| ▪ Unisource Energy Gas – Kingman | Type: Natural Gas |
| ▪ Unisource Energy Services – Kingman | Type: Electric |
| ▪ Arizona Department of Transportation | Type: Electric, Traffic Signals, Signal Loops |
| ▪ City of Kingman | Type: Water, Sewer, Traffic Signals, Lighting |

Unisource Energy Services (UES) has indicated that they have plans for new 230 KV and 69 KV transmission lines in the Kingman and Golden Valley areas. Information was provided by UES regarding the proposed location of their planned facility. Further coordination with UES on the final locations of their new power transmission lines, and the impacts of the selected alternative is recommended during a future DCR study. Major utilities, including the current proposed location of the transmission line, are shown in **Figure 14**.

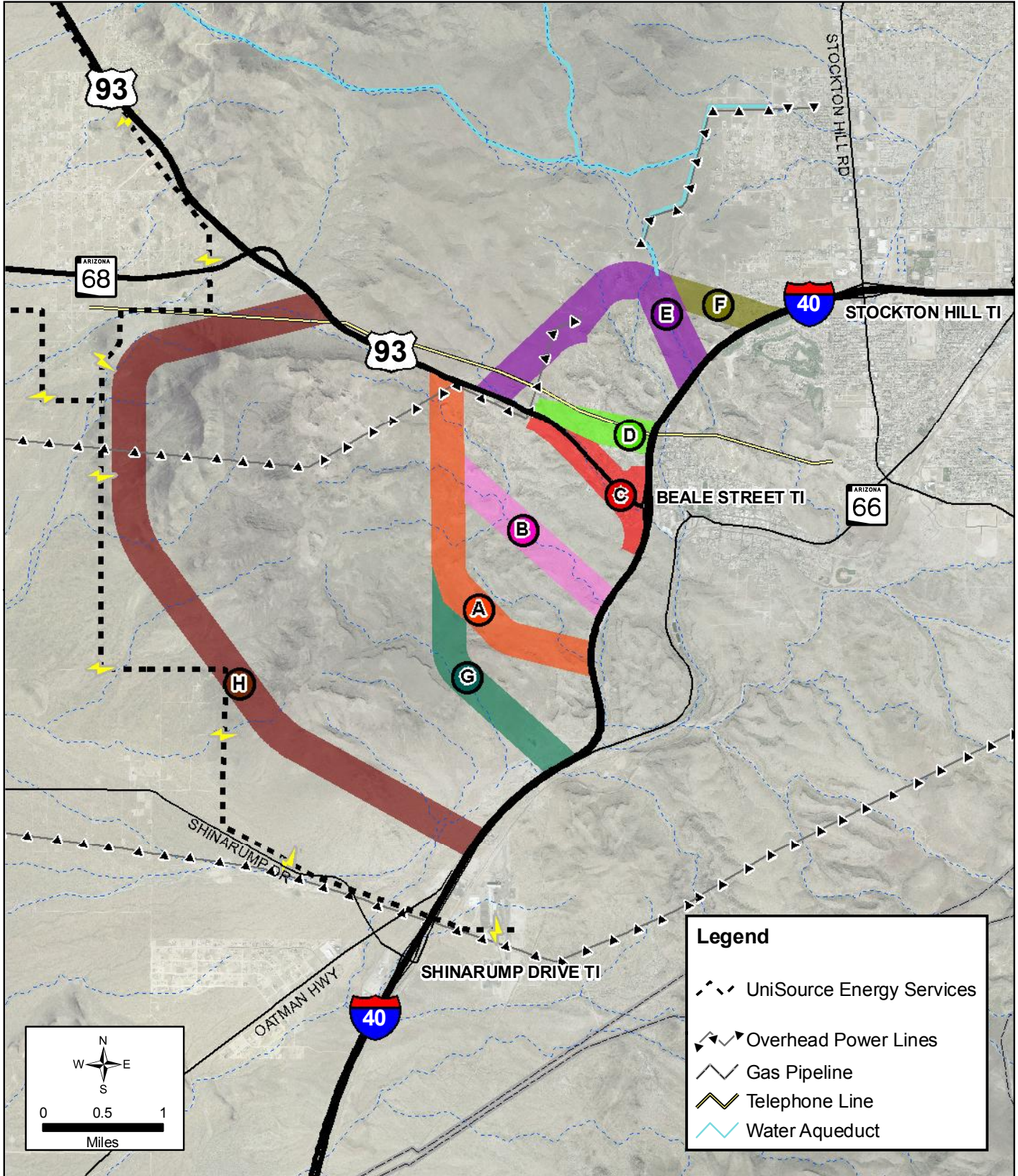


Figure 14 Major Utilities

6.0 Environmental Overview

6.1. Purpose of an Environmental Overview

The purpose of this section, entitled Environmental Overview, is to describe the existing social and environmental conditions within the I-40/US 93 Kingman TI study area in Mohave County and to identify potential environmental concerns for future development of the I-40/US 93 Kingman TI within the project limits. Information presented within this environmental overview is based on the existing data sources from local, county, state, and federal agencies, field reconnaissance, and input from the Agency and Public Scoping process. This overview is not intended to meet the requirements of the National Environmental Policy Act (NEPA).

6.1.1. Environmental Conditions Study Area

For the purpose of this environmental overview the I-40/US 93 Kingman TI study area is defined by the following boundaries: the eastern boundary is set by I-40 from Shinarump Drive to Stockton Hill Road; the southern boundary is set by Shinarump Drive (CR 205) from I-40 to a point approximately 3.15 miles west of I-40 near Graham Road; the western boundary is set by Tooman Road from Shinarump Drive to Chino Drive and follows the western boundary of the Cerbat Foothills Recreation Area; and the northern boundary is set by Chino Drive in the west near US 93 and El Rancho Drive in the east to Stockton Hill Road (**Figure 15**). The study area is within the central portion of Mohave County, Arizona, and incorporated portions of The City of Kingman.

6.2. Social and Environmental Issues and Constraints

This environmental overview contains documentation and evaluation of the land-use within the study area, the socioeconomic environment, physical and natural environmental character, cultural resources, Section 4(f), and Section 6(f) resources in the study area. Existing environmental conditions within the study area have been evaluated to identify potential “fatal flaws”, obstacles, issues, and sensitive areas for future improvements. The corridor alternatives relative to the general environmental constraints are shown in **Figure 16**. This analysis also addresses surveying, permitting, and agency coordination requirements that would need to be addressed in future studies prepared in accordance with NEPA.

6.2.1. Land Jurisdiction and Ownership

Land jurisdiction refers to the authority to regulate land uses. Land ownership is identified as public or private ownership. The study area contains property within the western incorporated portion of the city of Kingman and unincorporated portions of Mohave County. The incorporated and unincorporated areas of the study area are made up of Bureau of Land Management (BLM) property, State Trust Land, and private land ownership (**Figure 17**). Land use located within the study area includes commercial areas, residential areas, recreational areas, and historic sites. Recreational areas are protected under Section 4(f) of the U.S. Department of Transportation Act and Section 6(f) of the Land and Water Conservation Fund Act (LWCF) which are further discussed in Section 6.2.8 and Section 6.2.9 respectively. Significant archaeological and historic sites are protected under the National Historic Preservation Act (NHPA) and are further discussed in Section 6.2.10.

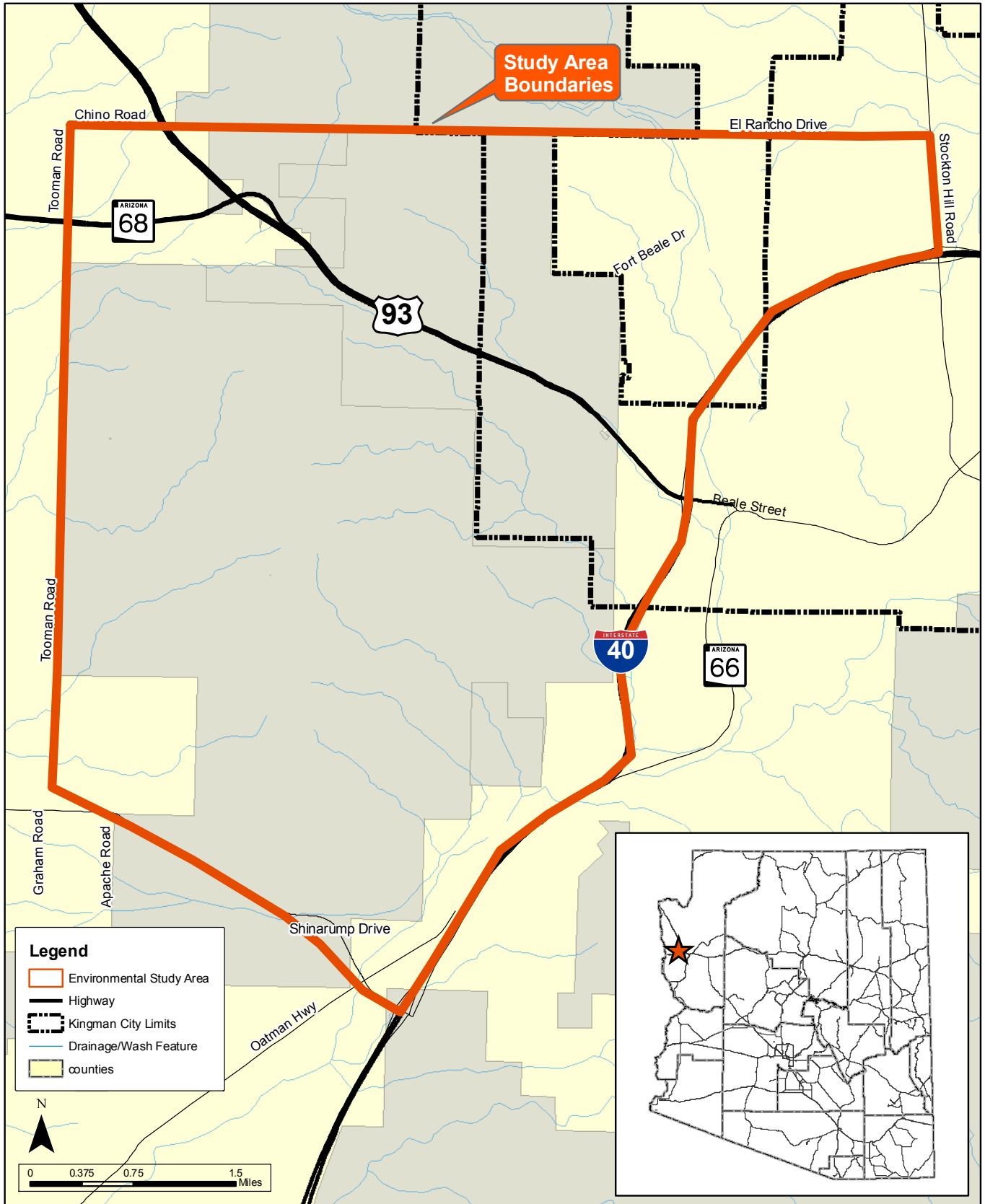


Figure 15 Project Area

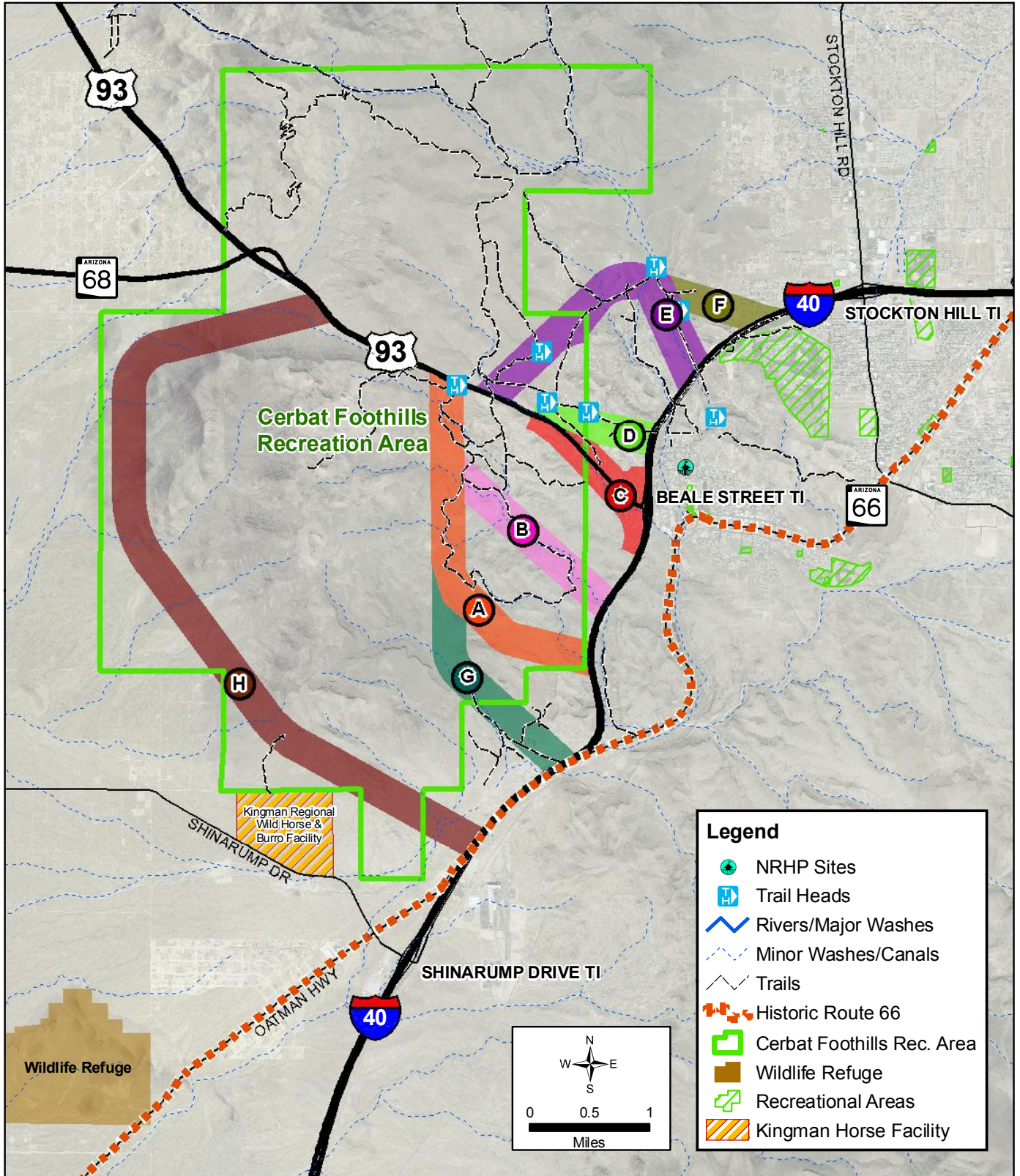


Figure 16 Environmental Constraints

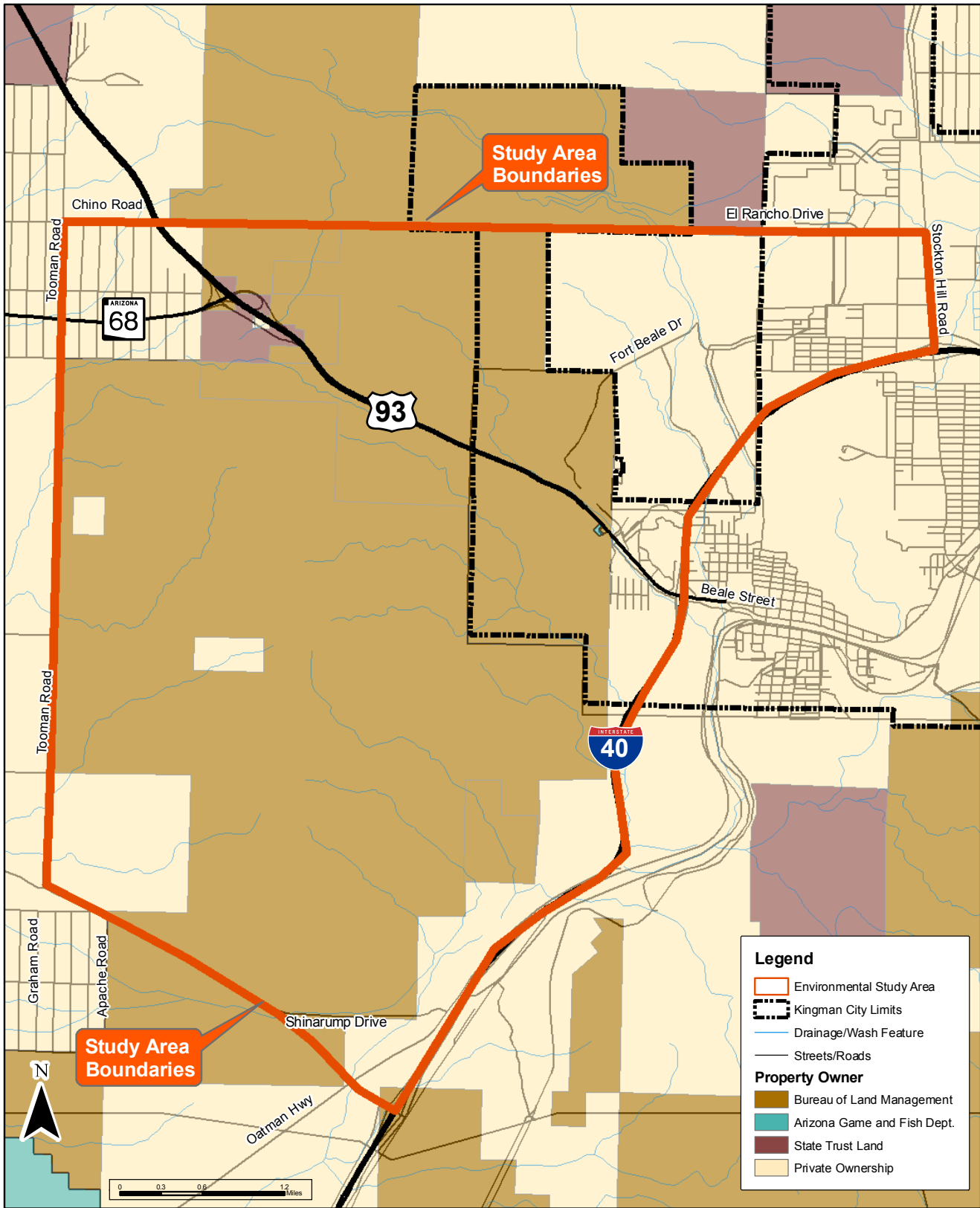


Figure 17 Land Jurisdiction and Ownership

The I-40/US 93 Kingman TI study area is not located within 20,000 feet (ft) of an airport or 10,000 ft of a heliport. The nearest airport facility identified is the Kingman Airport (IGM) which is located approximately 25,000 ft east of the study area boundary. Notification to the Federal Aviation Administrator (FAA) is not required for construction operations outside a 20,000 ft radius of IGM, based upon guidance standards as stipulated in 14 CFR Part 77, Objects Affecting Navigable Airspace, and explained in the Federal Aviation Administrator (FAA) Advisory Circular AC 70/7460-2K.

Issues and Constraints – Land Jurisdiction and Ownership. The I-40/US 93 Kingman TI study area encompasses property under the jurisdiction of Mohave County, the City of Kingman, the BLM, and the Arizona State Land Department (State Trust Land). Land in the study area is under a combination of public and private land ownership. Coordination with these entities will be required as roadway improvements are designed. The Kingman Airport (IGM) is located approximately 25,000 ft to the east of the I-40/US 93 Kingman TI study area. Notification to the FAA Administrator is only required if construction operations occur within a 20,000 ft radius of IGM and exceed the 100:1 slope equation, based upon guidance standards as stipulated in 14 CFR Part 77, Objects Affecting Navigable Airspace, and explained in the Federal Aviation Administrator (FAA) Advisory Circular AC 70/7460-2K.

6.2.2. Socioeconomic Conditions

Discussion of the socioeconomic environment of the study area includes an overview of the demographic composition of the area. Title VI of the Civil Rights Act of 1964 and related statutes assure that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of race, color, national origin, age, sex, and disability. Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, issued February 11, 1994, requires that federally funded projects identify and address any disproportionately high and adverse human health and environmental effect on minority and low-income populations. Executive Order 12898 is a reaffirmation of the principles of the Title VI and adds the consideration of low-income to the minority, disabled, female, elderly, and racial/ethnic populations.

The demographic composition of the study area was calculated using the recent decennial Census 2000 data sets from the United States Census Bureau. The size of the census tracts (CT) varies widely, depending on the density of settlement. Census tracts are delineated with the intention of being maintained over a long time, allowing statistical comparisons from census to census. Block groups are geographic subdivisions of census tracts; their primary purpose is to provide a geographic summary unit for census tract data. Each census tract contains a minimum of one block group and may have a maximum of nine block groups. For the purposes of this analysis, the demographic composition has been conducted to the census tracts level.

The I-40/US 93 Kingman TI study area lies within a total of five (5) census tracts. The boundaries of some census tracts extend beyond the I-40/US 93 Kingman TI study area and therefore may depict the demographic characteristics for an area greater than the I-40/US 93 Kingman TI study area. The exact population and demographic characteristics of the I-40/US 93 Kingman TI study area may vary from the represented census tract data. For the purpose of this socioeconomic discussion the demographic area represented by the identified census tracts will be reported as the 'census study area'. It is important to note that the city of Kingman, located in the central portion of the study area, has the potential to experience significant seasonal changes in resident population because of many winter-only visitors.

The five (5) census tracts within the study area contain a total of 31,797 people (2000 Census).

6.2.2.1 Title VI Populations

Title VI of the Civil Rights Act of 1964 and Executive Order 12898 require that federally funded projects identify and address any disproportionately high and adverse human health effects from environmental impacts on minority and low-income people and that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination on the basis of race, color, age, sex, disability, and national origin. The United States Department of Transportation (USDOT) Order 5610.2 and the United States Census Bureau define a racial minority person as:

- Black: a person having origins in any of the black racial groups of Africa;
- Hispanic: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;
- Asian: a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands;
- American Indian and Alaskan Native: a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition;
- Native Hawaiian or Other Pacific Islander: a person having origins in any of the original peoples of Hawaii, Guam, Samoa, Tonga, Chamorro, Fiji, or other Pacific Islands.

Federal Highway Administration (FHWA) Order 6640.23 defines disproportionately high and adverse effect on minority populations as an adverse effect that (1) is predominantly borne by a minority population; or (2) will be suffered by the minority population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or the non-low-income population. For purposes of the socioeconomic analysis for minority populations disproportionate adverse impacts to minority populations is likely to occur when the minority population is either (1) 50 percent of the total population of that block group or (2) is more than double the percentage of the respective minority population within Mohave County or the City of Kingman.

Within the census study area the majority of the total population is White and comprises 86.6 percent of the population; the Hispanic or Latino population is the largest minority group within the census study area and comprises 8.5 percent (**Table 12**). There are no individual minority groups within the total census study area that are greater than 50 percent of the population or more than double the percentage for Mohave County or The City of Kingman. However, when analyzing individual census tracts within the study area a total of four (4) CT 9508, CT 9509, CT 9510, and CT 9511, indicated minority populations with the potential to result in disproportionate adverse impacts (**Table 12** and **Figure 18**). The shaded numbers in **Table 12** indicate the four (4) census tracts with percentages of minority populations that are at higher percentages of the minority population within the comparative county and city.

6.2.2.2 Title VI Related Statutes/Environmental Justice Populations

Title VI Related Statutes/Environmental Justice Populations include individuals classified as elderly, disabled, low-income, and/or female head-of-household. The following Title VI Related Statutes/Environmental Justice Population groups are defined as:

- Elderly: an individual 60 years of age or over;
- Disabled: a non-institutionalized civilian that has reported a sensory disability, physical disability, mental disability, self-care disability, go-outside-home disability, or employment disability;

Table 12 – Racial and Ethnic Demographics of the Census Study Area Population

Area/ Census Tract (CT) Block Group (BG)	Total Population	Population of One Race / Not Hispanic or Latino*						Population of Two or More Races/ Not Hispanic or Latino*	Hispanic or Latino* of Any Race	Total Minority Population
		White	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Other			
Mohave County	155,032	130,287 84.0%	753 0.5%	3,239 2.1%	842 0.5%	79 0.1%	109 0.1%	2,724 1.8%	16,999 11.0%	24,745 16.0%
City of Kingman	19,755	17,001 86.1%	162 0.8%	315 1.6%	71 0.4%	12 0.1%	9 0.0%	378 1.9%	1,807 9.1%	2,754 13.9%
CT 9506	6,513	5,772 88.6%	24 0.4%	88 1.4%	13 0.2%	6 0.1%	0 0.0%	110 1.7%	500 7.7%	741 11.4%
CT 9508	3,685	3,251 88.2%	6 0.2%	94 2.6%	14 0.4%	0 0.00%	17 0.5%	92 2.5%	211 5.7%	434 11.8%
CT 9509	7,618	6,509 85.4%	119 1.6%	168 2.2%	26 0.3%	6 0.1%	0 0.0%	131 1.7%	659 8.7%	1,109 14.6%
CT 9510	10,376	9,063 87.3%	100 1.0%	78 0.8%	0 0.0%	0 0.0%	9 0.1%	200 1.9%	926 8.9%	1,313 12.7%
CT 9511	3,605	2,940 81.6%	20 0.60%	130 3.6%	45 1.2%	6 0.2%	0 0.0%	52 1.4%	412 11.4%	665 18.4%
Total Study Area	31,797	27,539 86.6%	269 0.8%	558 1.8%	98 0.3%	18 0.1%	26 0.1%	585 1.8%	2,708 8.5%	8,525 26.8%

Source: U.S. Census Bureau. Census 2000 Summary File 3 (SF-3)

* Hispanic or Latino refers to ethnicity and is derived from the total population; 'Hispanic or Latino' is not classified as a separate race.

- Low-income: a person whose median household income is at or below the US Department of Health and Human Services (DHHS) poverty guidelines used in determining financial eligibility for certain federal programs. The 2007 DHHS poverty guidelines for a four person family is \$20,650;
- Female head-of-household: any woman either living alone or not living alone who acts as the primary income provider.

For purposes of the socioeconomic analysis on Title VI Related Statutes/Environmental Justice disproportionate adverse impacts to populations are likely to occur when the population is either (1) 50 percent of the total population of that block group or (2) is more than double the percentage of the respective Title VI Related Statutes/Environmental Justice population within Mohave County or the City of Kingman.

Within the study area the overall total Title VI Related Statutes/Environmental Justice populations are low to comparable when compared with the populations of Mohave County and the City of Kingman. Within the census study area the total elderly population is slightly lower than Mohave County and higher than the City of Kingman; the total low-income population is slightly lower than Mohave County and slightly higher than the City of Kingman; the disabled population is slightly higher than both Mohave County and the City of Kingman; and the female head-of-household population is lower than both Mohave County and the City of Kingman (**Table 13** and **Figure 19**).

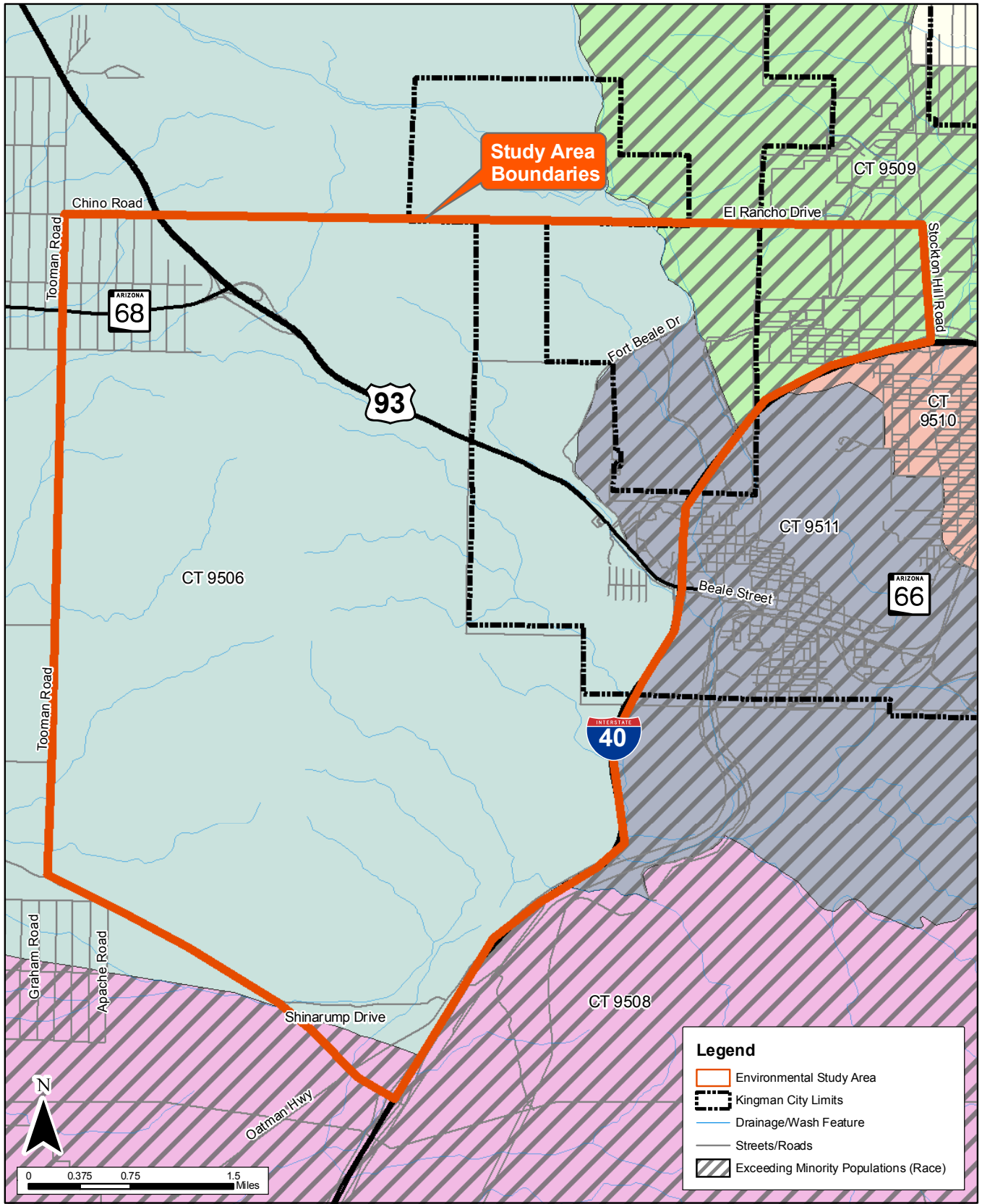


Figure 18 Socioeconomic Data/Block group Information (Race)

Table 13 – Population Composition of Elderly, Low-Income, Disabled, and Female Head-of-Household within the Census Study Area

Area/ Census Tract (CT) Block Group (BG)	Elderly		Low-Income		Disabled *		Female Head of Household**	
	Number	%	Number	%	Number	%	Number	%
Mohave County	42,131	27.2	21,252	13.9	37,799	26.1	15,143	24.1
City of Kingman	4,360	22.1	2,207	11.6	4,443	25.0	1,991	25.6
CT 9506	1,669	25.6	1026	15.9	1,933	31.2	575	21.8
CT 9508	916	24.9	651	17.7	1,099	30.9	263	15.9
CT 9509	1,800	23.6	717	9.5	2,064	29.2	763	24.0
CT 9510	2,265	21.8	1173	11.7	2010	21.4	937	24.6
CT 9511	660	18.3	624	19.2	922	30.4	520	35.4
Total Study Area	7,310	23.0	4,191	13.5	8,028	27.5	3,058	24.0

Source: U.S. Census Bureau. Census 2000 Summary File 3 (SF-3)

* Disabled population is comprised of individuals within the population 5 years of age and older.

**Female Head of Household population is comprised of individuals in '1-person' households, '2-or-more-person' households, and 'non-family' households either living alone or not living alone.

There are no individual census tracts within the total study area that exceed 50 percent of the population or are double that of the total elderly, low-income, disabled or female head-of-household populations for Mohave County or the City of Kingman. Based on these findings, further consideration for disproportionate adverse impacts on the elderly, low-income, disabled or female head-of-household populations within the census study area would not be required.

6.2.2.3 Limited English Proficiency (LEP) Populations

Executive Order 13166, *Improving Access to Services for Persons with Limited English Proficiency* (LEP), requires all agencies ensure that federally supported programs and activities are meaningfully accessible to LEP individuals. Data from the U.S. Census Bureau, Census 2000 database, was used to determine the "Ability to Speak English" for the population of individuals' age five years and over. For the purposes of the socioeconomic analysis on LEP populations implementing LEP services are likely to be required when the LEP population is either (1) 20 percent of the total population of that block group or (2) is more than double the percentage of the LEP population within Mohave County or The City of Kingman. The U.S. Census Bureau classifies spoken languages into five categories as follows:

- English;
- Spanish or Spanish Creole;
- Other Indo-European Languages: includes French (incl. Patois, Cajun), French Creole, Italian, Portuguese or Portuguese Creole, German, Yiddish, Other West Germanic languages,

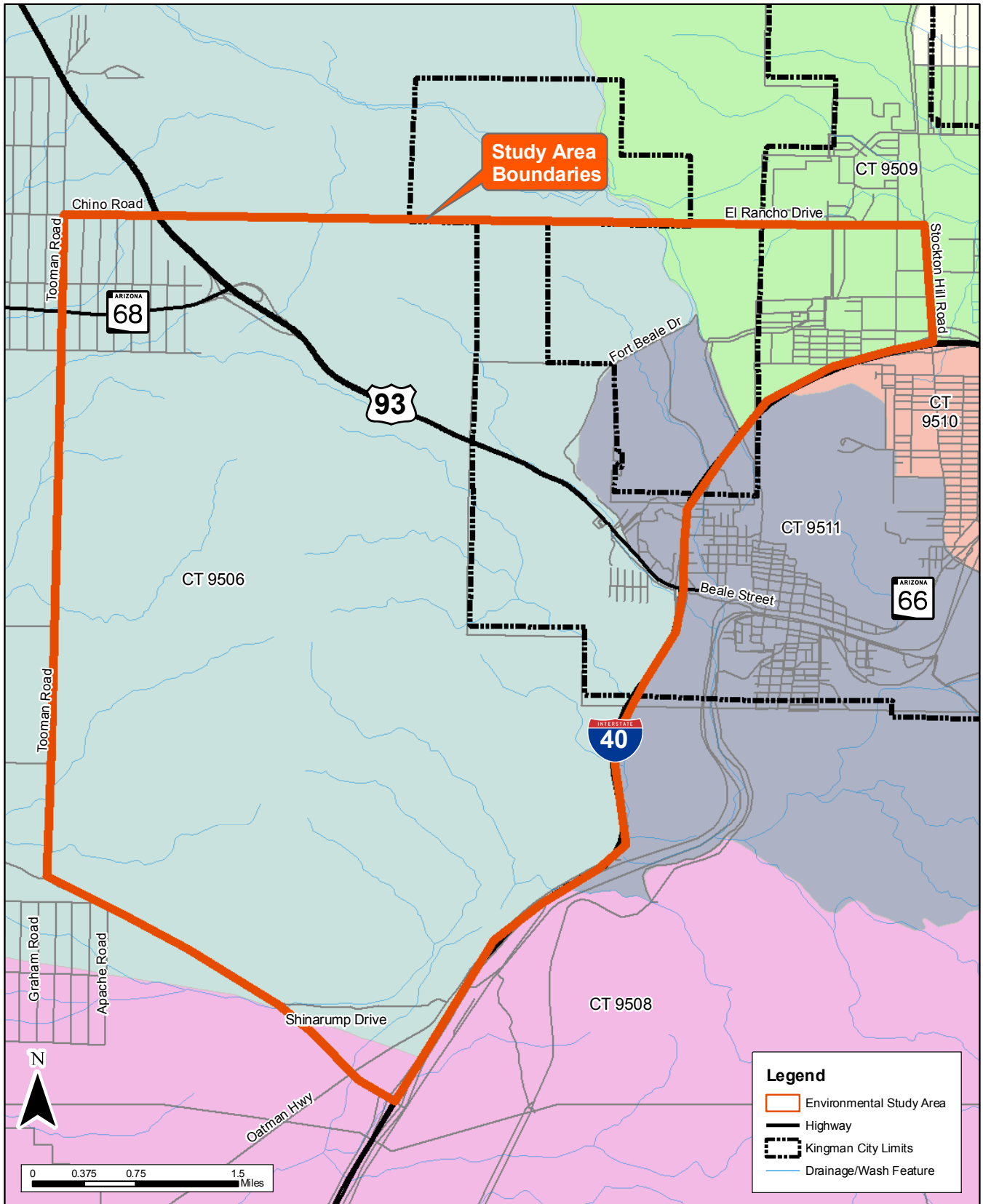


Figure 19 Socioeconomic Data/Block group Information (Elderly, Low-Income, Disabled, Female Head-of-Household, and LEP)

Scandinavian languages, Greek, Russian, Polish, Serbo-Croatian, Other Slavic languages, Armenian, Persian, Gujarathi, Hindi, Urdu, Other Indic languages, and any other Indo-European languages;

- Asian and Pacific Island languages: includes Chinese, Japanese, Korean, Mon-Khmer, Cambodian, Hmong, Thai, Laotian, Vietnamese, Other Asian Languages, Tagalog, and Other Pacific Island languages;
- Other languages: includes Navajo, Other Native North American languages, Hungarian, Arabic, Hebrew, African languages, and other unspecified languages.

Within the census study area 1.1 percent of the total population speaks English “Not Well” or “Not at All”, which is lower than the total percentage for Mohave County and higher than the City of Kingman (Table 14). The total LEP population within the census study area does not exceed the standards established for this socioeconomic analysis in that there are no individual census tracts/block groups within the study area that exceed 20 percent of that group’s population or are double that of the LEP populations for Mohave County or the City of Kingman. Based on these findings, further consideration for LEP services within the census study area would not be required.

Table 14 – Limited English Proficiency (LEP) Populations within the Census Study Area

Area/ Census Tract (CT) Block Group (BG)	Total Population 5 Years and Over	Total Population That Speak English “Not Well” or “Not at All”	LEP Percentage (%)
Mohave County	145,803	2,406	1.7%
City of Kingman	18,438	181	1.0%
CT 9506	6,199	50	0.8%
CT 9508	3,553	41	1.2%
CT 9509	7,092	110	1.6%
CT 9510	9,693	33	0.3%
CT 9511	3,352	85	2.5%
Total Study Area	29,889	319	1.1%

Source: U.S. Census Bureau. Census 2000 Summary File 3 (SF-3)

6.2.2.4 Socioeconomic Environment Conclusions

The US 93/I-40 Kingman TI study area is predominantly White and comprises 86.6 percent of the population. The Hispanic or Latino population is the largest minority group within the census study area and comprises 8.5 percent. Four (4) census tracts within the study area have been identified with race minority populations that exceed the standards set for this socioeconomic analysis and may require further consideration for disproportionate adverse impacts as roadway improvements are designed.

The total elderly population is slightly lower than Mohave County and higher than in the City of Kingman; the total percentage for low-income households below the poverty level is slightly lower than Mohave County and higher than the City of Kingman; the total disabled population is slightly higher than both Mohave County and the City of Kingman; the female head-of-household population is slightly lower than both Mohave County and the City of Kingman. There are no individual census tracts within the total study area that exceed 50 percent of the population or are double that of the total elderly, low-income, disabled or female head-of-household populations for Mohave County or the City of Kingman; further

consideration for disproportionate adverse impacts on the elderly low-income, disabled or female head-of-household populations within the census study area would not be required.

The percent of LEP individuals, at 1.1 percent, is lower than the total percentage for Mohave County and slightly higher than the percentage for the City of Kingman. The total LEP population within the census study area does not exceed the standards established for this socioeconomic analysis and further consideration for disproportionate adverse impacts on the LEP population within the census study area would not be required.

Issues and Constraints – Socioeconomic. Racial populations considered in the socioeconomic analysis are relatively comparable within the total census study area. The dominant racial group is White, at 86.6 percent; the total minority population is 26.8 percent with the Hispanic/Latino ethnic group comprising the largest minority population at 8.5 percent. Review of individual block groups within the census study area displayed that standards were exceeded within four (4) census tracts for Black/African Americans, American Indian and Alaska Natives, Asians, Native Hawaiian and other Pacific Islanders, and the racial group classified as “other” not of Hispanic or Latino ethnicity. Additional evaluations and/or considerations may be required for racial populations as specific roadway improvements are designed.

Elderly, low-income, and disabled populations considered in the socioeconomic analysis are relatively comparable within the total census study area, while the female head-of-household population is well below the relative populations of Yuma and La Paz Counties. Review of individual block groups within the census study area displayed that standards were not exceeded for any of these minority populations. Additional evaluations and considerations would not be required for the elderly, low-income, disabled populations, and female head-of-household as roadway improvements are designed.

The percent of LEP individuals, at 1.1 percent, is comparable to the total percentage for Mohave County and the City of Kingman. Review of individual block groups within the census study area displayed that standards were not exceeded for the LEP population; therefore further consideration for LEP services within the census study area would not be required.

6.2.3. Natural Environment

This section describes the existing natural environment within the study area in terms of wildlife, sensitive species, plants, water resources, visual character, air quality, noise, and hazardous material concerns. The inventory of the natural environment for the study area consisted of gathering data and information from various local, state, and federal agencies, including the Arizona Game and Fish Department (AGFD), Bureau of Land Management (BLM) and the U.S. Fish and Wildlife Service (USFWS). The characteristics of the natural environment within the study area were also identified by field surveys and aerial photographs.

6.2.3.1 Biotic Communities

The majority of the study area is very similar in terrain, vegetation, and wildlife habitat. A decrease in natural vegetation and wildlife habitat was observed in the northeastern portion of the study area which contains an increased number of residential and commercial buildings. A majority of the study area is located within the Mohave Desertscrub, Saltbush Series Biotic Community, with a small portion in the northeastern portion of the study area located within the Semidesert Grassland Biotic Community (Brown 1994). Within the study area there are multiple named and unnamed ephemeral washes, as well as some intermittent washes. Named washes that occur within the study area include: Holy Moses Wash, Coyote Holes Spring, Grapevine Spring, Atlantic Spring, Cook Canyon Wash, and Box Canyon Wash. The Vegetation within the study area is described in further detail below and shown graphically in **Figure 20**.

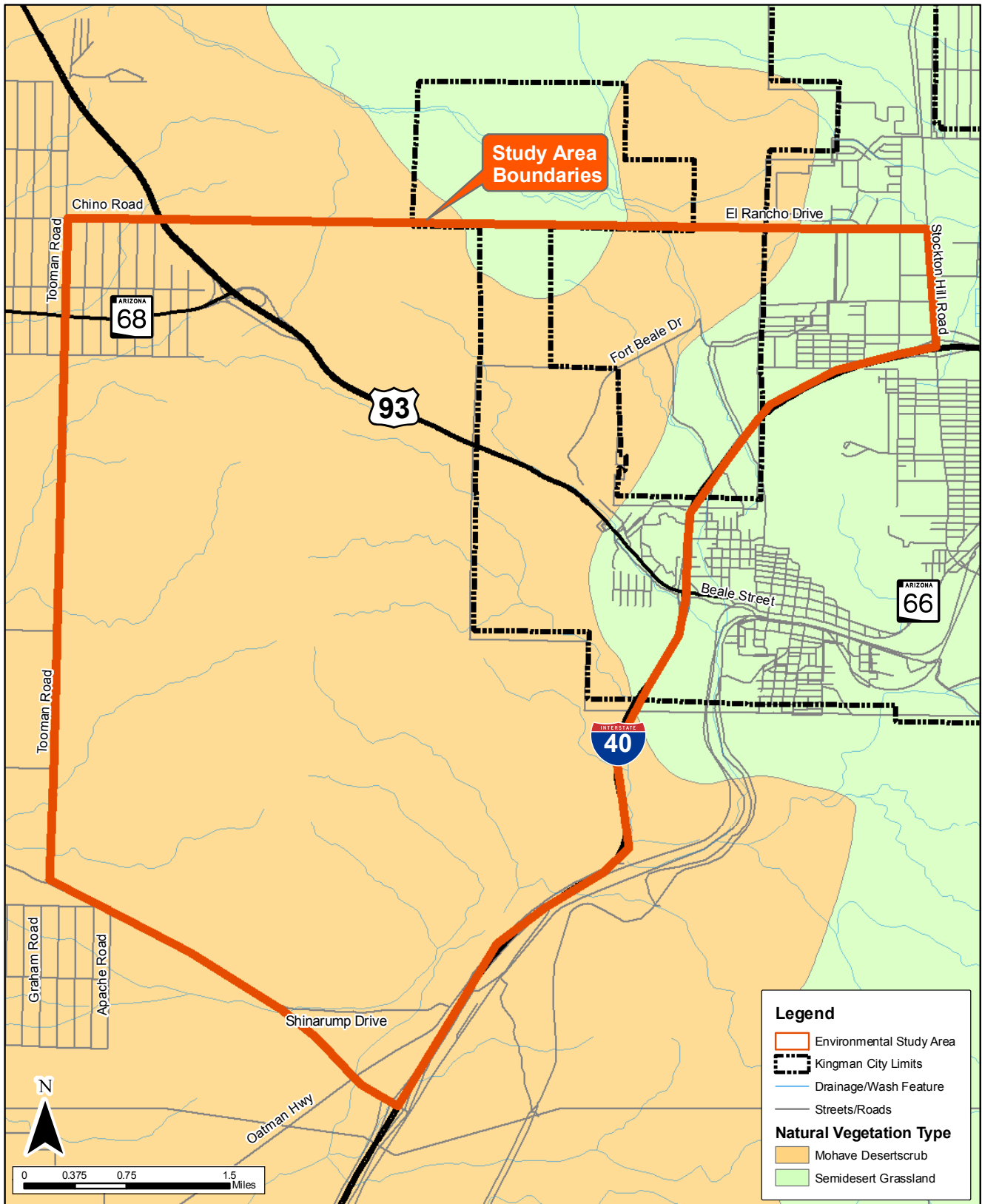


Figure 20 Natural Vegetation

Mohave Desertscrub (Saltbush Series)

According to the *Biotic Communities Southwestern United States and Northwestern Mexico* (Brown 1994) the Mohave Desertscrub biome is the smallest of the four North American desertland biomes. The main plants that are found in this biome include creosotebush (*Larrea tridentata*), all-scale (*Atriplex polycarpa*), brittlebush (*Encelia farinosa*), desert holly (*Atriplex hymenelytra*), Joshua tree (*Yucca brevifolia*), white burrobrush (*Hymenoclea salsola*), and multiple cacti species.

Within the Mohave Desert there are five separate series, they are creosotebush, shadescale, saltbush, blackbrush, and Joshua tree series. The study area occurs within the Saltbush Series and is characterized by one or more of the *Atriplex* species, such as all-scale (*A. polycarpa*), shadescale (*A. Confertifolia*), four-wing saltbush (*A. canescens*), and desert holly (*A. hymenelytra*). The plants are commonly found in combination with other plants such as creosote (*Larrea tridentata*) pickleweed (*Allenrolfea occidentalis*), glassworts (*salicornia spp.*), and greasewood (*Sarcobatus vermiculatus*).

Semidesert Grassland

The Semidesert Grassland community is a scrub and perennial grass dominated landscape that serves much as a transition between desertscrub land at lower elevations and chaparral or plains grassland at higher elevations. Semidesert Grassland is largely associated with the Chihuahuan Desert which covers much of Mexico, New Mexico, and the western and southern portions of Texas. The Semidesert Grassland community does occur within and above areas of the Sonoran Desert and is only located in small stretches of west central and southeast Arizona.

Common species in this community include: black grama (*Bouteloua eriopoda*), slender grama (*Bouteloua filiformis*), chino grama (*Bouteloua breviseta*), spruce top grama (*Bouteloua chondrosioides*), hoe grass (*Muhlenbergia porteri*), several three-awn species (*Artistida spp.*), curly mesquite (*Hilaria belangeri*), slim tridens (*Tridens muticus*), pappus grass (*Pappophorum vaginatum*), and tanglehead grass (*Heteropogon contortus*).

Arizona Native Plant Law (Arizona Revised Statutes Title 3) protects specific plant species from destruction, mutilation, unearthing, collection, cutting activities, and harvesting. Protected plant species under the Arizona Native Plant Law that have been observed during field reconnaissance, and/or have a high likelihood to occur within the study area: crucifixion thorn (*Canotia holacantha*), paloverde (*Cercidium microphyllum*), cholla sp. (*Opuntia sp.*), mesquite (*Prosopis glandulosa*), ironwood (*Carpinus caroliniana*), Yucca (*Yucca sp.*), and *Mammillaria* species. During future design phases, additional consideration would be required to ensure that impacts to these protected species are minimized and that landscape firms and nurseries are afforded the opportunity for salvage.

Field reconnaissance efforts were performed on November 7, 2007 and November 27, 2007. Field observations within the study area revealed that there is developed residential land use, developed commercial land use, and confirmed the native Mohave Desert, Saltbrush Series, and Semidesert Grassland communities. The variation in vegetation observed within the study area is related to the difference in topography. Vegetation appeared to be limited to grasses and smaller shrubs when topography relief was high and/or contained large boulders and rock outcrops. Vegetation appeared to be denser and more diverse in areas that had lower topographic relief. The majority of undeveloped land and areas that contained high topographic relief occur in the southern portion of the study area, although the entire area contains both. Throughout the study area there are areas that contain xeroriparian vegetation such as, green paloverde, ironwood, and salt cedar (*Tamarix sp.*).

6.2.3.2 Wildlife

Animal species that inhabit the Mohave Desert include: western burrowing owl (*Athene cunicularia hypugaea*), banded Gila monster (*Heloderma suspectum cinctum*), desert night lizard (*Xantusia vigilis*), banded gecko (*Coleonyx variegates*), Arizona chuckwalla (*Sauromalus obesus*), Desert tortoise (*Gopherus agassizii*), desert iguana (*Dipsosaurus dorsalis*), western leafnose snake (*Phyllorhynchus decuratus perkinsi*), desert rosy boa (*Lichanura trivirigata gracia*), California kingsnake (*Lampropeltis getulus californiae*), feral burro (*Equus asinus*), desert bighorn sheep (*Ovis canadensis nelsoni*), coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), great western mastiff bat (*Eumops perotis californicus*), and various other rodent, snake, and lizard species.

The Arizona Game and Fish Department's On-line Review tool (AGFD, 2007) indicates that the following species are known to occur within three miles of the study area: desert rosy boa, western burrowing owl, Gila monster, great western mastiff bat, and the Sonoran Desert tortoise. These species are listed in **Appendix A.2** and discussed further in Section 6.2.3.3.

Numerous washes which contain xeroriparian vegetation occur throughout the study area, these washes typically provide a higher habitat value than the surrounding upland areas by providing food, shelter, and travel corridors. Coyote, desert cottontail (*Sylvilagus floridanus*), phainopepla (*Phainopepla nitens*), and various other avian species were observed during field reconnaissance. Because the majority of animals that inhabit the Mojave Desert are mainly active during dawn, dusk, and twilight hours wildlife sightings during the day are limited. Suitable habitat exists for numerous species within the study area and includes but is not limited to the previously listed species such as western burrowing owl, banded Gila monster, desert iguana, desert bighorn sheep, and mule deer. Feral burros are reported within the study area and are protected by the Wild and Free-Roaming Horse and Burro Act of 1971 and are managed by the Bureau of Land Management (BLM).

The Arizona Wildlife Linkages Assessment (2006) was conducted as a proactive effort to preserve and potentially restore habitat connectivity within the state of Arizona. The purpose of the assessment was to identify:

- Habitat blocks that encompass important wildlife habitat;
- Fracture zones that separate habitat blocks;
- Potential linkage zones between, within, and through the habitat blocks and fracture zones that can be identified as areas critical to wildlife movement; and
- Factors threatening to disrupt the potential wildlife linkage zones.

The objective of the assessment is to maintain natural ecosystems, habitat connectivity, and wildlife populations and to address habitat fragmentation through a comprehensive, systematic approach. The Arizona Wildlife Linkages Assessment has identified one potential linkage zone within the US 93 study area, Linkage 20 – Hualapai Mountains – Cerbat Mountains Linkage (**Figure 21**). Species identified in this wildlife linkage include: Allen's big-eared bat (*Idionycteris phyllotis*), Townsend's big-eared bat (*Corynorhinus townsendii pallescens*), kit fox (*Vulpes macrotis*), mountain lion (*Felis concolor*), Bobcat (*Lynx rufus*), speckled rattlesnake (*Crotalus mitchellii*), American peregrine falcon (*Falco peregrinus anatum*), golden eagle (*Aquila chrysaetos*), Swainson's hawk (*Buteo swainsoni*), mule deer, greater western mastiff bat, Arizona chuckwalla, banded Gila monster, desert rosy boa, desert tortoise, and western burrowing owl. Threats to this wildlife linkage include highway (I-40), railroad (Santa Fe), and further growth and urbanization of the City of Kingman.

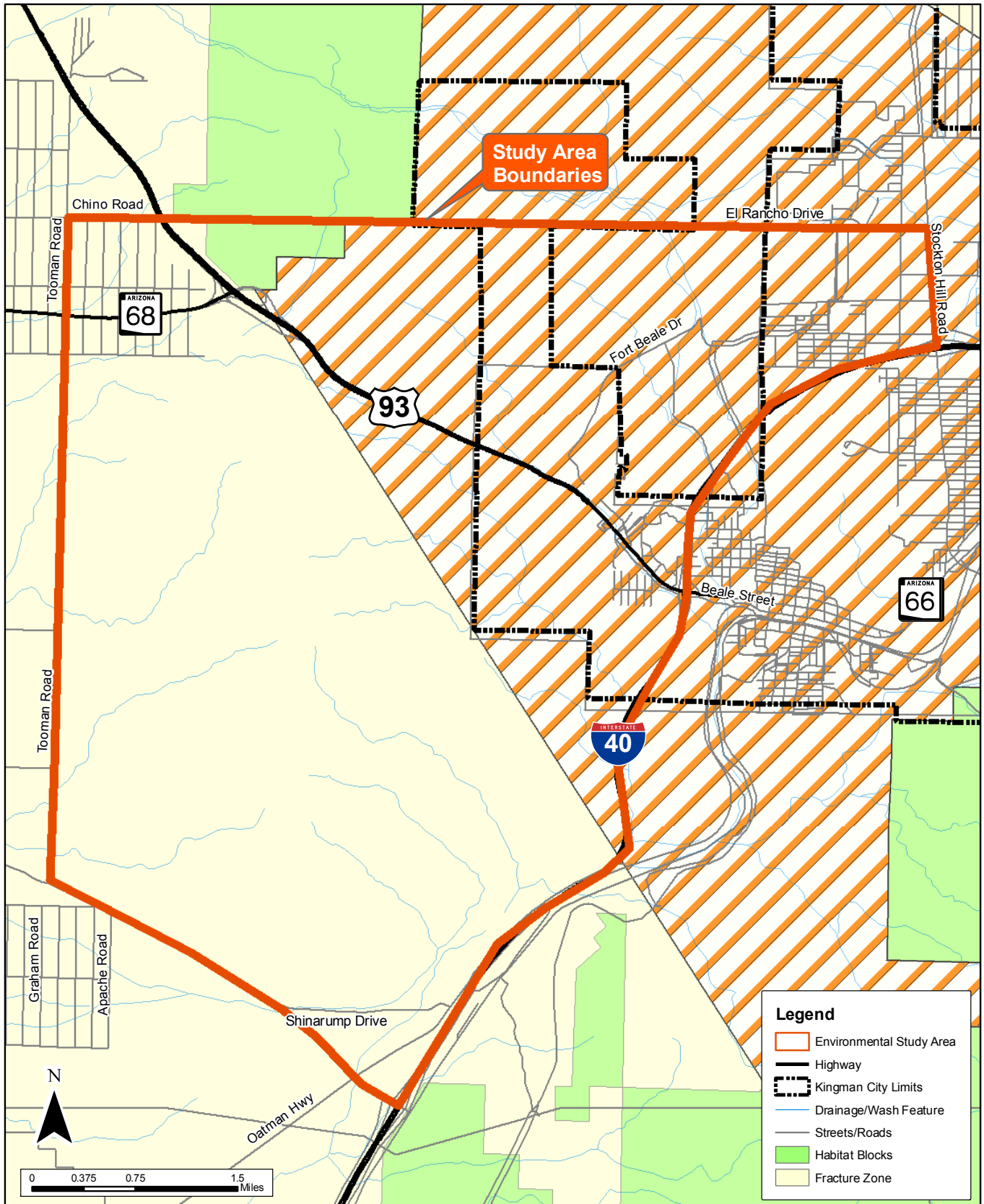


Figure 21 Arizona Proposed Wildlife Linkages

The identified wildlife linkage, Linkage 20, and its value for connectivity with adjacent habitat blocks should be considered as the I-40/US 93 improvements are designed. Further studies and/or surveys for wildlife may be required as the design plans for US 93 are developed to assess the potential impacts to wildlife, habitats, and linkages.

6.2.3.3 Special Status Species and Critical Habitat

For purposes of this document special status species include those that are federally listed as threatened, endangered, proposed, or candidate for listing under the Endangered Species Act of 1973, as amended, along with species identified for protection by AGFD and governing agencies such as, but not limited to, the BLM, Forest Service, and Tribal Governments. Species listed by the USFWS as endangered, proposed, or candidate, under the Endangered Species Act of 1973 are included in **Appendix A.1**. Special status species and/or their critical habitat that are known to occur within a three mile radius of the study area are listed by the AGFD's on-line environmental review tool and included in **Appendix A.2**. Special status species include threatened, endangered, proposed, candidate, state listed, and BLM sensitive species. A large portion of the study area occurs on BLM lands; therefore, a complete list of species known to occur on BLM lands within Mohave County is included in **Appendix A.3**.

The federal lists of threatened and endangered (T&E) species for Mohave County were obtained from the United States Fish and Wildlife Service (USFWS) through the Arizona Ecological Services Field Office website (www.fws.gov). Presently, within Mohave County there are sixteen (16) T&E species, three (3) candidate species, and one (1) species with a conservation agreement listed (**Appendix A.1**). Candidate status represents species for which the USFWS has sufficient information on biological status and threats to propose them as endangered or threatened under the Endangered Species Act, but for which development of a listing regulation is precluded by higher-priority listing activities. Conservation agreement status represents formal agreements between USFWS and one or more parties to address the conservation needs of proposed or candidate species, or species likely to become candidates, before they become listed as endangered or threatened.

Information on Special Status Species Occurrences and Critical Habitat was obtained from the AGFD On-line Environmental Review Tool. The AGFD On-line Environmental Review Tool reported that the western burrowing owl, desert rosy boa, greater western bonneted bat, Sonoran Desert tortoise, and the banded Gila monster have been documented as occurring within three miles of the study area (**Appendix A.2**). No critical habitat was documented in the study area. The western burrowing owl is listed as a federal species of concern and as a sensitive species on BLM lands. According to the AGFD Heritage Data Management System (HDMS) suitable habitat for the western burrowing owl includes open, well drained grasslands, steppes, deserts, prairies, and agricultural lands. The western burrowing owl is often associated with burrowing mammals and occasionally in open areas such as vacant lots, golf courses, or airports. The desert rosy boa is listed as a federal species of concern, sensitive species on United States Forest Service (USFS) land, and sensitive species on BLM land. According to the AGFD HDMS, suitable habitat includes rocky areas in desert habitat and in canyons that have permanent or intermittent streams. The greater western bonneted bat is listed as a federal species of concern. According to the AGFD HDMS suitable habitat for the greater western bonneted bat consists of lower and upper Sonoran desertscrub near cliffs. The greater western bonneted bat prefers rugged rocky canyon with abundant crevices. The Sonoran Desert tortoise is listed as a federal species of concern and as a State wildlife species of concern. The AGFD HDMS describes the Sonoran Desert tortoise's habitat as rocky slopes and bajadas of Mojave and Sonoran desertscrub, caliche caves in incised, cut banks of washes are also used as shelter. Shelter sites are rarely found in shallow soils. The Gila monster is listed as a federal species of concern and as a BLM sensitive species. The AGFD HDMS describes the Gila monster's habitat as undulating (wave like) rocky foothills, bajadas, and canyons. The Gila monster is primarily found in desert-grassland and occasionally found in oak woodland and sandy plains.

During the environmental clearance process of subsequent detailed studies, potential impacts to these species and their habitat should be evaluated. After alternatives have been determined species specific surveys should be conducted to determine if these species exist within the study area.

The BLM lists 25 sensitive species as occurring within Mohave County. As noted above, the AGFD's online review tool indicates that three species listed by the BLM as sensitive occur within three miles of the study area. These species are the western burrowing owl, desert rosy boa, and the banded Gila monster. The complete list of BLM sensitive species is included in **Appendix A.3**.

As the project development process continues, further coordination with the USFWS, AGFD, and BLM is recommended given the nature of the surrounding area and the extensive amount of undeveloped land within the I-40/US 93 study area. Federally funded projects with construction activities impacting an area of listed species or critical habitat would require coordination with the USFWS along with the preparation of a Biological Assessment (BA). Since there are no listed threatened or endangered species or critical habitat in the project area, the submittal of a BA is not necessary. This project will have no effect on threatened and endangered species.

6.2.3.4 Noxious Weeds

Invasive and noxious weeds are an increasing problem. Invasive and noxious weeds rapidly displace desirable plants that provide habitat for wildlife and food for people and livestock. Invasive and noxious weeds are plants that are not native to Arizona and were introduced accidentally, unintentionally, and/or intentionally. Noxious weeds are recognized on state and federal lists and are generally considered those that are exotics and/or negatively impact agriculture, navigation, fish, wildlife, and public health. Since the 1900s, weedy annuals such as cheatgrass (*Bromus tectorum*), Russian thistle (*Salsola spp.*), and tumble mustard (*Thelypodopsis spp.*) have become established in areas where grazing has greatly reduced the native vegetation. Invasive weeds such as those listed previously can alter fire regimes.

Under Executive Order 13112, dated February 3, 1999, projects that occur on federal lands or are federally funded must be:

“subject to the availability of appropriations, and within Administration budgetary limits, use relevant programs and authorities to: i) prevent the introduction of invasive species; ii) detect and respond rapidly to, and control, populations of such species in a cost-effective and environmentally sound manner; iii) monitor invasive species populations accurately and reliably; and iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded.”

During the final detailed study process, a survey will be required by a qualified noxious weed authority to determine if any noxious weeds are present within the study area boundaries.

6.2.3.5 Water Resources

The U.S. Army Corps of Engineers (USACE) regulates the discharge of dredge and fill material into waters of the U.S. under Section 404 of the Clean Water Act. Any activity that will discharge dredge or fill material into jurisdictional waters, including wetlands, will require a Clean Water Act Section 404 Nationwide Permit (NWP) or an Individual Permit (IP), following the completion of a jurisdictional delineation. A jurisdictional delineation is the process of identifying the characteristics and boundaries of waters of the U.S. within a given geographic area and must receive final approval by the USACE.

There are several ephemeral drainage systems within the study area. Following the US Supreme Court's Decision in *Rapanos v. United States* and *Carabell v. United States*, the USACE issued final guidance on Clean Water Act Jurisdiction in June 2007. In general, ephemeral drainage systems in the arid west are determined by the USACE to be jurisdictional waters. If it is anticipated that work will take place within or adjacent to potential waters of the U.S., a jurisdictional delineation for the study area should be completed and submitted to the USACE for concurrence. Following USACE approval of the jurisdictional

delineation, the project would be reviewed to determine if a Section 404 permit is required based on the alternative or roadway improvements proposed. Activities that may require a permit include, but are not limited to: construction of new roads; widening of existing roads; construction or expansion of bridges; installation of corrugated-metal pipe and concrete box culverts; installation of riprap; and maintenance activities within a drainage system.

If impacts are expected to be below 0.5 acre for each identified water of the U.S. (i.e. each individual wash system), a Nationwide Permit (NWP) Number 14 would likely be required. If impacts at a single crossing or to any individual drainage system are 0.1 acre or more, pre-construction notification must be provided to the USACE, and the project must be authorized by the USACE prior to the start of construction. If impacts at a single crossing or to any individual drainage system do not exceed 0.1 acre, pre-construction notification is generally not required, but may be required if a "may effect" determination is made for a threatened or endangered species and/or the presence of any historic property determined to be eligible, or which may be eligible, for listing on the National Register of Historic Places is identified. If impacts at any single crossing or to any individual drainage system exceed 0.5 acre, a Section 404 Individual Permit would be required. The Individual Permit process requires a more detailed permit application, and the USACE review period is typically much longer than that of a Nationwide Permit.

Improvements within or near waters of the U.S. require Section 401 Water Quality Certification. In certain cases, projects are conditionally certified and it is not necessary to submit an application for certification to the Arizona Department of Environmental Quality (ADEQ); however, the Section 401 conditions listed in the applicable Section 404 permit must be adhered to in order to qualify for conditionally certified. Linear transportation projects are generally conditionally certified.

The National Pollutant Discharge Elimination System (NPDES) is a national program under Section 402 of the Clean Water Act that regulates discharges of pollutants from point sources into waters of the U.S. Arizona has been delegated authority from the U.S. Environmental Protection Agency (EPA) to implement the permit program within the state. The state program is referred to as the Arizona Pollutant Discharge Elimination System (AZPDES). The AZPDES permit program requires an AZPDES general permit for construction activities that disturb one or more acres of land. A Stormwater Pollution Prevention Plan (SWPPP) must be prepared as a part of the AZPDES permit.

A review of Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) indicates 100-year floodplains are located within the southern region of the study area and in the eastern region of the study area near the Beale Street TI (**Figure 22**). The identified floodplains within the study area are classified Zone A and are recognized as areas with a determined base flood elevation. Coordination with the floodplain manager and FEMA would be required if impacts are proposed within the identified flood zones and any suspected flood zones within the I-40/US 93 Kingman TI study area. Any construction activity located within a delineated floodplain and watercourses or contributing watersheds (with flows greater than 200 cubic feet per second during a 100-yr flood event) must adhere to the local Mohave County Floodplain Regulations.

6.2.3.6 Prime and Unique Farmlands

The majority of the study area is undeveloped natural desert with a concentration of commercial development and scattered residential areas near US 93 and I-40. Agricultural lands were not observed within the study area during field reconnaissance efforts or on aerial photographs.

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with a minimum input of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion. Unique farmland is land other than prime farmland that is used for the production of specific high value food and fiber crops. High value food crops include but are not limited to citrus, tree nuts, olives, avocados, fruit, and vegetables. Prime and unique farmland has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields and/or high quality of crops when treated and managed, including water



Figure 22 100-year Floodplains

management, according to acceptable farming methods. Within the State of Arizona prime and unique farmland is determined by the location of a designated urban area, the soil types present, and the availability of water. A review of the U.S. Census Bureau Reference Map for Urban Areas indicates that only the eastern portion of the I-40/US 93 Kingman TI study area is located within a designated urban area and therefore the potential for prime or unique farmland is not present for the eastern region of the study area. A review of the U.S. Department of Agricultural Soil Survey for Mohave County indicates that the study area is within the *Soil Survey of Mohave County, Arizona, Central Part (AZ697)*. The *Soil Survey of Mohave County, Arizona, Central Part (AZ697)* indicates that prime farmland soils do not exist within the western region of the I-40/US 93 Kingman TI study area. Furthermore, field reconnaissance did not identify existing and/or functioning irrigation systems within the I-40/US 93 Kingman TI study area and therefore prime or unique farmland do not exist within the study area. In accordance with the Farmland Protection Policy Act a farmland conversion impact rating (Form NRCS-CPA-106) would not be required if right-of-way is to be acquired within the study area.

Issues and Constraints – Natural Environment. Native vegetation, including riparian tree species and cacti, is present within the study area. During future design phases, additional consideration would be required to ensure that impacts to these species are minimized and that landscape firms and nurseries are afforded the opportunity for salvage.

One (1) potential wildlife linkage is located within the I-40/US 93 Kingman TI study area. Further studies and/or surveys for habitat connectivity and biological value may be required as the I-40/US 93 Kingman TI improvements are designed.

The USFWS list of Threatened and Endangered Species would need to be addressed for compliance with the Endangered Species Act for any future I-40/US 93 improvements. Presently, sixteen (16) T&E species, three (3) candidate species, and one (1) species with a conservation agreement are listed for Mohave County.

The AGFD identified five (5) special status species that are recorded as occurring within three miles of the I-40/US 93 Kingman TI study area. It may be necessary to conduct a survey for any one or all of the following species: western burrowing owl, desert rosy boa, greater western bonneted bat, Sonoran Desert tortoise, and the banded Gila monster. Additionally, given the nature of the surrounding area, AGFD highly recommends further field investigations to be conducted within the I-40/US 93 Kingman TI study area to identify the presence of federally listed and special status species within the area that may be impacted by roadway improvements.

BLM maintains a species list of concern that would need to be addressed for roadway improvements that occur on BLM land. Three (3) animal species are listed for the project area by BLM. The Cerbat Foothills Recreational Area, located within the I-40/US 93 Kingman TI study area, is managed by BLM.

A survey will be required by a qualified noxious weed authority to determine if any noxious weeds are present within the study area boundaries.

A jurisdictional delineation to determine the potential waters of the U.S. within the study area may be completed and submitted to the USACE for concurrence. If impacts are less than 0.1 acre, a jurisdictional delineation may not be necessary.

A Section 404 Nationwide Permit (NWP) or an Individual Permit (IP) would be required if the proposed project impacts identified waters of the U.S. within the project limits. Additionally, a pre-construction notification (PCN) would be required if impacts exceeded 0.10 acre.

Improvements that occur within or near waters of the U.S. would require a Section 401 Water Quality Certification. However, if the proposed project is Conditionally Certified under the NWP program then a separate Section 401 Water Quality Certification application would not be required.

Improvements that disturb more than one acre of land would require an AZPDES permit. Additionally a SWPPP would also be required.

100-year floodplains are located within the study area. Considerations would be required for proposed work that falls within the flood zone. Coordination with the floodplain manager and FEMA would be required if impacts are proposed within the identified flood zones. Any construction activity located within a delineated floodplain and watercourses or contributing watersheds must also adhere to the local Mohave County Floodplain Regulations.

Prime Farmlands soils have not been identified within the study area, therefore no prime or unique farmlands are located within the study area. A farmland impact assessment is not required in accordance with the Farmland Protection Policy Act.

6.2.4. Visual Character

The visual character within the study area is dominated by relatively undisturbed natural desert with scattered mountains and ridges in the western region with commercial and residential buildings concentrated in the eastern region of the study area. The topographic relief within the study area varies from approximately 2,680 feet above mean sea level (MSL) to approximately 4,320 ft MSL (National Geographic, 2000). Throughout the study area, views of the surrounding natural areas and scattered mountains are virtually unimpeded by existing buildings and roadway structures.

The dominant mountain range that can be observed within the I-40/US 93 Kingman TI study area includes the southern foothills of the Cerbat Mountain range which is located throughout the study area. Distant mountain views can be seen of the Hualapai Mountains towards the east and the Black Mountains towards the west. Future proposed alternatives within the I-40/US 93 Kingman TI study area include: the constructions of direct connect modifications to the existing I-40/US 93 alignment to increase capacity for increasing traffic volumes; or the construction of a new highway direct connect ramp alignment to reroute the US 93 traffic volumes to and from I-40. Proposed alternatives for the I-40/US 93 improvements will alter the existing visual quality within the study area. The elevated structures proposed by the direct connect modifications to the existing I-40/US 93 alignment will impede views of the surrounding area to travelers on the corridors below while travelers utilizing the elevated direct connect structures would be provided with unimpeded views of the surrounding area; both impact and benefit would only exist as a short-term affect on the views during the duration of their travels. A new highway direct connect alignment would impact the natural and undisturbed setting of the existing desert and hillside environments which would impose a visual and aesthetic impact on the high recreational use of the Cerbat Foothills area which consumes a majority of the I-40/US 93 environmental study area. It is recommended that a visual character assessment study is conducted based on the preferred alternative that is chosen for roadway improvements.

The limits of the visual environment for the I-40/US 93 Kingman TI study area are defined by the geography, built structures, and natural environments from which the proposed project may be visible. Where additional right-of-way may be acquired for alternatives or where man-made elements may be constructed above grade, visual character impacts will depend on the design, scale and engineering of the new roadway. Additionally, removal of vegetation where additional right-of-way may be acquired would create temporary visual impacts to the landscape immediately adjacent to the roadway and change the existing visual character until natural or implemented re-vegetation occurs. A visual analysis may be warranted based on the preferred alternative chosen.

Issues and Constraints – Visual Character. Roadway improvements or modifications for a new traffic interchange between US 93 and I-40 would alter the existing visual character within the study area. Visual character impacts will depend on the final design, scale, and engineering of the roadway improvements. A visual analysis may be warranted based on the preferred alternative chosen.

6.2.5. Air Quality

The Clean Air Act (CAA) Amendments and NEPA require that air quality impacts be addressed in the preparation of environmental documents. The level of effort used to evaluate these impacts may vary from a simplified description to a detailed analysis depending on factors, such as the type of document to be prepared, the project location and size, the air quality attainment status of the area, and the state air quality standards. Under the CAA, areas are classified for the degree of ambient air pollution existing at the time of the 1990 amendments as to whether they attain the National Ambient Air Quality Standards (NAAQS) or are in nonattainment of the standards as described below.

As required by the CAA, NAAQS have been established for the following major air pollutants: carbon monoxide, hydrocarbons, nitrogen dioxide, ozone, particulate matter smaller than 10 microns (PM_{10}), particulate matter smaller than 2.5 microns ($PM_{2.5}$), sulfur dioxides, and lead. Carbon monoxide is a colorless, odorless gas that affects the cardiovascular system. Vehicular emissions are a major source of carbon monoxide. Ozone is created through a complex reaction of hydrocarbons and oxides of nitrogen with sunlight as a catalyst. Ozone affects the respiratory system; and vehicle emissions, power plants, and service stations are major sources. Nitrogen dioxide is a gas with a yellowish orange to reddish brown appearance, depending on its concentration, which impairs the respiratory system. Major sources of nitrogen dioxide are power plants and vehicle emissions. Particulate matter refers to small aerosols that may cause irritation and damage to the respiratory system. Vehicle emissions and the resuspension of road dust by vehicular activity are common sources. Sulfur dioxide is a colorless gas frequently derived from the combustion of sulfur-containing fuels. It primarily affects the respiratory system and major sources are coal- and oil-fired power plants. Lead and its compounds damage the cardiovascular, renal, and nervous systems. Before the harms of lead were known it was commonly used as an additive in gasoline. The primary source of airborne lead is vehicular emissions associated with the use of leaded gasoline. The CAA banned the sale of leaded fuel for use in on-road vehicles in 1996; however, the CAA allowed leaded fuel to be sold for off-road uses until the year 2008. Off-road uses include aircraft, racing cars, farm equipment, and marine engines. These standards have also been established as the official ambient air quality standards for the state of Arizona. The "primary" standards have been established to protect the public health. The "secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the general welfare.

In 1987, the standard for particulate matter was revised by the Environmental Protection Agency (EPA). The EPA defines total suspended particulate matter (TSP) as aerosols with diameters ranging from 0.1 microns up to approximately 30 microns in size, and include fine, coarse, and super coarse particles. Aerosols with aerodynamic diameters of 10 microns or less are referred to as PM_{10} .

In July 1997, EPA revised the standards for both particulate matter and ozone. For particulate matter, the methods for the determination of exceedences were revised and the PM_{10} standard was revised by adding standards for particulates with diameters less than or equal to 2.5 microns and are referred to as $PM_{2.5}$. For ozone, the 1-hour standard was replaced with an 8-hour standard. In addition, the standard for concentration of ozone was lowered from 0.12 ppm to 0.08 ppm, and the method for the determination of exceedences was also revised. The effective date of those final rules was September 16, 1997.

6.2.5.1 Nonattainment Areas

The CAA Amendments of 1990 authorized the EPA to designate areas as nonattainment, and to classify them according to their degree of severity. This classification initiates a set of control requirements designed to achieve attainment by a specified date. A nonattainment area is an area in which compliance with the NAAQS has not been established for one or more pollutants. States that fail to attain the NAAQS for any of the criteria pollutants are required to submit State Implementation Plans, which

outline those actions that will be taken to attain compliance. No nonattainment areas are located within the I-40/US 93 Kingman TI study area.

6.2.5.2 Conformity

Since 1977, federal agencies and Metropolitan Planning Organizations have been required by Section 176c of the CAA to ensure that all transportation projects conform to the approved air quality State Implementation Plans. The CAA enacted in 1990 defined conformity to a State Implementation Plan as meaning the conformity to a State Implementation Plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS. The conformity determinations for federal actions related to transportation projects must meet the requirements of Title 40 of the Code of Federal Regulations (CFR) Parts 51 and 93.

Projects within the US 93 and I-40 study area will need to be included in an approved transportation improvement plan for at least one year, and no more than three years, prior to construction. The Transportation Improvement Plan will have to be approved by the FHWA and EPA as conforming to the State Implementation Plan, and the Federal Implementation Plan.

Construction related disturbance of the soil by heavy equipment would increase fugitive dust and, if uncontrolled, would affect local air quality. In addition, construction-related traffic delays, combined with exhaust emissions from constructed-related equipment, may elevate levels of pollutants. Such impacts would be temporary and would be eliminated once construction is complete. Any construction activity located within Mohave County must adhere to the Arizona Department of Environmental Quality (ADEQ) air quality rules and regulations.

Issues and Constraints – Air Quality. No nonattainment areas are located within the I-40/US 93 Kingman TI study area; however, proposed roadway improvements must adhere to any air quality rules and regulations of Mohave County.

6.2.6. Noise

Noise, defined as unwanted or excessive sound, is an undesirable by-product of our modern way of life. While noise emanates from many different sources, transportation noise is perhaps the most pervasive and difficult source to avoid in society today. The Federal-Aid Highway Act of 1970 mandates the FHWA to develop noise standards for mitigating roadway traffic noise. The FHWA regulations for mitigation of roadway traffic noise in the planning and design of federally-aided roadways are contained in Title 23 of the United States Code of Federal Regulations Part 772. The regulations require the following during the planning and design of a roadway project: 1) identification of traffic noise impacts; examination of potential mitigation measures; 2) the incorporation of reasonable and feasible noise mitigation measures into the roadway project; and 3) coordination with local officials to provide helpful information on compatible land use planning and control. The regulations contain noise abatement criteria, which represent the upper limit of acceptable roadway traffic noise for different types of land uses and human activities. The regulations do not require that the abatement criteria be met in every instance. Rather, they require that every reasonable and feasible effort be made to provide noise mitigation when the criteria thresholds are approached or exceeded.

ADOT has adopted a State Policy, the *Noise Abatement Policy for Federal Aid Projects*, which is consistent with the FHWA *Highway Traffic Noise Analysis and Abatement Policy and Guidance*. These policies outline noise impacts. A traffic noise impact occurs when either of the following conditions occurs:

- The predicted traffic noise level approaches or exceeds the FHWA noise abatement criteria (NAC) shown in **Table 15**. ADOT defines approach as being 3dBA below the appropriate NAC.
- The predicted traffic noise level substantially exceeds the existing noise level. ADOT defines substantial in this context as 15dBA or greater.

If potential traffic noise impacts are identified, noise abatement is considered and implemented, if it is found to be both reasonable and feasible. The concerns of the impacted residents are a major consideration in reaching a decision on the reasonableness of abatement measures to be provided. When noise abatement measures are being considered, every reasonable effort is made to obtain substantial noise reductions. Substantial noise reductions have been defined by State highway agencies to typically range from 5 to 10dBA.

Table 15 – FHWA Noise Abatement Criteria

Activity Category	Description	Leq(h)
A	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.	57dBA (exterior)
B	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.	67dBA (exterior)
C	Developed lands, properties, or activities not included in Categories A or B.	72dBA (exterior)
D	Undeveloped lands.	None
E	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.	52dBA (interior)

Source: Title 23, CFR Part 772

Roadway construction noise is often viewed by the public as being short term and a necessary price for growth and improvement. Roadway construction noise should generally be addressed in a qualitative, rather than quantitative, manner commensurate with the scope of a roadway project. Construction noise levels may be predicted, if warranted. If potential construction noise impacts are identified, a common sense approach should be utilized to incorporate appropriate abatement measures into a roadway project.

Activity areas under Category B, Category C, and Category D described in **Table 15** are found within and adjacent to the I-40/US 93 Kingman TI study area. Commercial buildings located within and adjacent to the study area are represented by Activity Category C. Residential buildings and churches are located within and adjacent to the study area are represented by Activity Category B. The Cerbat Foothills Recreational Area, located within the study area, is used for recreational hiking and equestrian trail riding and is represented by Activity Category B. The Cerbat Foothills Recreational Area covers a majority of the study area and is further discussed in Section 6.2.8. Additional recreational areas are located adjacent to the study area and include the AT & SF Locomotive City Park, the Cerbat Cliffs golf course, and the Kingman Fire Fighter Memorial Park; these recreational facilities are further discussed in Section 6.2.8. Furthermore a portion of the study area is composed of undeveloped land that is not identified for recreational usage, these undeveloped lands area represented by Activity Category D. During subsequent environmental documentation on proposed projects within the I-40/US 93 Kingman TI study area a noise analysis would be required. The future noise quality for the study area would need to be evaluated against existing noise data to conform to the FHWA *Highway Traffic Noise Analysis and Abatement Policy and Guidance* and ADOT *Noise Abatement Policy*. In addition, local noise ordinances will need to be evaluated in considering future project development.

No other noise receptors were identified within or adjacent to the study area that would be impacted by roadway improvements. If any new noise receptors are constructed within the study area, prior to construction of proposed I-40/US 93 TI improvements, considerations for further noise analysis would be required.

Issues and Constraints – Noise. Noise receptors within the study area include the recreational areas (Activity Category B), commercial buildings (Activity Category C), residential buildings and churches (Activity Category B). Noise receptors located within the study area may require ambient noise levels to be monitored following the determination of a preferred alternative. Determination to conduct a noise impacts evaluation should be guided based on input received from agencies and public involvement efforts.

6.2.7. Hazardous Materials

Hazardous materials are regulated by the EPA pursuant to the Federal Resources Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The EPA implements CERCLA, commonly known as Superfund, and its amendments, the 1986 Superfund Amendments and Reauthorization Act (SARA). In order to evaluate the environmental concerns associated with hazardous materials and solid waste landfills, a preliminary evaluation was performed of the permitted and non-regulated hazardous materials sites and solid waste facilities located within or immediately adjacent to the study area.

A review of the various state and federal databases for hazardous materials was completed for the study area. Sources consisted of:

- ADEQ Underground Storage Tanks (UST);
- ADEQ Leaking Underground Storage Tanks (LUST);
- ADEQ Hazardous Material (HazMat) Incident Logbook (HMIL);
- Federal Superfund Sites, including National Priority List (NPL), Department of Defense (DoD), and Arizona Water Quality Assurance Revolving Fund (WQARF) sites – one mile search radius;
- Arizona Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF) and Solid Waste Landfills (SWLF) – one mile search radius;
- EPA Regulated Facilities – Enviromapper for Envirofacts.

Data obtained on hazardous materials identified by the various state and federal databases is detailed in the following sections and listed in **Appendix B**.

6.2.7.1 Underground Storage Tanks

The results of the underground storage tank (UST) database search indicate that sixteen (16) sites with UST records are located within or adjacent to the study area. The results are summarized in **Appendix B.1**.

6.2.7.2 Leaking Underground Storage Tanks

The results of the leaking underground storage tank (LUST) database search indicate that there are twenty-one (21) sites with LUST case files located within or adjacent to the study area. Five (5) LUST cases are currently open and sixteen (16) have been closed. The results are summarized in **Appendix B.2**.

6.2.7.3 Hazardous Material Incident Logbook

No hazardous material incidents occurred within or immediately adjacent to the study area study area, as recorded in the *Hazardous Material Incident Logbook*.

6.2.7.4 Superfund Sites

Superfund Sites include the following; WQARF sites, Potential WQARF sites, NPL sites, DOD sites, and Formerly Used Defense (FUD) sites. According to the ADEQ Superfund Programs Section and the ADEQ Interactive GIS eMap website, there are no NPL, DOD or WQARF sites located within 1.0 mile of the project limits.

6.2.7.5 Treatment, Storage, and Disposal Facilities and Solid Waste Landfills

The current industry accepted search radius for Resource Conservation and Recovery Act (RCRA) – Treatment, Storage and Disposal Facilities (RCRA TSD) sites is 0.5 miles. This industry standard is appropriate for this level of evaluation. According to a search performed on Enviromapper website, there is two (2) EPA regulated RCRA facilities within 0.5 miles of the project limits. The identified RCRA facilities are the ADOT Materials Testing Lab and North Star Steel. The result is summarized in **Appendix B.3**.

6.2.7.6 Other Environmental Sites and Facilities

According to the ADEQ Interactive GIS eMap website there are no other environmental hazardous material sites or facilities located within 1 mile of the I-40/US 93 Kingman TI study area. One bridge exists that was built prior to 1978 (construction prior to 1978 are more likely to contain asbestos and lead-based paint) within the study area and is located approximately at MP 46.75 and spans the Holy Moses Wash. Bridge Inventory List #247, and was originally built in 1939. The Holy Moses Wash Bridge is approximately 250 feet long with a 37 foot span and is comprised of a single structure continuous concrete span bridge for both northbound and southbound traffic lanes. An asbestos and lead based paint assessment will be required prior to construction operations at the existing Holy Moses Wash Bridge structure.

6.2.7.7 Hazardous Materials Conclusion

Identified hazardous material sites located within or immediately adjacent to the I-40/US 93 Kingman TI study area includes sixteen (16) recorded UST sites, five (5) open LUST sites, sixteen (16) closed LUST sites and two (2) EPA regulated RCRA facilities. No obvious signs of contamination were observed during field reconnaissance. Further coordination would be required if R/W acquisition or proposed construction actions will impact any existing hazardous material sites. If new R/W is to be acquired for future construction, a Phase I Environmental Site Assessment should be conducted to satisfy the requirements of The *All Appropriate Inquire Rule* (CFR 40 312) and allow the user a legal defense under the Landowner Liability Protections of CERCLA; as well as provide the user with an account of the potential for the study area to have been impacted by contaminants.

Issues and Constraints – Hazardous Materials. If new R/W is to be acquired within the I-40/US 93 Kingman TI study area, a Phase I Environmental Site Assessment should be conducted to satisfy the requirements of The All Appropriate Inquiry Rule (CFR 40 312) and to allow the user a legal defense under the Landowner Liability Protections under CERCLA; as well as, provide the user with an account of the potential for the study area to have been impacted by contaminants.

Several hazardous material sites have been identified within or immediately adjacent to the I-40/US 93 Kingman TI study area. These hazardous material sites include sixteen (16) underground storage tank (UST) sites, five (5) leaking underground storage tank (LUST) sites, and two (2) EPA regulated Resource Conservation and Recovery Act (RCRA) facilities. Additionally, records identified one (1) bridge site within the study area that may have the potential for asbestos or lead paint contamination. Further

coordination would be required if R/W acquisition or proposed construction actions will impact any existing hazardous material sites.

6.2.8. Section 4(f) Resources

Section 4(f) refers to the original section in the Department of Transportation Act of 1966. The 4(f) requirement, originally set forth in *Title 49 United States Code (U.S.C.), Section 1653(f)*, considers publicly-owned park and recreational lands, publicly-owned wildlife and waterfowl refuges, and historic sites in transportation project development. Section 4(f) states that the FHWA "...may approve a transportation program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if...there is no prudent and feasible alternative to using that land and the project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use." (*49 U.S.C. 303[c]*). Section 4(f) also establishes criteria by which public parks and recreation lands, wildlife, and waterfowl refuges and historic sites can be evaluated for consideration as 4(f) resources.

A "use" of a Section 4(f) resource, as defined in *Title 23, CFR, Part 771.135(p)*, "occurs: (1) when land is permanently incorporated into a transportation facility; (2) when there is a temporary occupancy of land that is adverse in terms of the statute's preservationist purposes; or (3) when there is a constructive use of land. A constructive use of a Section 4(f) resource occurs when the transportation project does not incorporate land from a Section 4(f) resource, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired."

Schools can also qualify as Section 4(f) if they are publicly owned, open to the public, have a major recreational purpose, and are considered to be significant resources by the community.

For purposes of Section 4(f), typically an historic site is significant only if it is listed on or eligible for the National Register of Historic Places (NRHP) under criteria A, B and/or C.

The FHWA has published a policy paper (FHWA Section 4(f) Policy Paper, 2005) that serves as a guide for the applicability of Section 4(f) and outlines an evaluation process and alternative analysis procedures. As this project progresses, early identification and evaluation of potential 4(f) resources and analysis of the project's potential impact on them will be important to the effective and efficient planning of the project should FHWA involvement be anticipated.

The study area and vicinity contain several 4(f) properties (**Figure 23**). The Cerbat Foothills Recreation Area (CFRA) is located just west of Kingman and I-40 and is approximately 13,300 acres in size is a 4(f) resource. The CFRA makes up approximately 66 percent of the total study area. Within BLM's *Kingman Resource Area Proposed Resource Management Plan and Final Environmental Impact Statement* (1993) the CFRA is identified as a designated cooperative recreation management area between the City of Kingman, Mohave County and BLM that provides established day use trails and picnic sites. Additionally, a significant measure of the land management for the CFRA is to protect wildlife and riparian habitat in the Kingman area and preserve it from further habitat fragmentation. However, a portion of the CFRA that is located on City of Kingman property may not be a 4(f) resource.

The 'major purpose' of the City of Kingman's portion of the CFRA is not considered by the City as being solely recreational (as indicated by zoning or other official land use documentation). Therefore the portion of the CFRA within the City of Kingman limits is not considered a 4(f) resource. This opens an opportunity to provide feasible alternatives that meet the project purpose & need and do not impact the BLM – CFRA 4(f) resource.

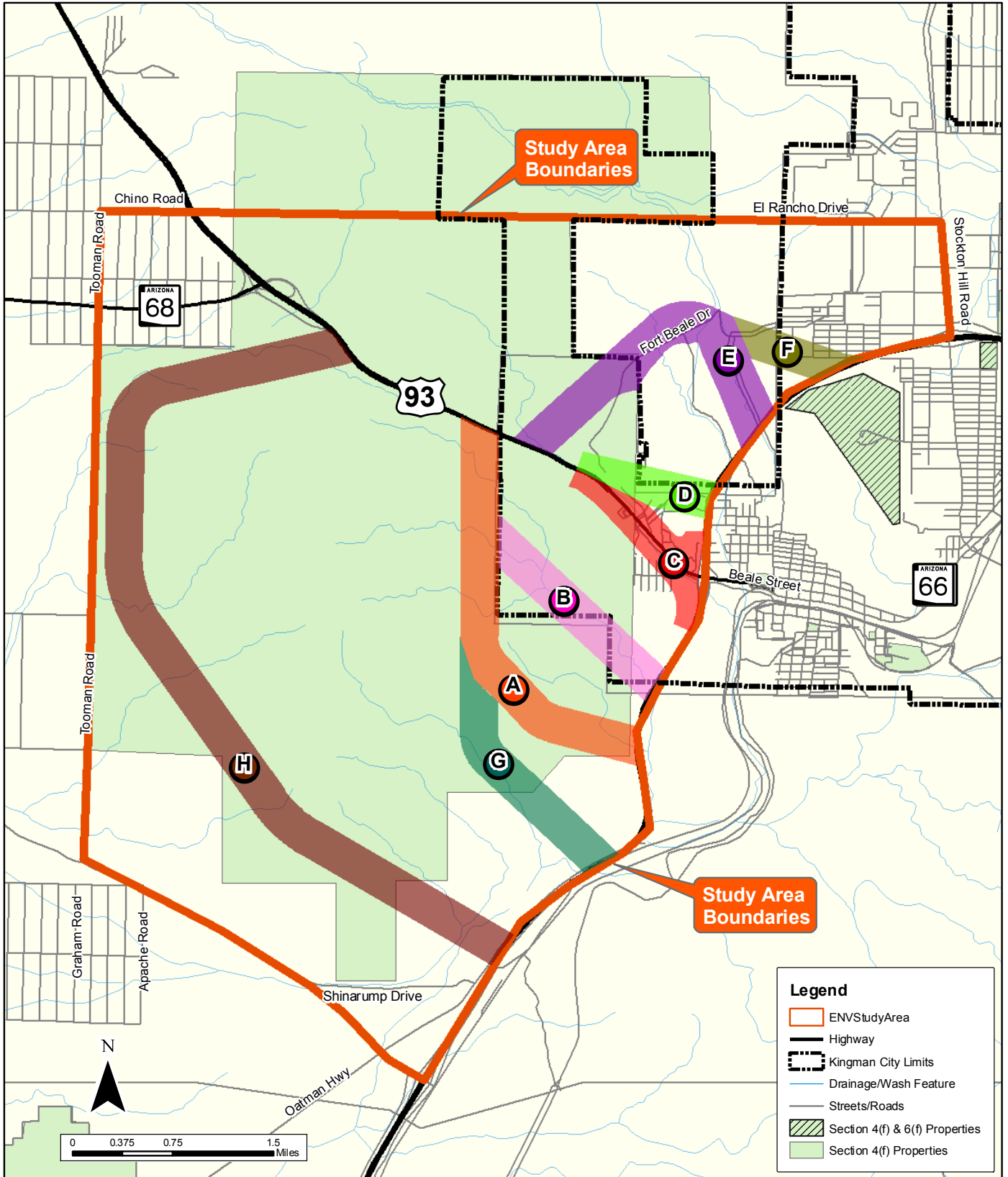


Figure 23 Potential Section 4(f) & Section 6(f) Resources

Of the currently recorded cultural resources within the study area, one site, Beale's Spring, has been determined eligible for the NRHP (believed to be eligible under multiple criterion) and therefore may be considered a potential 4(f) resource. Numerous other cultural resources located within the project area have not yet been evaluated for the NRHP, consequently their potential to be 4(f) resources is unknown at this time. Furthermore, since the entire study area has not been completely surveyed for cultural resources, there is the potential that unrecorded 4(f) resources may exist.

Additional 4(f) resources are located adjacent to and within the vicinity of the I-40/US 93 Kingman TI study area. These include several NRHP sites within the downtown Kingman area located just east of the Beale Street TI, the AT & SF Locomotive City Park located at West Beale Street and Grandview Avenue, the Cerbat Cliffs golf course located east of I-40 off of Country Club Drive, and the Kingman Fire Fighter Memorial Park located on Detroit Avenue and Stockton Hill Road. Entrances to these recreational facilities may be affected by design plans for the proposed US 93/I-40 improvements.

Future coordination with the appropriate agencies and departments of the aforementioned facilities is recommended.

6.2.9. Section 6(f) Resources

The Land and Water Conservation Fund Act (LWCF) was signed into law on September 3, 1964. The Act was established to provide a funding source for acquisition of park and recreation lands by federal, state, and local governments. The provisions under Section 6(f) mandate that these investments be protected but recognize that changes in land use, especially in growing urban areas, can impact these protected areas. The LWCF Act contains the following provision to protect these areas from conversions (National Park Service 2004):

SEC. 6(f)(3) No property acquired or developed with assistance under this section shall, without the approval of the Secretary, be converted to uses other than public outdoor recreation uses. The Secretary shall approve such conversion only if he finds it to be in accord with the then existing comprehensive statewide outdoor recreation plan and only upon such conditions as he deems necessary to assure the substitution of other recreation properties of at least equal fair market value and of reasonable equivalent usefulness and location.

According to the 2008 Arizona Statewide Comprehensive Outdoor Recreation Plan (Arizona State Parks 2004) there are no Section 6(f) funded properties located within the I-40/US 93 study area, however there are two Section 6(f) funded properties adjacent and near to the study area which include: the Kingman Municipal Golf Course-Cerbat Cliffs funded in 1973 and located adjacent to I-40; and the Kingman Fire Fighter Memorial Park funded in 1975 which is located on Detroit Avenue and Stockton Hill Road. If a new outdoor recreation facility or open space project is constructed within the study area (prior to construction of proposed I-40/US 93 improvements) that could be directly impacted and LWCF funds are used to construct the recreational facility, requirements of Section 6(f) would apply and coordination with the Arizona State Parks LWCF Grants Coordinator and the National Park Service would be required.

Issues and Constraints – Section 6(f) Resources. There are no Section 6(f) funded properties located within the I-40/US 93 Kingman TI study area, however there are two Section 6(f) funded properties adjacent and near to the study area which include: the Kingman Municipal Golf Course-Cerbat Cliffs and the Kingman Fire Fighter Memorial Park. Future coordination with the appropriate agencies and departments is recommended if any impact to the aforementioned facilities is anticipated by the preferred alignment.

6.2.10. Cultural Resources

In March of 2008 an investigation of cultural resource information contained in the AZSITE cultural resource database, the ADOT Historic Preservation Team's Portal database, and files maintained at the Arizona State Historic Preservation Office was completed for the I-40/US 93 Kingman TI review area. The review area for cultural resources consists of the entire I-40/US 93 Kingman TI Study area and a one mile buffer around the review area. The purpose of the investigation was to evaluate the review area for potential cultural resources.

The cultural resource investigation revealed that 95 cultural resource surveys have been undertaken in the review area. Many of these surveys were conducted for linear transportation projects along the US 93, I-40 and SR 68 alignments. There are large portions of the review area, away from the transportation alignments, that have not been covered by cultural resources surveys.

The investigation also identified a total of 107 individual sites/cultural resources and 1 historic district that are located within the review area. Of these, 54 are listed on the National Register of Historic Places (NRHP). These resources vary greatly in nature from prehistoric archaeological sites, rock shelters, historic road segments, historic homes, government buildings, and commercial buildings. The lists of cultural resource surveys and sites are listed in **Appendix C**.

As the US 93 and I-40 corridors are improved and modified to meet current and future transportation needs, compliance with local, state and federal legislation concerning cultural resources must be part of the planning process. Cultural resources clearance and compliance with existing regulations requires adequate time to account for agency reviews and the execution of mitigation measures.

Many of the cultural resource surveys that have been conducted within the review area were conducted for projects related to the maintenance, alignment/realignment and expansion of US 93 and I-40. However, it is anticipated that additional archaeological surveys will be required for new transportation corridors within the I-40/US 93 review area. Furthermore, archaeological sites identified through such surveys will require evaluation, testing and/or data recovery investigations to mitigate any potential impacts.

Special consideration of cultural resources/historic sites listed on or determined eligible for the National Register of Historic Places located within the Cerbat Foothills Recreational Area will need to be undertaken to determine their potential as Section 4(f) resources.

Issues and Constraints – Cultural Resources. Ninety-five (95) cultural resource surveys have been undertaken in the review area. However, large portions of the review area, away from the transportation alignments, have not been covered by cultural resources surveys and would require surveying if construction is proposed within those areas.

One hundred and seven (107) individual sites/cultural resources and one (1) historic district area are located within the review area. Of these, fifty-four (54) are listed on the National Register of Historic Places (NRHP).

Compliance with local, state, and federal legislation concerning cultural resources must be part of the planning process. Cultural resources clearance and compliance with existing regulations requires adequate time to account for agency reviews and the execution of mitigation measures.

6.3. Environmental Overview Conclusion

The evaluation of the socioeconomic environment, physical and natural environmental character, section 4(f) and 6(f) and cultural resources conducted for the I-40/US 93 Kingman TI study area indicates that proposed enhancements within the study area may have impacts on the quality of the human and natural environment. The extent of impacts resulting from any proposed I-40/US 93 Kingman TI improvements would be dependent on the proposed alignment alternatives. The purpose of this report was to describe

the existing social and environmental conditions within the study area and assist in identifying potential environmental concerns to guide future development of I-40/US 93 Kingman TI within the study area. Design alternatives developed for the I-40/US 93 Kingman TI would need to be individually evaluated to determine any potential environmental impacts and presented in a written format compliant with the National Environmental Policy Act (NEPA). This environmental overview does not present an evaluation of environmental impacts for potential design alternatives and is not intended to meet the requirements of the National Environmental Policy Act (NEPA).

Any proposed improvements within the I-40/US 93 Kingman TI study area would be required to comply with Title VI of the Civil Rights Act of 1964 and related statutes, the Endangered Species Act of 1973 as amended, the Migratory Bird Treaty Act of 1918, the Clean Water Act of 1977 as amended, the Clean Air Act of 1990 as amended, Section 4(f) of the Department of Transportation Act of 1966, Section 6(f)(3) of the Land and Water Conservation Fund Act of 1964, and the National Historic Preservation Act of 1966 along with any governing Federal, State, County, and/or local rules, regulations, and ordinances. This may include, but is not limited to, special considerations for minority groups, additional studies and surveys, jurisdictional delineations, noise analysis and modeling, air analysis and modeling, environmental site assessments (ESA), prevention plans, various regulatory permits, and certifications, along with agency coordinations and concurrences. Additionally, NEPA compliance would be required if any federal funding is utilized for the design or construction of potential I-40/US 93 Kingman TI improvements.

Within the study area two major environmental resources have been identified that would significantly influence any potential design alignments for the I-40/US 93 Kingman TI improvements and include Section 4(f) resources and biological resources. As previously identified within this environmental overview a majority of the study area is located within the Cerbat Foothills Recreational Area, large portions of which are a Section 4(f) resource. Additional Section 4(f) resources include NRHP listed or eligible cultural sites (under criteria A, B, or C) within the Cerbat Foothills Recreational Area and adjacent areas. The I-40/US 93 Kingman TI study area also presents concerns towards the local biological resources, such as USFWS listed species, state special status species, and wildlife linkage areas.

The existing social and environmental resources identified within this environmental overview should be considered in determining the appropriate potential design alignments to be evaluated for the I-40/US 93 Kingman TI improvements.

6.4. Agency and Public Involvement Efforts

Agency and public input is essential to help guide improvement strategies that best meet the area's needs. Agency and public involvement efforts have been initiated for the I-40/US 93 Kingman TI Study. Efforts have included two agency meetings and two public meetings, further details are provided in the following discussions.

Agency and public involvement is a requirement for NEPA compliance, further agency and public involvement will be required during the NEPA documentation process and may include additional Agency Scoping Meetings, public meetings, or a public hearing, depending on the level of NEPA documentation required for proposed roadway improvements.

6.4.1. Agency Scoping Meetings

ADOT held two Agency Scoping Meetings at convenient local venues within the City of Kingman to facilitate agency participation. The first meeting was held on Monday, November 27th, 2007 at the ADOT Kingman District Training Center located at 3660 E. Andy Devine, Kingman, Arizona. The second meeting was held on Monday, March 31st, 2008 at the Mohave County Offices located at 700 West Beale Street, Kingman, Arizona. These meetings provided information on the I-40/US 93 Kingman TI Study and offered agencies and organizations the opportunity to speak one-on-one with ADOT officials,

project planners and engineers. In addition, the meetings allowed engineers and planners the opportunity to hear first-hand the concerns of those who might be affected by the project.

The Agency Scoping Meetings were held to discuss issues, concerns, and opportunities to be addressed during development and evaluation of the I-40/US 93 Kingman TI corridor alternatives. Study vicinity maps, information handouts, and meeting Figures were also available for examination and commentary. Meeting summaries and material from the scoping meetings are provided in **Appendix E**.

6.4.2. Public Meetings

ADOT held two public meetings in the City of Kingman to facilitate public participation. The first public scoping meeting was held on Monday, March 31st, 2008 at the Mohave County Offices located at 700 West Beale Street, Kingman, Arizona. This meeting provided information on the I-40/US 93 Kingman TI Study and offered the public and attending organizations the opportunity to speak one-on-one with ADOT officials, project planners and engineers. In addition, the meeting allowed engineers and planners the opportunity to hear first-hand the concerns of those who might be affected by the project. Meeting summaries and material from the scoping meeting are provided in **Appendix E**.

The second public meeting was held on Thursday, November 13, 2008 at the Palo Christi Elementary School located at 500 West Maple Street, Kingman, Arizona. This meeting provided information on each of the corridor alternatives that have been evaluated, and discussed the recommended corridor alternatives that are being recommended for further study in the next phase of the project development process. The meeting offered the public and attending organizations the opportunity to review the project information and speak one-on-one with the engineers and planners who have developed the feasibility study. The meeting also allowed the public to ask questions and express their support or concerns on the corridor alternative recommendations. Meeting summaries and material from this public meeting are provided in **Appendix E**.

7.0 Cost Estimate

Preliminary order of magnitude cost estimates have been prepared for Alternatives A-H. The preliminary order of magnitude cost estimates include pavement, earthwork, drainage, bridge structures, lighting, signing, utilities, maintenance of traffic, incidental items, right-of-way acquisition, and construction contingency. **Table 16** summarizes the order of magnitude construction costs for each of the corridor alternatives. More detailed cost estimates for each of the corridors showing approximate quantities, units, unit prices, and estimated costs may be found in **Appendix F**. The unit prices are based on recent ADOT bid results and other generally accepted planning level unit costs for the type of work listed in this area of the state.

Table 16 – Summary of Estimated Cost by Alternative

Alternative	Order of Magnitude Cost Estimate
A	\$62,000,000
B	\$62,000,000
C	\$167,000,000
D	\$51,000,000
E	\$57,000,000
F	\$60,000,000
G	\$71,000,000
H	\$169,000,000

The order of magnitude cost estimates vary widely between the alternatives, ranging from a low of \$51 million (Alternative D) to a high of \$169 million (Alternative H). Alternatives C and H are considerably more expensive alternatives compared to the others, primarily because of the bridge structure costs for Alternative C, and the significantly longer corridor length for Alternative H. The cost estimates for the recommended alternatives C and D are \$167,000,000 and \$51,000,000 respectively.

APPENDIX A

LISTED AND PROPOSED THREATENED AND ENDANGERED SPECIES

Appendix A.1

USFWS Listed and Proposed Species that May Occur in Mohave County, Arizona

Common Name	Species	Status	Habitat Elevation Range (Ft above Mean Sea Level-MSL)
Plants			
Arizona cliffrose	<i>Purshia subintegra</i>	E	< 4,000
Holmgren (Paradox) milk vetch	<i>Astragalus homgreniorum</i>	E	2,700-2,800
Jones cycladenia	<i>Cycladenia humilis</i> var. <i>jonesii</i>	T	4,390-6,000
Siler pincushion cactus	<i>Pediocactus sileri</i>	T	2,800-5,400
Fickeisen plains cactus	<i>Pediocactus peeblesianus</i> var. <i>fickeiseniae</i>	C	4,000-5,000
Birds			
Bald Eagle	<i>Haliaeetus leucocephalus</i>	T	Varies
California Brown Pelican	<i>Pelecanus occidentalis californicus</i>	E	Varies
California Condor	<i>Gymnogyps californianus</i>	E	Varies
Mexican spotted owl	<i>Strix occidentalis lucida</i>	T	4,100-9,000
Southwestern Willow Flycatcher	<i>Empidonax traillii extimus</i>	E	<8,500
Yuma clapper rail	<i>Rallus longirostris yumanensis</i>	E	<4,500
Yellow-Billed Cuckoo	<i>Coccyzus americanus</i>	C	<6,500
Fish			
Bonytail Chub	<i>Gila elegans</i>	E	<4,000
Humpback chub	<i>Gila cypha</i>	E	<4,000
Razorback Sucker	<i>Xyrauchen texanus</i>	E	<6,000
Virgin rive chub	<i>Gila seminude</i>	E	<4,500
Woudfin	<i>Plagopterus argentissimus</i>	E	<4,500
Virgin spikedace	<i>Lepidomeda mollispinis mollispinis</i>	CA	<4,500
Mammal			
Hualapai Mexican vole	<i>Microtus mexicanus hualpaiensis</i>	E	3,500-7,000
Reptile			
Desert tortoise, Mohave population	<i>Gopherus agassizii</i>	T	500-5,100
Relict leopard frog	<i>Rana onca</i>	C	680- 1,900
Total Endangered, Threatened, and Candidate Species:		19	

Key: E — Endangered
T — Threatened
PE — Taxa proposed for listing as endangered
PT — Taxa proposed for listing as threatened
PCH — Critical habitat which has been proposed
CH — Critical Habitat

CA — Conservation Agreement has been established for the species
C — Candidate species for which the Fish and Wildlife Service has on file sufficient information on the biological vulnerability and threats to support proposals to list as endangered or threatened

Appendix A.2

AGFD Sensitive Species List Identified within the Kingman TI I-40/US 93 Study Area for Mohave County, Arizona

Common Name	Species	ESA Status	USFS Status	BLM Status	State Status
Birds					
Western Burrowing Owl	<i>Athene cunicularia hypugaea</i>	SC	--	S	--
Mammal					
Greater western bonneted bat	<i>Eumops perotis californicus</i>	SC	--	--	--
Reptile					
Sonoran Desert Tortoise	<i>Gopherus agassizii</i>	SC	--	--	WSC
Banded Gila monster	<i>Heloderma suspectum cinctum</i>	SC	--	S	--
Desert rosy boa	<i>Charina trivirgata gracia</i>	SC	S	S	--
Total State Sensitive Species:		5	1	2	1

Key: ESA Status – Endangered Species Act (1973 as amended)

LE – Listed Endangered: imminent jeopardy of extinction.

LT – Listed Threatened: imminent jeopardy of becoming Endangered.

XN – Experimental nonessential population.

PE – Proposed Endangered

PT – Proposed Threatened

C – Candidate: Species for which USFWS has sufficient information on biological vulnerability and threats to support proposals to list as Endangered or Threatened under ESA. However, proposed rules have not yet been issued because such actions are precluded at present by other listing activity.

SC – Species of Concern: The terms "Species of Concern" or "Species at Risk" should be considered as terms-of-art that describe the entire realm of taxa whose conservation status may be of concern to the US Fish and Wildlife Service, but neither term has official status (currently all former C2 species).

USFS Status – US Forest Service (1999 Animals, 1999 Plants)

S – Sensitive: those taxa occurring on National Forests in Arizona which are considered sensitive by the Regional Forester.

BLM Status – US Bureau of Land Management (2000 Animals, 2000 Plants)

S – Sensitive: those taxa occurring on BLM Field Office Lands in Arizona which are considered sensitive by the Arizona State Office.

P – Population: only those populations of Banded Gila monster (*Heloderma suspectum cinctum*) that occur north and west of the Colorado River, are considered sensitive by the Arizona State Office.

State Status – Arizona Native Plant Law (1993)

HS – Highly safeguarded: no collection allowed.

SR – Salvage Restricted: collection only with permit.

ER – Export Restricted: transport out of State prohibited.

SA – Salvage Assessed: permits required to remove live trees.

HR – Harvest Restricted: permits required to remove plant by-products.

WSC – Wildlife of Special Concern in Arizona. Species whose occurrence in Arizona is or may be in jeopardy, or with known or perceived threats or population declines, as described by the Arizona Game and Fish Department's listing of Wildlife of Special Concern in Arizona (WSCA, in prep). Species indicated on printouts as WC are currently the same as those in Threatened Native Wildlife in Arizona (1988).

Appendix A.3

BLM Species List Identified within the Kingman TI I-40/US 93 Study Area for Mohave County, Arizona

Common Name / Species Name	BLM Status	Elevation	Habitat
Birds			
Western burrowing owl <i>Athene cunicularia hypugea</i>	SS	650 – 6,140	Variable in open, well drained grasslands, steppes, deserts, prairies, and agricultural fields, often associated with burrowing mammals. Also known to occur in open areas such as vacant lots near human habitation, golf courses, or airports (AGFD/HDMS).
Fish			
Longfin dace <i>Agosia chrysogaster</i>	SS	< 4,900	The habitat of longfin dace is wide ranging, from intermittent hot low-desert streams to clear and cool brooks at higher elevations. They tend to occupy relatively small or medium size streams, with sandy or gravelly bottoms; eddies, pools near overhanging banks or other cover. Usually in water less than 0.6 ft deep. They are rarely abundant in large streams or above 5,000 ft (1524 m). Generally found in water less than 75° F (24° C), but are tolerant of high temperatures and low dissolved oxygen. During low water, they may take refuge in moist detritus and algal mats (AGFD/HDMS).
Desert sucker <i>Catostomus [Pantosteus] clarki</i>	SS	480 – 8,840	Found in rapids and flowing pools of streams and rivers primarily over bottoms of gravel-rubble with sandy silt in the interstices. Adults live in pools, moving at night to swift riffles and runs to feed. Young inhabit riffles throughout the day, feeding on midge larvae (AGFD/HDMS).
Sonoran sucker <i>Catostomus insignis</i>	SS	1,120 – 8,730	The Sonora sucker is found in a variety of habitats from warm water rivers to trout streams. "It has an affinity for gravelly or rocky pools, or at least for relatively deep, quiet waters". Adults tend to remain near cover in daylight, but move to runs and deeper riffles at night. Young live and utilize runs and quit eddies (AGFD/HDMS).
Speckled dace <i>Rhinichthys osculus</i>	SS	6,560 – 9,840	A bottom dweller, found in rocky riffles, runs, and pools of headwaters, creeks, and small to medium rivers: rarely in lakes. Reside in water less than 1.6 ft deep. Often congregate below riffles and eddies. Breeding adults prefer swift water (AGFD/HDMS).
Mammals			
Underwood's mastiff bat <i>Eumops underwoodi</i>	SS	1,080 - 3,760	Very little known about preferred habitat. Has been netted over waterholes in desert and mesquite/grassland situations. In Arizona it has been found in Sonoran desert habitat and in Mexico in pine-oak forests (Pierson). While it is presumed that they roost primarily in rock crevices on cliff faces, the only identified roost was in a large, hollow tree in Jalisco, Mexico (AGFD/HDMS).
Allen's (Mexican) big-eared bat <i>Idionycteris phyllotis</i>	SS	--	Inhabits forested areas of the mountainous Southwest, and is relatively common in pine-oak forested canyons and coniferous forests. Prefers areas of cliffs, outcroppings, boulder piles, or lava flows are nearby. Day roosts may include rock shelters, caves, and mines. May also occur in non-forested, arid habitats (AGFD/HDMS).
Small-footed myotis <i>Myotis ciliolabrum</i>	SS	2,120 - 8,670	Generally inhabits desert, chaparral, western coniferous forest, badland and semiarid habitats, known from deserts, chaparral, riparian areas and oak-juniper forests. Microhabitat - Hibernates in caves and old mines; summers in crevices, cracks, holes, snags, hollow trees, under rocks and in buildings. Generally

Common Name / Species Name	BLM Status	Elevation	Habitat
Long-eared myotis <i>Myotis evotis</i>	SS	MSL – 10,000	tolerates colder and dryer hibernacula than other small bats (AGFD/HDMS). Occurs in ponderosa pine or spruce-fir forests of Arizona. During the summer months these bats roost in small groups of 12 to 30 individuals in rock outcroppings, tree cavities, under peeling bark, in stumps, caves, mines, sink holes, lava tubes, or in abandoned buildings. Large diameter trees and snags seem to be the preferred tree roost sites. During winter it is likely that they use caves and abandoned mines as hibernacula. Also occurs in higher elevation forests, pinyon-juniper woodlands, sagebrush steppe, and in riparian desert scrub habitats (AGFD/HDMS).
Fringed myotis <i>Myotis thysanodes</i>	SS	4,000 – 8,430	Occur in habitats ranging from deserts, grasslands, and woodlands. Prefer oak-pinyon woodlands and other open, coniferous, middle-elevation forests but also can be found in high-elevation habitats and in sea level coastal areas. Day and Night roost sites have been found in caves, mine tunnels, in large snags, under exfoliating bark, and in buildings. Lower elevation caves and mines are used as hibernation sites. All desert and steppe areas within the range of <i>M. thysanodes</i> are within an hour flight from forested or riparian areas (AGFD/HDMS).
Cave myotis <i>Myotis velifer</i>	SS	300 – 5,000	Found in desertscrub of creosote, brittlebush, paloverde and cacti. Roost in caves, tunnels, and mineshafts and under bridges and sometimes in buildings within a few miles of water. In summer are apparently tolerant of high temperatures and low humidity's (AGFD/HDMS).
Long-legged myotis <i>Myotis volans</i>	SS	6,600 – 10,000	Occurs primarily a coniferous forest bat, it may also be found in riparian and desert habitats. This species utilizes a variety of roosts including abandoned buildings, cracks in the ground, crevices in cliff faces and spaces behind exfoliating tree bark. Caves and mine tunnels are used as hibernacula. In the summer, they apparently do not use caves as a daytime roost site.
Big free-tailed bat <i>Nyctinomops macrotis</i>	SS	1,810 – 8,475	Primarily inhabitant of rugged, rocky country and riparian areas. They roost in buildings, caves and occasionally in holes in trees (AGFD/HDMS).
Arizona Myotis <i>Myotis lucifugus occultus</i>	SS	6,000 – 9,200	Usually found in ponderosa pine and oak-pine woodland near water. Also found along permanent water or in riparian forest in some desert areas such as along the lower Colorado and Verde rivers (AGFD/HDMS).
Reptiles			
Chuckwalla <i>Sauromalus obesus</i>	SS	MSL – 6,000	Predominantly found near cliffs, boulders or rocky slopes, where they use rocks as basking sites and rock crevices for shelter. Can be found in rocky desert, lava flows, hillsides and outcrops. Creosote bush occurs throughout most of range (AGFD/HDMS).
Rosy boa <i>Charina trivirgata</i>	SS	MSL – 5,000	Rocky areas in desert ranges, especially in canyon with permanent or intermittent streams. Associated with desert-scrub, cottonwood-willow or pine oak riparian communities. Found in basalt and granite soils (AGFD/HDMS).
Banded Gila monster (only populations NW of Colorado River) <i>Heloderma suspectum cinctum</i>	SS	MSL – 5,000	Primarily in Sonoran Desert and extreme western edge of Mohave Desert, less frequent in desert-grasslands and rare in oak woodland. Most common in undulating rocky foothills, bajadas and canyons. Less frequent or absent in open sandy plains (AGFD/HDMS).
Invertebrates			
Hydrobiid spring snails on public land All species in genus <i>pyrgulopsis</i>	SS	Varies	Habitat varies between species (AGFD/HDMS).

Common Name / Species Name	BLM Status	Elevation	Habitat
Plants			
Aquarius milkvetch <i>Astragalus newberryi</i> var. <i>aquarii</i>	SS	2,000 – 2,600	The seraphic islands on which this species grows do not support Sonoran Desert dominants such as creosote bush and foothill paloverde. Occurs with other rare plants such as <i>Purshia subintegra</i> and <i>Phacelia parishii</i> mostly in the BLM Clay Hills Area of Critical Environmental Concern. (Anderson 1999) (AGFD/HDMS).
Aravaipa woodfern <i>Thelypteris puberula</i> var. <i>sonoriensis</i>	SS	2,220 – 4,500	In moist soil in the shade of boulders in mesic canyons. On riverbanks, seepage areas, and meadow habitats (AGFD/HDMS).
California flannelbush <i>Fremontodendron californica</i>	SS	3,500 – 6,500	Mainly well-drained rocky hillsides and ridges, in chaparral and oak/pine woodland. In Arizona, usually on dry, north slopes in canyons. In California, on slopes in chaparral, yellow pine forest, and pinyon-juniper woodland (AGFD/HDMS).
Parish phacelia <i>Phacelia parishii</i>	SS	2,300 – 2,800	Alkaline playas in the desert, and sometimes on barren, alkaline knolls, where it may be more leafy-stemmed. Clay or alkaline soils, dry lake margins. Edge of barren playa surrounded by semi-desert grassland and Mohave Desert; gypsum beds in lacustrine deposits of the Sonoran Desert. At Burro Creek it occurs on edaphic islands with other rare plants, <i>Purshia subintegra</i> and <i>Astragalus newberryi</i> var. <i>quarii</i> (AGFD/HDMS).
Pinto beardtongue <i>Penstemon bicolor</i>	SS	--	Gravel washes and disturbed roadsides, to outwash fans and plains. In Nevada, this plant is found on rocky calcareous, granitic, or volcanic soils in washes, roadsides, scree at outcrop bases, rock crevices, or similar places receiving enhanced runoff, in the creosote-bursage, blackbrush, and mixed-shrub zones (AGFD/HDMS).
Three hearts <i>Tricardia watsonii</i>	SS	1,400 – 4,600	Dry, rocky canyon and slopes in desert ranges. Generally, on gravelly slopes and sandy loam flats in Joshua tree woodland and creosote bush scrub (AGFD/HDMS).
White-margined penstemon <i>Penstemon albomarginatus</i>	SS	1,500 – 3,000	Coarse sandy and silty soil in Mohave Desertscrub communities. Sometimes found in the open, but often near creosote bushes, Joshua trees, or other large shrubs (AGFD/HDMS).
Total BLM Species:	25		

Key: BLM Status – US Bureau of Land Management (2000 Animals, 2000 Plants)

SS – Sensitive Species: those taxa occurring on BLM Field Office Lands in Arizona which are considered sensitive by the Arizona State Office.

SP – Sensitive Population: only those populations of Banded Gila monster (*Heloderma suspectum cinctum*) that occur north and west of the Colorado River, are considered sensitive by the Arizona State Office.

Note: * Some bats species with roost site protection problems were not included on the list. Some raptor species that have fairly specific nesting requirements were not included.

* The Arizona BLM Sensitive Species List does not include species that are already Federally-listed or State-listed.

APPENDIX B

HAZARDOUS MATERIAL DATABASE SEARCH RESULTS

Appendix B.1

Underground Storage Tanks (UST) Database Search Results within the US 93 and I-40 Study Area for Mohave County, Arizona

Facility ID	Facility Name	Address/ Location	Status
0-008432	Hafen and Hafen Inc	1224 West Beale Street	3 tanks: 3 tanks in use
0-002094	Woody's	1000 West Beale Street	4 tanks: 4 tanks in use
0-009620	Westside Mobil	999 West Beale Street	2 tanks: 2 tanks in use
0-008261	Express Stop	915 West Beale Street	3 tanks: 3 tanks in use
0-005414	Kingman 76 Auto Truck Stop Plaza	946 West Beale Street	6 tanks: 6 tanks in use
0-005020	Paul Wells Texaco	1182 West Beale Street	3 tanks: 3 tanks in use
0-003903	F & S Oil	953 West Beale Street	6 tanks: 6 tanks in use
0-003287	Shell Mini Mart #1	1302 West Beale Street	1 tank: 1 tank in use
0-002426	Hallum Mobil	932 West Beale Street	1 tank: 1 tank in use
0-007922	Kingman Regional Medical Center	3269 Stockton Hill Road	3 tanks: 2 tanks in use 1 tank removed
0-005701	Woody's Exxon #112	3401 Stockton Hill Road	3 tanks: 3 tanks in use
0-010017	Smith Food and Drug #190	3490 Stockton Hill Road (Adjoining UST 0.07 mile)	2 tanks: 2 tanks in use
0-007709	Arco #5815	3200 Stockton Hill Road (Adjoining UST 0.03 mile)	4 tanks: 4 tanks in use
0-003282	Monroe Burgess	3555 Kayenta Road	1 tank: 1 tank removed
0-007374	LWX Motor Freight	3100 Gatlin Road	4 tanks: 4 tanks removed
0-006988	C & R Trucking	2722 South Old Hwy 66	1 tank: 1 tank removed

Appendix B.2

Leaking Underground Storage Tanks (UST) Database Search Results within the US 93 and I-40 Study Area for Mohave County, Arizona

Facility ID	Facility Name	Address/ Location	Status
0-005414	Kingman 76 Auto Truck Stop Plaza	946 West Beale Street	6 tanks currently in use One (1) open LUST case reported for this facility. The leak was reported May 25, 2000. The site has been characterized and assigned a priority level two indicating that soil impacts are undefined.
0-002426	Hallum Mobil	932 West Beale Street	1 tank in use One (1) open LUST case reported for this facility. The leak was reported June 15, 2000. The site has been characterized and assigned a priority level three indicating that impacts are limited to the soil and the impacted soil requires remediation.
0-009091	Van Brunt Property	2486 West Old Highway 66	Four (4) open LUST cases reported for this facility. The leaks were reported March 20 and 21, 2000. The site has been characterized and assigned a priority level two indicating that soil impacts are undefined.
0-006841	Anbardan Texaco	3115 Stockton Hill Road	One (1) open LUST case reported for this facility. The leak was reported September 10, 1990. The site has been characterized and assigned a priority level two indicating that soil impacts are undefined.
0-006200	Canada Mart	210 West Andy Devine Avenue (Adjoining UST 0.37 mile)	Six (6) open LUST cases reported for this facility. The leaks were reported May 31, 1996 and January 6, 1999. The site has been characterized and assigned a priority level three indicating that impacts are limited to the soil and the impacted soil requires remediation.
0-003287	Shell Mini Mart	1302 West Beale Street	This LUST regulatory file was closed April 26, 1999.
0-005652	D&J Service Center	1246 West Beale Street	This LUST regulatory file was closed March 3, 2000.
0-005020	Paul Wells Texaco	1182 West Beale Street	This LUST regulatory file was closed January 11, 2006.
0-004079	Ray Bell	1125 West Beale Street	This LUST regulatory file was closed October 29, 1996.
0-008915	Leon Station	Metcafe A Dungan Block Unit #1	This LUST regulatory file was closed October 15, 1996.
0-001757	Arizona National Guard	700 West Beale Street	This LUST regulatory file was closed January 7, 2000.
0-001125	Chevron	777 West Beale Street	This LUST regulatory file was closed March 27, 1998.
0-000057	Mohave Concrete & Materials	4502 Highway 95	This LUST regulatory file was closed November 1, 1996.
0-008924	ADOT Port of Entry	Junction of US-93/SR 68	This LUST regulatory file was closed March 1, 2005

Facility ID	Facility Name	Address/ Location	Status
0-004776	Sun Country Motors Inc.	3730 Stockton Hill Road	This LUST regulatory file was closed August 10, 1995.
0-002847	Mohave Ford Lincoln and Mercury	3505 Stockton Hill Road	This LUST regulatory file was closed June 5, 1995.
0-001261	Circle K #586	3130 Stockton Hill Road	This LUST regulatory file was closed May 13, 2003.
0-003073	Mohave Union High School District	515 West Beale Street (Adjoining UST 0.37 mile)	This LUST regulatory file was closed October 9, 1998.
0-000764	Benjamin Brock	No address (Adjoining UST 0.37 mile)	This LUST regulatory file was closed October 19, 1989.
0-006200	Canada Mart	210 West Andy Devine Avenue (Adjoining UST 0.37 mile)	This LUST regulatory file was closed May 9, 2002.
0-001827	Dunton Motors	119 East Andy Devine Avenue (Adjoining UST 0.50 mile)	This LUST regulatory file was closed May 16, 1994.

Appendix B.3

Enviromapper for Envirofacts Database Search Results within the US 93 and I-40 Study Area for Mohave County, Arizona

Facility ID	Facility Name	Address/ Location	Status
AZD98199 7836	ADOT ¹ Materials Testing Lab	502 West Beale Street	RCRA Facility Hazardous Waste Handler
AZD00000 0604	North Star Steel	3050 Highway 66	RCRA Facility LQG Hazardous Waste Handler

¹ As of June 25, 2009, Enviromapper still shows that this facility is owned by ADOT. However, ADOT Kingman District personnel indicated this is no longer an ADOT owned facility. ADOT personnel indicated that the facility was behind the Mohave County courthouse, and the County Assessor's website shows this as a single parcel, so it is likely that Mohave County is the owner. It is not known whether the former ADOT Materials Testing Lab is being used by Mohave County in the same manner, or if its use has changed.

APPENDIX C

CULTURAL RESOURCES DATABASE SEARCH RESULTS

Appendix C.1

AZSITE Cultural Resource Database Results on Cultural Projects within the Kingman TI (I-40/US 93) Review Area

No.	Agency Number	Project Description	References	AZSITE Project Number
1	025-94-18.BLM	King Spring water line	N/A	12285
2	025-95-16.BLM	FNF Sacramento Wash Materials pit	N/A	12323
3	025-95-3.BLM	Walnut Creek H2O line	N/A	12310
4	025-96-11.BLM	Water Catchment	N/A	12342
5	025-96-25.BLM	Shinarump Road	N/A	12356
6	030-93-B.BLM	King Spring	N/A	12250
7	1982-56.ASM	Arizona Department of Transportation - Kingman Facility Site	N/A	11688
8	1983-181.ASM	N/A	N/A	0
9	1985-59.ASM	ADOT Statewide Survey (Pit 964)	Sires (1985)	12550
10	1988-45.ASM	ADOT-Kingman SR 68	N/A	11697
11	1991-216.ASM	US 93 SURVEY MP 58.3-65	N/A	262
12	1991-4.ASM	Route 93 Relocation Study	N/A	8448
13	1993-209.ASM	KINGMAN SIDEWALKS	Stone (1993b)	790
14	1994-388.ASM	OLD 66 SOUTH OF KINGMAN (HOLY MOSES WASH BRIDGES)	Lefthand (1994)	1369
15	1994-4.ASM	KINGMAN: US 93 REALIGNMENT	Crary (1994)	1382
16	1995-242.ASM	NORTH STAR STEEL AUTO SHREDDER LANDFILL	Crownover (1995)	1681
17	1996-196.ASM	Kingman Maintenance Shop	N/A	18091
18	1996-313.ASM	Interstate 40 - Stockton Hill Road Interchange	N/A	16706
19	1997-19.ASM	I-40 West Kingman TI, at US 93	N/A	18136
20	1997-199.ASM	Kingman: U.S. 93 Realignment	Crownover (1997)	2323
21	1998-424.ASM	Coyote Pass Survey	N/A	7962
22	1999-196.ASM	Stockton Hill Road Kingman TI	N/A	8702
23	1999-465.ASM	Beverly Ave., Kingman	N/A	10163
24	1999-581.ASM	Griffith Energy Project	Doolittle and Huber (2001)	14579
25	2000-406.ASM	SBA Inc. Flagstaff Build (Mohave Co.)	N/A	10664

No.	Agency Number	Project Description	References	AZSITE Project Number
26	2000-612.ASM	TowerCom GOLDEN VALLEY	N/A	10970
27	2000-662.ASM	I-40, Mohave Wash Pathway	N/A	11152
28	2000-697.ASM	Davis-Kingman 69-kV Transmission Line Emergency Anchor Replacement at Structure 25/8	Rose (2001)	12604
29	2000-736.ASM	Griffith Energy Project Survey of Proposed Transmission Line Access Roads	N/A	15553
30	2000-88.ASM	WRP- Kingman Borrow Pit Expansion	N/A	10164
31	2001-545.ASM	I-40, Mohave Wash	N/A	11234
32	2001-547.ASM	I-40, Beverly	N/A	11221
33	2001-759.ASM	Mohave Wash Survey	N/A	14696
34	2003-23.ASM	Kingman Multi-Use Pathway Survey	Gentilli, Toni (2003)	16480
35	2003-246.ASM	Southwest Fibernet Project Fiber Optic ROW, Electric Lightwave	Foster, Lascaux, and Gerken (1993)	12915
36	2-1-92-6.BLM	Northstar Exchange	N/A	12234
37	SHPO-2000-2027	Request for 106 Review of Proposed Communications Tower - Golden Valley Site AZ-1007 -U. S. Highway	Musser-Lopez (2001)	15371
38	1-40-1(30)	I 40 MP 46	1978	N/A
39	999 SW000 H4830 01D	I 40 ROW	2000	N/A
40	040 MO 48 H3580 01C	I40/US93 TI ROW	1997	N/A
41	040 MO 052 H5519 01C	Mohave Wash Survey	2001	N/A
42	999 SW 000 H4839 01D	US 93 ROW	1999	N/A
43	09 MO 065 H 2865 01C	US 93 Realignment	1996	N/A
44	68 MO 0 H3138 51D	SR 68 Corridors	1993	N/A
45	N/A	Kingman Historic Resource Survey	N/A	N/A

Appendix C.2

AZSITE Cultural Resource Database Results on Cultural Sites within the Kingman TI (I-40/US 93) Review Area

No.	Agency Number	Site Type	Eligibility * (Criterion)	References	AZSITE Project Number
1	AZ F:16:45(ASM)	Rock Walls	Recommended Eligible	N/A	7014
2	AZ F:16:22(ASM)	Rock Walls	Not Recommended Eligible	Crary (1994)	7016
3	AZ F:16:24(ASM)	Prehistoric Artifact Scatter	Recommended Eligible	Crary (1994)	7017
4	AZ F:16:36(ASM)	Historic Road Segment (Old US 93)	Recommended Eligible	Crary (1994)	7018
5	AZ F:16:25(ASM)	Historic Trash Scatter	Recommended Eligible	Crary (1994)	7019
6	AZ F:16:47(ASM)	Wagon Wheel Ruts in Bedrock	Recommended Eligible	N/A	7020
7	AZ F:16:42(ASM)	Historic Artifact Scatter	Not Recommended Eligible	Crownover (1995)	7021
8	AZ F:16:48(ASM)	Rock Shelters	Not Evaluated	Crownover et al. (1997)	7022
9	AZ F:16:40(ASM)	Early 20th C. Telephone polls & alignment	Recommended Eligible	Crary (1994)	7023
10	AZ F:16:37(ASM)	Historic Road Segments (Hardy Toll Rd.)	Recommended Eligible	Crary (1994)	7025
11	AZ F:16:32(ASM)	Wickiup Site and Artifact Scatter	Recommended Eligible	Crary (1994)	7026
12	AZ F:16:38(ASM)	Historic Road Segments	Recommended Eligible	Crary (1994)	7027
13	AZ F:16:33(ASM)	Historic Trash Scatter	Recommended Eligible	Crary (1994)	7029
14	AZ F:16:1(ASM)	Historic Camp Site	Listed	Crary (1994)	7030
15	AZ F:16:39(ASM)	Historic Road Segment and Artifact Scatter	Recommended Eligible	Crary (1994)	7031
16	AZ F:16:34(ASM)	Historic Artifact Scatter	Recommended Eligible	Crary (1994)	7032
17	AZ F:16:49(ASM)	Historic Trash Scatter	Recommended Eligible	N/A	7035
18	AZ F:16:46(ASM)	Rock Shelter	Not Evaluated	N/A	7037
19	AZ F:16:23(ASM)	Wickiup Site and Artifact Scatter	Recommended Eligible	Crary (1994)	7038
20	AZ F:16:35(ASM)	Historic Artifact Scatter & Pump Station Ruins	Recommended Eligible	Crary (1994)	7039
21	AZ F:16:41(ASM)	Rock Shelters with Trash Scatter	Not Evaluated	N/A	7040
22	AZ F:16:21(ASM)	Prehistoric Artifact Scatter/Rock Alignment/Historic Trash	Recommended Eligible	Crary (1994)	7041
23	AZ I:15:156(ASM)	Historic Road Segment (Old Rt. 66)	Not Evaluated	Weaver (1990)	7951
24	MPAEXP-7079	Historic Building	Undetermined	N/A	46367
25	MPAEXP-7080	Historic Building	Undetermined	N/A	46368
26	MPAEXP-7081	Historic Building	Listed	Kingman MRA	46369
27	MPAEXP-7082	Historic Building	Undetermined	N/A	46370
28	MPAEXP-7083	Historic Building	Undetermined	N/A	46371
29	MPAEXP-7084	Historic Building	Undetermined	N/A	46372
30	MPAEXP-7085	Historic Building	Undetermined	N/A	46373
31	MPAEXP-7088	Historic Building	Undetermined	N/A	46376
32	MPAEXP-7112	Historic Building	Listed	Kingman MRA	46400
33	MPAEXP-7113	Historic Building	Listed	Kingman MRA	46401
34	MPAEXP-7114	Historic Building	Listed	Kingman MRA	46402

No.	Agency Number	Site Type	Eligibility * (Criterion)	References	AZSITE Project Number
35	MPAEXP-7115	Historic Building	Listed	Kingman MRA	46403
36	MPAEXP-7118	Historic Building	Listed	Kingman MRA	46406
37	MPAEXP-7119	Historic Building	Listed	Kingman MRA	46407
38	MPAEXP-7120	Historic Building	Listed	Kingman MRA	46408
39	MPAEXP-7129	Historic Building	Listed	Kingman MRA	46417
40	MPAEXP-7132	No data available	Undetermined	N/A	46420
41	MPAEXP-7136	No data available	Undetermined	N/A	46424
42	MPAEXP-7142	Historic Building	Undetermined	N/A	46430
43	MPAEXP-7143	Historic Building	Undetermined	N/A	46431
44	MPAEXP-7147	Historic Building	Undetermined	N/A	46435
45	MPAEXP-7153	No data available	Undetermined	N/A	46441
46	MPAEXP-7154	Historic Building	Undetermined	N/A	46442
47	MPAEXP-7156	Historic Building	Undetermined	N/A	46444
48	AZ F:16:2(ASM)	Prehistoric Artifact Scatter	Undetermined	N/A	69477
49	AZ F:16:6(ASM)	Historic Building	Undetermined	N/A	69478
50	NA3383	Rock Shelter	Not Evaluated	N/A	89892
51	NA3486	Corral	Not Evaluated	N/A	89893
52	NA3382	Sherd Scatter	Not Evaluated	N/A	89894
53	NA3378	Jake Johnson Ranch - Sherd Scatter	Not Evaluated	N/A	89895
54	NA3771	Burial (?)	Not Evaluated	N/A	89896
55	NA3364	Sherd Scatter	Not Evaluated	N/A	89897
56	NA3381	Sherd Scatter	Not Evaluated	N/A	89898
57	NA3379	Sherd Scatter	Not Evaluated	N/A	89899
58	NA3387	Possible Habitation Site	Not Evaluated	N/A	89900
59	NA14462	RR Depot remains	Recommended Eligible	Doolittle and Huber (2001)	89904
60	AZ F:16:54(ASM)	House Foundations	Not Evaluated	N/A	93877
61	AZ F:16:58(ASM)	Abandoned Road Segments	Not Recommended Eligible	N/A	93881
62	AZ F:16:17(ASM)	Rock Shelters	Not Evaluated	N/A	94275
63	AZ F:16:9(ASM)	Cave with Artifact Scatter	Not Evaluated	N/A	94276
64	AZ F:16:12(ASM)	Historic House	Listed	Kingman MRA	94277
65	AZ F:16:18(ASM)	Historic House	Listed	Kingman MRA	94278
66	AZ F:16:16(ASM)	Prehistoric Artifact Scatter	Not Evaluated	Bradley and Johnson (1979)	94301
67	N/A	Historic House	Listed	Kingman MRA	N/A
68	N/A	Historic House	Listed	Kingman MRA	N/A
69	N/A	Historic Building	Listed	Kingman MRA	N/A
70	N/A	Historic Object	Listed	Kingman MRA	N/A
71	N/A	Historic Building	Listed	Kingman MRA	N/A
72	N/A	Historic House	Listed	N/A	N/A
73	N/A	Historic House	Listed	Kingman MRA	N/A
74	N/A	Historic Building	Listed	Kingman MRA	N/A
75	N/A	Historic House	Listed	Kingman MRA	N/A
76	N/A	Historic House	Listed	Kingman MRA	N/A
78	N/A	Historic Building	Listed	Kingman MRA	N/A
79	N/A	Historic Building	Listed	Kingman MRA	N/A
80	N/A	Historic House	Listed	Kingman MRA	N/A
81	N/A	Historic Building	Listed	Kingman MRA	N/A
82	N/A	Historic Building	Listed	Kingman MRA	N/A
83	N/A	Historic House	Listed	Kingman MRA	N/A
84	N/A	Historic House	Listed	Kingman MRA	N/A
85	N/A	Historic House	Listed	Kingman MRA	N/A
86	N/A	Historic House	Listed	Kingman MRA	N/A
87	N/A	Historic House	Listed	Kingman MRA	N/A
88	N/A	Historic House	Listed	Kingman MRA	N/A
89	N/A	Historic Building	Listed	Kingman MRA	N/A

No.	Agency Number	Site Type	Eligibility * (Criterion)	References	AZSITE Project Number
90	N/A	Historic House	Listed	Kingman MRA	N/A
91	N/A	Historic Structure	Listed	N/A	N/A
92	N/A	Historic District	Listed	Kingman MRA	N/A
93	N/A	Historic Building	Listed	Kingman MRA	N/A
94	N/A	Historic House	Listed	Kingman MRA	N/A
95	N/A	Historic House	Listed	Kingman MRA	N/A
96	N/A	Historic House	Listed	Kingman MRA	N/A
97	N/A	Historic Building	Listed	Kingman MRA	N/A
98	N/A	Historic Building	Listed	Kingman MRA	N/A
99	N/A	Historic Building	Listed	Kingman MRA	N/A
100	N/A	Rock Art Site	Listed	N/A	N/A
101	N/A	Historic Building	Listed	Kingman MRA	N/A
102	N/A	Historic Building	Listed	Kingman MRA	N/A
103	N/A	Historic House	Listed	Kingman MRA	N/A
104	N/A	Historic House	Listed	Kingman MRA	N/A
105	N/A	Historic House	Listed	Kingman MRA	N/A
106	N/A	Historic Building	Listed	Kingman MRA	N/A
107	N/A	Historic Building	Listed	Kingman MRA	N/A
108	N/A	Historic House	Listed	Kingman MRA	N/A
109	N/A	Historic House	Listed	Kingman MRA	N/A
* Determined: eligibility decided by SHPO					
* Recommended: recording archaeologist's opinion					

APPENDIX D

ENVIRONMENTAL DOCUMENTATION REFERENCES

1. Arizona Department of Environmental Quality (ADEQ). *Arizona Hazardous Waste Treatment, Storage, and Disposal Facilities*. Revised April 24, 2007. Available: www.azdeq.gov.
2. – –: *Hazardous Material Incident Logbook*. Online. Updated April 7, 2007. Available: www.azdeq.gov.
3. – –: *Leaking Underground Storage Tank Database*. Online. Updated April 16, 2007. Available: www.azdeq.gov.
4. – –: *Underground Storage Tank Database*. Online. Updated April 16, 2007. Available: www.azdeq.gov.
5. – –: *Interactive GIS eMaps*. Online. Updated May 7, 2007. Available: www.azdeq.gov.
6. U.S. Environmental Protection Agency. EnviroMapper Storefront. Online. Accessed on December 3, 2007. Available: <http://www.epa.gov/enviro/html/em>.
7. Arizona Wildlife Linkage Workgroup. 2006. *Arizona's Wildlife Linkages Assessment*. Available: http://www.azdot.gov/Highways/OES/AZ_WildLife_Linkages/assessment.asp
Accessed September 27, 2007.
8. Arizona Game and Fish Department (AGFD). *Environmental Review On-line Tool*. Available online <http://www.azgfd.gov/hgis>. (Accessed on November 5, 2007).
9. Brown, D.E., editor. 1994. *Biotic Communities of the Southwestern United States and Northwestern Mexico*. The University of Utah Press.
10. Federal Emergency Management Agency (FEMA). *Flood Insurance Rate Map (FIRM): Mohave County, Arizona*. Map Numbers. 0400582310C and 0400582325C (Effective Date: October 20, 2000); 0400582350C (Effective Date: March 1, 1983).
11. Federal Emergency Management Agency (FEMA). *Flood Insurance Rate Map (FIRM): Kingman City/Mohave County, Arizona*. Map Numbers. 0400600001C, 0400600003C, 0400600004C, 0400600006C, and 0400600007C (Effective Date: December, 22, 1981).
12. Google Earth. Image © 2008 TerraMetrics, Image © 2008 Digital Globe, and © 2008 TeleAtlas. Area of Latitude 35° 11'25.53"N, Longitude 114°04'01.69"W. Accessed March 6, 2008.
13. National Geographic (2000). *Arizona: Seamless United States Geological Survey (USGS) Topographic Maps on CD-ROM* [USGS 7.5-Minute Quadrangles, Arizona; Kingman NW and Kingman]. Wildflower Productions. San Francisco, California.
14. U.S. Department of Agriculture, Soil Conservation Service. 1991. *Soil Survey of Mohave County, Arizona, Central Part (AZ697)*.
15. U.S. Department of Commerce, Bureau of the Census. Census 2000 Summary File 3 (SF3). Table P1. Total Population. Washington. Website <http://factfinder.census.gov> (accessed on 12/5/2007)
16. – –: Census 2000 Summary File 3 (SF3). Table P7. Hispanic or Latino by Race. Washington. Website <http://factfinder.census.gov> (accessed on 12/5/2007)

17. --: Census 2000 Summary File 3 (SF3). Table P8. Sex by Age. Washington. Website <http://factfinder.census.gov> (accessed on 12/5/2007)
18. --: Census 2000 Summary File 3 (SF3). Table P9. Household Type (Including Living Alone) by Relationship. Washington. Website <http://factfinder.census.gov> (accessed on 12/5/2007)
19. --: Census 2000 Summary File 3 (SF3). Table P19. Age by Language Spoken at Home by Ability to Speak English for the Population 5 Years and Over. Washington. Website <http://factfinder.census.gov> (accessed on 12/5/2007)
20. --: Census 2000 Summary File 3 (SF3). Table P42. Sex by Age by Disability Status by Employment Status for the Civilian Noninstitutionalized Population 5 Years and Over. Washington. Website <http://factfinder.census.gov> (accessed on 12/5/2007)
21. --: Census 2000 Summary File 3 (SF3). Table P87. Poverty Status in 1999 by Age. Washington. Website <http://factfinder.census.gov> (accessed on 12/5/2007)
22. U.S. Department of the Interior, Bureau of Land Management (BLM). 1993. *Kingman Resource Area Proposed Resource Management Plan and Final Environmental Impact Statement*. Available online: < http://www.blm.gov/az/st/en/info/nepa/environmental_library/kingman_prmp_feis.html> (Accessed May 8, 2008)
23. U.S. Department of the Interior, Fish and Wildlife Service, Arizona Ecological Services Field Office. 2003. "County Species List – Mohave County. (Revised April 8, 2008)" <<http://www.fws.gov/southwest/es/arizona/Documents/CountyLists/Mohave.pdf>> (Accessed May 19, 2008).

APPENDIX E

AGENCY AND PUBLIC SCOPING INVOLVEMENT SUMMARIES & MATERIALS

I-40/US 93 West Kingman Traffic Interchange Public Meeting - November 13, 2008

ADOT Project No. 040 MO 048 H7323 01L/Federal Project No. NH-040-A(AVJ)



LOCATION: Palo Christi Elementary School, Kingman Arizona
DATE: November 13, 2008

SUBJECT: **I-40/US 93 West Kingman Traffic Interchange
Feasibility Report and Environmental Studies
ADOT Project Number: 040 MO 048 H7323 01L
Federal Project Number: NH-040-A(AVJ)
Public Meeting Summary**

AGENCY AND CONSULTANT ATTENDEES:

Shahid Bhuiyan	ADOT Predesign
Mike Kondelis	ADOT Kingman District
Larry Doescher	ADOT SPMG
Michele Beggs	ADOT CCP
Steve Thomas	FHWA
Doug Fischer	Kimley-Horn & Associates
Sarah Eichinger	Kimley-Horn & Associates
Ahmad Omais	Kimley-Horn & Associates
Steve Latoski	Mohave County
John Reid	BLM
Coralie Cole	Jacobs
Laura Nordan	Jacobs

ATTACHMENTS: Sign-In Sheets
Informational Handout
Newspaper Advertisement
Presentation Slides
Meeting Board Graphics
Postcard Notification
Question Cards (32)
Comment Sheets (9)
Emails (9)
Phone Calls (5)

SUMMARY:

The Arizona Department of Transportation (ADOT), in coordination with the Federal Highway Administration (FHWA) and the Bureau of Land Management, has initiated a study of potential improvements to the Interstate 40 (I-40)/US 93 traffic interchange (TI) in Kingman. The study will identify alternatives for providing connection between I-40 and US 93 that will allow traffic to flow through the interchange without stopping. Alternatives for a new TI location, including possible improvements to the existing Beale Street TI, are being evaluated.

I-40/US 93 West Kingman Traffic Interchange Public Meeting - November 13, 2008

ADOT Project No. 040 MO 048 H7323 01L/Federal Project No. NH-040-A(AVJ)



A public information meeting was held on November 13, 2008, at the Palo Christi Elementary School in Kingman from 6:00 p.m. to 8:00 p.m. to provide an update on the study progress. Two alternative corridors recommended for further consideration were presented in detail and the opportunity was given for the public to provide issues, concerns and opportunities to be addressed during further development and evaluation of the study alternatives. A total of 120 people (not including agency and consultant representatives) attended the meeting.

Meeting advertisements were published in the *Kingman Daily Miner* on November 12 and 13, 2008, and the *Standard* on November 5 and 11, 2008. In addition, meeting notification postcards were mailed to over 14,000 addresses in the Kingman area on October 29, 2008. Informational handouts, copies of the slide presentation, comment sheets, and question cards were distributed to the meeting attendees. Public meeting visuals were on display for viewing prior to the formal presentation. The meeting consisted of an open house from 6:00 to 6:30, with a 15-minute presentation given at 6:30 p.m. After the presentation, a question-and-answer session was held. A summary of the questions and answers is provided below. The meeting closed at approximately 8:00 p.m.

Question/Answer Summary

Q1 - *Will this project stop or slow down progress on ADOT's plan for Rattlesnake Wash?*

A - This project will not impact the Rattlesnake Wash project schedule.

Q2 - *The City of Kingman should keep the Ft. Beale area free of the interchange – there are parks, trails and cultural areas – are they to be protected?*

A - Since this project will require FHWA funding, impacts to 4(f) properties require additional analysis and avoidance alternatives must be investigated.

Q3 - *Both C and D will be an incursion into Metcalfe Acres – what streets therein are impacted?*

A - At this level of the study we do not know specific impacts to streets. Those details will be worked out later in the study process, and we will have more details available at that time.

Q4 - *I believe and support the plan that calls for overhead on and off ramps that would provide a true highway interchange. This is the only real remedy in my opinion. It should serve for a great deal of growth for a long time at a longer construction period/max cost.*

A - Thank you for your comment.

Q5 - *Please zoom in on C & D areas. What happens to present US 93/Beale Street Interchange?*

A - For both C and D interchange options, access will remain the same – it will be like the current configuration.

Q6 - *Does this project have anything to do with Canamex or North American Union? Please explain - C Corridor = \$204M as opposed to \$51M dollars. Is there really any question?*

A - The project is not related to Canamex or North American Union, but is the result of the need to relieve local area congestion. Cost is a consideration, but not the only one. The \$204M

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estimate is an order of magnitude estimate of the “worst case” scenario, and would be refined during the next phase of the study.

Q7 - At this time, do you anticipate any possible new funding for the "five-year" construction program due to the new "progressive" administration coming in office next year? Our country's infrastructure is in such bad shape.

A - There is discussion regarding a proposed stimulus package, but we do not know the details for funding. This project may or may not benefit from the stimulus package, because 6-7 years from now, we do not know the status the economy will be in.

Q8 - Thank you for the presentation. Why not shoot for A's and B's for the direct connection in 2040 instead of B's & C's? Is it cost? What would A's and B's look like? Is there room to grow/expand in 2040? (is this in the current planning discussion?)

A - This is the guideline by which ADOT designs roadways to provide an acceptable peak-hour level of service.

Q9 - Where on Option D would traffic leave I-40 and where would it connect on US 93 - give points of reference or landmarks that we know.

A - At this level of the study we do not have exact locations for these connections; however we can show you more detail during the next stage of the study.

Q10 - How much do you think this will cost?

A – That depends on which alternative is chosen (refer to slide presentation).

Q11 - Will private property be taken to build the interchange?

A - There would likely be some impacts to private property; however, ADOT's goal is to avoid impacts to property.

Q12 - What kind of environmental issues exist?

A - Quite a few – there are 4(f), and 6(f) resources in the area; washes, historic wagon trails, and cultural resources. At the next stage of the study we will define issues, show them on the study map and mitigate whenever there are conflicts.

Q13 - How much population will this make (will project increase area growth)

A - The study used historical population data and current projections to model growth.

Q14 - Is US 93 going to be a 4-lane road to Beale Street? Can you get off 93 to the park area between Beale Street and Route 68?

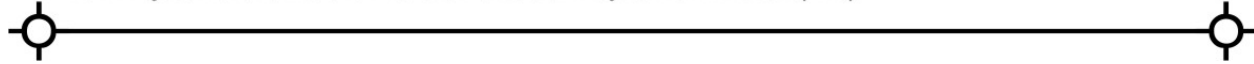
A - The anticipated US 93 configuration on the west side of the interchange will be three lanes in each direction. The existing interchange will stay remain in place.

Q15 - Can you show C&D over a map showing businesses like on the first slide?

A – This information is not developed yet. In the next phase of the study we will have a more detailed map to present to the public.

I-40/US 93 West Kingman Traffic Interchange Public Meeting - November 13, 2008

ADOT Project No. 040 MO 048 H7323 01L/Federal Project No. NH-040-A(AVJ)



Q16 - *What is to be done to help the environment?*

A - Traffic congestion creates more pollution. The aim is to alleviate this. We will study and mitigate environmental impacts. There will be Federal funds involved with the study with strict requirements to analyze impacts.

Q17 - *Is there available better graphics that are easier to see and read?*

A – This will be more feasible at the next level of the study, when more detail is available.

Q18 - *What impact would Corridor D have on businesses located in Corridor C?*

A - Physically there would be no impacts and vehicles would still have access. Any potential economic impacts would be investigated as part of the environmental process in the next level of study.

Q19 - *Is the C & D choices set in stone?*

A - These choices are not set in stone. We're dealing with wide corridors at this stage. The goal is to create a direct connection, and there may be alternatives that come up and will be examined. We're moving forward from one phase in the study to the next – there may be new alternatives to discuss.

Q20 - *Is there a push by the Feds as part of the Canamex Highway?*

A - As seen from the traffic numbers, there is lots of congestion in the area – which primarily stems from local traffic. The community would want ADOT to address this congestion. This congestion is not related directly to Canamex, but is primarily a result of local area congestion.

Q2 - *Please consider south border of Corridor C - cost will decrease if you avoid the businesses and it will affect fewer homes and businesses. D will affect the water area natural spring and water tower.*

A - That is one of the alternatives we will consider; we'll be maneuvering within the corridor. The water impacts will be noted in the next phase; we will display impacts on map renderings once they are refined.

Q22 - *Do you have a rendering or artist sketch of C & D?*

A – We will have more visuals to show at the next phase of the study in the future.

Q23 - *What's more important – costs or someone's house?*

A - The goal of ADOT is not to acquire property; the goal is to have the least impact. We will be developing avoidance options.

Q24 - *Is ADOT adding onto or creating new highways in this area?*

A - ADOT is conducting public meetings to give opportunity for you to voice your comments - to help in developing ADOT's overview, or "big" plan. ADOT is looking at long term planning; 30-40 years out to plan what they want to do. Public meetings on this will be conducted in Bullhead City on Monday, Lake Havasu City on Tuesday – to look at long term issues and we

I-40/US 93 West Kingman Traffic Interchange Public Meeting - November 13, 2008

ADOT Project No. 040 MO 048 H7323 01L/Federal Project No. NH-040-A(AVJ)



want your input on needs. For those meetings we are not looking at improvements to current highways, improving corridors within existing alignments; or improving interchanges – but get input on developing an overview plan for the state.

Q25 - *Can you come back before the year end with the footprint and construction schedule for option “C”?*

A - No footprint or construction schedule will be set at this phase of the study.

Q26 - *If private property is taken, what is the process to determine value?*

A - ADOT provides lots of advance notice and will know years before an acquisition. ADOT uses appraisals to determine market value, makes an offer on the property, and works with the owner to come to an agreement.

Q27 - *With a \$204M price tag, why is Route C even being considered?*

A – Corridor Alternative C is feasible and recommended for further study because it would meet the needs of the traffic and stay within an existing transportation corridor. This cost reflects a “worst case” scenario.

Q28 - *You said traffic flow historically from US 93 has been stopped to trucking since 2001 – has this been taken into account?*

A –The issue of truck traffic and the anticipated opening of the Hoover Dam bypass are included in the Kingman Area Traffic Study that was used as a basis for the traffic projections used in this study.

Q29 - *What will happen when Hoover Dam will be bypassed with a 4-lane road portion of US 93?*

A –The issue of truck traffic and the anticipated opening of the Hoover Dam bypass are included in the Kingman Area Traffic Study that was used as a basis for the traffic projections used in this study.

Q30 - *This will completely take away Metwell and Camp Beale Loop Hiking area according to the BLM map.*

A - At this level of study present we do not know the potential impacts to these specific areas. Recreational areas are protected under federal law and must be considered in the environmental analysis.

Q31 - *Would either the C or D corridors have an impact on the ingress/egress to the ADOT weigh station at Hwy 68, or is any additional weigh station (truck scales) being considered going N on US 93?*

A- There would be no impacts to the weigh station – it is outside of the study area.

Q32 - *Is there a website to see the progress of the planning maps, etc?*

A - The project website is:

http://www.azdot.gov/highways/districts/kingman/I40_US93_WestKingmanTI.asp

I-40/US 93 West Kingman Traffic Interchange Public Meeting - November 13, 2008

ADOT Project No. 040 MO 048 H7323 01L/Federal Project No. NH-040-A(AVJ)



Q33 (no card) - *Who ultimately decides C or D?*

A – In the next phase of study, the study team would work to develop consensus between agency and public stakeholders to identify a preferred alternative.

Comment Overview

All comments received are attached to this report and will be discussed in detail in the Project Scoping Summary Report. Comments generally focused on the following topics:

- Concerns negative economic impact will be greater with alternative D more than C
- Opinion both alternatives D and C are too costly
- Support for alternative C – land will cost less, plus has less impacts to homes and spring water
- Support for corridor alternative farthest from Kingman
- Request corridor evaluation criteria include comparative analysis on projected accident rates, roadway aesthetics, and fuel consumption based on yearly ADT
- Alternative should be chosen based on speed and ease of implementation
- Alternative choice should be based on economic impacts before, during, and after construction as a selection priority
- Concerns negative financial impacts will result if businesses are uprooted due to project takes
- Concerns over impacts to residential and commercial property in Kingman
- Concerns over impacts to Metcalf Acres
- Request information on property value changes due to new interchange
- General support for the project including requests for immediate action, that current configuration is unsafe, and to expedite selection and implementation process
- Concern crime from south of the border will increase in Kingman because new roadway construction will encourage traffic from Mexico and lack of local resources
- Cultural concerns resulting from project including protecting historic trails and impacts to Kingman historic district
- Concerns regarding construction inconvenience
- Requests for details on the roadway, including roadway width and access locations
- Environmental concerns including impacts to water quality and Beale Springs, and increases in traffic noise
- Design requests including access for Clarks Canyon Road and providing climbing lanes to accommodate truck traffic
- Requests for timely updates to study
- Requests for general study information
- Concerns with R/W takes in town, in particular station owners and other businesses/homes possibly impacted by proposed corridors

Issues, Concerns and Opportunities

During the initial phase of the study, several issues, concerns and opportunities were identified as criteria that would be used in the corridor alternative evaluation process. These were obtained from investigations conducted by the study team and from feedback from the agency and public scoping meetings. The feedback can be organized into two categories, Environmental Considerations and Engineering Considerations.

Environmental Considerations

- Visual impacts
- Wildlife crossings and connectivity
- Impacts to flora and fauna
- Conflicts with mining claims and grazing rights
- Impacts to natural water sources
- Impacts to drainage patterns
- Impacts to recreational resources such as Cerbat Foothills Recreation Area and Beale Springs
- Impacts to trails
- Economic impacts resulting from removing traffic from Beale Street
- Impacts to residential properties and businesses located near new interchange or roadway
- Tribal concerns and cultural resources
- Outreach for business community
- Considerations regarding land use, both existing and planned
- Historic sites

Engineering Considerations

- Access to Kingman local streets
- Possible new traffic interchange west of the study limits
- Proposed power line close to Corridor Alternative H
- Traffic interchange spacing at 1-2 mile increments along I-40
- Clearly define corridors to evaluate possible impacts
- Retaining existing traffic interchange
- Traffic study reflects future area development
- Improvements to existing Beale Street traffic interchange needed
- Access control on new traffic interchange to provide free-flow traffic
- Providing roadway drainage

Environmental Overview

The corridor alternatives are being developed with your feedback and evaluated for environmental issues, consistent with the National Environmental Policy Act (NEPA). NEPA requires federal agencies to include environmental values in their decision-making processes by considering the environmental, social, and economic impacts of proposed actions and reasonable alternatives to those actions. An environmental overview has been prepared as part of the engineering study. This information was used to evaluate corridor alternatives and to recommend eliminating specific corridor alternatives from further consideration based on potential environmental issues.

What's Next

At this time, we are recommending carrying two corridor alternatives, C and D, forward for further detailed study. The input we receive from you tonight will help us identify the critical issues that will be considered in concluding this study. After tonight's meeting, the Study Team will consider the feedback from the public and finalize the study recommendations.

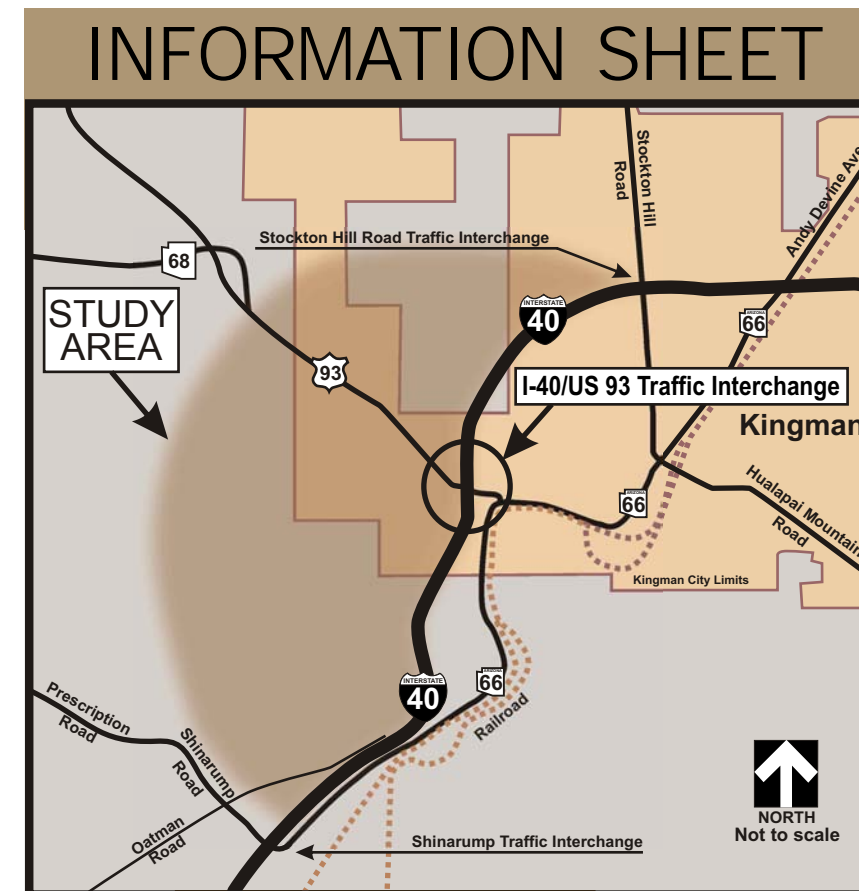
For More Information, Contact:

- | | |
|--|--|
| <ul style="list-style-type: none"> ■ Shahid Bhuiyan, Project Manager
ADOT Predesign
205 South 17th Avenue, Mail Drop 605E
Phoenix, Arizona 85007
Phone: 602-712-8722
Email: sbhuiyan@azdot.gov | <ul style="list-style-type: none"> ■ Mike Kondelis, District Engineer
ADOT Kingman District
3660 East Andy Devine, Mail Drop K600
Kingman, Arizona 86401
Phone: 928-681-6010
Email: mkondelis@azdot.gov |
| <ul style="list-style-type: none"> ■ Michele Beggs, Public Information Officer
ADOT Kingman District
3660 East Andy Devine, Mail Drop K600
Kingman, Arizona 86401
Phone: 928-681-6054
Email: mbeggs@azdot.gov | <ul style="list-style-type: none"> ■ Ahmad Omais, Consultant Project Manager
Kimley-Horn & Associates
7878 North 16th Street, Suite 300
Phoenix, Arizona 85020
Phone: 602-944-5500
Email: ahmad.omais@kimley-horn.com |

I-40/US 93 West Kingman Traffic Interchange

Feasibility Report and Environmental Studies

Public Meeting - November 13, 2008



Study Vicinity Map
ADOT Project No. 040 MO 048 H7323 01L
Federal Project No. NH-040-A(AVJ)

Background

The Arizona Department of Transportation (ADOT), in coordination with the Federal Highway Administration and the Bureau of Land Management, is conducting a study to identify feasible corridors for providing a free-flow traffic connection between I-40 and US 93 in the Kingman area.

Potential corridors for a new traffic interchange location, including possible improvements to the existing I-40/Beale Street traffic interchange, are under evaluation. The corridor alternatives have been examined for potential environmental, social, and economic issues. It is anticipated that the findings of this study will be carried forward for more detailed study.

Study Update

A public scoping meeting was held on March 31, 2008. This meeting introduced the Kingman community to the study and invited public comments. Eighty-three members of the public attended. Comments generally centered on impacts to businesses and private property along the existing highway, as well as access and impacts to recreational areas and trails. Concerns were also voiced about project funding and potential environmental impacts on the Cerbat Foothills Recreational Area. Since then, an

analysis of eight potential corridor alternatives (A through H, map inside right) has been conducted. Meetings with government agency stakeholders have also been held to solicit comments on the study. Based on agency and public comments, traffic analysis, as well as environmental and engineering criteria, Corridors C and D are recommended as the best corridors to carry forward for further study.

Tonight the Study Team will present the recommended corridors to carry forward for further detailed study and the reasoning behind the corridor selections. We invite your feedback on the study findings and recommendations.

About Tonight's Meeting



- Please review the exhibits around the room. Study Team members are available to answer questions and discuss details.
- A question and answer session will be held immediately following the presentation. To have your question answered in front of the group, please write your question on the yellow card provided and hand it to any Study Team member.
- Your input is important to us. Be sure to complete a comment sheet. You may leave it with us tonight or submit it to the Study Team by **December 12, 2008**, as directed on the form.

Study Website:
www.azdot.gov/highways/districts/kingman/I40_US93_WestKingmanTI.asp

Corridor Alternatives Selection

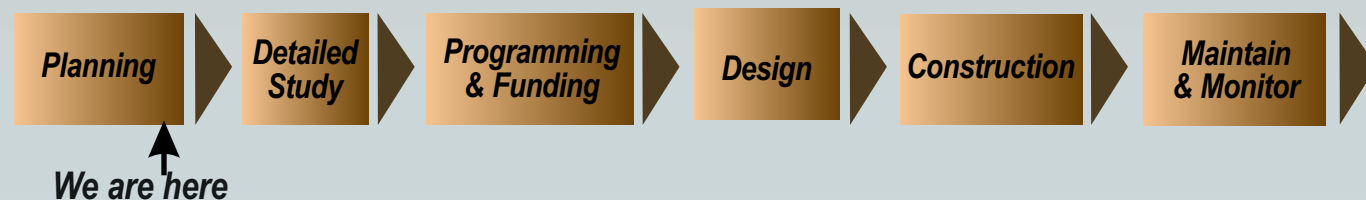
The study area under consideration includes the area along US 93 from State Route 68 to I-40 and on I-40 from the Stockton Hill Road traffic interchange to the Shinarump Drive traffic interchange. As shown to the public last March, eight corridor alternatives within this area were developed for consideration: Corridor Alternatives A through H (map, right).

After evaluating the corridors, the Study Team is recommending that Corridor Alternatives A, B, E, F, G, and H be eliminated from further consideration. These corridors would have greater impacts on the Cerbat Foothills Recreation Area and would require a substantially longer new roadway to be built than Corridors C and D. Construction of a longer new roadway results in increased environmental impacts as well as higher construction costs. Corridors C and D are recommended as the best corridor alternatives to carry forward for the next phase of study, based on engineering and environmental data as well as input received from the public and government agency representatives.

The primary objective of this study is to identify feasible corridors that could be used as a direct connection by through-traffic traveling between US 93 and I-40. Corridor length and travel time are issues under consideration in the selection process. Corridor Alternatives C and D would be most likely to be used by through-traffic, while requiring the shortest length of new roadway. Additionally, these alternatives minimize impacts to the Cerbat Foothills Recreation Area, a consideration that emerged as a high priority for both agency and public stakeholders.

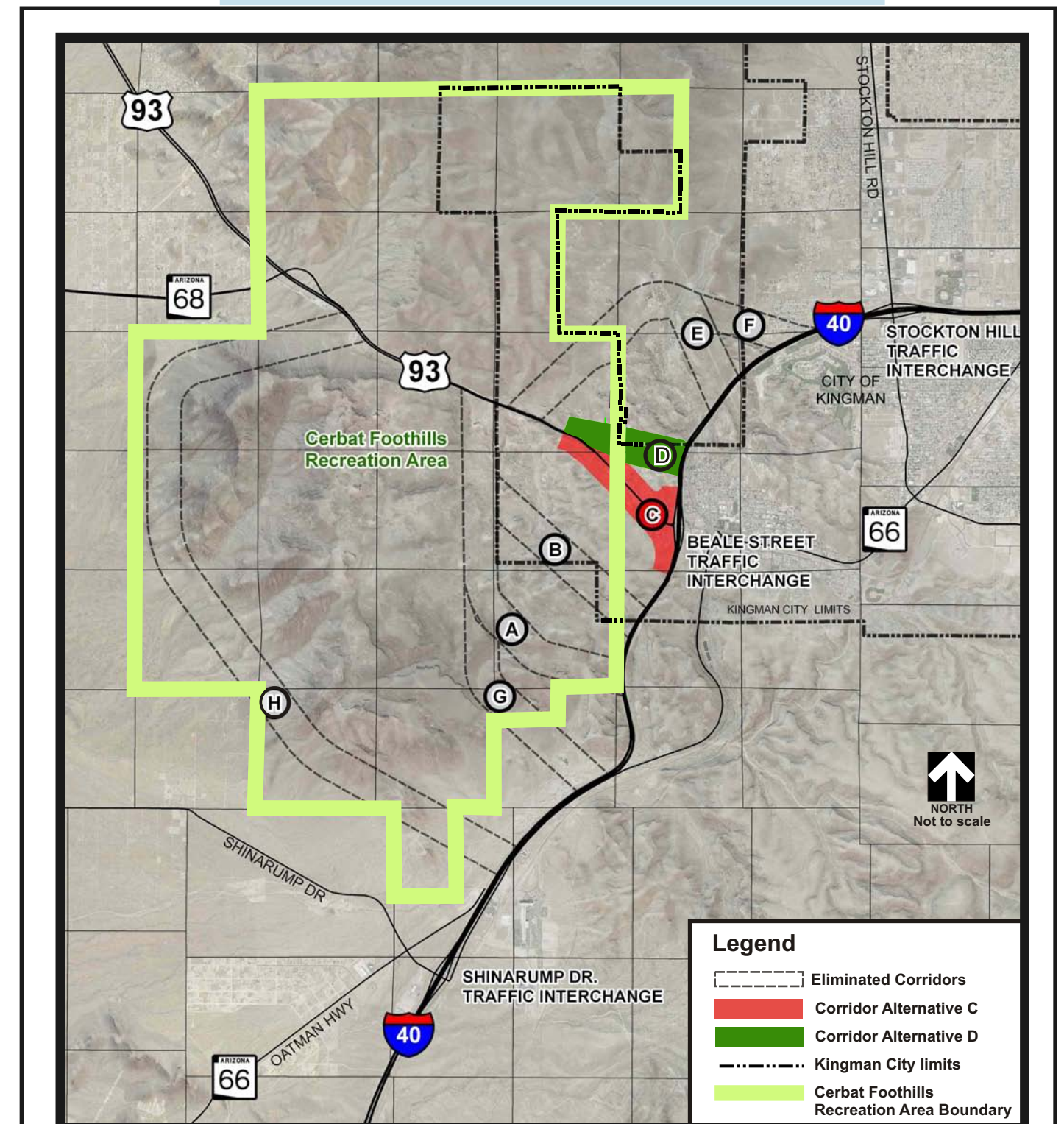
The analysis conducted to date has shown that Corridor Alternatives C and D are feasible corridors in which roadway design concepts could be further developed and examined. The next phase of the project development process would include developing multiple design concept alternatives and specific roadway alignments within the corridors. These design concepts would go through detailed design, development, and environmental analysis before a final alternative would be selected.

The Project Development Process



Currently the project is in the planning stage at the beginning of the project development process. During this phase, long-term planning is conducted to determine future transportation needs and potential improvements. Area population growth, anticipated land use, jurisdictional responsibilities, and other factors are used to determine the need, feasibility, and general location of future improvements. The public and agency scoping meetings held during March 2008, as well as tonight's meeting, are a part of this first phase.

The actual construction of any proposed roadway may not take place for at least ten years, due to funding limitations as well as the time required to conduct detailed engineering and environmental studies of the potential improvements. ADOT anticipates that the recommended corridors will be advanced to the Detailed Study phase, during which design concept alternatives are developed and evaluated. At this time, construction funding for this project is not included in the ADOT Five-Year Transportation Facilities Construction Program.



**I-40/US 93 West Kingman Traffic Interchange
Corridor Alternatives**

Legend

- Eliminated Corridors
- Corridor Alternative C
- Corridor Alternative D
- Kingman City limits
- Cerbat Foothills Recreation Area Boundary

ARIZONA DEPARTMENT OF TRANSPORTATION PUBLIC MEETING

Your Input is Needed on I-40/US 93 West Kingman Traffic Interchange Feasibility Report and Environmental Studies

Thursday November 13, 2008

6:00 p.m. - 8:00 p.m. (MST)

Presentation at 6:30 P.M.

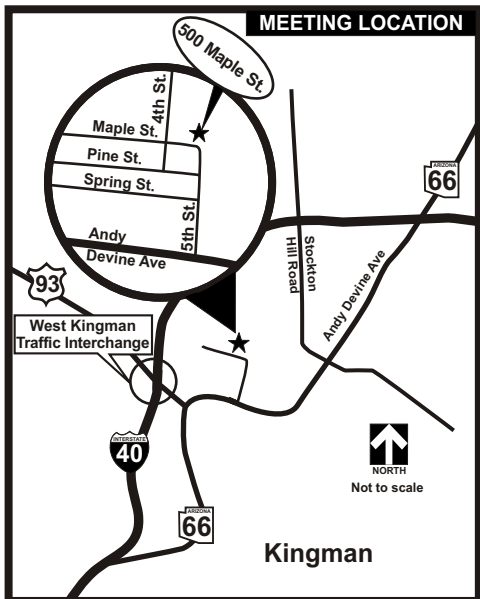
**Palo Christi Elementary School
500 Maple Street, Kingman AZ 86401**

The general public is invited to attend an informational meeting about potential improvements to the Interstate 40 (I-40)/US 93 traffic interchange in Kingman. The Arizona Department of Transportation (ADOT), in coordination with the Federal Highway Administration and the Bureau of Land Management, is conducting a study to identify feasible corridors for providing a free-flow traffic connection between I-40 and US 93 in the Kingman area.

Potential corridors for a new traffic interchange location, including possible improvements to the existing I-40/Beale Street traffic interchange, are under evaluation. The corridor alternatives have been examined for potential environmental, social, and economic issues. It is anticipated that the findings of this study will be carried forward for more detailed study.

The purpose of the meeting is to discuss the status of the study, present the corridors under consideration, and gather public feedback on the corridor alternatives recommended to carry forward for further study. The input received from this meeting will be used to help refine the corridor alternatives and finalize the study findings. Study Team representatives will be present to answer your questions and address your concerns. Map displays will be available for viewing.

For additional technical information, you may contact Ahmad Omais, phone: (602) 944-5500, email: ahmad.omas@kimley-horn.com. **Comments may be submitted by December 12, 2008**, to ADOT c/o Laura Nordan, Jacobs Engineering, 875 West Elliot Road, Suite 201, Tempe, Arizona 85284; fax (480) 763-8601; email laura.nordan@jacobs.com.



Americans with Disabilities Act: Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting Laura Nordan at (480) 763-8715. Requests should be made as early as possible to allow time to arrange the accommodation. This document is available in alternate formats by contacting Ms. Nordan.

MIKE KONDELIS
Kingman District Engineer
ADOT

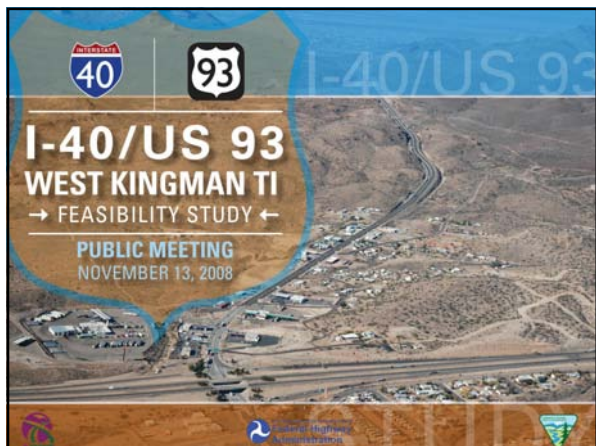
SHAHID BHUIYAN
Project Manager
ADOT

FLOYD ROEHRICH, JR.
State Engineer
ADOT

TRACS No. 040 MO 048 H7323 01L • Federal Project No. NH-040-A(AVJ)

For additional meeting information, contact:
Laura Nordan, phone: (480) 763-8715, fax: (480) 763-8601, email: laura.nordan@jacobs.com

THIS NEWSPAPER NOTICE IS AVAILABLE AT WWW.ADOTENVIRONMENTAL.COM



FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Meeting Agenda

- ▶ Introductions
- ▶ Project Purpose and Need
- ▶ Project Development Recap
- ▶ Summary of Initial Feasibility Report Findings
- ▶ Questions and Answers

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Project Purpose and Need

- ▶ Need for a Direct Connection Between I-40 and US 93 has been Documented in Previous Studies
- ▶ Congestion Backs up onto I-40
- ▶ Area is Developing Fast
- ▶ Right-of-Way Costs are Escalating
- ▶ Improve Local Access

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Purpose and Need (Continued)

- ▶ Relieve Congestion – Increase Roadway Capacity and Improve Traffic Flow
- ▶ Accident Reduction
- ▶ Continued Growth - Plan for Future Developments

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Project Development Recap

- ▶ Project Development Process
- ▶ Feasibility Study Process
- ▶ Public & Agency Feedback
- ▶ Where We Are Now

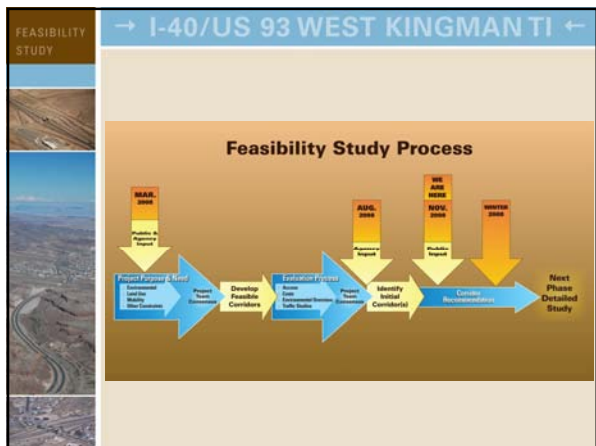
FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

The Project Development Process

```

    graph LR
      A[Planning] --> B[Detailed Study]
      B --> C[Programming & Funding]
      C --> D[Design]
      D --> E[Construction]
      E --> F[Maintain & Monitor]
  
```

We are here



- FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←
- ### Project Development Recap
- ▶ Public & Agency Feedback
 - » Economic Concerns for Existing Businesses
 - » Impacts to Trails and Recreation Areas
 - » Impacts to Private Property and Residences Along Project Area
 - » Project Funding Concerns

- FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←
- ### Project Development Recap
- ▶ Public & Agency Feedback(cont.)
 - » Environmental Concerns – Impact to Wildlife and Water Quality
 - » Requests for Roadway Details – Traffic Interchange Locations, Business Access and Traffic Flow
 - » Avoid Stockton Hill Area

- FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←
- ### Summary of Initial Findings
- ▶ Traffic Analysis
 - ▶ Corridor Alternatives Recap
 - ▶ Corridor Alternatives Comparison
 - ▶ Environmental Overview
 - ▶ Corridors Recommended for Further Study

- FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←
- ### Traffic Analysis
- ▶ Existing and Future Traffic Volumes
 - ▶ Level of Service

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Traffic Analysis

- ▶ Existing and Future Traffic Volumes

Location	2006 Average Daily Traffic	2040 Average Daily Traffic	% Growth in Avg. Daily Traffic
WB I-40 Mainline (North of Beale St)	16,132	45,060	179%
WB I-40 Off-Ramp	12,433	22,627	82%
WB I-40 On-Ramp	1,830	6,510	255%
WB I-40 Mainline (South of Beale St)	6,863	28,943	322%
US 93	21,500	56,823	164%
EB I-40 Mainline (South of Beale St)	8,513	29,507	247%
EB I-40 Off-Ramp	2,347	6,574	180%
EB I-40 On-Ramp	12,457	24,340	95%
EB I-40 Mainline (North of Beale St)	16,603	47,273	185%

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Traffic Analysis

► Level of Service

Level of Service A

Level of Service D

Level of Service B

Level of Service E

Level of Service C

Level of Service F

Level of Service Criteria for Signalized Intersections	
Level of Service	Delay (seconds/vehicle)
A	0 - 10 seconds
B	10 - 20 seconds
C	20 - 35 seconds
D	35 - 55 seconds
E	55 - 80 seconds
F	80 + seconds

Source: Exhibit 26-8, Highway Capacity Manual 2000

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Traffic Analysis

► Existing and Future Levels of Service

Location	2006		2040 No Build		2040 Direct Connection	
	Average Delay (per vehicle)	Level of Service	Average Delay (per vehicle)	Level of Service	Average Delay (per vehicle)	Level of Service
US 93/WB I-40 (West side of Traffic Interchange)						
SB US 93 (West approach)	18 seconds	B	286 seconds (4 minutes 46 seconds)	F	20 seconds	C
NB US 93 (East approach)	6 seconds	A	96 seconds (1 minute 36 seconds)	F	14 seconds	B
WB I-40 Off-Ramp (North approach)	31 seconds	C	256 seconds (4 minutes 16 seconds)	F	28 seconds	C
Intersection Overall	19 seconds	B	221 seconds (3 minutes 41 seconds)	F	18 seconds	B

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Traffic Analysis

► Existing and Future Levels of Service

Location	2006		2040 No Build		2040 Direct Connection	
	Average Delay (per vehicle)	Level of Service	Average Delay (per vehicle)	Level of Service	Average Delay (per vehicle)	Level of Service
US 93/Beale St/EB I-40 (East side of Traffic Interchange)						
SB US 93 (West approach)	20 seconds	C	455 seconds (7 minutes 35 seconds)	F	13 seconds	B
NB US 93 (East approach)	60 seconds	E	522 seconds (8 minutes 42 seconds)	F	29 seconds	C
EB I-40 Off-Ramp (South approach)	38 seconds	D	214 seconds (3 minutes 34 seconds)	F	29 seconds	C
Intersection Overall	38 seconds	D	454 seconds (7 minutes 34 seconds)	F	24 seconds	C

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Corridor Alternatives Comparison

- No Build
- South Corridors (A, B, G, and H)
- North Corridors (C, D, E, and F)
- Evaluation Criteria and Measurements

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Corridor Alternatives

- South Corridor Alternatives
 - » A, B, G, and H
- North Corridor Alternatives
 - » C, D, E, and F

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Corridor Alternatives Comparison

► Evaluation Criteria/Measurements

Evaluation Criteria	Unit of Measure	Land Use Considerations							
		A	B	C	D	E	F	G	H
Bureau of Land Management / Cerbat Foothills Recreation Area Outside City of Kingman Limits	acres	108	38	0	0	0	0	122	242
Bureau of Land Management / Cerbat Foothills Recreation Area within City of Kingman Limits	acres	0	44	14	16	36	36	0	0
City of Kingman & Private Land	acres	5	9	22	20	57	59	14	43
State Land	acres	0	0	0	0	0	0	0	90
Length of Corridor	miles	3.1	2.5	1.0	1.0	2.5	2.6	3.7	7.0
Order of Magnitude Total Project Cost	\$ Millions	\$ 62 M	\$ 62 M	Up to \$204 M	\$ 51 M	\$ 57 M	\$ 65 M	\$ 71 M	\$ 200 M

4(f) resources are defined as public parks, recreation areas, wildlife/waterfowl refuges, and historic sites (from the US Department of Transportation Act of 1966)

6(f) resources are defined as recreation properties that were acquired or developed with grants from the Land and Water Conservation Fund Act of 1964

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Corridor Alternatives Comparison

► Evaluation Criteria/Measurements

Traffic Considerations									
Evaluation Criteria	Unit of Measure	A	B	C	D	E	F	G	H
Distance from Nearest Interchange	miles	1.4	0.9	0	0.5	1.2	0.9	2.0	1.1
Length of Travel from Stockton Hill Traffic Interchange on I-40 to SR 68 Traffic Interchange on US 93 (WB I-40 to NB US 93)	miles	9.4	8.3	6.7	6.1	6.6	5.8	11.3	14.1
Anticipated utilization of the direct connection by through traffic	-	<20%	<20%	35% to 50%	35% to 50%	25% to 35%	25% to 35%	<10%	<10%

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Corridor Alternatives Comparison

► Evaluation Criteria/Measurements

Environmental Considerations									
Evaluation Criteria	Unit of Measure	A	B	C	D	E	F	G	H
Section 4(f) lands	Acres	108	38	0	0	0	0	122	242
Potential Impact on Section 6(f) property	Yes / No	No	No	No	No	Yes	Yes	No	No
Potential Conflicts with Known Archeological Sites	count	3	3	2	6	4	4	4	3
Number of Facilities with Underground Storage Tanks	count	0	0	9	0	0	0	0	1
Number of Facilities with Leaking Underground Storage Tanks	count	1	0	11	0	0	2	1	1
Number of Hazardous Waste Handling Facilities	count	0	1	1	0	0	0	0	0
Wash Crossings	count	6	6	3	3	4	4	8	13
Potential Number of Residential Parcels	count	0	0	9	13	6	26	1	1
Potential Number of Business Parcels	count	0	0	27	0	1	1	0	0
Potential Number of Vacant/Municipal/Mixed/Other	count	5	6	37	15	9	12	7	7
Major Utility Conflicts	count	1	1	0	1	1	1	1	3
Springs/Wells/Water Tanks	count	0	0	0	1	2	2	0	1

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Section 4(f) & 6(f) Resources

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Corridors Recommended for Further Study

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Questions and Answers

► Please submit your questions on a card as shown below:

QUESTION CARD

If you have a question that you would like answered at the end of the presentation, please write your question on this card and pass it to an ADOT project representative. We have limited the time for questions and answers. If we do not get to your question, we encourage you to speak directly with project staff after the question and answer portion of the presentation.

PLEASE WRITE YOUR QUESTION ON THE BACK OF THIS CARD

Thank you for printing legibly.

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

We Want to Know What You Think!

- Please fill out a comment form
 - » Leave it tonight
 - » Fax it
 - » E-mail or mail it
- Please submit your comments by December 12, 2008
- Thank you for your time and input

I-40/US 93 WEST KINGMAN TI

Feasibility Report and Environmental Studies

2040 Beale Street Traffic Interchange
Level of Service (LOS)



Beale Street Improvements and Level of Service

Based on the summary of findings from the *I-40/US 93 West Kingman TI Study*, additional improvements were recommended to the Beale Street Traffic Interchange to improve the projected Level of Service at that location by the year 2040.

Even if a new direct connection were built, with the traffic interchange remaining in its current configuration, then traffic turning right onto eastbound I-40 from Beale Street and turning left to access eastbound I-40 from US 93 is projected to experience a Level of Service "F" by 2040.

To improve the efficiency of the Beale Street interchange, the Study Team recommends a dedicated right turn lane for traffic entering eastbound I-40 from Beale Street. Providing a dedicated left-turn lane for traffic accessing eastbound I-40 from US 93 is also recommended.

With these changes implemented in conjunction with the new direct connection, the Level of Service is projected to be category "C" and "B" at these locations by the year 2040.





I-40/US 93 WEST KINGMAN TI

Feasibility Report and Environmental Studies



Level of Service Classifications



A



D



B



E



C



F

Level of Service and Traffic Delay

Level of Service is a qualitative measurement that describes traffic conditions in terms of speed, travel time, freedom to maneuver, comfort, convenience, traffic interruptions, and safety.

Six classifications are used to define Level of Service, designated by the letters A through F. Level of Service "A" represents the best conditions, while Level of Service "F" represents heavily congested flow with traffic demand exceeding highway capacity.

The figures to the left illustrate traffic conditions experienced at Level of Service A through F. The table below describes the traffic delay (waiting time at the intersection) for each Level of Service.

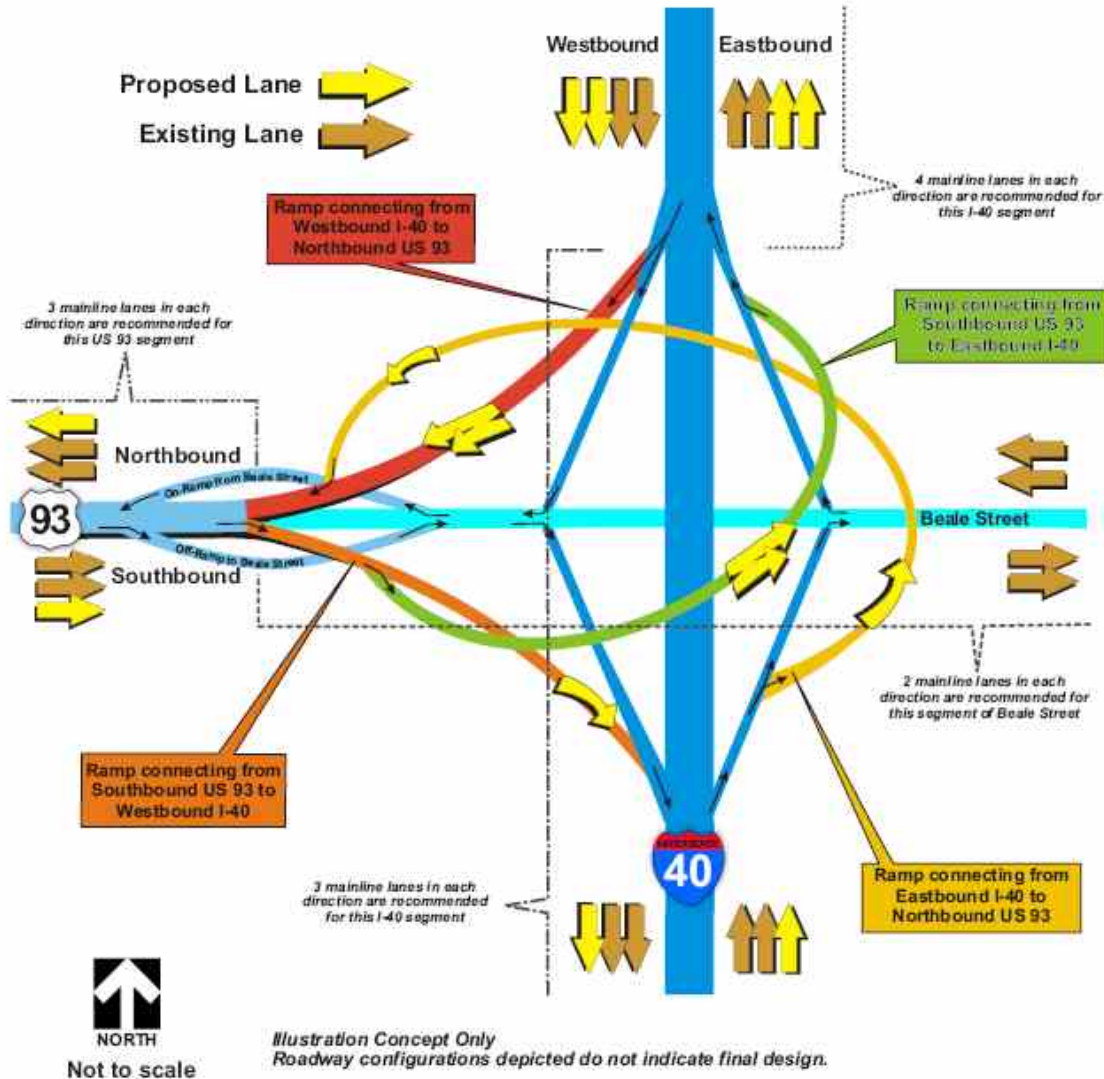
Level of Service Criteria for Signalized Intersections

Level of Service	Delay (seconds/vehicle)
A	0 - 10 seconds
B	10 - 20 seconds
C	20 - 35 seconds
D	35 - 55 seconds
E	55 - 80 seconds
F	80+seconds



I-40/US 93 WEST KINGMAN TI

Feasibility Report and Environmental Studies



2040 Recommended Number of Lanes

The graphic to the left illustrates proposed connecting ramp configurations and the existing and proposed mainline roadway configurations for the "Direct Connection" traffic interchange of US 93 and I-40.

Based on traffic studies of existing and proposed traffic volumes, the study team has made the following recommendations:

MAINLINE LANE CONFIGURATIONS		
LOCATION	EXISTING LANES	PROPOSED LANES
I-40 Westbound	2	4 North of Ramp 3 South of Ramp
I-40 Eastbound	2	4 North of Ramp 3 South of Ramp
US 93 Northbound	2	3 West of Ramp
US 93 Southbound	2	3 West of Ramp
NEW CONNECTING RAMP CONFIGURATIONS		
RAMP LOCATION	PROPOSED LANES	
Eastbound I-40 to Northbound US 93	1	
Westbound I-40 to Northbound US 93	2	
Southbound US 93 to Eastbound I-40	2	
Southbound US 93 to Westbound I-40	1	

I-40/US 93 WEST KINGMAN TI

Feasibility Report and Environmental Studies



Traffic Study Results

To analyze efficiency levels for the I-40/US 93 Interchange, the *I-40/US 93 West Kingman TI Study* utilized traffic interchange delay data and Level of Service (LOS) information to determine driving conditions. The information below reflects traffic conditions experienced for 2006, future conditions should no action be taken, and conditions anticipated with the proposed direct connection and improvements to the Beale Street Interchange.

Traffic Interchange Delay

Traffic Interchange Delay is described as delays experienced by motorists while queuing up at intersections - both entering and exiting the I-40/Beale Street Traffic Interchange. Analysis was conducted for eastbound (EB), westbound (WB), northbound (NB), and southbound (SB) travel conditions.

Level of Service (LOS)

Level of Service (LOS) is a qualitative measurement that describes traffic conditions in terms of speed, travel time, freedom to maneuver, comfort, convenience, traffic interruptions, and safety.

Six classifications are used to define LOS, designated by the letters A through F. LOS A represents the best conditions, while LOS F represents heavily congested flow with traffic demand exceeding highway capacity.

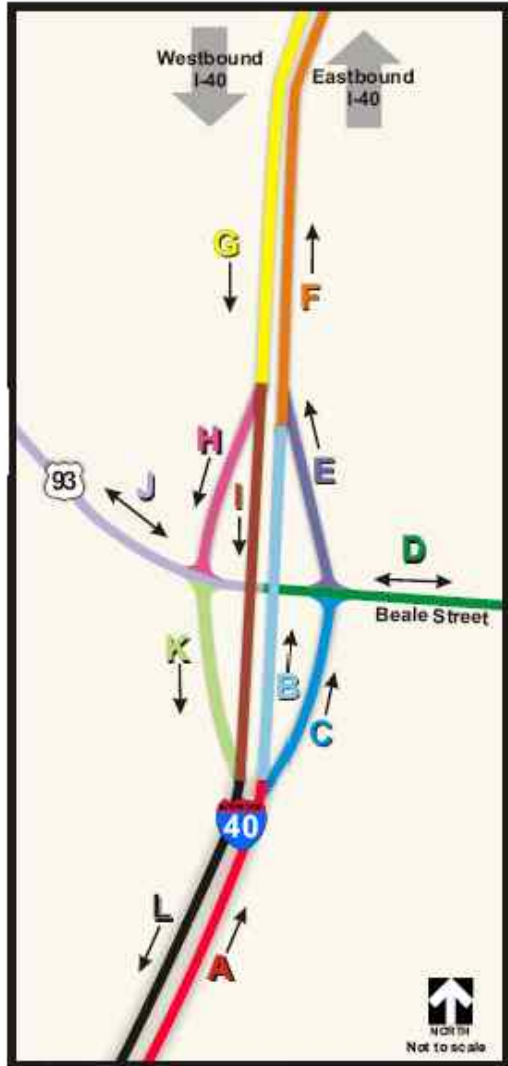
The existing I-40/US 93 Traffic Interchange does not have adequate capacity to meet the needs of the community and regional traffic, and it is anticipated that the current arrangement will exceed its capacity before the projected design year.

Beale Street Traffic Interchange Delay and Level of Service

Route	2006 Conditions		2040 With No Action		2040 With Direct Connection and Improvements to Beale Street Interchange	
	Delay (seconds/vehicle)	Level of Service	Delay - in seconds (minutes/seconds)	Level of Service	Delay - in seconds (minutes/seconds)	Level of Service
US 93/WB I-40 On-and Off-Ramp Terminal Intersections						
① SB US 93 (west approach)	18 sec	B	286 sec (4 min 46 sec)	F	20 sec	C
② NB US 93 (east approach)	6 sec	A	96 sec (1 min 36 sec)	F	14 sec	B
③ WB I-40 Off-Ramp (north approach)	31 sec	C	256 sec (4 min 16 sec)	F	28 sec	C
Intersection Overall	19 sec	B	221 sec (3 min 41 sec)	F	18 sec	B
US 93/Beale St./EB I-40 On- and Off-Ramp Terminal Intersections						
④ SB US 93 (west approach)	20 sec	C	455 sec (7 min 35 sec)	F	13 sec	B
⑤ NB US 93 (east approach)	60 sec	E	522 sec (8 min 42 sec)	F	29 sec	C
⑥ EB I-40 Off-Ramp (south approach)	38 sec	D	214 sec (3 min 34 sec)	F	29 sec	C
Intersection Overall	39 sec	D	454 sec (7 min 34 sec)	F	24 sec	C

I-40/US 93 WEST KINGMAN TI

Feasibility Report and Environmental Studies



Traffic Volumes

- REVISED -

Existing and projected traffic volumes were examined for the *I-40/US 93 West Kingman TI Study*. The graphic to the left illustrates the I-40/US 93 Traffic Interchange (TI) segments analyzed for traffic volume projections. The traffic analysis showed large increases in traffic volume for all portions of the interchange, with particularly large increases experienced by traffic on sections E and H, where vehicles are both entering Eastbound I-40 from Beale Street (Section E) and exiting from Westbound I-40 onto US 93 (Section H).

Traffic volumes for 2006 are listed below for each corresponding section to demonstrate current conditions. Projections for the year 2040 are provided to show the increases anticipated for each section. Average Daily Traffic is defined as the average number of vehicles that pass a specified point during a 24-hour period. Please note the traffic counts for Beale Street and for US 93 reflect combined counts for traffic traveling in both directions.

SECTION	AVERAGE DAILY TRAFFIC		LOCATION
	2006	2040	
A	8,513	29,507	Eastbound I-40 to Off-Ramp
B	-	22,933	Eastbound I-40 before Ramp Traffic
C	2,347	6,574	Eastbound I-40 Off-Ramp to Beale Street/US 93
D	-	41,541	Beale Street, Combined Directional Traffic
E	12,457	24,340	On-Ramp to Eastbound I-40
F	16,603	47,273	Eastbound I-40
G	16,132	45,060	Westbound I-40 to Off-Ramp
H	12,433	22,627	Westbound Off-Ramp to US 93/Beale Street
I	-	22,433	Westbound I-40 before Ramp Traffic
J	21,500	56,823	US 93, Combined Directional Traffic
K	1,830	6,510	On-Ramp to Westbound I-40
L	6,863	28,943	Westbound I-40

I-40/US 93 WEST KINGMAN TI

Feasibility Report and Environmental Studies

Evaluation Criteria/Measurements

		CORRIDOR ALTERNATIVES								
Evaluation Criteria		Unit of Measure	A	B	C	D	E	F	G	H
Land Use	Bureau of Land Management/Cerbat Foothills Recreation Area Outside City of Kingman Limits	Acres	108	38	0	0	0	0	122	242
	City of Kingman & Private Land	Acres	5	9	22	20	57	59	14	43
	Bureau of Land Management/Cerbat Foothills Recreation Area Within City of Kingman Limits	Acres	0	44	14	16	36	36	0	0
	State Land	Acres	0	0	0	0	0	0	0	90
	Length of Corridor	Miles	3.1	2.5	1.0	1.0	2.5	2.6	3.7	7.0
	Order of Magnitude Total Project Cost	\$Millions	\$62M	\$62M	Up to \$204M	\$51M	\$57M	\$60M	\$71M	\$200M
Traffic	Distance from Nearest Interchange	Miles	1.4	0.9	0	0.5	1.2	0.9	2.0	1.1
	Length of Travel from Stockton Hill Traffic Interchange on I-40 to SR 68 Traffic Interchange on US 93 (WB I-40 to NB US 93)	Miles	9.4	8.3	6.7	6.1	6.6	5.8	11.3	14.1
	Anticipated utilization of the direct connection by through traffic	Percentage	<20%	<20%	35%to 50%	35%to 50%	25%to 35%	25%to 35%	<10%	<10%
Environmental	Section 4(f)* Lands	Acres	108	38	0	0	0	0	122	242
	Potential Impact on Section 6(f)* property	Yes/No	No	No	No	No	Yes	Yes	No	No
	Potential Conflicts with Known Archeological Sites	Count	3	3	2	6	4	4	4	3
	Number of Facilities with Underground Storage Tanks	Count	0	0	9	0	0	0	0	1
	Number of Facilities with Leaking Underground Storage Tanks	Count	1	0	11	0	0	2	1	1
	Number of Hazardous Waste Handling Facilities	Count	0	1	1	0	0	0	0	0
	Wash Crossings	Count	6	6	3	3	4	4	8	13
	Potential Number of Residential Parcels	Count	0	0	9	13	6	26	1	1
	Potential Number of Business Parcels	Count	0	0	27	0	1	1	0	0
	Potential Number of Vacant/Municipal Mixed/Other	Count	5	6	37	15	9	12	7	7
	Major Utility Conflicts	Count	1	1	0	1	1	1	1	3
	Potential Number of Residential Parcels	Count	0	0	0	1	2	2	0	1

* 4(f) resources are defined as public parks, recreation areas, wildlife/waterfowl refuges, and historic sites (from the US Department of Transportation Act of 1966)

* 6(f) resources are defined as recreation properties that were acquired or developed with grants from the Land and Water Conservation Fund Act of 1964

ARIZONA DEPARTMENT OF TRANSPORTATION

PUBLIC MEETING

I-40/US 93 West Kingman Traffic Interchange

Thursday, November 13, 2008
Palo Christi Elementary School
500 Maple Street, Kingman, AZ 86401
6 pm – 8 pm (MST)
Presentation Time – 6:30 pm

The general public is invited to attend an informational meeting about a long-range planning study of potential improvements to the I-40/US 93 traffic interchange in Kingman. The study will identify corridors for providing a free-flow traffic connection between I-40 and US 93. Corridors for a new interchange location, including possible improvements to the existing Beale Street interchange, will be evaluated. The purpose of the meeting is to discuss the status of the study, present the alternatives under consideration, and gather public feedback on the alternatives recommended to carry forward for further study. Input received from this meeting will be used to help refine the corridor alternatives and finalize the study recommendations.



For additional technical information, you may contact Ahmad Omais, phone: (602) 944-5500, email: ahmad.omaais@kimley-horn.com. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting Laura Nordan at (480) 763-8715; fax (480) 763-8601. Requests should be made as early as possible to allow time to arrange the accommodation.



MIKE KONDELIS
Kingman District Engineer

SHAHID BHUIYAN
Predesign Project Manager

FLOYD ROEHRICH, JR.
State Engineer

TRACS No. 040 MO 048 H7323 01L / Federal Project No. NH-040-A(AVJ)

You're Invited!

**ADOT Public Meeting
November 13, 2008
6:00 – 8:00 pm**

**Palo Christi Elementary School
Kingman, AZ**



① Will this project stop or slow down progress on ADOT's plan for Rattlesnake Wash?

Marsha Nelson

② The city of Kingman should keep the Ft Bel area free of the interchange - there are parks, trails and cultural areas - are they to be protected?

③ Both C and D will be an incursion into Metcalfe Acres - what streets therein are impacted?

CULTURAL
④ I believe and support the plan that calls for overhead overpass ramps that would provide a true highway interchange. This is the only real remedy in my opinion. It should serve for a good deal of years for a long time at a longer construction period/more cost. But only one time. I think a better deal

⑤ Please zoom in on L & D areas.

- What happens to present 93/bule street interchange?

~~Estimated costs L & D?~~

⑥ At this time, do you anticipate any possible new funding for the "five-year" construction program due to the new "progressive" administration coming in office next year? Our country's infrastructure is in such bad shape.

⑥ Does this project have any thing to do with Canamex or North American Union? Please explain. - Corridor 204 Mill As opposed to 51 Million D Is there really any question?

⑥ - Thank you for the presentation

Q - Why not shoot for A & B's for the direct connection in 2040 instead of B & C's? Is it cost? What would A & B's look like? Is there room to grow/expand in 2040? (is this in the current planning discussion?)

9

Where on option D—

would before leave I-40

+ when would it connect on 93

give points of reference or landmarks
that we know

11

Will private properties
be taken to build
interchange?

10

How much do you think
this will cost?

COST

12

What kinds of environmental issues exist?

13

How much population
will this make?
(from 1990)

(will project
increase area
growth)

15

Can you show C+D
over a map showing
Businesses like on first
slide

14

Is 93 going to be a 4
lane road to Beale St.

Can you get off 93 to
the park area between
Beale St. and Ry 687?

16

~~What~~ What is to be done to help the
Environment?

Environmental

①7
Is there available letter
graphics that are easier to
see & read

①8
What impact would Corridor D have on
businesses located in Corridor C

C/D

15 The C&D choices
Set in stone?

C/D

The Fed. as part
of the CANAMAX Highway?

(related to
CANAMEX)

21 Please consider South Boarder
of Corridor (C) - cost will
decrease if you avoid the
businesses - and it will affect
fewer homes and businesses.

D will affect the water area

23 What's more important costs
or someone's house?

22 Do you have a rendering
or artist sketch of C & D?

24 ~~Is ADOT adding~~ Is ADOT adding
on to ~~the project~~ or creating new
highways in this area?

25) CAN YOU COME BACK ~~WITH~~ BEFORE
YEAR END WITH THE FOOTPRINT
AND CONSTRUCTION SCHEDULE F OPTION "C"

26) IF PRIVATE PROPERTY IS TAKEN,
WHAT IS THE PROCESS TO DETERMINE
VALUE?

WHAT TYPE OF NOTICE IS GIVEN?

27) WITH A \$204M PRICE
TAG, WHY IS ROUTE
73 EVEN BEING CONSIDERED?

28) YOU SAID TRAFFIC
FLOW FROM HISTORY
73 HAS BEEN STOPPED
TO TRUCKING SINCE
2001 HAS THIS BEEN
TAKEN INTO ACCOUNT

29

WHAT WILL HAPPEN
WHEN HOOVER DAM
WILL BE BY PASSED
WITH A 4 LANE ROAD
PORTION OF 93?

30

Would either the C or A corridors
have an impact on the ingress/egress
to the ADOT Weigh Station @ Hwy
68, or ~~is~~^{is} any additional
weigh station (truck scales) being
considered going N on US 93?

31

This will completely take
away Metwell and
Camp Beale Loop, Hiking
area. according to
BLM map

32

Is there a web site to
see the progress of Planning.
Maps - ect.

I-40/US 93 West Kingman Traffic Interchange Public Meeting - November 13, 2008

ADOT Project No. 040 MO 048 H7323 01L/Federal Aid Project No. NH-040-A(AVJ)



COMMENT SHEET

PLEASE ANSWER A FEW QUESTIONS TO TELL US HOW WE ARE DOING

How did you hear about this meeting? Kingman Daily Miner

Do you have any suggestions for improving future meetings?

Several tables in the powerpoint hand-out should be enlarged per legibility.

CONTACT INFORMATION (Optional)*

Name: Keri Davidson

Address: 3069 Sactown Ave

City, State, Zip: Kingman AZ 86401 Email: _____

Would you like to be added to the project mailing list? _____

COMMENTS

1. Do you have any concerns about the environmental, social, and/or economic impacts of the corridor alternatives presented tonight? What are they?

Economic impact on existing businesses on Hwy 93 is expected to be higher w/ D vs. C.

Actes may seek services outside the City limits such as from plant in the County from So-Mi to Santa Clara @ Mineral Park Road.

2. What criteria would you suggest for evaluating and comparing the corridor alternatives?

In addition to consider length, fuel consumption based on ADT could be captured for each year.

Was there an aesthetic evaluation?

Is there a way to compare probable accident rates?

* Note: Providing your contact information is voluntary. Under state law, any identifying information provided above will become part of the public record and, as such, must be released to any individual upon request.

I-40/US 93 West Kingman Traffic Interchange
Public Meeting - November 13, 2008

ADOT Project No. 040 MO 048 H7323 01L/Federal Aid Project No. NH-040-A(AVJ)



COMMENT SHEET

PLEASE ANSWER A FEW QUESTIONS TO TELL US HOW WE ARE DOING

How did you hear about this meeting? Post Card in mail

Do you have any suggestions for improving future meetings?
This one seems fine so far. (a bit cool)

CONTACT INFORMATION (Optional)*

Name: _____

Address: _____

City, State, Zip: _____ Email: _____

Would you like to be added to the project mailing list? _____

COMMENTS

1. Do you have any concerns about the environmental, social, and/or economic impacts of the corridor alternatives presented tonight? What are they?

Hire as many local (from Kingman and surrounding area) as possible. The most important consideration should be the economical impact both during and after highway construction. Project needs to be completed soon to match road improvements over Hoover Dam and the 93 improvements to Phoenix. If this project is not completed way before 2040, I'll be dead and never get to see or use the new road. Decorate over passes like they do in New Mexico.

2. What criteria would you suggest for evaluating and comparing the corridor alternatives?

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I-40/US 93 West Kingman Traffic Interchange Public Meeting - November 13, 2008

ADOT Project No. 040 MO 048 H7323 01L/Federal Aid Project No. NH-040-A(AVJ)



COMMENT SHEET

PLEASE ANSWER A FEW QUESTIONS TO TELL US HOW WE ARE DOING

How did you hear about this meeting? Mail & Newspaper

Do you have any suggestions for improving future meetings?

CONTACT INFORMATION (Optional)*

Name: _____

Address: _____

City, State, Zip: _____ Email: _____

Would you like to be added to the project mailing list? _____

COMMENTS

1. Do you have any concerns about the environmental, social, and/or economic impacts of the corridor alternatives presented tonight? What are they?

The sheriff of Mohave County has stated publicly that this international way will open our town up to an even larger meth problem (80% which comes from Mexico). He also stated he will not have the budget to hire new deputies to deal with the added crime coming from Mexico due to the lack of border security this new will cause. How does Kingman plan to budget for the extra officers and Deputies needed?

2. What criteria would you suggest for evaluating and comparing the corridor alternatives?

I would like the corridor furthest outside of town

* Note: Providing your contact information is voluntary. Under state law, any identifying information provided above will become part of the public record and, as such, must be released to any individual upon request.

3. Please provide any additional comments that you feel would be helpful to the study team.

The downtown area is full of historic buildings. Will those be taken and bulldozed over for the interchange?
How wide will the connection be?
I dont think homes should be taken to make a cheaper route

You may leave this comment sheet with us tonight, or send it by December 12, 2008, to:
ADOT c/o Coralie Cole, Jacobs Engineering, 875 W. Elliot Rd., Suite 201, Tempe, AZ 85284;
or Coralie.Cole@jacobs.com; fax 480-763-8601

THANKS FOR YOUR INPUT!

I-40/US 93 West Kingman Traffic Interchange Public Meeting - November 13, 2008

ADOT Project No. 040 MO 048 H7323 01L/Federal Aid Project No. NH-040-A(AVJ)



4

COMMENT SHEET

PLEASE ANSWER A FEW QUESTIONS TO TELL US HOW WE ARE DOING

How did you hear about this meeting? through the City / newspaper / radio

Do you have any suggestions for improving future meetings? well noticed

This was a great meeting - well organized & well presented!
(I will attend)

CONTACT INFORMATION (Optional)*

Name: Janet Watson

Address: 1285 Franklin Ct

City, State, Zip: Kingman AZ 86401 Email: _____

Would you like to be added to the project mailing list? I think I already am on the list

COMMENTS

1. Do you have any concerns about the environmental, social, and/or economic impacts of the corridor alternatives presented tonight? What are they?

My concerns have been addressed - "Thank You"

2. What criteria would you suggest for evaluating and comparing the corridor alternatives?

I knew that your team will explore all the possibilities and alternatives with the criteria you have and will continue to use.

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3. Please provide any additional comments that you feel would be helpful to the study team.

You are doing a great job!

Information, process and presenter - Excellent!

You may leave this comment sheet with us tonight, or send it by December 12, 2008, to:
ADOT c/o Coralie Cole, Jacobs Engineering, 875 W. Elliot Rd., Suite 201, Tempe, AZ 85284;
or Coralie.Cole@jacobs.com; fax 480-763-8601

THANKS FOR YOUR INPUT!

I-40/US 93 West Kingman Traffic Interchange Public Meeting - November 13, 2008

ADOT Project No. 040 MO 048 H7323 01L/Federal Aid Project No. NH-040-A(AVJ)



5

COMMENT SHEET

PLEASE ANSWER A FEW QUESTIONS TO TELL US HOW WE ARE DOING

How did you hear about this meeting? MAILER, NEWSPAPER

Do you have any suggestions for improving future meetings?
AS MUCH DETAILS AS POSSIBLE.

CONTACT INFORMATION (Optional)*

Name: _____

Address: _____

City, State, Zip: _____ Email: _____

Would you like to be added to the project mailing list? _____

COMMENTS

1. Do you have any concerns about the environmental, social, and/or economic impacts of the corridor alternatives presented tonight? What are they?

OLD TRAILS, WATER QUALITY, HISTORICAL AREAS,
BEAVER SPRINGS, ETC.

2. What criteria would you suggest for evaluating and comparing the corridor alternatives?

CONSTRUCTION INCONVENIENCE, TRAFFIC, NOISE, SAFETY

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I-40/US 93 West Kingman Traffic Interchange

Public Meeting - November 13, 2008

ADOT Project No. 040 MO 048 H7323 01L/Federal Aid Project No. NH-040-A(AVJ)



6

COMMENT SHEET

PLEASE ANSWER A FEW QUESTIONS TO TELL US HOW WE ARE DOING

How did you hear about this meeting? postcard

Do you have any suggestions for improving future meetings?

CONTACT INFORMATION (Optional)*

Name: DR KIRSTEN MORTENSON

Address: 201 E. SPRING ST

City, State, Zip: KINGMAN AZ Email: doctor@drkm.com

Would you like to be added to the project mailing list? yes

COMMENTS

1. Do you have any concerns about the environmental, social, and/or economic impacts of the corridor alternatives presented tonight? What are they?

Current configuration is a major safety hazard - Recommend going ahead with alternative C or D as soon as possible. Lives are at stake

2. What criteria would you suggest for evaluating and comparing the corridor alternatives?

Speed & ease of implementation

* Note: Providing your contact information is voluntary. Under state law, any identifying information provided above will become part of the public record and, as such, must be released to any individual upon request.

I-40/US 93 West Kingman Traffic Interchange Public Meeting - November 13, 2008

ADOT Project No. 040 MO 048 H7323 01L/Federal Aid Project No. NH-040-A(AVJ)



COMMENT SHEET

PLEASE ANSWER A FEW QUESTIONS TO TELL US HOW WE ARE DOING

How did you hear about this meeting? MAIL + NEWSPAPER

Do you have any suggestions for improving future meetings?

CONTACT INFORMATION (Optional)*

Name: Tom Callahan

Address: 500 E Simon Ave

City, State, Zip: KINGMAN AZ

Email: PT Cruiser 2 @

Would you like to be added to the project mailing list? YES

NPG CABLE . com

COMMENTS

1. Do you have any concerns about the environmental, social, and/or economic impacts of the corridor alternatives presented tonight? What are they?

OUR FAMILY has 3 Homes in Corridors E + F
495 SIMON Ave 300 Simon Ave, 720 Simon
Ave These are our HOMES Dont want to
MOVE I ALSO OWN a BUSINESS At 1150 + 1152
WEST BEALE ST Concerned how This would affect
OUR FAMILIES,

2. What criteria would you suggest for evaluating and comparing the corridor alternatives?

How many of OUR FAMILY + Neighbors
would be uprooted, and financially
affected by this, D + C look
as though they will be quite costly,

* Note: Providing your contact information is voluntary. Under state law, any identifying information provided above will become part of the public record and, as such, must be released to any individual upon request.

I-40/US 93 West Kingman Traffic Interchange Public Meeting - November 13, 2008

ADOT Project No. 040 MO 048 H7323 01L/Federal Aid Project No. NH-040-A(AVJ)



COMMENT SHEET

PLEASE ANSWER A FEW QUESTIONS TO TELL US HOW WE ARE DOING

How did you hear about this meeting? Neighbor got card in mail.

Do you have any suggestions for improving future meetings?

Announce in paper 1 week sooner - Send info to every one living within 1 mile of changes.

CONTACT INFORMATION (Optional)*

Name: LARRY Mc CAIL

Address: 3201 FORT BAKER Rd

City, State, Zip: Kingman, AZ 86401 Email: LARRY Mc CAIL at FRONTIER

Would you like to be added to the project mailing list? yes NET.NET

COMMENTS

1. Do you have any concerns about the environmental, social, and/or economic impacts of the corridor alternatives presented tonight? What are they?

WHAT ABOUT INTERCHANGES? Will there be access to clacks canyon Road and North?

2. What criteria would you suggest for evaluating and comparing the corridor alternatives?

Climbing Hills For TRUCKS :

* Note: Providing your contact information is voluntary. Under state law, any identifying information provided above will become part of the public record and, as such, must be released to any individual upon request.

3. Please provide any additional comments that you feel would be helpful to the study team.

Send updates as they happen.

You may leave this comment sheet with us tonight, or send it by December 12, 2008, to:
ADOT c/o Coralie Cole, Jacobs Engineering, 875 W. Elliot Rd., Suite 201, Tempe, AZ 85284;
or Coralie.Cole@jacobs.com; fax 480-763-8601

THANKS FOR YOUR INPUT!

I-40/US 93 West Kingman Traffic Interchange Public Meeting - November 13, 2008

ADOT Project No. 040 MO 048 H7323 01L/Federal Aid Project No. NH-040-A(AVJ)



COMMENT SHEET

PLEASE ANSWER A FEW QUESTIONS TO TELL US HOW WE ARE DOING

How did you hear about this meeting?

Local newspaper

Do you have any suggestions for improving future meetings?

CONTACT INFORMATION (Optional)*

Name: *Marshall Nelson*

Address: *Box 4124*

City, State, Zip: *Kingman, AZ 86402* Email: _____

Would you like to be added to the project mailing list? *Yes*

COMMENTS

1. Do you have any concerns about the environmental, social, and/or economic impacts of the corridor alternatives presented tonight? What are they?

No

2. What criteria would you suggest for evaluating and comparing the corridor alternatives?

* Note: Providing your contact information is voluntary. Under state law, any identifying information provided above will become part of the public record and, as such, must be released to any individual upon request.

3. Please provide any additional comments that you feel would be helpful to the study team.

Your team did an
excellent job
of explanation

Much more than I
anticipated, considering
amount of detail involved.
Good job!

You may leave this comment sheet with us tonight, or send it by December 12, 2008, to:
ADOT c/o Coralie Cole, Jacobs Engineering, 875 W. Elliot Rd., Suite 201, Tempe, AZ 85284;
or Coralie.Cole@jacobs.com; fax 480-763-8601

THANKS FOR YOUR INPUT!

Cole, Coralie

From: Cathy Gates [catgonefishing@yahoo.com]
Sent: Thursday, November 20, 2008 7:42 AM
To: Cole, Coralie
Subject: Re: Hwy 93-I 40

Thank you Coralie. Look forward to getting the map to see exactly how it impacts my mother and I.

Cathy

From: "Cole, Coralie" <Coralie.Cole@jacobs.com>
To: Cathy Gates <catgonefishing@yahoo.com>
Sent: Wednesday, November 19, 2008 3:44:52 PM
Subject: RE: Hwy 93-I 40

Thank you for the information Cathy.
 I'll forward your parcel information and map request to the study team, and follow up with you soon. Your input is a valuable part of the study process.
 Thanks again,

Coralie

Environmental Planner
 Jacobs
 875 West Elliot Road, Suite 201
 Tempe, Arizona 85284
 ph: 480.763.8734

-----Original Message-----

From: Cathy Gates [mailto:catgonefishing@yahoo.com]
Sent: Wednesday, November 19, 2008 1:59 PM
To: Cole, Coralie
Cc: diamondjc@citlink.net
Subject: Re: Hwy 93-I 40

My parcel number is 301-01-121. My mother lives accross the street and owns property around me. Her parcels are 304-01-128, 304-01-033, and 304-01-140. I would really appreciate a better map and idea where each corridor alternative is.

Thank you,

Cathy

From: "Cole, Coralie" <Coralie.Cole@jacobs.com>
To: catgonefishing@yahoo.com
Sent: Wednesday, November 19, 2008 1:09:31 PM
Subject: Hwy 93-I 40

Cathy:

Here is some more information regarding property issues with respect to the study.

Corridor alternatives represented in the study should be considered a “broad brush stroke” depiction of each corridor under consideration and are 1/4 mile wide. Alignments within those corridors will not be determined until the preferred corridor itself has been selected – so essentially within each “broad brush stroke” represented there can be many alignment options. The actual roadway will be constructed within a 300 foot-wide right-of-way-footprint within the corridor.

Also I wanted to point out the study is far from establishing the footprint of a proposed roadway location, and while the study is underway, impacts to private property are one of many study criteria used to determine where these alignments take place. Avoidance of properties, if possible, is the preferred route.

It would be helpful to pass your location on to the study team – do you happen to know the parcel number of your property so the engineers can plot it against the corridors? If you have any questions, please let me know.

Thanks again,
Coralie Cole

Environmental Planner
Jacobs
875 West Elliot Road, Suite 201
Tempe, Arizona 85284
ph: 480.763.8734

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Cole, Coralie

From: Cathy Gates [catgonefishing@yahoo.com]
Sent: Thursday, December 04, 2008 9:02 AM
To: Cole, Coralie
Subject: Re: Hwy 93-I 40

Coralie,

I sent you mine and my mothers parcel numbers. Have you and the team had a chance to look at where my property is in conjunction with the 2 proposed sites? From what you have sent me it looks like it goes right through my house or right my it.

Please advise.

Cathy

From: "Cole, Coralie" <Coralie.Cole@jacobs.com>
To: Cathy Gates <catgonefishing@yahoo.com>
Sent: Tuesday, November 18, 2008 4:20:58 PM
Subject: RE: Hwy 93-I 40

Cathy:

As requested, I've attached the Public Meeting Handout, PDFs of the Power Point Slides, and a PDF of the Comment Sheet.

The project website is currently being updated to include PDFs of the Study Information Boards which were on display at the Public Meeting.

The website is listed on the first page of the handout, and I've included it here as well:

www.azdot.gov/highways/districts/kingman/I40_US93_WestKingmanTI.asp

A thorough detailed study will be conducted of the corridors which include examining cultural resources as well as water and other environmental impacts. The preferred result is to minimize impacts to both cultural and natural resources.

Please review the materials I've sent over - I encourage you to submit your thoughts, ideas and concerns on the Comment Sheet, or simply email your input back to this email address. Comments received up to December 12 th, 2008 will be included in the official record of the study and will assist the study team in making the preferred corridor determination. Your input is a valuable part of this process.

Thank you for taking your time in participating in the I-40/US 93 West Kingman Traffic Interchange Study.

Sincerely,
 Coralie Cole

Environmental Planner
 Jacobs
 875 West Elliot Road, Suite 201
 Tempe, Arizona 85284
 ph: 480.763.8734

-----Original Message-----

From: Cathy Gates [mailto:catgonefishing@yahoo.com]
Sent: Tuesday, November 18, 2008 9:18 AM

To: Cole, Coralie
Subject: Re: Hwy 93-I 40

Please email them to me. The proposed D goes right through my house and C would definately affect me as well. Do you all realize the historical nature and water tables of our property? Also, there have been archalogical surveys done behing my property.

Thank you,

Cathy Gates

From: "Cole, Coralie" <Coralie.Cole@jacobs.com>
To: catgonefishing@yahoo.com
Sent: Monday, November 17, 2008 4:26:31 PM
Subject: Hwy 93-I 40

Cathy – I was sent your email request for information. Would you like us to email you pdfs of the meeting materials or would you prefer them mailed to you via the post?

We can accommodate you either way,
Thanks,
Coralie

Environmental Planner
Jacobs
875 West Elliot Road, Suite 201
Tempe, Arizona 85284
ph: 480.763.8734

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Cole, Coralie

From: Evelyn Price [evierae@citlink.net]
Sent: Sunday, November 23, 2008 1:54 PM
To: ahmad.omais@kimley-horn.com; sbhuiyan@azdot.gov; Cole, Coralie; mkondelis@azdot.gov
Subject: ADOT I-40/US 93 West Kingman Traffic Interchange -- Public Meeting - November 13, 2008

Re: I-40/US 93 West Kingman Traffic Interchange
Feasibility Report and Environmental Studies
Public Meeting - November 13, 2008

Ahmad Omais, Consultant Project Manager
Kimley-Horn & Associates
7878 North 16th Street, Suite 300
Phoenix, Arizona 85020

Dear Mr. Omais:

Thank you for the informative presentation of the Study Team analysis and current recommendations of Corridors Alternatives C and D. However, I was greatly heartened with your statement that selection of Corridors C and D is not 'set in stone'. Both these corridors will have a direct impact on Metcalfe Acres which was surveyed in the 1930s by E. Ross Householder for Charles Metcalfe. My step-dad, Lawrence Monroe Hall, worked on that survey team . . . part of his payment for services was one acre, bordered on the south by Hall Lane (named for him) and Evelyn Drive on the west . . . my home at 920 Evelyn Drive. Mr. Householder had a penchant for giving female names for the streets . . . Joyce, Alma, Lynette (for his wife) and Evelyn Drive for the three Evelyns that lived in the Acres . . . Mrs. Evelyn Swanson, Mrs. Evelyn Venable, and young Evelyn Rae Fox (Price). As the last of the Evelyns, I am a self-appointed custodian of Metcalfe Acres . . . other streets included are Kit Carson Road, Ericson Drive, Fort Beale Drive.

In order to gain some insight into the Study Team's analysis, I did a cursory reconnaissance drive from my home on Evelyn Drive - Ericson Drive to Fort Beale Drive into Anson Smith Road to Stockton Hill Road to Andy Devine Avenue to Beale Street . . . then 93N over Coyote Pass and under the 68/93 Interchange into outskirts of Golden Valley and back to Kingman. Then I drove old 66 west and returned by I-40, on past Cerbat Golf course to SHR and home. Looks like the plan may be to enter 93N east of Coyote Pass. The far south edge of Corridor C (marked in red) seems to be a feasible route along the top of the hill south of the truck wash facility, truck stops, service stations, housing, etc., and could have the least impact into Metcalfe Acres.

We hope that some of the Corridor Alternatives might be reconsidered for evaluation. The concern for incursion into residential areas should be of equal importance as the possible impacts to the Cerbat Foothills Recreation Area. We will be very interested in your further studies and reports.

Again, thank you.

Sincerely yours,

Evelyn R. Price
(920 Evelyn Drive)
P. O. Box 3465
Kingman, Arizona 86402
evierae@citlink.net
928-753-3644

From: Michele E. Beggs [MBeggs@azdot.gov]
Sent: Wed 12/3/2008 9:00 AM
To: jasonjray@cox.net [<mailto:jasonjray@cox.net>]
Subject: Kingman 93/40

Hello Jason Ray,
The meeting materials from our public meeting last month are available on
http://www.azdot.gov/highways/districts/kingman/I40_US93_WestKingmanTI.a
sp

Please let me know if you have any questions regarding the materials.
At this time we are receiving comments regarding the proposed alternatives
- I will certainly pass on your e-mail noting your preferred alternative is D.

Thank you and have a nice day,
Michele Beggs

-----Original Message-----
From: jasonjray@cox.net [<mailto:jasonjray@cox.net>]
Sent: Tuesday, December 02, 2008 8:24 PM
To: Michele E. Beggs
Subject: Kingman 93/40

Michele,

I was wondering what came out of the meeting with the city of Kingman as a result of the 93/40 interchange. I think after the Hoover dam bypass is completed the volume of that interchange might double. When looking at the project area map my vote goes to alternative D. I think you will see Beale st. get just as much or more business even with that alternative.

http://www.azdot.gov/highways/districts/kingman/PDF/Project_Area.pdf

Thanks for the update.

Jason Ray

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Cole, Coralie

From: John Brooke [jbrooke@rgv.rr.com]
Sent: Friday, December 12, 2008 9:00 PM
To: Cole, Coralie
Cc: jbrooke@rgv.rr.com; jwbrooke@gmail.com
Subject: I-40/US 93 West Kingman TI-Project No. 040 MO 48 H732301L

Dear Coralie:

I would like to give your study group the list of property that our family owns or has an interest in located in Kingman, AZ. The identification of the parcels should not to be included in the public comment record.

Parcel ID #30411060
Parcel ID #30412005
Parcel ID #30412006
Parcel ID #30412130A
Parcel ID #30412099
Parcel ID #30412100
Parcel ID #30412101
Parcel ID #30412104
Parcel ID #30412107
Parcel ID #30412108

For the public record:

As owners of some property along the proposed Beale Street corridor, we would hope that any taking by the State of Arizona for right of way be in areas only where it is absolutely necessary. One of my family members purchased property in Kingman sometime in the early 1960's. The State of Arizona Highway Department said they needed the property, but with later design changes to the highway, it was not needed and was subsequently sold as surplus property.

We would like to see the continued viability of commercial property along Beale Street West of I-40. Any designs affecting access by way of ingress and egress along this area should be carefully considered as to the impact upon the property owners. I also believe, property owners along US 93 do not want to be cut off from the increasing traffic flow that will be generated after completion of the Hoover Bypass project. Thank you for your consideration when you decide upon these issues.

John W. Brooke

Cole, Coralie

From: Michele E. Beggs [MBeggs@azdot.gov]
Sent: Monday, November 17, 2008 1:07 PM
To: Cole, Coralie
Subject: Fw: I-40/US 93 West Kingman Traffic

Hi Coralie,
I am in Bullhead for Frameworks meetings - will you please respond to this request?
Thanks.

From: Keith Evans
To: Michele E. Beggs
Sent: Mon Nov 17 12:01:36 2008
Subject: I-40/US 93 West Kingman Traffic

Dear Ms. Beggs:

My name is Keith J. Evans.

I was not able to attend the meeting last Thursday. I would like to "view maps and graphics" with regards to the proposed I-40/US 93 connection- or whatever the term is.

I checked out the ADOT website and could not find any such link? Are there any maps or artist renderings on the website?

Please advise and thank you.

Keith J. Evans

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Cole, Coralie

From: Carol Kiser [carollk@citlink.net]
Sent: Monday, November 17, 2008 11:00 AM
To: Cole, Coralie
Subject: Beale

1-40 US west Kingman Traffic Interchange ADOT project ## 040 MO 048 H 732301 /
My vote goes to C it will have less effect on homes and spring water and the land and cost
will be less.

carol kiser

Public Involvement
Public Input Log

Project Name: I-40/US 93 West Kingman T/I

Date of Comment: 11/18/2008

Type (circle one) Phone/Email/Letter/Other

ADD TO
MAILING
LIST

Comment received by: CORAUS ~~COB~~ 10:19 - 10:41

Action Taken: ^{emailed} ~~SAF~~ WEBSITE INFO TO LANCE, described study
Briefly - mailed hard copy + encouraged input.

Check when entered into Input Log

Content of Input:

LANCE Buckhammer 928.565.2279

Missed Meeting last week, wants materials (hardcopy) sent, and name added to mailing list. Didn't rec've postcard notification. Concerned with ROW take in town, particularly re: gas station owners and other businesses/homes possibly impacted by alternative corridors. Commutes/works at Kingman Airport

Address: 3807 North Bryce Road

Garden Valley AZ 86413

Phone: 928.565.2279

EMAIL: westernarizona@frontiernet.net

Public Involvement
Public Input Log

Project Name: I-40 / US 93 West Kingman T1

Date of Comment: November 21, 2008

Type (circle one) Phone / Email / Letter / Other

Comment received by: Connie Cou

Action Taken: explained study process sent material to Mr. Wade. encouraged input

Check when entered into Input Log

Content of Input:

Conversation w/ Ken Wade @ 4:12 Friday Nov 21
Mr Wade owns small lot next to T.A. truck stop w/ no construction on it. Purchased lot as investment, wants to know if project will impact property. Explained we are at this stage, as are early in study process & Corridor hasn't been determined @ this stage.

Sent meeting mtg's to him: encouraged input to contribute as part of study record.

o email: wademaniac@yahoo.com.

o phone: 775.742.5847 (lives in Reno)

Public Involvement
Public Input Log

Project Name: Kingman T1

Date of Comment: 11/12/08

Type (circle one) Phone/Email/Letter/Other

Comment received by: Laura Nordan

Action Taken: Returned call

Check when entered into Input Log

Content of Input:

Lori Chambers, 928-753-6747
called for more information on the
meeting. She asked if anything had
changed from the previous meeting in
terms of the alternatives. I let her know
that ADOT was recommending Alts. C & D
for further study and eliminating the
others.

November 18, 2008

Dear Coralie:

I don't believe I received any of the materials for the meeting that was held last week. If they are ready, could you send them to me at this email address. Thanks for your help.

John Brooke

On Nov 5, 2008, at 7:23 PM, Cole, Coralie wrote:

John:

We will mail you a copy of the materials for next week's public meeting as soon they have been finalized.

As requested I've included the website link for the project which includes information from the previous Public Meeting:

www.azdot.gov/highways/districts/kingman/I40_US93_WestKingmanTI.asp

If you have any more questions, please do not hesitate to contact us.

Thank you,
Coralie Cole

Environmental Planner

Jacobs

875 West Elliot Road, Suite 201
Tempe, Arizona 85284
ph: 480.763.8734

-----Original Message-----

From: Don.Tappendorf@kimley-horn.com [<mailto:Don.Tappendorf@kimley-horn.com>]

Sent: Wednesday, November 05, 2008 5:35 PM

To: Nordan, Laura; Cole, Coralie

Cc: Doug.Fischer@kimley-horn.com; Ahmad.Omais@kimley-horn.com; SBhuiyan@azdot.gov; jwbrooke@gmail.com

Subject: I-40/US 93 West Kingman TI - Project No. 040 MO 48 H732301L

Importance: High

Laura and Coralie,

Ahmad received a phone message today from a gentleman who has a property interest in the vicinity of the I-40/US 93 Traffic Interchange. I spoke with Mr. John Brooke for a few minutes describing where we were in the study process, and in particular that this was a Feasibility Study to determine feasible corridors for further, more detailed study in the next phase of the project development.

John asked whether there is any information that could be sent to him since he is located in Texas and cannot attend the public meeting. I explained that you were responsible for the public involvement and coordination, and that we were still in the process of finalizing the information for the public meeting and did not know exactly when that information will be available to be sent to him. I also explained the comment period running until December 12th.

His contact information is shown below:

John Brooke
1615 Harvey Street
McAllen, TX 78501-4248
jwbrooke@gmail.com
956 821-4230

I told John I would copy him on my email so that he knew I had forwarded the request for information to you , and so that he would have your email contact information.

Please provide a copy of the public meeting materials to Mr. Brooke once it is available. I also told him there was a project website that contained previous information. If you would provide that link as well I would appreciate it.

Thank you.

Don Tappendorf
Kimley-Horn and Associates, Inc.

Phone message I received today at 3:30.

Ken Wade

Property owner next to TA Truck Stop

Lives in Reno and could not make the public meeting. He wants to know what evolved from the meeting and get any other info you have.

His phone: 775-742-5847.

Don Tappendorf thought it was probably more appropriate for you to give him a call back rather than myself.

Thanks,

Angie Shoemaker ☺

Roadway/Water Resources Division

Kimley-Horn and Associates, Inc.

7878 N. 16th Street, Suite 300

Phoenix, AZ 85020

(602) 678-3438

(602) 906-1174 Fax



AGENCY PROGRESS MEETING SUMMARY

LOCATION: Mohave County Offices, Saguaro Rooms A and B
700 West Beale Street
Kingman, Arizona 86401

DATE: August 25, 2008, 10:00 a.m. to 12:00 p.m.

SUBJECT: I-40/US 93 West Kingman Traffic Interchange
Feasibility Report & Environmental Studies
ADOT Project No. 040 MO 048 H7323 01L
Federal Project No. NH-040-A(AVJ)

ATTENDEES:

Shahid Bhuiyan	ADOT Predesign
Mike Kondelis	ADOT Kingman District
Mick Hont	ADOT Kingman District
Kara Hinker	ADOT Kingman District
Ken Paetz	ADOT Regional Traffic
Pat Mahoney	ADOT Roadway Design
Roxanne Turner	ADOT Right-of-Way
Arif Kazmi	ADOT Traffic Design
Jessica Walsh	ADOT Environmental Planning
Steve Thomas	FHWA
Aryan Lirange	FHWA
Steve Latoski	Mohave County
John Reid	BLM
Melanie Headstream	ASLD
Kathleen Tucker	US Army Corps of Engineers
Stephen Pebley	Frontier Communications
Patricia Van Wormer	Frontier Communications
Dave Morphey	Frontier Communications
Michael Gibelyou	Unisource Energy Services
Marvin Yarbrough	Unisource Energy Services
June Pelehowski	Unisource Energy Services
Debbie Casson	City of Kingman
Gary Jeppson	City of Kingman
Chuck Osterman	City of Kingman
Ray Sipe	City of Kingman
Wes Bauer	City of Kingman
Lisa Swick	Colorado River Indian Tribes
Ahmad Omais	Kimley-Horn and Associates
Doug Fischer	Kimley-Horn and Associates
Don Tappendorf	Kimley-Horn and Associates
Sarah Eichinger	Kimley-Horn and Associates
Laura Nordan	Jacobs
Coralie Cole	Jacobs

I-40/US 93 West Kingman Traffic Interchange

Feasibility Report & Environmental Studies



The Arizona Department of Transportation (ADOT), in coordination with the Federal Highway Administration (FHWA) and the Bureau of Land Management (BLM), is conducting a study of potential improvements to the Interstate 40 (I-40)/US 93 traffic interchange (TI) in Kingman. Several possible corridor alternatives for providing a free-flow traffic connection between I-40 and US 93 have been identified and are under evaluation. The study area includes US 93 from State Route 68 to I-40 and I-40 from the Stockton Hill Road TI to the McConnico TI. It is anticipated that the findings of this study will be carried forward for further detailed study.

An agency progress meeting was held on August 25, 2008, to discuss concerns identified at the agency and public scoping meetings held on March 31, 2008, as well as the preliminary findings from the study team's analysis of eight corridor alternatives (A through H). Based on agency and public input, the study team recommends narrowing the field to two preferred corridor alternatives, C and D, for future detailed study. These alternatives were presented at the August 25 progress meeting along with the rationale and evaluation criteria for eliminating or continuing to develop each corridor alternative.

Ahmad Omais, project manager for Kimley-Horn, opened the meeting by describing the project development process and how the progress meeting fit into the study schedule as a whole. He reviewed comments that were received during the scoping process and discussed the purpose and need for the project. He then presented an overview of the initial study findings, with evaluations of each of the corridor alternatives A through H according to the various criteria identified during scoping. The resulting preferred alternatives recommended for further study are corridor alternatives C and D.

Mr. Omais described the traffic analysis, which used traffic counts from 2006 and traffic projections for 2040. Data from the Kingman Area Transportation Study and planning information were used to predict future volumes. The existing and anticipated Levels of Service (LOS) and delays at the TI location were examined. The analysis showed that there would still be poor LOS at the existing TI even with through-traffic diverted to a direct connection between I-40 and US 93; thus, improvements would be required at the existing Beale Street TI as part of any recommended alternative.

Conceptual layouts for corridor alternatives C and D were shown to illustrate that they are feasible corridors in which design concepts could be developed. Alternative C consists of a viaduct with elevated travel lanes above the existing Beale Street. Alternative D consists of a new TI located about 0.5 mile east of the existing Beale Street TI and includes collector/distributor roads along I-40 to accommodate local traffic.

The floor was then opened for discussion. The following is a summary of comments put forth during the open discussion portion of the meeting.

BLM

- Opposes corridors that affect Cerbat Foothills Recreation Area
- LOS illustration should be verified; C looks more congested than D
- May want to provide a cost estimate for building 5-lane Beale Street rather than the viaduct, for comparison purposes

I-40/US 93 West Kingman Traffic Interchange

Feasibility Report & Environmental Studies



Mohave County

- Need to be prepared to answer questions from the public about constructing the ramps within the I-40 median or constructing at-grade improvements to reduce need for new R/W
- May want to consider an interim improvement of the existing TI in the near future to address existing congestion

ADOT

- Need to present traffic information in a way that the general public can understand; delays are a good description; suggest referring to delays in minutes rather than seconds
- LOS F currently occurs during peak traffic hours at the Beale Street TI
- Study assumes that the long-term plan of construction to 3 lanes on I-40 from Stockton Hill Road to McConnico TI would be in place
- Will look at 2012 traffic volumes to gauge Hoover Dam opening impacts
- Previously looked at adding a turn lane at the existing TI; the cost was \$750k and would not achieve desired LOS
- Alternative C is extremely expensive compared to D

FHWA

- Reminded group that there will be 3 to 4 design concept alternatives within each corridor
- Suggest an illustration showing how many lanes would be required on existing Beale Street to carry projected traffic (in the absence of a direct connection) and how it would affect adjacent development

Colorado River Indian Tribes

- Requested information on how archeological sites and issues would be dealt with

City of Kingman

- Prefers alternative D

Unisource

- Corridor alternative H may have conflicts with proposed power lines
- Rationale for selecting alternatives C and D seems logical

Mr. Omais then concluded the meeting with an update of the schedule. The next public meeting will take place in November 2008, with the Feasibility Study to be concluded by February 2009. He requested that any additional comments on the study be sent to ADOT within two weeks.

ATTACHMENTS:

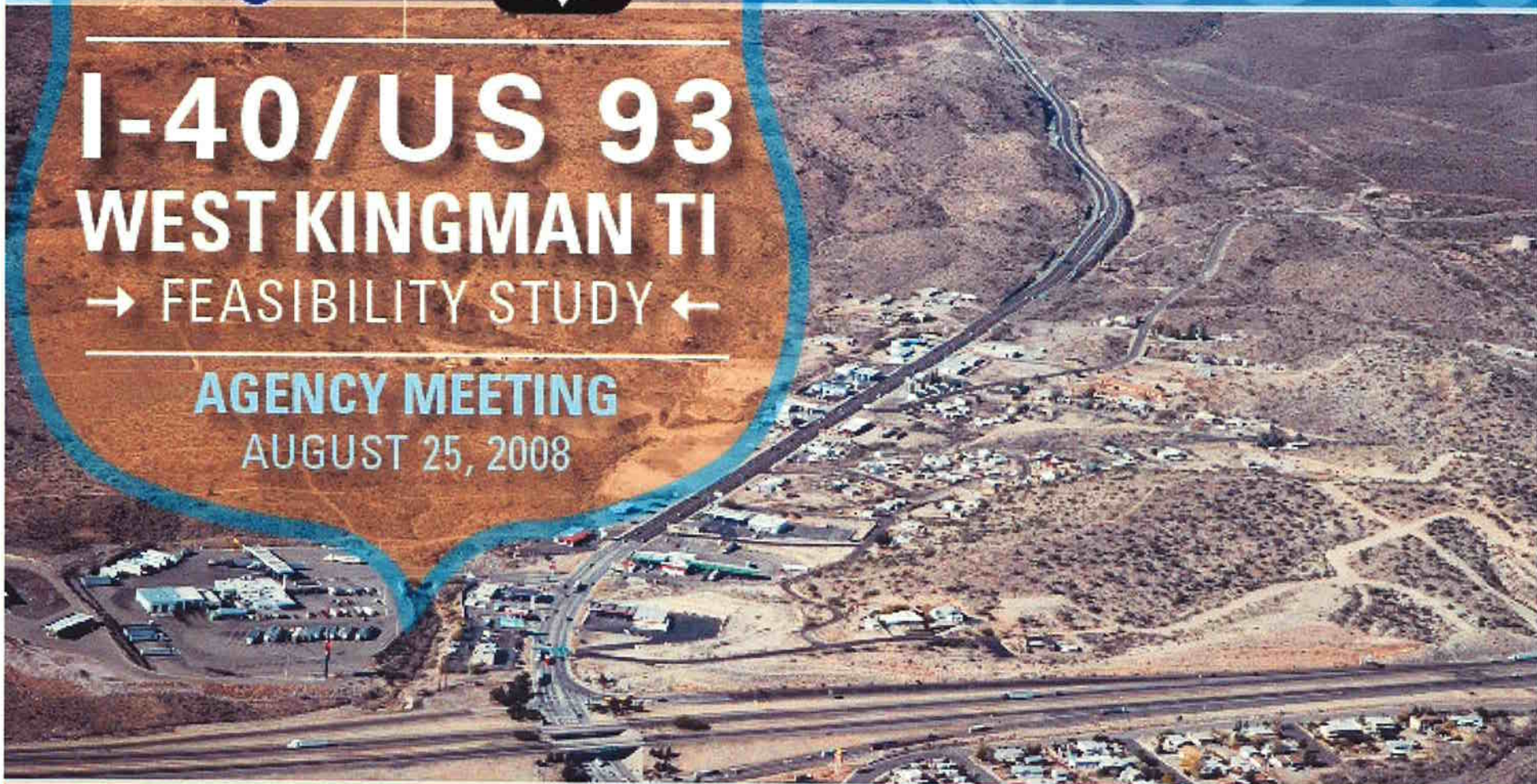
1. Sign-In Sheet
2. Presentation Slides



I-40/US 93

I-40/US 93
WEST KINGMAN TI
→ FEASIBILITY STUDY ←

AGENCY MEETING
AUGUST 25, 2008



FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Meeting Agenda

- ▶ Introductions
- ▶ Project Development Recap
- ▶ Project Purpose and Need
- ▶ Summary of Initial Feasibility Report Findings
- ▶ Agency Feedback
- ▶ Project Schedule
- ▶ Open Discussion

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Project Development Recap

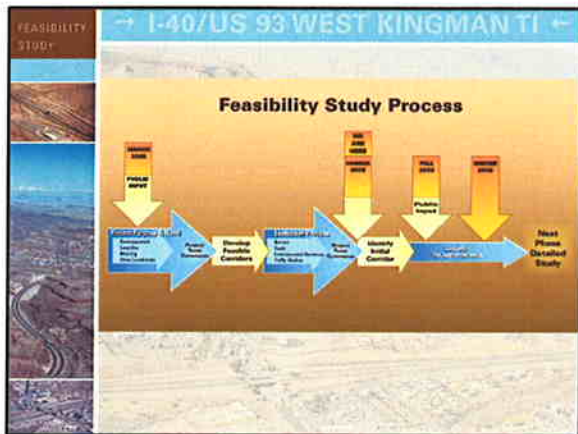
- ▶ Project Development Process
- ▶ Feasibility Study Process
- ▶ Agency Scoping / Public Involvement Responses
- ▶ Where are we now

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Project Development Process

```
graph LR; Plan --> Design; Design --> Project_Feasibility[Project & Feasibility]; Project_Feasibility --> Design; Design --> Construction; Construction --> Maintenance_Operations[Maintenance & Operations];
```

We are here



Project Development Recap

► Agency Scoping / Public Involvement Responses

- » Economic Concerns for Existing Businesses
- » Impacts to Trails and Recreation Areas
- » Impacts to Private Property and Residences Along Project Area
- » Project Funding Concerns

Project Development Recap

► Agency Scoping / Public Involvement Responses (cont.)

- » Environmental Concerns – Impact to Wildlife and Water Quality
- » Requests for Roadway Details – TI Locations, Business Access and Traffic Flow
- » Requests to Avoid Stockton Hill

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Project Purpose and Need

- ▶ Need for a Direct Connection Between I-40 and US 93 has been Documented in Previous Studies
- ▶ Third Bottleneck from CANAMEX Corridor Study
- ▶ Congestion Backs up onto I-40
- ▶ Area is Developing Fast
- ▶ Right-of-Way Costs are Escalating
- ▶ Improve Local Access

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Purpose and Need (Continued)

- ▶ Relieve Congestion – Increase Roadway Capacity and Improve Traffic Flow
- ▶ Improve Safety
- ▶ Continued Growth - Plan for Future Developments

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Summary of Initial Findings


- ▶ Corridor Alternatives Recap
- ▶ Traffic Data / Traffic Report
- ▶ Corridor Alternatives Comparison
- ▶ Environmental Overview
- ▶ Corridors Recommended for Further Study

FEASIBILITY STUDY

→ I-40/US 93 WEST KINGMAN TI ←

Corridor Alternatives

- ▶ South Corridor Alternatives
 - » A, B, G, and H
- ▶ North Corridor Alternatives
 - » C, D, E, and F

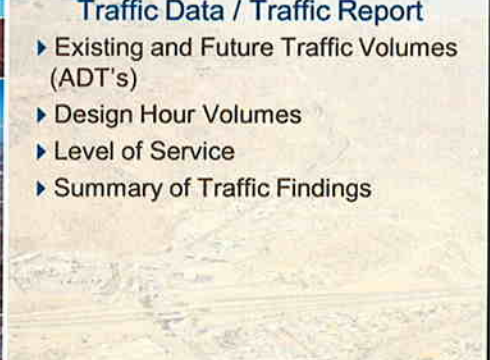


FEASIBILITY STUDY

→ I-40/US 93 WEST KINGMAN TI ←

Traffic Data / Traffic Report


- ▶ Existing and Future Traffic Volumes (ADT's)
- ▶ Design Hour Volumes
- ▶ Level of Service
- ▶ Summary of Traffic Findings

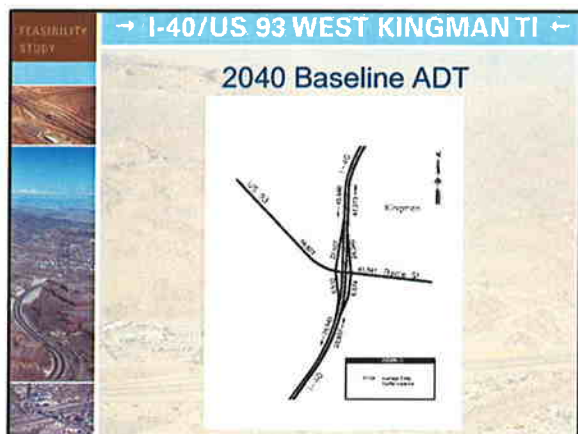


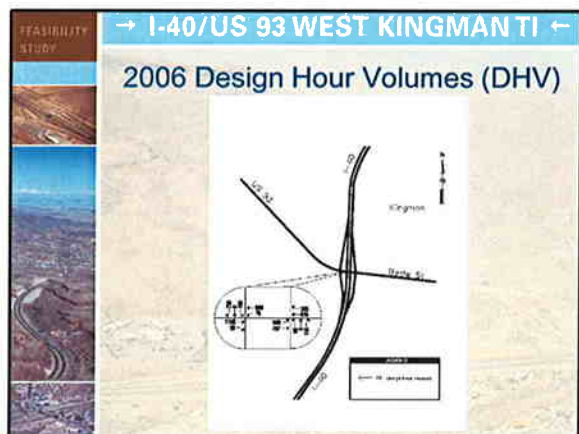
FEASIBILITY STUDY

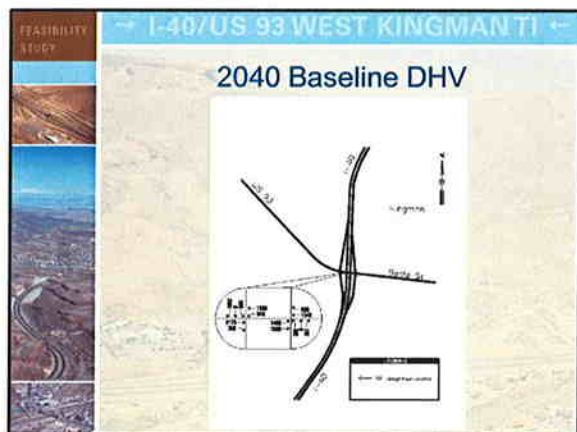
→ I-40/US 93 WEST KINGMAN TI ←

2006 Existing Conditions









FEASIBILITY STUDY

→ I-40/US 93 WEST KINGMAN TI ←

Traffic Data / Traffic Report

- ▶ Summary of Findings - 2040
 - » Beale Street TI will operate at LOS F in 2040 under No Build Alternative
 - » Direct Connect System TI significantly improves traffic conditions
 - » Additional Improvements to Beale Street TI to improve LOS




FEASIBILITY STUDY

→ I-40/US 93 WEST KINGMAN TI ←

Traffic Data / Traffic Report

- ▶ Summary of Findings – 2040 (cont.)
 - » Additional Improvements to Beale Street TI to improve LOS
 - Replace SB split Phasing with Protected/Permitted Left-turn Phasing and Permitted Through Phasing




FEASIBILITY STUDY

→ I-40/US 93 WEST KINGMAN TI ←

Traffic Data / Traffic Report

- ▶ Summary of Findings – 2040 (cont.)
 - » Collector-Distributor Ramp System Required
 - I-40 – 4 mainline lanes in each direction north of the directional ramp merge/diverge points
 - I-40 - 3 mainline lanes in each direction south of directional ramp merge/diverge points



FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Traffic Data / Traffic Report

► Summary of Findings – 2040 (cont.)

- I-40 WB to US 93 NB and US 93 SB to I-40 EB directional ramps require 2 lanes
- I-40 EB to US 93 NB and US 93 SB to I-40 WB ramps are a minimum single lane ramps

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Traffic Data / Traffic Report

► Summary of Findings – 2040 (cont.)

- US 93 – 3 mainline lanes in each direction west of the directional ramp merge/diverge point
- US 93 - 2 mainline lanes in each direction east of the directional ramp merge/diverge point

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

FEASIBILITY STUDY

→ I-40/US 93 WEST KINGMAN TI ←

Corridor Comparisons

- ▶ South Corridors (A, B, G, and H)
- ▶ North Corridors (C, D, E, and F)
- ▶ Evaluation Criteria and Measurements

FEASIBILITY STUDY

→ I-40/US 93 WEST KINGMAN TI ←

Corridor Alternatives Comparison

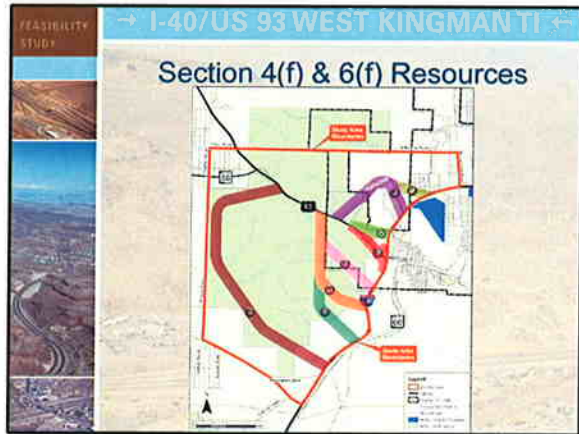
▶ Evaluation Criteria/Measurements

Evaluation Criteria	Unit of Measure	A	B	C	D	E	F	G	H
City of Kingman & Private Land	acres	7	7	27	20	17	58	14	43
State APNs within City of Kingman Limits	acres	0	44	14	14	38	38	0	0
State APNs Outside City of Kingman Limits	acres	108	34	4	0	0	0	122	243
State Land	acres	0	0	0	0	0	0	0	30
Length of Corridor	Miles	3.1	2.8	1.0	1.0	1.0	3.0	3.7	7.0
Percent of Highway Total Project Cost	Millions	\$ 58M	\$ 54M	\$ 202M	\$ 48M	\$ 87M	\$ 53M	\$ 68M	\$ 100M
Traffic									
Distance from nearest interchange	miles	1.4	0.8	0	0.5	1.2	0.9	2.0	1.1
Length of travel from Greenlee Hwy 71 and 43 to I-40 on US 93 (0.5 to 1.0 mile)	miles	0.4	0.2	0.7	0.1	0.6	0.8	1.1	1.1
Anticipated utilization of the road at connection by through traffic		<10%	<10%	10% to 20%	10% to 20%	20% to 30%	20% to 30%	>10%	>10%
Conflicts with known environmental sites									
Wash Drainage	count	3	3	3	0	4	4	4	3
Private Number of Residential Parcels	count	0	0	0	13	0	28	1	1
Private Number of Business Parcels	count	0	0	27	0	1	1	0	0
Private Number of State-Managed Wetlands	count	0	0	27	0	1	1	0	0
Major Utility Conflicts	count	1	1	0	1	1	1	1	3

FEASIBILITY STUDY

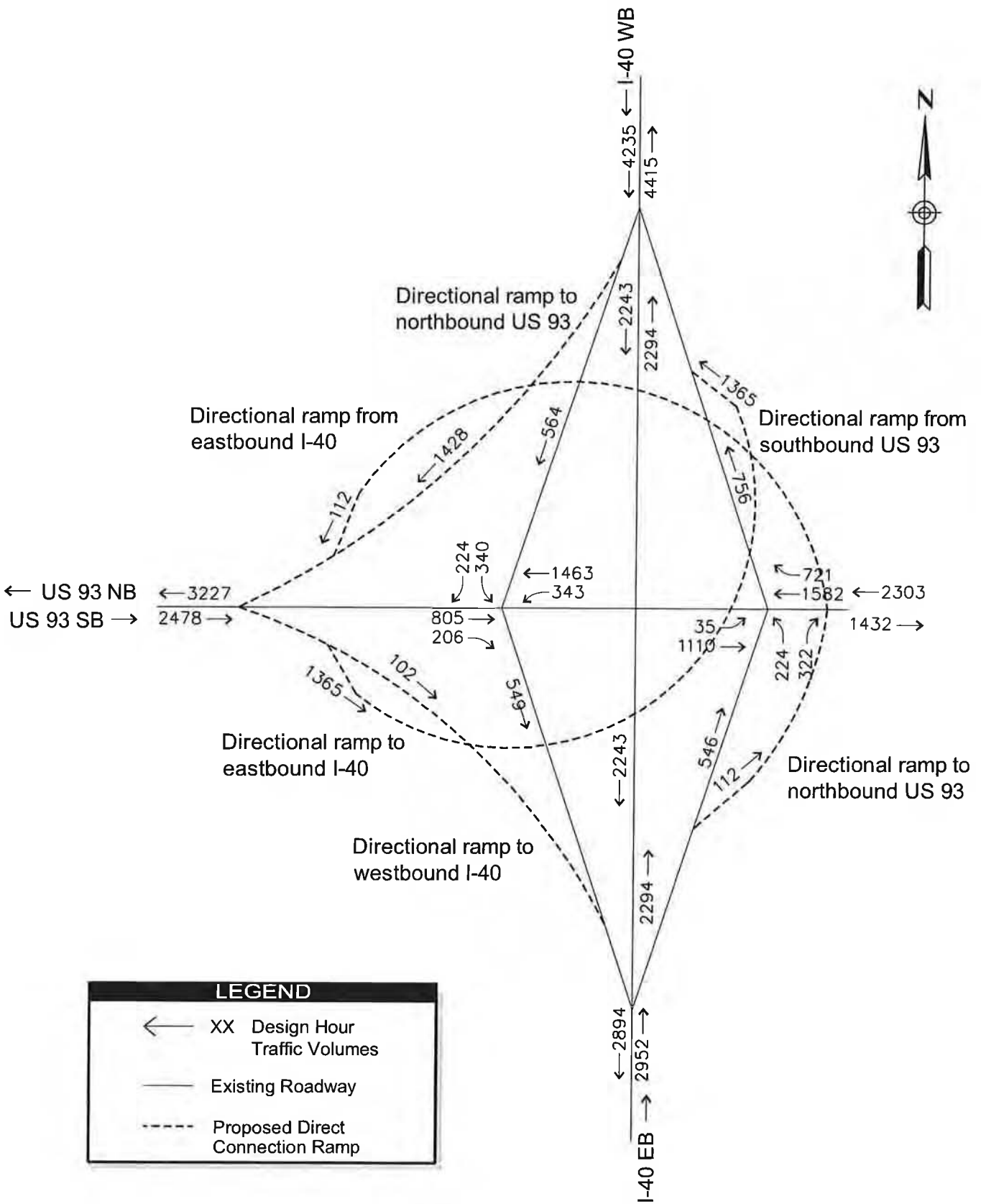
→ I-40/US 93 WEST KINGMAN TI ←

Environmental Constraints









LEGEND	
← XX	Design Hour Traffic Volumes
—	Existing Roadway
- - -	Proposed Direct Connection Ramp

Evaluation Criteria and Measurements

Evaluation Criteria	Unit of Measure	A	B	C	D	E	F	G	H
City of Kingman & Private Land	acres	5	9	22	20	57	59	14	43
BLM /CFRA within City of Kingman Limits	acres	0	44	14	16	36	36	0	0
BLM /CFRA Outside City of Kingman Limits	acres	108	38	0	0	0	0	122	242
State Land	acres	0	0	0	0	0	0	0	90
Length of Corridor	miles	3.1	2.5	1.0	1.0	2.5	2.6	3.7	7.0
Order of Magnitude Total Project Cost	\$ Millions	\$ 58 M	\$ 54 M	\$ 203 M	\$ 48 M	\$56 M	\$ 59 M	\$ 68 M	\$190 M
Traffic									
Distance from Nearest Interchange	miles	1.4	0.9	0	0.5	1.2	0.9	2.0	1.1
Length of Travel from Stockton Hill TI on I-40 to SR 68 TI on US 93 (WB I-40 to NB US 93)	miles	9.4	8.3	6.7	6.1	6.6	5.8	11.3	14.1
Anticipated utilization of the direct connection by through traffic	-	<20%	<20%	35% to 50%	35% to 50%	25% to 35%	25% to 35%	<10%	<10%
Environmental									
Conflicts with known archaeological sites	count	3	3	2	6	4	4	4	3
Wash Crossings	count	6	6	3	3	4	4	8	13
Potential Number of Residential Parcels	count	0	0	9	13	6	26	1	1
Potential Number of Business Parcels	count	0	0	27	0	1	1	0	0
Potential Number of Vacant/Municipal/Mixed/Other	count	5	6	37	15	9	12	7	7
Major Utility Conflicts	count	1	1	0	1	1	1	1	3
Springs/Wells/Water Tanks	count	0	0	0	1	2	2	0	1



INITIAL SCOPING SUMMARY

I-40/US 93 West Kingman Traffic Interchange
Feasibility Report & Environmental Studies
ADOT Project No.: 040 MO 048 H7323 01L
Federal Project No.: NH-040-A(AVJ)

July 2008

The Arizona Department of Transportation (ADOT), in coordination with the Federal Highway Administration (FHWA) and the Bureau of Land Management, has initiated a study of potential improvements to the Interstate 40 (I-40)/US 93 traffic interchange (TI) in Kingman. The study will identify alternatives for providing connection between I-40 and US 93 that will allow traffic to flow through the interchange without stopping. Alternatives for a new TI location, including possible improvements to the existing Beale Street TI, will be evaluated.

The purpose of the scoping process is to identify potential issues, concerns, and opportunities (ICOs) that should be considered in the development of alternatives and environmental studies for the proposed TI. ICO information was obtained from area residents, business owners, and government agency representatives through public and agency scoping meetings. This document summarizes the ICOs identified from agencies and the public during the scoping process for the I-40/US 93 West Kingman TI.

Agency Scoping

An agency scoping meeting was held on March 31, 2008. The meeting notes and agency correspondence are included in Appendix 1. Agency representatives identified the following ICOs regarding engineering and environmental considerations for the study.

Engineering Considerations

- Access to Kingman local streets
- Possible new TI west of the study limits
- Proposed power line close to Corridor Alternative H
- TI spacing at 1-2 mile increments
- Multiple alignment options within each corridor alternative
- Clearly define corridors to evaluate possible impacts
- Retaining existing TI
- Traffic study should factor in future development, including a proposed residential development with 33,000 dwelling units anticipated west of the Cerbat Foothills Recreational Area
- Improvements to existing Beale Street TI needed
- Access control on new TI to provide free-flow traffic
- Drainage



Environmental Considerations

- Visual impacts
- Wildlife crossings and connectivity
- Recreational uses and access to trails
- Impacts to flora and fauna, including Threatened and Endangered species, BLM sensitive species, Arizona Wildlife of Special Concern, and Native Plants
- Mining claims and grazing rights investigation needed
- Potential impacts to wells, springs, other natural water sources, and drainage features
- Waters of the US
- Section 4(f) resources are present in the study area
- Economic impacts of re-routing traffic from Beale Street to new TI
- Possible impacts to historical and recreational resources for Alternatives E and F
- Outreach to business community
- Cultural resources, Traditional Cultural Properties, and historic sites
- Early consultation with tribes
- Existing and planned land use
- Conformance with BLM and City planning documents

Public Scoping

A public scoping meeting was held on March 31, 2008. The public meeting summary and all comments received are included in Appendix 2. In general, comments could be categorized into the following types:

1. Supportive of the concept of building a new TI and improvements to the existing Beale St TI, but concerned about:
 - a. impacts to Cerbat Foothills Recreational Area (CFRA)
 - b. economic impact to businesses dependent on local and regional traffic
 - c. suggested additional corridor alternatives to what was presented at the meeting
2. Opposed to the concept of building a new TI due to:
 - a. environmental impacts to CFRA and Beale Springs
 - b. impacts to residential properties located near new interchange
 - c. lack of an immediate solution to the existing traffic congestion

In summary, the public identified the following ICOs regarding engineering and environmental considerations for the study.

I-40/US 93 West Kingman Traffic Interchange

Feasibility Report & Environmental Studies



Engineering Considerations

- Expand study area to include alternative to the west of CFRA
- Suggest US 93 bypass on the north side of Kingman
- I-40 needs repaving in Kingman area
- Port of Entry locations should be reconsidered
- Traffic flow
- Cost
- Impact on traffic during construction
- Suggest alternative to go east of US 93 between the Port of Entry and Coyote Pass to connect to Alternative E/F
- Suggest alternative through Golden Valley
- Avoid elevated interchanges
- Traffic circulation to/from Golden Valley, Walnut Creek, and Rhodes Pravada developments

Environmental Considerations

- Avoid any impact to the CFRA
- Impacts to recreation and visual quality at CFRA
- Habitat for Sonoran desert tortoise in CFRA
- Prefer Alternative C because it has the least amount of new ground disturbance and least impact to businesses because it keeps traffic in town
- Avoid residential areas; prefer use of BLM land
- Avoid Beale Springs
- Positive social impact of alleviating traffic at Beale Street TI
- Choose shortest route with least environmental impact
- Loss of business due to traffic bypass
- Avoid blasting Box Canyon and Cook Canyon walls
- Immediate need for solution to traffic congestion
- Pedestrian safety
- Liability for accidents and injuries
- Access for handicapped
- Impacts on residences and neighborhoods at Ft. Beale/Clack Canyon, Thunderbird Estates
- Scenery at Clack Canyon
- Natural springs
- Wildlife
- Aquifer/water supply
- Historic Fort Beale
- Impact on hiking, biking, horse riding in CFRA
- Impact on growth in Kingman area



APPENDIX 1

I-40/US 93 West Kingman Traffic Interchange Agency Scoping Meeting - March 31, 2008

ADOT Project No. 040 MO 048 H7323 01L/Federal Aid Project No. NH-040-A(AVJ)

AGENCY SCOPING MEETING NOTES

LOCATION: Mohave County Offices, Saguaro Rooms A and B
700 West Beale Street
Kingman, Arizona 86401

DATE: March 31, 2008, 1:00 p.m. to 3:00 p.m.

SUBJECT: I-40/US 93 West Kingman Traffic Interchange
Feasibility Report & Environmental Studies
ADOT Project No. 040 MO 048 H7323 01L
Federal Aid Project No. NH-040-A(AVJ)

ATTENDEES: Sarah Eichinger, Kimley-Horn
Kara Hinker, ADOT Kingman District
Mike Kondelis, ADOT Kingman District
Laura Nordan, Jacobs
Coralie Cole, Jacobs
Marvin Yarbrough, UES Electric
Gary Jeppson, City of Kingman Development Services
Debbie Casson, City of Kingman Engineering
Michele Beggs, ADOT Communications & Community Partnerships
Shahid Bhuiyan, ADOT Predesign
Mick Hont, ADOT Kingman District
John Reid, BLM Kingman Field Office
Steve Thomas, FHWA
Dough Fischer, Kimley-Horn
Ahmad Omais, Kimley-Horn

The Arizona Department of Transportation (ADOT), in coordination with the Federal Highway Administration (FHWA) and the Bureau of Land Management (BLM), has initiated a study of potential improvements to the Interstate 40 (I-40)/US 93 traffic interchange (TI) in Kingman. The study will identify alternatives for providing a free-flow traffic connection between I-40 and US 93. Alternatives for a new TI location, including possible improvements to the existing Beale Street TI, will be evaluated. The improvements will be evaluated for potential environmental, social, and economic issues. The study area includes US 93 from State Route 68 to I-40, and I-40 from the Stockton Hill Road TI to the McConnico TI. It is anticipated that the findings of this study will be carried forward for further detailed study.

An agency scoping meeting was held to discuss issues, concerns, and opportunities to be addressed during development and evaluation of the project corridor alternatives. Study vicinity maps, information handouts, and meeting exhibits were also available for examination and commentary.

Michele Beggs, ADOT Communications & Community Partnerships, opened the meeting and began introductions. Meeting participants were then welcomed by Mike Kondelis, ADOT Kingman District

I-40/US 93 West Kingman Traffic Interchange Agency Scoping Meeting - March 31, 2008

ADOT Project No. 040 MO 048 H7323 01L/Federal Aid Project No. NH-040-A(AVJ)

Engineer, who provided the meeting's objectives and a general project overview. Ahmad Omais, project manager for Kimley-Horn, gave a presentation discussing the project scope and schedule. Following the presentation, Mr. Omais invited agency participants to offer their input to aid in developing the study corridors.

The following is a summary of issues, concerns, and opportunities communicated during the open discussion portion of the meeting.

City of Kingman

- Requested economic impacts of re-routing traffic from Beale Street to be analyzed.
- Requested details on corridor off-ramps in terms of possible locations and access to existing streets.
- Future development in the area will need to be factored into the study, including a proposed residential development with 33,000 dwelling units anticipated west of the Cerbat Foothills Recreational Area.
- Anticipates impacts to historical and recreational resources for Alternatives E and F.
- The City prefers Corridor Alternative D, as stated in a letter previously sent to ADOT. The City requested that the letter be included in the study scoping summary.
- Will verify and inform team of the zoning designation for City lands along Beale Street and within the Recreation Area.
- Suggested that the study team make a presentation to the Kingman City Council at one of the Council's regularly scheduled meetings.
- Recommended changing the corridor map graphics by labeling the alternatives alphabetically instead of using color labeling; Alternatives A and E are hard to tell apart.
- Requested information on possible improvements to the existing Beale Street TI after construction of a new TI.
- Expressed concern that the business community be included in the public outreach process.
- Stated that there are currently no pending applications for re-zoning within City lands in the study area.

ADOT Kingman District

- Recommended economic impacts from the alternatives be included as part of the environmental analysis.
- Confirmed that the new TI at I-40 will not have local access off-ramps to Kingman, because the purpose of the new TI is to accommodate free-flow traffic between US 93 and I-40.
- Confirmed that access to Kingman will be maintained via the existing TI.
- Requested clarification from the City of Kingman regarding the zoning of land west of Beale Street.
- Requested input from the City of Kingman regarding impacts to businesses; suggested making a presentation to the Chamber of Commerce.

BLM

- Inquired as to whether a new TI is planned to access the area west of the study limits if future residential development takes place as anticipated.

I-40/US 93 West Kingman Traffic Interchange Agency Scoping Meeting - March 31, 2008

ADOT Project No. 040 MO 048 H7323 01L/Federal Aid Project No. NH-040-A(AVJ)

- Emphasized that consideration needs to be given for historic and traditional cultural properties.
- Emphasized that visual impacts will be an important study criteria for the alternative selection.
- Requested wildlife crossings and connectivity be addressed in the study process.
- Recommended that the issues of recreational use and access to trails be considered.
- Impacts to flora and fauna, including Threatened and Endangered species, BLM sensitive species, Arizona Wildlife of Special Concern, and Native Plants, need to be considered.
- Informed the team that other uses in the study area need to be identified, including historic mining claims and grazing rights which may still be active in study area.
- Informed the team that water issues within the study zone include potential impacts to wells, springs, other natural water sources, and drainage features.
- Confirmed that BLM planning documents will be supplied to assist the team in the study process.
- Cultural resources, Traditional Cultural Properties, and historic sites are present in the study area and will need to be considered.

UES Electric

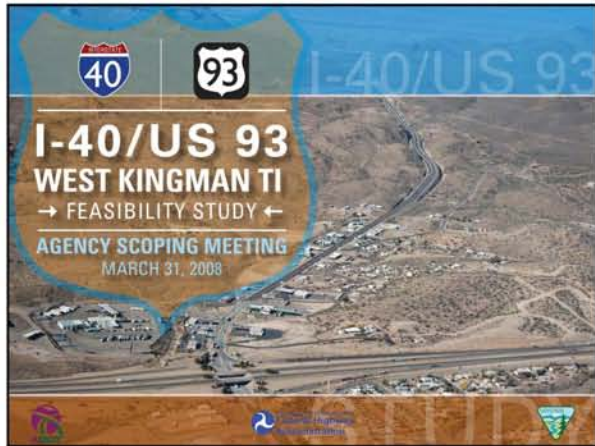
- There is a proposed power line located close to and roughly following Corridor Alternative H which may be in conflict with a new roadway.

FHWA

- Recommended that the lands to the west of the study area be examined for TI access when the corridor is more tightly defined
- Recommended spacing TIs at 1-2 mile increments; the team needs to provide a general reference where TI locations will be anticipated.
- Recommended that coordination on cultural resources, historic properties, and Waters of the US be initiated early in the study process.
- Confirmed that literature searches are adequate for cultural resources investigation at this level of the study process.
- Recommended early consultation with tribes.
- Recommended that corridor alternatives should have multiple alignment options within each corridor area.
- Section 4(f) resources are present in the study area and need to be considered early in the process.
- Commented that drainage issues within the study area are a concern.
- Request that the corridor widths be more clearly defined for possible impacts.

ATTACHMENTS:

1. Sign-In Sheet
2. Presentation Slides







FEASIBILITY STUDY

→ I-40/US 93 WEST KINGMAN TI ←

Project Purpose and Need

- ▶ Third Bottleneck from CANAMEX Corridor Study
- ▶ Congestion Backs up onto I-40
- ▶ Area is Developing Fast
- ▶ Right-of-Way Costs are Escalating
- ▶ Improve Local Access
- ▶ Relieve Congestion – Increase Roadway Capacity and Improve Traffic Flow



FEASIBILITY STUDY

→ I-40/US 93 WEST KINGMAN TI ←

Purpose and Need (Continued)

- ▶ Improve Safety
- ▶ Continued Growth - Plan for Future Developments




FEASIBILITY STUDY

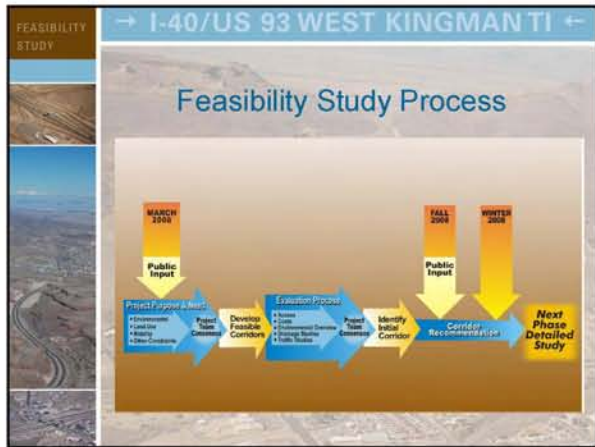
→ I-40/US 93 WEST KINGMAN TI ←

Study Area

- ▶ US 93
 - » From SR 68 to I-40
- ▶ I-40
 - » From Stockton Hill TI to McCannico TI









FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Possible Corridors

- ▶ No Build
- ▶ Existing Alignment
- ▶ New Corridors to the North
- ▶ New Corridors to the South
- ▶ Others – Resulting from Public Scoping and Study Process Input



FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

We Want to Know What You Think!

- ▶ Ask questions and express your opinions
- ▶ Thank you for your time and input



FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Questions & Answers





THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT

5000 W. CAREFREE HIGHWAY
PHOENIX, AZ 85086-5000
(602) 942-3000 • WWW.AZGFD.GOV

GOVERNOR
JANET NAPOLITANO
COMMISSIONERS
CHAIRMAN, WILLIAM H. MCLEAN, GOLD CANYON
BOB HERNBRODE, TUCSON
JENNIFER L. MARTIN, PHOENIX
ROBERT R. WOODHOUSE, ROLL
MICHAEL M. GOLIGHTLY, FLAGSTAFF
DIRECTOR
LARRY D. VOYLES
DEPUTY DIRECTOR
STEVE K. FERRELL



April 15, 2008

Ms. Laura Nordan
Jacobs
875 West Elliot Road, Suite 201
Tempe, AZ 85284

**Re: I-40/US 93 West Kingman Traffic Interchange
Feasibility Report and Environmental Studies
TRACS No. 040 MO 048 H7323 01L
Federal Project No. NH-040-A(AVJ)
Agency Scoping Letter and Meeting Invitation**

Dear Ms. Nordan:

The Arizona Game and Fish Department (Department) has received your letter, dated March 11, 2008, regarding a study to identify possible alternatives for improving traffic flow at the Interstate 40 (I-40)/US 93 traffic interchange in west Kingman, AZ. We have reviewed the information provided to us in your letter, and have generated a list of special status species (attached) occurring within 3 miles of the proposed alternative routes (A-H) from the GIS information that has been recently submitted.

Based on the information available, the Department would like to emphasize that further consideration be given to those routes that stay within the boundaries of the City of Kingman, and the existing footprint of human development. Furthermore, the Department supports and recommends Alternative C as a viable option because of its geographic location and the scale of development. Because some of the special status species listed in the attachment have been documented adjacent to the proposed routes, further coordination with the Department is requested when a specific route is selected for further study and/or development.

The Department appreciates the opportunity to review your project and if you have any questions regarding this letter, please contact me at 623-236-7486.

Sincerely,

Reuben Terán
Project Evaluation Specialist

Ms. Laura Nordan

April 15, 2008

2

cc: Project Evaluation Program Supervisor
Habitat Program Manager, Region 3

Attachment

AGFD #M08-04090036

Special Status Species within 3 Miles of I-40/US 93 Traffic Interchange

NAME	COMMON NAME	ESA	USFS	BLM	STATE
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	SC		S	
<i>Charina trivirgata gracia</i>	Desert Rosy Boa	SC	S	S	
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC			
<i>Gopherus agassizii (Sonoran Population)</i>	Sonoran Desert Tortoise	SC			WSC
<i>Heloderma suspectum cinctum</i>	Banded Gila Monster	SC		S	

AGFD #M08-04090036. Proposed West Kingman Traffic Interchange Routes.

Arizona Game and Fish Department, Heritage Data Management System, April 10, 2008.
Project Evaluation Program.



City of Kingman

310 NORTH FOURTH STREET • KINGMAN • ARIZONA • 86401 • 928 • 753-5561
www.ci.kingman.az.us

February 28, 2008

Mr. Ahmad Omais
Kimley-Horn and Associates, Inc.
7878 N. 16th Street, Suite 300
Phoenix, AZ 85020

RE: I-40/ US 93 W. Kingman TI
February 2008 Potential Corridor Alternatives map & Overview of Alternatives table

Mr. Omais:

The City of Kingman Traffic Safety Committee staff reviewed the Potential Corridor Alternatives map dated February 2008 and Table of "Overview of Alternatives Considered" received on 2/21/08 via e-mail. We appreciate inclusion of many of our comments provide in our January 17, 2008 letter (attached) to you in your matrix table and offer the following additional general comments for your consideration:

1. Congestion is definitely backing up onto the I-40 westbound off-ramp and into travel lanes.
2. Protection and maintenance of access to the Kingman business community is essential in the study. Mohave County has a sizable existing investment with their Mohave County Administrative building adjacent to the study area, and is moving toward construction of a new Jail facility. Easy access from I-40/ US-93 in both directions to these County facilities, plus the downtown City offices, and businesses located downtown and on the US 93 corridor are essential.
3. The project must minimize the environmental impact to the area as well as enhancing the environment with the construction of the new highway. Innovative/ integrative design in highways, walls, cuts, ramps are available and essential in this case. Innovative designs are being incorporated in the Phoenix area and on projects along US-93 South, not just the old concrete abutments methods.
4. It is expected that development pressure will increase at this location. Auto and truck related uses will want to locate and possibly expand nearby. Could integrated design for access signs be built into the study and used by local governments?
5. Will improvements to the existing TI/ underpass be included with the proposed project? Items like beautification of the existing slope paving, additional medians, landscaping, and signal timing optimization (for the changed traffic volumes, patterns) would modernize the existing underpass and bring it up to current standards.

Again, our preferred alternative based upon this latest map is Alternative D. Alternatives E & F have the greatest adverse impact to the City's historic & recreational areas and we believe alternatives A, G, and particularly H will not serve the intended purpose because of under utilization beyond the existing traffic interchange.

Thank you for the opportunity to review this new information. Some City staff and elected officials are expected to attend the upcoming March 31, 2008 Public Meeting at the County offices and I can let you know who will be there either prior to the meeting presentation. Feel free to contact me with any questions at (928)753-8122.

Sincerely,



Debra Casson
Asst. Engineer

- c. Jack Kramer, City of Kingman City Manager
Mike Kondelis, ADOT Kingman District Engineer



City of Kingman

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www.ci.kingman.az.us

January 22, 2008

Mr. Doug Fischer
Kimley-Horn and Associates, Inc.
7878 N. 16th Street, Suite 300
Phoenix, AZ 85020

RE: I-40/ US 93 W. Kingman TI Feasibility Report & Preliminary Alternatives Drawing

Mr. Fischer:

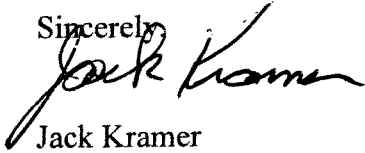
The City of Kingman Traffic Safety Committee reviewed the "I-40/ US 93 Interchange Preliminary Alternatives" drawing (distributed during your Nov. 17, 2007 Agency Scoping/ Progress meeting held at the ADOT District offices) at their December & January meetings. General comments for your consideration are as follows:

1. Maintain convenient access to the Kingman downtown area & new Mohave County Complex.
2. Consider the impacts on the City recreation areas and historical sites, including Camp Beale Springs and the Cerbat Foothills Recreation area.
3. Prefer an at-grade alternative to the Alternative C Viaduct option. Alternative C would not allow truck access to existing businesses and could compound the redevelopment challenges that already exist on portions of this section of US 93.
4. Concerned that the additional lanes planned on I-40 for Alternatives D, E, & F could adversely impact the already congested Stockton Hill Road TI.
5. Prefer avoidance of routes that would require large cuts and fills and adversely impact the environment. Representations were made on the nearby ADOT US 93 Coyote Pass project during the environmental analysis process that new earthwork cuts would be dyed, but it does not appear that happened.
6. Concern about the economic impacts the alternatives will have on downtown & US 93 businesses. The selected route will need to maintain access to businesses on US 93.
7. Believe Alternatives A & B would be under utilized due to their locations beyond the original interchange.
8. Alternative D is the preferred alternate at this time, based only upon this preliminary drawing.
9. Alternatives E & F would most adversely affect the City's historic & recreational areas.

We understand the alternative plan is very preliminary, and look forward to seeing additional information about the alternatives & their impacts to our community.

Thank you for the opportunity to review this information. Feel free to contact myself or Debbie Casson, Engineering Department with any questions at (928)753-8122.

Sincerely,

A handwritten signature in black ink that reads "Jack Kramer". The signature is written in a cursive style with a large, sweeping initial "J".

Jack Kramer
City Public Works Director
Acting City Manager

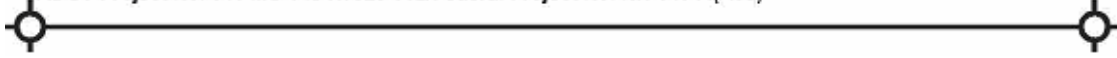
c. Mike Kondelis, ADOT Kingman District Engineer



APPENDIX 2

**I-40/US 93 West Kingman Traffic Interchange
Public Scoping Meeting - March 31, 2008**

ADOT Project No. 040 MO 048 H7323 01L/Federal Project No. NH-040-A(AVJ)



PUBLIC MEETING SUMMARY

LOCATION: Mohave County Offices, Saguaro Rooms A & B
700 West Beale Street
Kingman, AZ 86401

DATE: March 31, 2008, 6 to 8 p.m.

SUBJECT: I-40/US 93 West Kingman Traffic Interchange
Feasibility Report and Environmental Studies
ADOT Project Number 040 MO 048 H7323 01L
Federal Project Number NH-040-A(AVJ)

AGENCY/CONSULTANT ATTENDEES:

Shahid Bhuiyan	ADOT Predesign
Mike Kondelis	ADOT Kingman District
Michele Beggs	ADOT Communications & Community Partnerships
Doug Fischer	Kimley-Horn & Associates
Sarah Echinger	Kimley-Horn & Associates
Ahmad Omais	Kimley-Horn & Associates
Steve Latoski	Mohave County
John Reid	BLM Kingman
Coralie Cole	Jacobs
Laura Nordan	Jacobs
Gary Jeppson	City of Kingman

ATTACHMENTS:

- Sign-In Sheets
- Informational Handout
- Newspaper Advertisement
- Presentation Slides
- Postcard Notification
- Question Cards (21)
- Comment Sheets (11)
- Emails (21)
- Phone comment (1)

The Arizona Department of Transportation (ADOT), in coordination with the Federal Highway Administration (FHWA) and the Bureau of Land Management, has initiated a study of potential improvements to the Interstate 40 (I-40)/US 93 traffic interchange (TI) in Kingman. The study will identify alternatives for providing connection between I-40 and US 93 that will allow traffic to flow through the interchange without stopping. Alternatives for a new TI location, including possible improvements to the existing Beale Street TI, will be evaluated.

I-40/US 93 West Kingman Traffic Interchange Public Scoping Meeting - March 31, 2008

ADOT Project No. 040 MO 048 H7323 01L/Federal Project No. NH-040-A(AVJ)



A public scoping meeting was held to provide information about the project and the study process to the general public and to give them an opportunity to provide input on issues, concerns and opportunities to be addressed during development and evaluation of the project alternatives. A total of 83 people (not including agency and consultant representatives) attended the meeting.

Meeting advertisements were published in the *Kingman Daily Miner* on March 16 and 23, 2008, and in *The Standard* on March 19 and 26, 2008. In addition, meeting notification postcards were mailed to all addresses in the Kingman area on March 14, 2008. Informational handouts, copies of the slide presentation, comment sheets, and question cards were distributed to the meeting attendees. The meeting consisted of an open house from 6:00 to 6:30, with a 15-minute presentation given at 6:30 p.m. After the presentation, a question-and-answer session was held. A summary of the questions and answers is provided below. The meeting closed at approximately 8:00 p.m.

Question/Answer Summary

Q: (summarized from similar questions) What would be the economic impact due to the potential loss of business resulting from these alternatives?

A: The study has not progressed far enough at this time to answer this question. Impacts to businesses will be investigated when more detailed concepts have been developed.

Q: Will the new road have free-flow traffic or be like a service road with direct access to businesses?

A: The intention of this project is to provide free flow traffic through the interchange. The existing interchange will remain in service to provide access to businesses.

Q: Why are there no alternatives west of Alternative "A"?

A: Please give us your suggestions and the study team will consider your comments.

Q: Why is there no alternative through the flat terrain at Golden Valley?

A: Please give us your suggestions and the study team will consider your comments.

Q: What are the emails of the principal project team members?

A: They are located on the handout.

Q: Stay away from Stockton Hill Road. Prefer alternative "H" – has the least impact on Cerbat – the grade on Alternative C drops down very steep- very hilly through there. Trucks would travel at 15 mph uphill on this choice; Alternatives G/H are best chance for trucks to get up to speed for the steep grades, then traffic can spread out .

A: Thank you for your comments.

**I-40/US 93 West Kingman Traffic Interchange
Public Scoping Meeting - March 31, 2008**

ADOT Project No. 040 MO 048 H7323 01L/Federal Project No. NH-040-A(AVJ)



Q: Why not create a loop and solve more problems, i.e. Rattlesnake Wash to Grace Neal parkway and through Cerbat to 93. And from the west exit off 40 through Golden Valley HWY 210 up to 93 around Mineral Park Road?

A: Please give us your suggestions and the study team will consider your comments.

Q: (summarized from similar questions) How will this project be funded?

A: ADOT and FHWA funding is envisioned for this project. Local funds will not be involved.

Q: (Summarized from similar questions) How much traffic comes from Canamex/NAFTA?

A: Our traffic numbers are based on growth patterns and do not distinguish Canamex and NAFTA-generated traffic.

Q: What will be the impact to Beale Springs?

A: The study has not progressed far enough at this time to answer this question. Specific impacts to environmental resources will be investigated when more detailed concepts have been developed.

Q: Will Clark Canyon be damaged?

A: The study has not progressed far enough at this time to answer this question. Specific impacts to environmental resources will be investigated when more detailed concepts have been developed.

Q: Do you expect the bulk of traffic to be from the east or west?

A: The predominant traffic movement is presently from the east.

Q: Avoid any alternative that impacts the Cerbat Foothills Recreation Area.

A: Thank you for your comment.

Q: What is the width of Alternative "C"?

A: At this stage of the study, the corridor is about 0.5 mile wide.

Q: How will the alternatives affect trails?

A: Access will be provided to trails that have existing access. Specific impacts to recreation will be investigated when more detailed concepts have been developed.

Q: What about the SR 68/Hoover Dam/Port of Entry – will these be relocated?

A: No relocation is anticipated.

Q: (summarized from similar questions) Has there been consideration given to a northern route or a bypass?

A: Please give us your suggestions and the study team will consider your comments.

Q: Assume gasoline at \$5.00/gal, diesel at \$6.00/gal., what effect on your study would this have?

I-40/US 93 West Kingman Traffic Interchange Public Scoping Meeting - March 31, 2008

ADOT Project No. 040 MO 048 H7323 01L/Federal Project No. NH-040-A(AVJ)



A: At this time we do not know what the effect would be.

Q: I would recommend a 5 year “no build” then reconsider.

A: “No build” is one of the alternatives.

Q: To minimize impact “C” is the best route.

A: Thank you for your comment.

Q: Why are there no rumble strips to slow traffic as it enters on the west end of Beale?

A: A flashing sign has been installed and helps slow traffic. Rumble strips are noisy and not desirable in a residential area.

Q: Are alternatives C and D envisioned as raised roadways – going over the top of existing businesses and homes?

A: D is not elevated, but C would be a viaduct.

Q: Would this be a business loop?

A: The new roadway would not have direct access to businesses.

Comment Overview

All comments received are attached to this report and will be discussed in detail in the Project Scoping Summary Report. Comments generally focused on the following topics:

- Impact to businesses along existing highway
- Impact to trails and recreation
- Impacts to private property
- Impacts on residential areas along project area
- Concerns for project funding
- Environmental impacts such as wildlife and water quality
- Specific details of the roadway, such as the TI
- Requests for contact information

Design Considerations and Issues

Preliminary investigations identified the following considerations that may exist in the study area:

- cultural/archaeological sites
- recreational areas
- wildlife/biological resources
- water quality
- access to adjacent properties
- utility conflicts
- local and regional planning
- access management
- impacts to private property
- impacts to businesses
- planned development
- noise impacts
- air quality
- visual quality
- physical topography
- floodplains

Environmental Overview

The corridor alternatives will be developed with your input and evaluated for environmental issues, consistent with the National Environmental Policy Act (NEPA). NEPA requires federal agencies to include environmental values in their decision-making processes by considering the environmental, social, and economic impacts of proposed actions and reasonable alternatives to those actions.

An environmental overview document will be prepared concurrent with the engineering study. Currently, the Study Team is gathering information on the study area to identify potential constraints and issues.

Study Schedule

At this time, we are in the earliest part of the planning study - the scoping phase - in which the Study Team seeks input on project constraints and evaluation criteria from the public and government agencies. The input we receive from you tonight will help us identify the critical issues that will be considered with this study.

Over the next few months, the Study Team will develop and evaluate corridor alternatives. The issues, concerns, and opportunities that you share tonight will be considered in that process. A follow-up public meeting will be held after the initial evaluation is complete to share the findings of the study and get further input from you.

For More Information, Contact:

■ Shahid Bhuiyan, Project Manager
ADOT Predesign
205 South 17th Avenue, Mail Drop 605E
Phoenix, Arizona 85007
Phone: 602-712-8722
Email: sbhuiyan@azdot.gov

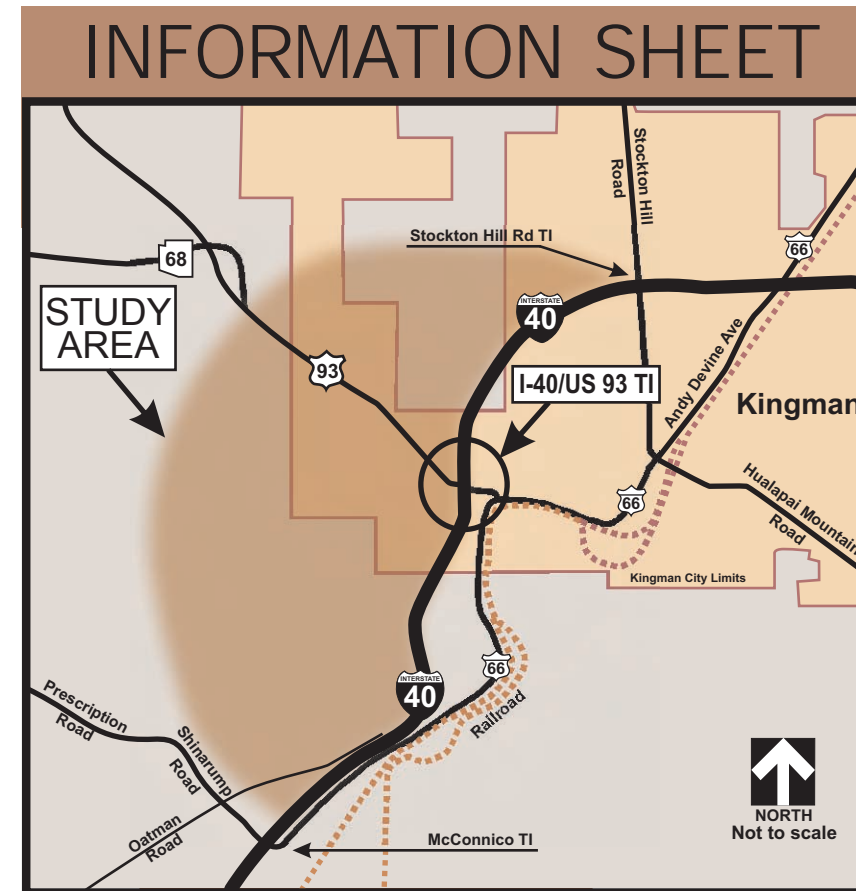
■ Mike Kondelis, District Engineer
ADOT Kingman District
3660 East Andy Devine, Mail Drop K600
Kingman, Arizona 86401
Phone: 928-681-6010
Email: mkondelis@azdot.gov

■ Michele Beggs, Public Information Officer
ADOT Kingman District
3660 East Andy Devine, Mail Drop K600
Kingman, Arizona 86401
Phone: 928-681-6054
Email: mbeggs@azdot.gov



I-40/US 93 West Kingman Traffic Interchange

Feasibility Report and Environmental Studies
Public Scoping Meeting - March 31, 2008



Study Vicinity Map

ADOT Project No. 040 MO 048 H7323 01L
Federal Project No. NH-040-A(AVJ)

Study Website:

www.azdot.gov/highways/districts/kingman/I40_US93_WestKingmanTI.asp

Study Background

The Arizona Department of Transportation (ADOT), in coordination with the Federal Highway Administration (FHWA) and the Bureau of Land Management, has initiated a study of potential improvements to the Interstate 40 (I-40)/US 93 traffic interchange (TI) in Kingman. The study will identify alternatives for providing a free-flow traffic connection between I-40 and US 93. Alternatives for a new TI location, including possible improvements to the existing Beale Street TI, will be evaluated. The improvements will be evaluated for potential environmental, social, and economic issues. The study area includes US 93 from SR 68 to I-40, and I-40 from the Stockton Hill Road TI to the McConnico TI.

The I-40/US 93 TI in Kingman is designated as part of the CANAMEX corridor established by the North American Free Trade Agreement. US 93 and I-40 are major highways that carry both regional and local traffic through the Kingman community with varied destinations ranging from Nevada to many recreational and tourist sites across northern Arizona. These routes also provide access to local retail, commercial, and residential development. Traffic volumes are expected to increase as the community and region continue to grow.

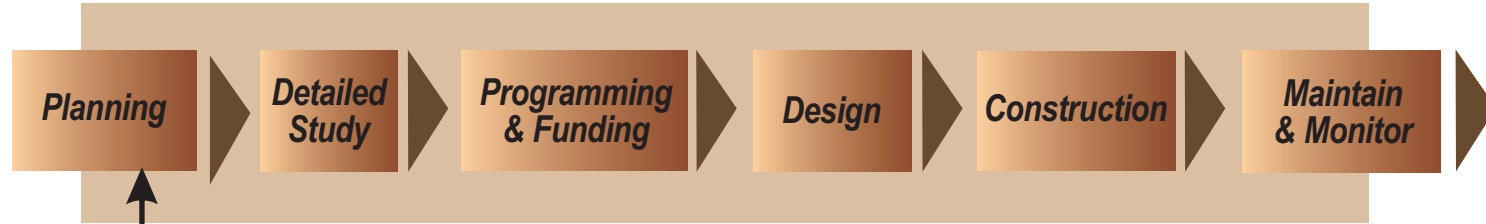
Meeting Purpose & Details

The primary objectives of tonight's meeting are to learn about issues and concerns you feel should be addressed in this study, obtain your input, and to listen to your suggestions. The Study Team will work proactively with the public as part of the study process.

About Tonight's Meeting

- Please review the exhibits around the room. Study Team members are available to answer questions and discuss details.
- A question and answer session will be held immediately following the presentation. To have your question answered in front of the group, please write your question on the yellow card provided and hand it to any Study Team member.
- Your input is important to us. Be sure to complete a comment sheet. You may leave it with us tonight or submit it to the Study Team by **April 30, 2008**, as directed on the form.

The Project Development Process



We are here

PLANNING

Long-range planning to determine future transportation needs and potential improvements is conducted well in advance of design and construction. Area population growth, anticipated land use, jurisdictional responsibilities, and other factors are used to determine the need, feasibility, and general location of future improvements.

DETAILED STUDY

The study phase establishes the location and basic characteristics of a roadway. Accompanying this are detailed environmental studies, identification and evaluation of alternatives, general cost estimates, coordination with public and private partners, and the determination of feasibility to move to the design phase. Pending the findings of the study, FHWA will decide whether or not to advance an alternative to design.

PROGRAMMING & FUNDING

The State Transportation Board develops the Five-Year Transportation Facilities Construction Program to fund the design and construction of transportation projects throughout Arizona. Projects are prioritized for the program according to the guidelines set under the Arizona Priority Programming Law.

DESIGN

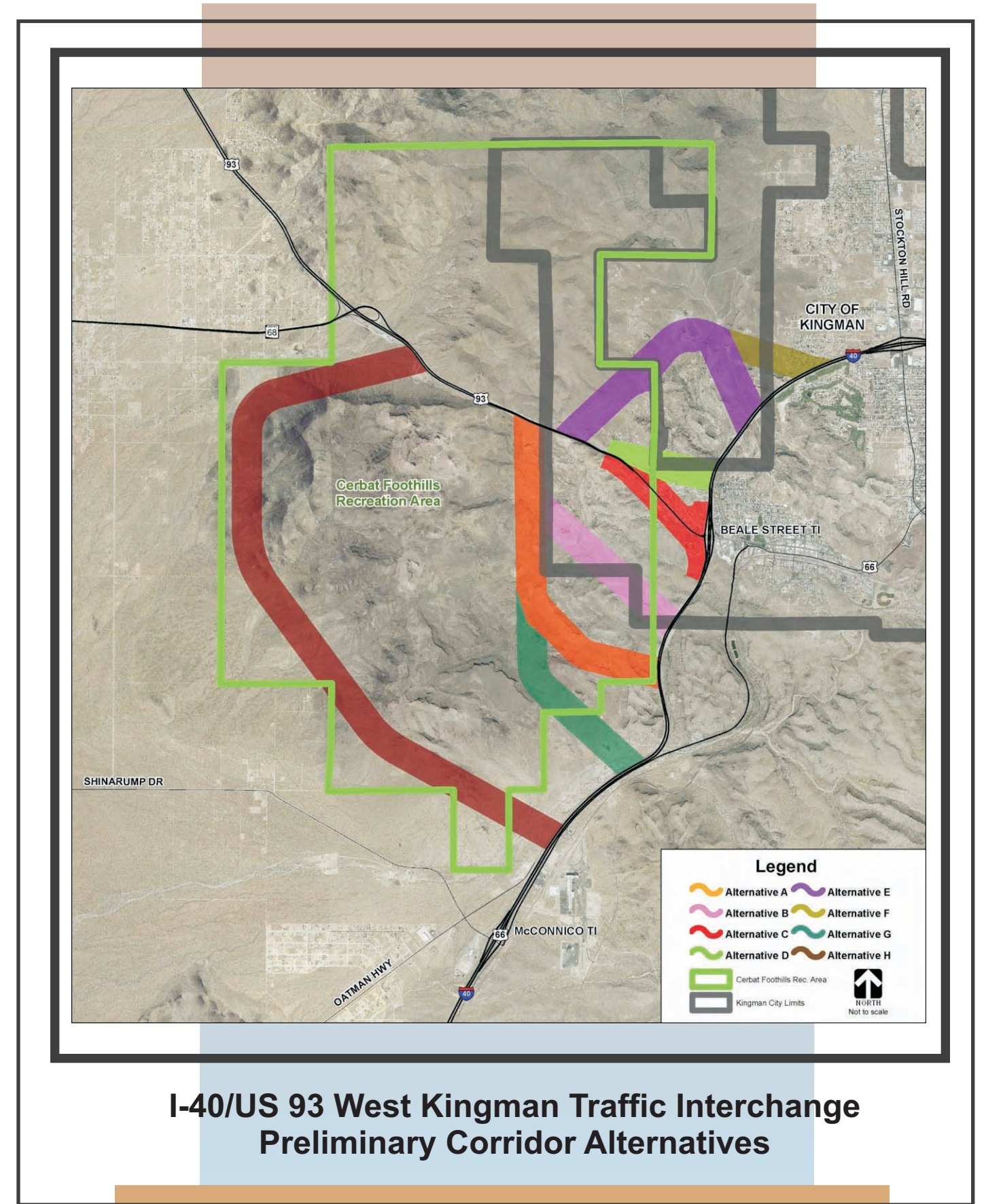
The design of a roadway involves several stages of detailed engineering and technical review and interim levels of approval. The final design of the roadway is represented in plans and specifications that construction contractors use to prepare construction bids. During final design, ADOT acquires new right-of-way required for the roadway improvements.

CONSTRUCTION

Road construction for projects is based on detailed plans and specifications provided to the contractor following the approved design. As construction occurs, ADOT continually looks for ways to improve the construction process for maximum efficiency and minimal community impact.

MAINTAIN & MONITOR

ADOT will maintain the facility and will monitor it to ensure it continues to meet the needs of the traveling public.



**I-40/US 93 West Kingman Traffic Interchange
Preliminary Corridor Alternatives**

ARIZONA DEPARTMENT OF TRANSPORTATION PUBLIC MEETING

Your Input is Needed on I-40/US 93 West Kingman Traffic Interchange Feasibility Report and Environmental Studies

Monday March 31, 2008
6:00 p.m. - 8:00 p.m. (MST)

Presentation at 6:30 P.M.

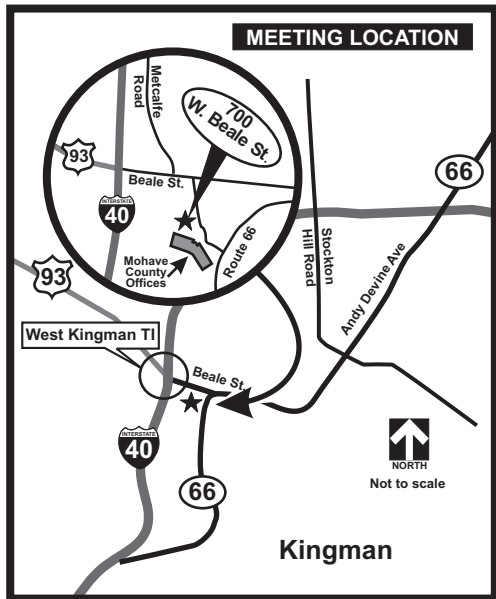
Mohave County Offices, Saguaro Rooms A & B
700 West Beale Street, Kingman AZ 86401

The general public is invited to attend an informational meeting about potential improvements to the Interstate 40 (I-40)/US 93 traffic interchange (TI) in west Kingman. The Arizona Department of Transportation (ADOT), in coordination with the Federal Highway Administration and the Bureau of Land Management, has initiated a study to identify alternatives for providing a free-flow traffic connection between I-40 and US 93. Alternatives for a new TI location, including possible improvements to the existing Beale Street TI, will be evaluated. The improvements will be evaluated for potential environmental, social, and economic issues. It is anticipated that the findings of this study will be carried forward for more detailed study.

The purpose of the meeting is to gather public input on issues, concerns, and opportunities to be considered during the study. The comments received from this meeting will be used to help identify critical

issues to be addressed in the development and evaluation of the alternatives. Study team members will be present to answer your questions and address your concerns. Map displays will be available for viewing.

For additional technical information, you may contact Ahmad Omais, phone: (602) 944-5500, email: ahmad.omas@kimley-horn.com. Written comments may be submitted by April 30, 2008, to ADOT care of Laura Nordan, Jacobs Engineering, 875 West Elliot Road, Suite 201, Tempe, Arizona 85284; fax (480)763-8601; email laura.nordan@jacobs.com.



Americans with Disabilities Act: Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting Laura Nordan at (480) 763-8715. Requests should be made as early as possible to allow time to arrange the accommodation. This document is available in alternate formats by contacting Ms. Nordan.

MIKE KONDELIS
Kingman District Engineer
ADOT

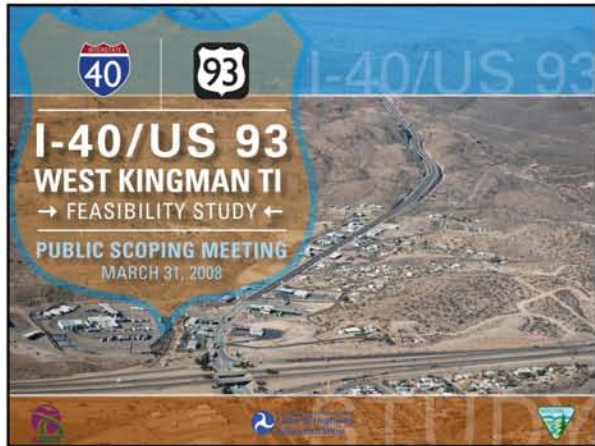
SHAHID BHUIYAN
Project Manager
ADOT

SAM ELTERS
State Engineer
ADOT

TRACS No. 040 MO 048 H7323 01L • Federal Project No. NH-040-A(AVJ)

For additional meeting information, contact:
Laura Nordan, phone: (480) 763-8715, fax: (480) 763-8601, email: laura.nordan@jacobs.com

THIS NEWSPAPER NOTICE IS AVAILABLE AT WWW.ADOTENVIRONMENTAL.COM



FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Meeting Agenda

- ▶ Introductions
- ▶ Purpose of Public Meeting
- ▶ Project Purpose and Need
- ▶ Study Area
- ▶ Project Development Process
- ▶ Overview of Feasibility Study Process
- ▶ Constraints/Possible Corridors
- ▶ Questions & Answers

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Purpose of Public Meeting

- ▶ To inform the public on project purpose and need
- ▶ To inform the public on project scope and schedule
- ▶ To solicit public issues, concerns and suggestions

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Project Purpose and Need

- ▶ Third Bottleneck from CANAMEX Corridor Study
- ▶ Congestion Backs up onto I-40
- ▶ Area is Developing Fast
- ▶ Right-of-Way Costs are Escalating
- ▶ Improve Local Access
- ▶ Relieve Congestion – Increase Roadway Capacity and Improve Traffic Flow

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

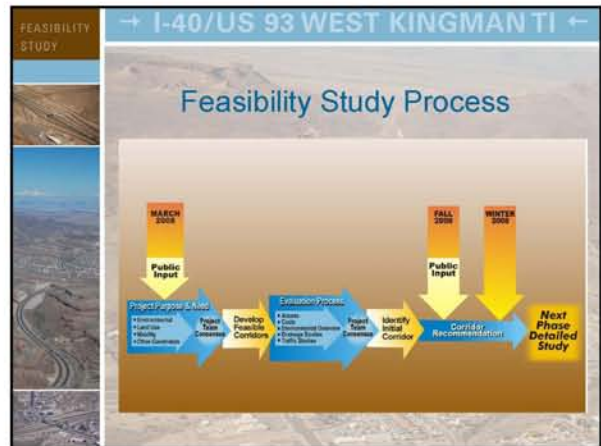
Purpose and Need (Continued)

- ▶ Improve Safety
- ▶ Continued Growth - Plan for Future Developments

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Study Area

- ▶ US 93
 - » From SR 68 to I-40
- ▶ I-40
 - » From Stockton Hill TI to McConnico TI



- FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←
- ### Constraints
- ▶ Cerbat Foothills Recreation Area
 - ▶ Physical Topography
 - ▶ Floodplains
 - ▶ Archaeological Sites
 - ▶ Environmental Considerations

- FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←
- ### Possible Corridors
- ▶ No Build
 - ▶ Existing Alignment
 - ▶ New Corridors to the North
 - ▶ New Corridors to the South
 - ▶ Others – Resulting from Public Scoping and Study Process Input

- FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←
- ### We Want to Know What You Think!
- ▶ Ask questions and express your opinions
 - ▶ Please fill out a comment form
 - » Leave it tonight
 - » Fax it
 - » E-mail or mail it
 - ▶ Comments are welcome anytime, but they become part of the Public Meeting record if submitted by April 30, 2008
 - ▶ Thank you for your time and input

FEASIBILITY STUDY → I-40/US 93 WEST KINGMAN TI ←

Questions & Answers

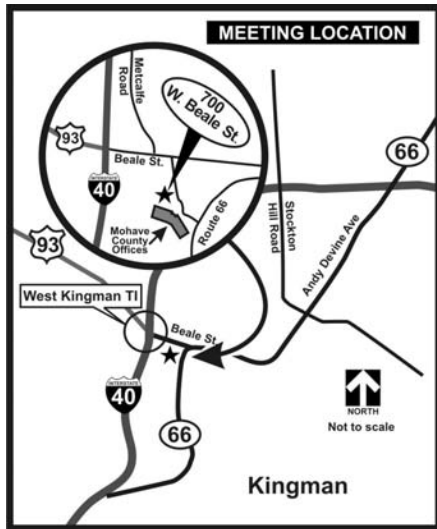
ARIZONA DEPARTMENT OF TRANSPORTATION
PUBLIC MEETING

I-40/US 93 West Kingman Traffic Interchange

Monday, March 31, 2008
Mohave County Offices, Saguaro Rooms A & B
700 West Beale Street, Kingman, AZ 86401
6 pm – 8 pm (MST)
Presentation Time – 6:30 pm

The general public is invited to attend an informational meeting about a long-range planning study of potential improvements to the I-40/US 93 traffic interchange (TI) in west Kingman. The study will identify alternatives for providing a free-flow traffic connection between I-40 and US 93. Alternatives for a new TI location, including possible improvements to the existing Beale Street TI, will be evaluated. The purpose of the meeting is to gather public input on issues, concerns, and opportunities to be considered during the study.

For additional technical information, you may contact Ahmad Omais, phone: (602) 944-5500, email: ahmad.omais@kimley-horn.com. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting Laura Nordan at (480) 763-8715; fax (480) 763-8601. Requests should be made as early as possible to allow time to arrange the accommodation.



MIKE KONDELIS
Kingman District Engineer

SHAHID BHUIYAN
Predesign Project Manager

SAM ELTERS
State Engineer

You're Invited!

**ADOT Public Meeting
March 31, 2008, 6:00 – 8:00 pm
Mohave County Offices
Saguaro Rooms A & B**





I-40/US 93, WEST KINGMAN TI AGENCY SCOPING / PROGRESS MEETING NOTES

TO:

X <i>Shahid Bhuiyan</i>	ADOT, Roadway Predesign, MD 605E
<i>Paul O'Brien</i>	ADOT, Roadway Predesign, MD 605E
X <i>Victor Yang</i>	ADOT, Roadway Predesign, MD 605E
<i>Marta Raiford</i>	ADOT, Predesign (Project File), MD 605E
<i>Pe-Shen Yang</i>	ADOT, Bridge Design Service, MD 613E
<i>Ken Akoh-Arrey</i>	ADOT, Drainage Design, MD 634E
X <i>Syed Alam</i>	ADOT, Drainage Design, MD 634E
<i>Thor Anderson</i>	ADOT, Environmental Planning Group, MD EM02
X <i>Jessica Walsh</i>	ADOT, Environmental Planning Group, MD F500
<i>Bruce Eilerts</i>	ADOT, Natural Resources, MD EM04
X <i>Larry Doescher</i>	ADOT, Statewide Project Management, MD 614E
X <i>Mike Kondelis</i>	ADOT, Kingman District, MD K600
X <i>Mick Hont</i>	ADOT, Kingman District Development, MD K600
X <i>Kara Hinker</i>	ADOT, Kingman District Development, MD K600
<i>Michael Warren</i>	ADOT, Kingman District Maintenance, MD K600
X <i>Ransom Spurlock</i>	ADOT, Kingman District Maintenance, MD K600
<i>Tommy Steinberger</i>	ADOT, Kingman District Maintenance, MD K600
X <i>Chris Olson</i>	ADOT, Kingman District Construction, MD K600
X <i>Julie Alpert</i>	ADOT, Kingman District Environmental, MD K600
<i>Robert LaJeunesse</i>	ADOT, Regional Traffic, MD P820
X <i>Ken Paetz</i>	ADOT, Regional Traffic, MD K600
<i>Lev Derzhavets</i>	ADOT, Roadway Design Support, MD 615E
X <i>Baljeet Chawla</i>	ADOT, Roadway Design Support, MD 615E
<i>Chris Cooper</i>	ADOT, Roadway Design, MD 615E
<i>John Eckhardt</i>	ADOT, Right of Way, MD 612E
X <i>Roxanne Turner</i>	ADOT, Right of Way, MD K600
<i>Arif Kazmi</i>	ADOT, Traffic Design, MD 065R
X <i>Stephanie Wilhardt-Smith</i>	ADOT, Traffic Design, MD 065R
<i>Bruce Vana</i>	ADOT, Utility & Railroad, MD 618E
<i>James Wilson</i>	ADOT, Materials Geotechnical Design, MD 068R
<i>J.J. Liu</i>	ADOT, Materials Geotechnical Operations, MD 068R
<i>Paul Burch</i>	ADOT, Materials Pavement Design, MD 068R
<i>Ali Zareh</i>	ADOT, Materials Pavement Design, MD 068R
<i>Debbie Mayfield</i>	ADOT, Priority Programming, MD 320B
<i>Hari Khanna</i>	ADOT, Program & Project Management, MD 620E
<i>LeRoy Brady</i>	ADOT, Roadside Development, MD EM03
<i>Estomih Kombe</i>	ADOT, Transportation Research, MD 075R
<i>Chong-Tai Chyan</i>	ADOT, Photogrammetry & Mapping, MD 203P
<i>Reed Henry</i>	ADOT, HES, MD 065R
X <i>Bill Pederson</i>	ADOT, Communication & Community Partnerships, MD 118A
X <i>Michele Beggs</i>	ADOT, Communication & Community Partnerships, MD K600
X <i>Aryan Lirange</i>	FHWA, 400 E. Van Buren St., Suite 400, Phoenix, AZ, 85004, MD 005R
X <i>Steve Thomas</i>	FHWA, 400 E. Van Buren St., Suite 400, Phoenix, AZ, 85004, MD 005R
X <i>John Reid</i>	BLM, 2755 Mission Blvd, Kingman, AZ, 86401
X <i>Debbie Casson</i>	City of Kingman, 310 N. 4 th St., Kingman, AZ, 86401
<i>Greg Henry</i>	City of Kingman, 310 N. 4 th St., Kingman, AZ, 86401
<i>Jack Kramer</i>	City of Kingman, 310 N. 4 th St., Kingman, AZ, 86401
X <i>Tom Duranceau</i>	City of Kingman, 310 N. 4 th St., Kingman, AZ, 86401
X <i>Gary Jeppson</i>	City of Kingman, 310 N. 4 th St., Kingman, AZ, 86401
X <i>Blake Chapman</i>	City of Kingman, 3700 E. Andy Devine, Kingman, AZ, 86401

<i>Michael Hendrix</i>	Mohave County Public Works, 3675 E. Andy Devine Ave., Kingman, AZ, 86401
<i>Steven Latoski</i>	Mohave County Public Works, 3675 E. Andy Devine Ave., Kingman, AZ, 86401
X <i>Mike Warner</i>	Transcon Environmental, 3740 E. Southern Avenue, Suite 218, Mesa, AZ 85206
X <i>Michael Gibelyou</i>	Unisource Energy Services, PO Box 3099, Kingman, AZ 86402-3099
<i>Laura Nordan</i>	Jacobs Engineering (for ADOT CCP), 875 W. Elliot Road, Suite 201, Tempe, AZ 85284
X <i>Coralie Cole</i>	Jacobs Engineering (for ADOT CCP) 875 W. Elliot Road, Suite 201, Tempe, AZ 85284
X <i>Ahmad Omais</i>	Kimley-Horn and Associates, 7878 N. 16 th Street, Suite 300, Phoenix, AZ 85020
X <i>Doug Fischer</i>	Kimley-Horn and Associates, 7878 N. 16 th Street, Suite 300, Phoenix, AZ 85020
X <i>Don Tappendorf</i>	Kimley-Horn and Associates, 7878 N. 16 th Street, Suite 300, Phoenix, AZ 85020
X <i>Crystal Gerrity</i>	Kimley-Horn and Associates, 7878 N. 16 th Street, Suite 300, Phoenix, AZ 85020

X= Attended Meeting

DISTRIBUTION DATE: December 7, 2007

DATE OF MEETING: November 27, 2007

SUBJECT: **Agency Scoping / Progress Meeting Notes**
I-40/US 93, West Kingman TI
ADOT Project No. 040 MO 48 H7323 01L
Federal Project No. NH-040-A(AVJ)

TIME/PLACE: **November 27, 2007 at 1:30 P.M.**
ADOT Kingman District Training Center
3660 E. Andy Devine
Kingman, AZ 86401

FROM: Ahmad Omais, Project Manager, Kimley-Horn and Associates
7878 N. 16th Street, Suite 300
Phoenix, AZ 85020
602-906-1328 ph
602-906-1174 fax
Ahmad.Omais@kimley-horn.com

The meeting notes for the aforementioned project are attached for your information and use. If you have any questions, please contact me at (602) 906-1328.

Thanks to all who participated in the meeting.

AGENCY SCOPING / PROGRESS MEETING NOTES – NOVEMBER 27, 2007

I-40/US 93, WEST KINGMAN TI
FEASIBILITY REPORT AND ENVIRONMENTAL STUDIES
ADOT PROJECT NUMBER: 040 MO 48 H7323 01L
FEDERAL PROJECT NUMBER: NH-040-A(AVJ)

INTRODUCTIONS AND OVERVIEW

The agency scoping/progress meeting for the I-40/US 93, West Kingman TI Feasibility Report and Environmental Studies was held on Tuesday, November 27, 2007 at 1:30 PM. The meeting was held at the ADOT Kingman District Training Center in Kingman, AZ.

The meeting was started with a greeting and introductions of the meeting participants. Ahmad Omais (Project Manager, KHA) opened discussions with a description of the project background, purpose and need. Preliminary alternatives were presented encompassing the general areas of potential alignments for the new interchange connection and then discussions regarding the project scope and agency input with the attending agencies ensued.

DECISION ITEMS

- Access to the existing Beale Street Interchange will be maintained for all alternatives.
- Any new merge lanes are to be added on the right side of existing lanes. The FHWA does not want lanes to merge into existing I-40 from the left side (in the median for example).

ACTION ITEMS

- KHA to coordinate with BLM regarding the Cerbat Recreational Area and incorporate the limits of the area into the alternative evaluation constraints map.
- BLM to send KHA visual classification listing for their lands.
- KHA to obtain general area plan from Debbie Casson with the City of Kingman.
- Jacobs Engineering in cooperation with ADOT CCP will develop a Public Involvement Plan.
- Transcon Environmental will provide the team with copies of the EA and technical documents for the proposed transmission line project upon receiving agency input on the reviews of those documents.
- KHA to contact Kevin Davidson with Mohave County to obtain information regarding the Highway 93 Area Plan and potential or planned development for the project area.
- KHA to add mapping to show the Stockton Hill and McConnico TI's, as well as the location of the Port-of -Entry, for visual reference.
- KHA to develop an alignment alternative that is nearer to the McConnico TI.

MEETING DISCUSSION

Unisource Energy Services is proposing a new 230 kV transmission line in the Kingman and Golden Valley areas. Transcon Environmental is preparing the environmental assessment document associated with the project. Transcon Environmental indicated that site alternatives for the proposed transmission line running through BLM recreational Class II visual areas were previously turned down by the BLM in their process of identifying potential transmission line alignments and that the recreational areas appear

to be in the same vicinity as Alternatives A & B of the I-40/US 93 alignments that were presented in the meeting. BLM indicated that this area is part of the Cerbat Foothills Recreational Area. This information will be considered as alternatives are evaluated for potential impact areas since it is possible that alignments will not be allowed through high valued recreation and visual areas.

It was also indicated that US 93 is a designated scenic/visual corridor for the BLM and that the BLM is managing the area for linear improvements. John Reid with the BLM stated that he will provide KHA with a visual classification listing for the project areas.

The constraints map will include the BLM recreational areas, land status/ownership and the City of Kingman limits.

Concern was brought up that construction of a new interchange would eliminate access to the existing interchange and to the existing downtown area. Access to the existing Beale Street Interchange will be maintained as part of this project. Potential alternatives that might impact the existing interchange would need to include improvements that allow access to the existing ramps.

Transcon Environmental indicated that US 93 is historic for several reasons and there are numerous cultural resources along the route. It was also indicated that there are burrowing owls in the vicinity of the project.

There are existing overhead utility lines running along US 93 that would be difficult to relocate if impacted by the new roadway alignments.

There are BLM accesses to trail heads along US 93. The accesses are right-in and right-out only. These locations should be noted on the constraints map.

Due to the natural topography of the area, there is potential for large cut areas. Terrain and drainage impacts will be included in the alternative evaluation matrix.

The design year for traffic generation is 2040.

It was indicated that there is a lot of planned development for the Golden Valley area north of the McConnico TI exit. KHA will contact Mohave County regarding these developments.

The BLM indicated that access is important to US 93 for several commercial users along this route. They would likely want access to both bounds for any proposed improvements that might impact them.

The BLM is developing horse/burro corrals in the northeast corner of the intersection of I-40 and the McConnico TI along the flat lands in this area. Any alignments developed in this area should consider this development.

Transcon Environmental indicated that Mineral Park Mine is undergoing considerable expansion, and the number of employees could triple by next summer or fall to around 1000 employees.

The county will be adding a new jail near the county complex that could generate more traffic to downtown just off of Beale Street to the east of I-40.

A question was brought up whether or not the jurisdiction of the existing US 93 corridor west of I-40 from the future tie-in point would be changed from the State to the City once the new interchange was completed. The Kingman District indicated that this would be considered and a determination would be made during the final development stages of the project.

Jacobs Engineering will be preparing the public involvement plan (PIP) for the project in cooperation with ADOT CCP. Coralie Cole with Jacobs indicated that the proposed schedule of January 2008 for the public scoping meeting will not be realistic. Due to the holidays it was suggested that the meeting be targeted for the middle of February 2008. Jacobs and ADOT CCP will be coordinating with the team to get input for the PIP. There would be a public meeting scheduled for another project in Lake Havasu City in early February 2008. It was suggested that the public scoping meeting for this project be scheduled close to that meeting, if possible.

An alternative selection meeting will be conducted after the public scoping meeting.

If these notes do not reflect your understanding of the items discussed, or do not contain important issues covered at the meeting, please reply within five days of receipt.



I-40/US 93 WEST KINGMAN TI PROJECT KICK-OFF MEETING NOTES

TO:

X Paul O'Brien	ADOT, Roadway Predesign, MD 605E
X Shahid Bhuiyan	ADOT, Roadway Predesign, MD 605E
X Victor Yang	ADOT, Roadway Predesign, MD 605E
X Pe-Shen Yang	ADOT, Bridge Design Service, MD 613E
Ken Akoh-Arrey	ADOT, Drainage Design, MD 634E
X Syed Alam	ADOT, Drainage Design, MD 634E
Thor Anderson	ADOT, Environmental Planning Group, MD EM02
X Jessica Walsh	ADOT, Environmental Planning Group, MD F500
Bruce Eilerts	ADOT, Natural Resources, MD EM04
Vincent Li	ADOT, Statewide Project Management, MD 614E
X Mike Kondelis	ADOT, Kingman District, MD K600
Mick Hont	ADOT, Kingman District Development, MD K600
Kara Hinker	ADOT, Kingman District Development, MD K600
X Michael Warren	ADOT, Kingman District Maintenance, MD K600
X Ransom Spurlock	ADOT, Kingman District Maintenance, MD K600
X Tommy Steinberger	ADOT, Kingman District Maintenance, MD K600
X Chris Olson	ADOT, Kingman District Construction, MD K600
Robert LaJeunesse	ADOT, Regional Traffic, MD P820
X Ken Paetz	ADOT, Regional Traffic, MD K600
X Lev Derzhavets	ADOT, Roadway Design Support, MD 615E
Chris Cooper	ADOT, Roadway Design, MD 615E
John Eckhardt	ADOT, Right of Way, MD 612E
X Roxanne Turner	ADOT, Right of Way, MD K600
Marta Raiford	ADOT, Predesign (Project File), MD 605E
Arif Kazmi	ADOT, Traffic Design, MD 065R
X Mohamed Youssef	ADOT, Traffic Design, MD 065R
Bruce Vana	ADOT, Utility & Railroad, MD 618E
Peggy Havins	ADOT, Utility & Railroad, MD 618E
James Wilson	ADOT, Materials Geotechnical Design, MD 068R
J.J. Liu	ADOT, Materials Geotechnical Operations, MD 068R
Paul Burch	ADOT, Materials Pavement Design, MD 068R
X Ali Zareh	ADOT, Materials Pavement Design, MD 068R
X Yongsub Lee	ADOT, Materials Pavement Design, MD 068R
Debbie Mayfield	ADOT, Priority Programming, MD 320B
Hari Khanna	ADOT, Program & Project Management, MD 620E
LeRoy Brady	ADOT, Roadside Development, MD EM03
Estomih Kombe	ADOT, Transportation Research, MD 075R
Chong-Tai Chyan	ADOT, Photogrammetry & Mapping, MD 203P
Reed Henry	ADOT, HES, MD 065R
X Julie Alpert	ADOT, Kingman District Environmental, MD K600
X Bill Pederson	ADOT, Communication & Community Partnerships, MD 118A
X Aryan Lirange	FHWA, 1 Arizona Center, 400 E. Van Buren St., Ste 410, Phoenix, AZ, 85004
X Steve Thomas	FHWA, 1 Arizona Center, 400 E. Van Buren St., Ste 410, Phoenix, AZ, 85004
X John Reid	BLM, 2755 Mission Blvd, Kingman, AZ, 86401
X Debbie Casson	City of Kingman, 310 N. 4 th St., Kingman, AZ, 86401
X Steven Latoski	Mohave County Public Works, 3675 E. Andy Devine Ave., Kingman, AZ, 86401
X Doug Fischer	Kimley-Horn and Associates, 7878 N. 16 th Street, Suite 300, Phoenix, AZ 85020
X Crystal Gerrity	Kimley-Horn and Associates, 7878 N. 16 th Street, Suite 300, Phoenix, AZ 85020

X= Attended Meeting

DISTRIBUTION DATE: July 25, 2007

DATE OF MEETING: July 17, 2007

SUBJECT: **Project Kick-off Meeting Notes**
I-40/US 93, West Kingman TI
Project No. 040 MO 48 H7323 01L
Federal No. NH-040-A(AVJ)

TIME/PLACE: **July 17, 2007 at 10:00 A.M.**
ADOT Kingman District Conference Room
3660 E. Andy Devine
Kingman, AZ 86401

FROM: Ahmad Omais, Project Manager, Kimley-Horn and Associates
7878 N. 16th Street, Suite 300
Phoenix, AZ 85020
602-906-1328 ph
602-906-1174 fax
Ahmad.Omais@kimley-horn.com

The project kick-off meeting notes for the aforementioned project are attached for your information and use. If you have any questions, please contact me at (602) 906-1328. Thanks to all who participated.

MEETING:

The Kick-off meeting for this project was held on July 17, 2007 at 10:00 am at the ADOT Kingman District Conference Room. ADOT has retained Kimley-Horn and Associates (KHA) to perform the Engineering and Environmental Studies.

The project is located on I-40 in Mohave County within the Kingman District. The project will identify location alternatives for a new system traffic interchange for the connection of I-40 and US 93. The meeting began with introductions of the project team and then a discussion of the project ensued. The following is a summarization of the items discussed.

The District stated that this is their number one project for scoping needs.

US 93 is part of the Cannamex Corridor. A system interchange between I-40 and US 93 is the third of three "bottleneck" locations along US 93 identified from the previous Cannamex Corridor study. The first location was Hoover Dam and that area is being addressed with the current bypass construction. The second location was Wickenburg and that area is being addressed with an interim bypass that is planned to start construction sometime this year.

The Kingman area is rapidly growing resulting in increased traffic volumes. There are occasions where traffic is backed up all the way onto westbound I-40 from the off ramp on weekends

experiencing heavy traffic. The District stated that they have to use their own staff to conduct traffic control along the interstate and interchange for these times of heavy traffic flow.

As a result of the increased growth, right-of-way is becoming more difficult and more expensive to obtain. It is the District's desire to start the process of acquiring right-of-way as quickly as possible. The District's goal of this study is to identify a corridor and right-of-way for a new system interchange.

The intent of this study is to be consistent with the NEPA process (linking planning & NEPA) from the start and to conduct full public and stakeholder involvement.

The FHWA indicated that the project should proceed straight into the NEPA process after the Feasibility Study is completed. A full range of options/alternatives will need to be evaluated.

The mapping is being performed by ADOT and is expected to be completed by the end of October or beginning of November 2007. The aerial orthophotography provided by ADOT will be used for the public exhibits. It is anticipated that the first public meeting will be held sometime in November 2007 after completing the mapping and exhibits for public presentation. The next public meeting will be in early spring of 2008.

Initial project scoping letters will be sent out for this project to the appropriate agencies and surrounding entities located within the project study area to get their feedback and input into the project. Once the input is received from the initial scoping letters, determination will be made on how to proceed with additional public scoping letters and meetings.

The Agency and Public Scoping meetings are anticipated to be held on the same day.

The BLM owns a significant amount of lands for the project study area and will be officially invited as a cooperating agency for this project.

The BLM stated that alternatives should be evaluated on both sides of the existing Beale Street interchange and not limited to one side or the other. The BLM indicated that there are areas west of the existing interchange that may be developed and will need to be taken into consideration for the alternative evaluation. It is anticipated that the BLM will require a planning amendment after the identified alternative/project is initiated. This is an internal process for the BLM that will require amending their Land Resource Management Plan since the plan does not address Transportation Planning items. John Reid will provide Kimley-Horn an electronic copy of their Resource Management Plan.

The District indicated that the ultimate goal for this corridor is to be a full access control corridor from Kingman to Hoover Dam.

There is a lot of development happening along US 93 near the junction with SR 68. There is also a Mohave County Complex being developed near the junction of SR 66. There is a lot of growth around the McConnico TI (exit 44) including new homes and the potential for a "small city" in the future for this area.

The Fort Beale Wagon Trail will need to be avoided for alternatives considered. The trail is located north of I-40 and east of US 93.

A traffic study will be completed to identify requirements of the new system interchange and corridor. A high level study will be completed on the magnitude needed to identify the number of lanes, connection requirements, spacing and weaving requirements and other elements for locating the new system interchange.

Surrounding development discussed at the meeting will be incorporated into the traffic model for traffic projections. The project team stated that the projections will be for 2040. The model used from the Rattlesnake TI study will be used as a base for the traffic study. Growth rates will be validated for use in the traffic model.

Evaluation criteria will be used to identify and rank the preferred corridor and interchange locations. Some of the criteria discussed include but are not limited to:

- Environmental Impacts
- Cost
- Traffic Impacts
- Construction and Constructability
- Public Impacts

Alternatives will be evaluated for locating a new system TI both east and west of the existing interchange. When considering alternatives west of the existing interchange, it was suggested that the evaluation consider an alternative that extends farther west and closer toward the McConnico TI (exit 44) where the topography is relatively flatter than the surrounding areas closer to the existing Beale St. Interchange (exit 48).

The FHWA presented a viaduct alternative that should be considered in the alternatives. A general idea of this alternative includes putting all free flow traffic on a viaduct that will essentially be placed above or “stacked” on top of the existing US 93 traffic (north and south directional traffic) that will be using the existing roadway and traffic interchange for local access needs. The viaduct would allow free flow traffic to bypass the business access and local traffic in the area immediately north of the existing interchange.

Alternatives may need to include options that include use of collector distributor (CD) roads if the interchange gets too close to the existing Beale St. Interchange.

FHWA indicated that this project will need to be included into the State Transportation Improvement Plan (STIP) sometime during the next phase after the Feasibility Study.

FHWA requested that the federal number NH-040-A(AVJ) be referenced on all future correspondence.

The project team anticipates having two progress meetings. The first progress meeting is anticipated for sometime in October to review traffic generations and other project information. Mapping will be completed shortly after this and then the evaluation and layout of alternatives will

begin in full swing. The second progress meeting is anticipated to be held after the year end holidays and is expected to be sometime in late January/early February.

If these notes do not reflect your understanding of the items discussed, or do not contain important issues covered at the meeting please reply within five days of receipt of these notes.

APPENDIX F

ORDER OF MAGNITUDE PROJECT COST

Order of Magnitude of Project Cost (Corridor Alternative A)					
Item	Item Description	Unit	Quantity	Unit Price	Total
1	Pavement				
	Mainline ¹	Sq. Yd.	126800	\$50.00	\$6,340,000
	Ramps ²	Sq. Yd.	79800	\$50.00	\$3,990,000
	Local Roads ³	Sq. Yd.	8800	\$35.00	\$308,000
	Removals	Sq. Yd.	8800	\$15.00	\$132,000
2	Earthwork	L.S.	50% of item 1		\$5,385,000
3	Drainage	L.S.	10% of item 1		\$1,077,000
Total Roadway Costs (Item 1-3): \$17,232,000					
4	Structures⁴				
	New Interchange on I-40	Sq. Ft.	80000	\$160.00	\$12,800,000
	Tie in at Existing US 93	Sq. Ft.	12000	\$150.00	\$1,800,000
	Wash Bridges	Sq. Ft.	12000	\$130.00	\$1,560,000
	Wash RCBCs	Each	12	\$250,000.00	\$3,000,000
Total Structures Costs (Item 4): \$19,160,000					
Total Roadway & Structures Costs (Item 1-4): \$36,392,000					
5	Maintenance of Traffic	L.S.	10% of item 1-4		\$3,639,200
6	Lighting	L.S.	2% of item 1-4		\$727,840
7	Signing/Pavement Markings/Signals	L.S.	5% of item 1-4		\$1,819,600
8	Utilities	L.S.	3% of item 1-4		\$1,091,760
9	Incidental	L.S.	15% of item 1-4		\$5,458,800
Total Construction Costs (Item 1-9): \$49,129,000					
10	R/W Acquisition	Acres	113	\$5,000.00	\$565,000
11	Contingency	L.S.	25% of Item 1-9		\$12,282,250
Total Cost (Item 1-11): \$61,976,000					
Order of Magnitude Total Project Cost: \$62,000,000					
¹ Mainline: 2 lane roadway for 5.4 miles					
² Directional Ramps: 2 lane roadway for 3.4 miles					
³ Local Roads: 2 lane roadway for 0.5 miles					
⁴ Number of Major Bridges = 7					
⁵ The anticipated 3rd lane (in each direction) on I-40 is NOT considered to be part of this Project					
⁶ Anticipated auxiliary lane is included					

Order of Magnitude of Project Cost (Corridor Alternative B)

Item	Item Description	Unit	Quantity	Unit Price	Total
1	Pavement				
	Mainline ¹	Sq. Yd.	98600	\$50.00	\$4,930,000
	Ramps ²	Sq. Yd.	68100	\$50.00	\$3,405,000
	C / D Roads ³	Sq. Yd.	21200	\$35.00	\$742,000
	Removals	Sq. Yd.	8800	\$15.00	\$132,000
2	Earthwork	L.S.	50% of item 1		\$4,604,500
3	Drainage	L.S.	10% of item 1		\$920,900
Total Roadway Costs (Item 1-3): \$14,734,000					
4	Structures⁴				
	New Interchange on I-40	Sq. Ft.	80000	\$160.00	\$12,800,000
	Tie in at Existing US 93	Sq. Ft.	12000	\$150.00	\$1,800,000
	Wash Bridges	Sq. Ft.	36000	\$130.00	\$4,680,000
	Wash RCBCs	Each	8	\$250,000.00	\$2,000,000
Total Structures Costs (Item 4): \$21,280,000					
Total Roadway & Structures Costs (Item 1-4): \$36,014,000					
5	Maintenance of Traffic	L.S.	10% of item 1-4		\$3,601,400
6	Lighting	L.S.	2% of item 1-4		\$720,280
7	Signing/Pavement Markings/Signals	L.S.	5% of item 1-4		\$1,800,700
8	Utilities	L.S.	3% of item 1-4		\$1,080,420
9	Incidental	L.S.	15% of item 1-4		\$5,402,100
Total Construction Costs (Item 1-9): \$48,619,000					
10	R/W Acquisition	Acres	91	\$10,000.00	\$910,000
11	Contingency	L.S.	25% of Item 1-9		\$12,154,750
Total Cost (Item 1-11): \$61,684,000					
Order of Magnitude Total Project Cost: \$62,000,000					
¹ Mainline: 2 lane roadway for 4.2 miles					
² Directional Ramps: 2 lane roadway for 3.4 miles					
³ C / D Roads: 2 lane roadway for 1.2 miles					
⁴ Number of Major Bridges = 11					
⁵ The anticipated 3rd lane (in each direction) on I-40 is NOT considered to be part of this Project					
⁶ Anticipated auxiliary lane is included					

Order of Magnitude of Project Cost (Corridor Alternative C)

Item	Item Description	Unit	Quantity	Unit Price	Total
1	Pavement				
	Mainline ¹	Sq. Yd.	23500	\$50.00	\$1,175,000
	Ramps ²	Sq. Yd.	84500	\$50.00	\$4,225,000
	C / D Roads ³	Sq. Yd.	21200	\$35.00	\$742,000
	Removals	Sq. Yd.	17600	\$15.00	\$264,000
2	Earthwork	L.S.	15% of item 1		\$960,900
3	Drainage	L.S.	10% of item 1		\$640,600
Total Roadway Costs (Item 1-3): \$8,008,000					
4	Structures⁴				
	New Interchange on I-40	Sq. Ft.	240000	\$160.00	\$38,400,000
	Viaduct	Sq. Ft.	200000	\$200.00	\$40,000,000
	Tie in at Existing US 93	Sq. Ft.	12000	\$150.00	\$1,800,000
	Wash Bridges	Sq. Ft.	0	\$130.00	\$0
Total Structures Costs (Item 4): \$80,200,000					
Total Roadway & Structures Costs (Item 1-4): \$88,208,000					
5	Maintenance of Traffic	L.S.	20% of item 1-4		\$17,641,600
6	Lighting	L.S.	4% of item 1-4		\$3,528,320
7	Signing/Pavement Markings/Signals	L.S.	5% of item 1-4		\$4,410,400
8	Utilities	L.S.	6% of item 1-4		\$5,292,480
9	Incidental	L.S.	15% of item 1-4		\$13,231,200
Total Construction Costs (Item 1-9): \$132,312,000					
10	R/W Acquisition	Acres	18	\$65,000.00	\$1,170,000
11	Contingency	L.S.	25% of Item 1-9		\$33,078,000
Total Cost (Item 1-11): \$166,560,000					
Order of Magnitude Total Project Cost: \$167,000,000					
¹ Mainline: 2 lane roadway for 1.0 miles					
² Directional Ramps: 2 lane roadway for 3.6 miles					
³ C / D Roads: 2 lane roadway for 1.2 miles					
⁴ Number of Major Bridges = 7					
⁵ The anticipated 3rd lane (in each direction) on I-40 is NOT considered to be part of this Project					
⁶ Anticipated auxiliary lane is included					

Order of Magnitude of Project Cost (Corridor Alternative D)

Item	Item Description	Unit	Quantity	Unit Price	Total
1	Pavement				
	Mainline ¹	Sq. Yd.	37600	\$50.00	\$1,880,000
	Ramps ²	Sq. Yd.	75100	\$50.00	\$3,755,000
	C / D Roads ³	Sq. Yd.	33500	\$35.00	\$1,172,500
	Removals	Sq. Yd.	8800	\$15.00	\$132,000
2	Earthwork	L.S.	25% of item 1		\$1,734,875
3	Drainage	L.S.	10% of item 1		\$693,950
Total Roadway Costs (Item 1-3): \$9,368,000					
4	Structures⁴				
	New Interchange on I-40	Sq. Ft.	80000	\$160.00	\$12,800,000
	Tie in at Existing US 93	Sq. Ft.	24000	\$150.00	\$3,600,000
	Wash Bridges	Sq. Ft.	12000	\$130.00	\$1,560,000
	Wash RCBCs	Each	4	\$250,000.00	\$1,000,000
Total Structures Costs (Item 4): \$18,960,000					
Total Roadway & Structures Costs (Item 1-4): \$28,328,000					
5	Maintenance of Traffic	L.S.	15% of item 1-4		\$4,249,200
6	Lighting	L.S.	2% of item 1-4		\$566,560
7	Signing/Pavement Markings/Signals	L.S.	5% of item 1-4		\$1,416,400
8	Utilities	L.S.	3% of item 1-4		\$849,840
9	Incidental	L.S.	15% of item 1-4		\$4,249,200
Total Construction Costs (Item 1-9): \$39,659,000					
10	R/W Acquisition	Acres	36	\$30,000.00	\$1,080,000
11	Contingency	L.S.	25% of Item 1-9		\$9,914,750
Total Cost (Item 1-11): \$50,654,000					
Order of Magnitude Total Project Cost: \$51,000,000					
¹ Mainline: 2 lane roadway for 1.6 miles					
² Directional Ramps: 2 lane roadway for 3.2 miles					
³ C / D Roads: 2 lane roadway for 1.9 miles					
⁴ Number of Major Bridges = 8					
⁵ The anticipated 3rd lane (in each direction) on I-40 is NOT considered to be part of this Project					
⁶ Anticipated auxiliary lane is included					

Order of Magnitude of Project Cost (Corridor Alternative E)

Item	Item Description	Unit	Quantity	Unit Price	Total
1	Pavement				
	Mainline ¹	Sq. Yd.	98600	\$50.00	\$4,930,000
	Ramps ²	Sq. Yd.	79800	\$50.00	\$3,990,000
	Local Roads ³	Sq. Yd.	15900	\$35.00	\$556,500
	Removals	Sq. Yd.	8800	\$15.00	\$132,000
2	Earthwork	L.S.	35% of item 1		\$3,362,975
3	Drainage	L.S.	10% of item 1		\$960,850
Total Roadway Costs (Item 1-3): \$13,932,000					
4	Structures⁴				
	New Interchange on I-40	Sq. Ft.	80000	\$160.00	\$12,800,000
	Tie in at Existing US 93	Sq. Ft.	12000	\$150.00	\$1,800,000
	Wash Bridges	Sq. Ft.	12000	\$130.00	\$1,560,000
	Wash RCBCs	Each	6	\$250,000.00	\$1,500,000
Total Structures Costs (Item 4): \$17,660,000					
Total Roadway & Structures Costs (Item 1-4): \$31,592,000					
5	Maintenance of Traffic	L.S.	10% of item 1-4		\$3,159,200
6	Lighting	L.S.	2% of item 1-4		\$631,840
7	Signing/Pavement Markings/Signals	L.S.	5% of item 1-4		\$1,579,600
8	Utilities	L.S.	3% of item 1-4		\$947,760
9	Incidental	L.S.	15% of item 1-4		\$4,738,800
Total Construction Costs (Item 1-9): \$42,649,000					
10	R/W Acquisition	Acres	91	\$35,000.00	\$3,185,000
11	Contingency	L.S.	25% of Item 1-9		\$10,662,250
Total Cost (Item 1-11): \$56,496,000					
Order of Magnitude Total Project Cost: \$57,000,000					
¹ Mainline: 2 lane roadway for 4.2 miles					
² Directional Ramps: 2 lane roadway for 3.4 miles					
³ Local Roads: 2 lane roadway for 0.9 miles					
⁴ Number of Major Bridges = 7					
⁵ The anticipated 3rd lane (in each direction) on I-40 is NOT considered to be part of this Project					
⁶ Anticipated auxiliary lane is included					

Order of Magnitude of Project Cost (Corridor Alternative F)

Item	Item Description	Unit	Quantity	Unit Price	Total
1	Pavement				
	Mainline ¹	Sq. Yd.	103300	\$50.00	\$5,165,000
	Ramps ²	Sq. Yd.	79800	\$50.00	\$3,990,000
	Local Roads ³	Sq. Yd.	26400	\$35.00	\$924,000
	Removals	Sq. Yd.	8800	\$15.00	\$132,000
2	Earthwork	L.S.	30% of item 1		\$3,063,300
3	Drainage	L.S.	10% of item 1		\$1,021,100
Total Roadway Costs (Item 1-3): \$14,295,000					
4	Structures⁴				
	New Interchange on I-40	Sq. Ft.	80000	\$160.00	\$12,800,000
	Tie in at Existing US 93	Sq. Ft.	12000	\$150.00	\$1,800,000
	Wash Bridges	Sq. Ft.	12000	\$130.00	\$1,560,000
	Wash RCBCs	Each	6	\$250,000.00	\$1,500,000
Total Structures Costs (Item 4): \$17,660,000					
Total Roadway & Structures Costs (Item 1-4): \$31,955,000					
5	Maintenance of Traffic	L.S.	10% of item 1-4		\$3,195,500
6	Lighting	L.S.	2% of item 1-4		\$639,100
7	Signing/Pavement Markings/Signals	L.S.	5% of item 1-4		\$1,597,750
8	Utilities	L.S.	3% of item 1-4		\$958,650
9	Incidental	L.S.	15% of item 1-4		\$4,793,250
Total Construction Costs (Item 1-9): \$43,139,000					
10	R/W Acquisition	Acres	95	\$60,000.00	\$5,700,000
11	Contingency	L.S.	25% of Item 1-9		\$10,784,750
Total Cost (Item 1-11): \$59,624,000					
Order of Magnitude Total Project Cost: \$60,000,000					
¹ Mainline: 2 lane roadway for 4.4 miles					
² Directional Ramps: 2 lane roadway for 3.4 miles					
³ Local Roads: 2 lane roadway for 1.5 miles					
⁴ Number of Major Bridges = 7					
⁵ The anticipated 3rd lane (in each direction) on I-40 is NOT considered to be part of this Project					
⁶ Anticipated auxiliary lane is included					

Order of Magnitude of Project Cost (Corridor Alternative G)

Item	Item Description	Unit	Quantity	Unit Price	Total
1	Pavement				
	Mainline ¹	Sq. Yd.	154900	\$50.00	\$7,745,000
	Ramps ²	Sq. Yd.	79800	\$50.00	\$3,990,000
	Local Roads ³	Sq. Yd.	12400	\$35.00	\$434,000
	Removals	Sq. Yd.	8800	\$15.00	\$132,000
2	Earthwork	L.S.	50% of item 1		\$6,150,500
3	Drainage	L.S.	10% of item 1		\$1,230,100
Total Roadway Costs (Item 1-3): \$19,682,000					
4	Structures⁴				
	New Interchange on I-40	Sq. Ft.	80000	\$160.00	\$12,800,000
	Tie in at Existing US 93	Sq. Ft.	12000	\$150.00	\$1,800,000
	Wash Bridges	Sq. Ft.	24000	\$130.00	\$3,120,000
	Wash RCBCs	Each	14	\$250,000.00	\$3,500,000
Total Structures Costs (Item 4): \$21,220,000					
Total Roadway & Structures Costs (Item 1-4): \$40,902,000					
5	Maintenance of Traffic	L.S.	10% of item 1-4		\$4,090,200
6	Lighting	L.S.	2% of item 1-4		\$818,040
7	Signing/Pavement Markings/Signals	L.S.	5% of item 1-4		\$2,045,100
8	Utilities	L.S.	3% of item 1-4		\$1,227,060
9	Incidental	L.S.	15% of item 1-4		\$6,135,300
Total Construction Costs (Item 1-9): \$55,218,000					
10	R/W Acquisition	Acres	136	\$10,000.00	\$1,360,000
11	Contingency	L.S.	25% of Item 1-9		\$13,804,500
Total Cost (Item 1-11): \$70,383,000					
Order of Magnitude Total Project Cost: \$71,000,000					
¹ Mainline: 2 lane roadway for 6.6 miles					
² Directional Ramps: 2 lane roadway for 3.4 miles					
³ Local Roads: 2 lane roadway for 0.7 miles					
⁴ Number of Major Bridges = 9					
⁵ The anticipated 3rd lane (in each direction) on I-40 is NOT considered to be part of this Project					
⁶ Anticipated auxiliary lane is included					

Order of Magnitude of Project Cost (Corridor Alternative H)

Item	Item Description	Unit	Quantity	Unit Price	Total
1	Pavement				
	Mainline ^{1 5}	Sq. Yd.	291000	\$50.00	\$14,550,000
	Ramps ^{2 6}	Sq. Yd.	176000	\$50.00	\$8,800,000
	C / D Roads ³	Sq. Yd.	42300	\$35.00	\$1,480,500
	Removals	Sq. Yd.	17600	\$15.00	\$264,000
2	Earthwork	L.S.	40% of item 1		\$10,037,800
3	Drainage	L.S.	10% of item 1		\$2,509,450
Total Roadway Costs (Item 1-3): \$37,642,000					
4	Structures⁴				
	New Interchange on I-40	Sq. Ft.	240000	\$160.00	\$38,400,000
	Tie in at Existing US 93	Sq. Ft.	48000	\$150.00	\$7,200,000
	Wash Bridges	Sq. Ft.	12000	\$130.00	\$1,560,000
	Wash RCBCs	Each	24	\$250,000.00	\$6,000,000
Total Structures Costs (Item 4): \$53,160,000					
Total Roadway & Structures Costs (Item 1-4): \$90,802,000					
5	Maintenance of Traffic	L.S.	10% of item 1-4		\$9,080,200
6	Lighting	L.S.	4% of item 1-4		\$3,632,080
7	Signing/Pavement Markings/Signals	L.S.	5% of item 1-4		\$4,540,100
8	Utilities	L.S.	6% of item 1-4		\$5,448,120
9	Incidental	L.S.	15% of item 1-4		\$13,620,300
Total Construction Costs (Item 1-9): \$127,123,000					
10	R/W Acquisition	Acres	375	\$25,000.00	\$9,375,000
11	Contingency	L.S.	25% of Item 1-9		\$31,780,750
Total Cost (Item 1-11): \$168,279,000					
Order of Magnitude Total Project Cost: \$169,000,000					
¹ Mainline: 2 lane roadway for 12.4 miles					
² Directional Ramps: 2 lane roadway for 7.5 miles					
³ C / D Roads: 2 lane roadway for 2.4 miles					
⁴ Number of Major Bridges = 10					
⁵ The anticipated 3rd lane (in each direction) on I-40 is NOT considered to be part of this Project					
⁶ Anticipated auxiliary lane is included					