

**PROJECT NO. 093 MA 199 H 5807 01C**

**FEDERAL NO. xxxx**

**WIKIEUP-WICKENBURG-PHOENIX HIGHWAY**

**TEGNER STREET, ALTERNATIVE 10 PROJECT IMPROVEMENT**

**(INTERSECTION IMPROVEMENT)**

**US 93/US 60**

**FINAL  
PROJECT ASSESSMENT**

**April 2001**

**Prepared for the**

**ARIZONA DEPARTMENT OF TRANSPORTATION  
INTERMODAL TRANSPORTATION DIVISION  
ROADWAY ENGINEERING GROUP  
ROADWAY PREDESIGN SECTION**

**By**

**Sverdrup**  
CIVIL INC

**A. INTRODUCTION**

Project 093 MA 199 H 5807 01 C\* (Federal Reference No. xxxx), Tegner Street, is a project within the ADOT Prescott District, intended to modify the intersection of Tegner Street and Wickenburg Way (US 93/US 60) to improve the level of service of the intersection by accommodating the increasing volume of turning movements. The project is described as “intersection improvements”.

The proposed intersection project is located on US 93 and US 60, in Maricopa County, within the Town of Wickenburg. The project begins on US 93 at Milepost (MP) 199.55, and extends 0.14 miles southeast to Milepost 199.69 (intersection of US 93/US 60) then turns east on US 60 at MP 110.33 and extends 0.09 miles to MP 110.42.

The project is not listed in the 2001-2005 ADOT Five-Year Highway Construction Program. The estimated construction cost is \$264,000 with \$53,000 for design costs. The project will be designed by a Consultant and assumes the use of Federal Funds.

The purpose of the project is to modify the intersection to improve the roadway safety and capacity. Providing dual left-lanes for the US 93 southbound to US 60 eastbound traffic movement and a dedicated right-turn lane for the US 60 westbound to US 93 northbound traffic will provide an adequate number of traffic lanes to improve the intersection level of service. This project was recommended in a February 2000 Interim Improvement Feasibility Study as a feasible alternative for relieving traffic congestion at the US 93/US 60 intersection in Wickenburg.

**B. BACKGROUND DATA**

Based upon the ADOT Milepost Strip Map, the following projects have been completed within the project limits:

<b>Project No.</b>	<b>Beginning MP</b>	<b>Ending MP</b>	<b>As-Built Date</b>	<b>Description</b>
NF 59(55)A	110.0	118.0	1954	Seal Coat
F-022-1-507	110.2	111.4	1968	AC Overlay
F-022-1-903	110.33	-	1969	Lighting & Signs
F-022-2-928	109.2	115.6	1973	Seal Coat
F-022-1-915	110.3	110.4	1986	Traffic Signal
F-022-1-512	109.0	111.18	1990	Mill, ACFC Overlay
STP-022-2(38)	110.33	117.81	1993	Mill, Replace & AR-ACFC

As shown in the attached exhibit “Recommended Improvements”, existing US 93 (Tegner Street) can generally be described as a two-lane urban highway with parking on each side of the roadway. The roadway width is 46 feet and consists of two 15-foot wide travel lanes (one lane in each direction), 8-foot wide parking bays, and concrete curb and gutter. Existing US 60 (Wickenburg Way) can generally be described as a four-lane urban highway with parking on each side of the roadway. The roadway width is 60 feet and consists of two 12-foot wide eastbound travel lanes, two

\* The TRACS Number was changed from 093 MA 199 H 5825 01 C to 093 MA 199 H 5807 01 C.

12-foot wide westbound travel lanes and 6-foot wide parking bays. The junction of US 93 with US 60 is located at MP 199.69 (US 93) and MP 110.33 (US 60). The as-built plans indicate the roadway has a parabolic crown (cross slope varies).

The AASHTO functional classification for US 93 and US 60 within the project limits is an urban principal arterial and the terrain is level at an elevation of approximately 2050± feet.

The posted speed limit on US 93 is 25 mph from MP 199.55 to MP 199.69. The posted speed limit US 60 is 25 mph from MP 110.33 to MP 110.42. This intersection is located near the center of the downtown area of the Town of Wickenburg. The Design Speed within this Urban Section is 30 mph per AASHTO design guidelines.

The existing 1999 Average Daily Traffic (ADT) volumes, projections, and data on US 93 are shown in the table below. The Transportation Planning Division (TPD) provided the information.

<b>Traffic Information</b>	<b>US 93</b>	<b>US 60</b>
1999 ADT	7,900	18,000
2004 ADT	9,600	22,000
2020 ADT	14,500	31,000
K	14%	16%
D	51%	50%
T	20%	28%

There are no major structures listed in the ADOT Bridge Record within the project limits. Most of the project drainage flows from north to south on US 93 and west to east on US 60. Drainage is captured by a catch basin inlet at the northwest corner of the intersection and by catch basin inlets located along the gutters of US 60. There is a 36-inch diameter storm drain located under US 60 that conveys the storm flows to the Hassayampa River for discharge.

The junction of US 93 (MP 199.69) and US 60 (MP 110.33) is currently a four-legged intersection. The north leg (US 93) has a SB to EB dedicated left-turn lane, a SB through and right-turn lane, and a NB lane. The east leg (US 60) has a WB to NB dedicated right-turn lane, a WB through and left-turn lane, and two EB lanes. The south leg (S. Tegner Street) has a single NB and SB lane. The west leg (US 60) has an EB to NB dedicated left-turn lane, an EB through and right-turn lane, and two WB lanes.

Traffic Studies Section records indicate that during the five-year period from December 1, 1994 to November 30, 1999, there were no reported accidents on US 93 between MP 199.55 and MP 199.69 and a total of four reported accidents on US 60 between MP 110.33 and MP 110.42. The accident types were as follows:

<b>Accident Type</b>	<b>Total</b>
SIDESWIPE (SAME)	2
REAR-END	1
HEAD-ON	1
<b>TOTAL</b>	<b>4</b>

Of the four reported accidents, there were no fatal accidents, one injury accident, and three property

damage only accidents. Three of the accidents were intersection related.

The intersection is currently operating at the following Levels of Service during peak periods:

<b>Time Period</b>	<b>LOS</b>	<b>Intersection Delay</b>	<b>Comments on Critical Movements</b>
AM Peak Hour (8:00 – 9:00 AM)	C	21.7 sec	
Midday (11:30 AM – 12:30 PM)	D	37.4 sec	SB Lt. operating at LOS E
PM Peak Hour (4:30 – 5:30 PM)	D	39.3 sec	SB Lt. operating at LOS E

If no improvements are made to the existing intersection, the LOS during peak periods will deteriorate rapidly within the next few years to the following:

<b>Time Period</b>	<b>LOS</b>	<b>Intersection Delay</b>	<b>Comments on Critical Movements</b>
2005 – AM Peak Hour	C	23.2 sec	
2005 – PM Peak Hour	E	66.3 sec	SB Lt. operating at LOS F WB Thru operating at LOS E
2010 – AM Peak Hour	C	26.9 sec	
2010 – PM Peak Hour	F	90.0 sec	SB Lt. operating at LOS F WB Thru operating at LOS F EB Lt. operating at LOS E
2015 – AM Peak Hour	C	34.5 sec	
2015 – PM Peak Hour	F	129.3 sec	SB Lt. operating at LOS F WB Thru operating at LOS F EB Lt. operating at LOS F

The land adjacent to ADOT’s right-of-way is privately and publicly (Town of Wickenburg) owned along US 93 from MP 199.55 to MP 199.69. The existing R/W along this portion of the project is 60 feet wide (30 feet left and 30 feet right of the roadway centerline). The land adjacent to ADOT’s right-of-way is privately owned along US 60 from MP 110.33 to MP 110.42. The existing R/W along this portion of the project is 75 feet wide (37.5 feet left and 37.5 feet right of the roadway centerline).

ADOT’s Statewide Permit Log indicated that the following utility companies have permitted facilities within or near the project limits:

<b>UTILITY</b>	<b>FACILITY</b>	<b>MILEPOST</b>
Town of Wickenburg	Relocate Water Main	MP 199.38 to 199.41 (US 93)
Arizona Public Service	New Duct Bank	MP 199.70 (US 93)
Town of Wickenburg	Water Main	MP 110.30 (US 60)
Arizona Public Service	Gas Main	MP 110.33 (US 60)
Arizona Public Service	Gas Service	MP 110.38 (US 60)
Arizona Public Service	Relocate Pole	MP 110.40 (US 60)
Arizona Public Service	Construct Electric Service	MP 110.50 (US 60)
Mountain Bell	Buried Cable	MP 110.50 (US 60)

Because this is a spot improvement, no AASHTO Controlling Criteria Report was prepared for this project.

### **C. PROJECT SCOPE**

The project limits on US 93 will begin at MP 199.55 through MP 199.69 and continue on US 60 from MP 110.33 to MP 110.45. The proposed improvements are listed below and can also be found on the attached exhibit.

Pavement work will include the following (see Exhibit 1):

- The curb return at the northeast corner of the intersection will be removed and replaced to increase the radius of the curve to provide improved turning movements for trucks.
- The curb return at the southeast corner of the intersection will be removed and modified to provide improved turning movements for trucks.
- PCCP was used for the original roadway structural section at the intersection. This project will use the same structural section.
- The asphalt roadway surface through the project limits will receive a 1/2" milling and the surface replaced with 1/2" AR-ACFC.

Project safety and miscellaneous improvements will include the following:

- Curb and gutter removed for the intersection improvements above will be replaced in kind.
- Sidewalk removed for the intersection improvements above will be replaced in kind.
- The signal poles, foundations, conduit, and conductors will need to be relocated/replaced at two corners of the intersection (NE and SE).
- The streetlight located just east of the intersection on the south side of Wickenburg Way will be relocated behind the new curb and gutter section.
- The roadway stripping will be redone to provide three lanes on the north leg (Tegner St.) and five lanes on the east leg (Wickenburg Way) of the intersection. The on-street parking will be removed (see Exhibit 1 for limits).
- The existing highway signage will be removed and reset.
- A new parking lot for a minimum of 28 parking stalls, to replace the on-street parking removal, will be paved and lighted (parking site to be provided by the Town).

### **D. PROJECT DEVELOPMENT CONSIDERATIONS**

The purpose of the intersection improvements is to improve the intersection level of service to handle the anticipated increase in traffic flow and associated turning movements for the next 10 years until a new bypass route for US 93 can be constructed. The proposed bypass will route regional traffic around the community reducing the traffic volume at the intersection. Restripping this portion of US 93/US 60 will remove approximately 28 roadside parking stalls that will need to be replaced with a nearby parking lot (site to be provided by the Town of Wickenburg). The cost for the 28 parking lot has been included in this project.

During final design, consideration should be given to adding some form of barrier between the outside travel lanes and the sidewalk to enhance pedestrian safety. This will need to be coordinated

with the Town.

By removing on street parking and widening the intersection, traffic flow will be greatly improved and the intersection would operate at acceptable levels of service for approximately 10 years. However, a protected left-turn phase will be needed for the EB to NB movement when volumes warrant. The improvement in the LOS is listed below:

<b>Time Period</b>	<b>LOS</b>	<b>Intersection Delay</b>	<b>Comments on Critical Movements</b>
2005 – AM Peak Hour	B	18.5 sec	
2005 – PM Peak Hour	C	24.9 sec	
2010 – AM Peak Hour	B	19.0 sec	
2010 – PM Peak Hour	C	26.9 sec	
2015 – AM Peak Hour	C	20.1 sec	
2015 – PM Peak Hour	C	34.7 sec	

Because less than five or more acres of land will be disturbed, a National Pollutant Discharge Elimination System (NPDES) permit will not be required.

Environmental Planning Group will determine if there are any special environmental or archaeological concerns and prepare the required documentation.

This project is not located within an EPA air quality non-attainment area.

During construction, one lane will remain open to travel in both directions and no detour will be required. Traffic control requirements will be in accordance with Part VI of the Manual on Traffic Control Devices (MUTCD) and the Arizona Supplements to Part VI of the MUTCD and/or special provisions in the project plans, as determined by ADOT Traffic Design Section during design.

Pavement marking plans will be required.

A location and cross section survey will be required.

New right-of-way and temporary construction easements (TCE) will be required to remove and replace the existing curbing, sidewalk, highway signage, and signal poles. See Exhibit 1 for the approximate location of the new right-of-way.

No major utility work is anticipated, however, Utility and Railroad Engineering Section or a designated consultant will investigate whether or not any utilities will be affected.

**E. OTHER REQUIREMENTS**

A review of the 5-Year Highway Construction Program (Fiscal Years 2001 – 2005) indicated no roadway construction projects are located in the vicinity of the proposed project. The following Location/Design Concept Study is currently in progress.

- Project 093 YV 161 H 4871 01 L. This study involves preparing a Location/Design Concept Report and an Environmental Assessment for improving US 93 between the Santa Maria River and Junction 74 south of Wickenburg, including a bypass route around Wickenburg. It also includes a Design Concept Report and an Environmental Assessment for an interim improvement project within Wickenburg to alleviate traffic congestion.

This project has not been scheduled for construction at this time. After it's inclusion in the 5-year program and within six weeks of the design kick-off meeting, the predesign phase project manager (in consultation with the design team) shall develop a customized project schedule that will reflect the full scope of the work. Upon request, ADOT's Program and Project Management Section (PPMS) will provide a copy of the project preliminary milestone schedule to the design team prior to the kick-off meeting and the technical support as needed during the development of the customized project schedule. The CPS ID and the bid advertising date have not been assigned.

Scheduling of the design and construction of this project will be as mutually agreed upon between ADOT Prescott District and the Town of Wickenburg. To date, the schedule has not been set.

This project will be built with Federal Funds and administered under ADOT/FHWA Operating Partnership Agreement (OPA) under Category "P".

A consultant will prepare the roadway plans. ADOT Traffic Engineering Group or a consultant will prepare the pavement marking, signing and work zone traffic control plans.

**F. ESTIMATED COST**

The estimated costs are based on unit prices obtained from ADOT's "Construction Costs 1999" using cost data from adjacent or similar projects.

Construction costs are based on a structural section of 10 inches PCCP over 4 inches AB for the areas widened. The asphalt roadway surface through the project limits will receive a ½" milling and the surface replaced with ½" AR-ACFC.

The Total Project Cost is estimated at \$412,000 comprised of construction costs of \$264,000, right-of-way costs of \$95,000, and design costs of \$53,000. The Project assumes the use of Federal Funds. See the attached estimate.

**G. REQUIRED ACTION BY PRIORITY PLANNING ADVISORY COMMITTEE AND/OR PROJECT REVIEW BOARD**

Action is required to program and fund this project.

TRACS No. 093 MA 199 H 5807 01 C  
 Federal No. N/A  
 Project Name: Tegner Street, Alternative 10 Project Improvement  
 Location: Wikieup – Wickenburg – Phoenix Highway

**SERVICE INVOLVEMENT SHEET**

Field Review	Contacted	Service Involvement	Significant	Minimum	None	Unknown	Comments-Identifying Issues Which Make Involvement Significant Or Minimal
	X	Statewide Project Management	X				Consultant Design. Senior PM: Mike Bruder
X	X	Prescott District	X				Construction Administration
	X	Right-of-Way	X				Right-of-Way: Clearance, New R/W and TCE
	X	Traffic Engineering	X				Pavement marking, signing plans, intersection lighting and signalization requirements.
		Drainage Design			X		
		Bridge Design			X		No Bridge
	X	Pavement Design	X				Materials Memorandum
	X	Geotechnical Services	X				Pavement Cores by Geotech Operations and Geotechnical subgrade report for the widened sections.
	X	Environmental Planning	X				Environmental Documentation and Clearance
X	X	Roadway Design Section	X				Review roadway plans prepared by Consultant
		Utility & Railroad		X			Utility Clearance & Coordination
		Engineering Survey Section			X		Location Survey and cross sections by consultant.
	X	Roadside Development			X		
		Contracts & Specs.	X				PS&E/advertise project
X	X	Town of Wickenburg	X				Coordination of new Parking Facilities
X	X	FHWA		X			Federal funds. Operating Partnership Agreement (OPA)