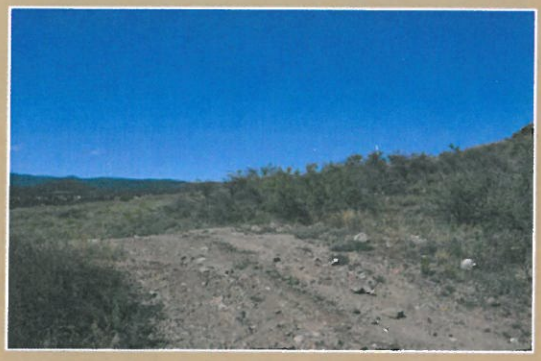
Sundog Connector Corridor Study

FINAL REPORT

CITY OF PRESCOTT ARIZONA

TASK ASSIGNMENT TPD 27-11C

JUNE 2013



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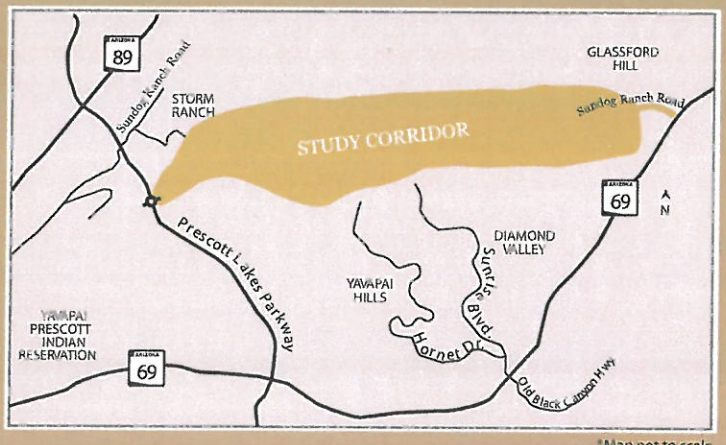

*Map not to scale.

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o EXECUTIVE SUMMARY

The City of Prescott was awarded funding to conduct this corridor study through the Planning Assistance for Rural Areas (PARA) program. The PARA grant program is sponsored by the Federal Highway Administration (FHWA) and administered by the Arizona Department of Transportation (ADOT). The PARA program provides federal funds to non-metropolitan communities for the purpose of conducting transportation planning studies. The City of Prescott, with support from ADOT, has worked with other local agencies in the region to conduct this study to evaluate and recommend a corridor alignment for the Sundog Connector located in Yavapai County, Arizona. The western corridor terminus is located in the City of Prescott and the eastern terminus is located in the Town of Prescott Valley.

The corridor study area is defined as the area between State Route (SR) 69 and Prescott Lakes Parkway. This roadway, which is currently shown in the Central Yavapai Metropolitan Planning Organization (CYMPO) 2030 Transportation Plan, has the potential to be a vital corridor which will connect the City of Prescott to the Town of Prescott Valley and provide a third east-west link between the communities as the CYMPO region continues to grow in population.

Parsons Brinckerhoff has been commissioned by ADOT to perform this preliminary assessment for the development of the Sundog Connector Corridor. The focus of the study was to document the current and future conditions through a review of all relevant planning studies, land use designation, development plans, needs assessments, and stakeholder input. Using the documented purpose and need for the corridor, the study team has identified, evaluated and recommended a preferred corridor for the planned roadway including alignment, typical sections, recommended right-of-way, and utilities and drainage recommendations.

In order to ensure that local input and direction has been incorporated into the study process, the study has been conducted with guidance from a Technical Advisory Committee (TAC) composed of members representing the following agencies:

- City of Prescott
- Town of Prescott Valley
- Yavapai County
- Arizona Department of Transportation Planning Division
- Arizona Department of Transportation Prescott District
- Central Yavapai Metropolitan Planning Organization (CYMPO)
- Arizona State Land Department (ASLD)
- Landowners

The study was conducted in two stages:

1. Current and Future Conditions Assessment
2. Evaluation and Plan for Improvements

Both stages were documented by producing working papers that were reviewed by TAC members and revised to address the input from the stakeholders. The major elements identified in the two working papers were presented to the public in two open house meetings. The results of the public involvement meetings and written comments received have been included in the attached appendices.

0.1. CURRENT AND FUTURE CONDITIONS ASSESSMENT

This section documents the current conditions that exist within the Sundog Connector Corridor study area in terms of land use, land ownership, socioeconomic conditions, environmental justice, activity centers, alternative modes of transportation, traffic accidents, topographic features, transportation network, and traffic conditions. The study documentation particularly focuses on the evaluation and documentation of the condition and operational characteristics of the existing street network (current conditions). Existing traffic conditions on the roadway network were assessed by reviewing the average daily traffic counts and roadway level of service (LOS) results, presented in the CYMPO 2005 RTS and the CYMPO 2011 RTP Update studies.

The future conditions assessment focused on a review of the proposed land use, development information and planned arterial improvements also documented in the CYMPO 2005 RTS and the CYMPO 2011 RTP Update studies. The CYMPO studies used information from the member agency general plan documentation to develop a travel forecast model to project the future conditions in the study area. Using the available travel forecast model results, the study team was able to project and quantify the future traffic volumes for the major arterials within the study area, particularly focusing on the major east-west corridors of SR 69, SR 89A, Prescott Lakes Parkway and the future Sundog Connector Corridor.

Based on the traffic capacity analysis, the development of the Sundog Connector Corridor will improve the current and future congestion experienced on the parallel east-west corridors in the areas between Prescott and Prescott Valley. Because of the variability of the historic population growth rates in the region, the traffic capacity analysis results and subsequent improvement needs were correlated to population thresholds rather than particular design years. Below is a summary of the east-west capacity improvement needs based on regional population. The 2010 census population for the CYMPO region is 121,783.

Table 1: Roadway System Configuration vs. CYMPO Population

SR-89A	SR-69	Sundog Corridor	Population of CYMPO Region
4-lane Freeway	4-lane Arterial	- -	<=174,900
4-lane Freeway	4-lane Arterial	2-lane Arterial	174,900 – 232,700
4-lane Freeway	4-lane Arterial	4-lane Arterial	232,700 – 286,400
4-lane Freeway	6-lane Arterial	4-lane Arterial	286,400 – 317,800

In addition to the traffic capacity justification for the development of the corridor, there is need to develop the corridor to support the currently identified general plan land use designations within the study area. The identification of trigger points for development of the Sundog

corridor based on the land use designation should be evaluated during the regular updates of the local jurisdiction general plans, the CYMPO regional plan updates and the sale of the ASLD owned property in the study area limits.

0.2. DEFINITION OF PROJECT PURPOSE AND NEED

Currently, SR 69 is the primary route between the business and tourism centers of the City of Prescott and the Town of Prescott Valley. The limited number of east-west routes in the area has resulted in SR 69 becoming increasingly congested with the region's rising population and retail development. Over the years, several improvement projects to expand SR 69 have been completed, but the corridor is reaching a point of limited expansion. The excessive congestion along the corridor has the potential to limit the future development opportunities in the area.

This Corridor Study evaluates the feasibility of a new route corridor parallel to SR 69 that would connect the City of Prescott to the Town of Prescott Valley. This east-west link, identified as the Sundog Connector Corridor, is envisioned to address future congestion concerns along SR 69 as the region continues to grow, provide access and circulation opportunities for future land use designations, and provide additional access for existing residential areas north of SR 69.

0.3. EVALUATION CRITERIA AND PLAN FOR IMPROVEMENTS

After defining the project purpose and need for the Sundog Connector Corridor, the feasibility of the corridor and the potential alternate route corridor alternatives were developed. Several corridor alternatives were developed using available topographic information, geographic information system (GIS), land ownership/property control, ground slope and hydrology.

As shown in Figure 1, the four colored alternative corridors developed were broken into two sections, an east and west section. The eight corridor alternatives were evaluated for feasibility and fatal flaws using a qualitative analysis based on the following factors and criteria approved by the TAC:

- Fatal flaws
- Consistency with the City of Prescott and Town of Prescott Valley General Plans
- Environmental impacts
- Feasibility of future intersection(s) and access

Three alternatives were eliminated based on the above criteria. The remaining five alternatives were then evaluated using a quantitative analysis based on the following factors and criteria approved by the TAC:

- Safety
- Constructability
- Right-of-Way
- Development Opportunities (along the corridor)
- Public and Agency Support
- Cost

The results of the preliminary and secondary analyses are shown in Section 4 of this report.

The final component of the study involved the identification of the preferred alternate route corridor. The study team, with input for the TAC members, selected the W-2 and E-3 corridors as the preferred corridor alternatives. In selecting the preferred corridor, this study presents a number of options for the improvement the corridor that will be further analyzed and considered during the subsequent Design Concept Report, Environmental Analysis, and preliminary design phases of the project development process.

Using the W-2 and E-3 corridors as a baseline, a hybrid alignment was created to connect the two preferred corridors. The hybrid alternative was developed after the evaluation process mentioned above highlighted several areas that could be improved upon as the design continues to be refined throughout the study process. Major areas improved upon in creating the hybrid alignment include:

- Roadway profile relative to the existing topography
- Sustained roadway profile grade
- Right-of-way requirements
- Project cost

0.4. NEXT STEPS

Below is a list of activities that should be completed to successfully develop the Sundog Connector Corridor:

- ☑ **Develop a Design Concept Report (DCR) and preliminary environmental documentation:** Through the development of a DCR and environmental document, the following technical elements can be further investigated:
  - Confirmation of Purpose and Need – Review updated traffic projections
  - Topographic Survey – To confirm GIS based contour information
  - Geotechnical Investigations - To confirm soil type and excavation difficulty
  - Environmental Investigations:
    - Cultural Evaluation
    - Biological Evaluation
    - Hazardous Materials
    - Noise and Air Quality

- ☑ **Right-of-way preservation:** Coordinate the preferred corridor alignment with ASLD, existing and future utilities, and other development identified within the study area.

- ☑ **Secure funding**

Figure 1: Recommended Alternative Land Use View