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March 6, 2012

Patrick O. Maxon, RPA
Director, Cultural Resources
BonTerra Consulting
2 Executive Circle, Suite 175
Irvine, California 92614

Subject: Final Draft Extended Phase I Geoarchaeological Report: Stage I, Geomorphic Sensitivity Model for the Centennial Corridor Project, Kern County, California

Dear Mr. Maxon:

The California Department of Transportation (Caltrans) proposes to establish a new alignment for State Route 58, which would provide a continuous route along State Route 58 from Interstate 5 via Westside Parkway to Cottonwood Road on existing State Route 58, east of State Route 99 (post miles T31.70 to R55.6). Improvements to State Route 99 (post miles 21.2–26.2) would also be made to accommodate the connection with State Route 58. The proposed continuous route, known as the Centennial Corridor, has been divided into three segments. Segment 1 is the easternmost segment, which would connect the Westside Parkway to the existing State Route 58 (East) freeway. This segment is all-new construction, and multiple alignment alternatives are being evaluated.

Enclosed you will find the final draft Extended Phase I Geoarchaeological Report: Stage I Geomorphic Sensitivity Model for Segment I. This version reflects revisions made in response to comments made by Bill Ray of Parsons and Jeanne Binning and Krista Kiaha of Caltrans. The primary objectives of this Extended Phase I study are (1) to help the project proponent select a preferred alternative route by developing an archaeological sensitivity model for buried cultural resources; (2) conduct a limited search for buried archaeological sites in areas deemed to be of high sensitivity; and (3) evaluate the potential for buried cultural deposits in areas of high archaeological sensitivity.

The development of the geomorphic sensitivity model is divided into two stages. Stage I (the focus of the enclosed report) involves assessing the vertical area of potential effects by conducting a geomorphic evaluation of specific areas along the planned and alternate routes, which entails the review of existing geologic maps, the regional District 6/9 geoarchaeological overview, soil-survey reports, records-search results, and other relevant data sources. This approach enables us to identify areas within the study area that possess that possess low, moderate, high, and very high archaeological sensitivity.

Stage II will begin once a preferred alternative route has been selected and will focus on subsurface testing, as necessary, to refine and field check the preliminary buried-site sensitivity model and to further assess the archaeological sensitivity model. An Extended Phase I proposal for the anticipated future Stage II work will be submitted to Caltrans for approval after the preferred alternative is selected.

The first stage of the geomorphic sensitivity model indicates that Segment I of the Centennial Corridor study area is underlain by four late Quaternary Kern River alluvial-fan surfaces that range in age from less than 150 to 1500 years B.P., as follows (from oldest to youngest):

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- Qa3: Upper Modesto (latest Pleistocene) fan alluvium capped with late Holocene alluvium. Surface less than 1500 years B.P. in age. Mapped as the Panoche and Milham soil series.
- Qa2: Post Modesto II (late Holocene) alluvial fan terrace. Deposits are less than 4000 years B.P. in age. Surface dates to less than 1200 years B.P. Mapped as the Kimberlina, Cajon, and Wasco soil series.
- Qa1: Post Modesto III (latest Holocene) fan terrace/floodplain deposits less than 1000 years B.P. in age along the modern Kern River channel. Surface less than 500 years B.P. in age. Mapped as the Excelsior and Cajon soil series.
- Qa0: Post Modesto IV modern channel and bar deposits less than 150 years B.P. along the Kern River. Surface is considered to be recent (historical period). Mapped as Riverwash soil series.

Three of these surfaces (Qa1, Qa2, and Qa3) are considered to have a high potential for intact buried cultural resources based on the following criteria: (1) the alluvial fills below these surfaces accumulated coevally with prehistoric occupation of the Bakersfield area (they are Holocene in age), (2) previous geomorphic studies on these surfaces in the eastern San Joaquin Valley revealed the presence of buried soils that mark former stable land surfaces, and (3) the alluvium underlying these surfaces was deposited in a lower-energy fluvial environment making displacement and translocation of artifacts or extensive erosion of features less likely. Areas within Qa1 and Qa2 adjacent to abandoned channels identified in 1952 aerial images of the project area are considered to have very high potential for intact buried cultural resources, because the close proximity to water would have made these areas particularly attractive locations for prehistoric settlement. Qa0 surfaces and the abandoned channels themselves on the Qa2 surface are considered to have low potential for intact buried archaeological resources Areas identified as urban land have been extensively disturbed and are considered to have a moderate potential for buried cultural deposits in a primary context.

It is recommended that Stage II of the XPI study be implemented to refine and field check the preliminary buried-site sensitivity model and to further assess the areas deemed to have high and very high archaeological sensitivity. Stage II is not intended to locate buried cultural deposits, although such deposits may be identified during fieldwork.

Stage II would involve subsurface testing focused on the Qa1, Qa2, and Qa3 surfaces, with more-intensified testing in those areas adjacent to abandoned channels (areas of very high potential). An integrated coring-and-trenching program is the most effective approach for documenting and interpreting the local stratigraphy, obtaining radiocarbon samples for dating, and testing and refining the buried-site sensitivity model developed in Stage I.

The specific number, size, and location of trenches and cores will be finalized in the Stage II XPI proposal. Generally, in areas where the maximum depth of disturbance extends beyond 1.5 m (5 feet), it is recommended that a direct-push coring rig be used in conjunction with mechanical trenching. Along State Route 99 between Ming Avenue and Brundage Lane (Qa2 surface), where the planned depth of disturbance extends down to 5.6 m (18.5 feet) for all three alternatives, 2–3-inch-diameter cores spaced 50–100 m apart should provide sufficient subsurface information for this area. Where Alternatives A, B, and C cross abandoned Qa2 channels, multiple transects of 2–3-inch-diameter cores should be closely spaced, approximately 50–100 m apart, and placed in a grid pattern (if possible). Outside of the areas identified as having very high potential on the Qa1 and Qa2 surfaces, the cores and trenches can be more widely spaced but should still be within 250 m.

Subsurface testing will also be required on the Qa3 surface; however, because late Holocene deposits are likely less thick here, mechanical trenching will be adequate for testing this area. No subsurface work is recommended for the Qa0 surface or the abandoned channels themselves on the Qa2 surface.

If you need any additional information, please do not hesitate to contact me (phone: 909-335-1896; fax: 909-335-0808; E-mail: kbecker@sricrm.com). I look forward to continuing to work with you on this project.

Sincerely,

Kenneth M. Becker, M.A., RPA

Enclosures: Final Draft Extended Phase I Geoarchaeological Report: Stage I, Geomorphic Sensitivity Model for the Centennial Corridor Project