

# Memorandum

To: Herb Jones

From: Catherine Glidden

Date: March 4, 2010

Subject: Buried Sites Identification & Evaluation Proposal: Comments on your recent revision

The Louis Berger Group (LBG) has completed its review of your revision to the Buried Sites Proposal on behalf of the Surface Transportation Board (LBG). LBG has organized its comments to address those received from the Forest Service regarding the Proposal (see attached). More recently, comments have also been received from the SD and WY State Historic Preservation Offices (SHPOs) regarding the geomorphological reports from the respective states (also attached as some of the comments are relevant to the Proposal). I recommend that the document be further revised to address all of the applicable comments received thus far prior to its formal submission to the WY and SD SHPOs.

**We make the following observations and recommendations to assist you in your revisions:**

The Forest Service Comment “a”: The Forest Service requested clarification on how data or information gaps noted in the two previous geomorphological studies would be addressed. Text that was added in your revision stated that: *“The model is not intended to establish a direct correlation with the previous studies or respond directly to any data gaps they may have exposed.”* This statement does not provide sufficient justification as explained below.

1. In our view, the questions raised by the Forest Service seem to be directly applicable to the stated purpose of this proposal: *“to ascertain where deep testing is necessary to identify cultural resources and to assess where sensitive areas are situated for purposes of monitoring construction”* (p.3-1).
2. We recommend that you revise your proposal to either incorporate research necessary to address the data gaps identified by the Forest Service or provide an explanation in the text of the proposal that demonstrates how the existing approach will be effective in addressing these types of concerns once it is implemented.

The Forest Service Comment “b”: The Forest Service raised concerns about potential adverse effects associated with placing fill over buried site deposits.

1. While substantial revisions were made to Section 3.1.2 “Identifying Culturally Sensitive Areas Subject to Adverse Effects,” the revisions are inadequate in addressing whether “loss of access” to archaeological sites is an adverse effect. Although the loss of access for scientific research purposes is not by itself an adverse effect for sites considered eligible under Criterion D only; as the Forest Service points out, there may be sites eligible under criteria other than D for which burying may result in adverse effects.
2. You have addressed the Forest Service concerns regarding definition of the project’s vertical APE and have added information stating that soil compaction resulting from placement of fill and rail traffic is estimated to occur to a depth of 3.0 feet below the ground surface. In addition to including this new information about project effects, we feel it would also be helpful and appropriate to cite and quote the actual ACHP guidance (ACHP Item 29, p.20) as you did for the “loss of access” issue. This would not only add greater clarity for the reader but would help support the definition that has been provided.

With respect to this issue, we make specific note that the ACHP guidance regarding assessment of the vertical APE states that “changes in soil compaction or soil chemistry” are factors that may diminish site integrity; specifically, if the placement of fill over eligible sites can be expected to cause physical damage to site deposits or

loss of feeling or association, as in burying sites of religious and cultural significance to an Indian tribe.

3. A new argument has also been added to Section 3.1.2 of your proposal which states that no additional archaeological survey or testing is needed in these fill zones as “*previous surveys were designed, among other things, to recognize shallow cultural deposits within a zone comparable to the depth of expected impacts attributable to disturbance, settlement, and compaction in targeted fill zones.*” We disagree with your assessment that previous surveys have been sufficient to identify potential buried sites that may exist within this 3-foot compaction zone.

Examination of the exposures you describe (i.e., cut banks, ant piles, burrowing animal backdirt piles) might offer occasional opportunities for detecting evidence of buried archaeological materials exposed in surface contexts, but these exposures cannot be considered sufficient to have identified buried archaeological sites that may exist within all fill segments. **Some form of systematic subsurface testing, such as shovel testing, would be needed to support this contention.** Your argument makes the point that shovel testing was performed as part of the survey work completed for the New Build segment, but shovel testing was used almost exclusively for the purpose of site evaluation, not site identification (survey crews only dug shovel tests within known site boundaries where artifacts were otherwise visible at the surface). Survey crews did not use subsurface testing as part of a methodology designed to locate or identify unreported sites in buried contexts. In fact, none of the survey reports completed for the New Build segment include documentation that shows how shovel testing or any other form of systematic subsurface testing was used to identify archaeological sites that might be buried as much as three feet below the ground surface. For this reason, we concur with the Forest Service recommendation that: “*areas proposed for burial that have potential for buried deposits should be tested just like those areas that will be excavated for route construction.*”

**We recommend that DM&E devise a work plan to address the project’s potential effects to unreported buried sites that may exist within the proposed fill portions of the project corridor and then incorporate that work plan into this proposal.**

The Forest Service Comment “c”: The Forest Service requested clarification regarding the statement on page 3-5 that some soils are “too old” to contain archaeological deposits.

This comment was not addressed in the revised text. Additional clarification is needed. The problem with the way this section is worded (i.e., too old = Pre-Holocene) lies with the fact that archaeological sites may indeed occur on Pre-Holocene surfaces that remained accessible to human occupation during the Holocene period. It would be more accurate to note that areas with low potential include land surfaces that were “buried prior

to 14,000 BP” which is the date cited elsewhere on page 3-5 as the earliest possible date for human occupation in the project area.

The Forest Service Comment “d”: The Forest Service requested clarification with regard to the depth of “deeply buried sites.”

This comment was not addressed in the revised text. The proposal uses the term “deeply buried sites” as opposed to “buried sites” when defining the object and intent of this work proposal, and yet nowhere is this distinction clearly defined. If you emphasize this distinction and insist that it has special relevance to how Section 3.4.5 of the ID Plan is applied, then this terminology needs to be defined somewhere in this document. What specifically is the cut-off depth for buried versus deeply buried site deposits? Is it the 40 to 60 inches typical for “sensitive soils” as implied on page 3-2?

The Forest Service Comment “e”: The Forest Service commented on inconsistency in report organization compared with geomorphology reports.

This comment was not addressed in the revised text, but at this point STB sees no significant value in reorganizing the document in this fashion.

The Forest Service Comment “f”: The Forest Service requested clarification or confirmation that the high probability areas identified in previous geomorphology assessments will be included in the sampling effort.

This comment was not addressed in the revised text. Is it possible to cross-reference this information in the Appendices to demonstrate that these areas have been included?

The Forest Service Comment “g”: The Forest Service expressed concern that site-specific recommendations included in the geomorphology report for South Dakota remain in effect and sought confirmation that implementation of this work proposal would incorporate, not supplant, these recommendations.

This comment was not addressed in the revised text. We recommend that you include a statement to this effect in Section 1.0 or 3.0.

The Forest Service Comment “h”: The Forest Service recommended that the proposal include a statement which specifies that implementation of this work plan will produce data that can be used to build or contribute to building a record of alluvial stratigraphy for the project area.

This comment was not addressed in the revised text. We recommend that you specify whether or not implementation of this work proposal will generate information that might contribute to this record. Perhaps this could be added to Section 4.0.

The Forest Service Comment “i”: The Forest Service recommended that the Phase I field investigations include sampling of the three playas identified in the previous geomorphology reports.

This comment was not addressed in the revised text. You should consider the feasibility of testing these areas as part of Phase I sampling and include information to this effect in Section 4 and the Appendices that specifically states whether these areas will be included or not.

The Forest Service Comment “j”: The Forest Service commented that Section 4 under “Testing Strategy, Phase I, Selection of Sample Areas” should reference the need to examine soils with buried site potential located in fill zones, not just cut zones.

This comment was not addressed in the revised text. Please address this comment with the response to Comment “b” above.

The Forest Service Comment “k”: The Forest Service requested that a statement in Section 4.1.3 regarding report reviews be revised to read that reports will be reviewed in accordance with the process outlined in Section A.3 of the Programmatic Agreement(PA).

This comment was not addressed in the revised text. The appropriate sentence needs to be revised to cite Section A.3 of the PA.

The Forest Service Comment “l”: The Forest Service suggested that the review of the Phase I and II results include peer review by a geomorphologist or geoarchaeologist to assess the accuracy of interpretation.

This comment was not addressed in the revised text. A statement addressing the above should be included in Sections 4.1 and 4.2, as appropriate. The current text is clear that DM&E will continue to have a professional geomorphologist or geoarchaeologist directly involved in the work effort.

The Forest Service Comment “m”: The Forest Service asked: “how will the likelihood of encountering eligible sites and low frequency sites be measured?”

This question was not addressed in the revised text. The text in Section 4.1.3 should be revised as needed to provide additional explanation of this terminology and the manner in which you anticipate making judgments about site frequency in evaluating the utility of the Phase I model.

For example, will the discovery of a single site within a given landform type be considered verification of the model’s expectation that sites do exist in these contexts and that they will therefore warrant continued investigation? If not, is there a minimum frequency or percentage figure that will be used to reach this decision point

or perhaps some other measure? The explanation should include a statement regarding representative sampling and how well the proposed sampling approach might achieve this goal, or in other words, the extent to which the proposed sampling approach is likely to yield reliable findings.

The Forest Service Comment “n”: The Forest Service questions whether the proposed “construction monitoring” approach is appropriate and recommends an approach that would allow the required identification, evaluation, and treatment work to be completed prior to construction.

This comment was not addressed in the revised text. The Forest Service closing comment that “This proposal seems contrary to how the project should proceed” indicates that additional explanation is needed help justify the need for this type of approach as opposed to one that includes more conventional testing of affected areas prior to construction (ref., STB position paper from December 2008). We note that the Introduction Section to the current proposal provides a statement of purpose, but does not articulate the reasons why this approach is necessary and advisable. Please revise this section to provide a clear explanation for your chosen methodology.