

PROCEDURAL CLARIFICATION REGARDING THE IDENTIFICATION AND EVALUATION OF BURIED ARCHAEOLOGICAL SITES

Issue

The Surface Transportation Board (STB) and the Dakota, Minnesota, & Eastern Railroad (DM&E) propose to account for the project's potential to impact buried archaeological sites that may be located within the project's construction right-of-way in accordance with the following procedural clarification.

Purpose

The STB and DM&E recognize that landforms along the Project's New Build route have potential to contain buried cultural deposits that have not yet been detected as part of the intensive surface inventories completed thus far for the project. DM&E has postponed subsurface testing of many landforms considered to have buried site potential citing landowner refusal to allow trenching, limited access for vehicle-mounted coring devices or trenching equipment, etc. DM&E also considers acquisition of the Right-of-Way (ROW) necessary prior to conducting the subsurface testing to ensure that DM&E has legal access to targeted landforms and the right to conduct these ground disturbing activities. STB and DM&E further recognize that discoveries of such cultural deposits during construction could delay construction activities while the discoveries are taken into account in accordance with Stipulation H of the Programmatic Agreement (PA); therefore, an alternative approach, not specifically detailed in the PA, is considered necessary to address these concerns.

The following statement presents a strategy for identifying and investigating landforms which may contain buried cultural deposits not detected during the intensive surface surveys. The goal of this strategy is to ensure that a good faith effort is invested in the identification and evaluation of subsurface historic properties that were not detected during surface inventories, but are expected to be subject to the effects of project construction.

PA Stipulations and Other Guidance

The first stipulation of the PA introduces the Identification Plan (ID Plan) prepared for the Project as follows:

The ID Plan describes the APE [Area of Potential Effect], the methodology for the location, inventory, identification, recording, and evaluation of *all cultural resources that have surface and exposed profile indications along the alignment(s) approved for construction*. The ID Plan also describes the APE, the methodology for location, inventory, identification, recording, and evaluation of all cultural resources in portions of the existing rail line. (PA, Stipulation A: Identification Plan; emphasis added)

The ID Plan provides additional guidance that expands the intended scope of the identification and evaluation effort to ensure that steps are taken to identify and test areas considered

to have potential for buried cultural resources. Specific reference to this is found in Part 3.4 of the ID Plan (ID Plan, page A-4) which presents the intended scope of the intensive survey effort in greater detail. The stated measures required to complete “Identification and Evaluation for the New Construction” segment of the project ROW in South Dakota and Wyoming (The APE for New Construction is defined as “the portion of the proposed project that will involve new construction where rail lines currently do not exist” [ID Plan, Part 3: Area of Potential Effect]) include the following.

An intensive survey of the construction ROW to identify all cultural resources. Testing will be done to evaluate cultural resources against NRHP eligibility criteria (36 CFR 60.4). The guidance in National Park Service Bulletin 38 and E.O. 13007 shall also be considered when evaluating sites for NRHP [National Register of Historic Places] eligibility. If in the opinion of the investigator and the cultural resource representative designated by the tribes, the cultural resource is to be recommended as a historic property, sufficient information to formulate Treatment Plan(s) shall be obtained...No backhoe or block excavations shall be undertaken without a written plan and SHPO [State Historic Preservation Officer] consultation and approval. [ID Plan, Part 3.4.4, page A-4; emphasis added]

A geomorphological survey of the construction ROW will be conducted to *identify areas where buried cultural resources may exist and where deep testing may be necessary to identify cultural resources*. The geomorphologist will also recommend construction monitoring areas and assist in evaluation of cultural resources against NRHP eligibility criteria (36 CFR 60.4) by providing identification of the soils(s), soil characteristics, soil dating, and analysis of the probability of the soils to contain cultural material. [ID Plan, Part 3.4.5, page A-4; emphasis added]

This part of the ID Plan (i.e., Part 3.4) is best interpreted and implemented as part of a coordinated identification and evaluation effort as opposed to strict interpretation as unrelated or stand-alone provisions, e.g., it would be mistake to interpret the highlighted language in Part 3.4.5 cited above to mean that the sole intent of the geomorphological survey was to identify areas with potential for buried cultural resources without the need to then survey or investigate those areas for the greater purpose of identifying buried sites.

This investigative approach, i.e., assessing the APE’s potential for buried cultural resources by means of a geomorphological survey and then testing those areas in order to identify buried sites, is also consistent with current guidance provided by the Secretary of the Interior (SOI) and the Advisory Council on Historic Preservation (ACHP) regarding the proper scope for cultural resource identification efforts as noted below.

Identification activities should use a search procedure consistent with *the management needs for information and the character of the area to be investigated*. Careful selection of methods, techniques and level of detail is necessary so that the gathered information will provide a sound basis for making decisions. [SOI Standards and Guidelines for Archaeology and Historic Preservation: Identification Standard I.

Identification of Historic Properties is Undertaken to the Degree Required to Make Decisions; emphasis added]

Since an undertaking's effects are not restricted to the surface, in delineating the APE, a federal agency also should consider the potential for the undertaking's effects to occur above and below ground. Because the APE is three dimensional, agencies should consider how the undertaking might impact historic properties on the surface, above it, and below it. In setting the APE's lower limits, the federal agency should rely on scientific and engineering analyses to define a depth beyond which alteration to any eligible or listed archaeological site, if present, is not reasonably expected to occur. This analysis should demonstrate that any such site, if present, would not be affected by the undertaking through changes in soil compaction or soil chemistry, for example. The challenge is to determine a vertical limit below which a knowledgeable person can reasonably say there will be no effect to the integrity of a site, should one be present. [ACHP website, Section 106 Archaeology Guidance at <http://www.achp.gov/archguide/should-area-potential-effects-ape-also-be-defined-vertically>]

Background Information on Geomorphological Survey Findings and Project Design

Geomorphological surveys for the New Construction ROW have been conducted by GeoArc Research (Hajic 2008) for the South Dakota segment and LaRamie Soils Service, Inc. (Mayer and McFaul 2008) for the Wyoming segment.

- The Wyoming survey concluded that Holocene-age alluvial, colluvial, and eolian deposits with potential to contain buried in-situ archaeological materials do occur within the New Construction ROW, and that alluvial fills in this portion of the project corridor have the greatest and most widespread potential to contain buried sites. The survey team encountered difficulties correlating the available soils information with landform sediment associations or landform types; nonetheless, they were able to generate a series of maps that identify culturally sensitive landforms throughout the project corridor in Wyoming.
- The South Dakota survey developed detailed geomorphic interpretations for 13 different sample locations within the New Construction ROW. The sample locations encompass a variety of landform types, but focused primarily on valley crossings. Potential for buried cultural resources was recognized within eolian deposits found on uplands, flats, terraces, and playa basins. Buried soils with potential for cultural resources were characterized as “abundant to common” within multiple alluvial fills identified within the Cheyenne River valley and its tributaries (Hajic 2008:79).

DM&E's preliminary engineering designs for the project indicate that some depositional landforms which may contain deeply buried cultural deposits will be subject to surface cutting construction activities. Other landforms with potential for subsurface cultural deposits will be situated below levels of anticipated disturbance by construction activities, particularly in areas where the current ground surface will be covered with fill material. Any buried cultural deposits located in these fill areas would likely be below construction impact zones and therefore may be considered

outside the APE according to ACHP guidance pending an engineering analysis of the potential effects associated with soil compaction. However, other areas, particularly locations where deep construction cuts are planned could be affected and should therefore be investigated. In order to provide a streamlined, cost effective and manageable approach to further identifying and evaluating buried cultural resources within the project's APE we provide the following recommendations.

Recommendations

Pre-Construction Investigations

1. DM&E will use the findings presented in the geomorphological reports completed by their consultants to map the location of Holocene-age landform sediment assemblages that exist within the project ROW for new construction. If additional geomorphological information is necessary to complete this task, then DM&E will conduct additional field investigations (i.e., profile inspection, coring, trenching, etc.) as appropriate to map this information for the new construction ROW. If property access is not possible for this purpose, then the location and aerial extent of these landform sediment assemblages should be estimated based on the best information available, e.g., mapped soil types, topographic maps, aerial photographs, etc.
2. All Holocene-age landform sediment assemblages with geological potential to include undisturbed cultural resources (i.e., landforms having suitable age to include cultural deposits, potential to include buried soil(s) or buried surfaces that exhibit periods of geological stability sufficient to permit human occupation, and absent evidence of modern disturbance affecting buried strata with resource potential) will be identified as "culturally sensitive landforms" and mapped throughout the project ROW for new construction.
3. DM&E will compare the geographic distribution of "culturally sensitive landforms" with project design information in order to identify areas within the APE that may be affected by proposed ground disturbance activities such as "cutting" or excavation.
4. All "culturally sensitive landforms" with potential to be affected by proposed ground disturbance should be investigated prior to construction in order to determine the presence or absence of buried cultural resources within the APE. Investigative efforts may rely on a variety of tools ranging from hand-operated coring devices, mobile Giddings rigs, or backhoes, and would follow sampling strategies (e.g., test intervals, collection techniques, etc.) in accordance with existing SHPO guidelines and tailored to the specific conditions, circumstances, and resource potential of each targeted locale.
5. All cultural resources identified as a result of these subsurface investigations should be evaluated against all National Register eligibility criteria (36 CFR 60.4) in accordance with the terms of the PA and ID Plan approved for this project. Wherever possible, buried sites should be evaluated prior to project construction.
6. In the event that property access or other factors beyond DM&E's control prohibit archaeological testing of areas with buried site potential within the project ROW prior to project construction and/or testing and evaluation of site eligibility, then provisions will be

made to investigate these areas for buried cultural resources and complete National Register eligibility evaluations as part of a Construction Monitoring Plan to be implemented during project construction. This plan should also include provisions for testing and evaluation of any previously unreported cultural resources that may be discovered during construction activities.

Construction Monitoring Plan

1. DM&E will prepare a Construction Monitoring Plan (Plan), subject to consulting party review, that provides detailed procedures for the identification of archaeological sites in areas considered to have geological potential for buried cultural deposits, but not previously tested for the presence or absence of buried archaeological sites prior to project construction due to factors beyond DM&E's control, particularly access issues.
2. The Plan must also provide procedures for evaluating the National Register eligibility of previously unevaluated sites or any new site discoveries made during the investigation of areas with buried site potential unless the consulting parties agree that these properties can be avoided during project construction.
3. If previously undiscovered cultural remains are encountered during project construction, they will be assessed by qualified monitors, evaluated and treated in accordance with the PA procedures governing construction monitoring (PA, Stipulation B.2.e) and site discovery (PA, Stipulation H).

References Cited

Hajic, E.

- 2008 Geoarchaeology and Geomorphology of the DM&E Railroad 'New Build' Route, Western South Dakota. Unpublished report submitted to HDR, Inc., Minneapolis, MN.

Mayer, J. H. and M. McFaul

- 2008 Geomorphological Assessment of Archaeological Sensitivity Along the DM&E Powder River Basin Expansion Project – Wyoming Segments. Unpublished report submitted to HDR, Inc., Minneapolis, MN.