

EO-1058



SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Economics, Environmental Analysis and Administration

June 19, 2008

Judith Bittner
State Historic Preservation Officer
Alaska Office of History and Archaeology
550 West 7th Ave., Suite 1310
Anchorage, AK 99501-3565

Re: STB Finance Docket No. 35095, the Alaska Railroad Corporation – Petition for Exemption to Construct and Operate a Rail Line Extension to Port MacKenzie, Alaska

Dear Ms. Bittner:

With this letter the Surface Transportation Board (Board) would like to formally initiate the Section 106 consultation process with your office, as recommended at 36 CFR 800, for the proposed Port MacKenzie Rail Extension. In addition, we are requesting your review and comment on the enclosed cultural resources work plan to support preparation of the Environmental Impact Statement (EIS) for the project. The work plan establishes guidelines for identifying and evaluating the impacts to cultural resources for each of the proposed project alternatives.

In brief, the Alaska Railroad Corporation has filed a petition with the Board, pursuant to 49 U.S.C. 10502, requesting authority to construct and operate a new rail line from Matanuska-Susitna Borough's Port MacKenzie to connect with the existing Alaska Railroad Corporation rail system between Wasilla and north of Willow, Alaska. The Board is the Federal agency responsible for deciding whether to grant authority for ARRC to construct and operate the proposed new rail line. The Section of Environmental Analysis (SEA) is the office within the Board responsible for preparing the appropriate documentation for compliance with the National Environmental Policy Act (NEPA). SEA is preparing an EIS to evaluate the potential environmental impacts of the proposed Port Mackenzie Rail Extension, including consideration of potential impacts to cultural resources. ICF International is serving as the independent third-party consultant to assist SEA with the EIS. Stephen R. Braund & Associates (SRB&A) is the cultural resources subcontractor to ICF International.

In March, Dave Navecky, SEA's Project Manager for the EIS, and SRB&A staff met with staff your office to discuss a methodology for assessing potential effects to cultural resources caused by the proposed action. SRB&A subsequently developed the enclosed work plan for identifying and evaluating cultural resources along the proposed new rail line. As you will see, the work plan proposes to use a combination of desktop predictive modeling and on-the-

ground testing to evaluate cultural resources within the vicinity of the project. The work plan outlines the process by which the project will satisfy the requirements of Section 106 of the National Historic Preservation Act and also provide adequate information on cultural resources for the EIS process to develop a determination of effects for the proposed project alternatives. We would like to receive any SHPO comments on or suggested revisions to the work plan by July 18, 2008.

We look forward to your comments on the enclosed work plan. If you have any questions about the project please do not hesitate to contact Dave Navecky, SEA Project Manager, at 202-245-0294, or Alan Summerville, ICF International Project Manager, at 703-934-3616.

Sincerely,

A handwritten signature in black ink, appearing to read "Victoria Rutson". The signature is fluid and cursive, with the first name "Victoria" and last name "Rutson" clearly distinguishable.

Victoria Rutson
Chief
Section of Environmental Analysis

Enclosure

CULTURAL RESOURCES
WORK PLAN
Proposed Port MacKenzie Rail Extension Project
Port MacKenzie to Willow, Alaska
STB Finance Docket No. 35095

Prepared for
Surface Transportation Board
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and

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5 June 2008

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EXECUTIVE SUMMARY

The Alaska Railroad Corporation (ARRC) intends to file a petition with the Surface Transportation Board (STB) requesting authority to construct and operate a new rail line from Matanuska-Susitna Borough's Port MacKenzie to the existing ARRC mainline between Wasilla and north of Willow in south-central Alaska. STB is the Federal agency responsible for granting authority for the construction and operation of the proposed new rail line. The Section of Environmental Analysis (SEA) is the office within the STB responsible for preparing the appropriate National Environmental Policy Act (NEPA) documentation for railroad construction and operation cases that come before the Board. SEA has issued a Notice of Intent to prepare an Environmental Impact Statement (EIS) for the Port Mackenzie Rail Extension, a draft scope of study, and a notice of scoping meetings.

STB, through ICF International (ICF), has engaged Stephen R. Braund & Associates (SRB&A) to assist SEA in the preparation of the cultural resources portion of the EIS. The EIS will identify cultural resources in the project area, evaluate the impacts of the proposed action on the cultural resources for each of the alternatives, and recommend mitigation measures, as appropriate. On March 5, 2008, SEA, ICF, ENTRIX, Inc., SRB&A, and the State Historic Preservation Office met to discuss a methodology for assessing effects to cultural resources caused by the proposed action. This cultural resources work plan is a result of that meeting and includes a brief description of the project and project area, NEPA and NHPA regulations regarding assessment of effects to cultural resources from proposed projects, consultation with parties knowledgeable about cultural resources in the proposed project area, and existing knowledge including documented cultural resources and previous surveys in the project area. The work plan also includes a description of the methods proposed for assessing effects to cultural resources from the proposed project for both the NEPA and Section 106 process.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
ADNR	Alaska Department of Natural Resources
AHPA	Alaska Historic Preservation Act
AHRS	Alaska Heritage Resources Survey
AIRFA	American Indian Religious Freedom Act
ANCSA	Alaska Native Claims Settlement Act
APE	Area of Potential Effect
ARRC	Alaska Railroad Corporation
ARPA	Archaeological Resources Protection Act
BP	Before Present
CFR	Code of Federal Regulations
CMT	Culturally Modified Tree
DOE	Determination of Eligibility
DOT&PF	Alaska Department of Transportation and Public Facilities
EIS	Environmental Impact Statement
GIS	Geographic Information Systems
IRA	Indian Reorganization Act
MSB	Matanuska-Susitna Borough
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	National Park Service
NRHP	National Register of Historic Places
OHA	Office of History and Archaeology
SEA	Section of Environmental Analysis
SHPO	State Historic Preservation Office(r)
SRB&A	Stephen R. Braund & Associates
STB	Surface Transportation Board
USGS	U.S. Geological Survey

INTRODUCTION

The Alaska Railroad Corporation (ARRC) intends to file a petition with the Surface Transportation Board (STB) requesting authority to construct and operate a new rail line from Matanuska-Susitna Borough's (MSB) Port MacKenzie to the existing ARRC mainline between Wasilla and north of Willow in south-central Alaska. STB is the Federal agency responsible for granting authority for the construction and operation of the proposed new rail line. The Section of Environmental Analysis (SEA) is the office within the STB responsible for preparing the appropriate National Environmental Policy Act (NEPA) documentation for railroad construction and operation cases that come before the Board. ICF International is serving as the independent third-party consultant to SEA to assist with the NEPA review process. SEA has issued a Notice of Intent to prepare an Environmental Impact Statement (EIS) for the Port MacKenzie Rail Extension, a draft scope of study, and a notice of scoping meetings.

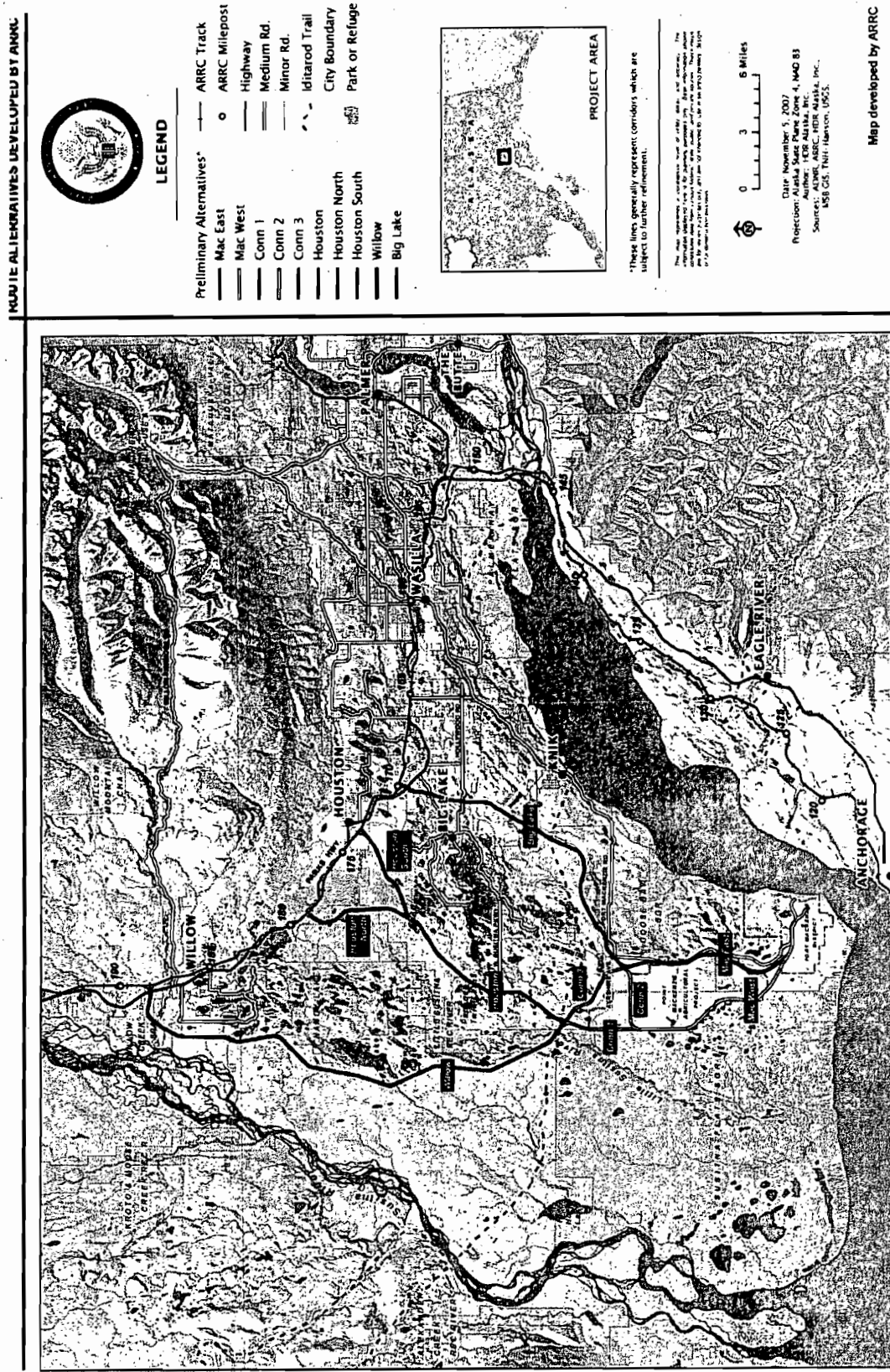
STB, through ICF International (ICF), has engaged Stephen R. Braund & Associates (SRB&A) to assist SEA in the preparation of the cultural resources portion of the EIS. The EIS will identify cultural resources in the project area, evaluate the impacts of the proposed action on the cultural resources for each of the alternatives, and recommend mitigation measures, as appropriate. On March 5, 2008, SEA, ICF, ENTRIX, Inc., SRB&A, and the State Historic Preservation Office (SHPO) met to discuss a methodology for assessing effects to cultural resources caused by the proposed action. This cultural resources work plan is a result of that meeting and includes a brief description of the project and project area, NEPA and National Historic Preservation Act (NHPA) regulations regarding assessment of effects to cultural resources from proposed projects, consultation with parties knowledgeable about cultural resources in the proposed project area, and existing knowledge including documented cultural resources and previous surveys in the project area. The work plan also includes a description of the methods proposed for assessing effects to cultural resources from the proposed project for both the NEPA EIS and Section 106 process.

Project Description and Area of Potential Effects

Under NHPA, the area of potential effect (APE) includes those areas where cultural resources would be directly or indirectly affected by the proposed undertaking (36 CFR 800.16(d)). To effectively meet the obligations under Section 106 of the NHPA, which requires federal agencies to take the effects of federal undertakings on historic properties into account, the NEPA process will be coordinated with the Section 106 process as recommended at 36 CFR 800.8. Identification of cultural resources within and near the proposed route alternatives, the APE, will be conducted to assess the effects of the proposed project on cultural resources.

The proposed Port MacKenzie Rail Extension would involve the construction and operation of a new rail line connecting Port MacKenzie to a point on the ARRC main line between Wasilla and north of Willow, Alaska (Figure 1). The proposed rail line would provide freight services between the Port and Interior Alaska, and according to the Matanuska-Susitna Borough, would support the Port's continuing development as an intermodal and bulk material resources export and import facility. Major elements of the proposed rail extension would include between 30 and 45 miles of new railroad track; a 200-foot wide right-of-way (100 feet on either side of the center line); crossings of local roads, streams, trails, and utility corridors; sidings; and ancillary facilities. The anticipated train traffic would be two trains daily on average, with one train per day traveling in each direction. The APE for direct effects would include the 200-foot wide right-of-way as well as areas where the ground would be disturbed such as staging areas, work camps, cut and fill areas, material sources/gravel quarries, overburden disposal areas, associated buildings/structures (e.g., sidings, bridges, etc.), and associated infrastructure (e.g., communication towers, power lines, etc.). Indirect effects could include a larger area than the 200-foot right-of-way.

Figure 1: Port MacKenzie Rail Extension Project, Southcentral Alaska



Cultural Resources Regulations: The National Environmental Policy Act and Section 106 of the National Historic Preservation Act

NEPA requires a review of project and program impacts on the cultural environment, which generally includes historic structures, archaeological sites, historic districts, traditional cultural properties, anthropogenic landscapes, and other culturally valued places, as well as cultural use of a biophysical environment, and sociocultural attributes (e.g., social cohesion, social institutions, lifeways, religious practices, and/or other cultural institutions).

Direct effects to cultural resources are impacts to the characteristics of a cultural resource's quality, integrity, and association (36 CFR Part 800.5; 40 CFR 1508.8). Examples of direct effects to cultural resources from construction and/or operation of the proposed facilities could include physical destruction of or damage to all or part of the resource, removal of the resource from its original location, change of the character of the resource's use or of physical features within the resource's setting that contribute to its historic significance, change in access to traditional use sites by users, or loss of cultural identity with a resource. Indirect effects to cultural resources include those impacts resulting from the action that occur later in time or further removed in distance but still reasonably foreseeable (40 CFR 1508.8). Indirect effects on cultural resources could include modifications to the visual or aesthetic setting of an NRHP-eligible property. It also includes increased access to and proximity of project components to culturally sensitive areas. This could result in a greater vulnerability of cultural resources to damage caused by project personnel and equipment during construction and operation of facilities and infrastructure.

NEPA requires consideration of context and intensity of an impact when describing its significance (40 CFR 1508.27). Context includes the affected society (e.g., local, regional, national), the affected region, the affected interests and the setting (or locality) of the proposed action (e.g., local, regional or national). Intensity includes consideration of geographic extent of the effect (e.g., limited, local or extensive), duration (e.g., one-time, intermittent or chronic), magnitude or amount of an impact, and likelihood or probability of an impact (e.g., certain, expected or actual). In the case of cultural resources, context applies to cultural resources located within the project area. Intensity for cultural resources includes the unique qualities of the resource, such as its eligibility for or listing on the NRHP, and the cumulative aspects of project impacts.

Compliance with Section 106 of the NHPA (16 USC 470) is required by law for all federal undertakings. Section 106 outlines the process for evaluating the effects of an undertaking on historic properties. The process involves consultation with the SHPO, the Advisory Council on Historic Preservation (ACHP), Native American tribes, and other interested parties to determine the effects of federal actions; coordinating with other reviews (e.g., NEPA, Native American Graves Protection and Repatriation Act [NAGPRA], American Indian Religious Freedom Act [AIRFA], and Archaeological Resources Protection Act [ARPA]), identifying the SHPO, tribes, and other likely consulting parties, and planning to involve the public; identifying historic properties using the Secretary of the Interior's Standards and Guidelines (as outlined in 36 CFR 800.4; National Park Service [NPS] n.d.); and evaluating all historic properties for NRHP eligibility on the basis of their significance (e.g., historical, archaeological, and/or cultural; see 36 CFR 60.4). The NEPA process generally involves partial completion of the Section 106 process by initiating consultation with agencies, tribes, and stakeholders, and by identifying cultural resources in the proposed project area to the extent that potential impacts of the proposed project can be reasonably determined.

NHPA defines historic properties as prehistoric and historic districts, sites, buildings, structures, and objects listed or eligible for inclusion on the NRHP including artifacts, records, and material remains related to the property (16 USC 470w, Sec. 301.5). A determination of eligibility (DOE) for the NRHP is based on a description and evaluation of a cultural resource, a statement of significance, and a selected list of sources, maps, photographs, or other illustrations. Consideration is given to both the criteria of

significance and integrity of the site condition. The evaluation considers the historic context of the property, including its relation to other known historic properties (Alaska Department of Natural Resources, Office of History and Archaeology [ADNR, OHA] 2003a). For a cultural resource (districts, sites, buildings, structures and objects) to be eligible for the NRHP, it must possess integrity of location, design, setting, materials, workmanship, feeling and/or association. The NRHP (36 CFR 60.4) outlines the criteria for determining the eligibility for a historic property as follows:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and

(a) that are associated with events that have made a significant contribution to the broad patterns of our history; or

(b) that are associated with the lives of persons significant in our past; or

(c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) that have yielded, or may be likely to yield, information important in prehistory or history. (36 CFR 60.4)

An effect, for both Section 106 and NEPA, is when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP. The effect is considered adverse if it would impact the property in a manner that would diminish the property's integrity (location, design, setting, materials, workmanship, feeling, association) and/or its association under Criteria A-D, thus rendering it ineligible for the NRHP. There are several ways to minimize or mitigate effects to cultural resources. Mitigation under NEPA (40 CFR 1508.20), as it applies to cultural resources, involves:

- Avoiding the impact altogether by not taking a certain action or parts of an action (e.g., relocating a project component to avoid impact on an archeological site, a historic district, or an area of traditional use)
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation (e.g., altering the design of a project to reduce impacts)
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment (e.g., restoring impacted sites, landscapes, or buildings)
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
- Compensating for the impact by replacing or providing substitute resources or environments (e.g., rehabilitating some buildings in exchange for demolishing others, conducting archeological data recovery or replacing areas used for cultural activities by providing access to other similar areas)

Consultation

As part of the preliminary environmental assessment for the proposed Port MacKenzie project, ARRC contacted the SHPO, the Knik Tribal Council, the Knik Tribal Council Cultural and Historic Preservation Committee, and the MSB Cultural Resources Office to identify potential cultural resources in the project area. Responses from these organizations are included in the preliminary environmental report (HDR

Alaska, Inc. and TNH-Hanson, LLC 2008). The STB published a Notice of Intent in the Federal Register on February 12, 2008 and requested scoping input from the SHPO and local tribes at that time. The STB intends to conduct consultation with SHPO, appropriate tribes, and other concerned parties throughout the project. The STB, ICF International, ENTRIX, Inc., SRB&A, and the SHPO met on March 5, 2008 to discuss a methodology for assessing effects to cultural resources caused by the proposed project. This cultural resources work plan is a result of that meeting.

EXISTING KNOWLEDGE

There are more than 100 recorded cultural resource sites in the project area based on a preliminary review of the Alaska Heritage Resources Survey (AHRS) maintained by the ADNR, OHA (ADNR, OHA n.d.). Cultural resource sites include archaeological, ethnographic, and historic sites. The project area was traditionally used by the Dena'ina, and a portion of the area is where the greatest density of Dena'ina population lived during the prehistoric and historic periods. Therefore, this is an area that is likely to encompass numerous Dena'ina cultural resource sites including villages, hunting and fishing camps, traditional locations where raw materials and subsistence resources were collected, sacred areas, and burial locations. In addition to Dena'ina uses, non-Native people used the area historically for fur farming, agriculture, homesteading, dog mushing, and recreation. One notable historic resource that could be affected by the proposed project is the Iditarod National Historic Trail, which was designated a National Historic Trail by the U.S. Congress in 1978.

There have been few cultural resource surveys conducted in the vicinity of the project area. In order to conduct a preliminary assessment of impacts to cultural resources from this project, the MSB Cultural Resources Office developed a model to predict areas of high probability for archaeological sites within the project area. Probability was based on the attributes and context of recorded sites (e.g., terrain, topography, distance to water). The probability model did not include post-twentieth century historical data on the built environment (HDR Alaska, Inc. and TNH-Hanson, LLC 2008).

METHODS PROPOSED FOR ASSESSING EFFECTS TO CULTURAL RESOURCES UNDER NEPA AND SECTION 106

Several types of cultural resources could be affected by the proposed Port MacKenzie Rail Extension including archaeological resources, historic structural resources, ethnographic resources, and cultural landscapes. Archaeological resources are prehistoric Native American cultural resources and historic archaeological resources of Native American and Euro-American origins. Archaeological resources that have been found, or can be expected to occur are diverse and include villages, fishing sites and weirs, hunting and gathering sites (e.g., camps, processing sites, lookouts, kill sites), collapsed log cabins, trails, horticulture sites, evidence of culturally modified trees (CMT), buried sites, major/multicomponent sites, and cemeteries or burials. Historic structural resources are standing structures that possess historic qualities, either for the people who occupied them or for the quality and integrity of workmanship. If the building has collapsed or is otherwise open to the elements, it falls into the archaeological resources category. Historic structural resources that may be found in the project area include homesteading cabins and related buildings, recreational cabins, and agricultural buildings. Ethnographic resources are tangible and intangible elements of the environment associated with cultural traditions, such as special places in the natural world, structures or sites with cultural associations, naturally occurring materials, and subsistence activities. Examples of ethnographic resources that may occur in the project area include traditional fishing and/or hunting locations, locations traditionally used for gathering materials used in utilitarian and craft items, locations associated with oral traditions, and traditionally used trails. Ethnographic resources also include traditional cultural properties. A traditional cultural property is eligible for inclusion in the NRHP because of its association with cultural practices or beliefs of a living community that are (1) rooted in that community's history, and (2) important in maintaining the continuing cultural identity of the community (Parker and King 1998). The cultural landscape is an

extension of the ethnographic resource. Cultural landscapes are a geographic area, including both natural and cultural resources, associated with historic events, activities, and/or people. Landscapes are “intertwined patterns of things both natural and constructed”, and are a “reflection of human adaptation and use of natural resources which are often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built” (NPS 1997). At the broadest scale, the ethnographic resource encompasses entire landscapes. During the March 5, 2008 meeting, the SHPO recommended that the assessment of cultural resources for the Port MacKenzie Rail Extension include an analysis of potential cultural landscapes for agriculture, dog mushing, and recreation in addition to the Dena’ina cultural landscape.

SRB&A proposes that the Section 106 and NEPA EIS processes for the proposed undertaking be integrated and conducted concurrently, as recommended in 36 CFR 800.8, so that information on potential impacts to cultural resources can be evaluated as part of the EIS. The following describes the proposed methodology for assessing impacts to cultural resources from the Port MacKenzie Rail Extension including methods to be used during the EIS preparation and the completion of Section 106 responsibilities.

NEPA Assessment of Potential Impacts

The NEPA review will begin with a literature review and background research, including review of the AHS maintained by ADN, OHA (n.d.); the NRHP maintained by NPS (n.d.); existing archaeological, historic, and ethnographic literature for the project area; and reports regarding previous surveys in the project area. The section of the EIS that discusses the affected environment for cultural resources will include a description of known archaeological, historic, and ethnographic resources as well as cultural landscapes in the project area. In addition, the affected environment coverage will include a discussion of cultural resources likely to be found in the project area based on the probability model, as well as cultural resources found during Summer 2008 ground truthing surveys. The probability method and ground truthing survey are described below.

For the purposes of comparing potential impacts to cultural resources in the EIS, all known cultural resources within the project area will be considered potentially eligible for the NRHP unless previously determined otherwise. As described above, an adverse effect to cultural resources would be found when an undertaking would alter, directly or indirectly, any of the characteristics of that resource that would qualify the property for inclusion in the NRHP such as the resource’s integrity (location, design, setting, materials, workmanship, feeling, association) and/or its association under Criteria A-D. The cultural resources environmental consequences chapter in the EIS will include an assessment of direct and indirect effects to known cultural resources for each proposed project alternative. The environmental consequences chapter will also include a comparison of effects on cultural resources by alternative based on probability modeling, including ground truthing field work, described below.

The EIS will also include cumulative effects to cultural resources (known and planned) from the proposed action and mitigation measures for addressing adverse effects to cultural resources from the proposed project.

Probability Methodology

A probability method for predicting the presence or absence of cultural resources was recently developed for the project area by the MSB Cultural Resources Division Planning and Land Use Department (HDR Alaska, Inc. and TNH-Hanson, LLC 2008). This probability methodology – or predictive modeling – can be used to guide where focused cultural resource investigations should be conducted prior to ground disturbing activity. In addition, predictive modeling can be used to compare effects to cultural resources from proposed alternatives during the NEPA process. For the proposed Port MacKenzie Rail Extension Project, SRB&A will tier off of the MSB probability model. The current model focuses on the

probability of prehistoric archaeological sites, but SRB&A will revise the model to add the probability for encountering historic sites. The MSB Cultural Resources office recommended field surveys prior to construction for areas identified as high probability for containing archaeological sites and included emphasis on the following features:

- confluence of a river with a lake,
- confluence of two rivers,
- bluffs above major waterways,
- promontories that may have provided good lookouts for prehistoric camps,
- promontories near or adjacent to swamps where waterfowl might have congregated, and
- bluffs surrounding inland lakes and streams (HDR Alaska, Inc. and TNH-Hanson, LLC 2008).

SRB&A suggests four levels of probability based on archaeological, ethnographic and historic information; known cultural resource site location information; topographic feature distributions; and other resource distribution data. These four levels of probability include:

- 1) **Known Site Location:** Includes a small area around identified sites, features, or artifact finds. Activities represented by sites/features/artifacts are rarely confined to the physical limits of a feature.
- 2) **High Probability:** Indicated by proximity to where clear-water streams enter silty rivers; high ground near an important resource; proximity to travelways (trails/streams); high prominences above surrounding terrain usable as lookouts for game; bluffs above major waterways as well as lakes and streams, inlets or outlets of lakes; confluences of two rivers/streams or a river/stream with a lake; proximity to Euroamerican settlements; and areas where remains have been reported but have not been confirmed.
- 3) **Medium Probability:** Includes areas with some prospect of finding cultural resources but less likelihood than high probability areas such as along high river banks, dry land with no topographic prominence relative to the surrounding terrain, topographic prominences away from the rivers, and high dry banks along the shores of lakes.
- 4) **Low Probability:** Includes swampy areas, intertidal marshes, very recent geological features such as active river floodplain or islands, areas with steep inclines, areas where previous ground surface and subsurface has been destroyed or heavily disturbed and/or culture bearing soils have been removed, dry lake or stream beds, bare bedrock outcrops, areas previously surveyed with negative results, areas known to have no historic significance, and areas determined not suitable for occupation or where there is a low potential for site preservation.

SRB&A will create a Geographic Information Systems (GIS) probability model for the proposed project area based on archaeological, ethnographic and historic information; known cultural resource sites; the MSB probability model; topography; and hydrography. This GIS probability model will help to refine the four probability levels described above and will be used to create a map that will be used to choose possible survey locations for the ground truthing survey. The GIS probability model will only evaluate areas within one mile of proposed project alternatives. The study area will be divided into 100-meter squares and scored based on the following criteria:

- within 500 feet of an AHRS or other cultural resource site (+1)
- designated as a high probability area for cultural resources by MSB (+1)
- within one mile of the coast (+1)
- within one-quarter mile of a river, stream, or lake (+1)
- a surficial geology type of any of the following (+1):
 - moraines and other unsorted glacial drift
 - proglacial lake and associated fluvial deposit

- sand dune and other eolian deposit
- previous survey data by section:
 - positive survey (+1)
 - negative survey (-1)
 - no survey (0)

Based on the above scoring method used in the GIS probability model, which was informed by the four probability levels described above, each 100-meter square could receive a maximum score of six. If the 100-meter square's end score was a four through six, SRB&A would designate it as high probability. If the 100-meter square's end score was a two or three, SRB&A would designate it as medium probability. If the 100-meter square's end score was a one, SRB&A would designate it as low probability. If the 100-meter square's end score was a zero or negative one, SRB&A would remove it from further consideration. SRB&A will use the results of the probability method to create a map that will be used to choose possible locations for the ground truthing survey and to assess the various route alternatives.

Ground Truthing Survey

Based on the probability method described above, SRB&A would conduct ground truthing surveys in the project area. A sample of each proposed alternative would be surveyed, with survey efforts concentrated in areas determined to be high or medium probability for cultural resources. Ground truthing would include a pedestrian survey along transects determined by ground conditions, as well as the excavation of test units in high and/or medium probability areas. To the extent possible, the cultural resources ground truthing survey will be coordinated with other field studies conducted for the EIS during Summer 2008. Following completion of the ground truthing field effort, a report describing the probability method, ground truthing survey methods and results will be submitted to SHPO. The SHPO will have a minimum of 30 days to review and respond to this report. The ground truthing survey will help to further refine the probability method that will be used for the Section 106 assessment.

Completion of the Section 106 Process

Following completion of the EIS process, and if the STB authorizes construction and operation of the rail line extension, the Section 106 assessment of cultural resources would be completed. The completion of Section 106 responsibilities is expected to be guided by a programmatic agreement (PA) developed for the Port MacKenzie project, with all fieldwork, reporting, and approvals obtained prior to construction. This phase of analysis would tier off of the data collected for the EIS, which included a review of the AHRS maintained by ADNR, OHA; the NRHP maintained by NPS; existing archaeological, historic, and ethnographic literature for the project area; and reports regarding previous surveys in the project area, and included the application and ground truthing of the probability method for the route alternatives. This phase of the work would include consultation with SHPO, appropriate Native organizations, user groups (e.g., dog mushers, farmers, snow machiners, recreationists, etc.) and other knowledgeable parties (e.g., the Matanuska-Susitna Borough, Bureau of Land Management, Alaska Division of Parks and Outdoor Recreation, etc.) regarding cultural resources and cultural landscapes in the project area for any alternative authorized by the STB for construction at the close of the NEPA process.

This phase of analysis would include a pedestrian survey and subsurface testing of the APE for the STB-authorized route prior to any ground disturbing activities, whereas only a sample of each proposed alternative would be surveyed as part of ground truthing during the NEPA process. These survey efforts would be concentrated in areas not surveyed during the ground truthing surveys that are determined to be high or medium probability for cultural resources. If any significant cultural resource is identified, a determination of eligibility for the NRHP would be completed and submitted as part of the final report. The final report would include a description of the project, APE, and environment in the project area. The report would also include a description, based on a review of available literature, AHRS and NRHP,

of known cultural resources and previous cultural investigations in the project area; a description of the prehistory, ethnography, and history of the project area; a description of cultural landscapes in the project area; a description of consultation methods and results; a description of field survey methods and results; determinations of eligibility for cultural resources that would be affected by the proposed project; completed AHRS forms for any cultural resources identified during the field survey; and recommendations based on the results of the archival and literature review, cultural resource compliance surveys and consultation. This STB would submit the report to SHPO for review and concurrence. The SHPO would have a minimum of 30 days to review and respond to this report. Ground disturbing activities may not start until SHPO has completed its review and concurred with STB's findings regarding the proposed project's effect on historic properties.

SUMMARY AND RECOMMENDATIONS

Cultural resource assessments associated with the proposed Port MacKenzie Rail Extension project, a federal undertaking, would involve an integrated process for satisfying NEPA and Section 106. The NEPA documentation would include a description of the affected environment, based on predictive modeling, with a description of direct, indirect, and cumulative effects from the proposed project on cultural resources. This level of analysis would provide an effective means for comparing the potential impacts of different project alternatives and provide mitigation strategies for addressing adverse impacts to cultural resources from the proposed project. As part of the NEPA process, a ground truthing survey will be conducted in Summer 2008. The ground truthing survey will focus on a sample of areas with high and/or medium potential for cultural resources for all proposed project alternatives. A report describing the probability method, ground truthing survey method and survey results will be submitted to SHPO following completion of the surveys. The results will be the basis for the EIS chapters on affected environment and environmental consequences. The subsequent completion of the Section 106 assessment will include a review of available information regarding cultural resources, consultation, field surveys with subsurface testing in areas not surveyed during ground truthing, and determinations of eligibility for the NRHP for any cultural resource that could be affected by the proposed project. This report will be submitted to SHPO for their review and concurrence prior to the start of any project construction.

SRB&A recommends that Native organizations be invited to participate in the ground truthing and Section 106 surveys and be allowed to review documents regarding cultural resources prior to submittal to STB. SRB&A recommends that STB, in cooperation with SHPO, create a Programmatic Agreement to outline methods to assess impacts to cultural resources from the proposed project. This Programmatic Agreement would be included in the EIS. Because all proposed alternatives would likely affect the Iditarod National Historic Trail, SRB&A also recommends that STB, in cooperation with SHPO and BLM, compose a Memorandum of Agreement to outline mitigation strategies for impacts to the Iditarod National Historic Trail from the proposed project.

REFERENCES

- Alaska Department of Natural Resources, Office of History and Archaeology (ADNR, OHA)
- n.d. Alaska Heritage Resources Survey. Database on file with State Office of History and Archaeology. Anchorage, Alaska.
 - n.d. Citations Database. Database on file with State Office of History and Archaeology. Anchorage, Alaska.
 - 2003a Determination of Eligibility. Historic Preservation Series Number 7.
 - 2003b Review and Compliance Program Guidelines for Section 106 Consultation with the State Historic Preservation Office. Historic Preservation Series Number 8.
 - 2004 SURF Database. On file with State Office of History and Archaeology. Anchorage, Alaska.
- HDR Alaska, Inc. and TNH-Hanson, LLC
- 2008 Preliminary Environmental and Alternatives Report for the Port MacKenzie Rail Extension Project. 4 Volumes. Prepared for the Matanuska-Susitna Borough and the Alaska Railroad Corporation. Anchorage, Alaska.
- National Park Service (NPS)
- n.d. Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines [As Amended and Annotated], Secretary of the Interior's Standards for Archeological Documentation. Available online at http://www.cr.nps.gov/local-law/arch_stnds_7.htm
 - n.d. National Register of Historic Places. Accessed at <http://www.cr.nps.gov/nr/nrlist.htm>
 - 1997 How to Apply the National Register Criteria for Evaluation. National Register Bulletin 15. U.S. Department of the Interior, National Park Service, National Register, History and Education. Available online: <http://www.cr.nps.gov/nr/publications/bulletins/nrb15/>
- Parker, P.L. and T.F. King
- 1998 Guidelines for Evaluating and Documenting Traditional Cultural Properties. National Register Bulletin (revised). U.S. Department of the Interior, National Park Service, National Register, History and Education, National Register of Historic Places.