Susitna-Watana Hydroelectric Project
(FERC No. 14241)

Transportation Resources Study
Study Plan Section 15.7

2014 Study Implementation Report

Prepared for

Alaska Energy Authority

SUSITNA-WATANA HYDRO

Clean, reliable energy for the next 100 years.

Prepared by

DOWL-HKM

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LIST OF ACRONYMS, ABBREVIATIONS, AND DEFINITIONS

Abbreviation	Definition
ADOT&PF	Alaska Department of Transportation and Public Facilities
AEA	Alaska Energy Authority
ARRC	Alaska Railroad Corporation
CFR	Code of Federal Regulations
FERC	Federal Energy Regulatory Commission
ILP	Integrated Licensing Process
ISR	Initial Study Report
MSB	Matanuska-Susitna Borough
NEPA	National Environmental Policy Act
Project	Susitna-Watana Hydroelectric Project No. 14241
RSP	Revised Study Plan
SPD	study plan determination

1. INTRODUCTION

This Study Implementation Report, Section 15.7 of the Revised Study Plan (RSP) approved by the Federal Energy Regulatory Commission (FERC) for the Susitna-Watana Hydroelectric Project, FERC Project No. 14241, focuses on documenting and assessing current transportation conditions in the study area and evaluating potential Project demands relative to current capacity limits and safety requirements for road, railroad, aviation, port, and river traffic.

A summary of the development of this study, together with the Alaska Energy Authority's (AEA) implementation of it through the 2013 study season, appears in Part A, Section 1-6, 8-10 of the Initial Study Report (ISR) filed with FERC in June 2014. As required under FERC's regulations for the Integrated Licensing Process (ILP), the ISR describes AEA's "overall progress in implementing the study plan and schedule and the data collected, including an explanation of any variance from the study plan and schedule." (18 CFR 5.15(c)(1)).

Since filing the ISR in June 2014, AEA has continued to implement the FERC-approved plan for the Transportation Resources Study. For example, the study team conducted the following activities:

- Participated in the October 23, 2014 ISR meetings related to the June 2014 Transportation Resources ISR facilitated by AEA;
- Reviewed other project studies, including the Engineering Feasibility Study, for relevant information;
- Documented the transportation infrastructure proposed as part of the Project; and
- Qualitatively evaluated the short-term (construction) and long-term (operational) impacts of the Project and compared the With-Project scenario to the Without-Project scenario.

In furtherance of the next round of ISR meetings and FERC's SPD expected in 2016, this report describes AEA's overall progress in implementing the Transportation Resources Study during calendar year 2014. Rather than a comprehensive reporting of all field work, data collection, and data analysis since the beginning of AEA's study program, this report is intended to supplement and update the information presented in Part A of the ISR for the Transportation Resources Study through the end of calendar year 2014. It describes the methods and results of the 2014 effort, and includes a discussion of the results achieved.

2. STUDY OBJECTIVES

The study objectives are established in RSP Section 15.7.1.1.

The Transportation Resources Study assesses current transportation conditions in the study area and evaluates potential Project demands relative to current capacity limits and safety requirements for road, railroad, aviation, port, and river traffic. The study assesses the short-term (construction) and long-term (operational) direct and indirect impacts of the Project, as well as of the cumulative impacts of the Project. The transportation effects of the Project (With-Project) are compared to a Without-Project scenario.

The AEA Project team will use information from this study to identify and coordinate needed transportation infrastructure improvements with the Alaska Department of Transportation & Public Facilities (ADOT&PF), Alaska Railroad Corporation (ARRC), the Matanuska-Susitna Borough (MSB), the Denali Borough, and others. This report will also provide valuable information for the multidisciplinary analysis of the Project required under the National Environmental Policy Act (NEPA).

3. STUDY AREA

As established in RSP Section 15.7.3, the study area for the Transportation Resources Study extends north from Anchorage to Fairbanks and east to the Susitna River to cover all relevant traffic sources, traffic nodes (points where travelers or shippers may select different routes), and destinations for each mode of transportation. The primary sources and destinations of Project-related road and railroad traffic will be the Project site, southcentral Alaska ports, and local material sources. The majority of the aviation traffic will originate in populated areas at primary and smaller general aviation airports.

As explained in Part C of the ISR, Section 1.4, when the ISR was filed AEA explained that it had decided to pursue the study of an additional alternative north-south corridor alignment for transmission and access from the dam site to the Denali Highway. Referred to the "Denali East Option," these areas were added to the study area for this study beginning in 2014.

In addition, Section 1.4 of the ISR noted that AEA was considering the possibility of eliminating the Chulitna Corridor from further study. In September 2014, AEA filed with FERC a formal proposal to implement this change. Thus, this report reflects a change in the study area to no longer include the Chulitna Corridor.

4. METHODS AND VARIANCES IN 2013

The methods used for this study consisted of the five steps described below.

4.1. Collect and Review Data

The methods for undertaking this task are discussed in RSP Section 15.7.4.1. The data collection and review task was completed and reported on in Section 5.1 of the ISR for the Transportation Resources Study in June 2014. This task has been completed.

4.1.1. Variances

There are no variances to the data collection and review section of this study.

4.2. Inventory Assets and Conduct Any Field Studies

The methods for this task were set forth in RSP Section 15.7.4.2, with the variances described in Section 4.2.1 of the ISR.

Since the ISR submittal, ISRs for the River Recreation Flow and Access Study (Study 12.7), Subsistence Resources Study (Study 14.5), and Social Conditions and Public Goods and Services Study (Study 15.6) were reviewed for relevant transportation information.

4.2.1. Variances

As noted in Section 4.2.1 of the ISR, the Ports of Seward and Whittier and the associated rail infrastructure were added to the study area and included in the asset inventory due to their existing capabilities and their status as year-round, ice-free ports. Both ports are owned by ARRC, which has plans to construct significant upgrades to the Port of Seward within the next several years.

Only bridges that had structural or functional conditions with a potential adverse impact on Project-related travel were included in the inventory included in the ISR.

The study proposed documenting existing river transportation by collecting relevant information from other related studies (River Recreation Flow and Access Study (Study 12.7), the Subsistence Resources Study (Study 14.5), and the Social Conditions and Public Goods and Services Study (Study 15.6)) and using that information to inform interviews with knowledgeable persons about transportation uses of the river. Interviews on river transportation have not been conducted.

4.3. Document Existing Conditions

RSP Section 15.7.4.3 documents the methods for this task. Existing conditions for all transportation modes other than river transportation were documented in Section 5.3 of the ISR for the Transportation Resources Study. Other studies (Recreation Resources, River Recreation Flow and Access, Subsistence Resources Studies, (Studies 12.5, 12.7 and 14.5) and other literature were reviewed for information on river transportation.

4.3.1. Variances

The Ports of Seward and Whittier and the associated rail infrastructure were added to the study area and included in the existing conditions documentation due to their existing capabilities and their status as year-round, ice-free ports.

Documentation of existing conditions for river transportation was not completed. Proposed interviews with knowledgeable individuals on river transportation uses have not been conducted. Information on existing transportation use of the river will be needed for impact assessment.

4.4. Forecast Future Conditions

During the 2013 study season, AEA implemented the methods for forecasting future conditions as set forth in RSP Section 15.7.4.4, with the exception of variances explained below in Section 4.4.1.

Future traffic forecasts have been documented. These forecasts addressed the following issues:

- Existing roads
- Railroad loading and unloading facilities
- Airport facilities

- Scheduled facility improvements, such as improvements proposed for the Denali Highway

Roadway traffic forecasts were documented based on existing traffic demand models where they were available and by projecting demand based on historic traffic level trends for some facilities not included in any traffic demand models. Aviation forecasts were documented based on existing aviation forecasts in master plans and other documents. Rail and port forecasts were developed based on interviews with rail and port staff.

Information on proposed Project transportation facilities and Project-related transportation forecasts was reviewed and is documented in Section 5.4 of this report.

4.4.1. Variances

Although the Study Plan contemplated the use of the Trip Generation to forecast future roadway traffic levels, the Trip Generation (ITE 2008) manual does not have information for hydroelectric dam construction and operations. As provided in the Study Plan (RSP Sections 15.7.7, 15.7.11), Project-related transportation forecasts have been developed based on information provided in the AEA Engineering Feasibility Study (MWH, 2014), such as construction employment and timing, workforce locations, and construction material scheduling and transportation information.

Forecasts of river transportation were proposed to be developed based on interviews with knowledgeable persons. Interviews were not conducted and river transportation forecasts were not developed. This information will be needed to assess potential transportation impacts of the Project on river transportation uses.

4.5. Evaluate Effects

The methods for this task were described in RSP Section 15.7.4.4. Under this task, the potential effects of Project construction and operation on various transportation modes are assessed and needed mitigation measures are identified.

4.5.1. Variances

The RSP called for evaluating Project effects on all transportation modes including river transportation. River transportation effects were to be evaluated based on information on river use obtained through interviews with knowledgeable persons, as described under previous sections. These interviews were not completed. This information will be needed to assess potential transportation impacts of the Project on river transportation uses.

5. RESULTS

5.1. Collect and Review Data

A bibliography of documents used to compile existing information was included in Appendix A of the ISR for the Transportation Resources Study.

5.2. Inventory Assets and Field Studies

An asset inventory was completed for all modes of transportation included in this study with the exception of river transportation. This asset inventory was included as Appendix B in the ISR for the Transportation Resources Study.

5.3. Existing Conditions

A discussion of the existing conditions for all transportation modes was included in Section 5.3 of the ISR for the Transportation Resources Study. Limited information on river transportation use was included.

5.4. Future Conditions

Funded and planned infrastructure improvements and data on projected operations by mode (except river travel), were documented in Appendices C through F of the ISR for the Transportation Resources Study.

5.4.1. River Transportation

No forecast information is available for river transportation uses. Interviews with knowledgeable people regarding the potential for changes in river use for non-recreation transportation were identified as a data source for this information. These interviews have not been conducted.

5.4.2. Easements

No forecasts of use of RS2477 easements or 17(b) easements are available. Interviews with knowledgeable people regarding the potential for changes in use of easements in the area for non-recreation transportation were identified as a data source for this information. These interviews have not been conducted.

5.4.3. Project Facilities

Construction of the project would include construction of new or improvements to existing transportation facilities to support project construction and operations. Transportation facilities associated with the project will include an access road, a railhead storage and transloading facility, and an airstrip.

Figure 5.4-1 shows an overview of the transportation facilities expected to be used for transporting the heavy equipment and bulk materials needed for project construction. These equipment and materials are expected to be transported into the State on ships and then transferred to railcars at the port of entry (assumed to be Whittier). Materials would be transported by rail to a rail station at Gold Creek or Cantwell. Materials would be transported from the railhead to the project site on trailer-trucks via a gravel access road. As shown on the figure, there are three road corridors being considered for the last leg of the trip to the dam site.

Personnel and time sensitive items, such as fresh food and emergency equipment and supplies, would be transported to the site by air. Most supplies would be expected to originate from ANC, but personnel may be transported to the site from a variety of airports in the Railbelt.

5.4.3.1. Road Access

Road access to the project site would follow one of three corridors: 1) Gold Creek, 2) Denali West, or 3) Denali East. These corridors are shown in Figure 5.4-2 and would connect a railhead transloading facility to the project site. If the Gold Creek corridor is selected, a gravel access road would be constructed from the railhead transloading facility to the dam construction site. This road would not be connected to the State highway system and only project-related traffic would be allowed on the access road. If either of the Denali corridors is chosen, the Denali Highway would be used to transport materials from the railhead at Cantwell to a point between milepost 111 and 114 on the Denali Highway. A new access road would be constructed the Denali Highway to the project site. Only project-related traffic would be allowed on the access road from the Denali Highway to the project site.

The access road is anticipated to be an all-season gravel road with a width of 32 feet (two 11-foot-wide travel lanes and two 5-foot shoulders). The road would have a design speed of 20-40 mph depending on the terrain. It is anticipated that transmission lines would be constructed parallel to the access road in the selected corridor. The project transmission lines would tie into the Railbelt transmission intertie along the Parks Highway near the railhead facilities.

In addition to the main access road, an internal road system would be developed to allow construction and later operations personnel to reach the dam, the power house, the airport, and other facilities. These gravel roads would not connect to public highway systems and would be used only for project-related transportation.

5.4.3.2. Rail Infrastructure

Project railhead storage and transloading facilities would be constructed at the appropriate railhead depending on the corridor selected. The storage and transloading facilities would be expected to require up to 40 acres and would include the following facilities:

- Fuel storage;
- Storage are for up to 100 containers;
- Covered storage;
- Offices for logistics controllers;
- Lodging/camp facilities for workers and drivers;
- Parking for 43 tractor-trailer trucks;
- Concrete hardstanding;
- Helicopter pad; and
- Tractor maintenance workshop.

5.4.3.3. Airstrip

An airstrip is proposed to be constructed near the dam site for personnel transport and for transport of time-sensitive goods. Figure 5.4-3 shows the proposed site, which is located north of the Susitna River and west of Deadman Creek. The airstrip would be a 5,500-foot-long by 100-foot-wide gravel strip. An 8,000-square foot apron would be constructed to allow two aircraft to load or unload at the same time. The apron would be set back 500 feet from the runway centerline and would be connected to the airstrip by a gravel taxiway. This airstrip would accommodate a range of aircraft from small passenger aircraft up to large cargo aircraft, such as the L-382 aircraft operated by Lynden Air Cargo.

Other permanent facilities associated with the airstrip include:

- fuel storage;
- fuel truck;
- office/control room for controlling the airstrip;
- waiting room and restrooms;
- fire truck;
- pneumatic truck;
- mobile air stairs, and
- helicopter pad.

Navigation aids anticipated include:

- a beacon;
- an instrument landing system;
- a radio;
- an automated weather observational system;
- a wind indicator;
- visual glide slope indicators; and
- runway and apron lighting.

5.4.3.4. Other Transportation Uses

Although personnel and materials are likely to be primarily transported through conventional means (rail, road or air), it is possible that unconventional access may occur during construction if:

- An accelerated schedule requires material and equipment be transported to the site before the construction access road has been completed; or
- The size of some items and the economics of transportation of specific large items requires consideration of unconventional transportation methods.

Potential unconventional transportation modes could include use of a hoverbarge on the Susitna River, use of CAT trains on winter trails, or use of helicopters or heavy lift airships to transport equipment by air.

5.5. Effects of the Project

Construction and operation of the proposed project will generate transportation demand for personnel, supplies, and equipment. The majority of the transportation demand during construction will be marine and rail transportation for bulk and large materials, with truck transportation of material from railheads to the project site. Personnel are proposed to be transported to the site by air during construction and operation.

5.5.1. Roadways

Although most construction materials would be transported by rail from ports, there are items that might be transported by truck to a railhead for transport to the construction site. This would result in increased truck traffic on State highways between the ports and the railhead during the construction period. For example, the construction contractor may transport some materials by road to a staging site, such as the McKinley siding and yard or the Sunshine siding for staging prior to transportation to the Project site. Given that most materials will be transported by rail from the port, the additional truck traffic on highways between the ports and the railhead site would not be expected to result in any substantive effects on highway capacity or safety during construction.

During construction, increased rail traffic from the port at Whittier could have minor effects by increasing road traffic congestion in Whittier due to the configuration of road and rail facilities from Whittier to the west side of the Whittier Tunnel. These effects could be reduced through improvements to the road system in Whittier to reduce points of conflict.

Construction personnel would be flown to the Project site, but traffic could increase in the vicinity of airports used for transporting construction workers. These effects would not likely be noticeable near ANC or FAI, but could be noticed around smaller airports used as transport locations, such as Talkeetna Airport.

If the Gold Creek corridor is chosen, there would be no public traffic on the project access road. Transportation of most materials would occur by rail and on the project access road, limiting the potential for project construction or operations to affect public roadways.

If the East or West Denali corridor is selected, there would be a substantial increase in heavy truck traffic on the Denali Highway over the 12-year construction period. Currently, the portion of the Denali Highway between the Parks Highway and the Old Parks Highway serves a traffic volume of approximately 200 vehicles per day.[1] Farther to the east, the Denali Highway serves a volume of approximately 100 vehicles per day. It is assumed that construction would require approximately 314 truck roundtrips per week, or 45 roundtrips per day. This would increase traffic on the Denali Highway by 90 trucks per day. This would increase traffic on the Denali Highway by up to almost 100% during the construction period.

A two-lane low-volume rural highway, such as the Denali Highway, is typically designed to accommodate up to 400 vehicles per day. With the following planned Project upgrades to the

[1] Estimated daily traffic volumes based on 2013 Annual Average Daily Traffic, as reported by the Alaska DOT & PF and made available at http://dot.alaska.gov/stwdplng/transdata/traffic_AADT_map.shtml.

Denali Highway width and stream crossing to accommodate trucks association with Project construction, the highway should be able to safety accommodate the proposed level of truck traffic and the addition of this truck traffic should not result in capacity or safety issues.

Denali Highway improvements are anticipated to include:

- Expanding the road surface from 24 feet to 32 feet;
- Replacing or modifying more than 100 culverts along the highway;
- Replacing the triple culvert structure at milepost 128.9; and
- Replacing the Seattle Creek Bridge at milepost 111.2.

There would also be a substantial increase in truck traffic crossing the Parks Highway from the Cantwell railhead to the Denali Highway heading east. The Parks Highway has a reduced speed limit (45 mph) in this area already, but there may be a need for additional traffic control at this intersection during periods of heavy truck traffic. Improvements to the intersection of the Parks Highway and the Denali Highway would likely also be required. These improvements could include an additional eastbound turn lane off of the Parks Highway onto the Denali Highway and possibly a traffic signal at this intersection to accommodate the increased traffic from the Cantwell railhead crossing the Parks Highway or turning from the Parks Highway to the Denali Highway heading east.

Traffic levels associated with Project operations would be much lower than during construction. If the Gold Creek Corridor is selected for access, operations traffic on public roads would be expected to be minimal. If one of the Denali Corridors is selected, traffic on the Parks and Denali Highways would likely be higher in future years than without the Project. However, the level of traffic generated during operations is expected to be fairly low and could be accommodated with the proposed road improvements noted above.

5.5.2. Aviation

Air transportation would be used for personnel and time-sensitive goods during both construction and operation. It is anticipated that cargo flights would originate in Anchorage or Fairbanks and that passenger flights would originate in Anchorage, Fairbanks or Talkeetna. Helicopters may also be used when needed for specific types of material transport.

The Anchorage and Fairbanks airports are large international airports and the increased flight operations would not be anticipated to result in any capacity issues at these airports. Both airports have sufficient undeveloped land to support construction of or expansion of cargo operations areas for construction freight handling.

The airspace in the Anchorage/Matanuska Susitna area is unique in the mixture of a high level of general aviation, military and international cargo use. This results in a mixture of all size and speed of aircraft transiting through the airspace over the MSB. Although an increase in passenger and cargo flights to the project site would increase the number of operations in that area compared to the level of operations without the Project, the relatively low number of aircraft operations associated with the Project and the location of the Project airstrip in a remote area reduce the potential for aviation safety hazards. Although there would be increased air traffic in the vicinity

of the Project site, this increase would not be expected to adversely affect overall regional aviation operations.

5.5.3. Railroad

Substantial amounts of the supplies and equipment needed for project construction would be imported from Seattle to Whittier (or possibly the Seward or Anchorage ports) and then by rail and truck to the project site. Major components would include cement, fly ash, fuel, transformers, other project components and large equipment. The majority of materials would arrive in Alaska in either a railway car or a container and transferred to rail at the port. Containerized shipments can be transferred to rail at ARRC port facilities at Whittier and Anchorage.

It is assumed that construction would require 250 containers of materials and supplies every week to be transported in two 70-car dedicated shuttle trains from Whittier to the railhead each week.

Interviews with ARRC staff in 2013 (included in Appendix G of the June 2014 ISR for Study 15.9 Transportation Resources Study) indicated that the railroad operates at approximately 30% of its freight capacity. Although rail freight traffic would see a substantial increase in volume with transport of construction materials from Whittier or Anchorage to the Project site, this additional demand is not likely to exceed capacity. While an increase of freight traffic on the railroad has the potential to conflict with passenger rail operations, the excess capacity available on the rail line makes the potential for effects on passenger traffic minimal. The ARRC has plans to implement passing sidings along the rail when and if rail traffic increases to the point where this is required.

If wide loads will be transported on the rail, there are some locations that may need improvements to accommodate them:

- The Talkeetna River Bridge at milepost 227.1 of the rail;
- The Billion Slough Bridge at milepost 227.9 of the rail line;
- There are various points north of Talkeetna there are some places where the rail is close to rock cuts that limit clearance.

Transporting wide loads by rail could require modifications to these areas including bridge replacements or rock removal.

5.5.4. Port

Most materials are likely to be shipped from Seattle to Whittier in containers and loaded on the railroad at the port. It is possible that some materials may be shipped through the Seward, Anchorage or Point MacKenzie ports as well. The Seward port freight facilities are currently at capacity but the port is in the planning process for improving the freight facilities. Port MacKenzie does not currently have rail access, but construction on a rail line is underway and could be complete by start of Project construction. The Anchorage port has adequate freight facilities, but is not as deep as the port at Whittier.

As noted above, construction would require an average of 250 containers per week. Container ships are able to carry hundreds of containers per ship, so this could be accommodated on one ship per week. This could result in an increase of 50% of annual vessel calls in Whittier which currently

has about 90 vessel calls per year. Given that current port operations are estimated at 50% of capacity, the additional traffic could be accommodated. As noted above, other southcentral ports such as Anchorage, Seward or Point MacKenzie could also provide additional capacity if needed.

5.5.5. Susitna River Transportation

As discussed in Section 5.3.5 of the June 2014 ISR for the Transportation Resources Study, residents of small communities and remote lodge owners along the river use or cross the river to transport people and goods to remote cabins and lodges, for accessing trapping locations, and for recreation and subsistence uses. Non-recreation transportation uses associated with access to lodges and cabins occur in both winter and summer. Most cabins and residences are located on the lower reaches of the river toward Chase, Curry and Talkeetna and the more densely populated areas have access via rail.

River transportation is not anticipated to be a major transportation route for construction materials, and construction activities would have limited effects on other uses of the river. In the event that unconventional transportation modes (see Section 5.4.5.5) are employed, such as a hovercraft, there would be the potential for conflicts with other river transportation uses. However river use levels are general low enough and distributed enough to minimize the potential for substantial adverse effects. In addition, hovercraft use would be expected to occur only prior to access road construction and therefore any potential adverse effects would be short-term.

Project operation could result in changes to river flows and ice formation below the dam location. These changes may affect transportation use of the river. More detailed information on specific uses, times and locations would need to be obtained from knowledgeable individuals to adequately assess the potential and extent of these effects.

5.5.6. Easements

Project construction and operations could directly affect existing trails and easements in areas impacted by the dam and reservoir, as well as by crossing trails and easements with new access roads. More detailed information on specific uses, times and locations would need to be obtained from knowledgeable individuals to adequately assess the potential and extent of these effects.

6. DISCUSSION

The primary goals and objectives of the Transportation Resources Study, as identified in RSP Section 15.7.1.1, are to assess current transportation conditions in the study area, evaluate Project demands on the transportation system within the study area, and describe Project effects on the transportation systems.

Existing conditions for road, rail, air transportation, ports have been documented. Existing information on river and trail use has also been addressed. Future forecast operations for most modes have been documented based on existing published data and interviews with knowledgeable individuals.

Transportation infrastructure proposed as part of Project development is described in Section 5.4.5.

Generally existing transportation infrastructure is sufficient for supporting Project construction and operation, given the proposed improvements noted in Section 5.5. Selection of one of the Denali Corridors for access to the Project site would result in a substantial increase in traffic on the Denali Highway. Although this increase in traffic would result in substantial increases of traffic on the Denali Highway and at the Denali Highway/Parks Highway intersection, the overall volume of traffic would still be within the design capacity of the highway and effects should be minimal.

Increased air traffic would occur in the vicinity of the Project site, but given the low level of development in the area, this increase would not be expected to adversely affect overall regional aviation operations.

Increased rail traffic from the Whittier port to the Project site could adversely affect road traffic in the Whittier area, but again the low road traffic volumes would likely result in modest effects. These effects would be short-term and occur only during the construction period.

Construction would result in substantive increases in operations at the Whittier port, but port capacity is available and could be supplemented with some use of the Anchorage, Point MacKenzie and/or Seward ports.

Overall, the Project would result in higher transportation demands on most transportation modes than without the Project. Existing infrastructure with proposed improvements is sufficient for most transportation modes.

7. CONCLUSION

The majority of objectives of the Transportation Resources Study have been met. The information collected and developed documents existing transportation resources, planned improvements and potential effects of the project on transportation systems. Little documentation is available on river and trail transportation uses and only very general analysis on river transportation has been addressed. More information may be needed to adequately evaluate impacts on river and trail transportation uses. This information would likely need to be developed through interviewing a broad range of knowledgeable sources on river and trail transportation uses.

8. LITERATURE CITED

MWH (MWH Americas, Inc.). 2014. Susitna-Watana Hydroelectric Project, Engineering Feasibility Report. AEA11-022. Prepared for Alaska Energy Authority.

9. FIGURES

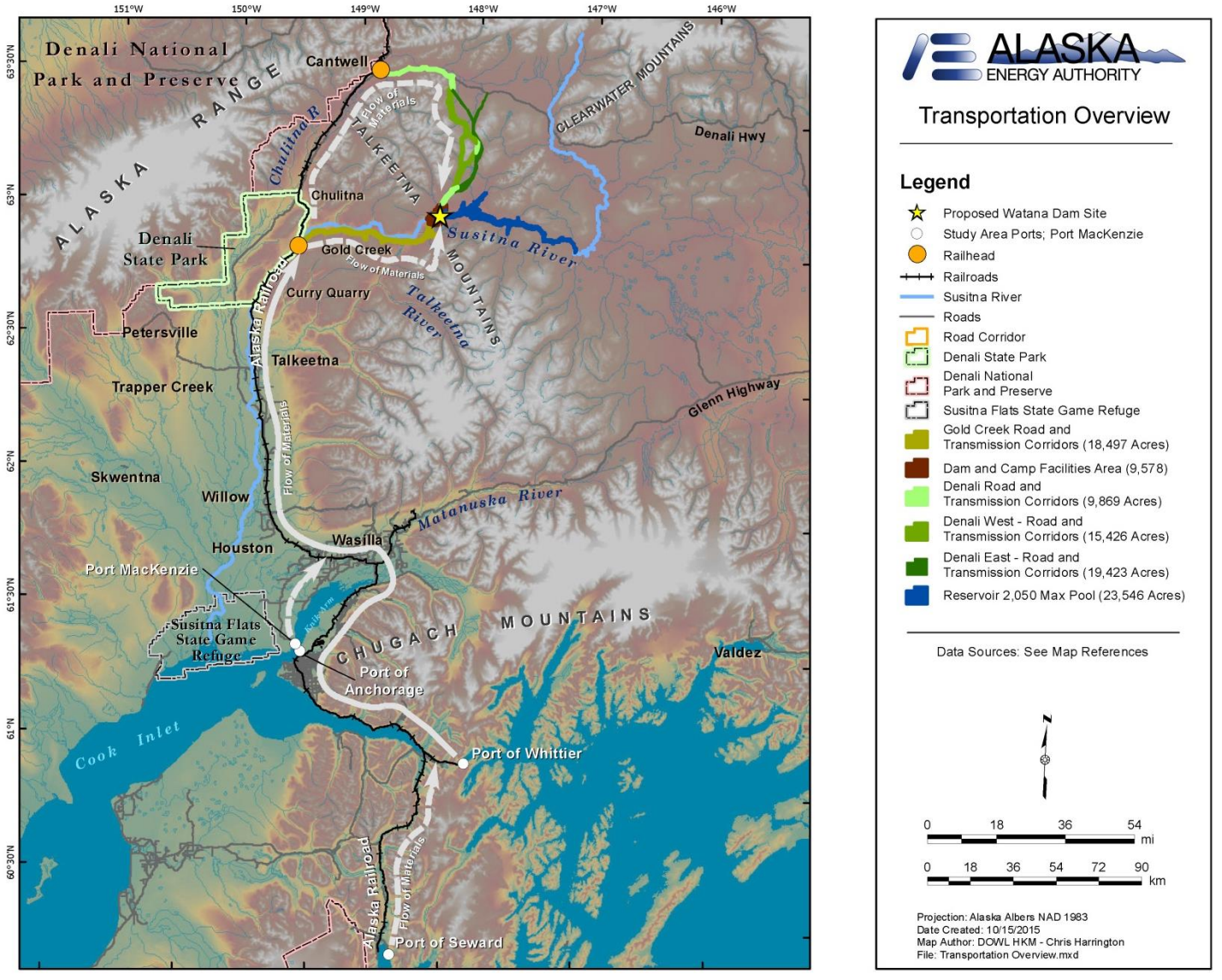

Figure 5.4 -1. Transportation Overview

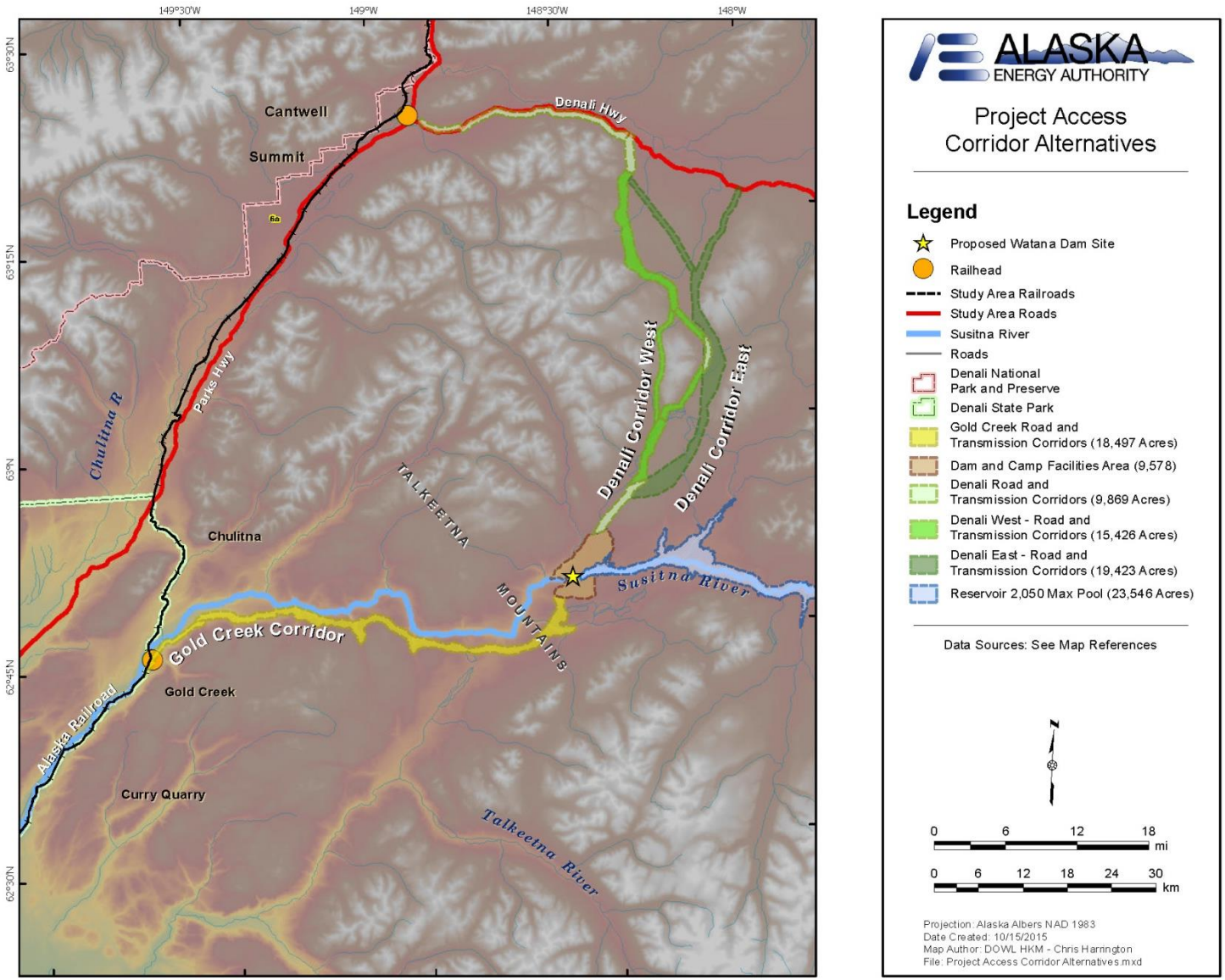

Figure 5.4 -2. Project Access Corridor Alternatives

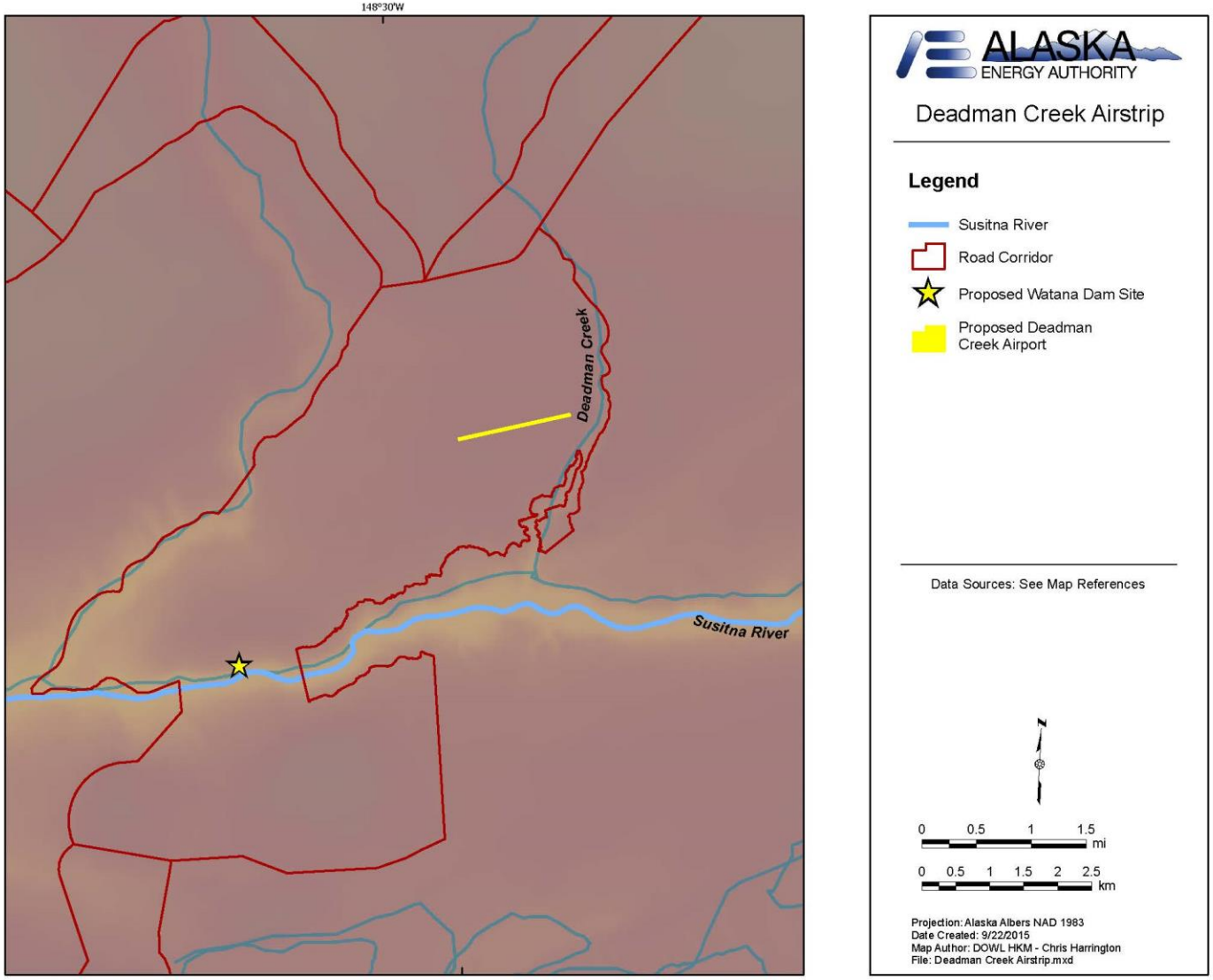

Figure 5.4 -3. Project Access Corridor Alternatives