

Final Federal Environmental Assessment and State Environmental Assessment Worksheet

for the
Runway 32 Approach Obstruction Removal
at the

Duluth - Sky Harbor Airport

Duluth, Minnesota

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SEH No. DULAI 080100
May 2015

Under contract with
the Duluth Airport Authority

And in coordination with
the Federal Aviation Administration (FAA)
the Minnesota Department of Transportation – Office of Aeronautics
the U.S. Army Corps of Engineers
and the Minnesota Department of Natural Resources

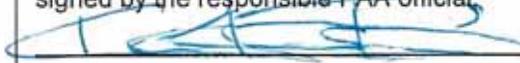
RGU CERTIFICATION: I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9b and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature  _____ Date May 22, 2015
Title Executive Director _____

FAA CERTIFICATION:

This Final Environmental Assessment becomes a federal document when evaluated and signed by the responsible FAA official.

 _____ May 8 2015
Responsible FAA Official _____ Date _____

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U.S. Department of Transportation
Federal Aviation Administration
Great Lakes Region
Minneapolis Airports District Office

Finding of No Significant Impact/
Record of Decision

For the Obstruction Removal Project at the
Duluth-Sky Harbor Airport
Duluth, Minnesota

May 2015

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I. Introduction

The Federal Aviation Administration (FAA) prepared this Finding of No Significant Impact/Record of Decision (FONSI/ROD) for the proposed Obstruction Removal Project at the Duluth-Sky Harbor Airport (DYT), operated by the Duluth Airport Authority (DAA). The attached Final Environmental Assessment (FEA), dated March 2015, has been prepared in accordance with the guidelines and requirements set forth by the Council on Environmental Quality (CEQ) and the FAA to implement the environmental review and disclosure provisions of the National Environmental Policy Act of 1969 (NEPA).

In accordance with FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*, FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, and based on the evaluation in the EA, there are no significant impacts associated with the proposed project. Therefore, an Environmental Impact Statement (EIS) will not be prepared and a FONSI/ROD is being issued. This FONSI/ROD provides a review of the Proposed Action, mitigation requirements, and the basis for the FAA's finding. Specific details are defined further in the FEA.

II. Purpose and Need (Chapter 1 of FEA)

Part 77 of the Federal Aviation Regulation (FAR) establishes airport "imaginary surfaces," which are intended to maintain unobstructed operation of air navigation facilities and the safe and efficient utilization of the navigable airspace. Part 77 surfaces are geometrically based upon the physical layout of the runway and the type of aviation use. An object is defined as an obstruction if it penetrates any of the imaginary surfaces. The imaginary surfaces become increasingly critical with respect to height limitations the closer to the runway surface, with an object height of zero feet being allowed within 200 feet of the runway end. Obstructions to FAR Part 77 surfaces can include manmade objects as well as natural growth and terrain.

There are obstructions to the FAR Part 77 approach surface for Runway 32 at DYT, which limits the use of the airport and threatens to impact future licensing. These obstructions include up to 599 trees that penetrate the approach surface and up to 1,286 trees that penetrate the transitional surface. The majority of these trees are located within the Minnesota Point Pine Forest Scientific and Natural Area (SNA), which consists of a mix of red and white pine old growth trees that are uniquely situated on the stabilized sand dunes of Minnesota Point. DYT needs to clear the approach to Runway 32 in order to meet established standards required to maintain a Minnesota Airport License and to meet FAA standards/requirements.

The purpose is to provide a safe airport facility that will meet FAA and MnDOT aeronautics design and operation requirements and safely maintain adequate runways with clear approach surfaces for local, regional, and interregional aviation users.

III. Alternatives

In accordance with NEPA and FAA Orders 1050.1E and 5050.4B, the FEA identified and evaluated all reasonable alternatives in Chapter 2.

▪ Alternatives Examined but Eliminated from Detailed Study

- Alternative 2 – Maintain Interim Conditions
This alternative is included in the No Action Alternative.
- Alternative 3 – Clear Existing Runway 32 Approach
This alternative would result in the elimination of the SNA and was eliminated from further analysis based on the identified impacts.
- Alternative 4 – Northwest Runway Shift
This alternative was also found to result in the elimination of the SNA and was eliminated from further analysis based on the identified impacts.
- Alternative 5a – Five Degree Runway Reorientation
This alternative was eliminated due to concerns with cost and construction feasibility.
- Alternative 5b – Runway Reorientation
This alternative was eliminated due to concerns with cost and construction feasibility.
- Alternative 6 – Lateral Runway Shift in Superior Bay
This alternative was eliminated due to concerns with cost and construction feasibility.
- Alternative 7 – Lateral Runway Shift and Reorientation
This alternative was eliminated due to concerns with cost and construction feasibility.
- Alternative 8 – Use of Existing Nearby Airports
It was determined that nearby airports did not provide adequate facilities or services to replace DYT and this alternative was eliminated from further analysis.
- Alternative 9 – Closure of Airport
This alternative is included as part of the No Action Alternative.
- Alternative 10 – Replace DYT at the US Steel Site
This alternative was found not to be feasible and was eliminated due to the costs associated with the relocation of the airport to a new site.
- Alternative 11 – Reduced Runway Length
Implementation of this alternative would eventually result in the loss of the SNA and was eliminated due to identified impacts.
- Alternative 12 – Reduced Runway Length with Shift
This alternative was eliminated from further analysis based on the identified impacts which include impacts to the SNA.

- **Alternatives Examined in Detail**

- No Action Alternative

The No Action Alternative assumes that existing interim conditions at DYT would remain and includes basic maintenance and operational activities. Interim conditions include a 658-foot displacement of Runway 32, relocated runway lighting, and a visual approach. The visual approach makes access to DYT less reliable and inaccessible in adverse weather conditions.

The displaced Runway 32 end provides sufficient distance between the runway end and the limits of the SNA so that the trees are not obstructions at this time. Although this condition is currently sufficient for maintenance of a state airport license, as trees grow and become penetrations to the threshold, eventually (within approximately the next five years) the trees will result in closure of the runway.

The No Action alternative would avoid impacts to the SNA but would ultimately result in closure of DYT. Therefore, the No Action Alternative does not meet the purpose and need for the proposed project.

- Alternative 5a Short

This alternative is derived from Alternative 5a that was considered during project scoping and was found to provide the most separation from and least impact to the SNA while limiting the fill and settlement issues identified during the scoping process. Because of its origin, this alternative is referred to as Alternative 5a Short.

This alternative includes the construction of a rotated and shortened runway. Compared to the existing runway, the new runway would be shortened by 450 feet and rotated five degrees (Runway 32 end) into Superior Bay. The runway would be 2600 feet long and 60 feet wide. The primary surface would be graded and the parallel taxiway reconstructed parallel to the runway at a separation of 150 feet. The existing Medium Intensity Runway Lights (MIRLs), Runway End Identifier Lights (REILs), Precision Approach Path Indicators (PAPIs) and Medium Intensity Taxiway Lights (MITLs) would be relocated or replaced.

Existing runway and taxiway pavements would be removed. The previously paved areas would be restored with native vegetation and would be maintained by mowing.

Alternative 5a Short includes placing approximately 69,800 cubic yards of soil for runway construction (combined in water and on land), 50,000 cubic yards of surcharge (fill to be placed in order to compact soft soils, and then removed) and 25,000 tons of riprap over a total project area of 29.47 acres.

- Alternative 13 – Reduced Runway Length with Shift and Rotation

Alternative 13 includes shortening the runway by 450 feet while rotating the Runway 32 end 1½ degrees away from the SNA to reduce potential impacts to the SNA and would include a 300-foot northern shift on fill into the small bay to the north. Filling into Superior Bay along the west shore would be required to establish safety areas. In

total, Alternative 13 would require approximately 24,360 cubic yards of fill over 3.40 acres for both the northern shift into the small bay and fill along the west shore.

The runway would be 2600 feet long and 60 feet wide. The primary surface would be graded and the parallel taxiway reconstructed parallel to the runway at a separation of 150 feet. The existing MIRLs, REILs, PAPIs and MITLs would be relocated.

Runway and taxiway pavements no longer needed would be removed. The previously paved areas would be restored with vegetation and would be maintained by mowing.

As of 2013, the approach surface established by this alternative would be expected to include up to 60 penetrations (trees), 34 on Airport property, 3 in the SNA (MNDNR property), and 23 on SWLP property. All penetrations to the approach surface would be subject to removal through tree topping or cutting at ground level. Over the long term (50 years), up to approximately 370 trees would become obstructions, including 76 trees within the SNA, which would either need to be trimmed or removed.

▪ **Sponsor's Preferred Alternative**

The DAA selected Alternative 5a Short as their preferred alternative. While this alternative requires more fill and has higher costs compared to Alternative 13, the impacts to trees, the SNA, and Section 4(f) resources are minimized.

IV. Proposed Federal Action

After careful analysis and consultation with various resource agencies, Alternative 5a Short was selected as the preferred alternative. Both the FAA and the USACE concur with the selection of Alternative 5a Short as the preferred alternative. This alternative satisfies the purpose and need while minimizing overall impacts.

The Proposed Action includes:

- Shortening the runway 450 feet to an overall length of 2,600 feet;
- Rotating Runway 32 by five degrees into Superior Bay;
- Establishing safety areas;
- Constructing the runway to a width of 60 feet;
- Relocating/Replacing MIRLs, REILs, PAPIs, and MITLs;
- Reconstructing the parallel taxiway at a 150 foot separation from the runway;
- Removing existing pavement that is no longer needed; and
- Restoring the area with native vegetation that can be mowed;

V. Integration of the National Environmental Policy Act and Section 404 of the Clean Water Act (CWA)

The FAA entered into a Memorandum of Understanding (MOU) with the US Army Corps of Engineers (USACE) and the Duluth Airport Authority (DAA) to merge NEPA and CWA Section 404 permitting processes into one process. The intent of the MOU is to preclude the need for revisiting decisions made during the NEPA process, encourage active participation by all parties, and to ensure that the information provided is adequate to address each agency's regulatory requirements.

The MOU included four concurrence points where the USACE would provide written concurrence on decisions made. The four concurrence points include Purpose and Need (Concurrence Point One); Alternatives Carried Forward (Concurrence Point Two); Preferred Alternative (Concurrence Point Three); and Preliminary Design Phase Impact Sequencing (Concurrence Point Four). Concurrence letters have been received for Concurrence Points One, Two, and Three. Concurrence Point Four will be completed after the issuance of this FONSI/ROD but before permits are acquired. Appendix A of the FEA contains the MOU.

VI. Environmental Consequences of the Preferred Alternative

Environmental impact categories identified in FAA Orders 1050.1E and 5050.4B were evaluated in the FEA. Environmental consequences of the No Action Alternative, Alternative 5a Short, and Alternative 13 are included in Chapter 3 of the FEA.

Given the location and nature of the Proposed Action, impacts to the following environmental resources and impact categories do not occur:

- Air Quality
- Compatible Land Use
- Farmlands
- Greenhouse Gases/Climate Change
- Noise
- Natural Resources and Energy Supply
- Secondary (Induced) Impacts
- Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks
- Wild and Scenic Rivers

The FEA discusses the environmental consequences of the Proposed Action, which include:

▪ Coastal Resources

Alternative 5a Short would require 7.49 acres of fill in Superior Bay and would impact the Coastal Barrier Resource System (CBRS) and the Lake Superior Coastal Zone Management Area (CZMA). The FAA received concurrence from the USFWS on July 12, 2013 that the project complies with the purposes of the CBRS and that a Section 6 exception (the maintenance, replacement, reconstruction or repair of publicly owned or publicly operated roads, structures, or facilities that are essential links in a larger network or system) under the Coastal Barrier Resource Act (16 U.S.C. § 3505) is applicable. The

FAA determined that the project is in consistent with the Minnesota Lake Superior Coastal Program and submitted a Federal Consistency Determination to the Minnesota Department of Natural Resources (MNDNR) for their concurrence.

▪ **Construction Impacts**

It is expected that construction would be completed in four stages within two construction seasons. Construction activities would be limited to daylight hours between 7:00 am and 7:00 pm to reduce the noise impact on area residences. Final design will evaluate options for minimizing impacts to Canal Park and Minnesota Point during the peak tourist season by limiting construction and/or construction traffic during this time where possible. The DAA will keep residents and MN Point users updated on construction schedule when impacts are expected.

The four stages of construction include:

- Perimeter Berm Stage: This stage includes construction of a perimeter berm and the excavation of approximately 8,600 cubic yards of material from the lake bottom for the riprap toe. The excavated material will be stored on site for future use. The runway will be closed during periods of active construction.
- Stage 1: Fill will be placed within the perimeter berm. Riprap will be placed around the project perimeter for permanent erosion control. A reinforcement geotextile will be placed at slightly above lake level to prevent slope failure. Upon completion of Stage 1, the site will stabilize in place over a period of three months. The runway will be closed during periods of construction but will re-open during the stabilization period.
- Stage 2: The remaining fill and a surcharge of five feet will be placed. The surcharge will stabilize over a period of approximately six to nine months. The runway will be closed for the duration of this stage since surcharge will be required to be placed within the existing runway safety area.
- Stage 3: The excess surcharge will be removed and the runway and taxiway will be constructed. The runway will remain closed for the duration of this stage.

Seaplane use of the facility may continue through construction with intermittent closures. Based aircraft could remain hangared at DYT during construction but would not have access to the runway while it is closed. Runway closure would also limit access to the businesses located at DYT. Based aircraft or businesses could temporarily relocate to other area airports (Richard I. Bong Superior Airport or Duluth International Airport).

Earth-moving equipment would be active on the site during reconstruction of the runway and would result in a temporary increase in noise and dust in the immediate project area (within airport boundary). The fill material used for runway construction will likely be brought to the project site using a combination of trucking and barging depending on material type and source. The material brought to the site via truck will travel on Lake Avenue through Canal Park, across the Aerial Lift Bridge, and down Minnesota Avenue on Minnesota Point. This same route will be used by the construction workers.

Canal Park is the most popular tourist and recreation-oriented destination in Duluth, particularly in the summer months. The Aerial Lift Bridge provides the only road access and evacuation route from Minnesota Point. Aerial Lift Bridge operations can create traffic backups in both directions and would increase trucks idling in these areas. The bridge has no load restrictions and any legal load may cross the bridge without a permit.

Construction traffic due to the preferred alternative is unlikely to increase traffic or congestion at any intersections that currently experience congestion issues. An air quality analysis will be completed once the route and extent of trucking necessary to bring material to and from DYT is known.

Solid waste generated during construction would consist mainly of concrete and asphalt debris derived from the runway. These materials may be recycled or disposed of at a licensed industrial/demolition waste disposal facility. Adequate space is available at licensed facilities should disposal be necessary.

Construction limits do not impact the identified closed petroleum leak site. However, the current extent of residual contamination is unknown. Excavation activities in the area will include screening of soils by trained personnel to identify potentially contaminated soil. Any impacted soils would be segregated from other soils in a containment area and would be analyzed in accordance with state requirements. Soils impacted by petroleum contaminants could be accepted at several landfills in the Duluth area.

Groundwater impacts following closure of the petroleum leak site were considered restricted to the leak site and the associated plume was considered to be stable or degrading. Due to the high water table resulting from the presence of Superior Bay and Lake Superior, any necessary dredging activities conducted for construction are unlikely to cause changes in groundwater flow conditions near the closed petroleum leak site; therefore, no further mobilization of the contaminants or increased impacts to receptors are likely. However, contaminants could be mobilized if dewatering or excavation activities occur around the former leak site. Water removed as a result of dewatering operations or from excavations would be field screened to identify potential impacts. In the event that contamination is discovered, the State Duty Officer will be notified, in accordance to the reporting requirements of Minnesota Statutes chapter 115.061.

The soils in the project area consist of excessively drained, loamy sand, with the potential to transmit water at 2 to 20 inches per hour. The drainage properties of this soil make it susceptible to groundwater contamination. A construction SWPPP will address preventative contamination measures and spill kits will be available as part of this plan during construction.

Construction limits, including equipment storage and staging areas, will be completely within areas previously disturbed. Impacts to native habitats will be avoided to the greatest extent possible by keeping construction activities on or within the existing disturbed, maintained, and mowed areas.

During construction a floating silt curtain will be installed around the perimeter of the site prior to placement of any fill material and will be maintained during the duration of fill placement. Upon completion of each phase of fill placement, a heavy duty silt fence will be placed on the embankment. Post-construction, Alternative 5a Short would utilize the same overland infiltration and filtration BMPs as the existing conditions for the management and treatment of stormwater runoff.

- **Department of Transportation Act Section 4(f)**

Alternative 5a Short does not result in impacts to any trees within the Section 4(f) resource (the Minnesota Point Pine Forest SNA) nor does it limit or prohibit access to the resource. Therefore, no impacts to Section 4(f) resources are anticipated as a result of Alternative 5a Short.

- **Fish, Wildlife and Plants**

Alternative 5a Short would avoid land cover changes to the natural terrestrial vegetation surrounding DYT but includes approximately 2.2-acres of impact to existing disturbed/non-native grassland areas. This alternative would result in 69,800 cubic yards of fill over 7.49 acres in the harbor. Transport of fill material will follow procedures in MNDNR Operational Order 113 to reduce the risk of introduction or spread of invasive species. The area surrounding DYT facilities would be maintained as mowed grass or other low vegetation. After construction, the balance of land cover on site will be a net gain of 8.68 acres of Lawn/Landscaping cover type. The existing forested habitat on Minnesota Point, including the SNA, would remain intact and would not be impacted.

The reconstruction of the runway and placement of fill within the harbor would affect the warmer water aquatic community. The fill will reduce the overall habitat for fish and other aquatic species. This is a direct loss of habitat, although the majority of the habitat lost is moderately shallow with silt/sand bottom and no submerged/emergent vegetation. As the benthic community is currently composed of common and abundant species, the impacts to wildlife are minimal. This alternative will also utilize riprap to stabilize the shoreline, which will provide a habitat similar to what is currently present.

The presence of a fishery in the project area requires a period of no activity within the bed of the lake to ensure that there are no disturbances during the spawning period. Within the northeast portion of the state, no work may be completed within a lake between April 1 and June 30. A waiver for work within restriction dates may be sought if necessary to achieve the construction schedule and to minimize construction impacts during the peak tourist season.

- **Floodplains**

Alternative 5a Short includes the placement of approximately 69,800 cubic yards of fill over approximately 7.49 acres of FEMA Zone A1 (City General Floodplain and Floodway District). The fill placement will be within Superior Bay, which functions more as a lacustrine (i.e. "lake") system than a riverine (i.e. "river") system which results in little to no conveyance of floodwaters. Any increase in flood elevations is related to the volume of floodplain storage lost due to fill. The volume of storage lost due to fill is approximately 2.1

acre-feet, which is a negligible fraction of the available 100-year floodplain storage of Superior Bay and would result in no discernible increase in flood elevations. A Special Use Permit from the City of Duluth will be obtained. Neither FEMA nor the City of Duluth requires compensatory storage for the loss of floodplain storage due to fill within the 100-year floodplain. Airport landing strips are a permitted use per City of Duluth zoning ordinance Section 50-18.c.2.a.ii, therefore no mitigation is proposed.

- **Hazardous Materials, Pollution Prevention and Solid Waste**

Alternative 5a Short would not result in any change to waste generation or collection at DYT or to collection and treatment of sanitary wastes. Solid waste from airport-owned facilities would continue to be collected by Waste Management and that from private hangars through their chosen contractors. The current fueling facilities will not be altered and would still be subject to routine monitoring and reporting.

- **Historical, Architectural, Archeological and Cultural Resources**

There are no properties within the APE eligible for listing on the NRHP. This alternative does not include ground disturbance in the vicinity of any resources identified in the Phase I survey. Therefore, Alternative 5a Short would not result in any adverse impact to cultural resources.

The FAA issued a finding of No Historic Properties Affected in August, 2011. The SHPO conditionally concurred with the finding in a letter dated September 8, 2011. The FAA revised the finding to incorporate SHPO's conditions and to reflect new information in July 2014. The SHPO concurred with the revised finding.

- **Light Emissions and Visual Impacts**

Alternative 5a Short will not impact scenic views and vistas to or from Minnesota Point. The reconstructed runway would be shorter than the existing runway, which would reduce the amount of runway and taxiway lighting. Two obstruction lights would be abandoned and one new obstruction light would be installed. The two abandoned obstruction lights would no longer be illuminated, but the poles will remain in order to avoid ground disturbance associated with their removal. The proposed obstruction light would be installed to provide only upward illumination in order to notify pilots of the edge of the forest and the associated obstructions within the transitional surface. The illumination would be directed upward to minimize effects. No new buildings or other infrastructure are planned that could potentially impede any scenic views or vistas.

- **Threatened and Endangered Species**

The preferred alternative would involve construction in several habitats for species listed in the MNDNR NHIS Database or documented in the 2012 benthos survey.

- Federal Threatened and Endangered Species

Piping plovers (Federally Endangered) previously nested on sparsely vegetated dredge spoil in the Superior Bay area, but has not been observed to breed in the area since the 1980s. Small numbers of piping plovers are still occasionally observed in the Duluth-Superior Harbor area. Gull exclosures have been constructed in recent years on the bay side of Wisconsin Point and Shafer Beach to attract nesting plovers. Plover

tracks (unknown if these were from piping plover or other similar plover species) have been observed in the exclosures, but as yet no nesting of piping plover has been documented (St. Louis River Alliance 2013). No such exclosures have been constructed on the Minnesota Point side, and Alternative 5a Short is unlikely to impact breeding populations of piping plover. This alternative is anticipated to have no effect on the piping plover.

- **State Threatened and Endangered Species**

Fill in the harbor would affect habitat for lake sturgeon, creek heelsplitter, and eastern elliptio. The impacted habitat is common in the harbor, and no additional coordination is anticipated to be necessary. In addition, area impacted by fill in the harbor is not likely to be good spawning habitat due to the soft/silty substrate and lack of emergent or submergent vegetation; therefore, impact to spawning habitat should be negligible. The aquatic macroinvertebrate sampling completed by SEH confirmed that eastern elliptio (state-listed special concern) mussels are present within the project area, although not at great abundance. Suitable mussel habitat is present within the project area and is present throughout the entire St. Louis River estuary. It is assumed that some quantity of mussels would be directly impacted by the project, as would a loss of suitable habitat. The lost habitat and the quantity of eastern elliptio that would be impacted are minor in relation to the overall habitat present and would not have negative impacts on the species.

Construction in the beach environments could affect habitat suitable for beach heather and beachgrass, both state-listed threatened species, as well as the hairy-necked tiger beetle (state-listed endangered). The anticipated construction limits for Alternative 5a Short would be restricted to mowed/maintained areas and outward to Superior Bay, thereby avoiding potential conflicts with potential areas of native plant communities.

- **Water Quality**

Alternative 5a Short includes placing approximately 69,800 cubic yards of fill (combined in water and on land), 50,000 cubic yards of surcharge and 25,000 tons of riprap over a total project area of 29.47 acres. Excess surcharge will be removed and reused on site within the project limits. Disposal of all excess surcharge material will be conducted in accordance with all applicable local, state, and federal regulations.

The placement of fill within the general development shoreland zoning area of Lake Superior will require a Shoreland Permit from the City of Duluth. All conditions of the permit will be met. The City of Duluth minimum shoreland area standards require a minimum setback of 50 feet for impervious surfaces along with a 50-foot naturally vegetated buffer in general development waters. Alternative 5a Short will result in only a 30 foot buffer to minimize fill in Superior Bay. Extending the area of fill by 20 feet to create a 50-foot buffer would increase surface water impacts and significantly increase project costs. This action is eligible for a variance of City of Duluth shoreland zoning requirements for the 50-foot buffer since reducing the buffer width minimizes fill in the bay.

Alternative 5a Short would result in an approximately 1.907 acre (83,075 ft²) reduction in impervious surface at DYT, reducing the impervious surface from 13.026 acres (567,414 ft²) of existing impervious surface to 11.119 acres (484,339 ft²). Therefore, this alternative creates a corresponding reduction in runoff. The 2-Year, 24-Hour Event Peak flow results in a reduction in runoff to 0.05 cubic feet per second (cfs) compared to 0.17 cfs for existing conditions. The 10-Year, 24-Hour Event peak flow results in 1.78 cfs compared to 7.28 for existing conditions. The 100 Year 24 Hour Event results in a peak flow of 17.85 cfs compared to 31.21 for existing conditions. Following project completion, site runoff will be directed to the onsite stormwater treatment system prior to entering groundwater or discharging to surrounding water bodies. Stormwater runoff would continue to be managed through vegetative swales parallel to the existing runway, taxiway, and other impervious surfaces.

Alternative 5a Short would result in no changes to the quantity or quality of sanitary wastewater generated at DYT. Sanitary wastes collected in the on-site septic system would continue to be removed regularly for treatment.

- **Wetlands**

The rotation of the runway will relocate the Runway 32 end farther away from the existing wetland. The wetland will be avoided during the removal of the existing runway and construction of the new runway. As a result, no wetland impacts will result from the preferred alternative.

VII. Environmental Mitigation/Commitments

The DAA has committed to the following mitigation measures as part of the Proposed Action:

- Completion of Concurrence Point 4 (Preliminary Design Phase Impact Sequencing) of the MOU between the FAA, USACE and the Duluth Airport Authority.
- Mitigation for the lost aquatic habitat, which may be completed through DAA monetary contributions to restoration projects in the Harbor with proximity to DYT or through other actions. Exact mitigation will be determined during final design in consultation with the USACE and DNR.
- Completion of an air analysis once the route and extent of trucking necessary to deliver material to the site is known. If the air analysis identifies an impact, the DAA will work with the FAA, the EPA and the Minnesota Pollution Control Agency to either resolve the impacts or to determine appropriate mitigation.
- Use of Best Management Practices (BMPs) to avoid additional unnecessary and/or unauthorized impacts to surface waters and aquatic resources.
- Include BMPs to limit construction impacts. The contractor would be required to carry out dust and erosion control procedures, such as watering to control dust and wind erosion, seeding with a temporary cover crop (oats) in work areas that are temporarily inactive, and installation and maintenance of silt fence. These requirements would be included in

the project drawings and specifications under the FAA standard specification Item P-156, "Temporary Air and Water Pollution, Soil Erosion, and Siltation Control."

- Development of a Storm Water Pollution Prevention Plan (SWPPP) in association with the NPDES Construction Permit.
- All phases of construction would be performed in accordance with FAA AC 150/5370-10B, Standards for Specifying Construction of Airports.
- Contaminated soil and water will be handled and disposed of in accordance with applicable federal, state and/or local regulations.
- The contractor would be required to repair the existing roadway to preconstruction conditions after completion of runway construction.
- The sites (positive shovel tests) identified during the Phase I survey will be protected from disturbance during construction.
- In the event that cultural or archaeological resources are discovered during construction, all work will stop until DYT notifies SHPO and the FAA Dakota Minnesota Airports District Office (MSP-ADO). DYT shall protect the area until cultural/archaeological resource concerns have been appropriately addressed, and DYT shall take action to comply with the National Historic Preservation Act, the Native American Graves Protection and Repatriation Act, and the Archaeological Resources Protection Act, as appropriate.
- If the previously proposed southernmost obstruction light is identified as needed for safety reasons, the appropriate coordination will be completed. This includes the completion of a Phase II archaeological survey to delineate the boundaries of the previously identified archaeological site and studies to determine the location of state sensitive species prior to any construction activities. The MN DNR will need to be coordinated with depending on the utility route that is chosen to provide power to the obstruction light.
- During construction, in the event that previously unknown contaminants are discovered or if a reportable spill occurs, work shall cease until the Airport notifies appropriate local, state, and Federal agencies.
- If endangered species are sighted during construction, work shall cease in the immediate area of the endangered species and all sightings shall be reported to the US Fish and Wildlife Service, DNR and the FAA.

VIII. Public and Agency Coordination

Public involvement is a vital component of the NEPA process. Public and agency coordination was conducted throughout the NEPA process (Chapter 6 of the FEA). A Public Advisory Committee and Technical Advisory Committee were formed. Numerous meetings and updates were provided to the public throughout the NEPA process.

The Draft EA was released for agency and public review on July 7, 2014 for a 45-day comment period. To facilitate comments, the DAA held a Public Open House and Public Hearing on August 7, 2014. Agency and public comments received during the comment period (July 7 – August 20) were considered in the development of the FEA. Responses to all verbal and written comments are provided in Appendix K of the FEA.

The FEA and FONSI/ROD will be distributed for a 30 day agency and public review period.

IX. Agency Findings

The FAA conducted an independent review of the factual assumptions contained in the EA and determined the adequacy of the EA and takes responsibility for the document's scope and content. Individuals from the FAA have devoted substantial attention to the EA in order to ensure compliance with NEPA, and other environmental requirements. Accordingly, I find that the independent and objective evaluation called for by the CEQ has been provided. The FAA has given this proposal the independent and objective evaluation required by CEQ (40 CFR 1506.5).

After careful and thorough consideration of the facts contained herein, I find that the proposed Federal action is consistent with existing national environmental policies and objectives of Section 101(a) of NEPA and other applicable environmental requirements. The proposed Federal action will not significantly affect the quality of the human environment or include any condition requiring consultation pursuant to section 102(2)(c) of NEPA.

Therefore, under the authority delegated to me by the Administrator of the FAA, I find that the proposed airport improvement projects described and evaluated in the EA and addressed in this FONSI/ROD are reasonably supported and approved. I direct that action be taken to carry out the following agency actions:

- Approval of the Airport Layout Plan for the Sponsor's Proposed Action for the development listed above.
- Issue final airspace determinations for the development listed above.
- Determine eligibility for Federal grant-in-aid funds for eligible items.

Having met all relevant requirements for environmental considerations and consultation, the proposed action is authorized to be taken when other requirements have been met. These decisions are taken pursuant to 49 USC § 40101, et seq. The FAA findings regarding the proposed airport improvements and any necessary funding, for the Duluth-Sky Harbor Airport, constitute an order of the Administrator, which is subject to review by the courts of

Appeal of the United States, in accordance with the provisions of Section 1006 of the Federal Aviation Act of 1958, as amended, 49 USC § 46110.

Finally, having based upon the administrative review of this project, I certify, as prescribed by 49 USC § 44502(b) that implementation of the Proposed Action is reasonable necessary for use in air commerce.

APPROVED:

✓

DISAPPROVED:

Susan Mowery-Schalk

Susan Mowery-Schalk
Manager, Airports Division
FAA Great Lakes Region

DATE: May 8, 2015

Right of Appeal

This FONSI/ROD presents the Federal Aviation Administration's final decision and approvals for the actions identified, including those taken under provisions of 49 USC Subtitle VII, Parts A and B. This decision constitutes a final order of the Administrator subject to review by the Courts of Appeals of the United States in accordance with the provisions of Section 1006 of the Federal Aviation Act of 1958, as amended, 49 USC § 46110.

DULUTH AIRPORT AUTHORITY

RECORD OF DECISION

In the matter of Runway 32 Approach Obstruction Removal at the Duluth – Sky Harbor Airport Final Federal Environmental Assessment and State Environmental Assessment Worksheet; Negative Declaration on the Need for an Environmental Impact Statement

FINDINGS OF FACT, CONCLUSIONS, AND ORDER

FINDINGS OF FACT

- I. The Duluth Airport Authority (DAA) has proposed reconstruction of the runway at the Duluth-Sky Harbor Airport (herein referred to as “the Airport”). The Airport is located approximately five miles from downtown Duluth on Minnesota Point (also known locally as “Park Point”). The runway reconstruction project will provide an approach surface clear of trees and obstructions. The proposed improvements would be funded with local funds with potential future, partial federal and state reimbursement through the Federal Aviation Administration (FAA) Airport Improvement Program (AIP), state bonding, and state airport funds.
- II. An Environmental Assessment Worksheet (EAW) is mandatory for this project pursuant to Minnesota Rules 4410.4300, Subp. 30 (Natural areas) because some of the alternatives considered could potentially impact the adjacent Minnesota Point Pine Forest Scientific and Natural Area (SNA). The preferred alternative would also result in fill in Superior Bay and would require an EAW under MR 4410.4300, Subp. 27 (Wetlands and public waters).
- III. The DAA is the Responsible Governmental Unit (RGU) for preparation and review of the EAW.
- IV. The use of AIP funding requires preparation of an Environmental Assessment (EA) to evaluate the proposed action in accordance with the National Environmental Policy Act (NEPA) (42 U.S. C. §§ 4321-4347) and NEPA’s implementing regulations (40 C.F.R. parts 1500-1508).
- V. The EA/EAW document is intended to meet both state (MEPA) and federal (NEPA) requirements. In this joint state and federal process, the DAA and FAA are acting as co-lead agencies in development of the document.
- VI. The EA/EAW was filed with the Environmental Quality Board (EQB) and a notice of its availability was published in the EQB *Monitor* on July 7, 2014.
- VII. The FAA and DAA released the draft EA/EAW for public comment on July 7, 2014. The FAA and DAA held a public hearing on the draft EA/EAW on August 7, 2014, at which the agencies received public comments. The public comment period on the draft EA/EAW closed on August 20, 2014.
- VIII. During the 45-day EA/EAW public review and comment period, and at the public hearing, the DAA and FAA received comments from agencies and individuals. The DAA and FAA responded to all comments received on the draft EA/EAW during the public comment period. The comment letters and response to comments are included in the Record of Decision as Attachment A.
- IX. In deciding whether a project has the potential for significant environmental effects and whether an EIS is needed, the Minnesota Environmental Quality Board rules (4410.1700 Subp. 6 & 7) require the RGU to compare the impacts that may be reasonably expected to occur from the project with four criteria by which potential impacts must be evaluated.

EOB rules require the RGU to make findings of fact with respect to the following criteria, the DAA response follows:

- 1) **Type, extent, reversibility of environmental effects.** The preferred alternative will fill 7.49 acres of aquatic habitat in the Duluth - Superior Harbor. The amount of lawn/landscaping cover type will increase, and impervious surface will decrease by 2.03 acres, due to the shortened paved runway and taxiway. These are considered permanent land conversions with irreversible environmental effects.
- 2) **Cumulative potential effects of related or anticipated future projects.** No related projects are known that would contribute to cumulative effects. Anticipated future projects that could contribute to cumulative impacts on aquatic habitat in the Duluth - Superior Harbor are redevelopment of the LaFarge Cement Terminal and expansion of the Canadian National (CN)/ Duluth Dock and Lakehead Storage Area. A number of future projects are in planning stage with potential beneficial effects on aquatic habitat, including Pickle Pond, Slip C, 40th Avenue West, and Howard's Bay.
- 3) **Extent to which environmental effects are subject to mitigation by ongoing public regulatory authority.** Environmental effects due to fill in waters of the U.S. are subject to regulation by the USACE; waters of the state are subject to regulation by the MNDNR and MPCA. The DAA assumes that mitigation will be required for 7.49 acres of fill in the Duluth - Superior Harbor. Anticipated future projects by others (LaFarge Cement Terminal and CN/Duluth Dock) would likely be subject to mitigation requirements by the USACE and/or the MNDNR and MPCA.
- 4) **Extent to which environmental effects can be anticipated and controlled as a result of other available environmental studies undertaken by public agencies or the project proposer including other EISs.** At this time, the DAA and FAA know of no other environmental studies being undertaken by public agencies or internally, including other EISs, that would affect the results of this project.

CONCLUSIONS

- X. Based on the EAW, the findings of fact, and related documentation for this project, the DAA, as the RGU for this environmental review, concludes the following:
 - a. Potential impacts evaluated under the four criteria (type, extent, and reversibility of environmental effects; cumulative potential effects of related or anticipated future projects; extent to which environmental effects are subject to mitigation by ongoing public regulatory authority; and extent to which environmental effects can be anticipated and controlled as a result of other available environmental studies undertaken by public agencies or the project proposer including other EISs) are subject to mitigation by the U.S. Army Corps of Engineers (USACE), Minnesota Department of Natural Resources (MNDNR), and Minnesota Pollution Control Agency (MPCA), and therefore do not have the potential for significant environmental effects.
 - b. Any finding more properly considered a conclusion shall be considered a conclusion. Any conclusion more properly considered a finding shall be considered a finding.

ORDER

Based on the above Findings of Fact and Conclusions, and the entire administrative record of the proceeding, the DAA hereby determines and declares that the proposed Runway 32 Approach Obstruction Removal project Final Environmental Assessment/Environmental Assessment Worksheet is adequate under the Minnesota Environmental Policy Act (MEPA), that the proposed Runway 32 Approach Obstruction Removal project does not have the potential for significant environmental effects, and that preparation of an Environmental Impact Statement (EIS) for the project is not required. Accordingly, the DAA is issuing a negative declaration on the need for an EIS under MEPA.

Dated 3/17/15
DULUTH AIRPORT AUTHORITY



Tom Werner
Executive Director

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Appendix A
Response to Comments Document

**Runway 32 Approach Obstruction Removal at the Duluth-Sky Harbor Airport
Duluth, Minnesota**

Introduction

A Draft Environmental Assessment (EA)/Environmental Assessment Worksheet (EAW) describing proposed improvements at the Duluth-Sky Harbor Airport in Duluth, Minnesota was published and distributed for a 45-day comment period in accordance with the requirements of the FAA. A public comment period on the Draft EA/EAW was held from July 7, 2014 through August 20, 2014. Availability of the Draft EA/EAW was published in the Duluth News Tribune and the Minnesota Environmental Quality Board Monitor on July 7, 2014.

During the comment period, eight (8) agencies, organizations or members of the public submitted written comments, as follows.

1. Minnesota Pollution Control Agency (received 08/19/2014)
2. Minnesota Department of Natural Resources (received 08/20/2014)
3. United States Army Corps of Engineers – Detroit District (received 8/19/2014)
4. Park Point Community Club (received 08/19/2014)
5. United States Environmental Protection Agency (received 08/20/2014)
6. White Earth Reservation Tribal Council (received 07/26/2014)
7. Band of Mohican Indians (received 07/11/2014)
8. Michael Wagner (received 07/24/2014)

Three (3) additional comments were received past the 45-day comment period. The Federal Aviation Administration and Duluth Airport Authority have chosen to accept these comments and provide a formal response, as these agencies and/or organizations have worked closely with the DAA on the project during the project.

1. Duluth Tree Commission (received 09/17/2014)
2. Minnesota Department of Natural Resources – 2nd comment (received 10/08/2014)
3. United States Army Corps of Engineers – St. Paul District (received 11/17/2014)

Additionally, a public open house followed by a public hearing were held on August 7, 2014 at the Inn on Lake Superior in Duluth, Minnesota. Eight (8) public comments were received at the hearing.

Minnesota Environmental Quality Board rules require the Duluth Airport Authority to respond in writing to each of the comments received on the EAW. The full text of the original comments is attached along with formal responses to substantive comments. The comment responses include references to any changes or additions to the Final Environmental Assessment/Environmental Assessment Worksheet document as relevant.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

AUG 20 2014

REPLY TO THE ATTENTION OF:

E-19J

Kandice Krull
Environmental Protection Specialist
FAA – Denver Airport District Office
26805 East 68th Avenue – Suite 224
Denver, Colorado 80249-6361

Tom Werner
Executive Director
Duluth Airport Authority
4701 Grinden Drive
Duluth, Minnesota 55811

Re: Federal Aviation Administration (FAA) Draft Environmental Assessment (DEA) and State Environmental Assessment Worksheet (EAW) for the Runway 32 Approach Obstruction Removal at the Duluth – Sky Harbor Airport, Duluth, Minnesota, dated July 2014.

Dear Ms. Krull and Mr. Werner:

The United States Environmental Protection Agency (EPA) has reviewed the above referenced FAA Draft Environmental Assessment (DEA) / State Environmental Assessment Work Sheet (EAW) and offers the following comments in accordance with our responsibility and authority under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act.

In order to bring the Duluth-Sky Harbor Airport in sufficient compliance with state and federal rules to allow issuance of a Minnesota Airport License, the Duluth Airport Authority (DAA) proposes to reconstruct Runway 32 to provide a runway approach clear of trees and obstructions. DEA/EAW adequately describes the no action and action alternatives considered. A preliminary preferred alternative (Alternative 5a Short) is identified. The rationale for the proposed elimination of other alternatives is provided. Impacts and potential mitigation measures are disclosed.

Alternative 5a Short consists of the construction of a new runway and full-length parallel taxiway on a new alignment at the existing Duluth-Sky Harbor Airport. The runway would be 2,600 feet in length (450 feet shorter than the existing runway) and would have a 5-degree rotation of the Runway 32 end into Superior Bay. Approximately 69,800 cubic yards of fill over 7.49 acres would be placed in Superior Bay to accommodate the runway construction and establishment of the runway safety areas (RSA) to FAA standards. If constructed, Alternative

5a Short would avoid impacting the old growth forest in the nearby Minnesota Point Pine Forest Scientific and Natural Area (SNA).

Water Resources

The potential mitigation identified in the DEA/EAW for the loss of aquatic habitat is not specific. The DEA/EAW mentions the need to apply for a Clean Water Act (CWA) Section 404 permit from the U.S. Army Corps of Engineers (COE), as well as CWA Section 401 certification from the Minnesota Pollution Control Agency. During the permitting process, specific mitigation will be determined. EPA reserves its right under CWA Section 404 to further review and comment on this proposal during COE's CWA, Section 404 permitting process.

- 1 | Recommendation: EPA recommends that FAA's Final EA/EAW include a conceptual mitigation plan that identifies and describes all quality sites that project proponents have looked at to date that could potentially be used for successful compensation mitigation for loss of aquatic habitat.

Construction Impacts: Air Quality, Noise, Safety and Traffic Congestion

The City of Duluth, including the Airport, is a Maintenance Area for carbon monoxide (CO) (Section 3.1, page 3-1). The DEA/EAW (Section 3.1.1, page 3-2) states that an air quality analysis for construction emissions will be completed once the route and extent of trucking necessary to bring material to and from the Airport is known.

- 2 | Recommendation: As this project develops, we recommend FAA and project proponents contact Tony Maietta, EPA Air and Radiation Division, for an update regarding the CO status of the project area. Tony may be reached by calling: (312) 353-8777 or by email at: Maietta.Anthony@epa.gov.

According to the DEA/EAW (Section 2.1), project construction would take place in three stages over two construction seasons. The Airport is located on a narrow strip of land with one access road. Fill and other construction materials brought to the Airport by truck would travel on Lake Avenue through Canal Park, a tourist and recreation district, across the Aerial Lift Bridge and down Minnesota Avenue, a residential area. A combination of trucking and barging could be used to bring fill and/or other materials to the Airport.

Potential emissions from older diesel engines found on haul trucks and construction equipment include high levels of particulate matter, hydrocarbons and carbon monoxide.

- 3 | Recommendations:
- In order to help maintain existing air quality and prevent increased noise levels and traffic congestion in the residential neighborhood, and tourist and recreation district

3 cont

during project construction, EPA recommends the use of barges and/or boats for hauling fill and other construction related materials and construction workers to and from the Airport.

4

If haul trucks must be used to bring in fill and other construction materials, we recommend the project proponents consider strategies to reduce diesel emissions, such as committing to project construction and haul contracts that require equipment and trucks that have clean diesel engines and use clean diesel fuels.

5

We also recommend project proponents adopt an anti-idling policy, requiring diesel construction equipment to be turned off when not in use.

EPA appreciates the opportunity to provide our comments on the DEA/EAW. If you would like to discuss the content of this letter in more detail, please contact Virginia Laszewski of my staff at (312) 886-7501 or at laszewski.virginia@epa.gov. Please send us two hard copies and two CDs of FAA's next NEPA document for this proposal when available.

Sincerely,



Kenneth A. Westlake
Chief, NEPA Implementation
Office of Enforcement and Compliance Assurance

cc: Daryl W. Wierzbinski, U.S. Corps of Engineers – Duluth Office, 600 South Lake Avenue, Suite 211, Duluth, Minnesota 55802
Andrew Horton, U.S. Fish and Wildlife Service, Twin Cities Field Office, 4101 American Boulevard East, Bloomington, Minnesota 55425

Response to Comment No.1

The EA/EAW includes conceptual mitigation options for aquatic resource benefits within Superior Bay (EA/EAW Section 3.16.1.1, subsection "Permitting and Mitigation"). The sites identified to date have all been on the Wisconsin side of Superior Bay. The FAA and DAA will continue to work with the agencies responsible for permitting wetland and aquatic resources impacts to identify mitigation options that will be of benefit to Superior Bay, preferably on the Minnesota side of Superior Bay. Flexibility in determining appropriate mitigation options and/or specific sites will be needed so that successful mitigation considers the benefits to both the land and water resources, both ecologically and economically, in the Duluth-Superior Harbor. During the permitting process, the FAA and DAA will consider potential mitigation projects in the Harbor with proximity to the Airport. Mitigation will likely include projects that can have aquatic habitat benefits to the Superior Bay and/or St. Louis River Area of Concern (AOC).

Other collective socioeconomic benefits to the natural and human environment in this area will be considered for compensatory mitigation. These could include a land release^[KK(1)] of DAA property adjacent to the SNA. This would place ecologically important terrestrial resources containing rare habitat for federally and state listed threatened and endangered species into public conservation and preservation. The DAA anticipates that this and other elements of a mitigation proposal will be negotiated with regulatory agencies during the permitting process.

Response to Comment No.2

Comment noted. The FAA and project proponents will contact the EPA Air and Radiation Division for updates regarding the CO status of the project area before completing an air analysis once the quantities of material to be trucked are known and trucking routes are finalized.

Response to Comment No.3

Barging of construction materials is proposed to be used to the greatest extent practicable (methods described in Section 3.5.2.1 of the EA/EAW). Practicability of barging vs. trucking will depend on material type and source, and will be evaluated at the design phase. Project proponents are continuing to evaluate the possibility of reducing truck trips during construction.

Section 3.5.3 of the EA/EAW describes efforts to minimize construction traffic effects during heavy tourism and recreational seasons at Canal Park and on Minnesota Point. During final design phase of the project, details for the proposed construction will evaluate options for minimizing construction impacts where possible to these tourist, recreational, and residential areas.

Construction workers will access the site via personal or company passenger vehicles, as is typical for landward construction projects in this region. It is not feasible, nor practicable for construction employees to be transported via barge to the site during construction. Passenger barges are not available in the Duluth-Superior Harbor. Options to minimize traffic impacts, such as carpooling of construction workers, will be considered during final design.

Response to Comment No.4

Comment noted. Strategies to further reduce construction emissions will be considered during the design phase.

Response to Comment No.5

Comment noted. Strategies to further reduce construction emissions will be considered during the design phase.



August 20, 2014

Tom Werner
Executive Director
Duluth Airport Authority
4701 Grinden Drive
Duluth, MN 55811

RE: Sky Harbor Airport Federal Environmental Assessment/State Environmental Assessment Worksheet
EA/EAW

Dear Mr. Werner:

The Minnesota Department of Natural Resources (MNDNR) Northeast Region has reviewed the combined Federal Environmental Assessment/State Environmental Assessment Worksheet for the Sky Harbor Airport. The MNDNR appreciates involvement as a member of the Executive Committee and efforts to reduce the impact to the Minnesota Point Pine Forest Scientific and Natural Area and also the Estuary. The MNDNR Northeast Region has the following comments for your consideration.

NON-NATIVE SPECIES AND SEEDING

1 Several non-native species occur on Minnesota Point. Buckthorn is specifically mentioned in the EA/EAW, however spotted knapweed, tansy, bouncing betty, and butter and eggs are also known to occur in the immediate vicinity. Any re-vegetation plans will need to include several years of maintenance and control efforts to reduce the occurrence and spread of invasive species.

The native seed mix Woodland Edge Northeast (fringed brome, blue-joint, poverty, nodding wild rye, etc.) is planned for the air field. If it is not necessary, the DNR would encourage not mowing the entire air field.

MITIGATION

2 The MNDNR is interested in working with the Duluth Airport Authority regarding potential mitigation opportunities as part of the Minnesota DNR Public Waters Work Permit to place fill material into public waters. In doing so we acknowledge the applicant has attempted to avoid the impact, minimized the impact and finally considered replacing the impacted area with another of at least equal function and value. Appropriate mitigation will be necessary prior to issuance of a permit. When the DNR receives the application for fill in public waters we also expect to receive a mitigation project with a similar level of detail. The DNR can offer some suitable mitigation project opportunities, and work with you; however this is generally the responsibility of the applicant.

The MNDNR identifies mitigation on-site as a first consideration and highest priority. The applicant should be aware that MNDNR considers on-site mitigation to be evaluated and compensated for at a 1:1

2 cont

acre-for-acre, value-for-value ratio. Off-site mitigation within the estuary is compensated for at a 2:1 replacement ratio. Mitigation outside the estuary will use a higher replacement ratio. Opportunities for removal of fill placed in the past for runway construction should be evaluated as part of the design of the preferred alternative. Land no longer needed for airport operations and adjacent to the proposed fill area appears to provide the opportunity for excavation such that there would be no net change in upland versus aquatic habitats.

All three initial mitigation proposals identified in the EA/EAW are in Wisconsin. Although they are still in the Estuary, the filling will occur in Minnesota. As discussed above, MNDNR puts the highest priority on mitigation in-state and on-site. Relative priority is assessed for acceptability and in terms of assigning replacement ratios. Additional evaluation of the habitat benefits of proposed off-site mitigation concepts will be needed prior to permitting. MNDNR notes that two of the proposed mitigation concepts are ongoing habitat enhancement projects and the other has contaminated sediments present.

Attached is a rough outline map of one potential configuration for on-site mitigation. DAA will shorten and redirect the runway, which will vacate a substantial portion of area at the end of the existing runway. We would suggest that the DAA excavate into the point at the end of the existing runway to remove existing upland habitat, thereby restoring historically filled aquatic habitat. The excavated material could be used as fill or surcharge for the project. MNDNR staff is interested in discussing an on-site mitigation design such as identified in the attached sketch as way to meet DAA needs and result in no net change of aquatic habitat.

3

The Document indicates a potential land swap or donation of existing airport property with additional rare species that is no longer needed for aeronautical purposes as a potential mitigation opportunity. The DNR appreciates this idea as a potential component of a final mitigation package. Additional site identification and ecological review of potential land donation(s) will be required prior to final approval. Proposed sites would need to either meet SNA quality standards or include ecological restoration prior to inclusion as a component of the mitigation package. Small inholdings within the current SNA boundary are potential candidates for evaluation if they are no longer needed for airport operations and ecological values can be restored.

Thank you for the opportunity to comment, we look forward to cooperating with you on the upcoming phases of this project. Please feel free to call or email me with any questions you may have.

Sincerely,



Rian Reed
Regional Environmental Assessment Ecologist
MNDNR
1201 East Hwy 2
Grand Rapids, MN 55744
218-999-7826
rian.reed@state.mn.us



Response to Comment No.1

Areas impacted by construction will be seeded with a native grass mix modified from the Minnesota state seed mix 36-311 (Woodland Edge Northeast). Re-vegetation plans will include methods to control invasive species. These details will be determined during the permitting process.

The Airport will be required to mow the grassland habitat within the runway and taxiway object free areas. However, the Airport will evaluate options to minimize mowing where possible outside that area.

Response to Comment No.2

Comment noted. The DAA will continue to work with the MN DNR in identifying potential mitigation sites.

On site mitigation in the form of excavation of upland to create additional aquatic habitat has been considered, but dismissed due to two (2) significant considerations: 1) the potential for impacts to terrestrial threatened and endangered species, their habitat, or other unique terrestrial habitat endemic to Minnesota Point; and, 2) potential conflict of creating additional open-water habitat that could further attract waterfowl in an aircraft approach area. In addition, future Airport development needs to be considered when considering onsite mitigation.

The FAA and DAA will continue to work with the state and federal agencies responsible for authorizing wetland and aquatic resources impacts to determine suitable mitigation within the vicinity of the Duluth-Superior Harbor

Other collective socioeconomic benefits to the natural and human environment in this area will be considered for compensatory mitigation. These could include such items as a land release of DAA property adjacent to the SNA. This would contribute to placing ecologically important terrestrial resources containing rare habitat for federally and state listed threatened and endangered species into public conservation and preservation. The DAA anticipates that this and other elements of a mitigation proposal will be negotiated with regulatory agencies during the permitting process.

Response to Comment No.3

Comment noted. The DAA realizes the ecological value of the property in question, and is interested in the potential for a land swap. The DAA anticipates that this element of a mitigation proposal will be negotiated during the permitting process.

From: Tom Werner <twerner@duluthairport.com>
To: Benita Crow <bcrow@sehinc.com>,
Date: 10/08/2014 02:06 PM

Subject: FW: Draft EA SKY Harbor Airport

See the additional DNR comment below RE: KDYT EA Tom

Werner
Executive Director Duluth
Airport Authority 4701 Grinden
Drive
Duluth, MN 55811
(218) 625-7773 -Scheduling
(218) 625-7766 -Direct

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[Description: cid:image001.gif@01CC7F43.21298F90]

From: Reed, Rian H (DNR) [mailto:rian.reed@state.mn.us] Sent: Wednesday,
October 08, 2014 2:04 PM
To: Tom Werner
Cc: kandice.krull@faa.gov
Subject: Draft EA SKY Harbor Airport

Dear Mr. Werner,

I would like to pass on an additional comment to supplement to our August 20, 2014 DNR letter.

1 | Endangered and Threatened species in the vicinity of the airport include the hairy-necked tiger beetle, beach grass, and beach heather. It appears the preferred alternative will avoid state-protected species, however Alternative 13 may result in a takings of beach heather (*Hudsonia tomentosa*). Please note that you will need to work with Rich Baker, richard.baker@state.mn.us<<mailto:richard.baker@state.mn.us>>, DNR Endangered Species Coordinator, (651-259-5073) regarding a takings permit for this alternative.

Please let me know if you have questions. I will be out of the office October 9-16.
Thanks,

Rian Reed
Regional Environmental Assessment Ecologist MNDNR
1201 East Hwy 2
Grand Rapids, MN 55744 218-
999-7826
rian.reed@state.mn.us<<mailto:rian.reed@state.mn.us>>

Response to Comment No.1

Comment noted. Alternative 13 was not selected as the preferred alternative. If impacts to sensitive species are identified, the project proponent will coordinate with the DNR Endangered Species Coordinator to obtain a takings permit prior to any construction.



Minnesota Pollution Control Agency

520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300
800-657-3864 | 651-282-5332 TTY | www.pca.state.mn.us | Equal Opportunity Employer

August 19, 2014

Mr. Tom Werner
Executive Director
Duluth Airport Authority
4701 Grinden Drive
Duluth, MN 55811

Re: Duluth Sky Harbor Airport Environmental Assessment Worksheet

Dear Mr. Werner:

Thank you for the opportunity to review and comment on the Environmental Assessment Worksheet (EAW) for the Duluth Sky Harbor Airport project (Project) located in Duluth, Minnesota. Regarding matters for which the Minnesota Pollution Control Agency (MPCA) has regulatory responsibility and other interests, the MPCA staff has the following comments for your consideration.

- 1 • A reminder to update the Stormwater Pollutant Prevention Plan (SWPPP) for the National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Industrial Stormwater Permit.
- 2 • It is not uncommon for public utility projects to encounter contamination, especially petroleum-contaminated soil from storage tanks or spills. Efforts should be made prior to construction to determine if and where any petroleum or other contamination is likely to be encountered during the Project. Utilization of the MPCA's database and mapping tool, *What's In My Neighborhood?* can be helpful in evaluating the Project area or areas for potential contamination. This mapping tool can be found at: <http://www.pca.state.mn.us/wimn/index.cfm>. It is the responsibility of the Project sponsor to complete the Project safely through any areas of contamination and to properly manage any contaminated soil that is excavated during the Project. The factsheet, *Managing Petroleum Contaminated Soil at Public Works Projects*, is available to assist with this process, including how to identify potential sources of contamination. The factsheet can be found at: <http://www.pca.state.mn.us/publications/c-prp5-01.pdf>. If contamination is found, it must be reported immediately to the State Duty Officer at 651-649-5451 or 800-422-0798.
- 3 • The MPCA encourages the reuse of materials such as uncontaminated concrete and asphalt (bituminous) and it should be done in accordance with Minn. R. 7035.2860.

Response to Comment No.1

Comment noted. The SWPPP will be updated for the NPDES/SDS permit.

Response to Comment No.2

Comment noted. Efforts have been made to identify potentially contaminated soils from storage tanks and/or spills. Potentially contaminated sites in the project area are detailed in the EA/EAW in Section 3.11.2. Activities related to runway realignment are not expected to encounter contaminated soils, but this potential does exist. Excavation activities in the area will include environmental screening of soils by trained personnel using a photo-ionization detector (PID) to identify soils potentially impacted by petroleum contaminants. Any impacted soils would be segregated from other soils in a containment area, placed on 10 mm polyethylene plastic, and covered with 10 mm plastic, to prevent infiltration of precipitation and dispersal of the contaminated soils. Soils identified as potentially impacted would be sampled and analyzed in accordance with MPCA guidance documents to allow characterization prior to disposal. Soils characterized as being impacted by petroleum contaminants could be accepted at several landfills in the Duluth area unless extremely high contaminant levels are encountered.

Response to Comment No.3

The project proponent plans to reuse existing asphalt as surcharge as practicable. Construction methods, including plans for reuse of material, are detailed in Section 3.16.1.1 of the EA/EAW document.

From: "Parzych, Edward M LRE" <Edward.M.Parzych@usace.army.mil>
Date: August 19, 2014 at 17:05:33 CDT
To: "twerner@duluthairport.com" <twerner@duluthairport.com>, "kandice.krull@faa.gov" <kandice.krull@faa.gov>
Subject: RE: Duluth Sky Harbor Airport (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

ALCON,

1 The U.S. Army Corps of Engineers, Detroit District, Duluth Area Office has a concern over the possibility of planes striking ships that may be located in the adjacent anchorage basin. What elevations would planes be at as they enter the anchorage basin, specifically the north west corner of the basin? Are there notices given to planes given the possibility of there being ships at anchor adjacent to the proposed runway re-alignment?

Edward Parzych

Construction Representative

U.S. Army Corps of Engineers

Detroit District, Duluth Area Office

600 Lake Ave. So.

Duluth, MN 55802

Voice - 218.720.5260 x-35262

Mobile - 218-343-5461

Fax - 218.720.5270

Classification: UNCLASSIFIED

Caveats: NONE

Response to Comment No.1

Potential impacts to the anchorage area were discussed with the USACE and the USCG as part of the EA preparation (see Appendix G-1 and G-2 of the EA/EAW). The FAA provided follow-up information to the USACE Detroit District prior to publication of the Final EA (See Appendix G-3 of Final EA/EAW).



From: David Poulin [mailto:dfpoulin@charter.net]
Sent: Wednesday, August 20, 2014 9:10 AM
To: Tom Werner
Subject: Park Point CC Comments-Sky Harbor Airport

Park Point Community Club
PO Box 16326
Duluth, MN 55816

August 19, 2014

Tom Werner
Executive Director
Duluth Airport Authority
4701 Grinden Drive
Duluth, MN 55811

Hello Mr. Werner and the Duluth Airport Authority.

The Park Point Community Club (PPCC) is a 501(c)4 Nonprofit Corporation consisting of over 300 members residing on Minnesota Point. The PPCC has maintained a high level of interest in the operation of Duluth Sky Harbor International Airport since the formation of the airport after WWII. Concurrently, the PPCC has demonstrated a strong interest in preserving the pine forest and the sensitive natural areas at the end of Minnesota Point. The PPCC has facilitated environmental studies and restoration efforts that have benefited both the airport and the City of Duluth. These projects were funded by the State of Minnesota, the Community Club and were completed by Club volunteers.

1 The Park Point Community Club wishes to comment on the Draft Federal Environmental Assessment and State Environmental Assessment Worksheet for the Runway 32 Approach Obstruction Removal at the Duluth-Sky Harbor Airport Dated July 2014. The PPCC supports the Preliminary Preferred Alternative (5a Short). We believe this would have the least impact on the integrity of the forest and the the small amount of fill needed in the harbor would be a fair trade off. The Club opposes the Alternative 13 Proposal. That proposal would allow cutting and trimming of hundreds of trees in the forest and the land exchange proposed in mitigation has the net effect of reducing the total forested area.

2 The PPCC has repeatedly asked that the boundaries of the airport land be defined by an act of the Duluth City Council. There are isolated land areas in and beyond the SNA that are presently labeled DAA Land. This land has been dedicated for the general use and welfare for all the citizens of the State of Minnesota and we feel that it should not be considered airport land. For its continued protection and preservation, we suggest that this land be added to the existing Scientific and Natural Area already established. We also request that the forested buffer area between the nature (1854 survey) trail and the obstruction lights be excluded from the airport land, and the boundaries the airport property shown on maps such as Figure 2-1 be redrawn to exclude any and all land of the nature (1854 survey) trail.

Thank you for your consideration.

Dawn Buck
President, Park Point Community Club, on behalf of the PPCC Executive Board

Response to Comment No.1

Comment noted.

Response to Comment No.2

A boundary survey is not part of the current project but may be included in a future project. The DAA is considering a potential land release of Airport property as part of a comprehensive mitigation plan. The DAA will negotiate with regulatory agencies during the permitting process to determine the mitigation plan. The DAA realizes the ecological value of the Airport property in question.

Mr. Tom Werner
Duluth Airport Authority
4701 Grinden Drive
Duluth, MN 55911

September 16, 2014

The Duluth Tree Commission provides guidance and citizen input to the City Council and Mayor on issues impacting Duluth's urban forest. The Sky Harbor Airport conflict with the Park Point pine forest is an important issue to this advisory body. Less than 2% of Minnesota's forests are old growth. Duluth is fortunate that it can boast a forest of red and white pines, many of them over 200 years old, within the city limits, on a sand beach, on Lake Superior, making it a completely unique and valuable resource. The Park Point forest provides crucial resting, nesting, and feeding habitat for a host of migratory birds including rare and threatened species, as well as many other forest animals. What Hawk Ridge is for raptors, the Park Point pine forest is for thousands of songbirds. Additionally, Park Point is one of Duluth's most popular recreational areas, enjoyed by hikers, skiers, beach-goers and birders from around the world.

1 Our primary concern is the potential for an irreversible loss of old growth red and white pines in this unique and sensitive area. Although it is desirable to hope for a scenario in which the airport and the pine forest can peacefully coexist in their current states, without a proper reorientation of the runway the trees will continue to be an issue with the airport as long as they continue to grow. The direct and secondary impact on overall forest health is dependent upon which alternative is selected and implemented.

The conflict between the airport and this unique area is an old, costly, and divisive one and unlikely to end unless the alternative selected adequately protects and sustains the forest. The Duluth community has strongly demonstrated its unwillingness to sacrifice this valuable forest resource for the airport, and the Duluth Tree Commission concurs. Therefore, we recommend selecting Alternative 5a, believing it will prove to be the best, most cost effective long-term solution. It addresses the inevitability of continued tree growth in the transitional area, provides for a safe, modern and FAA compliant runway, and lays this contentious issue to rest for the foreseeable future.

Respectfully,



James Lemmerman
Chair

Cc: Ms. Kandice Krull



Response to Comment No.1

Comment noted. The DAA selected Alternative 5a Short as the preferred alternative to avoid impacts to the old growth pine forest. The FAA and US Army Corps of Engineers have concurred with the selection.



White Earth Reservation Tribal Council

P.O. Box 418
White Earth, Minnesota 56591
Tel. (218) 983-3285
Fax (218) 983-3641



CHAIRWOMAN
Erma J. Vizenor

SECRETARY-TREASURER
Robert J. Durant

DISTRICT I
Irene Auginaush

DISTRICT II
Terrence Tibbetts

DISTRICT III
Kenneth Bevins

July 17, 2014

Kandice Krull
Environmental Protection Specialist
FAA Denver Airports District Office
26805 East 68th Avenue, Suite 224
Denver, CO 80249-6361

Re: Duluth-Sky Harbor Airport Obstruction Removal Project, Duluth MN

Dear Ms. Krull:

1 | Thank you for providing information regarding the above project, pursuant to Section 106 of the National Historic Preservation Act, and its implementing regulations 36 CFR Part 800. This office requests that we receive further information regarding the project as it becomes available, including the pending FAA finding, and SHPO concurrence.

Again, thank you for sending the project information to this office for comment. Your time and consideration is appreciated. Please contact me with any questions regarding this correspondence.

Sincerely,

Cayla Olson
White Earth Tribal Historic Preservation Officer
NAGPRA Representative
Archives

Response to Comment No.1

Comment noted. A copy of the SHPO concurrence to the FAA Section 106 finding will be submitted to the White Earth Tribal Preservation Officer along with the Final EA document.

From: Bonney Hartley [mailto:Bonney.Hartley@mohican-nsn.gov]
Sent: Friday, July 11, 2014 8:09 AM
To: Krull, Kandice (FAA)
Cc: Sherry White
Subject: Duluth-Sky Harbor Airport Obstruction Removal Project, Duluth MN

Dear Kandice:

1 | Thank you for the invitation from FAA to consult on the Duluth-Sky Harbor Airport Obstruction Removal Project under Section 106.

We wish to notify you that we elect not to be a consulting party for this project.

Sincerely,

Bonney

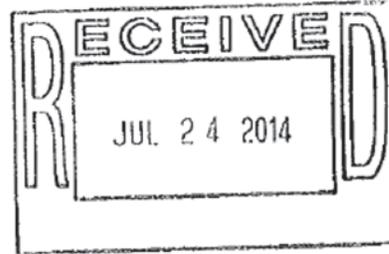
Bonney Hartley
Tribal Historic Preservation Assistant Stockbridge-Munsee
Band of Mohican Indians W13447 Camp 14 Road
Bowler, WI 54416
(715) 793- 3995

Response to Comment No.1

Comment noted.

16 July 2014

Mr. Tom Werner
Duluth Airport Authority
4701 Grinden Drive
Duluth, MN 55811



Subject: Comments regarding proposed runway project at the Duluth Sky Harbor Airport (DYT)

Dear Mr. Werner:

1 | I am writing to express my support for the proposed runway realignment project at the Duluth Sky Harbor Airport. My understanding is that there are clearance issues with trees on the approach to runway 32 that could cause the airport to be closed if no action is taken. The preferred alternative for the airport is to fill a portion of Superior Bay adjacent to the airport and construct a new runway aligned to avoid the trees south of the airport. This alternative would not require cutting or topping any of the trees at the south end of the airport.

I typically fly into the Sky Harbor Airport between six and ten times per year from late spring through fall for recreational purposes. Many of these trips involve bringing a bicycle which I use to reach the Canal Park business district, Amsoil Arena, and several parks along the North Shore like Leif Ericson Park, Lester Park and Brighton Beach. The Sky Harbor Airport is a more convenient option than flying into Duluth International for many of my trips to Duluth and allows a safer bike route for reaching my destinations.

Sincerely,

Michael Wagner

Michael Wagner
W4973 Black Dan Road
Winter, WI 54896

cc: Kandice Krull, FAA - Denver Airport District Office, 26805 East 68th Avenue, Suite 224,
Denver, CO 80249-6361

Response to Comment No.1

Comment noted.



DEPARTMENT OF THE ARMY
ST. PAUL DISTRICT, CORPS OF ENGINEERS
180 FIFTH STREET EAST, SUITE 700
ST. PAUL MINNESOTA 55101-1678

NOV 17 2014

CEMVP-Operations
Regulatory (2008-01902-DWW)

Ms. Kandice Krull
Environmental Protection Specialist
FAA - Minneapolis Airport District Office
6020 28th Avenue South, Suite 102
Minneapolis, Minnesota 55450

Dear Ms. Krull:

I am writing in response to the combined Draft Environmental Assessment and Environmental Assessment Worksheet (EA/EAW) dated July 2014 for the Duluth Airport Authority's (DAA) proposed reconstruction of Runway 32, at Duluth Sky Harbor Airport on Minnesota Point. The project's purpose and need is to provide a safe airport facility with land and water services that will meet Federal Aviation Administration (FAA) and Minnesota Department of Transportation (MnDoT) aeronautics design and operation requirements and safely maintain adequate runways with clear approach surfaces for local, regional, and interregional airplane users. The review area is located in Sections 13, 18, and 19, T. 49N., R. 13W., St. Louis County, Minnesota.

As you are aware, we are a cooperating agency in the preparation of the EA/EAW because the alternatives under consideration would require the discharge of dredged and/or fill material in Superior Bay, which is a navigable water of the United States. Consequently, the selected alternative would require Corps authorization pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. In prior correspondence, we provided concurrence with the purpose and need statement, and the range of alternatives carried forward in the EA/EAW. We are now providing concurrence with the preliminary selected alternative.

According to the EA/EAW, the preliminary preferred Alternative 5a Short would result in a clear approach surface that would not be penetrated by any existing trees (objects/obstructions). This preferred alternative proposed within Superior Bay would avoid topping or cutting of any trees within the Minnesota Point Pine Forest Scientific and Natural Area (SNA). As stated in the EA/EAW, this alternative would meet the overall purpose and need of the proposed runway project, and appropriately satisfy Part 77 of the Federal Aviation Regulations for maintaining unobstructed operation of air navigation facilities, and the safe and efficient utilization of the navigable airspace.



CEMVP-Operations
Regulatory (2008-01902-DWW)

Based on the EA/EAW, the preliminary preferred Alternative 5a Short would result in the discharge of dredged and fill material into 7.49 acres of Superior Bay. As stated in Section 3.2.1.4 of the EA/EAW, this area of Superior Bay consists of "shallow, sluggish, tannin-stained water, composed of soft sediments and sand, with no submerged or emergent vegetation."

In comparison to the other alternatives brought forward in the EA/EAW, alternatives 12 and 13 would result in 2.08 acres and 3.40 acres of fill in Superior Bay, respectively. However, both of these alternatives would result in significant adverse effects to an area that is part of the Minnesota Point SNA which is a designation made under Minnesota state rules for the purpose of preserving such areas due to their ecological value. The area that would be impacted is described in Appendix C of the EA/EAW as approximately 18 acres of old-growth pine forest, sand dunes, and lakeshore. This native woodland is considered the only one of its kind in Minnesota due to its unique geology.

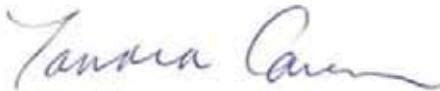
In accordance with Section 404(b)(1) of the Clean Water Act, in cases where a practicable alternative exists that would have less adverse impact on the aquatic ecosystem, but has other significant adverse effects to the natural environment, another alternative that avoids this significant adverse effect but has greater impact to the aquatic environment may be considered for authorization.

Based upon the information contained in the EA/EAW, we have determined that the DAA's preliminary preferred alternative, Alternative 5a Short, would comply with the requirements of Section 404(b)(1) of the Clean Water Act, and therefore concur with the selection of Alternative 5a Short as the preferred alternative.

As established in our NEPA/404 merger process, if there are substantial changes or there is new information regarding the proposed project, we may need to revisit the project purpose and/or range of alternatives and the selected alternative.

Our comments on the Draft EA/EAW are enclosed for your consideration. We look forward to continued coordination with you as you finalize the EA/EAW. If you have any questions, please contact Daryl W. Wierzbinski in our Duluth office at (218) 720-5291 Ext. 35401. In any correspondence or inquiries, please refer to the Regulatory number shown above.

Sincerely,



Tamara E. Cameron
Chief, Regulatory Branch

CEMVP-Operations
Regulatory (2008-01902-DWW)

Enclosure
Corps comments to EA/EAW

Copy furnished:
Virginia Laszewski, USEPA, Region 5 Chicago
Lisa Mandell, USFWS, St. Paul, MN
Patricia Fowler, MnDNR, Two Harbors, MN
Tom Estabrooks, MPCA, Duluth, MN
Allyz Kramer, SEH, Duluth, MN

CEMVP-Operations
Regulatory (2008-01902-DWW)
Draft EA/EAW comments enclosure
Page 1 of 1 though 1 of 2, 11/14/2014

1. Please provide design drawings of the proposed excavation area for the proposed work within Superior Bay.
2. Please consider other alternatives and timing for hauling material to the project site; reduce the amount of hauling trips by trucks through Canal Park and across the lift bridge and through Minnesota Point neighborhood.
3. Please provide clarification on the possible loss of environmental characteristics and values for the proposed work in the open water of Superior Bay in relation to substrate: For example(s) the discharge of dredged or fill material can result in varying degrees of change in the complex physical, chemical, and biological characteristics of the substrate. Discharges which alter substrate elevation or contours can result in changes in water circulation, depth, current pattern, water fluctuation and water temperature. Discharges may adversely affect bottom-dwelling organisms at the site by smothering immobile forms or forcing mobile forms to migrate. Benthic forms present prior to a discharge are unlikely to recolonize on the discharged material if it is very dissimilar from that of the discharge site. Erosion, slumping, or lateral displacement of surrounding bottom of such deposits can adversely affect areas of the substrate outside the perimeters of the disposal site by changing or destroying habitat. The bulk and composition of the discharged material and the location, method, and timing of discharges may all influence the degree of impact on the substrate.
4. Please provide clarification on the possible loss of environmental characteristics and values for the proposed work in the open water of Superior Bay in relation to current patterns and water circulation: For example(s) the discharge of dredged or fill material can modify current patterns and water circulation by obstructing flow, changing the direction or velocity of water flow, changing the direction or velocity of water flow and circulation, or otherwise changing the dimensions of a water body. As a result, adverse changes can occur in: location, structure, and dynamics of aquatic communities; shoreline and substrate erosion and deposition rates; the deposition of extent of mixing of dissolved and suspended components of the water body; and water stratification.
5. Please provide conceptual plans for compensatory mitigation for the fill activity in the Superior Bay. We would like to review the proposed restoration sites in and around Superior Bay or Duluth Harbor so that we may provide a formal response.

Response to Comment No.1

A typical section of the riprap toe area is shown on Figure 2-3. A plan view of this riprap toe area has been included as Figure 2-3B in the Final EA.

Response to Comment No.2

Barging of construction materials is proposed to be used to the greatest extent practicable (methods described in Section 3.5.2.1 of the EA/EAW). Practicability of barging vs. trucking will depend on material type and source, and will be evaluated at the design phase. Project proponents are continuing to evaluate the possibility of reducing truck trips during construction.

Response to Comment No.3

The project is located within a portion of the Superior Bay that is outside any direct currents generated from the Nemadji or St. Louis Rivers, and is consequently a depositional area with bottom sediments composed of fine sand, silts, and clays. The alignment of the runway will extend into the open water of the harbor, but is shaped to minimize intrusion, and will maintain the geometry and transitional characteristics of the existing shoreline. The runway extension into the Superior Bay is not expected to alter the movement patterns of water within the Bay. With changes to water movement limited, the related effects on chemistry, temperature, and biota would similarly be negligible. Losses of substrate are expected to be limited to direct impacts, as discussed in 3.2.1.2 of the EA/EAW.

Biota within the bottom substrates of the Bay within the runway relocation area are composed of an abundance of common worm and fly larvae species, which is a common assemblage throughout the Bay. As discussed in Section 3.2.1.3 of the EA, the biota is considered to be low quality, and is composed of species that burrow into the soft bottom sediments. By filling the Bay to relocate the runway, there is a direct loss of some habitat. The placement of hard substrate will diminish the habitat for the existing burrowing invertebrate community, but this type of habitat is common within the Bay, and this is not a significant loss. The placement of hard substrates will locally benefit invertebrates that cannot colonize the soft bottom sediment, and include the mayflies, stoneflies, and caddisflies, in addition to other fly and beetle species that require a stable substrate. Hard substrates comprise a more limited habitat within the Bay, so the transition from the soft bottom sediment to the hard substrate will result in a reduction of total habitat, but is not a loss of the hard, and biologically preferable, substrate.

Response to Comment No.4

Aquatic habitat in the Harbor in the vicinity of the Airport is relatively shallow, with bottom composition of soft sediments and sand. This area is not part of the Nemadji River channel nor the St. Louis River channel. Neither the Airport nor the area immediately adjacent are located in the floodway. Therefore, potential for the project to disrupt flow is low. Aquatic habitat in this area is described in more detail in Section 3.2.1.3 of the EA/EAW, and floodplains are described in Section 3.9.

Response to Comment No.5

The EA/EAW includes conceptual mitigation options within Superior Bay (EA/EAW Section 3.16.1.1, subsection "Permitting and Mitigation"). The FAA and DAA will continue to work with the agencies responsible for permitting wetland and aquatic resources impacts to identify mitigation options that will be of benefit to Superior Bay. Flexibility in determining appropriate mitigation options and/or specific sites will be needed so that successful mitigation considers the benefits to land and water resources that is both ecologically and economically feasible within the Duluth-Superior Harbor. During the permitting process, the FAA and DAA will consider potential mitigation projects in the Harbor with proximity to the Airport. Mitigation will likely include projects that can have aquatic habitat benefits to the Superior Bay and/or St. Louis River Area of Concern (AOC), but it will also consider other collective socioeconomic benefits to the natural and human environment in this area for compensatory mitigation. These could include such items as a land swap/release for DAA property adjacent to the SNA. This would contribute to placing ecologically important terrestrial resources containing rare habitat for federally and state listed threatened and endangered species into public conservation and preservation. The DAA realizes the ecological value of the Airport property in question for terrestrial habitat, connectivity with the SNA, and potential to harbor sensitive species. The DAA anticipates that this and other elements of a mitigation proposal will be negotiated with regulatory agencies during the permitting process. The FAA and DAA will work through conceptual mitigation with more detail as the project moves to the permitting phases.

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SEH PUBLIC HEARING
IN RE: DULUTH SKY HARBOR AIRPORT
August 7, 2014
7:00 p.m.
Inn on Lake Superior
350 Canal Park Drive
Duluth, Minnesota

COURT REPORTER: NANETTE J. CORBETT, RDR

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P R O C E E D I N G S

1
2
3 MR. LUNDSTROM: Good evening, everyone.
4 Welcome to this special session of the Duluth Airport
5 Authority board meeting. I'm Mike Lundstrom. I'm chair
6 of the Duluth Airport Authority. Sitting amongst us is
7 the Airport Authority board of directors and Tom Werner,
8 who is the executive director.

9 The purpose of this public hearing is to
10 collect public comment about the Environmental
11 Assessment -- State Environmental Assessment Worksheet,
12 which you will hear referred to as the EA/EAW. This
13 document evaluates the environmental effects of proposed
14 improvements to the Sky Harbor Airport.

15 The -- you can make written comments about this
16 proposal up until August 20th. Those written comments
17 can be submitted to the -- in the following locations:
18 The Duluth International Airport, the Duluth Sky Harbor
19 Airport, Duluth City Hall, Duluth Public Library,
20 Park Point Community Club in Lafayette Square, the DAA
21 website, and SEH office in downtown Duluth. Addresses
22 for the locations are available on the handout at the
23 registration table outside the door.

24 The written comments can be submitted tonight
25 at the registration table. In addition, written

1 comments can be submitted via e-mail to the Duluth
2 Airport Authority and FAA through August 20th. Address
3 information for submitting written comments is available
4 at the handout again. If you'd like to make public
5 comment tonight, please make sure and sign up on the
6 registration table in the front door.

7 Now I'd like to ask Josh Fitzpatrick with the
8 FAA, an environmental protection specialist, to come
9 forward and say a few words. Josh?

10 MR. FITZPATRICK: Good evening. I'm
11 Josh Fitzpatrick with the FAA, and it's good to see a
12 few familiar faces in the crowd. I actually moved
13 here -- from Duluth in March down to the Twin Cities,
14 but I wanted to express FAA's interest in this project.
15 We have obviously spent a lot of money going down this
16 path. We have an environmental assessment here and
17 opportunity for all you guys to voice your public
18 comment, and the FAA and the Corps of Engineers have
19 entered into a Memorandum of Understanding for four
20 concurrence points, which are the purpose and need of
21 the project. The alternatives carry forward, and for
22 those two concurrence points we have an agreement
23 between the Corps and the FAA.

24 We are still working through the, I guess,
25 final selected alternative and the design impact

1 phasing, so, yes, we'd very much like to hear from the
2 public on this and go from there. So thank you for
3 having me today.

4 MR. LUNDSTROM: Thanks for being here,
5 Josh. We appreciate it. Okay. Then next I'd like to
6 call up Kaci Nowick -- Nowick -- I knew I was going to
7 do that.

8 MS. NOWICKI: Nowicki.

9 MR. LUNDSTROM: -- Nowicki, thank you, who
10 is with SEH.

11 MS. NOWICKI: Thank you. Thank you
12 everyone for coming. I just wanted to give a brief
13 overview of where we are in the process on this EA/EAW
14 project. The Draft EA/EAW was formally published on
15 July 7th, 2014. As Mike mentioned, written comments
16 received by August 20th, 2014, regarding the proposed
17 project, the alternatives considered, and the assessment
18 of potential effects will be considered in the
19 preparation of the final EA.

20 The final EA will include a written response to
21 all comments. We anticipate the final steps of this
22 process will occur throughout the fall of this year. A
23 summary of the overall process is included on a board
24 out in the open house area that you're welcome to take a
25 look at after the hearing.

1 And the FAA will use this EA as a basis for
2 their issuance of either a finding of no significant
3 impact, also called a FONSI, or a determination that an
4 Environmental Impact Statement is required.

5 The Duluth Airport Authority will, for the
6 State process, use this document to make their decision
7 on either a positive or negative declaration on the need
8 for a State EIS.

9 MR. LUNDSTROM: Thank you, Kaci. The
10 public hearing on the -- is now open. Please be advised
11 that your entire comment, including your personal
12 identifying information, may be publicly available.
13 I'll -- I will be calling up speakers in the order in
14 which you signed up. Please state your name and address
15 for the record before starting your comment. You can
16 have up to four minutes for the comment.

17 So we will go ahead and start, and Sanda --
18 Sandra Ed -- Ed -- Edelstad [sic], please come on up.

19 SANDRA ETTESTAD: Okay. Sandra Ettestad,
20 president and founder of the Duluth Aviation Institute,
21 located at 5000 Minnesota Avenue, Hangar 10, and also
22 resident of 716 East Superior Street.

23 As president of the Duluth Aviation Institute,
24 I would like to thank all of you involved in this
25 process. It has taken us six years to come to this

1 table, so FAA, Duluth Airport Authority, Minnesota
2 Department of -- of Resources, the SEH--I'm sure I'm
3 missing someone else here--but this is a considerable
4 effort, and I want to acknowledge that. Thank you.

5 As president of the Institute, I would also
6 like to thank my aviators here that are representing us
7 as -- as -- as Sky Harbor, a big deal for me. Our
8 vision is a community inspired and -- and enriched by
9 the art and science of aviation. Our mission is to
10 preserve our aviation edu -- history and to educate our
11 community with this history and knowledge of aviation
12 and aerospace.

13 With this vision and mission so stated,
14 Sky Harbor is vital to our goals, and for these reasons:
15 The preservation of aviation history in our region,
16 Sky Harbor, and St. Louis Bay is where aviation began in
17 Duluth. On February 26th, 1913, Oliver Rosto took off
18 from the bay in his Rosto Monoplane named Duluth One.

19 In June of 1913, the Lark of Duluth flying boat
20 flew from the Duluth Boat Club, introducing aviation to
21 our community through the Lark of the Lake Carnivals.
22 The Lark of Duluth became the world's first airliner.

23 Sky Harbor is the only airport viable as a base
24 for our replica of the Lark of Duluth and the only
25 airport viable to host our Lark of the Lake Festivals

1 that are every other year.

2 Jack Brockway and William Neukom began
3 Sky Harbor in 1931 to ferry passengers to Rainy Lake,
4 Kabetogama Lake, and the Boundary Waters. Today that
5 spirit lives on in our seaplane pilots at Sky Harbor.

6 To educate our community with this history and
7 knowledge of aviation, we have taught 2,400 sixth-grade
8 students in Duluth, Hermantown, and Proctor 11 lessons
9 on aviation science. In honor of Robert Gilruth, child
10 citizen of Duluth and father of human space flight, we
11 have named our education program the Gilruth Continuum
12 Path to Aviation.

13 Without Sky Harbor, this would indeed be a
14 challenge. Sky Harbor is home to the Duluth Aviation
15 Institute, and we -- where we invite our community into
16 the aviation environment. Sky Harbor is a kinder
17 airport to teachers, sixth graders, and their families.
18 Sky Harbor is a place to explore aviation and science, a
19 place where our students can dream about the airplanes
20 they want to create and fly, a place where teachers can
21 enrich their science curriculum with real world
22 experiences, and a place where aviators can spread their
23 wings and explore the planet from above.

24 The top 15 percent of the Path to Aviation
25 students receive a Young Eagles flight from Sky Harbor.

1 During this field trip, we enforce the aviation science
2 concepts taught and abstract theory becomes retained
3 knowledge. Through this experience we prepare our
4 students for the future and the challenges they will
5 ultimately inherit.

6 The program is funded by local and national
7 foundations that support us in our effort to bring
8 quality Aero STEM education to our students. In respect
9 for --

10 MR. LUNDSTROM: Can you please wrap up your
11 comments.

12 SANDRA ETTESTAD: In respect for our
13 community and the values they -- they have expressed in
14 the preservation of both the pine forest and Sky Harbor,
15 we advocate for a solution that reflects -- reflects the
16 diversity and future of its citizens. We are an
17 aviation community, an environmental community, and a
18 community that invests in its citizens.

19 For this reason the choice is clear. Preferred
20 Alternative 5a Short is the solution that reflects the
21 values of this community. Thank you for your collective
22 intelligence in finding the best solution for all
23 concerned.

24 MR. LUNDSTROM: Thank you. Okay.
25 Mr. Bill Irving? Remember, your name and address,

1 please.

2 BILL IRVING: Good evening. My name is
3 Bill Irving. I'm with the Experimental Aircraft
4 Association. I'm the president of the local EAA chapter
5 and also the vice president of Duluth Aviation
6 Institute, and Sandra is my boss in that organization
7 there.

8 I've been involved in aviation in this part of
9 the country for about 15 years now, and I am really
10 concerned to -- really worried about losing an airport
11 such as Sky Harbor. We seem to be losing airports,
12 small airports, general aviation airports, at an
13 alarming rate across the country. It seems like the
14 alternative that's been offered seems to be probably one
15 of the best solutions that I've seen, and if there's
16 only a difference of \$600,000 between closing the
17 airport and fixing it, that makes a heck of a lot of
18 sense to me.

19 And, you know, I would like to go on record in
20 supporting that alternative if I can and, you know, I
21 represent 50 members in our chapter plus a lot of youth
22 in the community that we've been teaching how to
23 learn -- learn how to fly and, you know, the concept of
24 aviation as a -- a vocation throughout their life, and
25 it just makes a lot of sense to have a small airport

1 like that available to us, and because of all the
2 security issues involving an international airport such
3 as Duluth up on the hill, there really isn't any
4 alternative for the city.

5 So I'd like to wrap up my comments and just say
6 that, you know, I think that the 5a alternative makes a
7 lot more sense and it makes everybody happy. So thanks.

8 MR. LUNDSTROM: Thank you for your
9 comments. Mike Busch, if I'm -- is it Busch?

10 MIKE BUSCH: Yep.

11 MR. LUNDSTROM: Yeah. Name and address
12 please, sir.

13 MIKE BUSCH: Yes, sir. Hello. My name is
14 Mike Busch. I live at 4327 Gladstone Street in Duluth,
15 Minnesota. I'm an EAA member since 1974, it's the
16 Experimental Aircraft Association, and also president of
17 the Experimental Aircraft Association Chapter 1128 in
18 Two Harbors, Minnesota.

19 Our chapters do a lot for youth. We work with
20 the Two Harbors High School a lot. We -- we fly
21 students. We participate in the -- the events that
22 Sandra mentioned. I won't go into all of that, but we
23 do support them, and we do fly those kids. We give them
24 rides. We teach them about aviation.

25 On a smaller scale, we teach them how to build

1 airplanes. At Two Harbors we have people coming through
2 all the time. We work closely with the students at the
3 high school there, and we build model airplanes and show
4 them the -- the basics of flights and get them excited
5 about aviation. Some we believe will become pilots some
6 day.

7 The small airports, as Bill Irving has
8 mentioned, are being taken away from us. We don't see
9 new airports being dedicated, ribbons being cut for
10 small airports anymore. Developers seem to want to take
11 over, and we're slowly being pushed out. The kind of
12 activities that we do certainly do not lend themselves
13 to landing at Duluth International, for example.

14 We also work closely with the Cloquet chapter
15 of the Experimental Aircraft Association. We do
16 complement each other and -- and help each other in our
17 various activities.

18 As representative of the EAA chapter in
19 Two Harbors, I would like to support the alternative
20 5a Short. It does make the most sense to us, and we
21 thank you for your time, your effort, your hard work.
22 We know it's a lot of work, it's not easy, but we
23 appreciate what you've done. Thank you.

24 MR. LUNDSTROM: Thank you, sir.

25 MS. NOWICKI: (Handing.)

1 MR. LUNDSTROM: Scott Wolff, if you'd come
2 up, please; again, name, address.

3 SCOTT WOLFF: I am Scott Wolff. I live at
4 4136 Minnesota Avenue, just about a half mile or a mile
5 from the airport. I just represent a local resident.

6 We in our community have jostled with the
7 airport for longer than I've been alive. I think the --
8 and, you know, the -- the -- your 5a proposition is
9 fairly close to what our community club had proposed
10 years ago, so this might be as close of a compromise as
11 we can hope for.

12 On -- on my -- on my personal interest, I do
13 have a couple of questions I would like addressed. One
14 is -- and I've looked at the map with the -- with the --
15 and I'm not a pilot. I wish I was, but I'm not. With
16 the change of 5 degrees, would that put the planes
17 taking off coming right over those of us that live
18 within a mile from the airport, and could we ask for,
19 oh, I guess cooperation and consideration and partnering
20 with the pilots to just keep us into consideration and
21 just to veer off a little bit so you're not flying right
22 over our houses. It's been much better the last year or
23 two. A couple years previously was pretty wild.

24 So I would like to -- and then the other
25 question, have you addressed the decibel levels? From

1 what I've read just on my own, the noise of aircrafts
2 can be an issue, and I don't know whose responsibility
3 it is to monitor that. I've looked into getting my own
4 decibel meter, but I don't think this is my
5 responsibility.

6 So those are my main con -- those are my main
7 concerns. With the angle of the runway, would it be
8 more noise? Who would monitor that? Would it affect
9 our property values? And what is the historic precedent
10 for the effect on property values of people living close
11 to airports? My house is my biggest asset, so I'm a
12 little interested in that.

13 Then the other question is I've looked at
14 the -- at the load of the numbers of trucks, and I was
15 speaking with a few of you out there about other options
16 of hauling in the fill. I -- I just tremble at the
17 thought of all those trucks going by my house and all of
18 our houses all the time, and we just -- we just assessed
19 a big chunk of money to -- to repave the road, and I
20 suspect that load of traffic isn't going to help the
21 road at all.

22 So when I -- you know, I know there's issues.
23 I know that's shallow over there, and somebody had
24 mentioned something about hydrofilling. It would be
25 really nice if that load of trucks -- if this is what

1 happens, if that load -- if the load of trucks that
2 people on the Point are subjected to can be minimized.
3 Thanks for your time.

4 MR. LUNDSTROM: Thank you for your
5 comments.

6 MS. NOWICKI: (Handing.)

7 MR. LUNDSTROM: Duane Poulin? Do I have
8 that right, Duane?

9 DAVE POULIN: Dave.

10 MS. NOWICKI: Dave.

11 MR. LUNDSTROM: Is it Dan -- Dave?

12 DAVE POULIN: Dave.

13 MR. LUNDSTROM: Dave? Sorry. Name and
14 address, please.

15 DAVE POULIN: My name is Dave Poulin,
16 3101 Lake Avenue South. I was the president of the
17 Park Point Community Club when most of this preliminary
18 work was done on this thing. At the time, we thought
19 the cutting of trees was imminent and we put -- put a
20 proposal forth, and your preferred alternative is very
21 much -- very close to what our proposal was.

22 As I understand, there's a possibility that --
23 some land exchanges for mitigation or something down
24 there. I don't know if that's been publicly announced,
25 but that certainly would be more favorable than what we

1 ever expected to get out of this thing.

2 And I honestly believe the Duluth Airport
3 Authority has done an honest job of trying to get this
4 thing properly straightened out for the long term.
5 Thank you.

6 MR. LUNDSTROM: Thank you for your
7 comments. Are there any other speakers who would like
8 to speak at the public hearing?

9 (Hands raised in the audience.)

10 MR. LUNDSTROM: Come on up, and tell us
11 your name and your address, please.

12 JOHN NEUKOM: My name is John Neukom, and I
13 used to live --

14 MR. LUNDSTROM: Name and address?

15 JOHN NEUKOM: Can you hear me better?

16 MR. LUNDSTROM: Your name and address,
17 please.

18 JOHN NEUKOM: Name is John Neukom. I used
19 to live at 63 -- 63rd Avenue West. I no longer live
20 here, but I do consider Duluth as the place where I grew
21 up. Sky Harbor meant a lot to me because my father
22 founded Sky Harbor.

23 And I literally only found out about this
24 until -- at 6:35 this evening, so I -- and I just
25 happened to be going through town because I've visited

1 Duluth several times in the last several years. I've
2 landed my airplane at -- at Sky Harbor, and it's a lot
3 of memories for me. I would hate to see it go away. I
4 know that's emotional, but being a pilot myself, I -- I
5 recognize the value of -- of having a -- a facility like
6 this and -- and hope that the city council can -- can
7 consider to continue funding whatever is needed there.
8 I guess that's all I had to say.

9 MR. LUNDSTROM: Thank you very much.
10 Appreciate that. Any other comments tonight?

11 MARK MARINO: There's other people signed
12 up on your sheet, including me.

13 (Off-the-record discussion between
14 Mr. Lundstrom and Kaci Nowicki.)

15 MR. LUNDSTROM: Oh. Mark, I missed you.
16 How could I miss you? Mark Marino, come on up, please.
17 Sorry.

18 MARK MARINO: My name is Mark Marino. I
19 live at 716 East Superior Street in Duluth. I'll be
20 forwarding this in writing to you also. I've reviewed
21 the Sky Harbor Environmental Assessment document. I'd
22 like to submit the following comments.

23 I've been flying out of Sky Harbor Airport
24 since 1982, and I've been a tenant there together with
25 my wife since 1999. At that time we started an aviation

1 business called Hangar 10 Aero Supply. It's the only
2 aviation business in Northern Minnesota that focuses on
3 lake -- on the lake sport industry. Hangar 10 builds
4 and supports a light sport biplane kit and parts,
5 aircraft-covering materials, and also supports the
6 Duluth Aviation Institute.

7 Hangar 10 Aero has an operator's agreement with
8 the Duluth Airport Authority that results in writing
9 checks every month to the State of Minnesota, the City
10 of Duluth, and the Airport Authority.

11 Most of the business we conduct is from outside
12 the Duluth area. Over the years Hangar 10 has done
13 business in 27 states and in other countries, such as
14 Canada, Brazil, Australia, Bolivia, and Spain. We're
15 not just trading dollars in our local area. Hangar 10
16 brings in new money into our Duluth economy.

17 Sky Harbor Airport is vital to the operation
18 and success of Hangar 10 Aero. No other airport in the
19 Duluth area can be considered appropriate for the type
20 of aviation -- for our type of aviation business. Both
21 the hard surface and water runways are necessary for the
22 type of recreational aviation Hangar 10 supports.

23 Pilots in our -- are in a unique situation when
24 choosing to fly for recreation. Unlike ATVs,
25 snowmobiles, and boats, a pilot cannot take their

1 airplane home and put it in their garage between usages.
2 We need small friendly airports like Sky Harbor. Pilots
3 use very little resources for their sport. On a mile of
4 road, you can travel a mile. With a mile of runway,
5 there's no limit to how much travel you can do.

6 For these reasons I am in favor of the DAA and
7 the FAA adopting and moving ahead with the preferred
8 plan of realigning the runway. This action will fulfill
9 the need for pilots who need airport access to fly their
10 planes, and it will benefit the continuation of business
11 for Hangar 10 Aero, and will also put an end to the
12 issue of cutting trees to provide a safe path to the
13 runway. Thank you for all the work you've done.

14 MR. LUNDSTROM: Thank you, and I'm sorry I
15 missed you, Mark. Unless there's any other speakers --

16 (Hand raised in the audience.)

17 MR. LUNDSTROM: Sir, name and address,
18 please.

19 DENNY JOHNSON: Okay. I hadn't planned on
20 speaking. My name is Denny Johnson. I live at -- I
21 live at 40th on -- on Lake Avenue, and we've been in our
22 house since 2001, and it seems like from that time until
23 just about now, those of us that have been concerned
24 about the forest down there and minimizing the impact on
25 it and the pilot group have been at odds, and I'm just

1 delighted that I think we've come together on a solution
2 that, as close as possible, meets the needs of all the
3 parties.

4 So I'm just here to voice my support for what
5 is the recommendation and move forward with this, and I
6 hope that you're able to fulfill it and get it done the
7 way you're proposing to do it.

8 MR. LUNDSTROM: Thank you, sir. All right.
9 Last call. Any other comments?

10 (No response.)

11 MR. LUNDSTROM: Just a reminder that this
12 is a public hearing. This is -- the purpose of this is
13 to gather information from you. Any questions and
14 comments that you brought up tonight will be a matter of
15 record. Principals that were part of this report are
16 here and will be available afterwards if you so choose
17 to talk to them.

18 You also--again, a reminder--have until
19 August 20th to make written comments which, again, will
20 be part of the public record as well. Otherwise, this
21 meeting is adjourned.

22 (Public hearing concluded at 7:27 p.m.)

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REPORTER'S CERTIFICATE

I hereby certify that I reported the
aforementioned public hearing on August 7, 2014,
in Duluth, Minnesota;

That the foregoing transcript is a true and
correct, full and complete transcription of the
proceedings, to the best of my ability;

Witness my hand and seal this 20th day of August,
2014.

NANETTE J. CORBETT, RDR
Registered Diplomate Reporter
Notary Public, State of Minnesota

Public Hearing Response to Comments

Response to Ettestad Comment:

Comment noted.

Response to Irving Comment:

Comment noted.

Response to Busch Comment:

Comment noted.

Response to Wolff Comment:

Alternative 5a Short does include a rotation of the runway and the aircraft approaching Runway 14 and taking off Runway 32 may traverse more directly over some areas of land on Park Point. However, Alternative 5a Short does not result in any substantial change in the number of aircraft operations or types of operations at the Airport and would not substantially contribute to a change or increase in noise generations at the Airport.

As discussed in Section 3.14 of the EA/EAW, noise levels at airports with fewer than 90,000 annual propeller operations (takeoffs or landings) or 700 jet operations (takeoffs or landings), typically does not exceed 60DNL more than 5,500 feet from the start of takeoff roll. The EA/EAW notes that the estimated annual propeller operations are 13,900 (2011) and no jet operations are reported. The FAA Terminal Area Forecasts [Fiscal Year (FY) 2011-2032] indicate that operations are expected to remain around this level, below the threshold requiring a noise analysis and below noise levels that could be expected to adversely affect surrounding land uses.

The Duluth Airport Authority is committed to evaluating and identifying options to reduce the number of truck trips to and from the Airport during construction. This will be evaluated further during final design. Additionally, public involvement and informational efforts will continue before and during construction to inform the public of the proposed construction schedules.

Response to Poulin Comment:

Comment noted.

Response to Neukom Comment:

Comment noted.

Response to Marino Comment:

Comment noted.

Response to Johnson Comment:

Comment noted.

Executive Summary

Introduction

The Duluth Airport Authority (DAA) has proposed reconstruction of the runway at the Duluth-Sky Harbor Airport (herein referred to as “the Airport”). The Airport is located approximately five miles from downtown Duluth on Minnesota Point (also known as Park Point). Minnesota Point is a baymouth sandbar that forms a natural boundary between Lake Superior and Superior Bay. The runway reconstruction project will provide an approach surface clear of trees and obstructions.

The proposed improvements would be funded with local funds with potential future, partial Federal and State reimbursement through the Federal Aviation Administration (FAA) Airport Improvement Program (AIP), State bonding, and State airport funds. Because federal funding will be used, the FAA will use this Environmental Assessment (EA) as the basis for their recommendation for either issuance of a Finding of No Significant Impact (FONSI) or that an Environmental Impact Statement (EIS) is required. In addition, an Environmental Assessment Worksheet (EAW) is mandatory for this project pursuant to Minnesota Rules 4410.4300, Subp. 30 (Natural areas) because some of the alternatives considered could potentially impact the adjacent Minnesota Point Pine Forest Scientific and Natural Area (SNA). The alternatives considered would also result in fill in Superior Bay and would require an EAW under MR 4410.4300, Subp. 27 (Wetlands and public waters).

Purpose and Need for Action

The overall project purpose is to provide a safe airport facility with land and water services that will meet FAA and MnDOT aeronautics design and operation requirements and safely maintain adequate runways with clear approach surfaces for local, regional, and interregional airplane users.

Part 77 of the Federal Aviation Regulation (FAR) establishes airport “imaginary surfaces,” which are intended to maintain unobstructed operation of air navigation facilities and the safe and efficient utilization of the navigable airspace. An object is defined as an obstruction if it penetrates any of these imaginary surfaces. There are obstructions to the FAR Part 77 approach surface for Runway 32 at the Airport, which limits the use of the Airport and threatens to impact future licensing.

Because obstructions to the runway approach have existed for some time and threaten Airport licensure and the continued use of the Airport in its existing capacity, the FAA and Minnesota Department of Transportation (MnDOT) expect implementation of an economically-feasible, long-term solution without undue delay that will provide safe and adequate aviation facilities while avoiding immediate as well as repeated environmental impacts.

Preferred Alternative

The preferred alternative consists of the construction of a new runway on a new alignment at the existing Duluth-Sky Harbor Airport. The runway would be 2,600 feet in length and compared to the existing runway, the new runway would be shortened 450 feet northwest with a 5-degree rotation of the Runway 32 end into Superior Bay. Approximately 69,800 cubic yards of fill over 7.49 acres would be placed in Superior Bay to accommodate the runway construction and establishment of the runway safety area (RSA) to FAA standards. The approach surface established by the preferred alternative would not be penetrated by any existing trees and construction of this alternative would avoid topping or cutting of any trees. Projected tree growth over 50 years would not result in any tree penetrations to the approach surface.

Other Alternatives Considered

Alternatives to the preferred alternative were considered to identify the potential to minimize project effects to the natural and human environments. The following alternative in addition to the no action alternative was considered in detail:

Executive Summary (Continued)

Alternative 13 – Reduced Length, Shifted and Rotated

Alternative 13 was developed by rotating the Runway 32 end 1½ degrees away from the forest resources to reduce potential impacts to the forest resources. Alternative 13 would include a 300-foot northern shift on fill into the small bay to the north of the Airport and add the maximum rotation available that avoids runway construction on fill along the west shore. However, filling into Superior Bay along the west shore would still be required to establish a standard RSA. In total, Alternative 13 would require approximately 24,360 cubic yards of fill over 3.40 acres in Superior Bay. As of 2013, the Approach Surface established by this alternative would be expected to include up to 60 penetrations (trees): 34 on Airport property, 3 in the SNA, and 23 on Superior Water Light and Power (SWLP) property. All penetrations to the approach surface would be subject to removal through tree topping or cutting at ground level. Of the potentially affected trees, 55 are red and white pine. Over the long term (50 years), up to approximately 370 trees would be affected including 295 red and white pine. Seventy-six (76) trees within the SNA would be impacted during the 50 year planning term.

No Action Alternative

The no action alternative would avoid fill in Superior Bay and avoid tree removal from the forest and the Minnesota Point Pine Forest SNA, but would ultimately result in closure of the Airport. As trees grow and become penetrations to the threshold location plane (similar to an approach surface), continued operation of Runway 14/32 would be in violation of Minnesota Rules Chapter 8800.1200 and would be expected to result in denial of a Minnesota Airport License by MnDOT. Although this alternative does not meet the purpose and need of the proposed action, the no action alternative is maintained throughout the EA to serve as a baseline for comparison to the alternatives being carried forward.

Affected Environment and Environmental Consequences

The following sections describe the primary effects resulting from the preferred alternative and Alternative 13. **Table S-1** provides a summary comparison of the preferred alternative, Alternative 13, and the no action alternative for all environmental impact categories.

Coastal Resources

Preferred Alternative

The preferred alternative would result in direct impacts due to fill in the Coastal Barriers Resources System (CBRS) and Coastal Zone located in Superior Bay. The US Fish and Wildlife Service (USFWS) concurred with the FAA's determination that the proposed project complies with the CBRS and is exempt under 16 U.S.C. § 3505(a)(3). A Coastal Zone Consistency Determination has been submitted by the FAA to the Minnesota Department of Natural Resources (MNDNR). Any required mitigation measures under the Clean Water Act or Public Water Work Permit will be negotiated during the permitting phase. Mitigation measures may include potential DAA funding of projects in the Superior Bay and/or St. Louis River Area of Concern (AOC) with benefits for coastal resources.

Alternative 13

Alternative 13 would result in direct impacts due to fill in the Coastal Barriers Resources System (CBRS) and Coastal Zone located in Superior Bay. A Coastal Zone Consistency Determination has been submitted by the FAA to the Minnesota Department of Natural Resources (MNDNR). Any required mitigation measures under the Clean Water Act or Public Water Work Permit will be negotiated during the permitting phase.

Construction Impacts

Preferred Alternative

Construction would result in a temporary increase in noise and dust in the area, but would be minimized through the use of construction best management practices (BMPs) including watering to control dust and wind erosion; seeding with fast growing grass in work areas that are temporarily inactive; and installation and maintenance of a floating silt curtain.

Executive Summary (Continued)

Alternative 13

Construction would result in a temporary increase in noise and dust in the area, but would be minimized through the use of construction BMPs including watering to control dust and wind erosion; seeding with fast growing grass in work areas that are temporarily inactive; and installation and maintenance of a floating silt curtain.

Department of Transportation Act: Section 4(f) and Section 6(f)

Preferred Alternative

The preferred alternative would have no permanent impacts to the Minnesota Point Pine Forest SNA [a 4(f) resource]. Construction of an obstruction light that would need to be accessed through SNA property was considered but is not currently proposed. If deemed necessary for safety reasons, construction of the obstruction light would have temporary construction impacts to native plant communities in the SNA. Avoidance and minimization techniques to mitigate temporary impacts to sensitive habitats would include accessing the area when plants are dormant during frozen conditions and/or using construction mats for equipment access to avoid compaction or other surface effects.

Alternative 13

Alternative 13 would have permanent impacts to the SNA in the form of ongoing tree felling/topping necessary to maintain an approach surface clear of obstructions, which would result in a Section 4(f) impact. If this alternative is selected, a Section 4(f) evaluation would be required. The Section 4(f) evaluation would have to demonstrate that Alternative 13 is the only feasible and prudent alternative. Construction of an obstruction light that would need to be accessed through native plant communities was considered but is not currently proposed. If deemed necessary for safety reasons, construction of the obstruction light would have temporary construction impacts to native plant communities. Avoidance and minimization techniques to mitigate temporary impacts to sensitive habitats would include accessing the area when plants are dormant during frozen conditions and/or using construction mats for equipment access to avoid compaction or other surface effects.

Fish, Wildlife, and Plants

Preferred Alternative

The preferred alternative would result in direct impacts to aquatic habitat due to 7.49 acres of fill in Superior Bay. Construction of an obstruction light would result in temporary impacts to native plant communities for construction access. Mitigation measures may include potential DAA funding of projects that can have aquatic habitat benefits to the Superior Bay and/or St. Louis River Area of Concern (AOC) and construction BMPs discussed in the Construction Impact section above.

Alternative 13

Alternative 13 would result in direct impacts to aquatic habitat due to 3.40 acres of fill in Superior Bay. Construction of an obstruction light would result in temporary impacts to native plant communities for construction access. Mitigation measures may include potential DAA funding of projects that can have aquatic habitat benefits to the Superior Bay and/or St. Louis River Area of Concern (AOC) and construction BMPs discussed in the Construction Impacts section above.

Historical, Architectural, Archeological, and Cultural Resources

Preferred Alternative

The FAA issued a finding of No Historic Properties Affected on August 17, 2011. The FAA concurred with SHPO recommendations in correspondence dated September 8, 2011. The FAA issued a revised finding in July 2014. SHPO concurred with the FAA finding in September 2014 (see **Appendix I**).

Executive Summary (Continued)

Alternative 13

Alternative 13 was included in both the original 2011 No Historic Properties Affected finding and the revised finding in July 2014. SHPO concurred with the FAA finding in September 2014 (see **Appendix I**).

Water Quality

Preferred Alternative

Construction of the preferred alternative would ultimately result in a reduction in impervious surface on the Airport (due to shortening of runway length), and may have a beneficial water quality effect. Temporary effects due to construction activities are expected. Surface water management on the Airport would include both construction erosion and sediment control and post-construction stormwater management, which would mitigate temporary construction effects. BMPs would be applied in accordance with the approved technical standards and to meet the required performance standards.

Alternative 13

Construction of Alternative 13 would ultimately result in a reduction in impervious surface on the Airport (due to shortening of runway length), and may have a beneficial water quality effect. Temporary effects due to construction activities are expected. Surface water management on the Airport would include both construction erosion and sediment control and post-construction stormwater management, which would mitigate temporary construction effects. BMPs would be applied in accordance with the approved technical standards and to meet the required performance standards.

Agency Consultation

Tribal Consultation

Early Tribal Consultation was initiated by the FAA during the scoping process. The Bois Forte Band of Chippewa Indians, the 1854 Treaty Authority, MnDOT Office of Government Affairs, FAA, and the DAA attended one meeting during the scoping process. A copy of the Draft EA was provided to numerous tribes including, but not limited to, the Bois Forte Band of Chippewa, Mille Lacs Band of Ojibwe, and the 1854 Treaty Authority

During publication of the Draft EA, the Strockbridge Munsee Band of Mohican Indians indicated they did not wish to be a consulting party for the project. The White Earth Band Reservation Tribal Council indicated they wish to receive further project information as it becomes available. A copy of the Final EA, including all Section 106 coordination, will be provided to the White Earth Band Reservation.

Section 106 Coordination

The FAA issued a finding of No Historic Properties Affected on August 17, 2011. The FAA concurred with SHPO recommendations in correspondence dated September 8, 2011. The FAA issued a revised finding in July 2014. SHPO concurred with the FAA finding in September 2014.

Technical Advisory Committee

Throughout the EA process, a technical advisory committee (TAC) met several times to provide input on the EA development. Agencies invited to TAC meetings included: representatives from the FAA, MNDOT, United States Army Corps of Engineers (USACE), multiple divisions of the MNDNR, Minnesota Pollution Control Agency (MPCA), Bois Forte Band of Chippewa Indians, 1854 Treaty Authority, Metropolitan Interstate Council (MIC), Minnesota Land Trust, City of Duluth and the DAA. An Interagency and Tree Study Technical committee was convened to review and discuss methodology and results of the Tree Growth Model and Tree Fate Study. This committee included members of the Duluth Tree Commission, City of Duluth staff, MNDNR staff, and FAA representatives. Meetings were held in 2009 and 2010.

Executive Summary (Continued)

Combined NEPA and Clean Water Act Section 404 Permitting Process

The FAA and USACE have entered into a Memorandum of Understanding (MOU) to merge the NEPA and Clean Water Act Section 404 Permitting processes into one process. The intent of the MOU is to preclude the need for revisiting decisions that have already been agreed upon earlier in the EA process, to encourage early substantive participation by the agencies, and to ensure that the information is adequate to address each agency's regulatory requirements. Through this MOU, the FAA has coordinated with the USACE to gain concurrence at different points in the process.

Prior to publication of the Draft EA, the USACE and FAA agreed upon concurrence points (1) Purpose and Need, and (2) Alternatives Carried Forward (see **Appendix A**). Prior to publication of the Final EA, the USACE and FAA have agreed upon concurrence point (3) Preferred Alternative. The Preliminary Design Phase Impact Sequencing (4) concurrence point will be completed after issuance of the FONSI/ROD but before the project permits are acquired.

Anchorage Area Coordination

A meeting with the USACE, the U.S. Coast Guard (USCG), the Duluth Seaway Port Authority (DSPA), the City of Superior, the Lake Carriers Association, and the FAA was held in May 2008 to discuss the potential impacts of each alternative to the existing anchorage area near the Airport. Additional coordination between the FAA and the USACE and USGC occurred in 2011 and 2012. Additional information summarizing the past coordination efforts was provided to the USACE in September 2014.

Public Participation

Draft EA/EAW

The DAA held a Public Open House and Hearing to solicit comment on the Draft EA on August 7, 2014 at The Inn on Lake Superior. The Open House took place from 6:00 p.m. to 7:00 p.m. and the Hearing followed at 7:00 p.m. The Public Notice for the hearing was included in the publication Public Notice, and it was re-published in the Duluth News Tribune on July 31, 2014 (See **Appendix J**). A transcript of the public hearing is included as part of **Appendix K**.

The Draft EA was published and distributed in accordance with the requirements of the FAA and the EQB. The Draft EA was circulated for a 45-day comment period (30 days prior to the Public Hearing, the day of the Public Hearing, and 14 days after the Public Hearing) during which comments were accepted regarding the proposed project, the alternatives evaluated, and the assessment of potential effects. The Distribution List in **Section 6.5.1** identifies those agencies and individuals invited to review the Draft EA.

The public was also provided opportunity to review and comment on the Draft EA. A Public Notice identifying the availability of the Draft EA was published in the Duluth News Tribune on July 7, 2014. Notice identifying the availability of the Draft EAW was published in the Minnesota EQB Monitor on July 7, 2014.

Public copies of the Draft EA was available at the following locations:

- Duluth-Sky Harbor Airport at 5000 Minnesota Ave, Duluth, MN
- Duluth International Airport (3rd floor, Administrative Office) at 4701 Grinden Dr, Duluth, MN
- Duluth City Hall at 411 W 1st St, Duluth, MN
- Duluth Public Library at 520 W Superior St, Duluth, MN
- Park Point Community Club (Lafayette Community Recreation Center) at 2026 Minnesota Ave, Duluth, MN
- The DAA website www.duluthairport.com
- SEH Duluth Office at 418 W Superior St, Ste 200, Duluth, MN

Executive Summary (Continued)

Final EA/EAW

This Final EA has been published and distributed in accordance with the requirements of the FAA and the EQB. The Final EA will be circulated for a 30-day comment period during which comments will be accepted regarding the FONSI/ROD and Final EA. The Distribution List in **Section 6.5.1** identifies those agencies and individuals invited to review the Final EA and FONSI/ROD.

The public was also provided opportunity to review and comment on the Final EA and FONSI/ROD. A Public Notice identifying the availability of this Final EA was published in the Duluth News Tribune on May 29, 2015. Notice identifying the availability of the Final EAW was published in the Minnesota EQB Monitor on May 29, 2015.

Public copies of the Final EA are available at the following locations:

- Duluth-Sky Harbor Airport at 5000 Minnesota Ave, Duluth, MN
- Duluth International Airport (3rd floor, Administrative Office) at 4701 Grinden Dr, Duluth, MN
- Duluth City Hall at 411 W 1st St, Duluth, MN
- Duluth Public Library at 520 W Superior St, Duluth, MN
- Park Point Community Club (Lafayette Community Recreation Center) at 2026 Minnesota Ave, Duluth, MN
- The DAA website www.duluthairport.com
- SEH Duluth Office at 418 W Superior St, Ste 200, Duluth, MN

Written comments regarding the FONSI/ROD and Final EA will be received for 30 days after advertising in the Duluth News Tribune.

Please direct written comments to:

RGU Contact:

Tom Werner
Executive Director
Duluth Airport Authority
4701 Grinden Drive
Duluth, MN 55811
twerner@duluthairport.com

FAA contact:

Kandice Krull
Environmental Protection Specialist
FAA – Denver Airport District Office
26805 E. 68th Ave, Suite 224
Denver, CO 80249-6361
kandice.krull@faa.gov

**Table S-1
Summary of Issues and Mitigation Measures**

Affected Environment	Preferred Alternative (5a Short)	No Action	Alternative 13	Preferred Alternative (5a Short) Mitigation Measures
Air Quality	No direct increase in aircraft operations, therefore no effect	Reduction in emissions due to airport closure	No direct increase in aircraft operations, therefore no effect	N/A
Coastal Resources	Direct impacts due to fill in the CBRS & Coastal Zone	No effect	Direct impacts due to fill in the CBRS & Coastal Zone	The USFWS concurred with FAA's determination that the project is exempt from the CBRS under 16 USC § 3505(a)(3). A Coastal Zone Consistency Determination has been submitted by the FAA to the MNDNR. Any required mitigation measures under the Clean Water Act or Public Water Work Permit will be negotiated during the permitting phase.
Compatible Land Use	No change or development of incompatible or noise-sensitive land uses	No effect	No change or development of incompatible or noise-sensitive land uses	N/A
Construction Impacts	Temporary impacts due to construction of proposed action	Temporary impacts due to removal of Airport facilities	Temporary impacts due to construction of Alternative 13	Construction BMPs
Department of Transportation Act: Section 4(f) and Section 6(f)	No impacts to MN Point Pine Forest SNA [a 4(f) resource].	No effect	Section 4(f) impact to MN Point Pine Forest SNA, due to ongoing tree felling/topping to maintain approach surface.	N/A
Farmlands	No impacts to prime or statewide important farmlands	No impacts to prime or statewide important farmlands	No impacts to prime or statewide important farmlands	N/A
Fish, Wildlife, and Plants	Direct impacts to aquatic habitat due to fill in Superior Bay.	No effect	Direct impacts to aquatic habitat due to fill in Superior Bay. Impacts to native forest community due to felling/topping of trees to maintain approach surface	Mitigation for aquatic impacts may include DAA funding of Superior Bay and/or SLR AOC projects.

**Table S-1 (continued)
Summary of Issues and Mitigation Measures**

Affected Environment	Preferred Alternative (5a Short)	No Action	Alternative 13	Preferred Alternative (5a Short) Mitigation Measures
Floodplains	Negligible effect due to fill in Superior Bay (lacustrine system)	No fill, therefore no effect	Negligible effect due to fill in Superior Bay (lacustrine system)	N/A
Greenhouse Gases and Climate	No direct increase in aircraft operations, therefore no effect	Reduction in emissions	No direct increase in aircraft operations, therefore no effect	N/A
Hazardous Materials, Pollution Prevention, and Solid Waste	Past spill has been closed per the Minnesota Pollution Control Agency. Construction activities are not proposed for the area of past spill; therefore, potential to disturb the spill site is low	No effect	Past spill has been closed per the Minnesota Pollution Control Agency. Construction activities are not proposed for the area of past spill; therefore, potential to disturb the spill site is low	N/A
Historical, Architectural, Archeological, and Cultural Resources	No effect expected at project site.	No effect expected at project site.	No effect expected at project site.	No effect expected at project site.
Light Emissions and Visual Impacts	Reduction in light emissions	Reduction in light emissions	Reduction in light emissions	N/A
Natural Resources and Energy Supply	Reduction in energy use due to decreased lighting needs	Reduction in energy use due to cessation of Airport activities	Reduction in energy use due to decreased lighting needs	N/A
Noise	No direct increase in aircraft operations, therefore no effect	Reduction in noise impacts due to cessation of Airport activities	No direct increase in aircraft operations, therefore no effect	N/A
Secondary (Induced) Impacts	Alternative 5a Short is not a major development that would be expected to induce secondary impacts	No induced impacts expected	Alternative 13 is not a major development that would be expected to induce secondary impacts	N/A
Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks	No adverse socioeconomic impacts. No disproportionate impacts to any minority population. No exposure of children to health or safety risks	Potential loss of 28 jobs in the county. No disproportionate impacts to any minority population. No exposure of children to health or safety risks	No adverse socioeconomic impacts. No disproportionate impacts to any minority population. No exposure of children to health or safety risks	N/A

**Table S-1 (continued)
Summary of Issues and Mitigation Measures**

Affected Environment	Preferred Alternative (5a Short)	No Action	Alternative 13	Preferred Alternative (5a Short) Mitigation Measures
Water Quality	Reduction in impervious surface may have beneficial water quality effect. Temporary effects of construction activities expected.	Reduction in impervious surface may have beneficial water quality effect. Temporary effects of construction activities expected.	Reduction in impervious surface may have beneficial water quality effect. Temporary effects of construction activities expected.	Construction BMPs will be installed and maintained to mitigate temporary effects from construction activities
Wetlands	No fill in wetlands, therefore no effect	No fill in wetlands, therefore no effect	No fill in wetlands, therefore no effect	N/A
Wild and Scenic Rivers	There are no rivers or segments of rivers designated as Wild and Scenic Rivers in or near the project area, so none would be affected	There are no rivers or segments of rivers designated as Wild and Scenic Rivers in or near the project area, so none would be affected	There are no rivers or segments of rivers designated as Wild and Scenic Rivers in or near the project area, so none would be affected	N/A

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Chapter 1 Purpose of and Need for Action

1.1 Project Title (EAW Item 1)

Duluth-Sky Harbor Airport Runway 32 Approach Obstruction Removal

1.2 Project Proposer (EAW Item 2)

The Duluth-Sky Harbor Airport (DYT, herein referred to as “the Airport”) is owned by the City of Duluth, Minnesota and operated by the Duluth Airport Authority (DAA).

1.3 Project Summary (EAW Item 6a)

EAW Item 6a. Provide the brief project summary to be published in the EQB Monitor (approximately 50 words).

The DAA proposes to reconstruct the runway at the Duluth-Sky Harbor Airport to provide a runway with an approach clear of trees and obstructions. The project will provide a clear approach surface and put the Airport in sufficient compliance with state and federal rules to allow issuance of a Minnesota Airport License.

1.4 Agency Roles and Relationships

1.4.1 Reason for EA/EAW Preparation (EAW Item 4)

The DAA proposes to reconstruct the runway at the Airport in order to provide a runway with an approach clear of trees and obstructions (see **Section 2.1**). The runway construction would be funded with local funds with potential future, partial Federal and State reimbursement through the Federal Aviation Administration (FAA) Airport Improvement Program (AIP), State bonding, and State airport funds. The use of AIP funding requires preparation of an environmental document to evaluate the proposed action in accordance with the National Environmental Policy Act (NEPA) (42 U.S. C. §§ 4321-4347) and NEPA’s implementing regulations (40 C.F.R. parts 1500-1508). It was determined that an Environmental Assessment (EA) would be appropriate for the proposed project based on information that was available at the start of the project.

Project scoping was performed at the beginning of the EA process to evaluate a suite of alternatives with the coordination of affected Federal, State, and local agencies and other interested public stakeholders. During that coordination, it was determined that an Environmental Assessment Worksheet (EAW) is mandatory for this project pursuant to Minnesota Rules 4410.4300, Subp. 30 (Natural areas) because some of the alternatives considered could potentially impact the adjacent Minnesota Point Pine Forest Scientific and Natural Area (SNA). Some of the alternatives would also result in fill in Superior Bay and would require an EAW under MR 4410.4300, Subp. 27 (Wetlands and public waters).

This joint Federal EA/State EAW has been prepared to evaluate the proposed action in accordance with NEPA, NEPA’s implementing regulations, and the Minnesota Environmental Policy Act (MEPA) (Minn. Stat. § 116D as provided for in Minnesota Rules 4410.3900). In addition, this document was prepared in accordance with the requirements of FAA Orders 1050.1E, Change 1, “Policies and Procedures for Considering Environmental Impacts” and 5050.4B “National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects”. This document meets the applicable EAW requirements of Minnesota Rules, part 4410.0200 to 4410.7800, though this document is formatted differently from the worksheet format of the EAW. References to the EAW Question numbers are included as a point of reference and to demonstrate where responses to each EAW Question can be found.

1.4.2 Responsible Governmental Unit and Roles and Responsibilities (*EAW Item 3*)

This document is intended to meet both state (MEPA) and federal (NEPA) requirements. In this joint state and federal process, the DAA and FAA are acting as co-lead agencies in development of the document.

When a project exceeds the threshold for more than one category in the environmental rule (MR 4410.4300, Subpart 27 and Subpart 30) and a single governmental unit proposes to carry out the project, the Responsible Governmental Unit (RGU) is that local government unit (MR 4410.0500, subpart 5). Therefore, the DAA will act as RGU on behalf of the City of Duluth. Although the Minnesota Department of Natural Resources (MNDNR) will not be the RGU for this EA/EAW, coordination with the MNDNR, as well as with other state agencies and stakeholders through an Executive Committee comprised of the FAA, the City of Duluth, the DAA and the MNDNR will continue throughout this EA process. In addition, a Technical Advisory Committee (TAC) will be maintained.

The DAA will serve as the lead and assume responsibility for the State environmental review process. They will perform the duties defined by environmental review rules and will participate at any public meetings, public hearings, or other public involvement pursuant to MEPA. The DAA will determine whether or not the Proposed Action has the potential for significant environmental effects and if an EIS should be prepared under MR 4410. The DAA will prepare and publish the record of their decision upon completion of the environmental review process.

As the lead federal agency in the preparation of this joint environmental review, the FAA will coordinate with other Federal agencies [e.g., the U.S. Environmental Protection Agency (EPA) and the U.S. Fish and Wildlife Service (USFWS)], and will consult with Native American Tribes, as appropriate.

Agency meetings will be held jointly between the FAA and the DAA to satisfy both Federal and state requirements pursuant to NEPA and MEPA. The FAA will determine whether or not the Proposed Action has the potential for significant environmental impacts and if an Environmental Impact Statement (EIS) should be prepared. If none of the potential impacts, either individually or collectively, is likely to be significant, the FAA will prepare a Finding of No Significant Impact/Record of Decision (FONSI/ROD) signifying that the FAA will not prepare an EIS and has completed the NEPA process for the proposed action.

The FAA and United States Army Corps of Engineers (USACE) have entered into a Memorandum of Understanding (MOU) to merge the NEPA and Clean Water Act Section 404 Permitting processes into one process. The intent of the MOU is to preclude the need for revisiting decisions that have already been agreed upon earlier in the EA process, to encourage early substantive participation by the agencies, and to ensure that the information is adequate to address each agency's regulatory requirements. Through this MOU, the FAA will coordinate with the USACE to gain concurrence at different points in the process (Purpose and Need, Alternatives, Selected Alternative, and Preliminary Design Phase Impact Minimization). A copy of this MOU is included in **Appendix A**.

Prior to publication of the Draft EA, the USACE and FAA agreed upon concurrence points (1) Purpose and Need, and (2) Alternatives Carried Forward (see **Appendix A**). Prior to publication of the Final EA, the USACE and FAA completed concurrence point (3) Preferred Alternative. The Preliminary Design Phase Impact Sequencing (4) concurrence point will be completed after issuance of the FONSI/ROD but before the project permits are acquired.

1.5 Project Location (*EAW Item 5*) and Description (*EAW Item 6*)

Duluth-Sky Harbor Airport is located approximately five miles from downtown Duluth on Minnesota Point (also known as Park Point) as shown on **Figure 1-1**. The project is located in Sections 18 and 19, Township 49 North, Range 13 West. Minnesota Point is a geologic feature that is known as one of the largest baymouth

sandbars in the world (Ojakangas and Matsch 1982). It has been developed in varying degrees and forms a natural boundary between Lake Superior and Superior Bay. The presence of this freshwater baymouth bar at the west end of Lake Superior is a key factor in making Duluth-Superior an excellent, safe inland port. The Airport has been in operation on Minnesota Point since 1939 and consists of a single 3,050 foot long paved and lighted runway with a parallel taxiway, two sea lanes and a seaplane ramp and dock for seaplane access as shown on **Figure 1-2**.

The unique location, facilities and services of the Duluth-Sky Harbor Airport has contributed to its ability to support a unique mix of users. The presence of both a paved runway and water based landing facilities supports aircraft with wheel-type landing gear, amphibian (land and water) landing gear, floats (water only), and skis (snow and ice) as well as two businesses that offer aircraft maintenance to wheeled, amphibian and float plane aircraft (Jonathan Aero and Hangar 10 Aero, LLC). The Airport is also an International Port of Entry to the United States and provides U.S. Customs services. Air charter businesses use the Airport as a base for aircraft ferrying passengers in and out of remote areas of Canada, utilizing both the land and sea-based aircraft. In 2011, U.S. Customs cleared over 500 passengers at the Airport.

In addition to the typical service, maintenance and annual inspection services, Jonathan Aero provides services specific to aircraft that use both land and water facilities. Jonathan Aero has been in business at the Airport since 1987 and manages a growing business performing float changes and general aircraft maintenance. Float changes are most often done twice per year on each aircraft, changing from wheeled gear to floats in the spring and back in the fall. These aircraft use the runway for use when using wheeled gear and the sea lanes when using floats.

Hangar 10 Aero, LLC is the Upper Midwest distributor for Poly-Fiber aircraft covering products and has been operating at the Airport since 1982. Their customer base represents hundreds of individuals and aircraft maintenance companies that rebuild and maintain a wide range of recreational aircraft from seaplanes, sport planes and light sport planes. They are the only aviation business in the Duluth area focused primarily on the new and growing Light Sport market developing since the Light Sport aircraft category and pilot license have been approved, which has made flying more affordable.

The area surrounding the Airport is composed primarily of woodlands, sand dunes, and lakeshore that remain relatively undisturbed in a natural condition, but also have significant and substantial value as a natural, ecological, aesthetic, scientific, and educational resource contributing to the natural heritage of Minnesota. The Airport is located adjacent to a mixed red and white pine forest that is uniquely situated on the stabilized sand dunes near the eastern tip of Minnesota Point. Although ranging in age, some of the red and white pine trees in the forested areas are more than 120 years old and portions of the forested area are considered “old-growth.” Old-growth forests are classified as such by criteria set forth by the MNDNR and typically include natural forests that have developed over a long period of time, generally at least 120 years, without experiencing severe, stand-replacing disturbance (e.g., fire, windstorm, or logging). The old-growth forest on the now urban setting of Minnesota Point is uniquely significant in Minnesota “by virtue of its presence on Lake Superior sand dunes” (Wilson and Rusterholz 1996), with the red and white pine woodland, its understory components, and ecological setting being the only example of this in Minnesota.

This adjacent forest includes the Minnesota Point Pine Forest Scientific and Natural Area (SNA) (see **Figure 1-2** and **Figure 1-3**) established in 2002 to preserve and protect a portion of the old-growth red and white pine forest remnant that once occurred along the length of Minnesota Point. The SNA is owned and managed by the MNDNR. The Minnesota Land Trust established a Conservation Easement with the State of Minnesota on June 30, 1999 to serve the policies of the State of Minnesota which encourage the protection of Minnesota’s natural resources as set forth in Minnesota Statutes Section 84C.01-12 (Conservation Easements), as well as Section 86A.05 and Section 84.033 (State Scientific and Natural Areas).

1.5.1 Project History

In 2006, the Office of Aeronautics of the Minnesota Department of Transportation (MnDOT) and the FAA directed the DAA to clear the approach to Runway 32 in order to meet established standards required to maintain a Minnesota Airport License (**Appendix B**). Public airports within the State of Minnesota must be licensed by the Commissioner of the Minnesota Department of Transportation (with minor exceptions)¹. State licensure requires that an airport meet state and federal requirements, including at least one runway with a minimum usable length of 2,000 feet and free from obstructions to the primary or approach surfaces.

At that time, the Airport approached the MNDNR for permission to top (remove the upper portion of) three pine trees and fell (cut at ground level) four large pines and a cluster of younger vegetation within the SNA which were identified as obstructions to the Federal Aviation Regulation (FAR) Part 77 approach surface (20:1 slope). This work would have been in addition to similar topping, trimming and felling of obstructions (trees) within the Airport property. The MNDNR granted permission for impacts to the seven trees within the SNA in a letter dated August 2006. In 2007 and prior to impacting any trees, a tree survey conducted on a portion of the SNA and Airport property identified the specific location and species of individual trees. Analysis of the tree survey data revealed that the actual number of trees penetrating the approach surface exceeded 250 trees, greater than the seven trees within the SNA than had been approved for impact by the MNDNR. It was at this point that the Airport initiated the environmental review process to evaluate alternatives to resolve the obstruction issues.

Part 77 of the FAR establishes airport “imaginary surfaces,” which are intended to maintain unobstructed operation of air navigation facilities and the safe and efficient utilization of the navigable airspace. Part 77 surfaces are geometrically based upon the ultimate physical layout of the runways and category of intended aviation use. An object is defined as an obstruction if it penetrates any of these imaginary surfaces. By definition, the imaginary surfaces become increasingly critical with respect to height limitations as they become closer to the runway surface, finally allowing an object height of zero feet within 200 feet of the runway end. The State of Minnesota airspace criteria for airport facilities comply with the above mentioned Federal criteria. **Figure 1-4** shows a three dimensional view of the FAR Part 77 approach and transitional surfaces surrounding the Airport. It also shows the known obstructions (trees) to those surfaces (shown in black). Obstructions to FAR Part 77 surfaces can include existing and proposed manmade objects as well as objects of natural growth and terrain.

Tree surveys performed in 2008 and 2009 as part of the environmental scoping process (and in addition to 2007 tree survey data) showed that the actual number of obstructions to the existing approach surface potentially approaches 600 trees. A tree growth model created to estimate the current (2010) tree heights based on 2007–2009 tree survey data (see **Appendix C**) shows that there could be between 1,860–1,885 trees that are obstructions to both the existing FAR Part 77 approach and transitional surfaces to Runway 32 at the Airport² (see **Figures 1-4 and 1-5**). These obstructions include up to 599 trees that penetrate the approach surface and up to an additional approximately 1,286 trees that penetrate the transitional surface. The most conservative estimate of total penetrations to each of the obstructed FAR Part 77 surfaces predicted by the aggressive growth model are shown by species and ownership in **Table 1-1**.

¹ Minnesota Rules 8800.1400, Subpart 1.

² The range of potential tree penetrations represents the difference between the assumed average growth rate and the aggressive growth rate described in the Tree Growth Model report in **Appendix C**.

**Table 1-1
Summary of Existing (2010) Obstructions to Runway 32**

Species	Approach Surface				Transitional Surface				Grand Total
	Property Ownership			Total	Property Ownership			Total	
	DAA	MNDNR	SWLP		DAA	MNDNR	SWLP		
Red Pine	90	138	55	283	199	346	0	545	828
White Pine	60	114	27	201	144	192	1	337	538
Paper Birch	13	18	17	48	84	61	3	148	196
Quaking Aspen	4	30	3	37	0	0	0	0	37
Poplar	15	2	2	19	214	0	0	214	233
Other ¹	0	5	6	11	41	1	0	42	53
Totals	182	307	110	599	682	600	4	1,286	1,885

¹ Other species include Balm of Gilead, Balsam Fir, Big Tooth Aspen, Black Willow, Elm, Maple, Tamarack and Unknown. No single species included in "other" has more than 7 affected individuals.

Growth of trees in the approach surface has resulted in additional obstructions to Runway 32. The number and extent of the obstructions are such that MnDOT is unable to allow continued licensure of the Airport unless measures are taken to remove the obstructions from the approach surface. The Commissioner of MnDOT may waive certain airport licensing standards if it is determined that the public interest and safety will not be adversely affected. The Airport has been operating under a waiver from MnDOT that has allowed continued operation of the Duluth-Sky Harbor Airport with obstructions in that area identified on **Figure 1-5**. The existing waiver was implemented with the expectation that the obstructions would be removed or some other solution implemented to provide a clear approach to the Airport. The waiver was not created with the intention of allowing it to be a long-term solution. In addition, the waiver does not include the entire approach surface, only that portion on the Lake Superior side of the obstruction lights (**Figure 1-5**). There are existing tree obstructions outside of and not covered by the existing waiver.

1.5.2 Interim Conditions

The DAA initiated an interim solution to temporarily mitigate the safety hazards created by the obstructions to the Runway 32 approach and to allow operation of the Airport while alternatives to remove the obstructions are evaluated. In February 2007, at the request of MnDOT, the Airport was closed for night operations and the runway lights, Runway 32 Precision Approach Path Indicators (PAPIs) and Runway End Identifier Lights (REILs) were turned off. PAPIs provide vertical guidance to help pilots navigate to the end of the runway and REILs provide flashing synchronized lights to clearly mark the end of the runway. Because the glide path presented to pilots by the PAPIs would have directed pilots into the obstructing trees, they were turned off. However, operating without PAPIs can be difficult for pilots. In November 2007, the Airport filed a Notice to Airmen (NOTAM) that the Global Positioning System (GPS) approach was unavailable resulting in only a non-directional beacon (NDB) circling approach available at the Airport. In 2010, the FAA cancelled the NDB approach because the NDB used for this approach [located at Richard I. Bong Memorial Airport (SUW) in Superior, Wisconsin] was decommissioned. As part of the FAA's transition from ground based to satellite based technology, NDBs throughout the United States are being decommissioned. Access to the Airport is currently limited to visual conditions (weather with cloud ceilings at least 1,000 feet above the Airport elevation and visibility of at least 3 miles).

In the summer of 2008, the threshold to Runway 32 was displaced 658 feet (the PAPIs and REILs were relocated accordingly and turned back on) reducing the usable runway length for Runway 32 to 2,392 feet, but increasing the safety at the Airport for approaching aircraft (see **Figure 1-2**). While not meeting all the needs

of the Airport, these measures have been taken to temporarily mitigate the obstructions to the Runway 32 approach. Although the GPS approach remains unavailable (due to insufficient runway length) as part of this interim solution, the shorter runway length provided by the displaced threshold allows for a clear threshold location plane to Runway 32 and nighttime operations (reinstated in January 2009).

Maintenance of a Minnesota Airport License at the Airport is necessary and will require a return to full regulatory compliance with MnDOT requirements. This will require provision of a fully clear approach to the runway and relief from all obstructions, including those within the area now affected by the waiver. In the current condition, 599 trees would have to be removed from the approach surface (either by topping or cutting at ground level) to maintain licensure. The trees penetrating the transitional surface may remain, if lighted.

1.5.3 Existing Airport Facilities

Apart from the obstructions in the approach to Runway 32, the existing facilities at the Airport generally meet users' needs and required design standards (See **Figure 1-2**). These existing facilities include:

- Single paved and lighted runway (Runway 14/32) 3,050 feet long by 75 feet wide with a full-length parallel taxiway;
- PAPIs, navigational aids used to assist the pilot in determining the aircraft position in relation to the established runway approach glide path;
- GPS non-precision instrument approach (currently unavailable due to the insufficient runway length provided by the interim condition) to aid pilots in landing in inclement weather conditions and reduced visibility;
- Seaplane access; two sea lanes, a seaplane dock which serves as a location for loading, unloading and fueling operations; and a seaplane ramp which provides means for amphibian aircraft to taxi from water to land and for float equipped aircraft to be removed from water and placed on land;
- Terminal area for Fixed Based Operator (FBO) operations and Arrival/Departure (A/D) Building, aircraft parking (currently 34 tiedowns), automobile parking; and
- Private hangars (currently nine).

The design standards applied to airport facilities are a function of the design critical aircraft operating at an airport. The critical aircraft is defined as that aircraft (or group of aircraft) whose dimensional and/or performance characteristics are the basis for selection of facilities design criteria. The FAA airport design criteria and dimensional standards for airport facilities are based on the Approach Category (aircraft approach speed) and Airplane Design Group (wingspan and height) of the most demanding aircraft (critical aircraft) having at least 500 annual itinerant operations (takeoffs or landings) currently using or forecasted to use an airport.

The conditionally approved Airport Layout Plan (ALP), available for review at the FAA Minneapolis Airport District Office (MSP ADO), states that the existing critical aircraft using the Duluth-Sky Harbor Airport is the Cessna 177, an ARC A-I aircraft (this aircraft can be configured with wheeled or float landing gear). The ALP identifies the ultimate critical aircraft to be a Beech B55 Barron (wheeled landing gear), also an Airport Reference Code (ARC) A-I aircraft. Of the amphibious and float plane aircraft that utilize the Airport, the critical aircraft are also in the A-I group. The results of a User Survey conducted in March 2008 confirm that the critical aircraft at the Airport continues to be A-I. Therefore, ARC A-I is the family of aircraft (both wheeled, amphibious and float landing gear) for which the Airport should be designed and maintained. A copy of the results of the User Survey is included as an appendix to the Final Scoping Document in **Appendix D** and includes definitions of the aircraft characteristics used to define critical aircraft. An updated ALP is being prepared concurrently with this EA process and depicts A-I as the ARC. The draft ALP is also available for review at the FAA Minneapolis Airport District Office.

FAA Advisory Circular (AC) 150/5300-13A, *Airport Design*, and other FAA ACs describe the standards for airport design. Because many of the project alternatives evaluated during project scoping include construction of new aviation facilities, the following summary demonstrates the facilities that would be necessary to meet the demonstrated needs of the Airport.

1.5.3.1 Runway Length

Adequate runway length is determined in accordance with aircraft flight manuals and FAA AC 150/5325-4B *Runway Length Requirements for Airport Design*. In addition, minimum runway length requirements exist for different types of instrument approaches to a runway. A straight-in non-precision approach, similar to the published GPS approach to the Airport, requires at least a 2,400-foot long runway (AC 150/5300-13A, Appendix 16, Table A16-1C). Runway length requirements for aircraft operations were calculated using FAA AC 150/5325-4B and the existing and future critical aircraft (an aircraft not more than 12,500 pounds in the ARC A-I category). The results are listed in **Table 1-2**.

Table 1-2
Recommended Runway Lengths

75% of small airplanes (less than 12,500 lbs.) with less than 10 passenger seats	2,600 feet
95% of small airplanes (less than 12,500 lbs.) with less than 10 passenger seats	3,100 feet
100% of small airplanes (less than 12,500 lbs.) with less than 10 passenger seats	3,700 feet
Small airplanes (less than 12,500 lbs.) with 10 or more passenger seats	4,150 feet
75% of large airplanes of 60,000 lbs. or less, at 60% useful load	5,350 feet
75% of large airplanes of 60,000 lbs. Or less, at 90% useful load	6,800 feet
100% of large airplanes of 60,000 lbs. or less, at 60% useful load	5,500 feet
100% of large airplanes of 60,000 lbs. or less, at 90% useful load	7,500 feet

Source: FAA AC 150/5325-4B

The FAA recommends a runway length that serves 95% of all small aircraft with less than ten (10) passenger seats, which in this case is 3,100 feet, for medium and small population areas, recreational areas as well as low-activity airports (AC 150/5325-4B, paragraph 205a). However, because the users of the Airport are small A-I aircraft, a runway length of 2,600 feet would serve known existing and forecasted users and would permit a straight-in GPS approach. Therefore, the runway must be a minimum of 2,600 feet long to adequately serve the users of the Airport.

The user survey that was completed as part of the Scoping Document (**Appendix D**) indicated that based aircraft use the hard surface land runway for approximately 51 percent of their operations, seasonally based aircraft use the runway for approximately 31 percent of their operations while transient (aircraft coming to/from another airport and not based at Duluth-Sky Harbor Airport) use the runway for 77 percent of their operations. The remaining operations by the respondents were conducted on the water in Superior Bay.

1.5.3.2 Runway Width

Runway width requirements are a function of the approach category of the critical aircraft and the type of instrument approach. According to AC 150/5300-13A, the runway width for an aircraft in approach category A with a non-precision instrument approach with not lower than $\frac{3}{4}$ mile approach visibility minimums should be 60 feet. The existing runway width is 75 feet.

Prevailing wind is a major factor influencing the orientation of runways. Wind conditions affect all aircraft to some degree. Generally, the smaller the aircraft, the more it is affected by crosswinds. Crosswinds are defined as winds typically perpendicular to a runway or an aircraft's direction of movement. The minimum

recommended wind coverage is 95%. The 95% of wind coverage is computed on the basis of the crosswind not exceeding 10.5 knots for ARC A-I and B-I, 13 knots for ARC A-II and B-II, 16 knots for ARC A-III, B-III, and C-I through D-III, and 20 knots for ARC A-IV through D-VI. Since Duluth-Sky Harbor Airport is an A-I airport, the crosswind component should not exceed 10.5 knots (AC 150/5325-4B). The 10.5 knot wind coverage for Runway 14/32 is 89.93% (Richard I. Bong Superior Airport, 1999-2008). When wind coverage is not achieved by a runway, a crosswind runway is recommended. However, due to the physical location of the Airport and the narrow width of the land mass, a crosswind runway is not feasible. According to AC 150/5300-13A, when a crosswind runway is impracticable due to terrain constraints, as in the case of Sky Harbor, operational tolerances to crosswinds may be increased through upgrading airport design to the next higher ARC. This may include a wider runway or wider safety areas, both required for a higher ARC. The larger widths (either runway width or safety area) allow pilots more space to safely maneuver the aircraft in crosswind conditions. While a 75-foot wide runway provides safer operating conditions for users by providing increased space for maneuverability and adjustments for crosswinds, the minimum runway width must be at least 60 feet (AC 150/5300-13A).

1.5.3.3 Parallel Taxiway

A taxiway is used at an airport to keep taxiing aircraft off of the active runway where aircraft are landing and departing. The term “parallel taxiway” refers to the fact that the taxiway is a linear facility located adjacent to a runway available for aircraft ground movements. Parallel taxiways are a primary airport design principle (AC 150/5300-13A, 204b), are part of the FAA’s commitment to safe airport operations, and are consistent with the FAA’s 2009–2013 Flight Plan objectives to reduce the risk of runway incursions by modifying and improving existing surface movement infrastructure. Field Formulation of the National Plan of Integrated Airport Systems (NPIAS) defines a full-length parallel taxiway as a “fundamental” development for airports.

A runway is intended for the high-speed operations of aircraft takeoffs and landings. A runway with no parallel taxiway results in back-taxiing (an aircraft landing on Runway 16, turning around, and taxiing back to the building area or an aircraft leaving the building area, taxing down the runway to reach the Runway 32 end for takeoff) which causes conflicting aircraft movements on an active runway at the same time that the runway is available for aircraft takeoffs or landings. This means that if an aircraft preparing to take off or having just landed is taxiing on the runway, any other aircraft on the ground must wait before it can enter the runway to prepare for takeoff. This results in aircraft waiting in the apron area with engines running, causing departure delays and increased fuel use. Back taxiing also requires any arriving aircraft to abort the approach and circle around to await taxiing aircraft to clear the runway before landing. When an approaching aircraft is unable to land at an airport due to another aircraft taxiing on the active runway, the approaching aircraft will continue to fly the traffic pattern of the Airport until the runway is clear for landing.

The Airport currently has a 25-foot wide, full-length parallel taxiway separated from the runway centerline by 150 feet (AC 150/5300-13A, A-I small aircraft). Although the existing taxiway meets dimensional standards, the existing taxiway is at too high of a grade compared to the runway centerline and the Airport currently has a design variance. The taxiway should be constructed to meet all design standards.

1.5.3.4 Approaches

There are currently no usable instrument approaches at the Airport. Formerly, there were two non-precision instrument approaches, both with visibility minimums not lower than one mile. The instrument approach procedures at the Airport provided operational reliability by allowing landings during inclement weather conditions, either obscured cloud ceiling and/or forward-looking visibility. These approach procedures, which provided visual alignment guidance, included a GPS straight-in approach and a NDB circling approach.

The GPS approach is currently unavailable (since 2007) because the interim condition does not provide sufficient runway length (a minimum of 2,400 feet is required) to meet the requirements for a straight-in approach (see the Final Scoping Document in **Appendix D**). The GPS approach provides straight-in directional guidance to an individual runway end and was the most used and preferred approach at the Airport. Seventy-eight percent (78%) of the reported annual approaches accounted for in the user survey (Appendix D of the Final Scoping Document found in **Appendix D**) were GPS approaches while only 22% were NDB approaches.

The NDB approach provided directional guidance to the Airport for a circling approach. The NDB approach functioned using an NDB antenna located at the Richard I. Bong Superior Airport in Superior, Wisconsin. However, this NDB approach was decommissioned in fall 2009 and will no longer be available for future use. NDBs throughout the United States are being decommissioned as part of the FAA transition from ground-based to satellite technology (as discussed in **Section 1.5.2** above).

General Aviation and business aircraft are increasingly capable of “all weather operations.” Instrument approaches are important in continuing the Airport’s ability to safely and reliably serve both recreational and business user needs. The capability for a published instrument approach is preferred to serve the needs of Airport users and operations in reduced visibility and inclement weather.

1.5.3.5 Seaplane Base Facilities

There are two existing sea lanes at the Airport which provide defined landing space for seaplanes. The north-south sea lane (13W/31W) is 10,000 feet long by 2,000 feet wide and the east-west sea lane (9W/27W) is 5,000 feet long by 1,500 feet wide (**Figure 1-2**). Taxi channel(s) of varying widths provide access to a seaplane dock and ramp north of the Runway 14 end where aircraft can be fueled, docked for loading and unloading, and temporarily stored. The seaplane ramp provides a means for amphibian aircraft to taxi from water to land and for float equipped aircraft to be removed from water and placed on land.

These facilities allow float planes (which can only land on water) and amphibious aircraft (which can land on water and hard surface runways) to operate at the Airport. In addition, although amphibious aircraft can operate on Runway 14/32 at the Airport, the availability of the sea lanes provides additional landing directions to be available to these aircraft. This allows amphibious aircraft to land in more varying wind conditions than aircraft which operate only on a hard surface runway. The existing sea lanes and taxi channels meet the standards defined in FAA AC150/5395-1. The seaplane facilities described in this section need to be maintained in order to adequately serve the users of the Airport.

1.5.3.6 Landside Facilities

Landside facilities at the Airport include an A/D building, nine private aircraft hangars, an aircraft parking apron with tiedowns, and automobile parking. All existing aircraft hangars are currently being used by airport tenants and users. There is demand for additional hangar space. Space is available on the existing aircraft apron for up to three additional hangars, but the Airport does not have adequate water supply to provide the required fire suppression services at this time. The A/D building houses the FBO that provides fuel services and aircraft storage for Airport users, an office for DAA staff (Airport Manager), and a small pilot lounge and flight planning area.

Although improvements in available hangar space would be beneficial, the existing landside facilities and services must be maintained at least in their current capacities to meet the needs of Airport users.

1.6 Purpose and Need for the Proposed Action

The overall project purpose is to provide a safe airport facility with land and water services that will meet FAA and MnDOT aeronautics design and operation requirements and maintain adequate runways with clear approach surfaces for local, regional, and interregional airplane users.

There are obstructions to the FAR Part 77 approach surface to Runway 32 at the Airport, which limits airport use and ability of the Airport to maintain an Airport License. The Airport needs to eliminate the obstructions to the approach surface to be able to maintain their Airport License and to meet FAA requirements. Because obstructions to the runway approach have existed for some time and threaten Airport licensure and the continued use of the Airport in its existing capacity, the FAA and MnDOT expect implementation of an economically-feasible, long-term solution without undue delay that will provide safe and adequate aviation facilities while avoiding immediate as well as repeated environmental impacts.

1.6.1 Project Objectives (EAW Item 6.d.)

EAW Item 6.d. Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.

The proposed action includes the following objectives:

1. Provide General Aviation airport facilities meeting FAA and MnDOT regulatory standards to maintain licensure by MnDOT,
2. Provide facilities sufficient to meet the demonstrated needs of Airport users (both paved and water based landing facilities, runway length of at least 2,600 feet, runway width of at least 60 feet, straight-in non-precision approach, and a parallel taxiway) ,
3. Minimize conflicts with the adjacent forest and provide for long-term continuation of both entities; and
4. To do so in a way that is economically feasible.

1.6.2 Permits and Approvals Required (EAW Item 8)

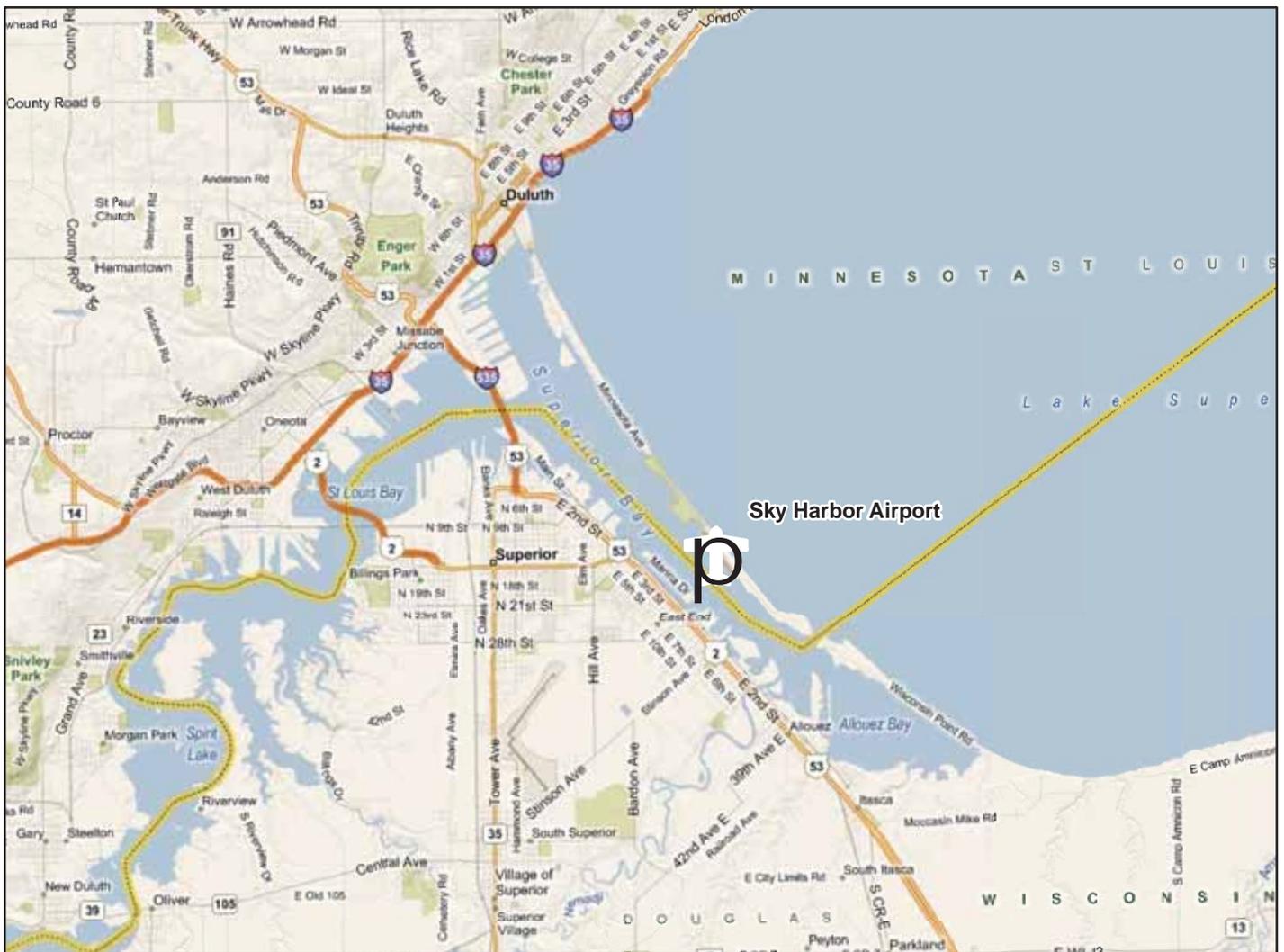
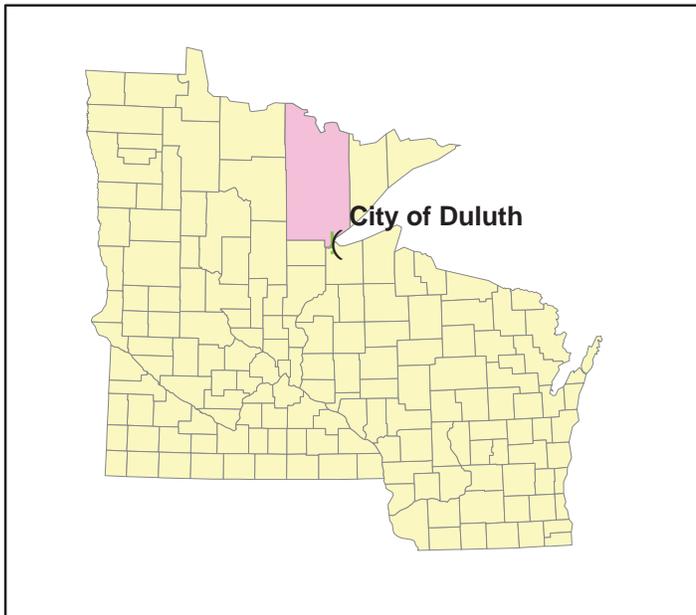
EAW Item 8. List all known local, state and federal permits, approvals and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure. All of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.

**Table 1-3
Permits and Approvals Required**

Unit of Government	Application/Approval	Status
Federal Approvals		
Federal Aviation Administration (FAA)		
	Finding of No Significant Impact (FONSI) / Record of Decision (ROD)	Pending results of EA
U.S. Army Corps of Engineers (USACE)		
	Clean Water Act Section 404 Permit Rivers and Harbors Act Section 10 Permit	To be applied for
U.S. Fish and Wildlife Services (USFWS)		
	Consistency Consultation under the Coastal Barrier Resource System Act of 1982; Endangered Species Act,	The USFWS concurred with FAA's determination that the project is exempt in letter dated July 12, 2013; The FAA determined that the project will have no effect on species protected by the Endangered Species Act.
State Approvals		
Minnesota Pollution Control Agency (MPCA)		
	Section 401 Water Quality Certification	To be applied for
	Compliance with M.R. Chapter 7050 Water Quality Standards	To be applied for
	NPDES/SDS Construction Permit	To be applied for
	NPDES/SDS Modification	To be applied for
Minnesota Department of Natural Resources (MNDNR)		
	Public Waters Work Permit for fill and dredging	To be applied for
	Natural Heritage Database Search	Complete
	Coastal Zone Management Plan Consistency Determination	To be applied for
	Prohibited/Regulated Invasive Species Permit	To be applied for
State Historic Preservation Office (SHPO)		
	Section 106 Consultation	FAA finding has been submitted to SHPO for review and concurrence.

**Table 1-3 (Continued)
Permits and Approvals Required**

Unit of Government	Application/Approval	Status
Minnesota Department of Transportation (MnDOT), Office of Aeronautics		
	State Airport License	To be maintained
County and Local Approvals		
City of Duluth		
	Special Use Permit for floodplain fill	To be applied for
	Shoreland Permit	To be applied for
Other Approvals		
Minnesota Land Trust		
	Approval Action	To be applied for



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Duluth Sky Harbor Airport
 Environmental Assessment
 Duluth, Minnesota

Project: DULAI 080100
 Print Date: 01/28/2010

Figure 1-1
Project Location Map

0 1 Miles

4

Map by: naa
 Projection: NAD 83, St. Louis County Transvers Mercator 1996
 Source: USDA NAIP 2008, MnDOT, MnDNR, SEH

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Aerial Source:
MnDOT Office of Aeronautics,
November, 2006

- Obstruction Lights
- MnDOT Clear Zone
- - - Existing Airport Property
- SNA Boundary
- Anchorage Area
- - - Navigation Channel

	ADULAI0801.00	Duluth Sky Harbor Airport Environmental Assessment Duluth, MN	Figure 1-2 Airport Location Map	
	November 2012			

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Duluth Sky Harbor Airport
Environmental Assessment
 Duluth, Minnesota

Project: DULAI 080100
 Print Date: 01/28/2010

Legend

- Ownership Boundaries
- ▭ DYT Aviation Easement
- Ownership
- ▭ DAA - Duluth Airport Authority
- ▭ MnDNR - MN Point Pine Forest SNA
- ▭ Superior Water Light and Power

Figure 1-3

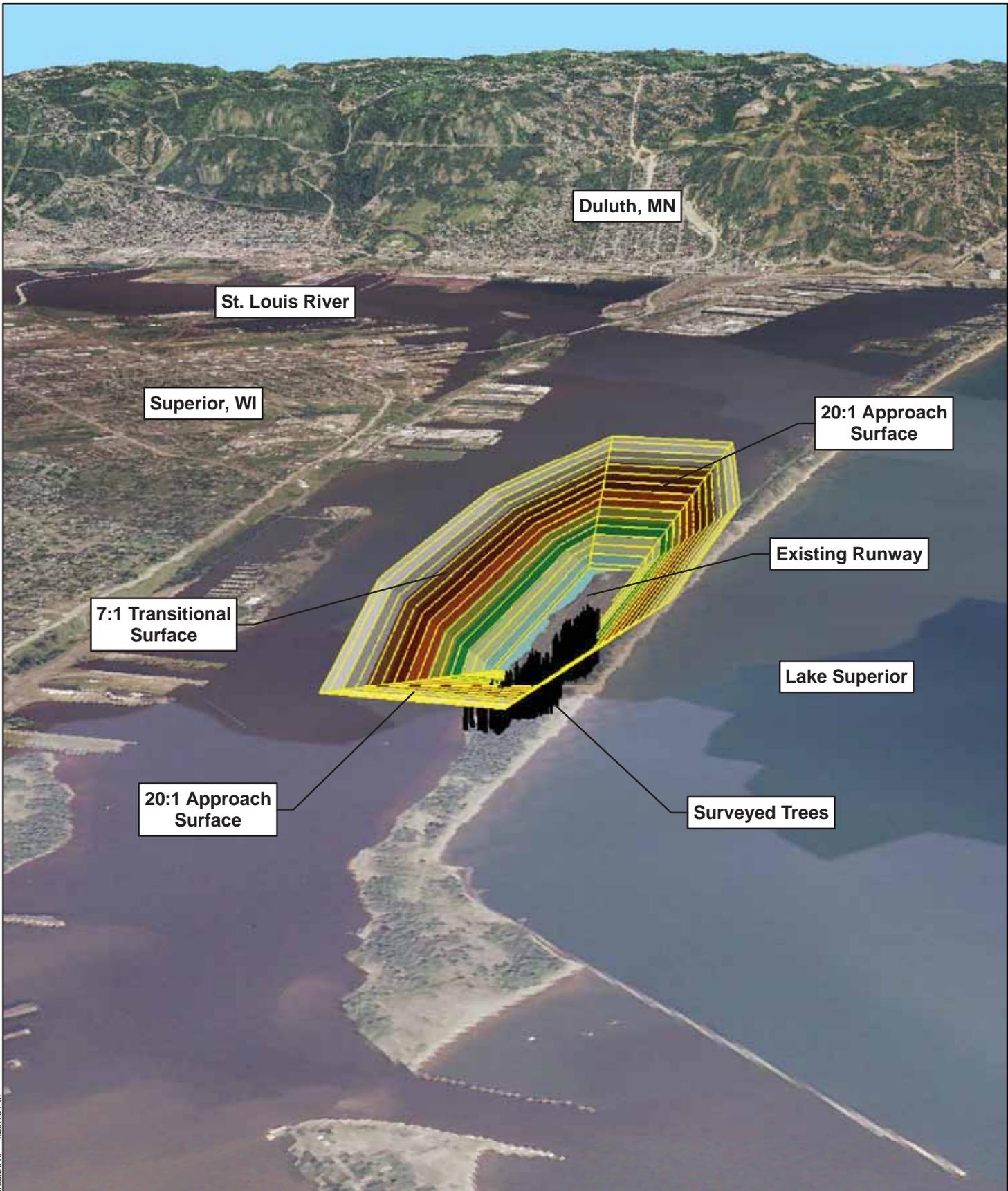
Property Interests



Map by: naa
 Projection: NAD 83, St. Louis County
 Transvers Mercator 1996
 Source: USDA NAIP 2008, RS&H,
 MnDNR, SEH

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Environmental Assessment
Duluth, Minnesota

Project: DULAI 080100
Print Date: 01/28/2010

Figure 1-4

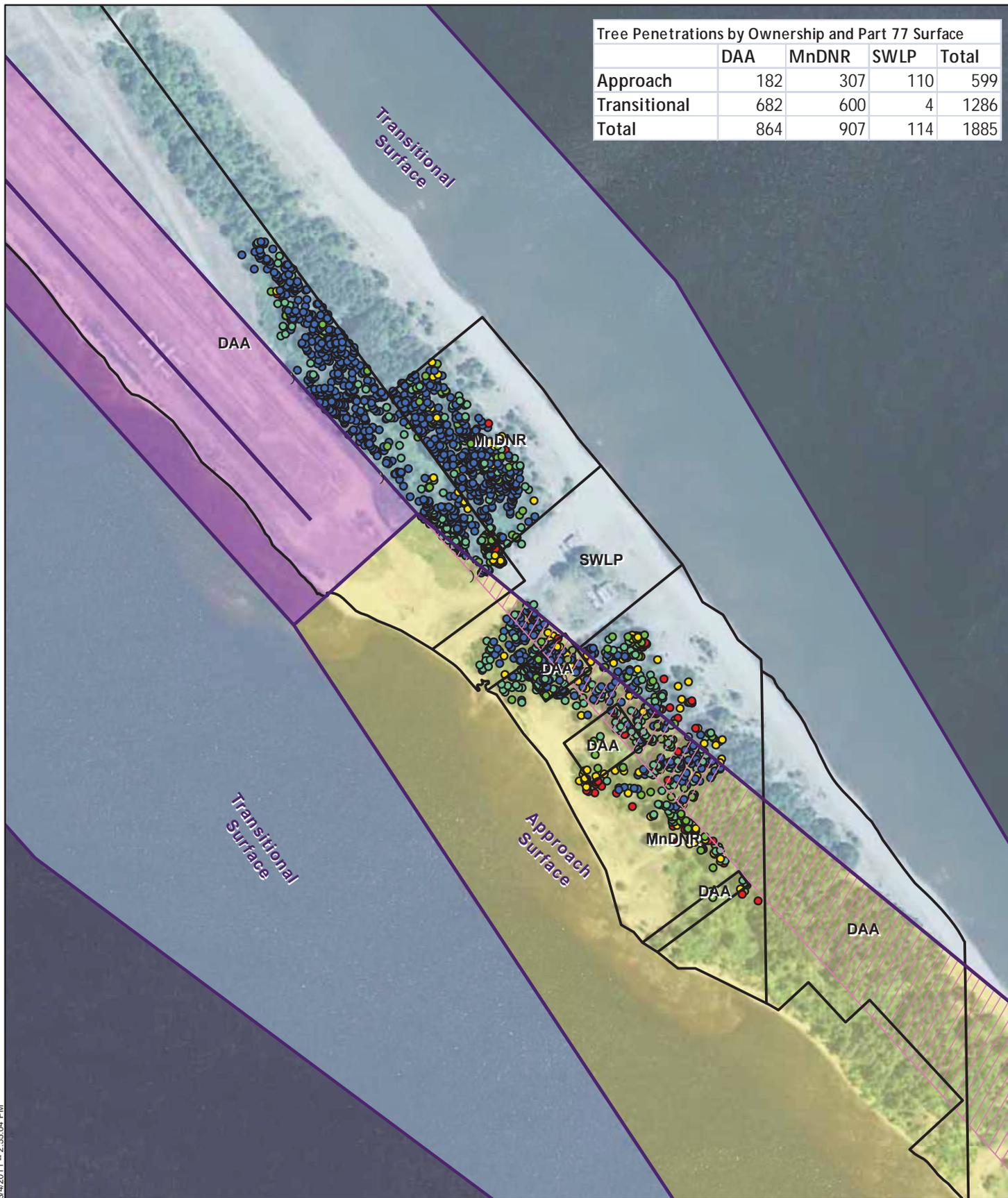
FAR Part 77 Surfaces: Existing Conditions

Map by: naa
Projection: NAD 83, St. Louis County Transvers Mercator 1996
Source: USDA NAIP 2008, RS&H, MnDNR, SEH

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Tree Penetrations by Ownership and Part 77 Surface				
	DAA	MnDNR	SWLP	Total
Approach	182	307	110	599
Transitional	682	600	4	1286
Total	864	907	114	1885



Map Document: (S:\AEID\080100\GIS\Maps\EA\EA_Fig1-5_A103_TreeImpacts_8x11P.mxd) 3/4/2011 - 2:55:04 PM



Duluth Sky Harbor Airport
Environmental Assessment
 Duluth, Minnesota

Project: DULAI 080100
 Print Date: 03/04/2011

Legend

- 0 - 2
- 2 - 5
- 5 - 10
- 10 - 20
- 20 +
-) Obstruction Lights
- Ownership Boundaries
- ▨ MnDOT Waiver Area
- Part 77 Surfaces
- Approach
- Primary
- Transitional

Figure 1-5
2010 Aggressive Growth Tree Penetrations



Map by: naa
 Projection: NAD 83, St. Louis County Transvers Mercator 1996
 Source: USDA NAIP 2008, RS&H, MnDNR, SEH

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

Chapter 2 Preferred Alternative and Project Alternatives

NEPA (42 U.S.C. §§ 4321-4347 and implementing regulations, 40 C.F.R. parts 1500-1508) and FAA Orders 1050.1E and 5050.4B require evaluation of the proposed action, as well as identification and review of reasonable alternatives to the proposed action and a no action alternative.

This chapter includes a detailed description of the preferred alternative (the proposed action), no action, alternatives considered and a summary of environmental impacts from the alternatives considered. This chapter also includes measures included in the preferred alternative to avoid, minimize, and mitigate potential environmental impacts. The information in this chapter also describes the alternatives evaluated and those eliminated from further analysis.

2.1 Preferred Alternative Project Description & Magnitude (*EAW Item 6.b. and Item 6.c.*)

***EAW Item 6b. Description.** Give a complete description of the proposed project and related new construction. Attach additional sheets as necessary. Emphasize construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes. Include modifications to existing equipment or industrial processes and significant demolition, removal or remodeling of existing structures. Indicate the timing and duration of construction activities.*

***EAW Item 6c. Project Magnitude Data.** Total project acreage, indicate areas of specific uses.*

The Draft EA/EAW identified alternative 5aShort as the preliminary preferred alternative. This alternative has been selected as the preferred alternative in the Final EA. The USACE concurred with the selection of this alternative as the ‘preferred alternative’ (see USACE Draft EA Comment letter, **Appendix K**). This preferred alternative would consist of construction of a new runway on a new alignment at the existing Duluth-Sky Harbor Airport as shown on **Figure 2-1**. The runway would be 2,600 feet in length. Compared to the existing runway, the new runway would be shortened 450 feet northwest with a 5-degree rotation of the Runway 32 end into Superior Bay.

This alternative is derived from Alternative 5a that was considered during project scoping (see **Appendix D**). Ongoing agency coordination following publication of the Final Scoping Document indicated interest in additional consideration in Alternative 5a (5 degree rotation of the 3,050-foot runway). The 3,050-foot alternative was dismissed because of concerns over the amount of fill in Superior Bay (primarily the cost thereof) and differential settlement of runway pavement constructed on fill. This alternative includes a shorter version of Alternative 5a comparable to the runway lengths in Alternatives 12 and 13 (see **Section 2.3.2**) and was found to provide the most separation from and least impact to the forest resources while limiting the fill and settlement issues for which the full-length alternative was dismissed. Because of its origin, the preferred alternative is also referred to as Alternative 5a Short.

This shortened version of Alternative 5a moves the more critical (lower elevation) area of the approach surface further from the forest resources and avoids the need for any shift of the runway into the small bay to the north that was considered for other alternatives (see **Section 2.3.2**). Fill would be placed at the Runway 19 (northwest) end to establish the runway safety area (RSA) to the required length beyond the runway end. The reconstructed runway would be constructed to a width of 60 feet and would include reinstallation of the existing Medium Intensity Runway Lights (MIRLs) along the length of the runway, relocation of the REILs, and relocation of the PAPIs.

The area of the 500-foot-wide primary surface would be graded and the parallel taxiway reconstructed parallel to the runway at a separation of 150 feet. The taxiway would be lit with MITLs (similar to the existing taxiway).

Existing runway and taxiway pavements would be removed. The previously paved areas would be restored with vegetation and would be maintained by mowing.

Geotechnical borings of the area of Superior Bay adjacent to the Airport showed that soil conditions in Superior Bay southwest of the Airport consist of very loose sand with occasional layers of very soft silty clay underlain by a very soft layer of organic clay and silt. Due to the low strength of the existing soils, it will be necessary to stage filling along the west shore. In addition, a surcharge (fill to be placed in order to compact soft soils, and then removed) will be used on the site to mitigate any anticipated settlement prior to construction of the runway after fill placement. Conceptual engineering of this alternative proposes the following construction stages (see **Figure 2-2**):

- **Perimeter Berm Stage:** This stage includes construction of a perimeter berm encompassing the site in the harbor. The berm will be underlain by a separation geotextile and will be constructed to an elevation of 603 to 605 feet above mean sea level (MSL). A floating silt curtain will be placed around the perimeter of the site prior to placement of any fill in the bay and will remain in place for the duration of fill placement. It is anticipated that this perimeter berm will be constructed of rock in order to provide a stable access road around the site for construction. Prior to riprap placement, approximately 8,600 cubic yards of material will be excavated from the lake bottom for the riprap toe (see **Figure 2-3**). The excavated material will be stored on site for use as fill or surcharge. The runway will be closed during periods of construction of this stage but will re-open during the stabilization period.
- **Stage 1:** Fill will be placed within the perimeter berm up to an elevation of 605 feet MSL. Riprap placement around the project perimeter will also be completed at this time. A reinforcement geotextile will be placed at 602 feet MSL, or slightly above lake level (601 feet MSL based on survey), to prevent slope failure. Upon completion of Stage 1, the site will stabilize in place over a period of three months prior to construction of Stage 2. The runway will be closed during periods of construction of this stage but will re-open during the stabilization period.
- **Stage 2:** The remaining fill and a surcharge of five feet will be placed within construction area. Since the grade of the proposed runway is variable, the top elevation of the surcharge will vary from 611 feet to 614 feet MSL. The surcharge will need to stabilize over a period of approximately six to nine months. The floating silt curtain will be required to be removed over winter months. However, heavy duty silt fence will also be used along the embankment after each phase of fill. The runway will be closed for the duration of this stage since surcharge will be required to be placed within the existing runway safety area.
- **Stage 3:** The excess surcharge will be removed and the runway and taxiway will be constructed. A typical section of the runway and completed fill is shown on **Figure 2-3**. The runway will remain closed for the duration of this stage.

Approximately 69,800 cubic yards of fill over 7.49 acres would be placed in Superior Bay to accommodate the runway construction and establishment of the RSA to FAA standards³. This includes 37,600 cubic yards of fill placed below the water line and 32,200 cubic yards of fill placed above the water line (See **Figure 2-3**). Including fill material placed in the water and on existing land, approximately 74,650 cubic yards of material are estimated to be needed for construction. In addition, approximately 50,000 cubic yards of surcharge are required. Excess surcharge will be removed from the site after the surcharge period.

³ FAA Advisory Circular 150/5300-13, Paragraph 305 and Table3-1.

The primary borrow site for fill and surcharge material is anticipated to be an established, existing site such as Erie Pier, located six (6) miles from the project site by water. If the material has suitable geotechnical properties for construction, this is a desirable source due to proximity to the project site and is a beneficial reuse of material stored at Erie Pier.

The fill material used for runway construction will likely be brought to the project site using a combination of trucking and barging (preferred) depending on material type and source. It is anticipated that the material used during the perimeter berm stage will be trucked to the site (approximately 1,800 truck trips). Materials used for Stages 1 and 2 will be a mix of materials from on site (material excavated for the riprap toe during the Perimeter Berm Stage, reclaimed pavement and base course, and material excavated for the taxiway, ditching and miscellaneous areas) and materials brought to the site using hydraulic pumping from a barge to the project site. While there will be no trucks hauling material, there will be minor construction automobile traffic related during this stage. The final stage, Stage 3, will utilize trucking (approximately 1,800 round-trip truck trips) to transport materials (topsoil borrow, class 5 aggregate base, and asphalt) to the site. Excess material from the surcharge will be reused on site within the project limits and will not be disposed of offsite. If any materials do need to be removed from the site, they will be the property of the contractor, and the contractor will be required to dispose of the material in accordance with all applicable local, state, and federal regulations. The delivery method and number of trips will be determined during final design.

This alternative does not affect the seaplane sea lane operations. The sea lanes would continue to meet the standards outlined in AC 150/5395-1, *Seaplane Bases*. In addition, aircraft operating at the Airport and seaplane base would continue to follow the right-of-way rules defined in FAR Part 91.113 (Right-of-Way Rules: Except Water Operations) and Part 91.115 (Right-of-Way Rules: Water Operations).

The approach surface established by the preferred alternative would not be penetrated by any existing trees (see **Figure 2-4**) and construction of this alternative would avoid topping or cutting of any trees. Projected tree growth over 50 years (see **Appendix C**) would not result in any tree penetrations to the approach surface. (see **Figure 2-5** and **Figure 2-6**)⁴.

⁴ Using the conservative results of the aggressive growth rate model described in the Tree Growth Model report in **Appendix C**.

**Table 2-1
Preferred Alternative Approach Surface Penetrations**

Tree Species	Immediate Penetrations ^{1,2}				Long-Term Penetrations ^{1,3}			
	Property Ownership			Total	Property Ownership			Total
	DAA	MNDNR	SWLP		DAA	MNDNR	SWLP	
Red Pine	0	0	0	0	0	0	0	0
White Pine	0	0	0	0	0	0	0	0
Other ⁴	0	0	0	0	0	0	0	0
Totals	0	0	0	0	0	0	0	0

¹ All penetrations are based on the conservative estimates of the aggressive growth rate model described in Appendix C.
² Penetrations in year 2013.
³ Penetrations over 50-year period from 2013 to 2063.
⁴ Other species include Paper Birch, Quaking Aspen, Poplar, Balm of Gilead, Balsam Fir, Big Tooth Aspen, Black Willow, Elm, Maple, Tamarack and Unknown.

The preferred alternative would leave up to 473 trees as obstructions to the transitional surface in 2013 (see **Figure 2-4**), 143 of which stand within the SNA. Obstructions to the transitional surface (as opposed to the approach surface) would not prohibit maintenance of a state airport license. By the year 2063, 1,028 penetrations to the transitional surface are estimated. These penetrations to the transitional surface would not be trimmed or removed, but would be mitigated through continued use of the existing two northernmost obstruction lights, abandonment (turning off and leaving in place) of the southernmost two lights and installation of one new obstruction light on DAA property as shown on **Figure 2-1**. Initial design of the preferred alternative called for installation of two new obstruction lights; however, construction of the southernmost obstruction light would have involved numerous potential impacts. Though the fourth obstruction light is preferred by the FAA to mitigate obstructions in the transitional surface, it has been removed due to the identified potential impacts. If the FAA determines that the fourth obstruction light is required for safety reasons, the following steps will be taken (as an EA reevaluation) prior to any construction activities:

- A Phase II archaeological survey to delineate the boundaries of a nearby archaeological site;
- A Phase III recovery survey, if necessary based on the location of the archaeological site;
- Permit from the commissioner of the DNR and permission from Minnesota Land Trust to access SNA property;
- Coordination with DNR on potential impacts to State listed threatened plant species; and
- Consultation with the USFWS for potential impacts to the piping plover.

Post construction, areas that will be maintained as open, mowed grassland (i.e., space between the runway and taxiway) will be seeded with a native grass mix modified from the Minnesota state seed mix 36-311 (Woodland Edge Northeast). The species composition of the mix is shown in **Table 2-2** below:

**Table 2-2
Native Grass Seed Mix**

Common Name	Scientific Name
fringed brome	<i>Bromus ciliatus</i>
bluejoint	<i>Calamagrostis canadensis</i>
poverty grass	<i>Danthonia spicata</i>
nodding wild rye	<i>Elymus canadensis</i>
slender wheatgrass	<i>Elymus trachycaulus</i>
fowl bluegrass	<i>Poa palustris</i>
false melic	<i>Schizachne purpurascens</i>
Cover Crop	
Oats or winter wheat	

2.2 No Action Alternative

The no action alternative assumes that existing interim conditions at the Airport would remain (see **Figure 1-2**) and includes basic maintenance activities. The no action alternative would avoid tree removal from the forest and the Minnesota Point Pine Forest SNA, but would ultimately result in closure of the Airport.

Under the no action alternative, the Airport would continue to operate in the interim condition (see **Section 1.5.2**). The interim condition includes the 658-foot displacement of Runway 32, relocation of the PAPIs and REILs, and visual approach as the GPS approach is unavailable. The unavailability of the GPS approach does not meet the purpose and need and is not adequate for Airport users as it makes access to the Airport less reliable and inaccessible in adverse weather conditions.

The displaced Runway 32 end provides sufficient distance between the runway end and the limits of the forest and Minnesota Point Pine Forest SNA so that the trees are not obstructions to the threshold location plane at this time (defined in AC 150/5300-13A, Appendix 2 and is similar to an approach surface for displaced thresholds). The interim condition was designed to take advantage of the threshold siting requirements of AC 150/5300-13A, Appendix 2, that allow a runway threshold to be displaced if obstructions exist. In the case of Duluth-Sky Harbor Airport, the threshold location plane has the same 20:1 slope as the approach surface but is narrower and begins at a further distance from the trees (see **Figure 1-2**).

Although this condition is currently sufficient for maintenance of a state airport license, as trees grow and become penetrations to the threshold location plane, continued operation of Runway 14/32 would be in violation of Minnesota Rules Chapter 8800.1200 and would be expected to result in denial of a Minnesota Airport License by MnDOT. It is estimated that approximately 15 trees penetrated the threshold location plane in 2010 [eight (8) on Airport property and seven (7) on SWLP property]. In 2013, the number of penetrations would be expected to increase to approximately 19 trees, nine (9) on Airport property and 10 on SWLP property. Although the no action alternative would not be permitted to persist for any substantial period of time, **Table 2-3** provides a summary of 2013 and long term (50-year) tree penetrations to the threshold location plane and approach surface. Although trimming of trees on Airport and SWLP property could potentially take place, this action would only delay the necessity of implementing one of the project alternatives and does not provide a long term solution. Eventually (within approximately the next five years) the trees will result in closure of the runway.

**Table 2-3
No Action Threshold Location Plane and Approach Surface Penetrations**

Tree Species	Immediate Penetrations ^{1,2}				Long-Term Penetrations ^{1,3}			
	Property Ownership			Total	Property Ownership			Total
	DAA	MNDNR	SWLP		DAA	MNDNR	SWLP	
Red Pine	6	0	8	14	66	13	41	120
White Pine	3	0	1	4	28	10	12	50
Other ⁴	0	0	1	1	1	0	16	17
Totals	9	0	10	19	95	23	69	187

¹ All penetrations are based on the conservative estimates of the aggressive growth rate model described in Appendix C.

² Penetrations in year 2013

³ Penetrations over 50-year period from 2013 to 2063.

⁴ Other species include Paper Birch, Quaking Aspen, Poplar, Balm of Gilead, Balsam Fir, Big Tooth Aspen, Black Willow, Elm, Maple, Tamarack and Unknown.

If Runway 14/32 was closed and the seaplane base maintained, MnDOT has indicated that they would not provide a license to a public seaplane base without a corresponding land-based facility. Without licensure as a public facility, the Airport would no longer be a public airport and would no longer be eligible for state or federal funding from MnDOT or FAA respectively. A private facility would not be feasible at the site, given restrictions placed on the property when it was conveyed to the City of Duluth. These limitations are described in more detail below.

Airport closure would require the City of Duluth to repay over \$3.0 million in state and federal grant funds that have been used in the expansion and maintenance of the Airport per the grant assurances related to past grant money the Airport has accepted. The Duluth-Sky Harbor Airport exists on land which was conveyed to the City of Duluth in 1939 by the State of Minnesota under the condition that the land be used for public recreation and public health and that the facilities on the land be available for public use to residents and non-residents of the City of Duluth. The transfer of property to the City requires that the property remain open to public use, which would limit the ability of the City to sell the property to finance the repayment of the grant funds. Closure would result in displacement of two businesses, one residence (located in the terminal building), 23 based aircraft, and nine private hangars.

The total cost of Airport closure that results from the no action includes the repayment of grant funds, reimbursement of land value to the FAA, removal of Airport facilities (pavement, hangars, fuel system, etc) and site restoration. The estimated total implementation cost of the no action alternative is approximately \$8 million. This cost does not include buy-outs of leases currently held by Airport tenants.

The 1938 conveyance of the property from the State of Minnesota to the City of Duluth requires that it remain for “purposes of public recreation and public health”. Therefore, if the Airport closed, the property would either remain open for a public use or revert to the State per the 1938 agreement.

Although this alternative does not meet the purpose and need of the proposed action, the no action alternative is maintained throughout the EA to serve as a baseline for comparison to the alternatives being carried forward to determine impacts in accordance with NEPA requirements.

2.3 Other Alternatives Considered

2.3.1 Public Scoping Alternatives

Project scoping was initiated in January 2008 and included participation of affected federal, state, and local agencies and other interested stakeholders. A Draft Scoping Document comparing the benefits and impacts of ten alternatives was distributed for public comment in November 2008. The Final Scoping Document, including comparison of three additional alternatives and addressing of public and agency comments was completed in February 2010. The Final Scoping Document in **Appendix D** provides a comprehensive description of the 13 considered alternatives.

Alternatives evaluated in the Final Scoping Document included alternatives that maintained the existing 3,050-foot runway length through the following measures: clearing the existing approach to Runway 32 in its existing location, shifting the runway to the northwest, re-orientating the runway, laterally shifting the runway into Superior Bay, using alternative airport sites, closing the Airport, and relocating the Airport. The Final Scoping Document analyzed three additional alternatives of reduced runway length (Alternatives 11 through 13) to further minimize impacts.

MnDOT has indicated they would not provide a license to a public seaplane base without a corresponding land-based facility. Without licensure as a public facility, the Airport would no longer be a public airport and would no longer be eligible for state or federal funding from MnDOT or FAA, respectively. Without a land-based runway, the Airport could conceivably remain as a private seaplane base, but would require private funding and management to do so. For this reason, an alternative looking at the closure of the runway was not evaluated.

The Final Scoping Document identified three alternatives to be carried forward into the Draft EA, the no action alternative and Alternatives 12 and 13. The following ten alternatives were removed from consideration in the Final Scoping Document (Chapter 2 of the Final Scoping Document in **Appendix D**).

- Maintain Interim Condition (Alternative 2)
 - This alternative was removed from consideration because it does not meet the purpose and need of the project as it would not provide sufficient facilities for Airport users and would also ultimately result in Airport closure.
- Clear Existing Runway 32 Approach (Alternative 3)
 - This alternative was removed from consideration because its implementation would result in elimination of the SNA.
- Northwest Runway Shift (Alternative 4)
 - This alternative was removed from consideration because its implementation would result in elimination of the SNA.
- Runway Reorientation – 7 degree rotation (Alternative 5B)
 - This alternative was removed from consideration due to cost and concerns with construction feasibility.
- Lateral Runway Shift into Superior Bay (Alternative 6)
 - This alternative was removed from consideration due to cost and concerns with construction feasibility.
- Lateral Runway Shift and Reorientation (Alternative 7)
 - This alternative was removed from consideration due to cost and concerns with construction feasibility.

- Use Existing Nearby Airports (Alternative 8)
 - This alternative was removed from consideration because it would not meet the purpose and need of the project due to the insufficient facilities and services offered at nearby airports.
- Close the Airport (Alternative 9)
 - This alternative, because the result is similar to the No Action, was removed from the Final Scoping Document. The No Action alternative, considered in the Final Scoping Document and this document, ultimately evaluates Airport closure.
- Replace Duluth-Sky Harbor Airport at the U. S. Steel Site (Alternative 10)
 - This alternative was removed from consideration because it did not meet the economic feasibility element due to the cost.
- Reduced Runway Length with No Extension (Alternative 11)
 - This alternative was removed from consideration because its implementation would result in elimination of the SNA.

2.3.2 Reduced Runway Length Alternatives

The Final Scoping Document identified two “build” or “action” alternatives that meet the demonstrated purpose and need of the proposed action, Alternative 12 and Alternative 13.

2.3.2.1 Alternative 12 – Runway 14/32 Reduced Length and Shifted

Alternative 12 would establish a 2,600-foot paved and lighted runway facility on the existing runway alignment (see **Figure 2-7**). Alternative 12 would include relocation of the Runway 32 threshold 750 feet northwest, which would shift the start of the approach surface the same distance and direction away from the forest resources. The remaining length of runway pavement south of the relocated threshold would be removed. The previously paved area would be restored with vegetation to minimize erosion and would be maintained by mowing. A 300-foot runway extension would be constructed on approximately 23,200 cubic yards (CY) of fill over 2.08 acres out into the small bay of Superior Bay immediately north of the Airport to provide a total runway length of 2,600-feet. The reconstructed runway would be built to a width of 60 feet and would include reinstallation of the existing MIRLS along the length of the runway, relocation of the REILs, and relocation of the PAPIs.

The parallel taxiway would be altered in a manner similar to the runway in order to maintain a full-length parallel taxiway to the 2,600-foot runway. All existing taxiway pavement would be removed. The previously paved area would be restored with vegetation and would be maintained by mowing. In order to provide an FAR Part 77 primary surface free of obstructions, including terrain, the area of the parallel taxiway would be graded prior to taxiway reconstruction. The grading limits for the parallel taxiway are shown in orange on **Figure 2-7**. The 25-foot wide taxiway would be reconstructed with a runway centerline to taxiway centerline separation of 150 feet and extended 300-feet to the northwest to reach the end of the extended runway as shown on **Figure 2-7**. A connector taxiway would be constructed at the relocated Runway 32 threshold to provide connection to the existing parallel taxiway. Similar to the existing taxiway, the parallel taxiway would be lit with MITLs.

The approach surface established by this alternative would be expected to include up to 224 penetrations (trees), 189 on Airport property, 12 in the SNA (MNDNR property), and 23 on SWLP property as shown on **Figure 2-8**. All penetrations to the approach surface would be subject to removal through tree topping or cutting at ground level. Of the potentially affected trees, 174 are red and white pine. There are six (6) red pine and four (4) white pine trees within the limits of the SNA. The 2013 penetrations are shown in a 3-D view in

Figure 2-9. Over the long term (50 years), up to approximately 794 trees would be affected (see **Figures 2-10** and **2-11**) including 515 red and white pine as shown on **Table 2-4**. 184 of the long-term tree impacts would be within the SNA.

Table 2-4
Alternative 12 Approach Surface Penetrations

Tree Species	Immediate Penetrations ^{1,2}				Long-Term Penetrations (2063) ^{1,3}			
	Property Ownership			Total	Property Ownership			Total
	DAA	MNDNR	SWLP		DAA	MNDNR	SWLP	
Red Pine	109	6	14	129	178	98	55	331
White Pine	37	4	4	45	84	73	27	184
Other ⁴	43	2	5	50	246	13	20	279
Totals	189	12	23	224	508	184	102	794

¹ All penetrations are based on the conservative estimates of the aggressive growth rate model described in Appendix C.
² Penetrations in year 2013.
³ Penetrations over 50-year period from 2013 to 2063.
⁴ Other species include Paper Birch, Quaking Aspen, Poplar, Balm of Gilead, Balsam Fir, Big Tooth Aspen, Black Willow, Elm, Maple, Tamarack and Unknown.

Alternative 12 would leave up to 678 trees as obstructions to the transitional surface. These penetrations to the transitional surface would be expected to remain and be mitigated through obstruction lights. The four existing obstruction lights would be removed since three of the lights would be located in the RPZ and all would penetrate the approach surface. Up to three obstruction lights would be used to delineate the boundary between the approach surface and transitional surface as shown on **Figure 2-7**. Each new obstruction light would impact a ground area of approximately 36 square feet and would be supported by up to three guy wires.

The estimated initial construction cost of Alternative 12 is \$4,135,440 plus an additional initial tree management cost of \$18,440 for a total implementation cost of \$4,153,880. The tree management costs expected over the 50-year planning period would add approximately \$367,600⁵ not including permitting and mitigation costs associated with impacts to the SNA. In total, the 50-year construction and management costs of Alternative 12 would be approximately \$4,521,480. The local (DAA) portion of project costs associated with this alternative is estimated to be \$782,988. This cost includes a ten percent (10%) local share of initial project costs (construction and initial tree management) and 100 percent of all additional tree management during the 50-year period⁶.

Because of the amount of impacts to the forest community (224 trees in the immediate term and 794 trees in the 50 year planning term) and the SNA (12 trees in the immediate term and 184 trees in the 50 year planning term), this alternative was removed from further consideration.

⁵ The tree management cost estimates include an obstruction survey every five (5) years, necessary tree topping/tree removal and contractor mobilization on an every 5-year basis.

⁶ FAA funding currently only considers one initial obstruction removal project on a runway end to be eligible for federal funding. Therefore, DAA will be responsible for 100 percent of tree management costs after the implementation year.

2.3.2.2 Alternative 13: Reduced Length, Shifted and Rotated

Alternative 13 was developed by rotating the Runway 32 end 1½ degrees away from the forest resources to reduce potential impacts to the forest resources (see **Figure 2-12**). Alternative 13 would include the 300-foot northern shift on fill into the small bay to the north (as proposed in Alternative 12) and add the maximum rotation available that avoids runway construction on fill along the west shore. However, filling into Superior Bay along the west shore would still be required to establish a standard RSA. In total, Alternative 13 would require approximately 24,360 cubic yards of fill over 3.40 acres for both the northern shift into the small bay, and fill along the west shore.

The reconstructed runway would be built to a width of 60 feet and would include reinstallation of the existing MIRLs along the length of the runway, relocation of the REILs, and relocation of the PAPIs.

In order to provide a primary surface free from terrain obstructions, the area of the parallel taxiway would be graded and the taxiway reconstructed parallel to the new runway at a separation of 150 feet and would be lit with MITLs (see **Figure 2-12**). Runway and taxiway pavements south of the new Runway 32 end and taxiway connection would be removed. The previously paved areas would be restored with vegetation and would be maintained by mowing.

As of 2013, the Approach Surface established by this alternative would be expected to include up to 60 penetrations (trees), 34 on Airport property, 3 in the SNA (MNDNR property), and 23 on SWLP property as shown on **Figure 2-13** and **2-14**. All penetrations to the approach surface would be subject to removal through tree topping or cutting at ground level. Of the potentially affected trees, 55 are red and white pine. Over the long term (50 years), up to approximately 370 trees would be affected (see **Figure 2-15** and **2-16**) including 295 red and white pine as shown on **Table 2-5**. Seventy-six (76) trees within the SNA would be impacted during the 50 year planning term.

**Table 2-5
Alternative 13 Approach Surface Penetrations**

Tree Species	Immediate Penetrations ^{1,2}				Long-Term Penetrations (2063) ^{1,3}			
	Property Ownership			Total	Property Ownership			Total
	DAA	MNDNR	SWLP		DAA	MNDNR	SWLP	
Red Pine	22	1	14	37	88	27	55	170
White Pine	12	2	4	18	57	41	27	125
Other ⁴	0	0	5	5	48	8	19	75
Totals	34	3	23	60	193	76	101	370

¹ All penetrations are based on the conservative estimates of the aggressive growth rate model described in Appendix C.

² Penetrations in year 2013.

³ Penetrations over 50-year period from 2013 to 2063.

⁴ Other species include Paper Birch, Quaking Aspen, Poplar, Balm of Gilead, Balsam Fir, Big Tooth Aspen, Black Willow, Elm, Maple, Tamarack and Unknown.

Implementation of this alternative would leave up to 715 trees as obstructions to the transitional surface, 285 of which stand within the SNA. Two of the four existing obstruction lights would be removed since they would penetrate the approach surface, and one new light would be installed in a new location in order to delineate the new boundary between the approach surface and transitional surface. The new obstruction light would impact a ground area of approximately 36 square feet and would be supported by up to three guy wires. In total, three obstruction lights would be used to delineate this boundary as shown on **Figure 2-12**. The FAA

preferred installation of two new lights (for a total of four) to mitigate obstructions in the transitional surface; however, in order to avoid impacts to native plant communities and potential habitat for listed species, the southernmost new obstruction light was eliminated from Alternative 13. If the fourth obstruction light is required for safety reasons, the following steps will be taken prior to construction of the light:

- A Phase II archaeological survey to delineate boundaries of a nearby archaeological site;
- A Phase III recovery survey, if necessary based on the location of the archaeological site;
- Coordination with DNR on potential impacts to State listed threatened plant species; and
- Consultation with the USFWS for potential impacts to the piping plover.

The estimated initial construction cost of Alternative 13 is \$5,508,400 for construction on a new alignment and fill in Superior Bay to establish the RSA. The initial 2013 tree management cost would add \$8,600 for a total implementation cost of \$5,517,000. The tree management costs expected over the 50-year planning period would add approximately \$198,000, not including permitting and mitigation costs for SNA impacts. In total, the 50-year construction and management costs of Alternative 13 would be approximately \$5,715,000. The local (DAA) portion of project costs associated with this alternative is estimated to be \$749,700. This cost includes a ten percent (10%) local share of initial project costs (construction and initial tree management) and 100 percent of all additional tree management during the 50-year period.

Although this alternative has more impacts to the SNA than the preferred alternative (Alternative 5a Short), it is being carried forward for comparison purposes due to the reduction in fill impacts to Superior Bay.

2.3.3 Summary of Alternatives Considered

Alternative 12 would allow use of the existing runway orientation. It would reduce the immediate potential tree impacts to forest resources from 599 trees (under the original Airport condition) to 224 trees and the cumulative (50-year) impact from 837 trees (under the original Airport condition) to 794 trees. Although Alternative 12 would minimize impacts to the forest resources over the original Airport condition and would require less construction cost than the preferred alternative, the preferred alternative provides greater avoidance of tree impacts in both the immediate- and long-term. Therefore, Alternative 12 was removed from consideration.

Alternative 13 would reduce potential impacts to forest resources over Alternative 12 (60 immediate potential tree impacts compared to 224 trees in Alternative 12). In addition, this alternative reduces the impacts to the SNA compared to Alternative 12. However, the preferred alternative (Alternative 5a Short) provides greater avoidance of tree impacts in both the immediate and long-term. Alternative 13 would minimize fill impacts compared to the preferred alternative. Alternative 13 is being carried forward throughout the EA for comparison purposes.

Alternative 5a Short is the preferred alternative and would include a runway shortened 450 feet northwest with a 5-degree rotation of the Runway 32 end into Superior Bay. While this alternative results in increased overall cost and fill (69,800 CY) over alternatives 12 (23,200 CY) and 13 (24,360 CY), this alternative further reduces the tree impacts to forest, SNA and Section 4(f) resources to zero trees in both the immediate and long-term.

An alternative comparison is presented in **Table 2-6**.

**Table 2-6
Comparative Summary of Reduced Runway Length Alternatives**

	Original Condition	No Action	Alternative 12	Alternative 13	Preferred Alternative (Alternative 5a Short)
Forest Impacts (Number of Tree)					
Red/White pine ¹	655	0	515	295	0
Trees in SNA ¹	523	0	184	76	0
Total trees ¹	837	0	794	370	0
Fill in Superior Bay					
Total Volume (CY)	0	0	23,200	24,360	69,800
Volume Below Water	0	0	Not Calculated	Not Calculated	32,200
Volume Above Water	0	0	Not Calculated	Not Calculated	37,600
Total Area (acres) of fill in water	0	0	2.08	3.40	7.49
Project Costs					
Construction ²	\$0	\$0	\$4,153,880	\$5,517,000	\$8,600,000
Tree Management ³	Not Calculated	\$0	\$367,600	\$198,000	\$0
Total Project Cost ¹	Not Calculated	\$8,000,000	\$4,521,480	\$5,715,000	\$8,600,000
DAA Cost	Not Calculated	\$8,000,000	\$782,988	\$749,700	\$860,000
¹ Impacts within the approach surface 2013–2063 predicted with aggressive growth model. ² Includes initial tree management costs ³ Post construction, over 50-year planning period not including required permits and mitigation Note: Original condition included for reference. However, since it is not being considered as an alternative, project costs were not determined. The no action, while it does not meet the purpose and need of the project, is also included for comparison purposes. Fill quantities and area for Alternative 5a Short (preferred alternative) are based on conceptual engineering. However, the fill quantities and areas for Alternatives 12 and 13 are not based on as detailed of engineering analysis since they are only being evaluated for comparison purposes on the basis of total volume (cy).					

Legend

Alternative 5a Short (2,600' Runway)

Future Graded RSA Fill

Pavement to be Removed

Exist./Fut/ Threshold Lights

Exist./Fut/ REILS

Exist./Fut/ PAPIs



Preferred Alternative 5a Short

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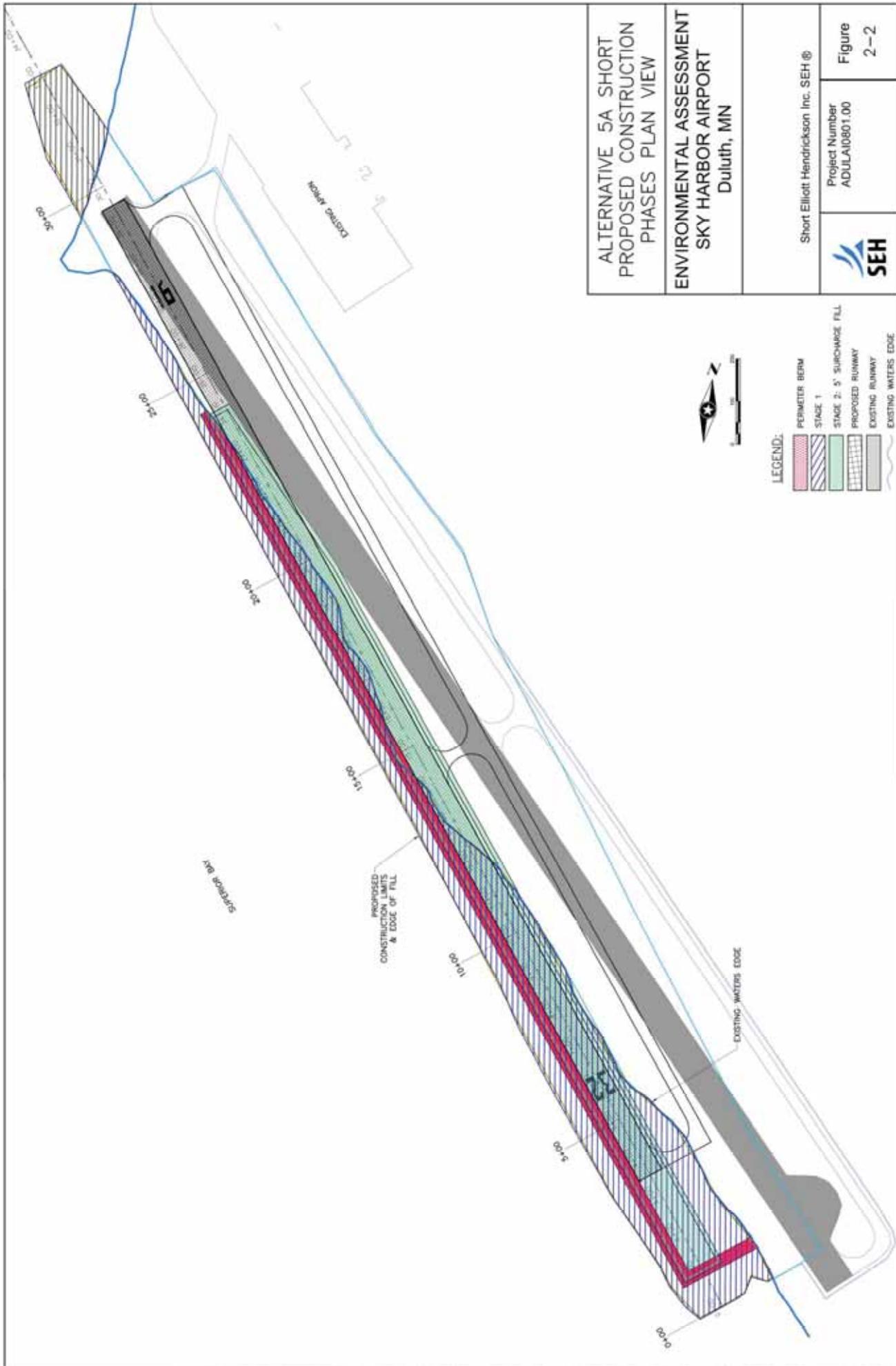


Project Number
ADULA10801.00

Figure
2-1



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ALTERNATIVE 5A SHORT
 PROPOSED CONSTRUCTION
 PHASES PLAN VIEW

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 SKY HARBOR AIRPORT
 Duluth, MN

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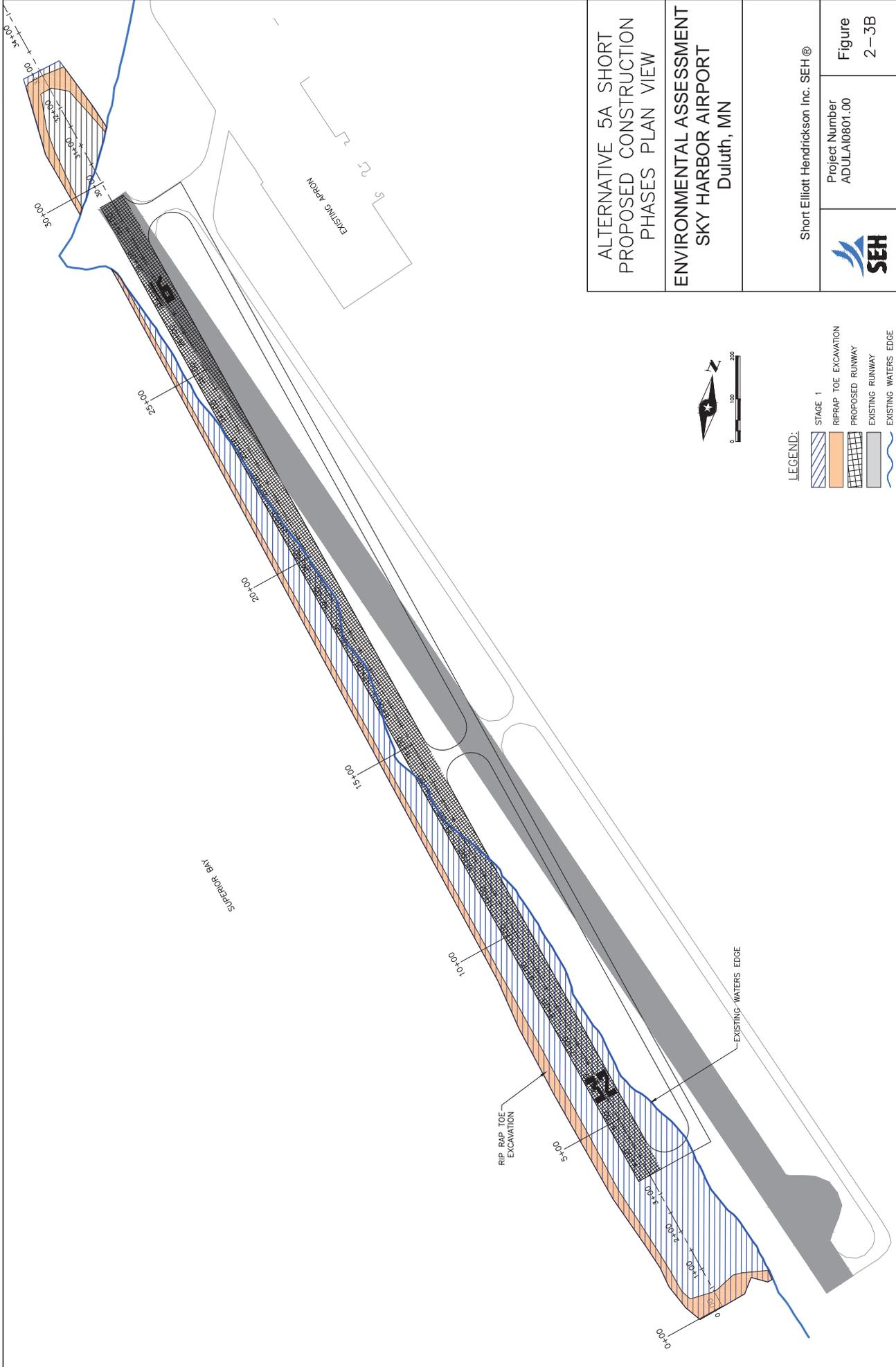


Figure
 2-2

LEGEND:

- PERIMETER BERM
- STAGE 1
- STAGE 2: 5' SURCHARGE FILL
- PROPOSED RUNWAY
- EXISTING RUNWAY
- EXISTING WATERS EDGE

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ALTERNATIVE 5A SHORT
PROPOSED CONSTRUCTION
PHASES PLAN VIEW

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Figure
2-3B

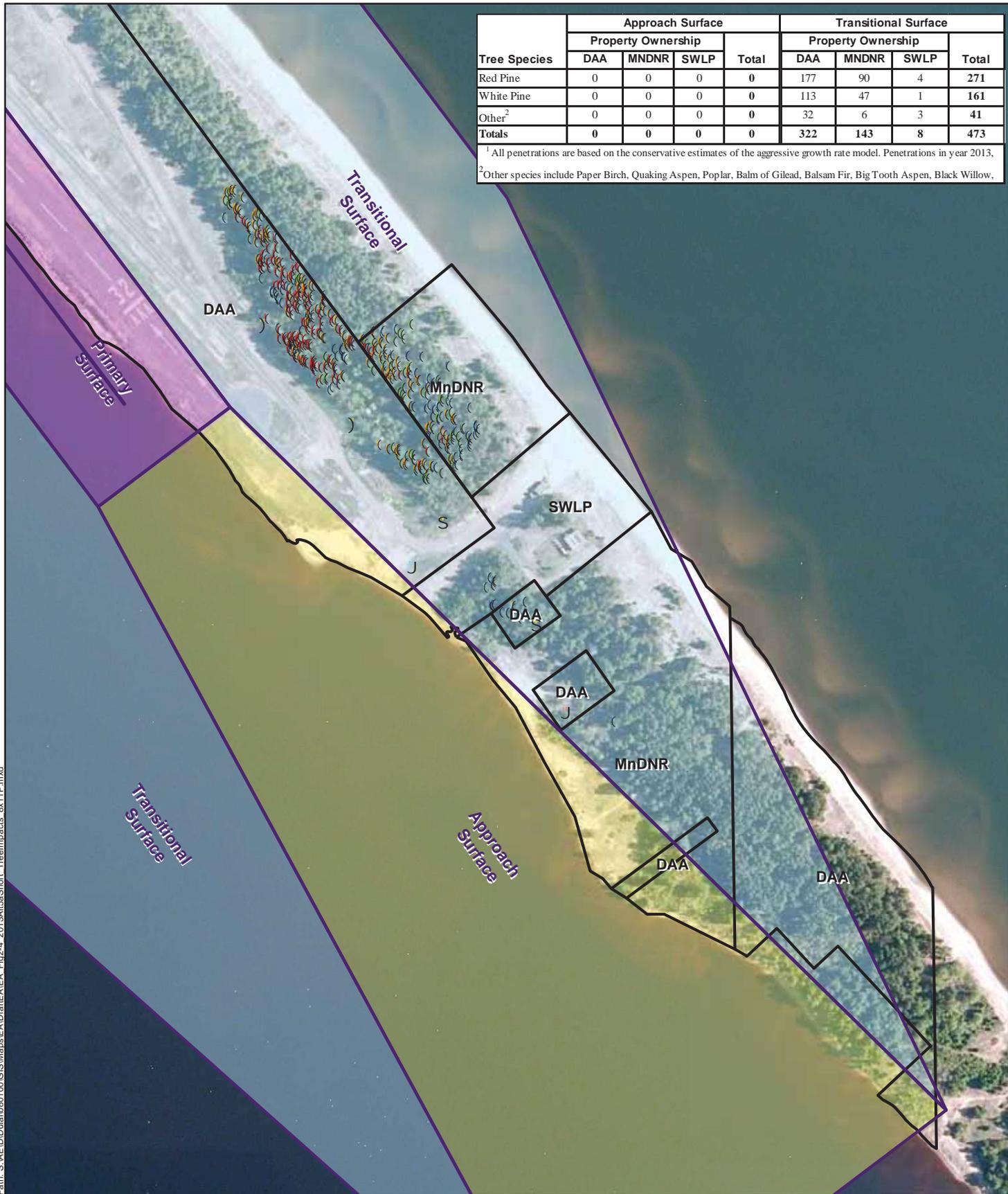
LEGEND:

- STAGE 1
- RIPRAP TOE EXCAVATION
- PROPOSED RUNWAY
- EXISTING RUNWAY
- EXISTING WATERS EDGE

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Tree Species	Approach Surface				Transitional Surface			
	Property Ownership			Total	Property Ownership			Total
	DAA	MNDNR	SWLP		DAA	MNDNR	SWLP	
Red Pine	0	0	0	0	177	90	4	271
White Pine	0	0	0	0	113	47	1	161
Other ²	0	0	0	0	32	6	3	41
Totals	0	0	0	0	322	143	8	473

¹ All penetrations are based on the conservative estimates of the aggressive growth rate model. Penetrations in year 2013.
² Other species include Paper Birch, Quaking Aspen, Poplar, Balm of Gilead, Balsam Fir, Big Tooth Aspen, Black Willow.



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 Scoping Document
 Duluth, Minnesota
 Project: DULAI 122129
 Print Date: 04/29/2014

Legend

Tree Penetrations (Feet)

- 0 - 2
- 2 - 5
- 5 - 10
- 10 - 20
- 20 +

Part 77 Surfaces

- Approach
- Primary
- Transitional

Obstruction Light Symbols

- Existing Obstruction Lights (to remain)
- Existing Obstruction Lights (to be shut off)
- Future Obstruction Light
- New Obstruction Light Eliminated From Plan

Ownership Boundaries

Figure 2-4
Alternative 5a Short 5 Degree Rotate 2013 Obstructions in Plan View

0 400 Feet

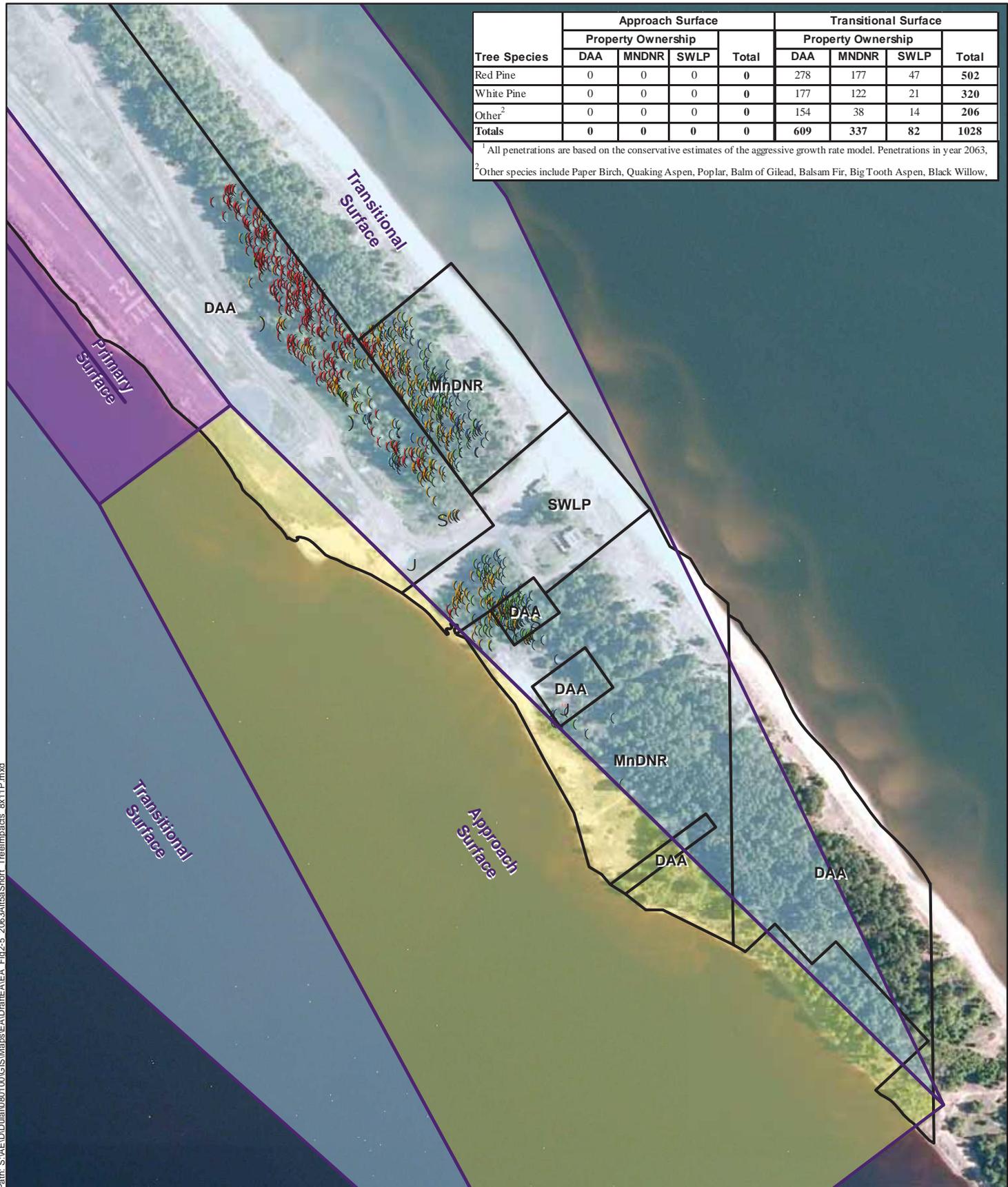
Map by: SRH
 Projection: NAD 83, St. Louis County Transvers Mercator 1996
 Source: USDA NAIP 2008, RS&H, MnDNR, SEH

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Tree Species	Approach Surface				Transitional Surface			
	Property Ownership			Total	Property Ownership			Total
	DAA	MNDNR	SWLP		DAA	MNDNR	SWLP	
Red Pine	0	0	0	0	278	177	47	502
White Pine	0	0	0	0	177	122	21	320
Other ²	0	0	0	0	154	38	14	206
Totals	0	0	0	0	609	337	82	1028

¹ All penetrations are based on the conservative estimates of the aggressive growth rate model. Penetrations in year 2063.
² Other species include Paper Birch, Quaking Aspen, Poplar, Balm of Gilead, Balsam Fir, Big Tooth Aspen, Black Willow.

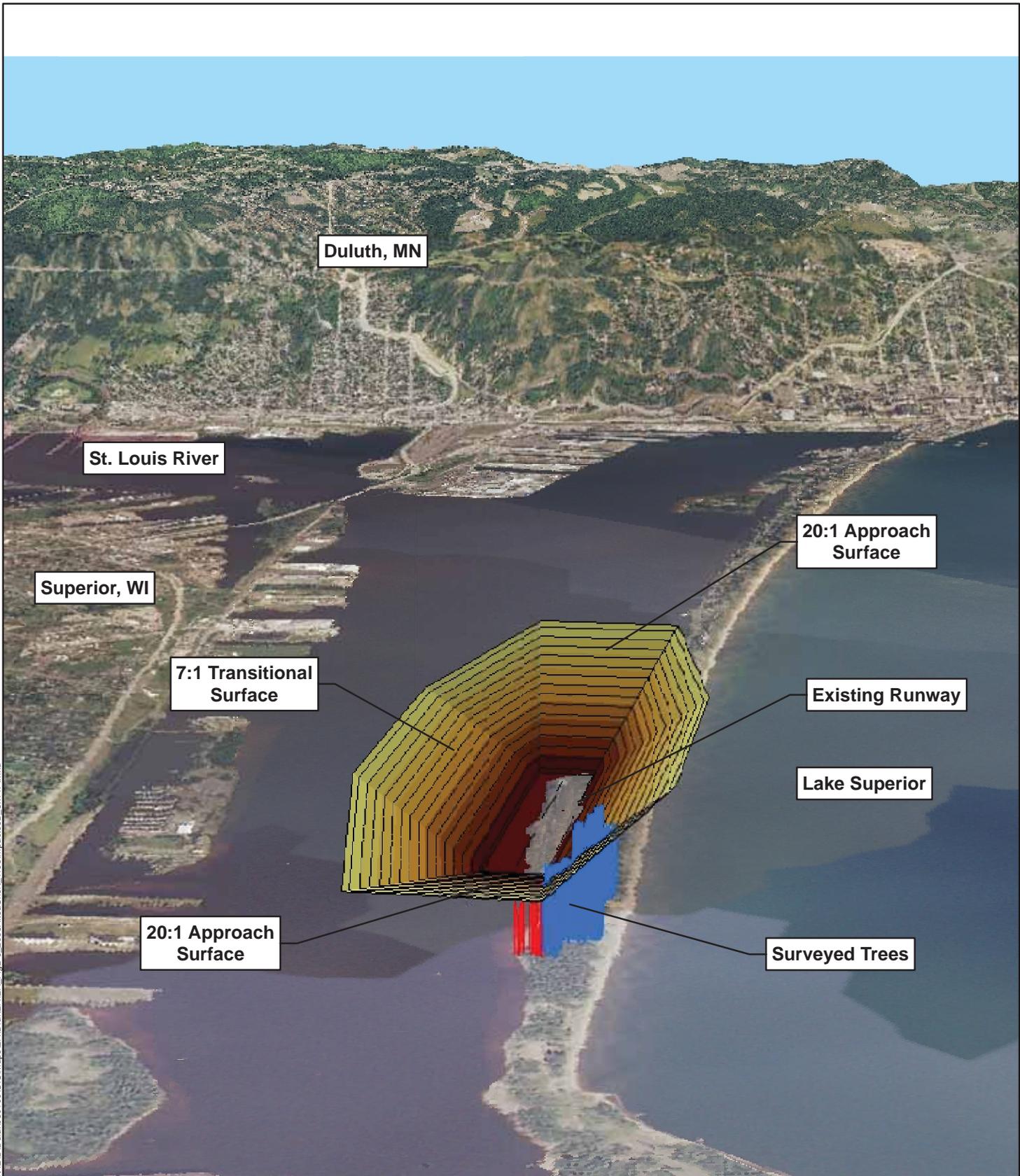


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Legend

-  300' Runway Shift (2,600' Runway)
-  Future Graded RSA Fill
-  Pavement to be Removed
-  Exist./Fut./ Threshold Lights
-  Exist./Fut./ REILs
-  Exist./Fut./ PAPIs



Alternative 12:
300' Shift - 2,600' Runway

ENVIRONMENTAL ASSESSMENT
SKY HARBOR AIRPORT
Duluth, MN

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Figure
2-7

Lake Superior



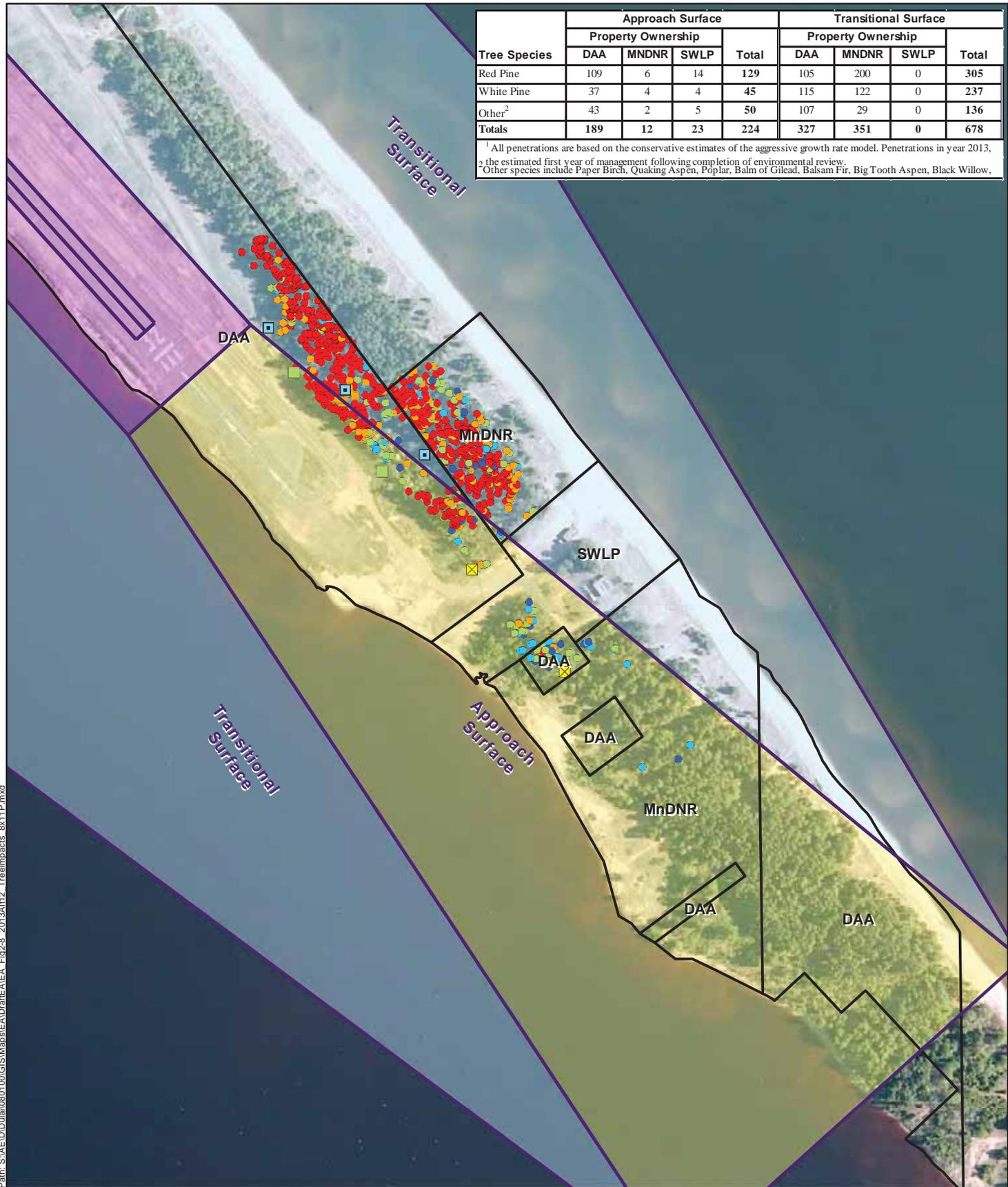
Superior Bay

Navigation Channel

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Tree Species	Approach Surface				Transitional Surface			
	Property Ownership			Total	Property Ownership			Total
	DAA	MNDNR	SWLP		DAA	MNDNR	SWLP	
Red Pine	109	6	14	129	105	200	0	305
White Pine	37	4	4	45	115	122	0	237
Other ²	43	2	5	50	107	29	0	136
Totals	189	12	23	224	327	351	0	678

¹ All penetrations are based on the conservative estimates of the aggressive growth rate model. Penetrations in year 2013, ² the estimated first year of management following completion of environmental review.
³ Other species include Paper Birch, Quaking Aspen, Poplar, Balm of Gilead, Balsam Fir, Big Tooth Aspen, Black Willow.

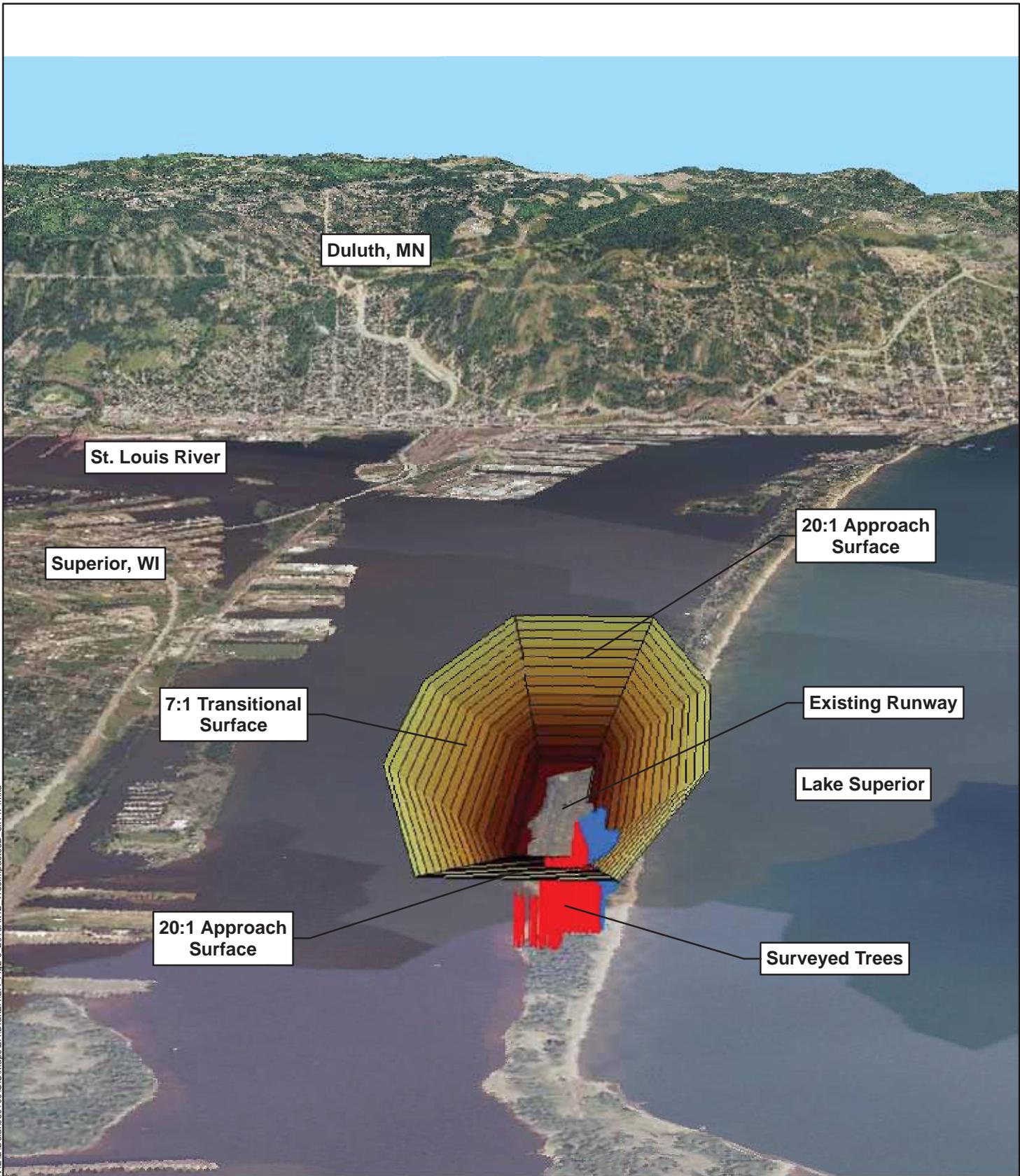


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Environmental Assessment
Duluth, Minnesota

Project: DULAI 122129
Print Date: 12/10/2012

Alt 12 Elevation (feet)	Estimated Tree Growths
FAR Part 77	Approach
605 - 622	Transitional
622 - 638	
638 - 655	
655 - 672	
672 - 689	
689 - 706	
706 - 723	
723 - 739	
739 - 756	

Obstructions based on 2013 Aggressive Growth Model

Figure 2-9
FAR Part 77 Surfaces:
Alternative 12
2013 Obstructions
in 3D

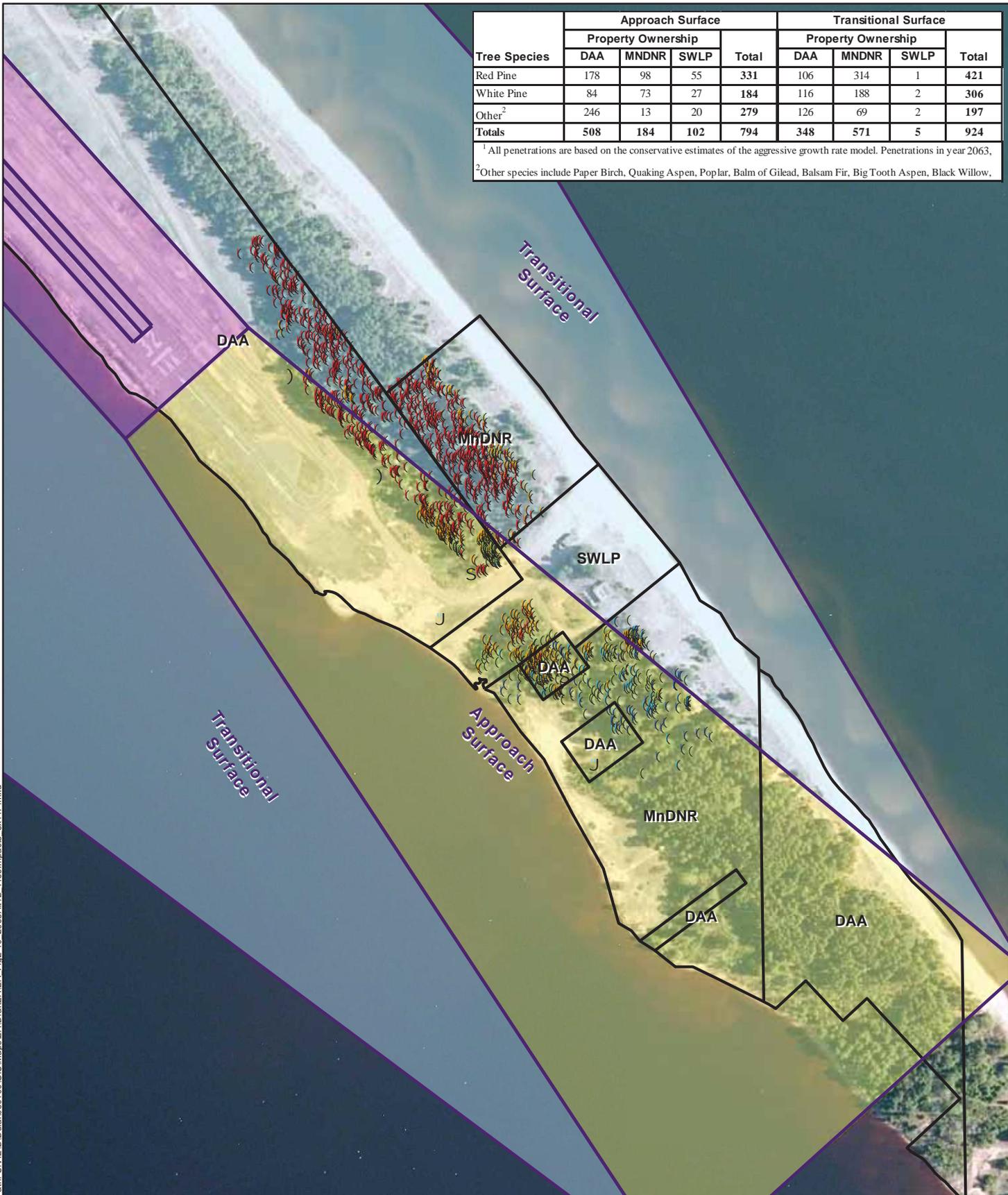
Map by: naa/srh
Projection: NAD 83, St. Louis County Transvers Mercator 1996
Source: USDA NAIP 2008, RS&H, MnDNR, SEH

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Tree Species	Approach Surface				Transitional Surface			
	Property Ownership			Total	Property Ownership			Total
	DAA	MNDNR	SWLP		DAA	MNDNR	SWLP	
Red Pine	178	98	55	331	106	314	1	421
White Pine	84	73	27	184	116	188	2	306
Other ²	246	13	20	279	126	69	2	197
Totals	508	184	102	794	348	571	5	924

¹ All penetrations are based on the conservative estimates of the aggressive growth rate model. Penetrations in year 2063.
² Other species include Paper Birch, Quaking Aspen, Poplar, Balm of Gilead, Balsam Fir, Big Tooth Aspen, Black Willow.

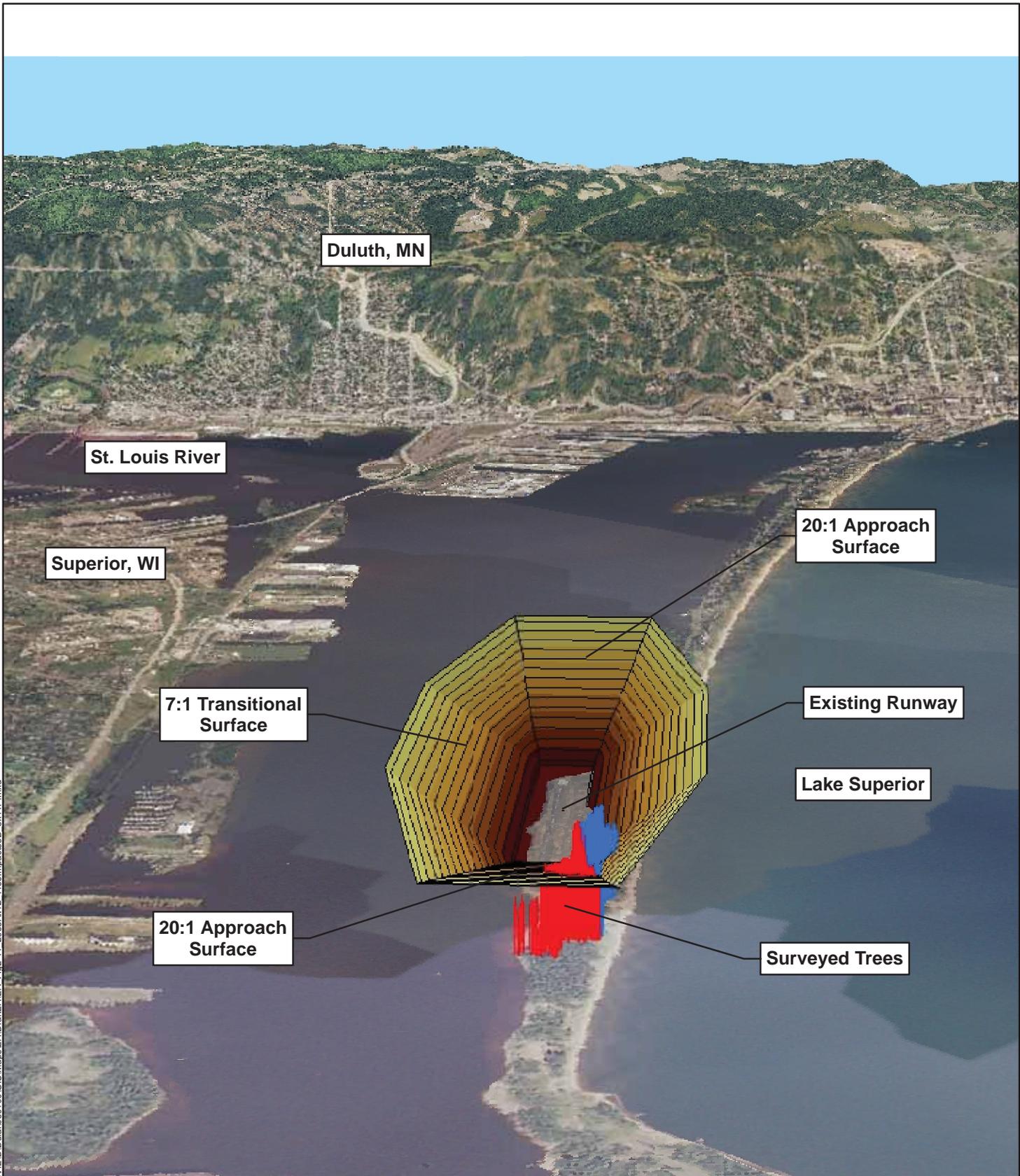


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Legend

-  300' Runway Shift (2,600' Runway)
-  Future Graded RSA Fill
-  Pavement to be Removed
-  Exist./Fut/ Threshold Lights
-  Exist./Fut/ REILs
-  Exist./Fut/ PAPIs



Alternative 13:
300' Shift & 1.5° Rotation -
2,600' Runway

ENVIRONMENTAL ASSESSMENT
SKY HARBOR AIRPORT
Duluth, MN

Short Elliott Hendrickson Inc. SEH®



Project Number
ADULA10801.00

Figure
2-12

Lake Superior

Exist. MnDOT Clear Zone
(500' X 1,000' X 800')

Obstruction Light
Eliminated from
Proposal

Future
Obstruction Light

Exist. Obstruction
Lights (To Remain)

Exist. Runway
3,050' X 75'
(To be removed)

Fut. Runway
2,600' X 60'

Fut. MnDOT Clear Zone
(500' X 1,000' X 800')

Approximate
Construction Limits

Existing Property

Exist. Ramp & Dock

Approximate
Construction Limits &
Edge of Fill

Fut. Approach Surface
120' RSA
(Filled and Graded. Fill
Will Extend Beyond
Graded Limits)

Exist. Approach Surface

Fut. Taxiway

Fut. 120' BSA

Fut. 400' OFA

SNA

SNA

Exist. Approach Surface

Fut. Approach Surface

Exist. Obstruction Lights
(To Be Removed)

Superior Bay

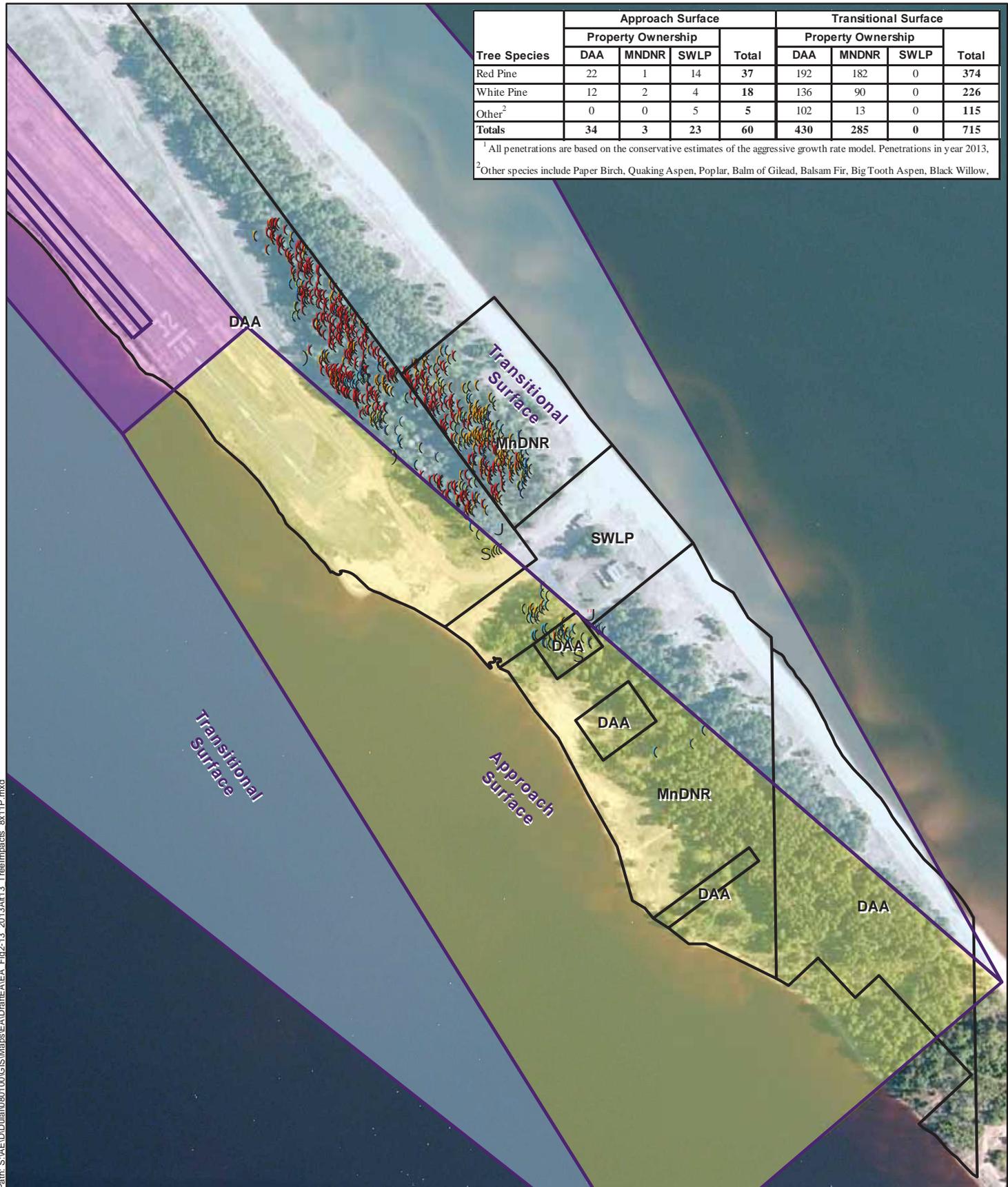
Anchorage Area

Navigation Channel

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Tree Species	Approach Surface				Transitional Surface			
	Property Ownership			Total	Property Ownership			Total
	DAA	MNDNR	SWLP		DAA	MNDNR	SWLP	
Red Pine	22	1	14	37	192	182	0	374
White Pine	12	2	4	18	136	90	0	226
Other ²	0	0	5	5	102	13	0	115
Totals	34	3	23	60	430	285	0	715

¹ All penetrations are based on the conservative estimates of the aggressive growth rate model. Penetrations in year 2013.
² Other species include Paper Birch, Quaking Aspen, Poplar, Balm of Gilead, Balsam Fir, Big Tooth Aspen, Black Willow.



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Duluth Sky Harbor Airport
 Environmental Assessment
 Duluth, Minnesota

Project: DULAI 122129
 Print Date: 04/29/2014

Legend

Tree Penetrations (Feet)

- (0 - 2
- (2 - 5
- (5 - 10
- (10 - 20
- (20+

— Ownership Boundaries

Part 77 Surfaces

- Approach
- Primary
- Transitional

Existing Obstruction Lights (to remain)
 Existing Obstruction Lights (to be shut off)
 Future Obstruction Light
 New Obstruction Light Eliminated From Plan

Figure 2-13
Alternative 13:
2013 Obstructions
in Plan View

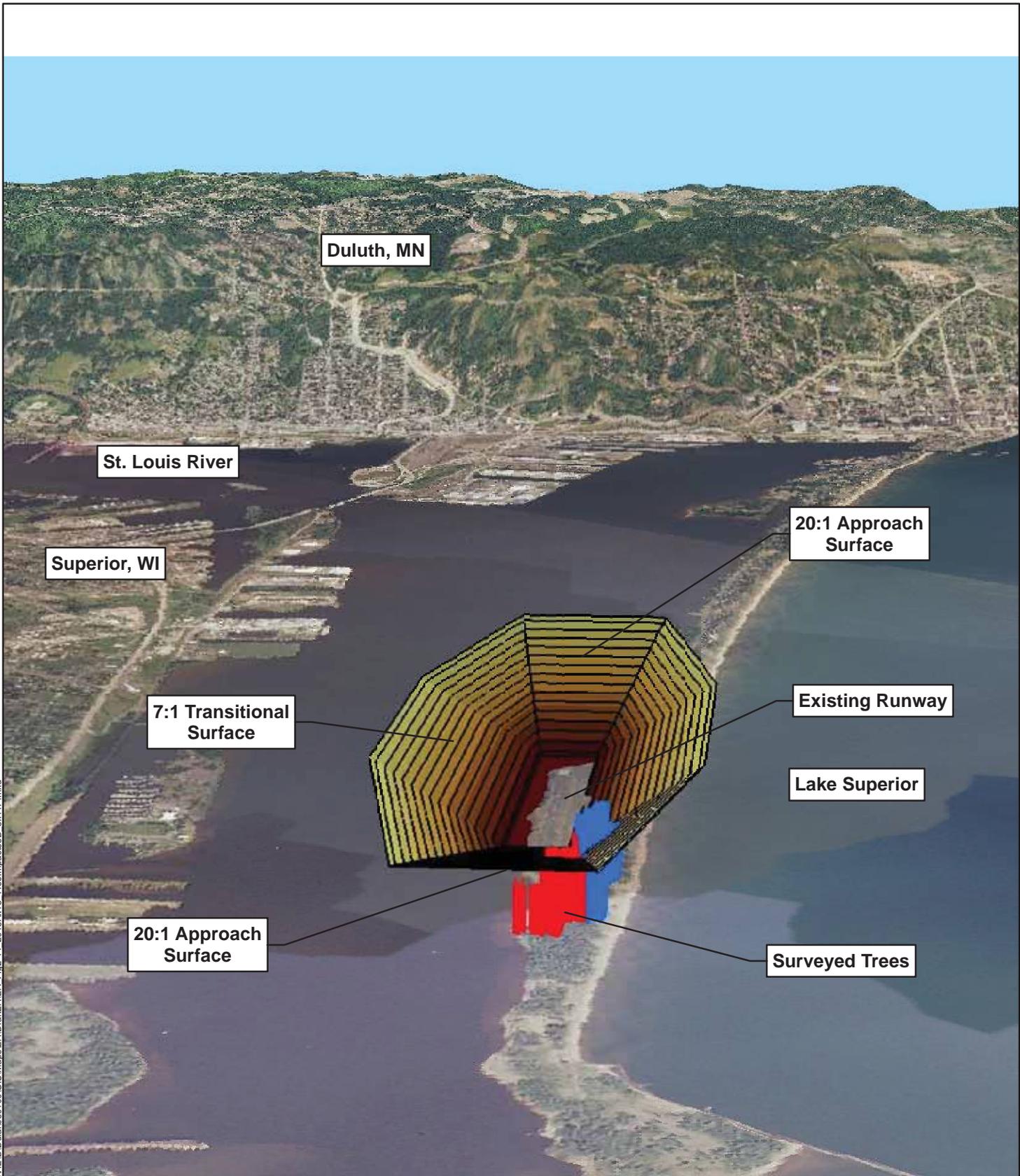
0 400 Feet

4

Map by: naa
 Projection: NAD 83, St. Louis County
 Transvers Mercator 1996
 Source: USDA NAIP 2008, RS&H,
 MnDNR, SEH

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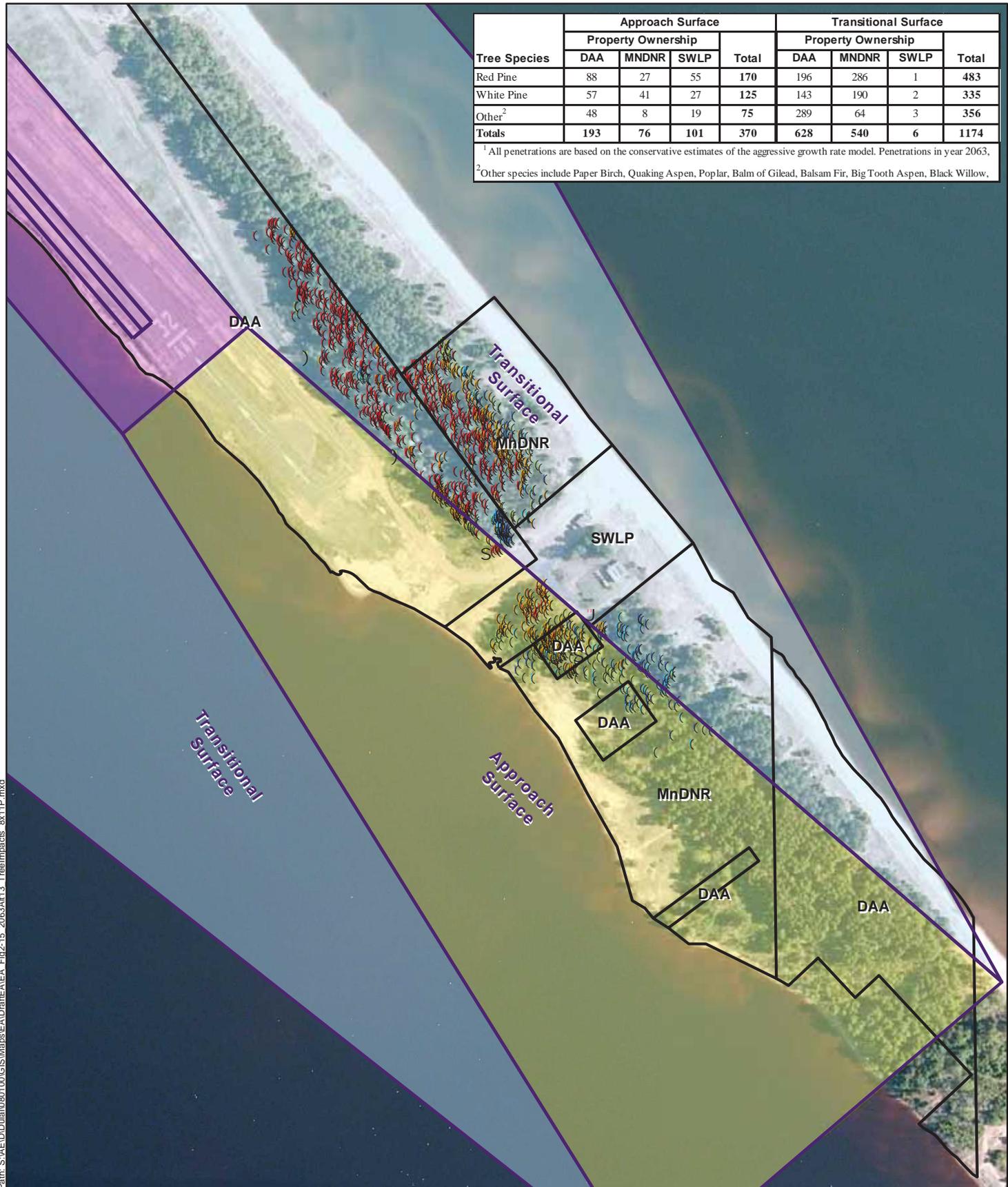
 <p>3535 VADNAIS CENTER DR. ST. PAUL, MN 55110 PHONE: (651) 490-2000 FAX: (651) 490-2150 WATTS: 800-325-2055 www.sehinc.com</p>	<p>Duluth Sky Harbor Airport <i>Environmental Assessment</i> Duluth, Minnesota</p> <p>Project: DULAI 122129 Print Date: 12/10/2012</p>	<table border="0"> <tr> <td>Alt 5A Short Elevation (feet)</td> <td>Estimated Tree Growths</td> </tr> <tr> <td>FAR Part 77</td> <td>Approach</td> </tr> <tr> <td>605 - 622</td> <td>Transitional</td> </tr> <tr> <td>622 - 638</td> <td></td> </tr> <tr> <td>638 - 655</td> <td></td> </tr> <tr> <td>655 - 672</td> <td></td> </tr> <tr> <td>672 - 689</td> <td></td> </tr> <tr> <td>689 - 706</td> <td></td> </tr> <tr> <td>706 - 723</td> <td></td> </tr> <tr> <td>723 - 739</td> <td></td> </tr> <tr> <td>739 - 756</td> <td></td> </tr> </table> <p style="text-align: right;"><i>Obstructions based on 2013 Aggressive Growth Model</i></p>	Alt 5A Short Elevation (feet)	Estimated Tree Growths	FAR Part 77	Approach	605 - 622	Transitional	622 - 638		638 - 655		655 - 672		672 - 689		689 - 706		706 - 723		723 - 739		739 - 756		<p>Figure 2-14 FAR Part 77 Surfaces: Alternative 13 2013 Obstructions in 3D</p>	<p>Map by: naa/srh Projection: NAD 83, St. Louis County Transvers Mercator 1996 Source: USDA NAIP 2008, RS&H, MnDNR, SEH</p>
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Tree Species	Approach Surface				Transitional Surface			
	Property Ownership			Total	Property Ownership			Total
	DAA	MNDNR	SWLP		DAA	MNDNR	SWLP	
Red Pine	88	27	55	170	196	286	1	483
White Pine	57	41	27	125	143	190	2	335
Other ²	48	8	19	75	289	64	3	356
Totals	193	76	101	370	628	540	6	1174

¹ All penetrations are based on the conservative estimates of the aggressive growth rate model. Penetrations in year 2063.
² Other species include Paper Birch, Quaking Aspen, Poplar, Balm of Gilead, Balsam Fir, Big Tooth Aspen, Black Willow.

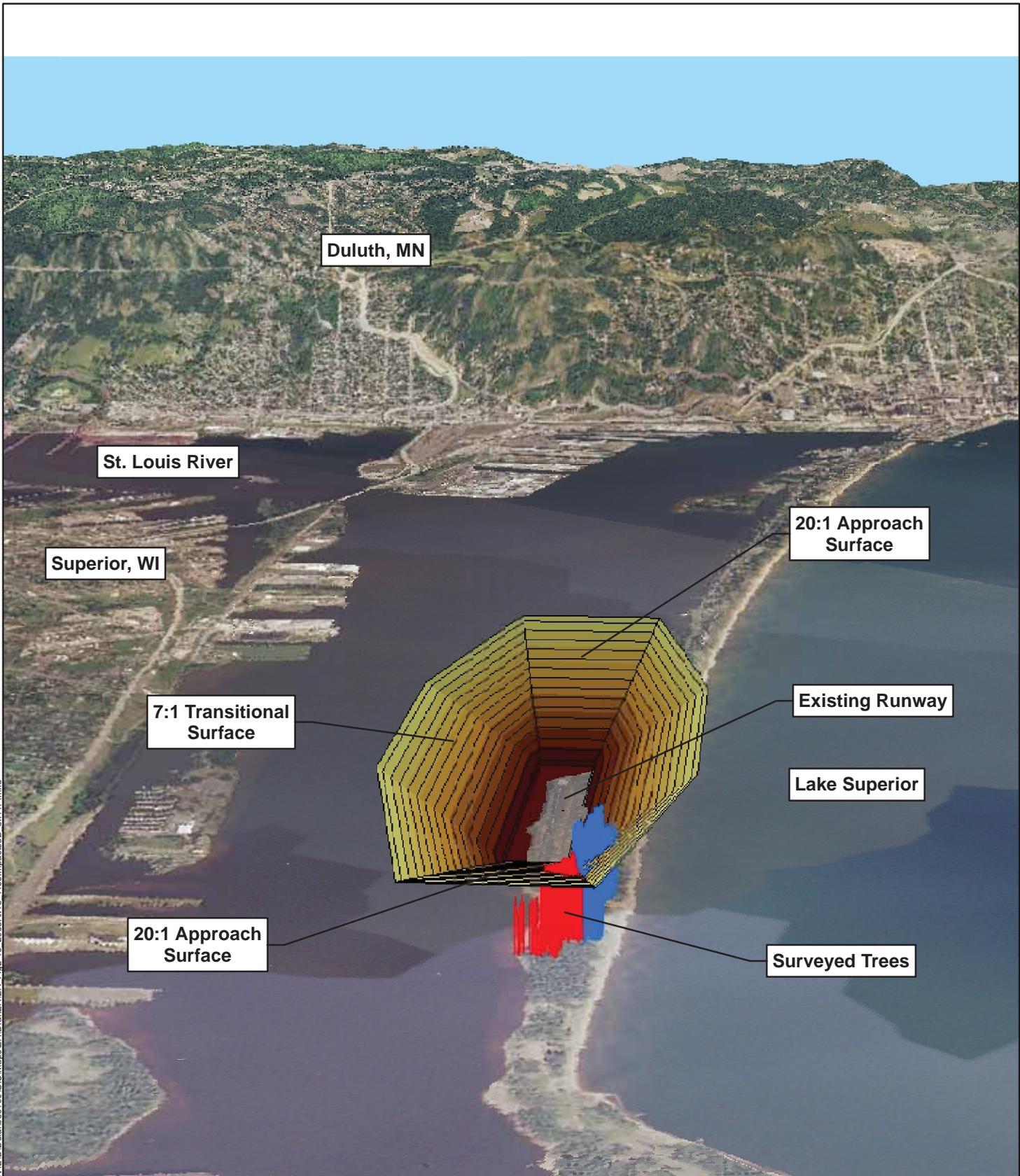


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Chapter 3 Affected Environment, Environmental Consequences & Mitigation

This chapter provides a description of the existing environmental conditions of the project area and of the reasonably foreseeable environmental consequences of the preferred alternative. This chapter also describes impacts from Alternative 13 and the no action alternative and provides the scientific and analytic basis for comparison between the preferred alternative and these other alternatives.

This joint Federal EA/State EAW has been prepared to evaluate the proposed project in accordance with the requirements of both the FAA and the Minnesota Environmental Quality Board (EQB). This joint document combines and integrates the required information from both requirements into a single document.

3.1 Air Quality (*EAW Item 16.a. and Item 16.b.*)

EAW Item 16.a. Stationary source emissions - Describe the type, sources, quantities and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants, and any greenhouse gases. Discuss effects to air quality including any sensitive receptors, human health or applicable regulatory criteria. Include a discussion of any methods used assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.

EAW Item 16.b. Vehicle emissions - Describe the effect of the project's traffic generation on air emissions. Discuss the project's vehicle-related emissions effect on air quality. Identify measures (e.g. traffic operational improvements, diesel idling minimization plan) that will be taken to minimize or mitigate vehicle-related emissions.

The Clean Air Act (CAA), which was last amended in 1990, requires the U.S. Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards [NAAQS - 40 Code of Federal Regulations (CFR) part 50] for pollutants considered harmful to public health and the environment. The CAA established two types of national air quality standards. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

The EPA uses six criteria pollutants as indicators of air quality and has established for each a maximum concentration above which adverse effects on human health may occur. The six criteria pollutants include ozone, which includes 1-hour ozone and 8-hour ozone; carbon monoxide; nitrogen dioxide; sulfur dioxide; particulate matter, which includes PM-10 and PM-2.5; and lead. EPA air quality classifications include:

- Nonattainment – any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.
- Attainment – any area [other than an area identified in clause (i)] that meets the national primary or secondary ambient air quality standard for the pollutant.
- Unclassifiable – any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.
- Maintenance Areas – are previously nonattainment areas that now meet standards.

The information on the EPA Greenbook website (<http://www.epa.gov/air/oaqps/greenbk/index.html>) indicates that there are no non-attainment areas in the City of Duluth and surrounding areas. However, the City of Duluth, including the Airport, is a Maintenance Area for carbon monoxide (CO).

FAA guidance in Order 1050.1E, Section 2.4b states that procedures for air quality analyses are provided in the report *Air Quality Procedures for Civilian Airports and Air Force Bases*. In that report, a NAAQS assessment is required if a project at an airport would have forecasted aviation activity of more than 180,000 annual operations. The current annual operations at the Airport are estimated to be 13,900 according to the current FAA Form 5010 Airport Master Record, below the threshold of operations that would generate emissions in excess of NAAQS conformity standards. According to the FAA Terminal Area Forecasts (Fiscal Year 2012-2032), operations at the Airport are expected to remain at current levels. Any future growth in operations is not expected to result in any substantial change in the number of aircraft operations or the type of aircraft using the Airport. Because the current and forecasted operations are considerably less than the cited thresholds, the potential for degradation of air quality is low and a NAAQS assessment is not required. Air quality analysis may be required for air emissions due to construction traffic.

There are no stationary sources of air emissions at the Duluth-Sky Harbor Airport.

3.1.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

Alternative 5a Short would not directly result in any substantial change in the number of aircraft operations, the type of aircraft using the Airport or automobile traffic at the Airport. Therefore, Alternative 5a Short would not directly contribute to a change or increase in generation of emissions at the Airport.

An air quality analysis for construction emissions will be completed once the route and extent of trucking necessary to bring material to and from the Airport is known.

Alternative 13

Alternative 13 would not directly result in any substantial change in the number of aircraft operations, the type of aircraft using the Airport or automobile traffic at the Airport. Therefore, Alternative 13 would not directly contribute to a change or increase in generation of emissions at the Airport.

An air quality analysis for construction emissions will be completed once the route and extent of trucking necessary to bring material to and from the Airport is known.

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility. Due to Airport closure, aircraft traffic at the Airport and the immediate vicinity would presumably be reduced, thus reducing the emissions generated at the Airport site.

An air quality analysis for construction emissions will be completed once the route and extent of trucking necessary to remove material for demolition of the Airport is known.

3.2 Biological Resources

3.2.1 Fish, Wildlife, and Plants (*EAW Item 7, Item 13.a., Item 13.c., and Item 13.d.*)

EAW Item 7. Cover types. Estimate the acreage of the site with each of the following cover types before and after development.

EAW Item 13.a. Describe fish and wildlife resources as well as habitats and vegetation on or in near the site.

EAW Item 13.c. Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.

EAW Item 13.d. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to fish, wildlife, plant communities, and sensitive ecological resources.

3.2.1.1 Ecological Setting

The project site is within the Northern Superior Uplands (NSU) Section, and more specifically the North Shore Highlands Subsection as defined by the MNDNR Ecological Classification System (ECS) *Field Guide to the Native Plant Communities of Minnesota: the Laurentian Mixed Forest Province* (MNDNR 2003). Assessment of onsite vegetation and wildlife has been completed through numerous field reconnaissance efforts over many years to characterize the unique natural habitat associated with Minnesota Point. The Minnesota Biological Survey (MBS) has assigned native plant community descriptions on the surrounding forest, shrub, and beach native plant communities following the MNDNR's ECS (MNDNR 2003), as depicted in **Figures 3-1a** through **3-1b**.

Vegetative cover immediately surrounding the existing Airport facilities is maintained by mowing to keep grasses and shrubs low to the ground as to not create any potential vegetative obstructions for aircraft utilizing the runway, taxiway, or other ground surfaces. Species common in this open grassland area include Canada bluejoint (*Calamagrostis canadensis*), wheatgrass (*Agropyron* spp.), Canada wild rye (*Elymus canadensis*), and Kentucky bluegrass (*Poa pratensis*). Common forbs present included *Chenopodium* species, beach pea (*Lathyrus japonica*), and *Artemisia* species. Occurrences of beachgrass (*Ammophila breviligulata* – state-listed threatened) and beach heather (*Hudsonia tomentosa* – state-listed threatened) were observed in this area (Pomroy-Petry 2000). This open, grassed area is dominated by a combination of native and non-native herbaceous plant species and is not classified as a native plant community following the MNDNR's ECS. The natural communities surrounding the Airport include forested, shrub, and grassland dunes associated with the sandy shores of Lake Superior.

The ecological setting and native plant communities found on sandy shores of Lake Superior are extremely rare in Minnesota and are primarily confined to Minnesota Point. There are several distinct native forested and non-forested plant communities associated with Minnesota Point found in the project area. Forested communities on the Airport include the old-growth forest, which is also found in the SNA and other areas of Minnesota Point. Mature red pine (*Pinus resinosa*) and white pine (*P. strobus*) are the dominant canopy species in the old-growth forest; the understory and ground cover is a mixture of native species. The old-growth trees in the now urban setting are uniquely significant in Minnesota “by virtue of its presence on Lake Superior sand dunes” (Wilson and Rusterholz 1996), with the red and white pine woodland, its understory components, and ecological setting being the only example of this in Minnesota. The MNDNR (2003) classifies this old-growth forest as Red Pine-White Pine Woodland (MNDNR code FDn32b). This red pine and white pine woodland in the SNA is the last natural remnant of a forest that stretched the length of Minnesota Point, which separates the St. Louis River estuary from Lake Superior (MNDNR 2003). Other examples of this plant community nearby or in a similar ecological setting are essentially limited to nearby Wisconsin Point (in Superior, Wisconsin) and on the lee shore of some islands within Wisconsin's Apostle Islands National Lakeshore near Bayfield, Wisconsin (Wilson and Rusterholz 1996).

Other upland forest communities types are less common in the project area including smaller pure stands of native aspen species (*Populus* spp.) where recent disturbances have resulted in second growth forest cover, and planted pine species: jack pine (*P. banksiana*) and Scotch pine (*P. sylvestris*).

Non-forested communities in the project area are primarily associated with the beach dune soils found along the shoreline and in areas on Minnesota Point. Three unique non-forested plant communities found only within the beach dune landscape setting of Minnesota Point are described by MNDNR (2003) as Beachgrass Dune, Juniper Dune Shrubland, and Sand Beach. The Beachgrass Dune (MNDNR code LKu32a) is an open

community characterized by beach dune formations vegetated primarily by a state-listed threatened species of beachgrass (*Ammophila breviligulata*) and other species of herbs and grasses, some of which are endemic to this unique community. The Juniper Dune Shrubland (MNDNR code LKu32b) is also an open dune community found on rolling, partly stabilized sand dunes inland between the beachgrass-dominated dunes and the forested communities. This shrubland has a patchy cover of shrubs, forbs, graminoids, and lichens; juniper (*Juniperus communis*) is the dominant shrub species. The Sand Beach (MNDNR code LKu32c) is a barren or sparsely vegetated community on sand beaches regularly exposed to wave-wash and ice-scouring. Vegetation in Sand Beach communities is typically limited to species associated with Beachgrass Dune and Juniper Dune Shrubland communities, and temporary establishment by opportunistic non-native species.

One other native, non-forested plant community on and in the vicinity of the Airport is Northern Alder Swamp (FPn73a). The Northern Alder Swamp is present as a small (0.69 acre) isolated basin located southeast of the existing runway, outside of the area proposed for construction. This wetland shrub community is typically dominated by dense cover of speckled alder (*Alnus incana*) and with scattered tree species present greater than six (6) feet tall. Shady conditions in Northern Alder Swamp favor understory coverage by shade-tolerant forbs, graminoids, and mosses typical of forested swamp communities in the state.

In June 2013, a survey for sensitive plant species was conducted by an SEH biologist in the area of a potential obstruction light on DAA property, as well as in potential construction access routes in surrounding SNA property. Two state-listed species were encountered in the potential access route during the survey: beach grass and beach heather. Matricary grapefern (*Botrychium matricariifolium*) was observed within the DAA property. Matricary grapefern is not a state-listed species. Although there are previous records of listed *Botrychium* species in this area, the 2013 survey did not encounter occurrences of these species within the survey area.

Invasive species are present on Minnesota Point and have been addressed in previous plans and studies. Of most concern is the presence of European buckthorn (*Rhamnus cathartica*), which was last recorded in 1999 as existing in small, still manageable patches scattered throughout Minnesota Point's forested areas. Garden variety lily-of-the-valley (*Convallaria majalis*) was also documented as a serious concern. Several species of planted pines have also been documented and recommended for removal by the MNDNR where these conflict with the old-growth forest.

3.2.1.2 Habitat and Wildlife

The forest communities, Juniper Dune Shrubland, and Beachgrass Dune communities provide habitat for a wide array of fauna and wildlife. In particular, Minnesota Point has a long history of bird research and hobby bird watching due in large part to its unique geologic setting, formation, and important presence for nesting, foraging, roosting, and resting/stop-over during annual bird migrations. The most recent study (Hawrot and Nicoletti 1999) on bird assemblages and migration related to Minnesota Point, the *Minnesota Point Environmental Management Plan* (LCMR 1999), and city records, document the species observed at Minnesota Point. Several fauna species found in habitats on Minnesota Point or in the vicinity of the project area include state- and/or federally-listed threatened, endangered, special concern species, or are considered Minnesota Species of Greatest Conservation Need. These species and their presence relative to Minnesota Point are described in some detail in **Section 3.2.2**. No known bald eagle nesting areas, waterbird nesting colonies, or other concentrations of wildlife, with or without special designations or protection requirements, are present within or immediately adjacent to the project area.

Breeding bird assemblages present include species that would be expected in mature and intact forest habitat including, but not limited to, the veery (*Catharus fuscescens*) and wood thrush (*Hylocichla mustelina*). The old-growth forest also provides important habitat for common amphibians, mammals, and macroinvertebrates.

On a regional scale, old-growth forest cover is an uncommon habitat type and is considered important for terrestrial wildlife species.

Beach dune and shoreline habitats provide suitable nesting and foraging habitats for shorebirds, including gulls, terns, plovers and sandpipers. Of these birds, the federally-endangered piping plover (*Charadrius melodus*), which is known to occur in the Superior Bay area, is a concern as it has specific habitat requirements. Piping plovers from the Great Lakes population previously nested on sparsely vegetated dredge spoil in the Superior Bay area, but that population has not been observed to breed in the area since approximately the 1980s. Small numbers of piping plovers are still occasionally observed in the Duluth-Superior Harbor area. Gull exclosures have been constructed across the Superior Entry on Wisconsin Point in recent years, in order to attract nesting plovers. Plover tracks (unknown if these were from piping plover or other similar plover species) have been observed in the exclosures, but as yet no nesting has been documented (St. Louis River Alliance 2013). For mammals, the beach dunes provide habitat for small mammals and rodents that prefer open habitats. Beach dunes can also support unique macroinvertebrate assemblages, including tiger beetles.

3.2.1.3 Fisheries

Two important and distinct fisheries are present in the project area. These include the deep, clear, and cold water of Lake Superior, and the shallow and warmer waters of the Duluth and Superior Harbors and the St. Louis River and Bay. Compared to Lake Superior, Superior Bay generally lacks the cold water species found in the lake, and is subject to a greater degree of environmental variation.

Lake Superior's fish community is composed of Salmonids at the top of a relatively linear food chain. Lake trout (*Salvelinus namaycush*) are the top predator of a prey base that is predominantly comprised of Coregonids (whitefish and cisco family). Other species of game fish common to the region are present as well, particularly in the shallower waters located closest to the existing Airport. Species expected to be present in proximity of the Airport would be those that inhabit shallower waters, such as walleye (*Sander vitreus*) and yellow perch (*Perca flavescens*). Species composition is dependent on habitat, which is primarily composed of sandy flats near the Airport.

The warm water fisheries within the Duluth and Superior Harbors and the Superior Bay are composed of walleye, yellow perch, sauger (*Sander canadense*), northern pike (*Esox lucius*), and panfish (Centrarchids). Lake sturgeon (*Acipenser fulvescens* - state-listed special concern) and eastern elliptio (*Elliptio complanata* - state-listed special concern) are present in the bay. There are records of creek heelsplitter (*Lasmigona compressa* - state-listed special concern) in the bay as well. This is in addition to a diverse assemblage of minnow and bait species. The biggest difference from the Lake Superior fishery is the general lack of Salmonid species within the harbors and river, although they are occasionally present. Habitat within the harbors and the bay near the Airport is primarily shallow to deep, sluggish, tannin-stained waters. Bottom composition is soft sediments and sand. Aquatic vegetation, hard substrates, and cover are generally lacking in the immediate project area, but are present elsewhere in the bay and within the St. Louis River and tributary streams.

Non-fish species are also present within Superior Bay, including the potential for aquatic macroinvertebrates and freshwater mussels. To assess the aquatic community that is present within the harbor, five benthic samples were collected. These samples were collected on October 9, 2012, and were collected using a mini-Ekman dredge. Samples were collected along a transect through the footprint of the potential area of impact (**Figure 3-2**). The samples were collected and provided to the University of Wisconsin Superior for identification. **Table 3-1** provides a summary of the results of the sampling.

The sampling indicates a low diversity of macroinvertebrates, and a dominance of midge larvae and aquatic oligochaetes (worms). These are very common species, and often occur in high densities in areas dominated by sand and organic benthic conditions. One sample collected a small amount of *Hexagenia sp.* mayflies, which are also common burrowing species. This sample location has coarser sediments, and was also correlated to an abundance of zebra mussels (*Dreissena polymorpha*). The change in macroinvertebrate composition reflects the change in benthic habitat. This sample location also collected two individual freshwater mussels which were identified as eastern elliptio, a state-listed special concern species. The eastern elliptio is abundant in the harbor, but vulnerable to zebra mussel infestation.

Overall the aquatic macroinvertebrate community in the sampled area is composed of common species that are expected to be present throughout the harbor area.

**Table 3-1
Aquatic Macroinvertebrates Per Square Meter within Alternative 5a Short Project Area**

Taxon	Sample Number					
	#1	#2	#3	#4	#5	#6
<i>Ephemeroptera</i>						
Ephemeridae						
Hexagenia sp.	172					
<i>Diptera</i>						
Chironomidae						
Chironominae						
Chironomini	2,752	860	1,376	5,676	1,032	344
Tanytarsini	8,772	1,376	3,784	37,324	6,536	2,064
Orthoclaadiinae	860			344		
Tanypodinae	516					
<i>Hydrachnida (mites)</i>						
Aquatic mites				172		
<i>Bivalvia</i>						
Dreissenidae	344					
Sphaeriidae	172			172		
Unionidae (large/rare component)	0					
Elliptio complanata ¹	2					
<i>Oligochaeta</i>						
Tubificidae						
Tubificinae	2,580	344		15,308		1,376
Naidinae	3,784	688	3,784	32,852	3,096	2,408
Total Abundance	20,038	3,268	8,944	91,848	10,664	6,192
¹ Two large mussels were collected in a single sample. Large/rare components cannot be extrapolated to determine density per square meter. Value is the total number of specimens collected.						

3.2.1.4 Environmental Consequences (EAW Item 7)

The following before and after land cover descriptions are provided based on the existing condition and the proposed change in land cover based on the preferred alternative, and any projected changes that could occur under Alternative 13 and the no action alternative (See **Table 3-2**). These data are provided for comparative purposes between the three alternatives considered.

**Table 3-2
Comparative Cover Type Changes per Each Alternative Action**

Preferred Alternative – 5a Short					
	Before	After		Before	After
Types 1-8 Wetlands	0.00	0.00	Lawn/Landscaping	15.58	24.26
Wooded/Forest	4.26	4.26	Impervious Surfaces	7.64	5.61
Brush/Grassland	33.88	33.88	Stormwater Pond	0.00	0.00
Cropland	0.00	0.00	Other (Water)	96.04	88.55
			Other (Sandy Beach)	2.03	2.03
			TOTAL¹	159.44	159.44
Alternative 13					
	Before	After		Before	After
Types 1-8 Wetlands	0.59	0.59	Lawn/Landscaping	19.26	24.57
Wooded/Forest	14.98	11.84	Impervious Surfaces	7.64	5.74
Brush/Grassland	30.22	33.36	Stormwater Pond	0.00	0.00
Cropland	0.00	0.00	Other (Water)	79.95	76.55
			Other (Sandy Beach)	3.61	3.61
			TOTAL¹	156.25	156.25
No Action Alternative					
	Before	After		Before	After
Types 1-8 Wetlands	0.00	0.00	Lawn/Landscaping	6.36	6.36
Wooded/Forest	0.00	0.00	Impervious Surfaces	7.65	0.00
Brush/Grassland	0.00	0.00	Stormwater Pond	0.00	0.00
Cropland	0.00	0.00	Other (Public Recreational Land)	0.00	7.65
			TOTAL	14.00	14.00
¹ Acreage of project area includes the construction area plus the area of the approach surface.					

Preferred Alternative: Alternative 5a Short

The preferred alternative (Alternative 5a Short) would avoid land cover changes to the natural terrestrial vegetation surrounding the Airport. This alternative would result in 69,800 cubic yards of fill over 7.49 acres in the harbor [the “Other (Water)” category]. Transport of fill material will follow procedures in MNDNR Operational Order 113 in order to reduce the risk of introduction or spread of invasive species. Some reduction in impervious surface would result due to the shortened runway and taxiway length (2,600 feet compared to the existing 3,050 feet) under this alternative. The area surrounding the Airport facilities, including the runway and taxiway, would be maintained as mowed grass or other low vegetation (see proposed native grass seed mix in **Table 2-2**). This accounts for the approximately 8.68 acres of increased land cover identified as “lawn/landscaping” in **Table 3-2**.

The existing forested habitat on Minnesota Point would remain intact and would not be affected by the preferred alternative. The construction limits for the project are shown on **Figure 2-1**. The area around the existing runway and taxiway is maintained by mowing and is free of trees and tall shrubs. Although not identified by the MBS with a native plant community code, previous plant surveys (Pomroy-Petry 2000) indicated this area is a mix of low-growing grasses, forbs, and shrubs with occasional bare patches of sandy soil. Records of beach heather (*Hudsonia tomentosa*) and beachgrass (*Ammophila breviligulata*), both state-listed threatened species, have been recorded in the vicinity. The anticipated construction limits for Alternative 5a Short would be restricted to that area on or immediately adjacent to the mowed/maintained areas of the existing runway (see **Figure 2-1**) and outward to Superior Bay, thereby avoiding potential conflicts with potential areas of native plant communities. The impacts would be limited to those areas adjacent to the existing runway that were disturbed during the initial Airport construction. Alternative 5a Short includes approximately 2.2-acres of impact to existing disturbed/non-native grassland areas (included in the “Lawn/Landscaping” cover type). The area that would be disturbed is maintained as mowed turf and has low potential to contain the listed species beachgrass and beach heather. After construction, the balance of land cover on site will be a net gain of 8.68 acres (24.26-acres proposed minus 15.58-acres existing) in the Lawn/Landscaping cover type, as shown in **Table 3-2** above. Locations of plant communities present pre- and post-construction are shown in **Figure 3-1b** and **Figure 3-1c**.

Initially, the preferred alternative proposed impacts to native habitat due to light vehicle traffic necessary for construction of the southernmost new obstruction light on DAA property as shown on **Figure 2-1**. It would have been necessary for light vehicle traffic to travel through the MNDNR property to access the new obstruction light, potentially disturbing a path 12 feet wide of Juniper Dune Shrubland community in order to access the proposed site. This disturbance would have been temporary,. A survey for rare species was completed in this area in 2013. Beach grass and beach heather are present outside the DAA property in the Juniper Dune Shrubland community, and could be directly impacted by construction traffic if the DAA property was accessed from the harbor side. . In an effort to avoid impacts to native plant communities, listed species, and potential habitat for piping plover and hairy-necked tiger beetle, the second new obstruction light has been removed from the preferred alternative. The proposal now includes only one new obstruction light on DAA property in disturbed/non-native grassland habitat. If the second new obstruction light is required for safety reasons, a permit will be sought from the commissioner of the DNR to access the SNA property, and coordination with DNR will take place regarding potential impacts to State listed threatened species. Consultation with USFWS would also take place for potential impacts to the piping plover.

The reconstruction of the runway and the placement of fill within the harbor would affect the warmer water aquatic community and may require mitigation. This fill will reduce the overall habitat for fish and other aquatic species. This is a direct loss of habitat, although the majority of the habitat lost is moderately shallow water depths, with silt and sand bottom, and no submerged or emergent vegetation. As the benthic community is currently composed of common and abundant species, the impacts to wildlife are minimal.

Mitigation for the lost habitat may be completed through DAA contributions to projects in the Harbor with proximity to the Airport. Mitigation will likely include projects that can have aquatic habitat benefits to the Superior Bay and/or the St. Louis River Area of Concern (AOC). Other collective socioeconomic benefits to the natural and human environment in this area will be considered for compensatory mitigation. These could include such items as a land swap for DAA property adjacent to the SNA. This would contribute to placing ecologically important terrestrial resources containing rare habitat for federally and state listed threatened and endangered species into public conservation and preservation. The exact project mitigation will be determined during project design once impacts are known.

The proposed action will also utilize riprap to stabilize the shoreline, which will provide a habitat similar to what is present currently. Riprap can provide for a habitat type that may be lacking within the harbor, and is of greater benefit to fisheries than would be provided by a grouted structure, retaining wall, or sheet piling.

In general, the aquatic macroinvertebrate community present in the project area is composed of common and abundant species, which would not be impacted by the project. The exception to this may be the presence of freshwater mussels, which are generally less abundant, and less resilient to recovery from disturbance. The aquatic macroinvertebrate sampling completed by SEH confirmed that eastern elliptio (state-listed special concern) mussels are present within the project area, although not at great abundance. Other mussel species were not collected during the sampling, but may be present. Suitable mussel habitat is present within the project area, and is present throughout the entire St. Louis River estuary. It is assumed that some quantity of mussels would be directly impacted by the project, as would a loss of suitable habitat. The lost habitat, and the quantity of eastern elliptio that would be impacted, are minor in relation to the overall habitat present, and would not have negative impacts on the species.

Correspondence with the MNDNR during preparation of the Draft EA indicated that no additional coordination with the MNDNR will be necessary for the eastern elliptio, other mussel species, or aquatic macroinvertebrates that may be present within the project limits. Mitigation measures for loss of aquatic habitat, if required, will be coordinated with the MNDNR when any authorizations/permits are made for in-water impacts, and with the USACE per any special conditions that may be included in the federal Clean Water Act permit.

The presence of a fishery in the project area also requires a period of no activity within the bed of the lake. This is to ensure that there are no disturbances during the spawning period, where impacts can be aggravated. Within the northeast portion of the state, no work may be completed within a lake between April 1 and June 30. A waiver for work within restriction dates may be sought if necessary to achieve the construction and funding schedule.

Alternative 13

Alternative 13 would result in land cover changes. The construction of Alternative 13 would result in the cutting or topping of 370 trees (295 pines and 76 trees within the SNA), which is more than preferred alternative. This would affect the old-growth forest and would lessen quality habitat for migratory birds and other fauna. Presumably, if portions of the forest were altered due to cutting, topping, or full removal, management of the remaining area would be in the form of low growing vegetation complementary to the nearby low shrubland community on the edges of the forest. Although this habitat has value for wildlife, it would be a change from the existing forest. Land-side parcel acquisition contiguous with the SNA and with the potential to contribute to the viability and integrity of habitat within the SNA might be considered to compensate for this loss. Development of an enhancement plan for existing DAA forested property could also be considered, to provide consistency with and aid in management of forested SNA property and adjacent forested areas.

The area around the existing runway and taxiway is maintained by mowing and is free of trees and tall shrubs. Although not identified by the MBS with a native plant community code, previous plant surveys (Pomroy-Petry 2000) indicated this area is a mix of low-growing grasses, forbs, and shrubs with occasional bare patches of sandy soil. Records of beach heather (*Hudsonia tomentosa*), a state-listed threatened species, and beachgrass (*Ammophila breviligulata* - state-listed threatened), have been recorded in the vicinity. The anticipated construction limits for Alternative 13 would restrict the construction limits to that area on or immediately adjacent to the mowed/maintained areas of the existing runway (see **Figure 2-10**) and outward to Superior Bay, thereby avoiding potential conflicts with potential areas of native plant communities. The impacts would be limited to those areas adjacent to the existing runway that were disturbed during the initial

Airport construction. The area surrounding the Airport facilities, including the runway and taxiway, would be maintained as mowed grass or other low vegetation. This accounts the approximately 5.31 acres of increased land cover identified as “lawn/landscaping” in **Table 3-2**. Changes in impervious surface are based on the shortened runway and taxiway length associated with this alternative (2,600 feet compared to the existing 3,050 feet).

Initially, Alternative 13 proposed impacts to native habitat due to light vehicle traffic necessary for construction of the southernmost new obstruction light on SWLP property as shown on **Figure 2-12**. It would have been necessary for light vehicle traffic to access the new obstruction light, potentially disturbing a path 12 feet wide of Juniper Dune Shrubland community. This disturbance would have been temporary. A survey for rare species was completed in this area in 2013. Beach grass and beach heather are present outside the DAA property in the Juniper Dune Shrubland community, and could be directly impacted by construction traffic if the DAA property was accessed from the harbor side. In an effort to avoid impacts to native plant communities, listed species, and potential habitat for piping plover and hairy-necked tiger beetle, the second obstruction light has been removed from Alternative 13. The proposal now includes only one new obstruction light on DAA property in disturbed/non-native grassland habitat. If the second new obstruction light is required for safety reasons, coordination with DNR will take place regarding any potential impacts to State listed threatened species. Consultation with USFWS would also take place for potential impacts to the piping plover.

This alternative requires the placement of 24,360 CY of material that will decrease the “Other (Water)” cover type by 3.40 acres within the harbor (see **Table 3-2**), which would affect the warmer water aquatic community and may require mitigation. Transport of fill material will follow procedures in MNDNR Operational Order 113 in order to reduce the risk of introduction or spread of invasive species. This is a smaller volume and area of fill as compared to the preferred alternative (Alternative 5a Short), which would place approximately 69,800 CY of material over a 7.49 acre area. This fill will reduce the overall habitat for fish and other aquatic species. This is a direct loss of habitat, although the majority of the habitat lost is moderately shallow water depths, with silt and sand bottom, and no submerged or emergent vegetation. As the benthic community is currently composed of common and abundant species, the impacts to wildlife are minimal. Mitigation for the lost habitat may be completed through DAA contributions to projects in the Harbor with proximity to the Airport. Mitigation will likely include projects that can have aquatic habitat benefits to the Superior Bay and/or the St. Louis River Area of Concern (AOC). Other collective socioeconomic benefits to the natural and human environment in this area will be considered for compensatory mitigation. These could include such items as a land swap for DAA property adjacent to the SNA. This would contribute to placing ecologically important terrestrial resources containing rare habitat for federally and state listed threatened and endangered species into public conservation and preservation.

Alternative 13 will also utilize riprap to stabilize the shoreline, which will provide a similar habitat to the riprap armored shoreline present currently. Riprap can provide for a habitat type that may be lacking within the harbor, and is of greater benefit to fisheries than would be provided by a grouted structure, retaining wall, or sheet piling.

In general, the aquatic macroinvertebrate community present in the project area is composed of common and abundant species, which would not be impacted by the project. The exception to this may be the presence of freshwater mussels, which are generally less abundant, and less resilient to recovery from disturbance. The aquatic macroinvertebrate sampling completed by SEH confirmed that eastern elliptio (state-listed special concern) mussels are present within the project area, although not at great abundance. Other mussel species were not collected during the sampling, but may be present. Suitable mussel habitat is present within the project area, and is present throughout the entire St. Louis River estuary. It is assumed that some quantity of mussels would be directly impacted by the project, as would a loss of suitable habitat. The lost habitat, and

the quantity of eastern elliptio that would be impacted, are minor in relation to the overall habitat present, and would not have negative impacts on the species.

Correspondence with the MNDNR during preparation of the Draft EA indicated that no additional coordination with the MNDNR will be necessary for the eastern elliptio, other mussel species, or aquatic macroinvertebrates that may be present within the project limits. Mitigation measures for loss of aquatic habitat, if required, will be coordinated with the MNDNR when any authorizations/permits are made for in-water impacts, and with the USACE per any special conditions that may be included in the federal Clean Water Act permit.

The presence of a fishery in the project area also requires a period of no activity within the bed of the lake. This is to ensure that there are no disturbances during the spawning period, when impacts can be aggravated. Within the northeast portion of the state, no work may be completed within a lake between April 1 and June 30. A waiver for work within restriction dates may be sought if necessary to achieve the construction and funding schedule.

No Action

The no action alternative would result in ultimate closure of the Airport. Removal of the Airport facilities would not affect the existing fish and wildlife resources on Minnesota Point. It is assumed that impervious surfaces, including the runway and all Airport facilities would be removed and land reclamation would be undertaken. It is unknown what the ultimate land cover at the Airport would be if the Airport were to close. However, it is known that the property would be required to be maintained for public recreational use. For this reason, any area of land cover that would change due to the Airport closure is reflected in the category labeled as “Other (Public Recreational Land)”.

3.2.2 Rare Species Including Federal Threatened and Endangered Species (EAW Item 13.b.)

EAW Item 13.b. Rare species. Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota County Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA-614) and/or correspondence number (ERDB _____) from which the data were obtained and attach the Natural Heritage letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.

3.2.2.1 Rare Species

A search of the MNDNR Natural Heritage Information System (NHIS) database was performed to identify known occurrences of rare plant and animal species on and around the existing airport. The most recent data available from the NHIS in 2012 identifies 37 known occurrences of rare species, native plant communities, or ecological features within a one-mile radius of the existing airport or within Minnesota Point. The species that were identified within one-mile of the Airport or within habitat on Minnesota Point are summarized in **Table 3-3**. Beach dune and shoreline habitats provide suitable nesting and foraging habitats for shorebirds, including gulls, terns, plovers and sandpipers. Of these birds, the federally-endangered piping plover (*Charadrius melodus*), which is known to occur in the Superior Bay area, is a concern as it has specific habitat requirements. Piping plovers from the Great Lakes population previously nested on sparsely vegetated dredge spoil in the Superior Bay area, but that population has not been observed to breed in the area since approximately the 1980s. Small numbers of piping plovers are still occasionally observed in the Duluth-Superior Harbor area. Gull exclosures have been constructed across the Superior Entry on Wisconsin Point in recent years, in order to attract nesting plovers. Plover tracks (unknown if these were from piping plover or

other similar plover species) have been observed in the exclosures, but as yet no nesting has been documented (St. Louis River Alliance 2013).

**Table 3-3
Rare Species/Ecological Features within One-Mile
of Existing Airport or within Habitat on Minnesota Point**

Common Name	Scientific Name	Resource Type	Number of Records	Protection Status
Piping plover	<i>Charadrius melodus</i>	Bird	6	Federally-listed Endangered State-listed Endangered
Common tern	<i>Sterna hirundo</i>	Bird	4	State-listed Threatened
Lake sturgeon	<i>Acipenser fulvescens</i>	Fish	1	State-listed Special Concern
Hairy necked tiger beetle	<i>Cincidela hirticollis rhodensis</i>	Insect	5	State-listed Endangered
Eastern pipistrelle	<i>Pipistrellus subflavus</i>	Mammal	1	State-listed Special Concern
Eastern elliptio ¹	<i>Elliptio complanata</i>	Mussel	2	State-listed Special Concern
Beach grass	<i>Ammophila breviligulata</i>	Plant	2	State-listed Threatened
Bur marigold	<i>Bidens discoidea</i>	Plant	1	State-listed Special Concern
Pointed moonwort	<i>Botrychium acuminatum</i>	Plant	1	State-listed Special Concern
Matricary grapefern	<i>Botrychium matricariifolium</i>	Plant	2	Non-status
Michigan grapefern	<i>Botrychium michiganense</i>	Plant	1	Non-status
Pale moonwort	<i>Botrychium pallidum</i>	Plant	1	State-listed Special Concern
St. Lawrence grapefern	<i>Botrychium rugulosum</i>	Plant	1	State-listed Threatened
Least moonwort	<i>Botrychium simplex</i>	Plant	1	State-listed Special Concern
Slender hairgrass	<i>Deschampsia flexuosa</i>	Plant	1	State-listed Threatened
Beach heather	<i>Hudsonia tomentosa</i>	Plant	4	State-listed Threatened
Clustered bur-reed	<i>Sparganium glomeratum</i>	Plant	2	Non-status
Lake and wetland deposition (quaternary)	N/A	Ecological feature	1	N/A
Native plant community, undetermined class (red pine forest)	N/A	Ecological feature	1	Scientific and Natural Area (SNA) and Minnesota Land Trust
Sand beach (Lake Superior) Type	N/A	Ecological feature	1	N/A

Notes:

A species is considered federally endangered if the species is threatened with extinction throughout all or a significant portion of its range within the United States for species listed under the federal Endangered Species Act.

A species is considered endangered in Minnesota if the species is threatened with extinction throughout all or a significant portion of its range within Minnesota for species listed under the Minnesota Endangered Species Statute.

A species is considered threatened in Minnesota if the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range within Minnesota for species listed under the Minnesota Endangered Species Statute.

Table 3-3 (Continued)
Rare Species/Ecological Features within One-Mile
of Existing Airport or within Habitat on Minnesota Point

Notes:

A species is considered a species of special concern in Minnesota if, although the species is not endangered or threatened, it is extremely uncommon in Minnesota, or has unique or highly specific habitat requirements and deserves careful monitoring of its status. Species on the periphery of their range that are not listed as threatened may be included in this category along with those species that were once threatened or endangered but now have increasing or protected, stable populations; for species listed under the Minnesota Endangered Species Statute.

N/A or Not Applicable is assigned to ecological features that do not have scientific names or have state or federal protection status.

Non-status implies that the species does not have any state protection status, but the species or its habitat are tracked by the MNDNR, and/or the species could be a candidate for state listing in the future.

¹ Occurrence of eastern elliptio was documented in the benthos survey conducted in 2012; the record was not retrieved from the NHIS database.

3.2.2.2 Old-growth Pine Forest

The mixed aged pine forest is found on stabilized sand dunes (MNDNR 2003), which are a function of the strong lakeside winds that created and maintain the sand dunes on the point. The sand spit itself was probably formed about 5,000 years ago and is one of the “newest” (geologically speaking) examples of this type of feature in the bay. The sand spit began forming as beach drifting sand was transported by wave action from the south shore of the lake (Wisconsin side) and was then deposited on the north shore (Minnesota side) (Wilson and Rusterholz 1996). This approximately 10-mile spit of land ultimately dammed the St. Louis River, which accounts for the relatively safe inland port in Duluth-Superior (Ojakangas and Match 1982).

The uniqueness of the forest stand and its location on Minnesota Point are key factors as to how this resource contributes to Minnesota’s natural heritage. The red and white pine woodland in the SNA is the last natural remnant of a forest that stretched the length of Minnesota Point, which separates the St. Louis River estuary from Lake Superior (MNDNR 2003). Classification of trees in the SNA forest as meeting the “old-growth” criteria set forth by the MNDNR requires that a natural forest has developed over a long period of time, generally at least 120 years, without experiencing severe, stand-replacing disturbance (e.g., fire, windstorm, or logging). The old-growth trees in the now urban setting are uniquely significant in Minnesota “by virtue of its presence on Lake Superior sand dunes” (Wilson and Rusterholz 1996), with the red and white pine woodland, its understory components, and ecological setting being the only example of this in Minnesota. The MNDNR has mapped this plant community in its Ecological Classification System (ECS) as “Red Pine-White Pine Woodland” (ECS code FDN32b). Other examples of this plant community nearby or in a similar ecological setting are essentially limited to nearby Wisconsin Point (in Superior, Wisconsin) and on the lee shore of some islands within Wisconsin’s Apostle Islands National Lakeshore near Bayfield, Wisconsin (Wilson and Rusterholz 1996).

The distribution of the red and white pine stands are a function of natural ecological processes that formed and maintained the sandbar on Minnesota Point. Red pines tend to be distributed on the drier dunes lakeside, whereas white pines tend to be found along the lee side of the dunes along a slightly more mesic saltation platform (Wilson and Rusterholz 1996). [Saltation refers to the “particle movement in water or wind where particles skip or bounce along the stream bed or soil surface” (Brady and Weil 1998).] The uneven aged stand of trees is unusual, particularly for red pine that tend to regenerate shortly after fire, and is likely a component of the sandy substrate. The assessment completed by Wilson and Rusterholz (1996) further surmised that the stand “will require little management to maintain the pine components of the stand well into the future.” This appears true today due to the fact that the site has had a history of human disturbance, but the pine stands

persist. The presence of paper birch (*Betula papyrifera*) within the canopy gaps is likely due to human disturbance in the last century (e.g., selective harvest or settling activities associated with buildings or their abandonment). Finally, Wilson and Rusterholz (1996) surmised that the birch component in the pine stand could be reaching the end of its life expectancy.

The 1996 assessment completed by Wilson and Rusterholz (1996) included age, diameter, and quantity measurements for trees in the SNA. A total of 166 trees within the SNA were inventoried in 1996: 79 white pine, 75 red pine, and 12 paper birch. For age estimates, increment cores from 17 red pines and six white pines representative of typical canopy trees were completed. For 14 of the 17 red pines, ages in 1996 were estimated from about 101 to 143 years old; in 2009, these age estimates would be between 114 and 156 years old. Three even older red pines were discovered in the assessment with two aged at 197 years and one aged at 175 years old. In 2009 this would make these three older trees approximately 210 and 188 years old, respectively. For the six white pines evaluated during the 1996 assessment, tree age was estimated between 100 and 130 years; in 2009 these white pines would be between 113 and 143 years old. For these oldest trees evaluated, diameters of red pine ranged between 20.8 and 50.9 cm (~8 to 20 in) and white pines ranged between 32.6 and 51.1 cm (~13 to 20 in).

3.2.2.3 Minnesota Point Pine Forest Scientific and Natural Area (SNA)

The Minnesota Point Pine Forest SNA was established in April 2002 to preserve and protect the old-growth red and white pine forest remnant that once extended along the length of Minnesota Point, as well as the associated sand dunes and lakeshore that make up one of the largest baymouth sandbars in the world (Ojakangas and Matsch 1982). Minnesota Administrative Rules (Chapter 6136) provides for “creation and establishment of scientific and natural areas for the purpose of preserving, protecting, and managing lands or waters possessing inherent natural values, including soils, waters, or sediments, sites of scientific value, habitats of rare or endangered species of plants and animals, places of historic or prehistoric interest and scenic beauty, and areas uniquely suitable for teaching natural history and conservation.” These areas are managed and protected by the MNDNR to preserve their natural features and rare resources of exceptional scientific and educational value.

Prior to establishment of the SNA, a Conservation Easement was established on the property on June 30, 1999 between the Minnesota Land Trust and the State of Minnesota. As the previous owners of the property, the Minnesota Land Trust recognized the value of the natural, ecological, and aesthetic features of the property, and established a conservation easement with the State of Minnesota to serve the policies of the State of Minnesota that encourage the protection of Minnesota’s natural resources as set forth in part in Minnesota Statutes Section 84C.01-02 (Conservation Easements), as well as Section 86A.05 and Section 84.033 (State Scientific and Natural Areas) to conserve and preserve it in perpetuity.

3.2.2.4 Tree Height Survey

In response to potential effects on the forest due to airport safety improvements, a tree height survey began in 2005. Supplemental surveys were conducted in 2008, 2009, and 2010. These tree height surveys were used to identify trees growing into the approach surface. Trees were identified to species and surveyed for height from their basal trunk area. The tree survey mapped and measured 2,431 trees within the approximately 18.5-acre study area. The study area was comprised of property owned by the DAA, MNDNR, and SWLP. Of the 2,431 trees surveyed, 922 (516 pines) were on DAA property, 1,392 trees (1,155 pines) were on MNDNR property, and 117 (85 pines) were located in SWLP property. Trees throughout the study area were surveyed for location and height. Summary data (**Table 1 in Appendix C**) shows tree heights in 2010. For trees that were surveyed prior to 2010, a tree growth model was applied to estimate tree heights in 2010. These data also provide long-term (50-year) projections of tree heights and potential future obstructions to the approach surface of the runway. The development, methodology, and results of the growth model are described in detail

in **Appendix C**. Subsequent refinement of the tree survey was conducted for a small area of quaking aspen trees on MNDNR property in 2012. This additional study is described in **Section 3.2.2.4** below.

Table 3-4 shows the distribution of trees per species throughout three height classes, and shows the average height of trees within each height class as well as the tallest individual in that height class. Red pine is the most abundant species with 1,059 individuals, while 697 individuals were white pine. Several hardwoods were also abundant, although most likely not considered dominant, and included paper birch (291 individuals), balsam poplar (251 individuals), and quaking aspen (46 individuals). Nineteen other species (for a total of 87 additional trees) were observed throughout the study area; none of these species had more than 17 individuals observed. Most (48.3%) of the trees fit in the 30- to 60-foot height class, with 37.5% of trees greater than 60 ft and 14.2% less than 30 ft tall. The tallest tree surveyed was a 101-foot tall white pine. Of the ten tallest trees, five were white pine (92.5, 93.3, 93.5, 93.7, and 101.0 feet) and five were red pine (94.6, 95.8, 96.8, 97.0, and 97.8 feet).

**Table 3-4
Summary of Trees**

Species and Height Class (ft)	Property Ownership (# of Trees)				2010 Tree Height ¹ (ft)	
	DAA	MNDNR	SWLP	Total	Average	Maximum
<i>Betula papyrifera</i> (Paper Birch)						
0-30	28	15	0	43	25.0	29.9
30-60	72	123	15	210	43.8	59.9
60+	11	22	5	38	67.7	78.8
Subtotal	111	160	20	291	44.2	78.8
<i>Pinus resinosa</i> (Red Pine)						
0-30	6	44	1	51	26.8	29.9
30-60	126	302	41	469	45.6	59.7
60+	172	353	14	539	72.7	97.8
Subtotal	304	699	56	1059	58.5	97.8
<i>Pinus strobus</i> (White Pine)						
0-30	5	41	2	48	26.7	29.8
30-60	78	219	23	320	46.7	59.8
60+	129	196	4	329	73.2	101.0
Subtotal	212	456	29	697	57.8	101.0
<i>Populus balsamifera</i> (Balsam Poplar)						
0-30	190	0	0	190	24.8	29.9
30-60	52	7	1	60	34.3	50.5
60+	0	0	1	1	69.8	69.8
Subtotal	242	7	2	251	27.3	69.8
<i>Populus tremuloides</i> (Quaking Aspen)						
0-30	0	0	0	0	0	0
30-60	5	38	2	45	48.5	59.4
60+	0	0	1	1	70.8	70.8
Subtotal	5	38	3	46	49.0	70.8
Other Tree Species²						
0-30	8	5	1	14	25.4	29.3
30-60	38	26	6	70	40.2	59.0
60+	2	1	0	3	66.4	73.0
Total	48	32	7	87	38.7	73.0
Grand Total (trees)	922	1392	117	2431	52.5	101.0
¹ Tree heights shown for 2010 are calculated using an aggressive growth model (Appendix C) for those trees surveyed prior to 2010. ² Nineteen other tree species were observed within the study area. Each of these species has fewer than 17 individuals and is considered non-dominant.						

3.2.2.5 Environmental Consequences

Preferred Alternative: Alternative 5a Short

Construction limits (see **Figure 2-1**), including equipment storage and construction staging areas, will be completely within areas previously disturbed. Impacts to native habitats surrounding the existing runway will be avoided to the greatest extent possible by keeping construction activities on or within the existing disturbed, maintained, and mowed areas that contain the runway and taxiway.

The preferred alternative would involve construction in several habitats for rare species listed in the MNDNR NHIS Database or documented in the 2012 benthos survey (see results in **Table 3-1**): aquatic habitat within the harbor and disturbed areas adjacent to the existing runway. A small area of construction was previously proposed for installation of an obstruction light in native plant communities (as described in **Section 2.1**). The obstruction light would have been installed on DAA property, but it would be necessary to access the site for construction through SNA property. Vehicles accessing the site would potentially disturb a path 12 feet wide of Juniper Dune Shrubland community in order to access the proposed site of the new obstruction light. This work would have had a permanent footprint of about 36 square feet within the DAA property, and could have temporary construction impacts to habitat suitable for the moonworts, beachgrass, and beach heather, as well as other faunal species including the common tern, hairy-necked tiger beetle, and eastern pipistrelle.

The NHIS Database also identifies endangered piping plover as occurring within one mile of the project area. Piping plovers from the Great Lakes population previously nested on sparsely vegetated dredge spoil in the Superior Bay area, but that population has not been observed to breed in the area since approximately the 1980s. Small numbers of piping plovers are still occasionally observed in the Duluth-Superior Harbor area. Gull exclosures have been constructed in recent years on the bay side of Wisconsin Point and Shafer Beach (on the Lake Superior side of Wisconsin) in order to attract nesting plovers. Plover tracks (unknown if these were from piping plover or other similar plover species) have been observed in the exclosures, but as yet no nesting of piping plover has been documented (St. Louis River Alliance 2013). No such exclosures have been constructed on the Minnesota Point side, and Alternative 5a Short is unlikely to impact breeding populations of piping plover. Due to potential for impacts to listed species as described above, as well as impacts to other resources, the southernmost obstruction light has been eliminated from the plan for the preferred alternative. Construction of all other portions of the project will avoid habitat for terrestrial listed species. Therefore, this action is anticipated to have no effect on the piping plover. If the second (southernmost) new obstruction light is ultimately required for safety reasons, a permit will be sought from the commissioner of the DNR in addition to permission from Minnesota Land Trust to access the SNA property, and coordination with DNR will take place regarding potential impacts to State listed threatened species. Consultation with USFWS would also take place for potential impacts to the piping plover.

Fill in the harbor would affect habitat for lake sturgeon, creek heelsplitter, and eastern elliptio. The impacted habitat is common in the harbor, and no additional coordination is anticipated to be necessary for any mussel species. Area impacted by fill in the harbor is not likely to be good spawning habitat, due to the soft/silty substrate and lack of emergent or submergent vegetation; therefore, impact to spawning habitat should be negligible. Construction in the beach environments could affect habitat suitable for beach heather and beachgrass, as well as the hairy-necked tiger beetle. Minnesota Point and the St. Louis River Estuary represent the western periphery of the beetle's range. The beetles were previously documented on Minnesota Point and Port Terminal on Rice's Point (Coffin and Pfanmuller, eds. 1988), but the Rice's Point population was not identified in the 2003 surveys. Preferred habitat for hairy-necked tiger beetle is sandy shorelines of the Great Lakes. Construction of Alternative 5a Short is planned to avoid sandy beach areas that may provide habitat for hairy-necked tiger beetle. Construction access to the previously proposed southernmost obstruction light in DAA property surrounded by the SNA would have temporary impacts to Juniper Dune Shrubland, a unique native plant community. Two additional non-state listed species of moonworts were listed in the NHIS

Database: matricary grapefern and Michigan grapefern, which could also be affected by construction in this area; however, in order to avoid impacts to native plant communities and potential habitat for listed species, the southernmost new obstruction light has been eliminated from the plan for the preferred alternative.

The tree survey and the subsequent tree growth model initially projected that nine quaking aspen trees would penetrate the approach surface in the long-term (50 years). This means that by year 2063, it was estimated that these nine trees would then be tall enough to become obstructions under the preferred alternative. While this small stand of quaking aspens was a part of the initial tree height survey, the intent of the initial tree survey was to concentrate primarily on collecting data for red and white pines. This stand of quaking aspens was surveyed as a group (i.e., a single clone), and the height of the tallest tree in the group was assigned to each tree in the clone. Each of the trees within this clone was re-surveyed in October 2012 in order to verify individual tree heights. The result showed trees with heights ranging from 23 to 39 feet, instead of the 46 feet assigned to the entire stand. It is possible the 46-ft tree was topped due to windthrow, as several large quaking aspen trunks were observed topped/felled and deceased during the 2012 re-survey. Reapplying the growth model to the heights of individual trees in this aspen clone resulted in no penetrations to the approach surface under the preferred alternative by year 2063.

Alternative 13

Construction limits for Alternative 13 are shown in **Figure 2-2**. Alternative 13 would involve construction in several habitats for rare species listed in the MNDNR NHIS Database or documented in the 2012 benthos survey (see results in **Table 3-1**): aquatic habitat within the harbor and disturbed areas adjacent to the existing runway. A small area of construction was previously proposed for installation of an obstruction light in native plant communities (as described in **Section 2.3.2.2**). The obstruction light would have been installed on SWLP property, and it would be necessary to access the site for construction through areas of native plant communities. Vehicles accessing the site would potentially disturb a path 12 feet wide of Juniper Dune Shrubland community in order to access the proposed site of the new obstruction light. The light itself would have had a permanent footprint of about 36 square feet, and could also have temporary construction impacts to habitat suitable for the moonworts/grapeferns, beachgrass, and beach heather, as well as other faunal species including the common tern, hairy-necked tiger beetle, and eastern pipistrelle. The NHIS Database also identifies endangered piping plover as occurring within one mile of the project area. Piping plovers from the Great Lakes population previously nested on sparsely vegetated dredge spoil in the Superior Bay area, but that population has not been observed to breed in the area since approximately the 1980s. Small numbers of piping plovers are still occasionally observed in the Duluth-Superior Harbor area. Gull exclosures have been constructed in recent years on the bay side of Wisconsin Point and Shafer Beach (on the Lake Superior side of Wisconsin) in order to attract nesting plovers. Plover tracks (unknown if these were from piping plover or other similar plover species) have been observed in the exclosures, but as yet no nesting of piping plover has been documented (St. Louis River Alliance 2013). No such exclosures have been constructed on the Minnesota Point side, and Alternative 13 is unlikely to impact breeding populations of piping plover. Due to potential for impacts to listed species as described above, as well as impacts to other resources, the southernmost obstruction light has been eliminated from the plan for Alternative 13. Therefore, this action is anticipated to have no effect on the piping plover.

Fill in the harbor would affect habitat for lake sturgeon, creek heelsplitter, and eastern elliptio. The impacted habitat is common in the harbor, and no additional coordination is anticipated to be necessary for any mussel species. Area impacted by fill in the harbor is not likely to be good spawning habitat, due to the soft/silty substrate and lack of emergent or submergent vegetation; therefore, impact to spawning habitat should be negligible. Construction in the beach environments could affect habitat suitable for beach-heather and beachgrass, as well as the hairy-necked tiger beetle. Minnesota Point and the St. Louis River Estuary represent the western periphery of the beetle's range. The beetles were previously documented on Minnesota Point and Port Terminal on Rice's Point (Coffin and Pfannmuller, eds 1988), but the Rice's Point population was not relocated in 2003 surveys. Preferred habitat for hairy-necked tiger beetle is sandy shorelines of the Great Lakes. Construction of Alternative 13 is planned to avoid sandy beach areas that may provide habitat for hairy-necked tiger beetle. Beach-heather has been recorded within the Alternative 13 construction area. Construction in sandy, forested areas could affect habitat for four listed species of moonworts including pale moonwort, St. Lawrence grapefern, pointed moonwort, and least moonwort. Two additional non-state listed species of moonworts were listed in the NHIS Database: matricary grapefern and Michigan grapefern. The construction of Alternative 13 would result in the cutting or topping of 370 trees (295 pines and 76 trees within the SNA) by 2063. This would affect the old-growth forest and would lessen quality habitat for migratory birds and other fauna. Cutting or topping of trees would likely convert a portion of the forest to a more open setting succeeding to Juniper Dune Shrubland. Although this habitat has value for wildlife, it would be a change from the existing forest in a portion nearest the runway.

The tree survey and the subsequent tree growth model projected the number of trees that would penetrate the approach surface in the long-term (50 years). By year 2063, it is estimated that 370 trees would penetrate the approach surface under Alternative 13.

There are several potential mitigation opportunities for impacts to sensitive habitat of rare species. Impacts to the SNA under Alternative 13 are greater than impacts to the SNA under the preferred alternative. Mitigation options are similar under both alternatives, but would be greater in scale under Alternative 13 in order to adequately mitigate for larger impacts. Potential options include replanting of rare species in protected areas, and land swap or a donation of existing airport property with additional rare species that is no longer needed for aeronautical purposes due to the relocated approach surface. This land would add contiguous habitat and would expand the size of the existing SNA. Other options that might be considered would be fees paid to permitting agencies in-lieu of specific mitigation actions on the site. Rather, these fees could be used for research on the ecological community and/or for dedicated management, enhancement, or restorative measures to protect the long-term integrity and viability of the SNA and unique biological resources surrounding and contiguous with the SNA. Potential mitigation opportunities will be developed in more detail and established at the permitting phase.

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility. The existing airport, although publicly open, would be re-dedicated to public recreational use with aviation use restrictions removed. It is unknown what type of potential ecological restoration might follow the re-dedication for public recreational use. Because the exact nature of the public recreational use of the area is not known, it is unknown what effect the no action alternative would have on the old-growth pine forest, the SNA, or any of the other habitats with ecological significance nearby.

3.3 Coastal Resources

Federal activities involving or affecting coastal resources are governed by the Coastal Barriers Resources Act (CBRA) of 1982, the Coastal Zone Management Act (CZMA) of 1972, and Executive Order (E.O.) 13089, Coral Reef Protection. The CBRA prohibits federal funding for new development within the Coastal Barriers

Resources System (CBRS), which consists of undeveloped coastal barriers along the Atlantic and Gulf coasts and the shores of the Great Lakes. Federal agencies are required to consult with the USFWS prior to committing funds for project or actions within the CBRS. Minnesota Point, including the Airport, is within the CBRS.

The CZMA applies to states having an approved Coastal Zone Management (CZM) plan. The CZM plan is implemented by a designated state or local agency and proposed federal actions within the CZM boundary must work to achieve consistency with the applicable CZM plan. The CZM plan typically compliments and implements relevant and applicable federal, state, and local regulations, policies and management plans to achieve the goals and intent of the CZMA. In Minnesota, the CZM is implemented through Minnesota's Lake Superior Coastal Program (MLSCP), a federal-state partnership dedicated to comprehensive planning and management within the designated Coastal Boundary of Lake Superior. MLSCP is administered by the MNDNR and encourages greater cooperation, simplifies governmental processes, and provides tools for implementing existing policies, authorities, and programs within the Coastal Boundary shown on **Figure 3-3**. The Airport is located entirely within the Coastal Boundary with the City of Duluth as the local unit of government.

Executive Order (EO) 13089, Coral Reef Protection, established the United States Coral Reef Task Force to lead U.S. efforts to preserve and protect coral reef ecosystems. EO 13089 directs federal agencies to ensure, to the extent practicable, that actions authorized, funded, or carried out do not degrade these ecosystems. No coral reefs are present in the project area, at Minnesota Point, or at any other location in Lake Superior or the St. Louis River.

3.3.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

The preferred alternative would require 7.49 acres of fill in Superior Bay and would impact the CBRS and the Coastal Zone. The FAA received concurrence from the USFWS on July 12, 2013 that the project complies with the purposes of the CBRA and that a Section 6 exception (the maintenance, replacement, reconstruction or repair of publicly owned or publicly operated roads, structures, or facilities that are essential links in a larger network or system) under CBRA (16 U.S.C. § 3505) is applicable (see **Appendix E**). As a part of the CZMA, the FAA has submitted a Federal Consistency Determination to the MNDNR for their concurrence that the project is consistent with the MLSCP. Any required mitigation measures under the Clean Water Act or Public Water Work Permit will be negotiated during the permitting phase.

No coral reefs are present in the project area, at Minnesota Point, or at any other location in Lake Superior or the St. Louis River. Therefore, the project will have no effect on coral reef ecosystems and is compliant with EO 13089.

Alternative 13

Alternative 13 would require 3.40 acres of fill in Superior Bay and would impact the CBRS and the Coastal Zone. The FAA will consult with the USFWS to determine if the Section 6 exception (the maintenance, replacement, reconstruction or repair of publicly owned or publicly operated roads, structures, or facilities that are essential links in a larger network or system) under CBRA (16 U.S.C. § 3505) is applicable. If alternative 13 is implemented, as a part of the CZMA, the FAA will submit a Federal Consistency Determination to the MNDNR for their concurrence that the project is consistent with the MLSCP.

No coral reefs are present in the project area, at Minnesota Point, or at any other location in Lake Superior or the St. Louis River. Therefore, the project will have no effect on coral reef ecosystems and is compliant with EO 13089.

No Action

The no action alternative would result in loss of Airport licensure and closure and removal of the facility. The no action alternative would not negatively impact any of the coastal resources. Removal of Airport facilities would reduce impervious surface on the site, a potential beneficial impact to coastal resources. The future use of the site would be a public recreational area. It is not known what land use would be associated with this recreational area, and whether there would be additional impervious surface or other impacts to coastal resources.

3.4 Compatible Land Use (EAW Item 9.b.)

EAW Item 9.b. Land use. Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.

3.4.1 Current and Past Land Use

The Airport is located within the City of Duluth on Minnesota Point (see **Figure 1-1**). Land uses surrounding the Airport and on Minnesota Point includes mixed developed and undeveloped parcels as shown in **Figure 3-4**. Undeveloped parcels are comprised of forest cover, wetlands, or beach dunes. Scattered low density residential parcels are found in the vicinity of the Airport with higher density residential areas occurring approximately one mile to the west (towards downtown Duluth) on Minnesota Point. Small commercial/retail and light industry parcels are also scattered within the residential and developed sections of Minnesota Point, especially towards the west where development density increases. Minnesota Point Pine Forest SNA is located adjacent to and southeast of the Airport on Minnesota Point (see **Section 3.2.2.3**). To the northwest of the Airport is Park Point Recreation Area. The nearest schools are located five (5) miles from the Airport in downtown Duluth and 1.5 miles from the Airport across Superior Bay in Superior, Wisconsin.

Aviation use on Minnesota Point began in 1931 with a lease agreement between the Duluth Boat Club and Northwest Airways, Inc. The Duluth-Sky Harbor Airport was created by Minnesota Law in 1969 and the Airport has operated in its current location since that time.

The compatibility of existing and planned land uses in the vicinity of an airport is typically associated with either noise impacts related to airport operations or land use planning, but can also be associated with other issues such as wildlife hazards (**Section 3.4.2**) and protection of approach surfaces (**Section 3.4.3**). See **Section 3.14** for a description of existing noise levels on and around the Airport and a description of potential noise impacts resulting from each alternative.

The Park Point Recreation Area hosts an annual art festival in the park which creates an assembly of people within Zone A of the Sky Harbor Airport Zoning Ordinance (See **Section 3.4.3.3**). The Minnesota Point Pine Forest SNA located in the approach to Runway 32 is currently an incompatible use since the tree heights penetrate the Approach Surface to Runway 32. In addition, the trees, due to their elevation, violate the Airport Overlay (A-O) Zoning Ordinance since they penetrate the approach surface. No other areas of assembly or other incompatible land uses are located in the immediate vicinity of the Airport.

3.4.1.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

Implementation of the preferred alternative would not result in development of incompatible or noise-sensitive land uses. The preferred alternative would not directly result in any change in the number of aircraft operations or the type of aircraft using the Airport, therefore, no changes in noise impacts outside of the Airport boundary would be expected. Any future growth in aircraft operations would not be a direct result of the preferred alternative and operations would be expected to remain at levels that would not increase noise impacts off of airport property (see **Section 3.14**).

No adverse impacts to area recreational uses would result from the preferred alternative.

Alternative 13

Similar to the preferred alternative, Alternative 13 would not result in development of incompatible or noise-sensitive land uses. Alternative 13 would not directly result in any change in the number of aircraft operations or the type of aircraft using the Airport, therefore, no changes in noise impacts outside the Airport boundary would be expected. Any future growth in aircraft operations would not be a direct result of Alternative 13 and operations would be expected to remain at levels that would not increase noise impacts off of airport property (see **Section 3.14**).

No Action

The no action alternative would result in loss of Airport licensure and closure of the Airport. The Airport site would be reclaimed and would be required to be used for other public recreational and public health purposes as described in **Section 2.2**. It is not anticipated that the use of this site for other recreational purposes would be an incompatible land use.

3.4.2 Hazardous Wildlife Attractants

FAA AC 150/5300-33A, *Hazardous Wildlife Attractants on or near Airports*, provides guidance on certain land uses that have the potential to attract hazardous wildlife on or near public use airports. The guidance also addresses coordination and implementation of approaches to reduce wildlife hazards for airport expansion projects during construction and subsequent operations.

Potential wildlife hazards present in the project area include the presence of open water (Lake Superior and Superior Bay), sandy beach, grass- and shrub-land, and the forested areas. The open water areas provide potential habitat for waterfowl. The Airport reports instances of gulls and Canada geese on and in the vicinity of the Airport. In addition, deer are occasionally sighted at the Airport. The DAA holds a depredation permit for lethal and non-lethal actions for deer and waterfowl and reports using both methods several times per week during seasons of high waterfowl activity. The only reported wildlife strike at the Airport occurred in 2007 and involved a Canada goose.

3.4.2.1 Environmental Consequences

Initial Consultation with the United States Department of Agriculture Wildlife Services (USDA) is included in **Appendix F**. The USDA indicated in this initial consultation that the alternatives are unlikely to increase the wildlife hazards present at the Airport.

Preferred Alternative: Alternative 5a Short

Alternative 5a Short is not expected to increase the potential for wildlife hazards at the Airport. Management and treatment of surface water runoff would be necessary to protect downstream receiving waters. Runoff management would be limited to the use of grassed swales, overland flow, and other best management practices (BMPs) that avoid creation of standing water or other attractants to hazardous wildlife. However, as indicated during Initial Consultation with USDA, water birds such as gulls could pose a hazard during periods of construction as dredging operations may attract these species. The Airport will continue to utilize the existing wildlife management techniques during construction. Should wildlife hazards increase during construction or existing management techniques become ineffective, the Airport will increase use of wildlife management techniques (non-lethal and lethal measures) as necessary. In addition, the Airport will be closed during periods of the construction process as described in **Section 2.1**.

Alternative 13

Similar to the preferred alternative, Alternative 13 is not expected to increase the potential for wildlife hazards at the Airport. Runoff management would be limited to the use of grassed swales, overland flow, and other best management practices that avoid creation of standing water or other attractants to hazardous wildlife. The Airport will continue to utilize the current wildlife management techniques during construction. Should wildlife hazards increase during construction or existing management techniques become ineffective, the Airport will increase use of wildlife management techniques (non-lethal and lethal measures) as necessary.

No Action

The no action alternative would not impact wildlife hazards at the Airport. Once Airport licensure is revoked and the Airport is closed, the potential wildlife hazards present in the Airport area will no longer be a hazard to aviation.

3.4.3 Land Use Planning and Zoning (*EAW Item 9.a.i., Item 9.a.ii., and Item 9.a.iii.*)

EAW Item 9.a. Describe: i. Existing land use of the site as well as areas adjacent to and near the site, including parks, trails, prime or unique farmlands. ii. Plans. Describe planned land use as identified in comprehensive plan (if available) and any other applicable plan for land use, water, or resources management by a local, regional, state, or federal agency. iii. Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.

3.4.3.1 City of Duluth

Properties on Minnesota Point are included in the Unified Development Chapter of the Duluth Legislative Code (UDC) and the City of Duluth 2006 Comprehensive Land Use Plan. Currently, the Airport and surrounding areas of Minnesota Point are zoned Residential Traditional (R-1) as shown in **Figure 3-5**. This district allows traditional neighborhoods of single-family residences, duplexes and townhomes on moderately sized lots.

The Comprehensive Plan identifies the area northwest and adjacent to the Airport on Minnesota Point as “recreational” (Park Point Recreation Area and Hartman Park). Further northwest towards downtown Duluth on Minnesota Point the land use is both “preservation” and “residential” as shown in **Figure 3-5**. North and southeast of the Airport the land use is primarily “preservation” with the land use at the Airport and the end of Minnesota Point being “Transportation and Utilities”.

The City of Duluth has recognized that the zoning on Minnesota Point including the Airport is not consistent with the Comprehensive Land Use Plan. As such, the entire Minnesota Point has been identified as an area to be studied as part of a city-wide rezoning process. The City of Duluth has decided to delay this rezoning of the Airport and the surrounding area until this EA process is complete since the outcome could change the desired zoning of the Airport land and the neighboring parkland.

3.4.3.2 City of Superior Zoning

The area west of the Airport, across Superior Bay, is included in the City of Superior, Wisconsin Zoning Ordinance, which is governed by the City of Superior Municipal Code, Chapter 122. The existing Superior Zoning is shown on **Figure 3-6**. The area along the shore of Superior Bay is zoned Waterfront (W-1) while the areas further southwest are zoned for residential uses.

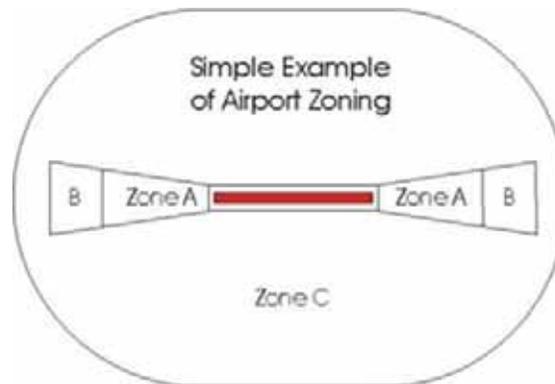
Wisconsin Statute 114.136 (airport and spaceport approach protection) provides public airport owners the authority to impose height limitations on structures within three miles of an airport. This height limitation zoning protects the community and the airspace for use by aircraft to and from the Airport. Portions of Minnesota Point including Duluth-Sky Harbor Airport, as well as the City of Superior, are governed by the

Richard I. Bong Memorial Airport Height Limitation Zoning Ordinance, adopted through Wisconsin Statute 114.136, which is also included in the City of Superior Municipal Code, Chapter 122. According to this ordinance, no structures on Minnesota Point shall exceed 811 feet MSL.

3.4.3.3 Airport Zoning

Minnesota Rules Chapter 8800.2400 describes the minimum standards for the zoning of public airports as to airspace, land use safety, and noise sensitivity. The rule includes boundaries (Zones A, B, and C – see diagram below) established for the purpose of restricting those uses that may be hazardous to the operational safety of aircraft using an airport, and furthermore, to protect the safety and property of people on the ground in the area near an airport. This is accomplished by limiting population and building density in the runway approach areas, thereby creating sufficient open space to protect life and property in case of an accident.

The safety zones are intended to protect the investment in an airport by limiting or preventing situations that would become an incompatible land use, and potentially affect airport safety and durability.



The City of Duluth-Sky Harbor Airport Zoning Ordinance, Ordinance Number 9215 (Adopted in September 1994) and Airport Overlay District, Article 2, Section 50.18.2 (adopted in August 2010) addresses the requirements of Minnesota Rule 8800.2400. The UDC defines safety zones for the existing airport facilities and regulates and restricts the presence and height of structures and natural growth objects and the use of property in the vicinity of the Airport. Because the Airport had previously planned to extend the runway longer than 3,050 feet, the existing ordinance is based on a 3,350 foot long runway. The following land use safety zones were established with relation to the Airport and Runway 14/32 and are shown on **Figure 3-7**:

- **Safety Zone A** extends outward from the end of the primary surface a distance equal to two-thirds of the planned runway length, in this case 2,230 feet. No buildings, temporary structures, exposed transmission lines, or other similar land use structural hazards are allowed in Zone A. Land uses in Zone A are restricted to those that do not create, attract, or bring together an assembly of people. Permitted uses may include agriculture (seasonal crops), horticulture, raising of livestock, animal husbandry, wildlife habitat, light outdoor recreation (non-spectator), cemeteries, and auto parking.
- **Safety Zone B** extends outward from Safety Zone A to a distance equal to one-third of the planned runway length, in this case 1,120 feet. Use in Zone B is restricted to those that do not create, attract, or bring together a site population that would exceed 15 times that of the site acreage. Parcel size is limited to less than three (3) acres in Zone B and no more than one building site on each parcel is allowed. Churches, hospitals, schools, theaters, stadiums, hotels and motels, trailer courts, camp grounds, and other places of public or semipublic assembly are specifically prohibited in Zone B.

The provisions of Zone A and Zone B do not apply to land uses in “established residential neighborhoods in built up urban areas.” This means that in an area designated as such, existing land uses will be allowed to continue as a conforming use with a few restrictions.

- **Safety Zone C** includes all the land enclosed within the perimeter of the horizontal zone (6,000 foot diameter arc beginning at the end of the primary surface) and not included in Zone A or Zone B. Land uses in Zone C are subject only to the general restrictions that no use creates or causes interference with the operation of radio or electronic facilities on the Airport, or with radio or electronic communications between the Airport and aircraft.

3.4.3.4 Environmental Consequences

Preferred Alternative: Alternative 5a Short

The preferred alternative would not change the land use of the Airport or the surrounding area and therefore these uses would be compatible with the Comprehensive Land Use Plan. While an airport is not a compatible use with the R-1 zoning of Duluth-Sky Harbor Airport, it is anticipated that when the City of Duluth completes the rezoning process, the Airport will be a permitted use of the area.

The anchorage area located in Superior Bay in the Runway 32 approach is incompatible with Zone A when in use by tall vessels. However, it is not currently dredged to a usable depth and the USACE in coordination with the United States Coast Guard (USCG) has agreed to issue a Notice to Navigational Interests indicating that a portion of the anchorage area is unusable due to this incompatible use (see correspondence in **Appendix G**). The Airport intends to seek permanent deauthorization of a portion of the anchorage area facility, permanently eliminating the potential incompatible use. Therefore, Alternative 5a Short would be compatible with the existing Airport Overlay district. Initial discussions with MnDOT Aeronautics indicate that Alternative 5a Short would not require an update to the Airport Overlay district standards in the UDC.

Alternative 13

Similar to Alternative 5a Short, Alternative 13 would not change the land use of the Airport or the surrounding area and therefore these uses would be compatible with the Comprehensive Land Use Plan. Also, similar to Alternative 5a Short, it is anticipated that if Alternative 13 were implemented, the City of Duluth would rezone the Airport so that the Airport use is permitted. A portion of the anchorage area located in the approach to Runway 32 is an incompatible use with Alternative 13. However, it is anticipated that the USACE and USCG would issue a Notice to Navigational Interests indicating a portion of the anchorage area is closed and that the Airport would seek permanent de-authorization of a portion of the anchorage area.

Alternative 13 would be compatible with the existing Airport Overlay district standards in the UDC, and would not require an update to the standards.

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility and thus it would result in a change in land use of the Airport property. After Airport closure, the property would be used for recreational purposes. This use would be incompatible with the use outlined in the Comprehensive Land Use Plan (Transportation and Utilities). However, it is anticipated that the Comprehensive Land Use Plan would then be revised to reflect the recreation use when the plan was next updated. Similar to Alternatives 5a Short and 13, it is expected that the Airport land would be rezoned to match the future recreational use of the area in this alternative.

Since the Airport Overlay district would no longer be needed to protect the Airport and the surrounding areas for aeronautical uses, the Joint Airport Zoning Board that was created to develop the ordinance would reconvene and would revoke the ordinance.

3.5 Construction Impacts

3.5.1 Odors, Noise, and Dust (EAW Item 16.c. and Item 17)

***EAW Item 16.c. Dust and Odors.** Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be discussed under item 16a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize or mitigate the effects of dust and odors.*

***EAW Item 17. Noise.** Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including 1) existing noise levels/sources in the area, 2) nearby sensitive receptors, 3) conformance to state noise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.*

Construction impacts are generally temporary in nature and include: construction equipment noise and exhaust; noise and dust from the delivery of materials through residential areas; off-site disruptions of local traffic patterns; use and mitigation of borrow and waste sites; and excessive dust.

Noise and dust effects from construction equipment would be minimized through the use of construction BMPs. The contractor would be required to carry out dust and erosion control procedures, such as watering to control dust and wind erosion, seeding with oats in work areas that are temporarily inactive, and installation and maintenance of silt fence. These requirements would be included in the project drawings and specifications under the FAA standard specification Item P-156, "Temporary Air and Water Pollution, Soil Erosion, and Siltation Control." These measures would also be part of the Storm Water Pollution Prevention Plan (SWPPP) developed in association with the NPDES Construction Permit. The dust and erosion control procedures would be required to be maintained throughout the construction activity and until disturbed areas are restabilized. All phases of construction would be performed in accordance with FAA AC 150/5370-10B, Standards for Specifying Construction of Airports.

The CAA General Conformity rules, which do not apply to this project, address construction impacts related to air quality (see **Section 3.1**).

3.5.2 Erosion and Sedimentation (EAW Item 11.b.ii.)

***EAW Item 11.b.ii. Stormwater.** Identify specific erosion control, sedimentation control or stabilization measures to address soil limitations during and after project construction.*

The National Pollutant Discharge Elimination System (NPDES) is a construction permitting program addressing storm water effects of disturbances on one acre or more. In the State of Minnesota, this program is administered by the Minnesota Pollution Control Agency (MPCA). NPDES permits will be required prior to construction.

There are no existing steep slopes or highly erodible soils on the project site. According to the Natural Resources Conservation Service (NRCS) Web Soil Survey (2012), the soils in the construction area consist of Udipsamments with 1 to 20 percent slopes. These sandy soils are excessively drained, have no frequency of flooding, and possess very high water infiltration rates of up to 20 inches per hour.

The potential for soil erosion due to water on this site is very low. The soil K factor, indicating the susceptibility of a soil to sheet and rill erosion by water, is 0.15 (values of K range from 0.02 to 0.69). The likelihood of flooding or ponding is none, meaning flooding is not probable and the chance is near zero percent in any year.

The wind erodibility group (WEG) of these soils is 2, meaning they are highly susceptible to wind erosion when cultivated. Soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The wind erodibility index for site soils is 134 tons/acre/year indicating a high potential for wind erosion when cultivated. Mitigation measures to minimize the effects of wind erosion on the site during construction activities will include the use of silt fence or other appropriate erosion control measures around the construction site perimeter in addition to seeding and mulching of exposed soils where construction is not active.

3.5.2.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

Construction activities can create environmental impacts at the construction site and in the surrounding area. These impacts are temporary in nature, and subside once construction is completed.

Alternative 5a Short includes moving and placing approximately 69,800 cubic yards of soil for runway construction (combined in water and on land), 50,000 cubic yards of surcharge (fill to be placed in order to compact soft soils, and then removed) material and 25,000 tons of riprap over a total project area of 29.47 acres. As described in **Section 2.1**, construction will occur in the following stages (see **Figures 2-2** and **2-3**):

- **Perimeter Berm Stage:** This stage includes construction of a perimeter berm encompassing the site in the harbor. The berm will be underlain by a separation geotextile and will be constructed to an elevation of 603 to 605 feet above mean sea level (MSL). A floating silt curtain will be placed around the perimeter of the site prior to placement of any fill in the bay and will remain in place for the duration of fill placement. It is anticipated that this perimeter berm will be constructed of rock in order to provide a stable access road around the site for construction. Prior to riprap placement, approximately 8,600 cubic yards of material will be excavated from the lake bottom for the riprap toe (see **Figure 2-3**). The excavated material will be stored on site for use as fill or surcharge. The Airport will be closed during periods of construction of this stage but will re-open during the stabilization period.
- **Stage 1:** Fill will be placed within the perimeter berm up to an elevation of 605 feet MSL. Riprap placement around the project perimeter for permanent erosion control will also be completed at this time. A reinforcement geotextile will be placed at 602 feet MSL, or slightly above lake level, to prevent slope failure. Upon completion of Stage 1, the site will stabilize in place over a period of three months prior to construction of Stage 2. Heavy duty silt fence will be used along the embankment after each phase of fill. The runway will be closed during periods of construction of this stage but will re-open during the stabilization period.
- **Stage 2:** The remaining fill and a surcharge of five feet will be placed. Since the grade of the proposed runway is variable, the top elevation of the surcharge will vary from 611 feet to 614 feet MSL. The surcharge will need to stabilize over a period of approximately six to nine months. The floating silt curtain will be required to be removed over winter months. However, heavy duty silt fence will again be used along the embankment after each phase of fill. The runway will be closed for the duration of this stage since surcharge will be required to be placed within the existing runway safety area.

- Stage 3: The excess surcharge will be removed and the runway and taxiway will be constructed. A typical section of the runway and completed fill is shown on **Figure 2-3**. The runway will remain closed for the duration of this stage.

Fill will be placed in these stages along with a reinforcement geotextile (ultimate tensile strength of 17,500 pounds per linear foot) in order to prevent slope failure (see **Figure 2-3**). Noise and dust effects from construction equipment would be minimized through the use of construction BMPs. The contractor would be required to carry out dust and erosion control procedures, such as watering to control dust and wind erosion, seeding with a temporary cover crop (oats) in work areas that are temporarily inactive, and installation and maintenance of silt fence. These requirements would be included in the project drawings and specifications under the FAA standard specification Item P-156, "Temporary Air and Water Pollution, Soil Erosion, and Siltation Control." These measures would also be part of the Storm Water Pollution Prevention Plan (SWPPP) developed in association with the NPDES Construction Permit. The dust and erosion control procedures would be required to be maintained throughout the construction activity and until disturbed areas are restabilized. All phases of construction would be performed in accordance with FAA AC 150/5370-10B, Standards for Specifying Construction of Airports.

Construction of the proposed project would result in creation of over one acre of new impervious surface; however, the existing runway and taxiway are proposed to be obliterated and there will be a net decrease in impervious surface post construction. Because there will be a net decrease in impervious, permanent control and treatment of surface water runoff under the NPDES/State Disposal System (SDS) Permit Program is not required. Additional discussion of stormwater runoff and management is included in **Section 3.16.5**.

There are no design features of the proposed project that have the potential to be affected by increases in precipitation or storm frequency due to climate change; therefore, climate change is anticipated to have no effect on erosion or sedimentation on the site.

Earth-moving equipment would be active on the site during reconstruction of the runway and would result in a temporary increase in noise and dust in the immediate project area (within airport boundary). In addition, the material brought to the site via truck will travel on Lake Avenue through Canal Park, a tourist and recreation district, across the Aerial Lift Bridge, and down Minnesota Avenue on Minnesota Point, increasing noise and potential dust to these areas as well. The fill material used for runway construction will likely be brought to the project site using a combination of trucking and barging depending on material type and source. It is anticipated that the material used during the perimeter berm stage will be trucked to the site (approximately 1,800 truck trips traveling the above-mentioned route through Canal Park and on Minnesota Avenue). Materials used for Stages 1 and 2 will be a mix of materials from on site (material excavated for the riprap toe during the Perimeter Berm Stage, reclaimed pavement and base course, and material excavated for the taxiway, ditching and miscellaneous areas) and materials brought to the site using hydraulic pumping from a barge to the project site. While there will be no trucks hauling material, there will be minor construction automobile traffic during this stage. The final stage, Stage 3, will utilize trucking (approximately 1,800 truck trips through Canal Park and on Minnesota Avenue) to transport materials (topsoil borrow, class 5 aggregate base, and asphalt) to the site. Excess material from the surcharge will be reused on site and will not require additional trucks for removal from the site. In an effort to promote construction procedures to protect, enhance and maintain a favorable environment, consultation with the contractor would be required prior to beginning construction. This meeting would serve to inform and instruct the contractor about the techniques and procedures included in the project construction drawings and specifications. Project updates and proposed schedules would also be provided to area residents and airport users.

Alternative 13

Alternative 13 would result in grading of approximately 28 acres of land. Approximately 24,360 cubic yards of material would be required for fill in Superior Bay. In addition to this, existing soils on the Airport site would be required to be moved in order to grade the area of the proposed runway and taxiway to FAA standards. This amount of soil is unknown.

Fill will be placed in stages similar to those of Alternative 5a Short along with a reinforcement geotextile in order to prevent slope failure. Noise and dust effects from construction equipment would be minimized through the use of construction BMPs. The contractor would be required to carry out dust and erosion control procedures such as watering to control dust and wind erosion, seeding with fast growing grass in work areas that are temporarily inactive, and installation and maintenance of silt fence. These requirements would be included in the project drawings and specifications under the FAA standard specification Item P-156, "Temporary Air and Water Pollution, Soil Erosion, and Siltation Control." These measures would also be part of the SWPPP developed in association with the NPDES Construction Permit. The dust and erosion control procedures would be required to be maintained throughout the construction activity and until disturbed areas are restabilized. All phases of construction would be performed in accordance with FAA AC 150/5370-10B, Standards for Specifying Construction of Airports.

Earth moving equipment would be active on the site during reconstruction of the runway and would result in a temporary increase in noise and dust in the immediate project area (within the Airport boundary). In addition, the material brought to the site via truck will travel on Lake Avenue through Canal Park, a tourist and recreation district, across the Aerial Lift Bridge, and down Minnesota Avenue on Minnesota Point, increasing noise and potential dust to these areas as well. The fill material used for runway construction will likely be brought to the project site using a combination of trucking and barging depending on material type and source.

Also, in an effort to promote construction procedures to protect, enhance and maintain a favorable environment, consultation with the contractor would be required prior to beginning construction. This meeting would serve to inform and instruct the contractor about the techniques and procedures included in the project construction drawings and specifications.

Construction of the proposed project would result in creation of over one acre of new impervious surface and require control and treatment of surface water runoff under the NPDES/SDS Permit Program. Additional discussion of stormwater runoff and management is included in **Section 3.16.5**.

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility. The entire airport site (35.0 acres) would be graded after removal of airport facilities. The number of cubic yards of soil to be moved during the grading activities is unknown.

Noise and dust effects from construction equipment would be minimized through the use of construction BMPs. The contractor would be required to carry out dust and erosion control procedures such as watering to control dust and wind erosion, seeding with fast growing grass in work areas that are temporarily inactive, and installation and maintenance of silt fence. These requirements would be included in the project drawings and specifications under the FAA standard specification Item P-156, "Temporary Air and Water Pollution, Soil Erosion, and Siltation Control." These measures would also be part of the SWPPP developed in association with the NPDES Construction Permit. The dust and erosion control procedures would be required to be maintained throughout the construction activity and until disturbed areas are restabilized. All phases of construction would be performed in accordance with FAA AC 150/5370-10B, Standards for Specifying Construction of Airports.

Earth-moving equipment would be active on the site during removal of airport facilities and would result in a temporary increase in noise and dust in the immediate project area (within the Airport boundary). In addition, the material removed from the site via truck will travel down Minnesota Avenue on Minnesota Point, across the Aerial Lift Bridge, and through Canal Park, a tourist and recreation district, increasing dust and noise to these areas as well.

The areas disturbed by construction would be approximately 0.3 miles from Park Point Recreation Area and Beach. The area is approximately 0.6 miles from the nearest off-airport residence. The local community and residents could expect several seasons to a decade or more of activity associated with reclamation and ecological restoration of the site upon decommissioning and removal of the Airport facility.

Also, in an effort to promote construction procedures to protect, enhance and maintain a favorable environment, consultation with the contractor would be required prior to beginning construction. This meeting would serve to inform and instruct the contractor about the techniques and procedures included in the project construction drawings and specifications.

3.5.3 Traffic (EAW Item 18)

The project does not involve expansion of traffic, and no parking spaces will be added. Temporary construction impacts due to traffic are compared for the alternatives below.

Preferred Alternative: Alternative 5a Short

Traveling to the Airport site for construction of the preferred alternative requires travel through Canal Park and across the Aerial Lift Bridge, increasing traffic in this area during construction. Canal Park is the most popular tourist and recreation-oriented destination in Duluth, particularly in the summer months. The Aerial Lift Bridge provides the only road access and evacuation route from Minnesota Point across the ship canal to Canal Park. The current Aerial Lift Bridge operation schedule is designed to reduce the number of traffic backups by limiting bridge opening during the peak navigation and tourist season [late May through early September, seven (7) days per week, 7:00 am – 9:00 pm], but the Aerial Lift Bridge still opens approximately every half hour and on demand for large ships during the peak season. Aerial Lift Bridge operations can create traffic backups in both directions and would increase trucks idling in these areas. Between Memorial Day and Labor Day, backups in Canal Park and Minnesota Point as long as ½ mile are commonly experienced during periods of Aerial Lift Bridge opening. The bridge takes about three (3) minutes to raise to its full height (opening height depends on the height of the vessel seeking passage), and traffic is blocked for up to 12 minutes to allow time for the bridge to raise, ship traffic to pass, and the bridge to lower again. The Aerial Lift Bridge is listed on the NRHP. The bridge has no load restrictions and any legal load may cross the bridge without a permit. Therefore, no impacts are anticipated to the Aerial Lift Bridge as a result of construction traffic. However, additional consultation with SHPO will take place, if required, after final design is complete and the extent and timing of truck traffic over the lift bridge is known.

Trucks transporting material to the project site would travel on Minnesota Point from the Aerial Lift Bridge to the project site. There is the potential that trucks may damage the existing roadway. The contractor would be required to repair the existing roadway to preconstruction conditions after completion of runway construction.

Impacts caused by material trucking will be minimized through utilization of hydraulic pumping of fill materials as described in **Section 2.1**.

The Airport runway would close for periods of the Perimeter Berm Stage, Stages 1 and 2, and for the duration of Phase 3. Based aircraft and businesses would be impacted by the temporary Airport closures. Seaplane use of the facility may continue through these phases with only intermittent closures due to construction vehicle activity. Based aircraft could remain hangared at the Airport during construction but would not have access to the runway while it is closed. The businesses located at the Airport would be impacted during periods of runway closure due to limited access to their business. Hangar 10 Aero's business is based primarily on wheeled aircraft that require runway use. Jonathan Aero's business includes both wheeled, amphibian and float geared aircraft. The portion of that business activity that relies on runway use would be impacted by construction. Alternately, based aircraft or businesses could temporarily relocate to other area airports (Richard I. Bong Superior Airport or Duluth International Airport).

It is expected that construction of the preferred alternative would be completed within two construction seasons. Construction activities could extend into winter months, but would be limited to daylight hours between 7:00 am and 7:00 pm in order to reduce the noise impact on area residences. Also, final design will evaluate options for minimizing impacts to Canal Park and Minnesota Point during the peak tourist season by limiting construction and/or construction traffic during this time where possible. The areas disturbed by construction would be approximately 0.3 miles from Park Point Recreation Area and Beach. The area is approximately 0.6 miles from the nearest off-airport residence. One residence is located on airport property in the terminal building and is used for airport employees.

Alternative 13

Traveling to the Airport site requires travel through Canal Park and across the Aerial Lift Bridge, increasing traffic in this area during construction. Construction traffic impacts to the popular tourist and recreation-oriented Canal Park due to Alternative 13 would be similar to those described above for the preferred alternative. The Aerial Lift Bridge provides the only road access and evacuation route from Minnesota Point across the ship canal to Canal Park. The current Aerial Lift Bridge operation schedule is designed to reduce the number of traffic backups by limiting bridge opening during the peak navigation and tourist season [late May through early September, seven (7) days per week, 7:00 am - 9:00 pm], but the Aerial Lift Bridge still opens approximately every half hour and on demand for large ships during the peak season. Aerial Lift Bridge operations can create traffic backups in both directions which would lead to an increase in trucks idling in these areas. Between Memorial Day and Labor Day, backups in Canal Park and Minnesota Point as long as 1/2 mile are commonly experienced during periods of Aerial Lift Bridge opening. The bridge takes about three (3) minutes to raise to its full height (opening height depends on the height of the vessel seeking passage), and traffic is blocked for up to 12 minutes to allow time for the bridge to raise, ship traffic to pass, and the bridge to lower again. The Aerial Lift Bridge is listed on the NRHP. The bridge has no load restrictions and any legal load may cross the bridge without a permit. Therefore, no impacts are anticipated to the Aerial Lift Bridge as a result of construction traffic. However, additional consultation with SHPO will take place, if required, after final design is complete and the extent and timing of truck traffic over the lift bridge is known.

Trucks transporting material to the project site would travel on Minnesota Point from the Aerial Lift Bridge to the project site. There is the potential that trucks may damage the existing roadway. The contractor would be required to repair the existing roadway to preconstruction conditions after completion of runway construction.

The runway would close for periods of runway construction. Based aircraft and businesses would be impacted by the temporary closures. Seaplane use of the facility may continue through these phases with only intermittent closures due to construction vehicle activity. Based aircraft could remain hangared at the Airport during construction but would not have access to the runway while it is closed. The businesses located at the Airport would be impacted during periods of runway closure due to limited access to their business. Hangar

10 Aero's business is based primarily on wheeled aircraft that require runway use. Jonathan Aero's business includes both wheeled, amphibian and float geared aircraft. The portion of that business activity that relies on runway use would be impacted by construction. Alternately, based aircraft or businesses could temporarily relocate to other area airports (Richard I. Bong Superior Airport or Duluth International Airport).

It is expected that construction of the Alternative 13 would be completed within two construction seasons. Construction activities could extend into winter months, but would be limited to daylight hours between 7:00 am and 7:00 pm in order to reduce the noise impact on area residences. Also, final design will evaluate options for minimizing impacts to Canal Park and Minnesota Point during the peak tourist season by limiting construction and/or construction traffic during this time where possible. The areas disturbed by construction would be approximately 0.3 miles from Park Point Recreation Area and Beach. The area is approximately 0.6 miles from the nearest off-airport residence. One residence is located on airport property in the terminal building and is used for airport employees.

No Action

The no action alternative would result in loss of Airport licensure and closure and decommissioning of the facility. Material removed from the site via truck will travel down Minnesota Avenue on Minnesota Point, across the Aerial Lift Bridge, and through Canal Park, a tourist and recreation district, temporarily increasing dust, traffic, and noise to these areas.

It is expected that construction of the no action alternative would be completed within one construction season. Construction activities could extend into winter months, but would be limited to daylight hours between 7:00 am and 7:00 pm in order to reduce the noise impact on area residences. Also, final design will evaluate options for minimizing impacts to Canal Park and Minnesota Point during the peak tourist season by limiting construction and/or construction traffic during this time where possible.

3.5.4 Air Quality (EAW Item 16.b.)

EAW Item 16.b. Describe the effect of the project's traffic generation on air emissions. Discuss the project's vehicle-related emissions effect on air quality. Identify measures (e.g. traffic operational movements, diesel idling minimization plan) that will be taken to minimize or mitigate vehicle-related emissions).

The City of Duluth, including the Airport, is a Maintenance Area for carbon monoxide (CO) according to EPA guidelines (see **Section 3.1**). Air quality analysis may be required for air emissions due to construction traffic.

Preferred Alternative: Alternative 5a Short

Construction traffic due to the preferred alternative is unlikely to increase traffic/congestion at any intersections with LOS D, E, or F. An air quality analysis will be completed once the route and extent of trucking necessary to bring material to and from the Airport is known.

Alternative 13

Construction traffic due to the Alternative 13 is unlikely to increase traffic/congestion at any intersections with LOS D, E, or F. An air quality analysis will be completed once the route and extent of trucking necessary to bring material to and from the Airport is known.

No Action

The no action alternative would result in loss of Airport licensure and closure and decommissioning of the facility. Construction traffic is unlikely to increase traffic/congestion at any intersections with LOS D, E, or F. An air quality analysis will be completed once the route and extent of trucking necessary to bring material to and from the Airport is known.

3.6 Department of Transportation Act: Section 4(f) (EAW Item 9.a.i.)

EAW Item 9.a.i. Describe existing land use of the site as well as areas adjacent to and near the site, including parks, trails, prime or unique farmlands.

Section 4(f) legislation was established under the Department of Transportation (DOT) Act of 1966 (now codified at 49 USC 303, and 23 USC 138) and provides protection for publicly owned land in public parks, recreation areas, or wildlife and waterfowl refuges of national, state, or local significance or lands from an historic site of national, state, or local significance. Any part of a publicly owned park, recreation area, refuge, or historic site is presumed to be significant unless there is a statement of insignificance relative to the whole park by the federal, state, or local official having jurisdiction thereof. The Section 4(f) regulations require the consideration of feasible and prudent alternatives that avoid using the Section 4(f) resource. If impacts cannot be avoided, measures to minimize harm must be included with the project.

The Minnesota Point Pine Forest SNA is a significant publicly owned recreation area, which therefore qualifies it as a Section 4(f) resource. Several other Section 4(f) resources exist in the vicinity of the Airport, but are not within the project area and will not be impacted. These include: Park Point, Park Point Trail, Park Point Recreation Area, Point Zero Light House, Hartman Park, and Southworth Marsh Wildlife Refuge. The Minnesota Point Pine Forest SNA consists of approximately 18 acres in two separate parcels adjacent to and southeast of the Airport as shown on **Figure 1-2**. The two parcels are divided by an opening in the forest created around 1968 by SWLP to accommodate electrical and water pumping substations and the easement for the water utility to the City of Superior, Wisconsin. The Minnesota Land Trust established a Conservation Easement with the State of Minnesota on June 30, 1999 to preserve and protect a portion of the pine forest, sand dunes, and lakeshore. The Minnesota Point Pine Forest SNA was then established in April 2002 and is now managed and protected by the MNDNR.

As described in **Section 3.2.2.3**, the SNA consists of a mixed-age pine forest found on stabilized sand dunes (MNDNR 2003), which are a function of the strong lakeside winds that created and maintain the sand dunes on the point. The sand spit itself was probably formed about 5,000 years ago and is one of the “newest” (geologically speaking) examples of this type of feature in the bay. The uniqueness of the forest stand and its location on Minnesota Point are key factors as to how this resource contributes to Minnesota’s natural heritage. The red and white pine woodland in the SNA is the last natural remnant of a forest that stretched the length of Minnesota Point, which separates the St. Louis River estuary from Lake Superior (MNDNR 2003).

Classification of trees in the SNA forest as meeting the “old-growth” criteria set forth by the MNDNR requires natural forests that have developed over a long period of time, generally at least 120 years, without experiencing severe, stand-replacing disturbance (e.g., fire, windstorm, or logging). The old-growth trees in the now urban setting are uniquely significant in Minnesota “by virtue of its presence on Lake Superior sand dunes” (Wilson and Rusterholz 1996), with the red and white pine woodland, its understory components, and ecological setting being the only example of this in Minnesota. The MNDNR has mapped this plant community in its Ecological Classification System (ECS) as “Red Pine-White Pine Woodland” (ECS code FDn32b). Other examples of this plant community nearby or in a similar ecological setting are essentially limited to nearby Wisconsin Point (in Superior, Wisconsin) and on the lee shore of some islands within Wisconsin’s Apostle Islands National Lakeshore near Bayfield, Wisconsin (Wilson and Rusterholz 1996).

There is an established, single foot trail (Park Point Trail) that traverses the pine forest including a portion through the SNA. This trail is for non-motorized use only. It is currently used by pedestrians, including their pets, and bicyclists. Although State Statute and Administrative Rule do not allow pets and bicycles in SNAs, some conditions exist where these activities could be allowed if so authorized through the use guidelines developed for a specific SNA. Pedestrian and bicycle use of trails (including with pets) in the Minnesota Point Pine Forest and designated SNA are pre-existing activities from before the SNA was designated. There is no history of enforcement action to discontinue these uses, and in May 2014 the MNDNR held a public hearing to receive public comments regarding allowing some of these recreational uses in the SNA. It is likely these typically unallowable uses of an SNA would continue so long as they remain a manageable use with no deleterious effects to the SNA, surrounding old-growth forest, or other significant ecological resources.

3.6.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

Alternative 5a Short does not result in impacts to any trees within the Section 4(f) resource (the Minnesota Point Pine Forest SNA) nor does it limit or prohibit access to the resource. Therefore, no permanent impacts to Section 4(f) resources are anticipated as a result of Alternative 5a Short.

As initially proposed, temporary impacts to the Section 4(f) resource would have occurred due to light vehicle traffic necessary for construction of a new obstruction light on DAA property as shown on **Figure 2-1**. It would have been necessary for light vehicle traffic to travel through the SNA property to access the new obstruction light furthest from Airport property. Vehicles accessing the site would potentially disturb a path 12 feet wide of Juniper Dune Shrubland community in order to access the proposed site of the new obstruction light. In order to avoid impacts to the Section 4(f) resource, as well as avoid impacts to native plant communities and listed species, this obstruction light has been eliminated from the preferred alternative. If the second new obstruction light is ultimately required for safety reasons, a permit will be sought from the commissioner of the DNR as well as permission from Minnesota Land Trust to access the SNA property. Additionally, coordination with DNR will take place regarding potential impacts to state-listed threatened species. Consultation with USFWS would also take place for potential impacts to the piping plover.

Alternative 13

Alternative 13 includes the immediate removal/topping of approximately 60 trees in the approach surface, including 3 trees (1 red pine and 2 white pine) in the SNA, which is a Section 4(f) resource. Approximately 76 trees (27 red pine, 41 white pine, 8 other species) would require topping or removal by 2063. The area of tree removal would be managed as beach heather-juniper community instead of old-growth forest. Alternative 13 would not limit or prohibit access to the Section 4(f) resource.

A formal Section 4(f) evaluation would be required if Alternative 13 is selected as the preferred alternative. Since Alternative 5a Short has been selected as the preferred alternative, the Section 4(f) evaluation was not completed. If Alternative 13 becomes the preferred alternative, a Section 4(f) evaluation will be completed. The Section 4(f) evaluation would have to demonstrate that Alternative 13 is the only feasible and prudent alternative in order for the FAA to participate in funding or approve the project. It is anticipated that this would be difficult to prove given the preferred alternative has no Section 4(f) impacts.

No Action

The no action alternative would result in loss of Airport licensure and Airport closure. The closure and rededication of the site to recreation purposes is not expected to impact the Section 4(f) resource.

3.7 Energy Supply and Natural Resources

Energy resources include all basic fuel supplies that are utilized for heating, electrical production, transportation, and other forms of energy requirements. Electric service is provided by Minnesota Power. The A/D Building uses fuel oil for heating and the fuel oil is provided by Caywood Oil LLC. Como Oil and Propane provides propane to the A/D Building.

The effects of airport development on energy and natural resources are generally related to the amount of energy required for stationary facilities (i.e., terminal building cooling or heating equipment, electrical lighting for the interior of buildings and the airfield, and approach systems), and movement of aircraft and ground vehicles.

3.7.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

The energy needs of the Airport would decrease as a result of the preferred alternative due to the decrease in airfield lighting that results from a decrease in runway length from the existing conditions (decrease from 3,050 feet to 2,600 feet). Movement of aircraft and ground vehicles would not substantially change as part of this alternative. There would be no net increase in energy needs from the new obstruction light as the total number of lights will decrease (from 4 to 3) compared to the existing conditions.

Alternative 13

The energy needs of the Airport would decrease as a result of the Alternative 13 due to the decrease in airfield lighting that results from a decrease in runway length from the existing conditions (decrease from 3,050 feet to 2,600 feet). Movement of aircraft and ground vehicles would not substantially change as part of this alternative. There would be no net increase in energy needs from the one new obstruction light as the total number of lights will remain decrease (from 4 to 3) compared to the existing conditions.

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility. The closure and removal of airport facilities as part of this alternative would eliminate the energy and natural resource needs of the Airport.

3.8 Farmlands (*EAW Item 9.a.i.*)

EAW Item 9.a.i. Describe existing land use of the site as well as areas adjacent to and near the site, including parks, trails, prime or unique farmlands.

The Farmland Protection Policy Act (FPPA) was enacted to minimize the extent to which federal actions contribute to the conversion of farmland to non-agricultural uses. As used in the FPPA, farmland includes prime and unique farmland and land of statewide or local importance. “Farmland” subject to FPPA requirements does not have to be currently used for cropland. It can be forestland, pastureland, cropland, or other land not under water or built-up.

While some areas across the bay in Superior, Wisconsin contain prime farmland or soils of statewide importance, no soils within the Airport boundary or adjacent to the Airport are designated prime or unique farmlands (see **Figure 3-8**).

3.8.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

Alternative 5a Short would not result in impacts to prime farmland or soils of statewide importance.

Alternative 13

Alternative 13 would not result in impacts to prime farmland or soils of statewide importance.

No Action

The no action alternative would not result in impacts to prime farmland or soils of statewide importance.

3.9 Floodplains

Executive Order 11988, *Floodplain Management*, bans federal actions in a floodplain unless no practicable alternative exists, and requires measures to minimize unavoidable short-term and long-term impacts if the preferred alternative is constructed in a floodplain. Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) were reviewed to determine if the preferred alternative would result in development within a 100-year floodplain.

The FIRM for the City of Duluth, Minnesota, St. Louis County – Panel Number 270421 0040, effective February 1, 1980 indicates that the Airport and all of Minnesota Point are located outside the FEMA designated 100-year floodplain of Lake Superior (see **Figure 3-9**). The Airport is located in Zone C, indicating it is of higher elevation than the 500-year flood.

The adjacent areas of Lake Superior and Superior Bay are identified as Zone A1 on the FIRM. This means the area is subject to the 100-year flood event as determined by detailed methods. The map indicates the methodology indicates a base flood elevation (BFE) of 605 feet. The FIRM indicates that flood insurance is not available for new construction or substantially improved structures on and after November 16, 1990 in designated coastal barriers for the entire area of Minnesota Point south of 42nd Street South.

The City of Duluth Natural Resources Overlay Zone District Map indicates that the narrow strip of land immediately adjacent to the Airport runway on the bay side is designated as City General Floodplain zone. Further out in Superior Bay is considered a Floodway of Lake Superior. Neither the Airport nor the area immediately adjacent to it is located in the floodway.

3.9.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

This alternative requires approximately 69,800 cubic yards of fill material placed over approximately 7.49 acres of FEMA Zone A1 (City General Floodplain and Floodway District). The fill placement will be within Superior Bay, which functions more as a lacustrine (i.e. “lake”) system than a riverine (i.e. “river”) system, which means that there is little to no conveyance of floodwaters. Therefore, any increase in flood elevations would be related to the volume of floodplain storage lost due to fill. The volume of storage lost due to fill is approximately 2.1 acre-feet, which is a negligible fraction of the available 100-year floodplain storage of Superior Bay and therefore would result in no discernible increase in the flood elevations. A Special Use Permit from the City of Duluth will be required for fill in the floodplain.

Neither FEMA nor the City of Duluth requires compensatory storage for the loss of floodplain storage due to fill within the 100-year floodplain. Airport landing strips are a permitted use per City of Duluth zoning ordinance Section 50-18.c.2.a.ii, therefore no mitigation is proposed.

There are no new structures or additions to any structures as part of this project that are located in the floodplain or flood fringe area. Therefore, the project should be in compliance with the Flood Hazard Areas provisions (City of Duluth Unified Development Code 50-38.2B).

Alternative 13

This alternative includes approximately 24,360 cubic yards of fill placed over 3.4 acres of FEMA Zone A1 (City General Floodplain and Floodway District). Similar to Alternative 5a Short, since the fill is within an area of non-conveyance, any associated increase in flood elevations would be related to the volume of floodplain storage lost due to the fill. The volume of the floodplain storage lost due to fill is approximately 0.6 acre-feet, a negligible fraction of the available 100-year floodplain storage of Superior Bay and therefore would result in no measurable increase in floodplain elevations. A Special Use Permit from the City of Duluth will be required for fill in the floodplain.

Neither FEMA nor the City of Duluth requires compensatory storage for the loss of floodplain storage due to fill within the 100-year floodplain. Airport landing strips are a permitted use per City of Duluth zoning ordinance Section 50-18.c.2.a.ii, therefore no mitigation is proposed.

There are no new structures or additions to any structures as part of this project that are located in the floodplain or flood fringe area. Therefore, the project should be in compliance with the Flood Hazard Areas provisions (City of Duluth Unified Development Code 50-38.2B).

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility and would not impact the floodplain.

3.10 Greenhouse Gases and Climate

Research has shown there is a direct correlation between fuel combustion and greenhouse gas emissions. In terms of U.S. contributions, the General Accounting Office reports that "domestic aviation contributes about 3% of total carbon dioxide emissions, according to EPA data," compared with other industrial sources including the remainder of the transportation sector (20%) and power generation (41%).⁷ The International Civil Aviation Organization (ICAO) estimates that greenhouse gas emissions from aircraft account for roughly 3% of all anthropogenic greenhouse gas emissions globally.⁸ Climate change due to greenhouse gas emissions is a global phenomenon, so the affected environment is the global climate.⁹

The scientific community is continuing efforts to better understand the impact of aviation emissions on the global atmosphere. The FAA is leading and participating in a number of initiatives intended to clarify the role that commercial aviation plays in greenhouse gas emissions and climate. The FAA, with support from the U.S. Global Change Research Program and its participating Federal agencies (e.g., NASA, NOAA, EPA, and DOE), has developed the Aviation Climate Change Research Initiative (ACCRI) in an effort to advance scientific understanding of regional and global climate impacts of aircraft emissions. FAA also funds the Partnership for Air Transportation Noise & Emissions Reduction (PARTNER) Center of Excellence research initiative to quantify the effects of aircraft exhaust and contrails on global and U.S. climate and atmospheric composition.

⁷ *Aviation and Climate Change*. GAO Report to Congressional Committees, (2009). <http://www.gao.gov/new.items/d09554.pdf>

⁸ Alan Melrose, "European ATM and Climate Adaptation: A Scoping Study," in *ICAO Environmental Report*. (2010).

⁹ Federal Aviation Administration (FAA) Order 1050.1E, Change 1, Guidance Memo #3, *Considering Greenhouse Gases and Climate Change Under the National Environmental Policy Act (NEPA): Interim Guidance*, January 2012.

Similar research topics are being examined at the international level by the International Civil Aviation Organization.¹⁰

Although there are no Federal standards for aviation-related GHG emissions, it is well-established that greenhouse gas emissions can affect climate. The Council on Environmental Quality (CEQ) has indicated that climate should be considered in NEPA analysis. As noted by CEQ, however, “it is not currently useful for the NEPA analysis to attempt to link specific climatological changes, or the environmental impacts thereof, to the particular project or emissions; as such direct linkage is difficult to isolate and to understand.”

3.10.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

Based on FAA data, operations activity at the Airport, relative to aviation throughout the United States, represents less than 0.1% of US aviation activity. Therefore, assuming that greenhouse gases occur in proportions to the level of activity, greenhouse gas emissions associated with existing and future aviation activity at the Airport would be expected to represent less than 0.05% of US based greenhouse gases. Because of the related uncertainties involving the assessment of such emissions regionally and globally, the incremental contribution of this proposed action cannot be adequately assessed given the current state of the science and assessment methodology.¹¹ Therefore, one would not expect the emissions of greenhouse gases from this project to be significant.

Alternative 13

Based on FAA data, operations activity at the Airport, relative to aviation throughout the United States, represents less than 0.1% of US aviation activity. Therefore, assuming that greenhouse gases occur in proportions to the level of activity, greenhouse gas emissions associated with existing and future aviation activity at the Airport would be expected to represent less than 0.05% of US based greenhouse gases. Because of the related uncertainties involving the assessment of such emissions regionally and globally, the incremental contribution of this proposed action cannot be adequately assessed given the current state of the science and assessment methodology.¹² Therefore, one would not expect the emissions of greenhouse gases from this project to be significant.

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility. Due to Airport closure, aircraft traffic at the Airport and the immediate vicinity would presumably be reduced, thus reducing the GHG emissions generated at the Airport. If the Airport were to close, the area would be rededicated as a public recreational area. It is not known what land use would be associated with this recreational area. It is unknown if some eventual uses of the site in the no action alternative would contribute to GHG emissions in the future.

¹⁰ Lourdes Q. Maurice and David S. Lee. *Chapter 5: Aviation Impacts on Climate*. Final Report of the International Civil Aviation Organization (ICAO) Committee on Aviation and Environmental Protection (CAEP) Workshop. October 29th - November 2nd, 2007, Montreal. http://www.icao.int/icao/en/caftrst/CAEP/CAEP_SG_20082/docs/Caep8_SG2_WPI0.pdf

¹¹ NEPA Regulations, Council on Environmental Quality, 40 CFR 1502.22, *Incomplete or unavailable information*.

¹² NEPA Regulations, Council on Environmental Quality, 40 CFR 1502.22, *Incomplete or unavailable information*.

3.11 Hazardous Materials, Pollution Prevention, and Solid Waste (*EAW Item 12.b., Item 12.c., and Item 12.d.*)

EAW Item 12.b. Project related generation/storage of solid wastes - Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of solid waste including source reduction and recycling.

EAW Item 12.c. Project related use/storage of hazardous materials - Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location and size of any above or below ground tanks to store petroleum or other materials. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.

EAW Item 12.d. Project related generation/storage of hazardous wastes - Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from hazardous waste handling, storage, and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling.

Solid wastes and hazardous materials/wastes are generated and stored at the Airport. Standard policies are employed at the Airport to minimize the potential for contamination due to these materials and wastes, including groundwater contamination. The aboveground tank and fuel system are subject to routine monitoring and reporting including daily, monthly, and quarterly inspections. Required Spill Prevention Control and Countermeasure (SPCC) plan inspections are also conducted and inspections and fuel safety activities are recorded as required.

Solid waste from the Airport owned facilities is collected by Waste Management. Private hangars contract for solid waste collection through private waste collection companies. All solid waste collected by licensed haulers in the City of Duluth area is transported to the solid waste transfer station operated by the Western Lake Superior Sanitary District (WLSSD). Waste delivered to the WLSSD is then transported to the Moccasin Mike Landfill in Superior, Wisconsin, a facility licensed by the Wisconsin Department of Natural Resources. Recyclable materials are not picked up from DAA owned facilities at the Airport. However, several private tenants contract recycling collection services including plastic, metal, glass, and cardboard through their waste hauler. Airport users can dispose of recyclable materials not handled by their waste hauler at the WLSSD Materials Recovery Center.

Duluth-Sky Harbor Airport collects and recycles used maintenance fluids, including engine and hydraulic oil, at the Duluth International Airport. When possible, the Airport uses recycled maintenance products.

A search of the MPCA database identified five (5) Hazardous Waste Generator Numbers issued for companies or individuals operating out of the Airport (**Table 3-5**). Communication with the Airport Manager indicates that one owner-operator, Jonathan Aero, operates three entities that are identified as Hazardous Waste Generators: Bill Smith Hangar (hangar 5), Foster Aviation, and North Star Aero Repair, as shown in **Table 3-5**.

**Table 3-5
Hazardous Waste Generators**

Entity/Owner-Operator	Hazardous Waste Generator Numbers ID #
Del Industries Inc.	MND985722248
Jonathan Aero (owns and operates three entities)	Bill Smith Hangar (hangar 5) – HWLIC1300025 Foster Aviation – HWLIC1300025 North Star Aero Repair – MNL1247
Don Macors Hangar	HWLIC1300024
Maco Aero	MNR000077164
Abateco	MND985756923

All generators were listed as Small to Minimal Quantity Generators. Only one of these generators (Don Macors Hangar) reported the actual handling of any material. In 2006 Don Macors Hangar reported generating three (3) gallons of paints/thinners and three (3) gallons of parts washer solvents, all of which were beneficially recycled. No other hazardous wastes have been reported or documented associated with the site.

3.11.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

The preferred alternative would not result in any change to waste generation or collection at the Airport or to collection and treatment of sanitary wastes. Solid waste from airport-owned facilities would continue to be collected by Waste Management and that from private hangars through their chosen contractors.

The preferred alternative would not result in any change in hazardous waste generation, collection, or disposal at the Airport. During construction solid wastes would be generated, which would consist mainly of concrete and asphalt debris derived from the re-orientation of the runway. These materials may be recycled by the construction contractor or at the selected disposal facility if suitable. If materials cannot be recycled disposal would occur at a licensed industrial or demolition waste disposal facility. Adequate space is available at licensed facilities should disposal be necessary. No additional hazardous wastes would be generated through the implementation of the preferred alternative.

Activities related to runway realignment are not expected to encounter contaminated soils, but this potential does exist. Excavation activities in the area will include environmental screening of soils by trained personnel. Potential for encountering contaminated soils is discussed in more detail in **Section 3.11.2**.

Alternative 13

The implementation of Alternative 13 would not result in any change to waste generation or collection at the Airport or to collection and treatment of sanitary wastes. Solid waste from airport-owned facilities would continue to be collected by Waste Management and that from private hangars through their chosen contractors.

Alternative 13 would not result in any change in hazardous waste generation, collection, or disposal at the Airport. During construction solid wastes would be generated, which would consist mainly of concrete and asphalt debris derived from the re-orientation of the runway. These materials may be recycled by the construction contractor or at the selected disposal facility if suitable. If materials cannot be recycled disposal will occur at a licensed industrial, or demolition waste disposal facility. Adequate space is available at licensed facilities should disposal be necessary. No additional hazardous wastes would be generated through the implementation of Alternative 13.

Activities related to runway realignment are not expected to encounter contaminated soils, but this potential does exist. Excavation activities in the area will include environmental screening of soils by trained personnel. Potential for encountering contaminated soils is discussed in more detail in **Section 3.11.2**.

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility. Closure of the facility would result in the demolition of airport buildings, hangars, runways, parking areas, fencing, etc. The demolition process would require all hazardous materials and asbestos containing materials to be identified and removed prior to dismantling. These materials would have to be documented and disposed of properly at licensed facilities. Non-hazardous materials, mainly classified as construction/demolition debris (C&D), would be generated and would be hauled off-site and disposed of at a licensed facility. Asphalt and concrete debris generated through the demolition of the parking areas, runways, etc., may be recycled by the demolition contractor or the selected disposal facility.

3.11.2 Above- and Belowground Tanks (*EAW Item 12.a. and Item 12.c.*)

***EAW Item 12.a. Pre-Project Site Conditions.** Describe existing contamination or potential environmental hazards on or in close proximity to the project site such as soil or ground water contamination, abandoned dumps, closed landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-project site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.*

***EAW Item 12.c. Project related use/storage of hazardous materials** - Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location and size of any above or below ground tanks to store petroleum or other materials. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.*

Existing Conditions

The existing airport fuel system consists of the following onsite tanks;

- A 3,000-gallon aboveground 100 Low Lead (LL) avgas (aviation gasoline) fuel tank with 24-hour self service credit card fueling. Fuel is not stored in private hangars.
- A 260-gallon aboveground diesel fuel tank located in an airport owned hangar and holds fuel for airport equipment.
- A 270-gallon aboveground tank in the hangar attached to the A/D building that holds fuel oil used for heating the office and lobby area.
- A 500-gallon aboveground propane tank located behind the A/D building that is used for heating in the A/D building and attached hangar.

Standard policies are employed at the Airport to minimize the potential for contamination. The tanks and fuel system are subject to routine monitoring and reporting including daily, monthly, and quarterly inspections. Required SPCC plan inspections are also conducted and inspections and fuel safety activities are recorded as required.

Potentially Contaminated Sites

One petroleum fuel leak has been documented on airport property according to MPCA records (Leak ID Number 10326). It was first reported in 1997 and involved a 14-year-old, 8,000 gallon fiberglass underground storage tank (UST). Review of MPCA files related to this leak indicates that contamination was encountered in the soil around the tank during its removal in 1997. Groundwater was present at a depth of three (3) feet below the ground surface and groundwater impacts were evident. The MPCA was notified of the leak and the site was required to complete a remedial investigation of the contamination. The investigation involved the installation of a series of groundwater monitoring wells, which were used to evaluate groundwater flow conditions and the extent of contamination (see **Appendix H**). Groundwater flow direction was found to vary depending on influences from Superior Bay to the southeast, and Lake Superior to the northeast. Due to these variations and a very small flow gradient, the migration of contaminants from the original leak site was determined to be limited. Groundwater sampling and analyses occurred for a period of at least three to four years following discovery and results were reported to the MPCA. In 2004 the Airport requested that the leak site be considered for closure with no further requirements. The MPCA accepted the closure report in December 2004 due to the removal of the source of contamination, the stability of the contaminant plume around the leak site, the indication that the natural attenuation processes were degrading the contaminants, and the lack of receptors.

An empty 1,000 gallon below ground fuel oil tank that was located behind the A/D building was removed in May 2014. A corresponding "General Excavation Report Worksheet", MPCA Guidance Document 3-02 was completed and submitted to the MPCA by Environmental Trouble Shooters, Inc. This document dated June 13, 2014 indicated Diesel Range Organic (DRO) compounds were detected at a concentration of 30.6 mg/kg in the soil which is below the Minnesota Pollution Control Agency (MPCA) recommended action level of 100 mg/kg for DRO. Due to the fact that only minor contamination was detected, no further investigation and site closure was recommended in the document. As required, the contamination was reported to the Minnesota Duty Officer on May 22, 2014 and assigned the Leak Number 19481 by the MPCA.

3.11.2.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

The preferred alternative would not result in any change in fueling use or spill protection. The construction limits of the preferred alternative do not impact the closed petroleum leak site. However, the current extent of residual contamination is not known. Activities related to runway realignment are not expected to encounter contaminated soils, but this potential does exist. Excavation activities in the area will include environmental screening of soils by trained personnel using a photo-ionization detector (PID) to identify soils potentially impacted by petroleum contaminants. Any impacted soils would be segregated from other soils in a containment area, placed on 10 mm polyethylene plastic, and covered with 10 mm plastic, to prevent infiltration of precipitation and dispersal of the contaminated soils. Soils identified as potentially impacted would be sampled and analyzed in accordance with MPCA guidance documents to allow characterization prior to disposal. Soils characterized as being impacted by petroleum contaminants could be accepted at several landfills in the Duluth area unless extremely high contaminant levels are encountered.

Groundwater impacts remaining following closure of the petroleum leak site were considered restricted to the leak site and the associated plume was considered to be stable or degrading. Mobilization of contaminants could occur if dewatering or excavation activities during construction were undertaken immediately around the former leak site. Contractors will be kept aware of the site conditions throughout the project in order to reduce the potential for re-mobilization. Water removed as a result of dewatering operations or from excavations would be field screened to identify potential impacts; contaminated water encountered would be sampled and tested at an analytical laboratory to allow for proper disposal to occur. In the event that

contamination is discovered, the State Duty Officer will be notified, in accordance to the reporting requirements of Minnesota Statutes chapter 115.061.

In October 2012, three sediment samples were collected from the project area to evaluate the potential for encountering elevated contaminant concentrations related to dredging during construction. Samples were collected from the upper 18 inches of the sediments from three locations (Sites 1, 3 and 6) as shown on **Figure 3-2**. Since the samples collected were dominantly sands, they were analyzed only for the parameters listed in **Table 3-6**, which are the suite of analytes identified for testing per the document “Managing Dredged Materials in the State of Minnesota” (MPCA 2009).

In the State of Minnesota dredged materials are managed according to the contaminant concentration present. There are three Management Levels established by the MPCA, which are defined as follows:

- **Level 1** – Represents the most restrictive standard. Soils that contain contaminant concentrations less than the Level 1 Soil Reference Values (SRV) are considered acceptable for reuse on properties with a residential or recreational use designation.
- **Level 2** – Represents a less restrictive standard than Level 1. Soils that contain contaminant concentrations less than the Level 2, but greater than Level 1, have SRV considered acceptable for reuse on properties with an industrial use designation.
- **Level 3** – Represents the least restrictive standard, for soils containing significant concentrations of contaminants. Soils containing contaminant concentrations greater than Level 2 SRV are evaluated on a case-by-case basis to determine how they can be appropriately managed to control for the risk of exposure to human health and the environment.

In **Table 3-6** the contaminant concentrations measured in the three analyses have been compared to the Level 1 SRV. This comparison shows that all of the measured concentrations are less than the SRV for each parameter. The sampling and analyses conducted were completed as a screening mechanism to evaluate the potential for encountering contaminated materials. The locations and number of samples/analyses required prior to construction to comply with the guidelines provided in the document “Managing Dredged Materials in the State of Minnesota” (MPCA 2009) will depend on the alternative selected and the volume of sediment to be dredged.

**Table 3-6
Contaminant Concentrations**

Parameter	Units	Level 1 Soil Reference Value (SRV)	Sample #1	Sample #3	Sample #6
Arsenic	mg/kg	9	3.9	3.4	5.8
Cadmium	mg/kg	25	0.36	0.35	0.55
Chromium III	mg/kg	44,000	3.7	5	8.2
Chromium VI	mg/kg	87	ND	ND	ND
Copper	mg/kg	100	2.2	3.1	6.1
Lead	mg/kg	300	2.5	2.1	3.4
Mercury	mg/kg	0.5	ND	ND	ND
Nickel	mg/kg	560	2.9	4	7.6
Selenium	mg/kg	160	ND	ND	ND
Zinc	mg/kg	8,700	7.9	8.2	20
Total Phosphorous	mg/kg	NA	156	110	254
Nitrate + Nitrite	mg/kg	NA	ND	ND	ND
Ammonia-Nitrogen	mg/kg	NA	ND	ND	48.5
Total Kjeldahl Nitrogen	mg/kg	NA	ND	ND	413
Total PCBs	mg/kg	1.2	ND	ND	ND
Total Organic Carbon	mg/kg	NA	501	766	11,300

Any removal of sediments required for construction is unlikely to encounter contamination from the petroleum leak sites above MPCA action levels. Due to the high water table resulting from the presence of Superior Bay and Lake Superior, any necessary dredging activities conducted for construction are unlikely to cause changes in groundwater flow conditions near the closed petroleum leak site; therefore, no further mobilization of the contaminants or increased impacts to receptors are likely.

Alternative 13

The implementation of Alternative 13 would not result in any change in fueling use or spill protection. The construction limits of Alternative 13 do not impact the closed petroleum leak site, however the current extent of residual contamination is not known. Activities related to runway realignment are not expected to encounter contaminated soils, but this potential does exist. During excavation activities in that area environmental screening of soils would be conducted by trained personnel using a PID to identify soils potentially impacted by petroleum contaminants. Any impacted soils would be segregated from other soils in a containment area, placed on 10 mm polyethylene plastic and covered with 10 mm plastic to prevent infiltration of precipitation and dispersal of the contaminated soils. Soils identified as potentially impacted would be sampled and analyzed in accordance with MPCA guidance documents to allow characterization prior to disposal. Soils characterized as being impacted by petroleum contaminants could be accepted at several landfills in the Duluth area unless extremely high contaminant levels are encountered.

Groundwater impacts remaining following closure of the petroleum leak site were considered restricted to the leak site and the associated plume was considered to be stable or degrading. Mobilization of contaminants could occur if dewatering or excavation activities during construction were undertaken immediately around the former leak site. Contractors will be kept aware of the site conditions throughout the project in order to reduce the potential for re-mobilization. Water removed as a result of dewatering operations or from

contains a high water table that is potentiometrically dependent on Lake Superior. This makes groundwater in the project area highly susceptible to contamination.

Standard policies are employed at the Airport to minimize the potential for contamination. The aboveground tank and fuel system are subject to routine monitoring and reporting including daily, monthly, and quarterly inspections. Required SPCC plan inspections are also conducted and inspections and fuel safety activities are recorded as required.

3.11.3.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

The preferred alternative would not result in any change in fueling use or spill protection and would not result in impacts to sinkholes, shallow limestone formations, or karst conditions.

Alternative 13

The implementation of Alternative 13 would not result in any change in fueling use or spill protection and would not result in impacts to sinkholes, shallow limestone formations, or karst conditions.

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility, which would ultimately result in the removal of the five aboveground storage tanks currently present at the Airport. Proper decommissioning of these tanks should result in no adverse environmental consequences at the site. The no action alternative would not result in impacts to sinkholes, shallow limestone formations, or karst conditions.

3.11.4 Soil Conditions (EAW Item 10.b.)

EAW Item 10.b. Soils and Topography - Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability or other soils limitations, such as steep slopes, highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 11.b.ii.

A review of the 2012 NRCS Web Soil Survey for St. Louis County indicates three different soil types in the project area (**Figure 3-10**): loamy Udifluvents (0-2% slopes) 1026A, sandy urban land complex Udipsamments (1-20% slopes) F157C, and sandy Udipsamments (4-20% slopes) F171D.

As noted above, Minnesota Point is predominantly underlain with highly permeable and sandy soils and contains a high water table that is potentiometrically dependent on Lake Superior. This makes groundwater in the project area highly susceptible to contamination. .

3.11.4.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

Construction activities will occur on the Udipsamments with the majority of the work located on the urban land complex Udipsamment F157C. This soil consists of excessively drained, loamy sand, with the potential to transmit water at 2 to 20 inches per hour. The drainage properties of this soil make it susceptible to groundwater contamination. A construction SWPPP will address preventative contamination measures and spill kits will be available as part of this plan during construction (see **Section 3.4**).

The approach for Runway 14 is partially located over the loamy Udifluents 1026A, but construction activities will not occur on this area.

Following project completion, site runoff will be directed to the onsite stormwater treatment system prior to entering groundwater or discharging to surrounding water bodies as part of the NPDES permit required for the site. Stormwater runoff on site is currently managed through vegetative swales parallel to the existing runway, taxiway, and other impervious surfaces. The current fueling facilities will not be altered in this project and are subject to routine monitoring and reporting including daily, monthly and quarterly inspections. Required SPCC plan inspections are also conducted and inspections and fuel safety activities are recorded as required.

Alternative 13

Similar to Alternative 5a Short, construction activities will occur on the Udipsamments with the majority of the work located on the urban land complex Udipsamment F157C. This soil consists of excessively drained, loamy sand, with the potential to transmit water at 2 to 20 inches per hour. The drainage properties of this soil make it susceptible to groundwater contamination. A construction SWPPP will address preventative contamination measures and spill kits will be available as part of this plan during construction (See **Section 3.5.2.1**).

The approach for Runway 14 is partially located over the loamy Udifluents 1026A, but construction activities will not occur on this area.

The current fueling facilities will not be altered in this project and are subject to routine monitoring and reporting including daily, monthly and quarterly inspections. Required SPCC plan inspections are also conducted and inspections and fuel safety activities are recorded as required.

No Action

The no action alternative results in Airport closure and removal of all airport facilities. Construction activities for the no action alternative would occur on the urban land complex Udipsamment F157C. A construction SWPPP will address preventative contamination measures and spill kits will be available as part of any plan that would be required for decommissioning and removing airport facilities (see **Section 3.5.2.1**).

3.12 Historical, Architectural, Archeological, and Cultural Resources (EAW Item 14)

***EAW Item 14.** Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include: 1) historic designations, 2) known artifact areas, and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.*

The National Historic Preservation Act (NHPA) of 1966, as amended, establishes the Advisory Council on Historic Preservation (ACHP) and the National Register of Historic Places (NRHP). Section 106 of the NHPA requires consideration of the effects of undertaking on properties on or eligible for inclusion in the NRHP. Compliance with Section 106 requires consultation the State Historic Preservation Officer (SHPO) if there is a potential adverse effect to historic properties on or eligible for listing on the NRHP.

The Area of Potential Effect (APE) is that area upon which the project has the potential to generate effect, either directly or indirectly. Belowground archaeological resources could be affected where the project would include physical ground-disturbing activities. Architectural and historical aboveground resources could be affected where increases in levels of noise, changes in visual or aesthetic qualities, or changes in traffic

densities or patterns would occur. The Area of Potential Effect (APE) is considered to include the full width of the Point at the Airport and extending both northwest and southeast from the existing runway as shown on Figure 3 in the Cultural Resources Review report (**Appendix I-2, Figure 3**). Results of tribal consultation, as well as input from the Technical Advisory Committee, indicated that there is a high potential for tribal and cultural resources on site.

A cultural resources review was conducted by Duluth Archaeology of Duluth, Minnesota as part of the Environmental Assessment Scoping Document (see **Appendix D**). The 2008 literature search and records review considered historic properties including standing structures, Traditional Cultural Properties (TCPs) and sacred/religious sites. The study also reviewed known archeological sites in the area.

The 2008 study (**Appendix I-3**) indicated that the existing airport location has not been surveyed for archeological sites. However, a recorded archeological site exists southeast of the Airport (adjacent and west of the Minnesota Point Lighthouse, which is on the NRHP) and has been identified in the SHPO database as a Native American campsite and cemetery. This suggests potential for additional unrecorded sites within the project area. In addition, the 2008 study included accounts from an elder of the Fond du Lac Band of Lake Superior Chippewa, photographs, and accounts of early settlement from pioneer settlers indicate occupation of Minnesota Point by Native Americans. Potential for burial sites also exists near the APE as indicated by an elder from the Fond du Lac Band, in information relayed to Duluth Archaeology by LeRoy Defoe, Cultural Resources Specialist for the Fond du Lac Band.

In conjunction with the cultural resources review, Duluth Archaeology completed a Phase I archaeological survey of the project area (**Appendix I-2**). The Phase I survey was conducted because the project area has a high potential for intact subsurface archeological deposits and burials. The Phase I survey included pedestrian walkover with shovel testing where permitted (no shovel testing was permitted within the SNA or within property owned by SWLP). The survey identified six possible cabin locations identified by brick piles, cement slabs, capped well pipes, and artifact scatters. A dump was also presumed to be associated with use of the cabins. No indication of Native American sites or burials was observed.

There are two structures on Minnesota Point that are listed on the NRHP, the Minnesota Point Lighthouse and the U.S.S. Essex Shipwreck (see **Figure 3-11**). These sites are located approximately 1.0 miles and approximately 0.6 miles, respectively, from the existing Runway 32 end. The Pine Knot Cabin, a recreational cabin, once stood within the southernmost parcel of the Minnesota Pine Forest SNA and within the APE, but was removed by the MNDNR in November and December 2010.

None of the existing structures on airport property are over 50 years old. The oldest hangars (Hangars 2, 3, and 4) were constructed in 1969 and the terminal building was constructed in the 1970s.

3.12.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

There are no properties within the APE eligible for listing on the NRHP. This alternative does not include ground disturbance in the vicinity of the possible cabin locations identified in the Phase I survey. Therefore, Alternative 5a Short would not result in any adverse impact to cultural resources. Installation of the previously proposed southernmost obstruction light could potentially impact the dump identified in the Phase I survey. Installation of the southernmost new obstruction light was eliminated from the preferred alternative to avoid impacts to cultural and other resources in the area. If the second new obstruction light is required for safety reasons, a Phase II archaeological survey will be conducted to delineate the boundaries of the archaeological site. A Phase III recovery survey would be conducted if necessary based on the location of the archaeological site.

The sites (positive shovel tests) identified during the Phase I survey will be protected from disturbance during construction. The FAA issued a finding of No Historic Properties Affected in August, 2011. The SHPO conditionally concurred with the finding in a letter dated September 8, 2011. The FAA revised the finding to incorporate SHPO's conditions and to reflect new information. The FAA issued a revised finding in July 2014 and the SHPO concurred in September 2014 (see **Appendix I**).

In the event that cultural or archaeological resources are discovered during construction, all work will stop until the Airport notifies SHPO and the FAA Minneapolis Airports District Office (MSP-ADO). The Airport shall protect the area until cultural/archaeological resource concerns have been appropriately addressed, and the Airport shall take action to comply with the National Historic Preservation Act, the Native American Graves Protection and Repatriation Act, and the Archaeological Resources Protection Act, as appropriate.

Alternative 13

There are no properties within the APE eligible for listing on the NRHP. This alternative includes ground disturbance in the vicinity of positive shovel tests (shovel test locations 6 and 2, **Appendix I-2, Figure 5**). This general area will be disturbed during installation of the new obstruction light (see **Figure 2-12**). As originally proposed, a second new obstruction light would have also had potential for impacts, but the second new light was eliminated from Alternative 13 in order to minimize impacts to cultural and other resources. A Phase II archeological survey will be completed prior to construction and identified sites protected from disturbance. A Phase III recovery survey would be conducted if necessary based on the location of the archaeological site. Alternative 13 was included in the August 2011 finding of No Historic Properties Affected and revised July 2014 finding. SHPO concurred with the FAA finding in September 2014 (see **Appendix I**). If Alternative 13 is selected, additional coordination will be completed as required.

In the event that cultural resources are discovered during construction, all work will stop until the Airport notifies SHPO and the FAA MSP-ADO. The Airport shall protect the area until cultural resource concerns have been appropriately addressed, and the Airport shall take action to comply with the National Historic Preservation Act, the Native American Graves Protection and Repatriation Act, and the Archaeological Resources Protection Act, as appropriate.

No Action

The no action alternative would result in loss of Airport licensure and closure and removal of the facility. Prior to implementation, an architectural history survey of the Airport would be required. Existing hangar structures at the Airport vary in age from 13 years to over 43 years old. The removal of airport facilities may result in work in the vicinity of positive shovel tests (shovel test locations 2, 6 and 12, **Appendix I-2, Figure 5**). In addition, the closure of the Airport would require a land release from the FAA releasing the DAA from the federal obligations associated with the site. The land release would end federal control of the site and may result in an Adverse Effect. A Phase II archeological survey would be completed prior to construction and identified sites protected from disturbance. Additional consultation with the SHPO would be required.

In the event that cultural resources are discovered during construction, all work will stop until the Airport notifies SHPO and the FAA MSP-ADO. The Airport shall protect the area until cultural resource concerns have been appropriately addressed, and the Airport shall take action to comply with the National Historic Preservation Act, the Native American Graves Protection and Repatriation Act, and the Archaeological Resources Protection Act, as appropriate.

3.13 Light Emissions and Visual Impacts

3.13.1 Scenic Views and Vistas (*EAW Item 15*)

EAW Item 15. Describe any scenic views or vistas on or near the project site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.

Duluth-Sky Harbor Airport is located between Lake Superior to the east and Superior Bay to the west on Minnesota Point, which makes up one of largest, natural freshwater baymouth sandbars in the world (Ojakangas and Match 1982). The Airport's location between both Lake Superior and Superior Bay makes it uniquely positioned so that from nearly any vantage point on the Airport property, there are broad, and often spectacular, scenic views and vistas in most directions. These views include the City of Duluth skyline; Lake Superior and Superior Bay; the Duluth and Superior harbors and major inland port facilities; the City of Superior to the immediate west across Superior Bay; and the sand dune and old-growth forest plant communities (including within and nearby the SNA) on Minnesota Point surrounding most of the Airport. These views and vistas are not officially designated or marked, but do have local and regional interest. The old-growth forest is specially designated by the MNDNR as a "Site of Biodiversity Significance." Minnesota Point is not officially designated as a unique geological feature, but it is recognized by both the regulatory, scientific, and lay community as a unique resource for its position as one of the world's largest freshwater baymouth sandbars.

3.13.1.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

The preferred alternative includes relocating the runway from the existing location but will not impact scenic views and vistas to or from Minnesota Point. Two obstruction lights would be abandoned and one new obstruction light would be installed. Bulbs would be removed from the abandoned obstruction lights, but the structures would remain in place to avoid ground disturbance caused by their removal. The new and existing obstruction lights would blend with the existing tree line. Therefore, the obstruction lights would be visible but would not have a significant effect on the view from Minnesota Point or to Minnesota Point from other areas. No new buildings or other infrastructure are planned that could potentially impede any scenic views or vistas.

Alternative 13

In Alternative 13 the runway will be relocated from the existing condition, but will not impact scenic views and vistas to or from Minnesota Point. The two southernmost obstruction lights would be abandoned (similar to the preferred alternative), and one new obstruction light would be installed on DAA property. As with the current location of the obstruction lights, they would blend with the existing forest. As with the preferred alternative above, the obstruction lights would be visible but would not have a significant effect on the view from Minnesota Point or to Minnesota Point from other areas. No new buildings or other infrastructure is planned that could potentially impede any scenic views or vistas.

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility. The removal of airport facilities would allow views of the Duluth skyline and harbor from additional vantage points at the existing airport, and would allow additional views of the old-growth forest (including of the SNA) from additional areas on Minnesota Point and the existing airport. If the Airport were to close, the area would be rededicated as a public recreational area. It is not known what land use would be associated with this recreational area. It is unknown if some eventual uses of the site in the no action alternative would have visual effects in the future.

3.13.2 Light Emissions and Visual Impacts (EAW Item 15)

EAW Item 15. Describe any scenic views or vistas on or near the project site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.

The major sources of light emissions at the Airport include exterior lighting on the terminal buildings, the Airport beacon, parking lot lighting, and runway and navigational lights (including obstruction lights).

Runway 14/32 is equipped with MIRLs that outline the edges of runway during periods of darkness or restricted visibility conditions. The parallel taxiway has MITLs.

Additional lighting at the Airport consists of REILs, PAPIs, and threshold lights all of which give off light emissions. The REILs mark the ends of the runways and consist of two synchronized flashing lights, one on each side of the runway threshold, facing the approach area. PAPIs provide pilots with visual glide slope guidance during approach for landing by presentation of a color-coded indication of the approach aircraft's position on the glide path. Threshold lights mark the runway ends and consist of a red light to indicate the end of the runway to a departing aircraft and emit green outward from the runway end to indicate the threshold to landing aircraft.

The runway and approach guidance lights (PAPIs and REILs) are pilot-controlled-lighting systems. Lights are not illuminated continuously at night or during adverse weather. The lighting systems are initiated by individual pilots as needed for night operations or operations under limited visibility. Once initiated by a pilot, the lights remain illuminated for a 15-minute period and then are extinguished automatically.

The four existing obstruction lights (see **Figure 1-2**) are lit continuously to alert pilots of the trees penetrating the existing approach surface. The obstruction light structures vary in height from 75 feet to 79 feet and are visible to individuals on airport property, traversing the trail in the SNA at various locations, and from Superior Bay. The lights are illuminated upwards and are visible from both the sky and the ground level. The Airport beacon is lit during periods of darkness or inclement weather and is illuminated upward towards the sky.

3.13.2.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

Alternative 5a Short would include replacement of existing lighting on the reconstructed runway. The lighting would include MIRLs, MITLs, PAPIs, and REILs. Two obstruction lights would be abandoned and one new obstruction light would be installed. The two abandoned obstruction lights would no longer be illuminated, but the poles will remain in order to avoid ground disturbance associated with their removal. The proposed obstruction light would be installed to provide only upward illumination in order to notify pilots of the edge of the forest community and the associated obstructions within the transitional surface. Since the illumination would be directed upward, it will not illuminate the surrounding forest and will minimize effects to wildlife in the forest. Because the reconstructed runway would be of shorter length than the existing runway there would be a net decrease in airport lighting. Construction activities for this alternative would not use lighting during periods of darkness.

The proposed construction would not be visible from Lake Superior.

Alternative 13

Similar to Alternative 5a Short, Alternative 13 would include replacement of existing lighting on the reconstructed runway. The lighting would include MIRLS, MITLS, PAPIs and REILs. The two southernmost existing obstruction lights would be removed, and one new obstruction light would be installed. The proposed obstruction light would be installed to provide only upward illumination in order to notify pilots of the edge of the forest community and the associated obstructions within the transitional surface. Since the illumination would be directed upward, it will not illuminate the surrounding forest and will minimize effects to wildlife in the forest. Because the reconstructed runway would be of shorter length than the existing runway there would be a net decrease in airport lighting. Construction activities for this alternative would not use lighting during periods of darkness.

The proposed construction would not be visible from Lake Superior.

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility. The removal of airport facilities including all associated lighting would reduce the light emissions at the Airport site. Construction (removal of airport facilities) would not include the use of lights during periods of darkness and would not be visible from Lake Superior.

3.14 Noise

FAA Orders 1050.1E and 5050.4B as well as FAA 14 CFR Part 150 provide the guidance for determining airport noise impacts. Noise is measured by the Day-Night Sound Level (DNL). It is the logarithmic average of sound levels in decibels and is based on a 24-hour Equivalent Sound Level (Leq). DNL values incorporate a 10-decibel penalty for noise events occurring between 10:00 PM and 7:00 AM to account for increased noise sensitivity at night. The FAA considers a noise impact would be significant if an action would cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure when compared to the no action alternative for the same timeframe. Sensitive areas include residential, school, hospital, day care, and retirement home uses.

In accordance with the guidelines set forth in FAA Order 5050.4B, Chapter 5, Paragraph 47e, Section (1), a noise analysis is not required for proposed development options at airports where existing or forecast operation levels do not exceed 90,000 annual propeller operations or 700 annual jet operations. These numbers of propeller or jet aircraft operations result in cumulative noise levels not exceeding 60 DNL more than 5,500 feet from start of takeoff roll or 65 DNL on the runway itself. Therefore, impacts in excess of these noise levels are not expected outside of the Airport property limits.

It is estimated that the existing (2011) approximately 13,900 annual operations are all propeller operations. No jet operations are currently reported at the Airport. These operations numbers are under the threshold requiring a noise analysis. Because both the anticipated jet and propeller operations are below the threshold requiring a noise analysis, it is concluded that noise impacts do not occur outside of the Airport property limits and do not adversely affect surrounding land uses. Annual operations are expected to remain consistent around 13,900 annual operations according to the FAA Terminal Area Forecasts [Fiscal Year (FY) 2011-2032], remaining below the threshold requiring a noise analysis and below noise levels that could be expected to adversely affect surrounding land uses.

3.14.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

Alternative 5a Short would not directly result in any substantial change in the number of aircraft operations or the type of aircraft using the Airport and would not directly contribute to a change or increase in noise generation at the Airport.

Alternative 13

Alternative 13 would not directly result in any substantial change in the number of aircraft operations or the type of aircraft using the Airport and would not directly contribute to a change or increase in noise generation at the Airport.

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility. Airport closure would remove aviation use and the associated noise and result in a decrease in noise in the immediate area.

3.15 Socio-Economic Conditions, Environmental Justice and Children's Environmental Health and Safety Risks

3.15.1 Socioeconomic Impacts

3.15.1.1 Demographics and Socioeconomics Conditions

The City of Duluth is located in northeastern Minnesota, in St. Louis County. The United States Census reports that in 2010 there were approximately 200,226 residents in St. Louis County with 102,931 residents in the labor force. Unemployment in the year 2010 was estimated at 5.0%. The St. Louis County unemployment rate has been consistently above the state average of 2.9% in 2000 and 4.5% in 2010. Per capita income in St. Louis County was \$25,014 in 2010, which is approximately 16 percent below the state average of \$29,582.

The City of Duluth population, according to the U.S. Census, has remained relatively stable with an estimated 2010 population of 86,265 people and a 2000 estimated population of 86,918 people. The unemployment rate in Duluth has remained above both the county and state rates. The Duluth unemployment was 4.8% in 2000 (compared to county unemployment of 4.3% and state unemployment of 2.9%) and 5.3% in 2010 (compared to county unemployment of 5.0% and state unemployment of 4.5%). The per capita income in Duluth for 2010 was \$23,845, below the county-wide average of \$25,014 and the state-wide average of \$29,582.

3.15.1.2 Airport Economic Impact

MnDOT Aeronautics provides airport sponsors with an Economic Impact Calculator, which estimates the economic impact of general aviation airports in Minnesota. The calculator was developed by the University of Minnesota, Department of Applied Economics and the North Central Research and Outreach Center in 2005 and updated in 2010. The calculator measures the change or additional money and jobs at the county level that has been created as a result of the current economic activity taking place at the Airport. This includes direct, indirect, and induced effects. The DAA used the Economic Impact Calculator in 2010 and 2012 to determine an estimate of the Airport's economic contribution to the local and state economy.

The results of the 2010 study (which utilized 2009 data and the Economic Impact Calculator developed in 2005) indicated that Duluth-Sky Harbor Airport contributed \$1.67 million in sales, supported 52 jobs, and contributed \$627,000 in wage income to the local and state economy in 2009.

The DAA completed an update of the economic impact analysis using data from January 2012 through September 2012 (9 months). The calculator was revised and updated by the University of Minnesota in 2010 to reflect changes in the economy since 2005, and thus is a different model than what was used to analyze the

2009 data. This update estimated that the total economic impact of the Airport during the 9-month period to be over \$1.5 million and over 28 jobs. Business use of the Airport was estimated to account for over \$500,000 of the total revenue and for over 12 of the total jobs. Overnight use by general aviation pilots and other visitors of the Airport during the 9-month period accounted for over \$580,000 of the total revenue and supported over 10 of the total jobs. The remaining economic impact from the 9-month estimate results from the economic impact of airport ownership and the economic impact of non-profit and government entities at the Airport.

3.15.1.3 Environmental Consequences

Social impacts are judged as significant if they cause the relocation of any resident or business, alteration of surface transportation patterns, division or disruption of established communities, disruption of orderly, planned development, or an appreciable change in employment.

Preferred Alternative: Alternative 5a Short

Alternative 5a Short would not result in the relocation of any residences or businesses or the alteration of surface transportation patterns, division or disruption of established communities, disruption of orderly, planned development, or an appreciable change in employment. Alternative 5a Short has the beneficial impact of allowing the Airport to continue operations, preserving 28 jobs and positive economic impact to the local economy.

Alternative 13

Alternative 13 would not result in the relocation of any residences or businesses or the alteration of surface transportation patterns, division or disruption of established communities, disruption of orderly, planned development, or an appreciable change in employment. Alternative 13 has the beneficial impact of allowing the Airport to continue operations, preserving 28 jobs and positive economic impact to the local economy.

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility. Closure of the Airport would result in relocation of 23 based aircraft as well as the closure and possible relocation of two (2) businesses (Jonathan Aero and Hangar 10 Aero). Jonathan Aero's business has one employee and includes changing aircraft landing gear from wheeled/ski landing gear in the spring to float gear and from float gear to wheeled/ski gear in the fall. This portion of the business requires an airport with both water and land based landing facilities, none of which exist in the immediate Duluth area. The closest airport with these facilities is located in Tower, MN, approximately 2 hours from Duluth-Sky Harbor Airport. No existing space is available at the Tower airport for construction of a replacement hangar for this business. However, the approved Airport Layout Plan for the Tower Airport includes a future building area that, once constructed (projected construction in 2016), could accommodate an additional hangar for this business.

Hangar 10 Aero's business has two employees and focuses primarily on the growing new Light Sport Aircraft market. Their business serves primarily wheeled-based aircraft and could thus be relocated to an airport with only a paved landing surface. The closest airports with the needed facilities are the Duluth International Airport and Richard I. Bong Superior Airport. Adequate space is available at these airports to accommodate Hangar 10 Aero's needs.

Based wheeled and amphibious aircraft could be relocated to Duluth International Airport or Richard I. Bong Superior Airport. Aircraft could also relocate to Cloquet/Carlton County Airport (28 miles from Duluth-Sky Harbor Airport) or Richard B. Helgeson Airport in Two Harbors, MN (33 miles from Duluth-Sky Harbor Airport). Float based aircraft would require relocation to an airport with a water-based landing facility. The closest such facility is located in Tower, MN.

The no action alternative would result in the relocation of one residence, which is located within the Airport terminal building. The residence is owned by the DAA and rented to an employee. Comparable, available, replacement housing units are available in the Duluth area. The project-related relocation to a comparable neighborhood in the Duluth area is not expected to cause a negative effect on an established neighborhood. The relocation would not cause an unacceptable increase in service demands to the comparable neighborhood.

The one residence, two businesses, hangar owners, and based aircraft owners would be relocated along with the assistance and services required according to the Uniform Relocation Assistance and Real Property Acquisition Policies Act, and 49 CFR Part 24 (Implementing the Uniform Relocation Assistance and Real Property Acquisition Policies Act) and FAA Order 5100.37B, Land Acquisition and Relocation Assistance.

Based on the economic impact study described in **Section 3.15.1.2**, this alternative would contribute to the potential loss of over 28 jobs to the county. While some airport users may choose to relocate to other airports in the vicinity including Duluth International Airport or Richard I. Bong Superior Airport in Superior, WI, the closure of Duluth-Sky Harbor Airport would result in the loss of the economic impact of the Airport (up to \$1.5 million over a 9-month period) to the local economy. As described in **Section 2.2**, the estimated total implementation cost of the no action alternative is approximately \$8.0 million. This cost does not include buy-outs of leases currently held by airport tenants. Expenditures of this amount could impact the DAA's budget for and ability to operate and maintain the Duluth International Airport at current levels.

3.15.2 Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, dated February 11, 1994, requires each federal agency to achieve environmental justice as part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.

The one-mile buffer area (by land) of the existing airport includes Census Tract 22, St. Louis County, Minnesota. The City of Duluth has a slightly higher percent minority population than the immediate project area (Census Tract 22) while St. Louis County's percent minority population is similar to the immediate project area. The following table identifies their ethnic characteristics for the immediate project area (Census Tract 22), the City of Duluth, and St. Louis County. The largest minority group living in the City of Duluth is individuals of two or more races followed by American Indian/Alaska Native and African American. The largest minority group living in St. Louis County are people of two or more races followed by African American and American Indian/Alaska Native.

The demographics for Census Tract 22, City of Duluth, and St. Louis County are shown in **Table 3-7**.

**Table 3-7
2010 Census Data**

Ethnicity	Census Tract 22	City of Duluth (% of population)	St. Louis County (% of population)
White	93.3	90.492	93.0
African American	2.0	2.3	1.4
American Indian and Alaska Native	0.9	2.5	2.2
Asian	1.6	1.5	0.9
Native Hawaiian and Other Pacific Islander	0.0	0.0	0.0
Some other race	0.0	0.3	0.2
Two or more races	0.0	3.0	2.3
Total Population	1,282	86,265	200,226

Source: 2010 U.S. Census

The median household income (MHI) for the Census Tract in the immediate project area, according to the 2010 Census, is \$60,208 (Tract 22). This is higher than the MHI for St. Louis County and the City of Duluth. There is a lower percentage of persons living in poverty in Census Tract 22 (4%) than the City of Duluth (15%) and the State of Minnesota (11%). The socioeconomics for these Census areas are shown in **Table 3-8**.

**Table 3-8
Demographics for Duluth, St. Louis County, and Local Census Tract
(2010 Census)**

	Duluth	St. Louis County	Census Tract 22
Total population	86,265	200,226	1,282
Median Household Income	\$41,092	\$44,941	\$60,208
% Persons Below Poverty Level	15% (Duluth, MN-WI Metro Area)	16%	4%

Source: 2010 U.S. Census

3.15.2.2 Environmental Consequences

In determining the disproportionate nature of high and adverse impacts resulting from the alternatives, the first step in the process is to determine whether the impact will be predominately borne by minority and/or low-income populations. The census data present above along with field observations and direct contacts with local government officials were used to assist in determining if there are any readily identifiable minority and/or low-income populations living in close geographic proximity to the project area.

According to the 2010 census data there are slightly fewer persons living in poverty within the City of Duluth (15%) than St. Louis County as a whole (16%). Furthermore, the area surrounding the Airport (Tract 22) has a lower percentage of individuals living in poverty (4%) than the City of Duluth, St. Louis County, and the Minnesota State Average (11%).

The project area (Census Tract 22) has a similar minority population to St. Louis County and a slightly lower minority population than the City of Duluth. The project area also has a slightly higher Asian population than the City of Duluth (0.6% compared to 0.5%). However, the census tract is much larger than the project area and the existence of any minority populations existing in the immediate area of the Airport could not be determined from the census data alone. No readily identifiable minority populations were noted during field observations and during contacts with local government officials.

Preferred Alternative: Alternative 5a Short

Alternative 5a Short would not result in property acquisition or displacement of any residents and would not result in incompatible land uses or adverse noise impacts off of airport property, so there would be no disproportionate impacts to any minority or low income populations.

Alternative 13

This alternative would have the same potential effects as Alternative 5a Short. Therefore, Alternative 13 would not result in disproportionate impacts to any minority or low income populations.

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility. This alternative would result in the relocation of one resident who currently resides at the Airport, but would not result in any property acquisition or incompatible land uses or adverse noise impacts off of airport property. The no action alternative would not result in any disproportionate impacts to any minority or low income populations.

3.15.2.3 Environmental Justice Determination

Based on consideration of the information described above it is reasonable to conclude that the project area contains no readily identifiable minority and/or low-income populations. Therefore, as defined by EO 12898 and based upon the data presented above, the improvements associated with the Duluth-Sky Harbor Airport project will not result in disproportionately high or adverse effects to minority and/or low-income populations.

3.15.3 Children's Environmental Health and Safety Risks**3.15.3.1 Environmental Consequences**

Environmental health risks and safety risks include risks to health or safety that are attributable to products or substances that a child is likely to come in contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products to which they might use or be exposed.

Preferred Alternative: Alternative 5a Short

Alternative 5a Short would result in no changes to these substances, nor would this alternative result in additional exposure of these substances to children.

Alternative 13

Alternative 13 would result in no changes to these substances, nor would Alternative 13 result in additional exposure of these substances to children.

No Action

The no action alternative would result in loss of Airport licensure and closure and removal of the facility. A Phase I and II Hazardous Material Site assessment would be required prior to implementation of the no action alternative. At this time are no known sites requiring clean-up or remediation in the area. Any areas determined to need environmental clean-up would be completed in a manner that would allow the site to be reclaimed for use as a public recreational area. This includes meeting health and safety standards applicable for the site to be used by children as part of the general public. The project area would be remediated to a level acceptable for use as a public recreational area, and thus acceptable to children's health based on that planned use.

3.15.4 Secondary (Induced) Impacts

3.15.4.1 Environmental Consequences

Secondary or indirect impacts involve shifts in population, changes in business and economic activities and climate, or shifts in levels of public service demand.

Preferred Alternative: Alternative 5a Short

Alternative 5a Short would not result in any shifts in population, changes in economic climate, or shifts in levels of public service demand. The preferred alternative would support the existing businesses at the Airport, but would not be expected to directly contribute to any new or additional commercial or industrial development.

Alternative 13

Similar to Alternative 5a Short, Alternative 13 would not result in any shifts in population, changes in economic climate, or shifts in levels of public service demand. Alternative 13 would support the existing businesses at the Airport, but would not be expected to directly contribute to any new or additional commercial or industrial development.

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility. The closure of the Airport would result in the relocation of 23 based aircraft and two (2) businesses. These airport users would presumably increase the demand for aviation services and hangar space at nearby airports (Duluth International Airport, Richard I. Bong Memorial Airport in Superior, WI, as well as potentially Richard B. Helgeson Airport in Two Harbors, MN and the Cloquet/Carlton County Airport in Cloquet, MN). Relocation assistance would be available for business and hangar owners (see **Section 3.15.1.3**). In addition, the Airport closure would result in a loss of the current positive economic impact the Airport has on the local economy as described in **Section 3.15.1.2**.

3.16 Water Quality

3.16.1 Surface Water Resources (*EAW Item 11.a.i. and 11.b.iv.*)

EAW Item 11.a.i. Surface water features on or near the site. Describe lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 mile of the project. Include DNR Public Waters Inventory number(s), if any: Lake Superior (16-1P)

EAW Item 11.b.iv. Surface water effects and minimization and mitigation measures. Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water features. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water Best Management Practices that are proposed to avoid or minimize turbidity/sedimentation while physically altering the page 6 water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.

The MNDNR Public Waters Inventory lists Lake Superior and Superior Bay (16-1P), as well as the St. Louis River, as Public Waters. Habitat within the harbor near the Airport is primarily shallow to deep sluggish and tannin-stained water. Bottom composition is soft sediments and sand. Aquatic vegetation, hard substrates, and cover are generally lacking in the immediate project area, but are present within the harbor, river, and tributary streams. The bay supports a warm water fishery comprised of species including walleye, yellow perch, sauger (*Sander canadense*), northern pike (*Esox lucius*), and panfish (Centrarchids). See **Section 3.2.1.2** for more details on aquatic habitats in Superior Bay.

3.16.1.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

Alternative 5a Short includes filling in Superior Bay in order to construct the proposed runway.

Approximately 69,800 cubic yards of fill over 7.49 acres would be placed in Superior Bay to accommodate the runway construction and establishment of the RSA to FAA standards¹³. This includes 37,600 cubic yards of fill placed below the water line and 32,200 cubic yards of fill placed above the water line (See **Figure 2-3**). Including fill material placed in the water and on existing land, approximately 74,650 cubic yards of material are estimated to be needed for construction. In addition, approximately 50,000 cubic yards of surcharge (fill to be placed in order to compact soft soils, and then removed) are required. After the surcharge period, some surcharge material will be able to be used on site for grading. Excess surcharge will be removed and reused on site within the project limits after the surcharge period. Disposal of all excess surcharge material will be conducted in accordance with all applicable local, state, and federal regulations.

Approximately 65,000 cubic yards of material will be obtained from on site excavation in the area of the existing runway and taxiway. These materials may be reused in construction of the embankment surcharge depending on material type and quality. All soil types would qualify as surcharge material provided there is no debris or organics present. Soil types that may be used for the surcharge may be generally classified as gravel, sand, silt and clay or combinations thereof. Granular fill material used for embankment construction and surcharge may come from Erie Pier located six miles by water and approximately nine miles by road from the project site. This site is controlled by the Duluth Seaway Port Authority. This site includes washed sand that is suitable for use as granular or select borrow. Erie Pier also contains fine-grained material that would not be suitable for use in portions of the embankment. Discussions with the Port Authority indicate they prefer material from Erie Pier or material slated to be deposited at Erie Pier be used since it would address space concern at the site. The second potential source is from the annual dredging program conducted by the U.S. Army Corps of Engineers. The annual dredge program produces approximately 100,000 cubic yards of fill material. However, this material does not always consist of sand; therefore, it may not be suitable for use beneath the runway but could be used for surcharged fill or in zoned areas of the embankment that do

¹³ FAA Advisory Circular 150/5300-13, Paragraph 305 and Table3-1.

not support the runway or taxiway. There are also stockpiles of materials at privately owned piers within the harbor.

The materials used for runway construction will likely be brought to the project site using a combination of trucking and hydraulic pumping (by barge) depending on material type and source. The primary borrow site for fill material is anticipated to be an established, existing site such as Erie Pier. If it becomes necessary to establish a new borrow site for the project, this action will be subject to all required reviews for potential to impact cultural or other resources.

Geotechnical borings of the area of Superior Bay adjacent to the Airport showed that soil conditions in Superior Bay southwest of the Airport consist of very loose sand with occasional layers of very soft silty clay underlain by a very soft layer of organic clay and silt. Due to the low strength of the existing soils, it will be necessary to stage filling along the shore of Superior Bay. In addition, a surcharge will be used on the site to mitigate any anticipated settlement prior to construction of the runway after fill placement. Similar to fill material, the surcharge material is anticipated to be obtained from an established, existing borrow site. Conceptual engineering of this alternative proposes the following construction stages (see **Figure 2-2**):

- **Perimeter Berm Stage:** This stage includes construction of a perimeter berm encompassing the site in the harbor. The berm will be underlain by a separation geotextile and will be constructed to an elevation of 603 to 605 feet MSL. A floating silt curtain will be placed around the perimeter of the site prior to placement of any fill in the bay and will remain in place for the duration of fill placement. It is anticipated that this perimeter berm will be constructed of rock in order to provide a stable access road around the site for construction. Prior to riprap placement, approximately 8,600 cubic yards of material will be excavated from the lake bottom for the riprap toe (see **Figure 2-3**). The excavated material will be stored on site for use as fill or surcharge. The Airport runway will be closed during periods of construction of this stage but will re-open during the stabilization period.
- **Stage 1:** Fill will be placed within the perimeter berm up to an elevation of 605 feet MSL. Riprap placement around the project perimeter will also be completed at this time. A reinforcement geotextile will be placed at 602 feet MSL, or slightly above lake level (601 feet MSL based on survey completed in 2009 and 2012), to prevent slope failure. Upon completion of Stage 1, the site will stabilize in place over a period of three months prior to construction of Stage 2. The runway will be closed during periods of construction of this stage but will re-open during the stabilization period.
- **Stage 2:** The remaining fill and a surcharge of five feet will be placed. Since the grade of the proposed runway is variable, the top elevation of the surcharge will vary from 611 feet to 614 feet MSL. The surcharge will need to stabilize over a period of approximately six to nine months. The floating silt curtain will be required to be removed over winter months. However, heavy duty silt fence will also be used along the embankment after each phase of fill. The runway will be closed for the duration of this stage.
- **Stage 3:** The excess surcharge will be removed and the runway and taxiway will be constructed. The removed surcharge will be reused on site. A typical section of the runway and completed fill is shown on **Figure 2-3**. The runway will remain closed for the duration of this stage.

Impact Avoidance and Minimization

The ability to avoid and minimize impacts to surface waters is limited due to the requirement to establish a standard FAA RSA for the proposed runway. Construction staging and BMPs will be used to avoid additional unnecessary and/or unauthorized impacts to surface waters and aquatic resources. Additional efforts to minimize impacts to surface waters would be made during project design.

Permitting and Mitigation

Surface waters and effects to aquatic resources are regulated at the federal level under Sections 401 and 404 of the Clean Water Act. For this project, these surface waters are also regulated federally under Section 10 of the Rivers and Harbors Act. At the state level, effects to these surface waters are regulated by the MNDNR and MPCA. Early coordination has been ongoing with federal and state officials during participation in the EA Scoping Process, the Technical Advisory Panel and through the merged NEPA/Section 404 process described in **Section 1.4**.

Loss of 7.49 acres of aquatic habitat in Superior Bay for runway reconstruction may require mitigation such as enhancement of in-water habitat. Mitigation for fisheries impacts will be based on the provision of habitat, and may be partially accomplished by maintaining the hard substrates that are currently present as a riprapped shoreline. The proposed project will also utilize riprap to stabilize the shoreline, which will provide a similar habitat to what is present currently. Riprap can provide for a habitat type that may be lacking within the harbor, and is of greater benefit to fisheries than would be provided by a grouted structure, retaining wall, or sheet piling.

Mitigation may be completed through DAA contributions to projects in the Harbor with proximity to the Airport. Mitigation will likely include projects that can have aquatic habitat benefits to the Superior Bay and/or the St. Louis River Area of Concern (AOC). Other collective socioeconomic benefits to the natural and human environment in this area will be considered for compensatory mitigation. These could include such items as a land swap for DAA property adjacent to the SNA. This would contribute to placing ecologically important terrestrial resources containing rare habitat for federally and state listed threatened and endangered species into public conservation and preservation. There are many projects available within the AOC that could be considered. Coordination with MNDNR and USACE during the permitting process will clearly define the mitigation plan for the proposed action.

The preferred alternative will not change the number or type of watercraft on any waterbody.

Alternative 13

Alternative 13 includes fill in Superior Bay in order to construct the proposed runway and establishment of the RSA to FAA standards. The fill includes approximately 24,360 cubic yards of fill in the bay (including fill below and above the water line). Fill from this alternative would include impacts to approximately 3.40 acres of Superior Bay.

Mitigation for surface water impacts to 3.40 acres of Superior Bay would be similar to that described for the preferred alternative above. Contributions to ongoing restoration or enhancement projects could be also be considered.

Alternative 13 will not change the number or type of watercraft on any waterbody.

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility. No direct or indirect wetland impacts or impacts to other surface waters would occur as a result of the No Action Alternative. The no action alternative will not change the number or type of watercraft on any waterbody.

3.16.2 Groundwater Resources (EAW Item 11.a.ii.)

EAW Item 11.a.ii. Groundwater - aquifers, springs, seeps. Include: 1) depth to groundwater; 2) if project is within a MDH wellhead protection area; 3) identification of any onsite and/or nearby wells, including unique numbers and well logs if available. If there are no wells known on site or nearby, explain the methodology used to determine this.

Approximate depth to groundwater at the project site is two (2) feet. The Airport is served by a City of Duluth water line, and does not use groundwater for consumption. The project is not within a Minnesota Department of Health (MDH) wellhead protection area. No nearby wells were identified by the MDH County Well Index Online (MDH 2014).

3.16.3 Water Use (EAW Item 11.b.iii.)

EAW Item 11.b.iii. Water appropriation. Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use and purpose of the water use and if a DNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.

The Airport is served by a City of Duluth water line. The Airport does not use groundwater for consumption.

3.16.4 Water-Related Zoning (EAW Item 9.a.iii.)

EAW Item 9.a.iii. Zoning. Discuss zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.

Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.

Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 9b above. If yes, identify the district and discuss project compatibility with district land use restrictions.

3.16.4.1 Shoreland Zoning District

The City of Duluth Natural Resources Overlay Zone District Map indicates that the Airport and Minnesota Point are located along general development waters. The shoreland overlay district applies to all Lake Superior shoreland and lands within 1,000 feet of Lake Superior or within 300 feet of rivers, creeks, streams and tributaries and floodplains. This district is depicted on **Figure 3-12**.

3.16.4.2 Environmental Consequences

Preferred Alternative: Alternative 5a Short

This alternative requires approximately 69,800 cubic yards of fill material placed over approximately 7.49 acres within the general development shoreland zoning area of Lake Superior and therefore a Shoreland Permit from the City of Duluth is required. A condition of the permit requires erosion and sediment control measures for all land disturbing activities within the shoreland overlay district. The permit also requires that grading or filling of more than 250 square feet or a quantity of fill exceeding 10 cubic yards to have city approved erosion control, storm water management, and shoreline buffer restoration plans. Impervious surfaces shall be designed and constructed to minimize and control runoff and erosion into Lake Superior. Naturally vegetated buffers shall be restored to the extent feasible after completion of the project.

The City of Duluth minimum shoreland area standards require a minimum setback of 50 feet for impervious surfaces along with a 50-foot naturally vegetated buffer in general development waters. Due to the location of the fill and proposed runway being extended out into Superior Bay below the Ordinary High Water Mark, a variance from the City of Duluth will be required. In addition, less than a 50-foot vegetative buffer will be established between the edge of impervious surface and the shore since the minimum required RSA (extending 30 feet from the edge of pavement) is being established in order to minimize fill in Superior Bay. Extending the area of fill 20 feet to create a 50-foot naturally vegetated buffer would increase surface water impacts due to a large amount of additional fill in the bay, and significantly increase project costs for transporting and placing the fill and surcharge. This action is eligible for a variance of City of Duluth shoreland zoning requirements for the 50-foot buffer, as reducing the buffer width reduces adverse consequences to the environment by minimizing fill in the bay.

Alternative 13

This alternative requires approximately 24,360 cubic yards of fill placed over 3.4 acres within the general development shoreland zoning area of Lake Superior and therefore a Shoreland Permit from the City of Duluth must be obtained. A condition of the permit requires erosion and sediment control measures for all land disturbing activities within the shoreland overlay area. The permit also requires that grading or filling of more than 250 square feet or a quantity of fill exceeding 10 cubic yards to have city approved erosion control, storm water management and shoreline buffer restoration plans. Impervious surfaces shall be designed and constructed to minimize and control runoff and erosion into Lake Superior. Naturally vegetated buffers shall be restored to the extent feasible after completion of the project.

The City of Duluth minimum shoreland area standards require a minimum setback of 50 feet for impervious surfaces along with a 50 foot naturally vegetated buffer in general development waters. Due to the location of the fill and proposed runway being extended out into Superior Bay below the Ordinary High Water Mark, a variance from the City of Duluth must be obtained. In addition, less than a 50-foot vegetative buffer will be established between the edge of impervious surface and the shore since the minimum required RSA (extending 30 feet from the edge of pavement) is being established in order to minimize fill in Superior Bay. Extending the area of fill 20 feet to create a 50-foot naturally vegetated buffer would increase surface water impacts due to a large amount of additional fill in the bay, and significantly increase project costs for transporting and placing the fill and surcharge. This action is eligible for a variance of City of Duluth shoreland zoning requirements, as it reduces adverse consequences to the environment by minimizing fill in the bay.

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility. Airport facilities would be replaced with natural vegetation. A shoreland permit would be required from the City of Duluth for work near Superior Bay during removal of the existing facilities and any subsequent future construction work on the property.

3.16.5 Surface Water Runoff (EAW Item 11.b.ii.)

EAW Item 11.b.ii. Describe the quantity and quality of stormwater runoff at the site prior to and post construction. Include the routes and receiving water bodies for runoff from the site (major downstream water bodies as well as the immediate receiving waters). Discuss any environmental effects from stormwater discharges. Describe stormwater pollution prevention plans including temporary and permanent runoff controls and potential BMP site locations to manage or treat stormwater runoff. Identify specific erosion control, sedimentation control or stabilization measures to address soil limitations during and after project construction.

The sand bar making up Minnesota Point (on which the Airport is located) is bounded by Lake Superior on the north and Superior Bay on the south. Lake Superior is the largest of the Great Lakes and the largest surface area of any freshwater lake in the world. The average depth is nearly 500 feet making Lake Superior the coldest and deepest of the Great Lakes. The drainage basin is approximately 49,300 square miles and encompasses parts of three states (Michigan, Minnesota, and Wisconsin) and one Canadian province (Ontario). Superior Bay is the narrow inlet of western Lake Superior. The bay is seven miles long and ½- to one-mile wide, separated and sheltered from Lake Superior by Minnesota Point. Receiving the St. Louis River, the bay forms part of one of the most important harbors on the Great Lakes.

Lake Superior is an impaired lake under two categories as established by MPCA: Mercury in Fish Tissue and polychlorinated biphenyl (PCB) in Fish Tissue. These impairments affect aquatic consumption, but are non-construction related. Impaired waters are those waters that do not meet state water quality standards as defined by Section 303(d) of the federal Clean Water Act. Lake Superior is also classified by the MPCA as a “Special Water” which requires additional BMPs for the treatment and management of discharges to Lake Superior.

St. Louis Bay of the St. Louis River is also listed as an “Impaired Water” by the MPCA. The water body is impaired for non-construction related parameters, including: Dieldrin, Dioxin, DDT, Mercury in Fish Tissue, Mercury in Water Column, PCB in Fish Tissue, PCB in Water Column, and Toxaphene. All of these impairments affect aquatic consumption.

Typical pollutants carried in airport runoff could include spilled fuel and oil, deposits from rubber tires and accidentally discharged chemicals. At the Duluth-Sky Harbor Airport, fuel is dispensed to aircraft located on the apron and aircraft located at the dock through the same fueling system which includes a 3,000 gallon 100LL tank. The Airport has a NPDES Industrial Stormwater Permit and corresponding SWPPP which requires the Airport to monitor and manage stormwater runoff from industrial activity areas. The current industrial stormwater permit held by the Airport restricts the use of infiltration BMPs where the facility utilizes deicing activities. Neither the Airport nor aircraft owners conduct or plan to conduct deicing operations in the future, and the Airport is therefore allowed to utilize infiltration BMPs for stormwater treatment. If aircraft require ice removal, aircraft may be placed in heated hangars to melt the ice through non-chemical means.

Stormwater runoff from the Airport in existing conditions is collected in vegetated swales. Most if not all of the runoff is then infiltrated through the site’s sandy soils (see **Sections 3.11.3** and **3.11.4** for details on soil types and protection of groundwater). This nearly eliminates direct surface runoff leaving the Airport and entering the surrounding surface waters. In the rare instances where runoff may leave the site during large rain events, runoff is directed to the north and south through culverts before entering Superior Bay. Existing runoff is summarized in **Table 3-9**. Existing and proposed runoff management treatment and routing are illustrated in **Figure 3-13**. This stormwater treatment system is effective and meets current requirements. There are no currently-used drinking water intakes in the vicinity of the Airport that would be affected by runoff from the Airport.

**Table 3-9
Existing Airport Runoff**

2-Year, 24-Hour Event		10-Year, 24-Hour Event		100-Year, 24-Hour Event	
Peak Flow (cfs)	Volume (af)	Peak Flow (cfs)	Volume (af)	Peak Flow (cfs)	Volume (af)
0.17	0.13	7.28	0.92	31.21	2.46
Note: Cubic feet per second (cfs), Acre feet (af)					

3.16.5.2 Environmental Consequences

The federal Water Pollution Control Act, as amended (commonly referred to as the Clean Water Act), provides the authority to: establish water quality standards, control discharges, develop waste treatment management plans and practices, prevent or minimize the loss of wetlands, and regulate other issues concerning water quality. Additionally, a NPDES permit under Section 402 of the Clean Water Act is required for point-source discharges into Waters of the U.S. and for construction activities to protect from construction-related erosion and sedimentation. A Section 404 permit is required to place dredged or fill material in Waters of the U.S. including jurisdictional wetlands. Section 401 Water Quality Certification is also required, which is generally authorized by the MPCA. However, Water Quality Certification may be encompassed within any Section 404 permits authorized by the USACE.

Preferred Alternative: Alternative 5a Short

Alternative 5a Short would result in an approximately 1.907 acre (83,075 ft²) reduction in impervious surface at the facility (including the runway, taxiway, aircraft parking apron, and hangars), reducing the impervious surface from 13.026 acres (567,414 ft²) of existing impervious surface to 11.119 acres (484,339 ft²). Therefore, this alternative creates a corresponding reduction in water quantity in the form of runoff. The 2-Year, 24-Hour Event Peak flow results in a reduction in runoff to 0.05 cubic feet per second (cfs) compared to 0.17 cfs in the existing conditions. The 10-Year, 24-Hour Event peak flow results in 1.78 cfs compared to 7.28 in the existing conditions. The 100 Year 24 Hour Event results in a peak flow of 17.85 cfs compared to 31.21 in the existing conditions.

Surface water management on the Airport would include both construction site erosion and sediment control and post-construction stormwater management. BMPs (such as floating silt curtain, described below) would be applied in accordance with the approved technical standards and to meet the required performance standards.

During construction, in particular for areas in Superior Bay, a floating silt curtain will be installed around the perimeter of the site prior to placement of any fill material and will be maintained during the duration of fill placement. Upon completion of each phase of fill placement, a heavy duty silt fence will be placed on the embankment. It will be necessary to remove the floating silt curtain during the winter months. Post-construction, Alternative 5a Short would utilize the same overland infiltration and filtration BMPs as the existing conditions for the management and treatment of stormwater runoff.

The Airport will update the MPCA NPDES Industrial Stormwater Permit and corresponding SWPPP to address the changes in airport facilities. Construction of this alternative will disturb more than one acre of land and will require an MPCA NPDES Construction Permit and SWPPP to manage construction site runoff and erosion and sediment control. This alternative will result in a reduction of the overall impervious surface and will not require permanent stormwater treatment measures under this permit. The City of Duluth requires a MS4 Statement of Compliance from the City Engineer and because the alternative creates and redevelops

more than one acre of impervious surface, City of Duluth regulations require compliance with the following conditions in addition to Ownership and Maintenance Controls:

1. Water Quality Treatment: Reduction in Total Suspended Solids (TSS) of 50%.
2. Volume Reduction: For the first ½-inch of rainfall from the newly created impervious surface or provide 85% TSS removal.
3. Runoff Rate Control: Match or reduce peak flow rates from predevelopment conditions for all storm events.
4. Drainage Report.

Reduced impervious surface and required TSS removal for the preferred alternative should result in reduced quantity of stormwater runoff from the site to the receiving water (Superior Bay). Quality of stormwater runoff would not decrease under Alternative 5a Short, and the anticipated effect on the receiving water due to stormwater runoff is negligible to beneficial, if any.

Alternative 13

Alternative 13 would result in an approximately 1.827 acre (79,587 ft²) reduction in impervious surface at the facility (including the runway, taxiway, aircraft parking apron, and hangars), reducing the impervious surface from 13.026 acres (567,414 ft²) of existing impervious surface to 11.199 acres (487,827 ft²). Therefore, this alternative creates a corresponding reduction in water quantity and improved water quality from the existing conditions. The 2-Year, 24-Hour Event Peak flow results in a reduction in runoff to 0.05 cubic feet per second (cfs) compared to 0.17 cfs in the existing conditions. The 10-Year, 24-Hour Event peak flow results in 1.78 cfs compared to 7.28 in the existing conditions. The 100-Year, 24-Hour Event results in a peak flow of 17.85 cfs compared to 31.21 in the existing conditions.

Surface water management on the Airport would include both construction site erosion and sediment control and post-construction stormwater management. BMPs would be applied in accordance with the approved technical standards and to meet the required performance standards.

During construction, a floating silt curtain will be installed around the perimeter of the site prior to placement of any fill material and will be maintained during the duration of fill placement. Upon completion of each phase of fill placement, a heavy duty silt fence will be placed on any embankment. It will be necessary to remove the floating silt curtain during the winter months. Post-construction, Alternative 13 would utilize the same overland infiltration and filtration BMPs as the existing conditions for the management and treatment of stormwater runoff.

The Airport will update the MPCA NPDES Industrial Stormwater Permit and corresponding SWPPP to address the changes in airport facilities. Construction of this alternative will disturb more than one acre of land and will require an MPCA NPDES Construction Permit and SWPPP to manage construction site runoff and erosion and sediment control. This alternative will result in a reduction of the overall impervious surface and will not require permanent stormwater treatment measures under this permit. The City of Duluth requires a Municipal Separate Storm Sewer System (MS4) Statement of Compliance from the City Engineer and because the alternative creates and redevelops more than one acre of impervious surface, City of Duluth regulations requires compliance with the following in addition to Ownership and Maintenance Controls:

1. Water Quality Treatment: Reduction in TSS of 50%
2. Volume Reduction: For the first ½ inch of rainfall from the newly created impervious surface or provide 85% TSS removal
3. Runoff Rate Control: Match or reduce peak flow rates from predevelopment conditions for all storm events.

4. Drainage Report

Reduced impervious surface and required TSS removal for the preferred alternative should result in reduced quantity of stormwater runoff from the site to the receiving water (Superior Bay). Quality of stormwater runoff would not decrease under Alternative 5a Short, and so the anticipated effect on the receiving water due to stormwater runoff is negligible to beneficial, if any.

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility. The removal of all airport facilities would potentially result in an elimination of all impervious surfaces (13.026 acres) at the Airport. If all impervious surfaces were removed, the no action alternative would result in a corresponding reduction in water quantity and improved water quality from the existing conditions. The 2-Year, 24-Hour Event Peak flow results in a reduction in runoff to 0.00 cubic feet per second (cfs) compared to 0.17 cfs in the existing conditions. The 10-Year, 24-Hour Event peak flow results in 0.08 cfs compared to 7.28 in the existing conditions. The 100 Year 24 Hour Event results in a peak flow of 1.25 cfs compared to 31.21 in the existing conditions. If the future land use as a public recreational area included construction of impervious surface, flow rates would increase commensurate with the amount of impervious surface. It is unknown at this time what the ultimate land cover would be if the area is converted into public recreational use.

The no action alternative would require a MPCA NPDES Construction Permit and SWPPP to manage construction site runoff and erosion and sediment control. A MS4 Statement of Compliance from the City Engineer will be required. No permanent stormwater treatment controls would be required if all impervious surfaces were removed. Also, no Water Quality Treatment, Volume Reduction, Runoff Rate Control, Drainage Report or operation and/or maintenance measures would be required by the City of Duluth.

3.16.6 Wastewaters (EAW Item 11.b.i.)

EAW Item 11.b.i. For each of the following, describe the sources, quantities and composition of all sanitary, municipal/domestic and industrial wastewater produced or treated at the site.

- 1) *If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the facility to handle the added water and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.*
- 2) *If the wastewater discharge is to a subsurface sewage treatment systems (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system.*
- 3) *If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges.*

The A/D building receives city municipal water but is not connected to the city municipal sewer system. Sanitary waste from the A/D building is collected in a drain field as part of the septic system. The septic system provides for collection of sanitary wastewater from the onsite living quarters (one apartment for a DAA staff member) and public restroom facilities in the A/D building. The system has low use and is pumped on an as-needed basis.

Material pumped from the septic system is removed to the WLSSD for treatment. The septic waste requires no pretreatment prior to delivery to the WLSSD. The volume and composition of wastewater is similar to that

generated at a single-family residence and is not beyond the capacity of the WLSSD nor does it require any improvements to that facility.

No municipal or industrial wastewater is produced or treated at the Airport site.

3.16.6.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

Alternative 5a Short would result in no changes to the quantity or quality of sanitary wastewater generated at the Airport. Sanitary wastes collected in the on-site septic system would continue to be removed regularly to the WLSSD for treatment.

Alternative 13

Similar to Alternative 5a Short, Alternative 13 would result in no changes to the quantity or quality of sanitary wastewater generated at the Airport. Sanitary wastes collected in the on-site septic system would continue to be removed regularly to the WLSSD for treatment.

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility. The removal of airport facilities and the Airport use would result in an elimination of all sanitary wastewater generated at the Airport site.

3.17 Wetlands

Wetlands in the project area are subject to regulation under Sections 401 and 404 of the federal Clean Water Act as regulated by the USACE, the Minnesota Wetland Conservation Act of 1991 (WCA), MPCA under Minnesota Rules 7050, and MNDNR Public Waters rules. Actions that are implemented by a federal agency are also subject to Executive Order 11990 mandating that federal agencies through their actions, implement “no net loss” of wetlands. Deep water areas in Lake Superior and Superior Bay are also regulated by the USACE under Section 10 of the River and Harbors Act and as Public Waters by the MNDNR.

The National Wetlands Inventory (NWI) and St. Louis County Soil Survey data were reviewed to identify known wetland resources or areas of hydric soils in the project area. The *Minnesota Point Environmental Plan* makes numerous references to wetlands on Minnesota Point, but none are shown in close proximity to the project on the NWI or soil mapping. A wetland delineation was completed for the project area in 2008. One Type 6 shrub swamp (Shrub-Carr) was identified and delineated. The wetland is located near the boundary with the SNA on the northeast side of the existing runway. The small wetland is dominated by speckled alder (*Alnus incana* - OBL), red-osier dogwood (*Cornus stolonifera* - FACW), and a species of willow (*Salix sp.*) in the shrub layer and by red raspberry (*Rubus ideaus* - FACU) and field horsetail (*Equisetum arvense* - FAC) in the herbaceous layer. The soil profile consisted of 10YR 3/1 silty clay with 15% 5YR 4/6 redox concentrations from 0-7 inches, 10YR 4/3 silty clay with 20% 5YR 4/6 redox concentrations from 7-9 inches, and 10YR 3/2 silty clay with 50% 2.5YR 3/6 redox depletions from at least 9-12 inches below ground surface. This wetland is shown on **Figure 3-14**.

3.17.1.1 Environmental Consequences

Preferred Alternative: Alternative 5a Short

The rotation of the runway will relocate the Runway 32 end farther away from the existing wetland. The wetland will be avoided during the removal of the existing runway and construction of the new runway. As a result, no wetland impacts will result from the preferred alternative.

Alternative 13

Construction of Alternative 13 would avoid wetland impacts. As a result, no wetland impacts will result from Alternative 13 and no wetland mitigation would be required.

No Action

The no action alternative would result in loss of Airport licensure and closure of the facility. No direct or indirect wetland impacts or impacts to other surface waters would occur as a result of the no action alternative.

3.18 Wild and Scenic Rivers

Wild and scenic rivers are designated as part of the National Wild and Scenic River Program by the U.S. Department of the Interior under the Wild and Scenic River Act to protect the most beautiful and unspoiled rivers in the nation. River segments are designated based on their outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values and are to be preserved in free-flowing condition for the benefit and enjoyment of present and future generations. There are no designated National Wild and Scenic River areas within the St. Louis River watershed or in the surrounding area. The nearest National Wild and Scenic River corridor, the St. Croix/Namekagan Rivers, is found approximately 60 miles south and east of the Airport.

The State of Minnesota Wild and Scenic Rivers Protection Act program assists communities in developing management plans that protect the scenic, recreational, natural, historical, and cultural values for which the rivers were originally designated. Six rivers in Minnesota have segments that are designated as wild, scenic, or recreational under the state program. Each designated wild, scenic, or recreational river segment in Minnesota has a management plan that outlines the rules and goals for that waterway. These rules work together with local zoning ordinances to protect the rivers from pollution, erosion, over-development, and degradation. There are no designated state wild, scenic or recreational sections within the St. Louis River watershed or in the surrounding area.

There are no rivers or segments of rivers within the project area that are designated as Wild and Scenic Rivers. Therefore, analysis of the preferred alternative, Alternative 13 and the no action alternative with respect to potential impacts to Wild and Scenic Rivers is not applicable.

3.19 Other Potential Impacts (EAW Item 20)

Potential environmental impacts are addressed throughout this document and the appendices. No additional environmental impacts are known.

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Lake Superior

Sky Harbor Airport

Superior Bay



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Duluth Sky Harbor Airport
Environmental Assessment
Duluth, Minnesota

Project: DULAI 122129
Print Date: 11/21/2013

Legend

- MCBS Native Plants**
- Alder - (Maple - Loosetrife) Swamp
 - Aspen - Ash Forest
 - Beachgrass Dune (Lake Superior)
 - Juniper Dune Shrubland (Lake Superior)
 - Red Pine - White Pine Woodland (Minnesota Point)
 - Sand Beach (Lake Superior)
 - Sedge Meadow
 - Young Forest Complex

Figure 3-1A

Native Plant Communities Existing Overall Conditions



Map by: naa/SrH
Projection: NAD 83, St Louis County Transvers Mercator 1996
Source: USDA NAIP 2008, RS&H, MnDNR, SEH

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Path: S:\A\ED\080100\GIS\Maps\EAD\Draft\EA EA Fig3-1B ExistingNativePlantCommunities 8x11P.mxd



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MCBS Native Plants	
	Alder - (Maple - Loosestrife) Swamp
	Aspen - Ash Forest
	Beachgrass Dune (Lake Superior)
	Disturbed Grassland
	Juniper Dune Shrubland (Lake Superior)
	Red Pine - White Pine Woodland (Minnesota Point)
	Sand Beach (Lake Superior)
	Sedge Meadow
	Young Forest Complex

 Existing Obstruction Lights

Figure 3-1B
Native Plant Communities Existing Runway Area Conditions

0 4 500 Feet

Map by: naa/SrH
Projection: NAD 83, St Louis County Transvers Mercator 1996
Source: USDA NAIP 2008, RS&H, MnDNR, SEH

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 <p>3535 VADNAIS CENTER DR. ST. PAUL, MN 55110 PHONE: (651) 490-2000 FAX: (651) 490-2150 WATTS: 800-325-2055 www.sehinc.com</p>	<p>Duluth Sky Harbor Airport <i>Environmental Assessment</i> Duluth, Minnesota</p> <p>Project: DULAI 122129 Print Date: 04/02/2014</p>	<p>MCBS Native Plants</p> <ul style="list-style-type: none"> ■ Alder - (Maple - Loosestrife) Swamp ■ Aspen - Ash Forest ■ Beachgrass Dune (Lake Superior) ■ Disturbed Grassland ■ Juniper Dune Shrubland (Lake Superior) ■ Red Pine - White Pine Woodland (Minnesota Point) ■ Sand Beach (Lake Superior) ■ Sedge Meadow ■ Young Forest Complex 	<p>Alternate 5A Short</p> <ul style="list-style-type: none"> - - - Centerline — Alignment — Runway Element — Stage 1 — V-WRES) Existing Obstruction Lights (to remain) S Existing Obstruction Lights (to be shut off)) Future Obstruction Light) New Obstruction Light) Eliminated From Proposal 	<p>Figure 3-1C Native Plant Communities Proposed Runway Area Conditions</p>	<p>0 500 Feet</p> <p>4</p> <p>Map by: naa/SrH Projection: NAD 83, St Louis County Transvers Mercator 1996 Source: USDA NAIP 2008, RS&H, MnDNR, SEH</p>
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Project: DULAI 122129
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Legend

- ▼ Samples

Figure 3-2
Benthic and Pollutant Testing Sites

4

0 2,000 Feet

Map by: naa/SrH
Projection: NAD 83, St Louis County Transvers Mercator 1996
Source: USDA NAIP 2008, RS&H, MnDNR, SEH

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Path: S:\A\ED\08100\GIS\Maps\EAD\Draft\EA\EA Fig3-3 CoastalBoundary_8x11P.mxd

Lake Superior

Superior Bay

Sky Harbor Airport

Minnesota Ave



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Print Date: 03/01/2013

Legend
 Coastal Boundary

Figure 3-3
Coastal Boundary

0 4
2,000
Feet

Map by: naa/SrH
Projection: NAD 83, St Louis County
Transvers Mercator 1996
Source: MnGeo 2009, RS&H,
MnDNR, SEH

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- Legend**
- Anchorage Area
 - Channel
 - Preservation
 - Recreation
 - Transportation

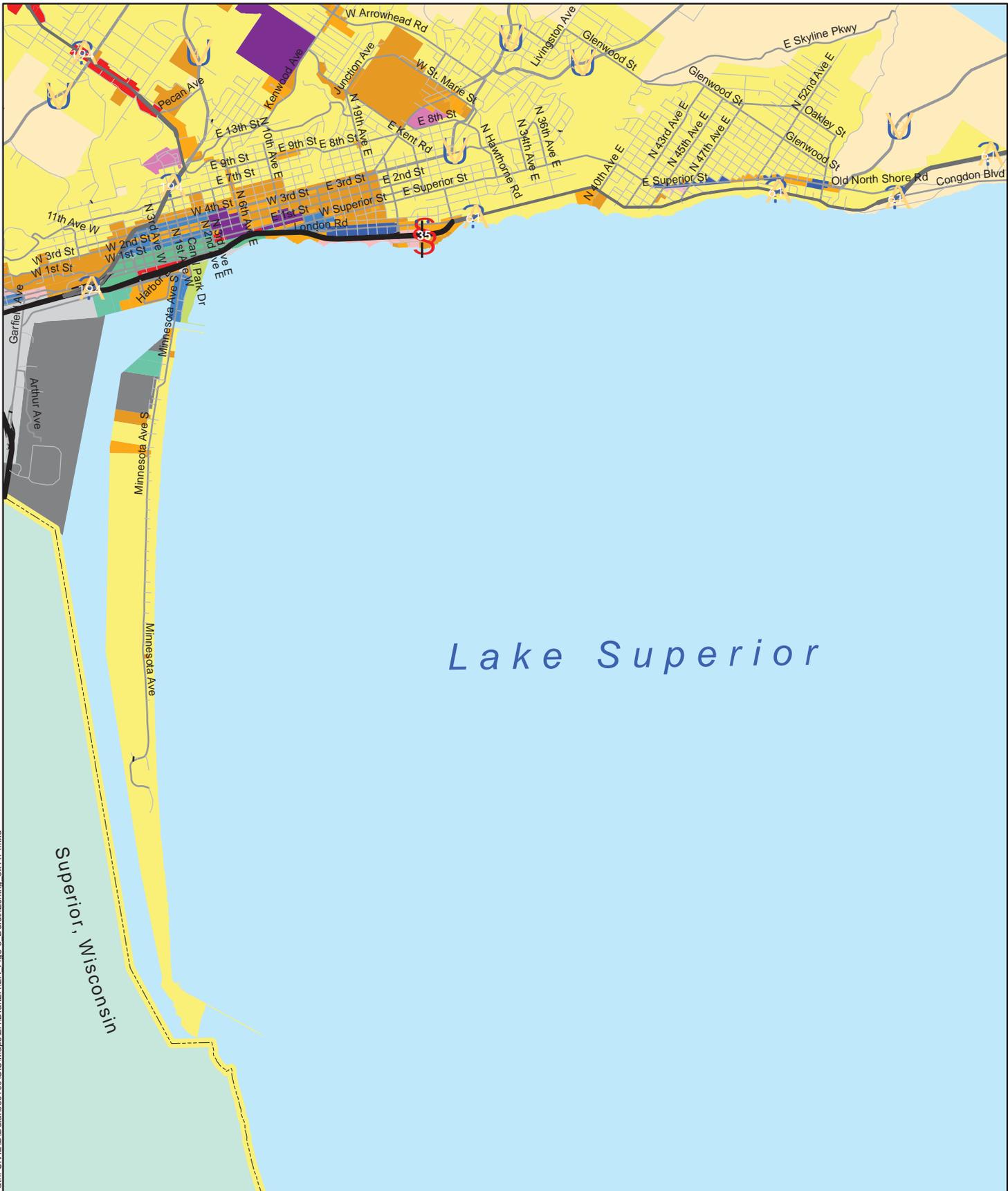
Figure 3-4
Land Uses



Map by: SrH
Projection: NAD 83, St Louis County
Transvers Mercator 1996
Source: MnGEO 2009, RS&H,
MnDNR, SEH

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Lake Superior

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Superior, Wisconsin



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Legend	
UDC Zoning	
	Low-Rise Neighborhood
	Mid-Rise Community
	Downtown
	Canal Park Lakefront
	Mixed Use Waterfront
	Rural Residential
	Residential Traditional
	Residential Urban
	Residential Planned
	Mixed Use Neighborhood
	Mixed Use Commercial
	Mixed Use Institutional
	Mixed Use Business Park
	Industrial General
	Industrial Waterfront
	Park
	Rural Conservation

Figure 3-5
Duluth Zoning



0 6,000 Feet

Map by: naa/SrH
Projection: NAD 83, St Louis County Transvers Mercator 1996
Source: USDA NAIP 2008, RS&H, MnDNR, SEH, City of Duluth

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Project: DULAI 122129
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Legend

Zoning	Commercial
1 Family Residential	Highway Commercial
2 Family Residential	Shopping Center District
Apartment Residential	Planned Development District
Suburban	Manufacturing District
	Waterfront District

Figure 3-6
Superior Zoning

0 2,000 4
Feet

Map by: naa/SrH
Projection: NAD 83, St Louis County
Transvers Mercator 1996
Source: USDA NAIP 2008, RS&H,
MnDNR, SEH

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LEGEND

- NAVIGATION CHANNEL
- ANCHORAGE AREA
- EXISTING AIRPORT ZONING

SOURCE:

CITY OF DULUTH ORDINANCE NO. 9215
SKY HARBOR AIRPORT ZONING



DRAFT ENVIRONMENTAL
ASSESSMENT

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MARCH 2013

SKY HARBOR AIRPORT

AIRPORT ZONING ORDINANCE

Figure 3-7



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Lake Superior

Superior Bay

Sky Harbor Airport

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Duluth, Minnesota

Project: DULAI 122129
Print Date: 03/01/2013

Legend

- Prime farmland
- Farmland of statewide importance
- Prime farmland if drained
- Not prime farmland

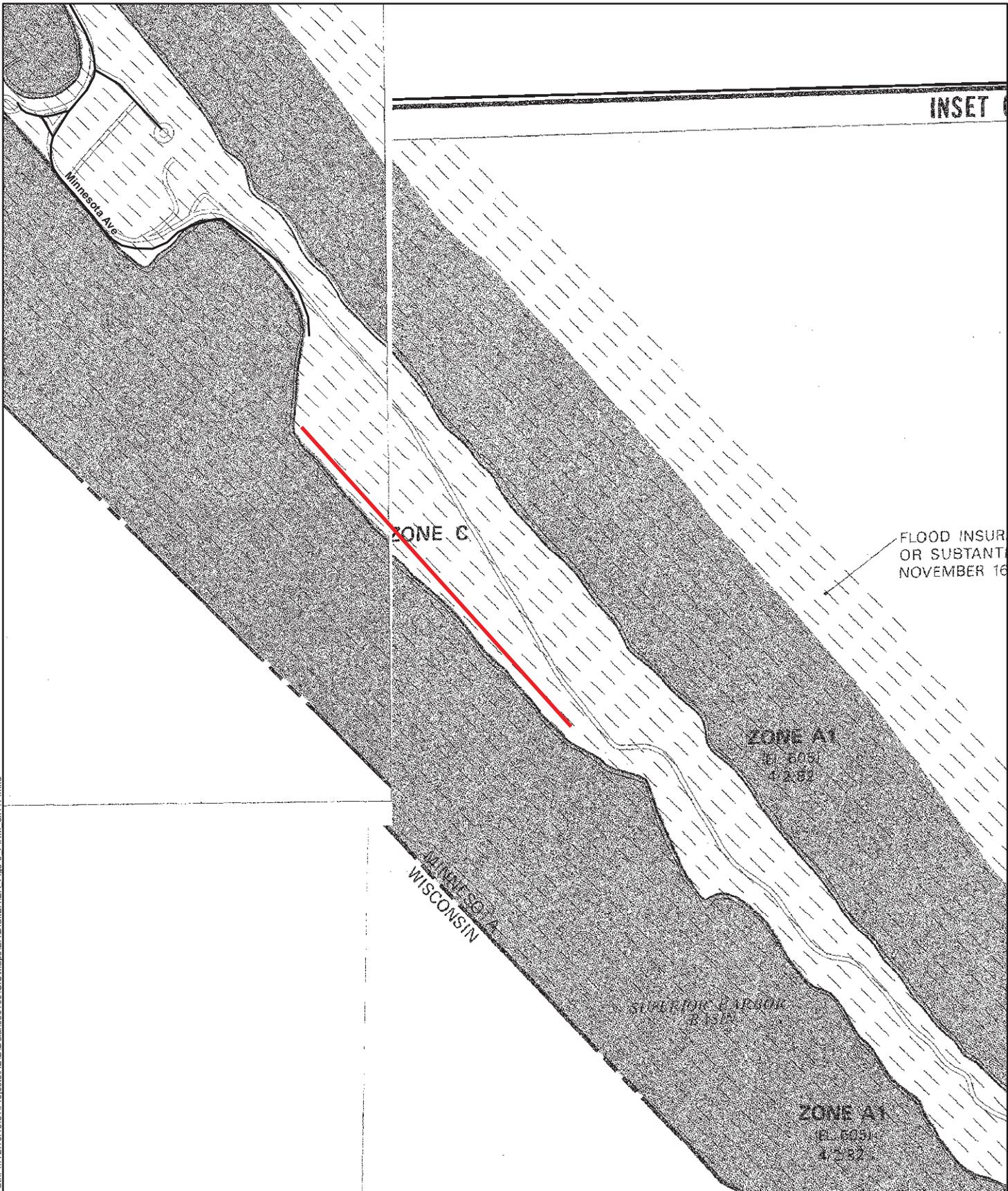
Figure 3-8
Farmland Soils



Map by: naa/SrH
Projection: NAD 83, St Louis County
Transvers Mercator 1996
Source: USDA NAIP 2008, RS&H,
MnDNR, SEH

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Legend

- Existing Runway
- FIRM Zone Explanation
- Zone A1 - Areas of 100-year flood; base flood elevations and flood hazard factors are determined
- Zone C - Areas of minimal flooding. (No shading)

Figure 3-9
FEMA FIRM Floodplain



Map by: naa/SrH
Projection: NAD 83, St Louis County Transvers Mercator 1996
Source: USDA NAIP 2008, RS&H, MnDNR, SEH

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Soil ID	Soil Classification
2030	Udorthents and Udipsamments, cut or fill
262B	Amnicon-Cuttre complex, 0 to 4 percent slopes
274C	Miskoaki clay loam, 6 to 12 percent slopes
274D	Miskoaki clay loam, 12 to 25 percent slopes
347A	Bergland-Cuttre complex, 0 to 3 percent slopes
405A	Lupton, Cathro, and Tawas soils, 0 to 1 percent slopes
5A	Arnheim mucky silt loam, 0 to 1 percent slopes, frequently flooded
6A	Moquah fine sandy loam, 0 to 3 percent slopes, frequently flooded
7C	Beaches, 2 to 12 percent slopes
92F	Udorthents, ravines and escarpments, 25 to 60 percent slopes
1026A	Udifuvents, loamy, 0 to 2 percent slopes, occasionally flooded
F157C	Udipsamments-Urban land complex, 1 to 20 percent slopes
F171D	Udipsamments complex, 4 to 20 percent slopes

Lake Superior

Superior Bay

Sky Harbor Airport



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Legend
Soils

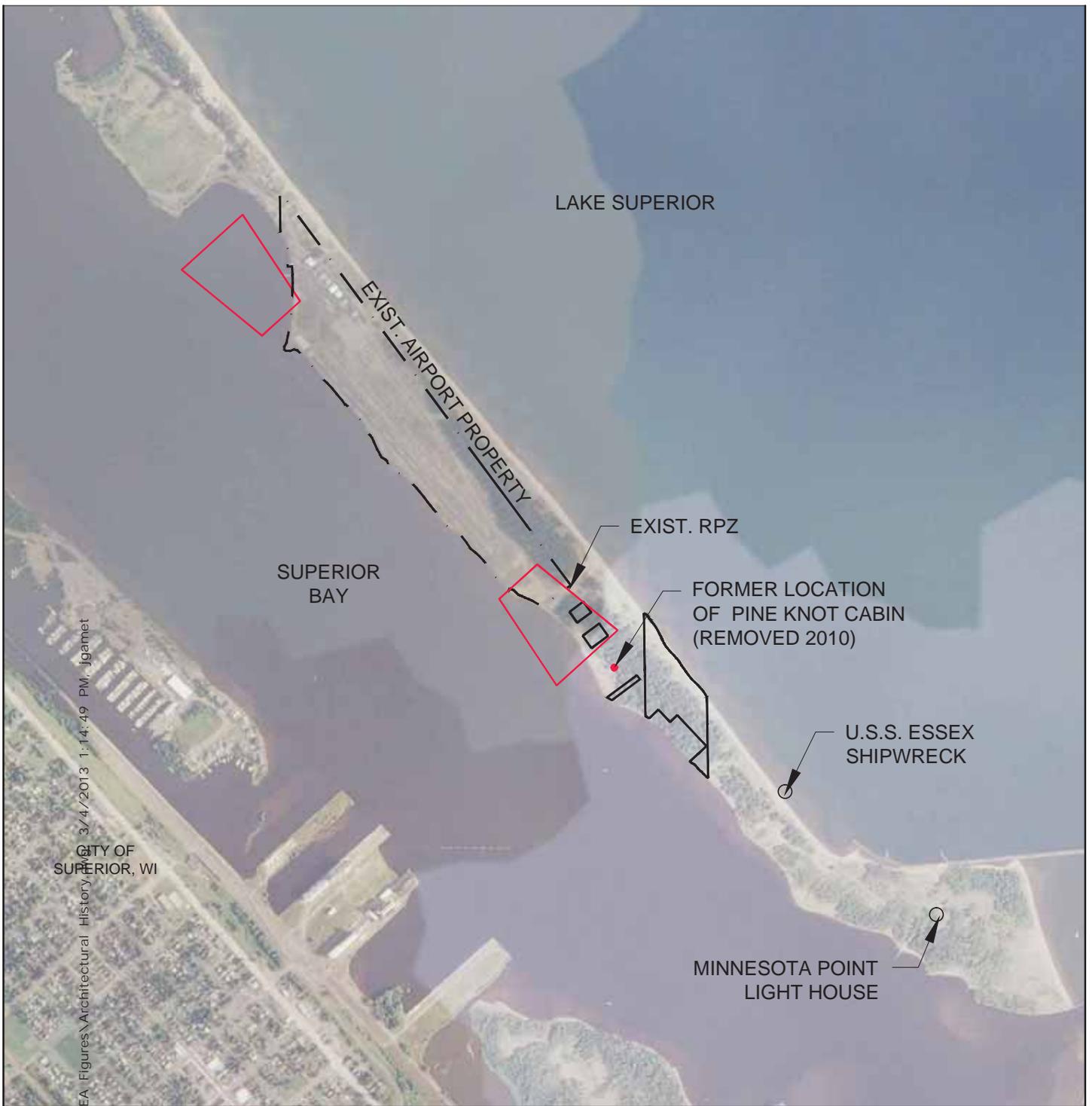
Figure 3-10
NRCS Classifications



Map by: naa/SrH
Projection: NAD 83, St Louis County Transvers Mercator 1996
Source: USDA NAIP 2008, RS&H, MnDNR, SEH

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SKY HARBOR AIRPORT

ARCHITECTURAL
HISTORY

Figure 3-11



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CUMULATIVE IMPERVIOUS SURFACE:

- EXISTING AREA OF IMPERVIOUS SURFACE = 2.65 Acres
- POST CONSTRUCTION AREA OF IMPERVIOUS SURFACE = 5.38 Acres

PERMANENT STORMWATER TREATMENT

- 1) REDUCTION OF IMPERVIOUS SURFACE
- 2) GRASS SWALES



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Print Date: 11/11/2013

Legend
SEH Delineated Wetland

Figure 3-14
Wetlands



Map by: naa/SrH
Projection: NAD 83, St Louis County
Transvers Mercator 1996
Source: USDA NAIP 2008, RS&H,
MnDNR, SEH

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

Chapter 4 Cumulative Effects (EAW Item 19)

Cumulative effects are impacts “on the environment which result from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR § 1508.7).” Council on Environmental Quality (CEQ) regulations require assessment of cumulative effects when an EA is prepared and when the proposed action under review would have a direct and/or indirect effect on a specific natural, historic, or cultural resource or population. The level of analysis and scope of cumulative effect assessment are typically commensurate with the potential impacts, resources affected, project scale, and other factors. If no direct and/or indirect effect to a specific resource is suspected, there is no need to consider cumulative effects to that resource.

The analysis area for cumulative effects evaluation varies by the affected resource. For example, effects on sensitive terrestrial species are considered for the area within airport property and adjacent habitats including the Minnesota Point Pine Forest SNA; effects on aquatic resources are considered within Superior Bay; and effects are considered regionally for economic impacts. The analysis timeframe for future effects is the 20-year planning period for airport facilities and airport use. Other reasonably foreseeable development in the analysis area was evaluated for the same time period.

4.1 Present Actions with Potential for Cumulative Effect

Consequences of the preferred alternative that have the potential for cumulative effects are considered below. Potential consequences of Alternative 13 and the no action alternative are also provided for comparison. These actions are considered in the context of their potential cumulative effect with other past, present, and future actions.

4.1.1 Preferred Alternative: Alternative 5a Short

The preferred alternative, Alternative 5a Short, would avoid land cover changes to the natural terrestrial vegetation surrounding the Airport. This alternative would result in the placement of 7.49 acres of fill in Superior Bay. Alternative 5a Short will have direct impacts due to fill in the CBRS and Coastal Zone. Potential consequences of fill in the bay are impacts to habitat for lake sturgeon (*Ascipenser fulvescens* - state-listed special concern) and creek heelsplitter (*Lasmigona compressa* - state-listed special concern). Eastern elliptio (*Elliptio complanata* - state-listed special concern) is known to be present in the project area. Mitigation for the lost habitat may be completed through DAA contributions to projects that can have aquatic habitat benefits to the Superior Bay and/or St. Louis River Area of Concern (AOC).

Anticipated runway construction limits will avoid beach environments that provide habitat for beach heather (*Hudsonia tomentosa*, state THR) and beachgrass (*Ammophila breviligulata* - state-listed threatened), as well as habitat with potential to be used by the hairy-necked tiger beetle (*Cicindela hirticollis rhodensis* - state-listed endangered) and piping plover (*Charadrius melodus* - federally- and state-listed endangered). Areas of the existing runway and taxiway that are proposed to be obliterated will be re-seeded with an appropriate native grass mix. In the original proposal, there would have been both small permanent (approximately 36 square feet for the footprint of the light) and temporary impacts to the Juniper Dune Shrubland native plant community due to light vehicle traffic necessary for construction of a new obstruction light on DAA property surrounded by SNA property. This plant community has potential to provide habitat for beach heather and beach grass. The temporary impacts caused by vehicle access to the location of the obstruction light would have taken place in the SNA [a 4(f) resource]. This second new obstruction light has been eliminated from the plan for the preferred alternative in order to avoid impacts to these resources. If the second new obstruction light is required for safety reasons, a Phase II archaeological survey will be conducted to delineate the boundaries of the archaeological site. A Phase III recovery survey would be conducted if necessary based on

the location of the archaeological site. Coordination with the DNR would take place regarding potential impacts to State listed threatened plant species, and consultation with the USFWS would be initiated for potential impacts to the piping plover.

This project will have temporary impacts related to construction. Construction will contribute to a temporary effect on noise, dust, and traffic impacts. Construction BMPs will mitigate these impacts.

By methods described above, any impacts to sensitive species will be avoided or mitigated, and the preferred alternative will not contribute to sensitive species trending towards endangered status or extirpation in the state of Minnesota.

4.1.2 Alternative 13

The construction of Alternative 13 would result in the cutting or topping of 370 trees (295 pines and 76 trees within the SNA), altering the forest habitat and shifting the land cover type to more dune/shrubland type community. This would affect the unique old-growth forest native plant community and would reduce the area of quality habitat for migratory birds and other fauna. This cutting or topping of trees would also be considered an impact to a Section 4(f) resource under the Department of Transportation Act. Land-side parcel acquisition contiguous with the SNA and with the potential to contribute to the viability and integrity of habitat within the SNA might be considered as mitigation for this loss. Another potential mitigation measure would be development of an enhancement plan for existing DAA forested property, in order to provide consistency with and aid in management of forested SNA property and adjacent forested areas.

The construction of this alternative would require 3.40 acres of fill in Superior Bay. The project will have direct impacts due to fill in the CBRS and Coastal Zone. Potential consequences of fill in the bay are impacts to habitat for lake sturgeon and creek heelsplitter. Eastern elliptio is known to be present in the project area. Mitigation for the lost habitat may be completed through DAA contributions to projects intended to benefit habitat restoration in the Superior Bay and/or St. Louis River AOC.

As with the preferred alternative, anticipated runway construction limits for Alternative 13 will avoid beach environments that provide habitat for beach heather and beachgrass, as well as habitat with potential to be used by the hairy-necked tiger beetle and piping plover. Areas of the existing runway and taxiway that are proposed to be obliterated will be re-seeded with an appropriate native grass mix. In the original proposal, there would have been both small permanent (approximately 36 square feet for the footprint of the light) and temporary construction impacts to native plant communities due to light vehicle traffic necessary for construction of a new obstruction light. This plant community has potential to provide habitat for beach heather and beach grass. This new obstruction light has been eliminated from the plan for Alternative 13 in order to avoid impacts to these resources. If the second new obstruction light is required for safety reasons, a Phase II archaeological survey will be conducted to delineate the boundaries of the archaeological site. A Phase III recovery survey would be conducted if necessary based on the location of the archaeological site. Coordination with the DNR would take place regarding potential impacts to State listed threatened plant species, and consultation with the USFWS would be initiated for potential impacts to the piping plover.

This project will have temporary construction impacts. Construction will contribute to a temporary effect on noise, dust, and traffic impacts. Construction BMPs will mitigate these impacts.

By methods described above, any impacts on sensitive species will be avoided or mitigated, and Alternative 13 will not contribute to these species trending towards endangered status or extirpation in the state of Minnesota.

4.1.3 No Action Alternative

The no action alternative would result in loss of airport licensure and the ultimate closure of the Airport. Subsequent removal of the airport facilities would not affect the natural terrestrial vegetation surrounding the airport, and would require no fill in Superior Bay; therefore, the no action alternative would not contribute to cumulative effects on terrestrial habitat, rare species, aquatic habitat, or the Section 4(f) resource. The no action alternative would have temporary construction impacts due to removal of Airport facilities. Construction BMPs would mitigate these impacts.

The no action alternative would have economic effects, with the potential loss of over 28 jobs to the county. Closure of the Airport would result in the loss of the facility's economic impact (up to \$1.5 million over a 9-month period) to the local economy. Upon closure of the airport, the DAA would be required to return grant monies to the FAA, and the City of Duluth would be obligated to pay for removal of airport facilities. Airport closure would require the City of Duluth to repay over \$3.0 million in state and federal grant funds per the grant assurances related to past grant money the Airport has accepted. The restrictions of the original land conveyance for the Airport would limit the ability of the City to sell the property to finance the repayment of the grant funds. In addition to repayment of grant funds, closure of the Airport would also require reimbursement of land value to the FAA, removal of airport facilities (pavement, hangars, fuel system, etc) and site restoration. The estimated total cost of airport closure is approximately \$8.0 million, excluding the cost of buying out the leases currently held by airport tenants.

4.2 Other Actions with Potential for Cumulative Effect

Some past, present, and future actions in and around the project area have potential cumulative effects when considered along with the preferred alternative. These actions are separate from and in addition to the preferred alternative evaluated in this EA but are described here to evaluate their potential for incremental impact when considered along with the preferred alternative. Cumulative effects of these other actions with Alternative 13 and the no action alternative are also considered in order to provide comparison with the preferred alternative:

4.2.1 Past Actions with Relevance to Current Resource Conditions

4.2.1.1 On Airport Development

4.2.1.1.1 Full Length Parallel Taxiway

The 1964 Sky Harbor Airport Master Plan identified the need for a full-length parallel taxiway. The original taxiway design included a 40-foot wide taxiway with a 200-foot separation from the runway, in accordance with FAA guidelines. When construction of the parallel taxiway was proposed in the 1980s, a local group voiced concerns for the potential detrimental environmental effects related to the proposed removal of natural vegetation and alteration to the natural integrity of Minnesota Point. The final taxiway design was modified with FAA cooperation to mitigate those concerns. The taxiway width was reduced from 40 feet to 25 feet and the runway centerline to taxiway centerline separation was reduced from 200 feet (the standard separation at the time of construction) to 150 feet. The parallel taxiway was constructed in 1984.

Several obstructions to the FAR Part 77 imaginary surfaces were also identified at that time. FAA cooperation allowed the airport to install three obstruction lights in the transitional surface. Records indicate that no trees were trimmed or cleared at this time.

Past construction of the taxiway may have impacted native plant communities and/or sensitive species; however, these effects were minimized by the reduction in size of the taxiway from the original design.

4.2.1.1.2. *Airport Fence*

Several vandalism incidents, incidents of recreational users of Minnesota Point entering the Airport operating environment, as well as an environment which was increasingly aware of airport security, created the need for a fence surrounding areas of the Duluth-Sky Harbor Airport. As a result, a perimeter security fence was completed in 2003. Removal of old fencing and the installation of the new fence and its associated pedestrian and vehicle gates resulted in impacts to sensitive beach dune vegetation. Transplantation of beachgrass from the impacted area was completed during the construction process to provide mitigation in accordance with a permit from the MNDNR Division of Ecological Services.

4.2.1.1.3. *Hangar Construction and Apron Expansion*

Construction of Hangars 9 and 10 as well as the apron expansion to accommodate the hangars was completed in 2003. The area showed signs of past disturbance and had significant cover of alien species; however, some beachgrass was present in the project area (Pomroy-Petry 2000). A permit was obtained from the MNDNR for transplantation of beachgrass from areas impacted, providing mitigation for the effects to this listed species. The Park Point Community Club (PPCC) participated in the beachgrass transplantation.

4.2.1.1.4. *Tree Clearing*

Inspections conducted by MnDOT Aeronautics in August 2001 indicated tree obstructions in the FAA-required Object Free Area (OFA). The DAA cleared several of these obstructions in 2002, all of which were located on airport property. Airport coordination with the Army Corps of Engineers indicated that no permit was necessary for the tree removal per the project description provided by the airport.

4.2.1.2 **Off Airport Development**

Past off-airport activities in the area of Minnesota Point include residential, commercial, and industrial development on Minnesota Point in addition to activities within the Park Point Recreation Area and SNA. The Duluth entry ship canal was constructed in 1871, disconnecting Minnesota Point from the mainland. Access to Minnesota Point was provided by ferry and a ferry bridge until 1929 when increased vehicle traffic resulted in the construction of the present Aerial Lift Bridge. The park at the far end of Minnesota Point developed in the 1930s, with additions of volleyball courts and other recreational facilities in the years since. Minnesota Point is largely fully-developed, with some redevelopment of lots throughout the years.

Designation of the SNA in 2002 provides protection in perpetuity of 18 acres adjacent to the Airport. Preservation of native plant communities has a positive environmental effect; preservation also limits the potential cumulative effects of other development actions on the protected plant communities and sensitive species within the SNA.

Other recent activities include projects at Newton Creek and Hog Island from 2003-2005 that removed 67,575 tons of contaminated sediment. This was followed in 2010 by the installation of 30 aquatic habitat structures and planting 2 acres of native aquatic vegetation in this vicinity. These actions have a beneficial effect on quantity and quality of aquatic habitat in Superior Bay.

4.2.2 **Present Actions of Relevance, but Not Part of Proposed Action or Action Alternatives**

4.2.2.1 **On Airport Development**

There are no additional present actions of relevance with potential to contribute to cumulative effects.

4.2.2.2 Off Airport Development

4.2.2.2.1. Minnesota Point

Two hotels are presently under construction on previously developed lots on Minnesota Point near the Aerial Lift Bridge. Redevelopment on these previously disturbed residential and industrial parcels in the Park Point Neighborhood will not convert terrestrial native plant communities, and no impacts on native plant communities or sensitive species are anticipated. No impacts to surface water resources are anticipated..

4.2.2.2.2. Superior Bay

In 2012, construction was implemented on Wisconsin Point to create rock groins which will trap sand and restore 3 acres of piping plover habitat. Other recent actions in Superior Bay include activities on Hearing Island and Interstate Island to restore sand dunes providing improved habitat for shorebirds. Aquatic habitat restoration activities at Grassy Point, Tallas Island, and Radio Tower Bay are ongoing to remove wood waste deposited from historic sawmill operations. Placement of dredged material is intended to restore aquatic habitat including submergent and emergent wetlands at the 21st Avenue West channel embayment project.

These projects contribute to beneficial cumulative effects on habitat in Superior Bay.

4.2.3 Reasonably Foreseeable Actions of Relevance

Reasonably foreseeable actions on and around the Airport include both airport improvements within the airport and development on area surrounding the Airport. Potential future actions or airport development anticipated within the 20-year planning period are considered. The ALP is a drawing of existing and proposed facilities necessary for safe and efficient airport operation based on a 20-year plan and forecasts of airport use. The ALP for the Duluth-Sky Harbor Airport includes airport improvements listed below (also shown on **Figure 4-1**). Reasonably foreseeable airport maintenance projects are also included.

4.2.3.1 On Airport Development

4.2.3.1.1. Future Hangars

The existing ALP includes additional hangar development (construction of two additional hangars – Hangar 11 and Hangar 8 as depicted on **Figure 4-1** and the Preliminary Draft Airport Layout Plan [the Airport Layout Plan is available for review at the FAA Minneapolis Airport District Office] on already prepared hangar sites, covering roughly 9,000 ft². The potential hangar sites currently receive some use for parking of vehicles and equipment and include areas of non-native dominated grassland vegetation as well as some unvegetated areas. A habitat assessment conducted in May 2013 identified some dune habitat with occurrences of beachgrass present near the fenceline, outside of the flat-graded areas of the hangar sites (SEH 2013). These hangars are proposed to be constructed when the fire suppression upgrades (see **Section 4.2.3.1.3**) are completed and tenants are ready and able to begin construction.

Construction should be planned to avoid areas of beachgrass along the fenceline, to prevent incremental impacts that could cause beachgrass to trend toward listing as endangered in the state. With no impacts to sensitive species such as beachgrass, nor to any native plant communities, future hangar construction is not anticipated to contribute to cumulative effects.

4.2.3.1.2. Airport Maintenance Projects

Airport maintenance projects expected in the foreseeable future and include reconstruction of apron pavements, reconstruction of the seaplane ramp, fence and gate replacement, and reconstruction of the seaplane base retaining wall (see **Figure 4-1**).

The reconstruction of the existing apron pavements was Categorical Excluded by the FAA on November 9, 2010¹⁴. Construction will take place entirely on the existing apron and will not impact any areas of native plant communities that surround the apron area. Temporary traffic impacts to Minnesota Avenue and the Aerial Lift Bridge will occur during construction. Construction is expected to last approximately one month. If possible, material from the existing apron will be recycled and reused on site in order to minimize temporary impacts from construction traffic.

Improvements to the A/D building are proposed; however, these improvements are all interior and will not expand the footprint of the building. The seaplane ramp is anticipated to require maintenance within the next five years. The existing ramp would be reconstructed. Additionally, the existing timber retaining wall located at the seaplane ramp would be removed and replaced. It is expected that the A/D building improvements, seaplane ramp replacement, and retaining wall replacement will also be Categorical Excluded. These repairs or replacements of existing infrastructure will not have impacts outside of their existing footprints, and will not contribute to cumulative effects.

4.2.3.1.3. *Fire Suppression Upgrades*

In order to construct the proposed additional hangars at the Airport, additional fire suppression capability is required. In order to provide this additional capability, the Airport is considering adding an additional dry hydrant (in addition to the one existing dry hydrant). Construction of a dry hydrant would likely involve a 10-foot by 10-foot area of ground disturbance, and a directional bore.

Such activity would have negligible effects on listed species, and would not likely contribute to species trending towards listing as threatened or endangered in the state.

4.2.3.2 **Off Airport Development**

4.2.3.2.1. *Minnesota Point*

The areas surrounding the airport include the Park Point Neighborhood of the City of Duluth, Park Point Recreation Area, and the Minnesota Point Pine Forest SNA. The Park Point Neighborhood is largely fully-developed, with some redevelopment of single-family and multi-family residential units and commercial/industrial lots anticipated. The City of Duluth recently sold approximately two acres of park property on Park Point. This property is undeveloped and zoned for residential use and is in Zone C of the existing Airport as well as Zone C of all alternatives on the existing Airport site.

Development of these lots has the potential to contribute to loss of habitat for flora and fauna on Minnesota Point.

No other area development or improvements are known to be proposed by the City of Duluth. No actions are known to be proposed in the SNA.

4.2.3.2.2. *Superior Bay*

Several projects in Superior Bay and the St. Louis River estuary are in the planning phase with potential to benefit aquatic habitat. Potential projects include: Pickle Pond, Slip C, 40th Avenue West, Howard's Bay, vegetation restoration at Newton Creek/Hog Island, and vegetation restoration in Allouez Bay. Projects at Grassy Point, Keene Creek, Tallas Island, and Radio Tower Bay will continue to focus on aquatic habitat restoration by removing wood waste discarded into the bay by historic sawmill operations. Clough Island was

¹⁴ Categorical Excluded actions represent actions that the FAA has found, based on past experience with similar actions, do not normally require an EA or EIS because they do not individually or cumulatively have a significant effect on the human environment (FAA Order 1050.1E Policies and Procedures for Considering Environmental Impacts).

recently acquired by the Wisconsin Department of Natural Resources and will have ongoing restoration activities to improve aquatic shoreline habitat and wetland areas.

Additional projects in Superior Bay include the Lafarge Cement Terminal near Bayfront Park. Preliminary plans include cleaning up the contaminated site, making repairs to the seawalls, and building a hotel and retail center on the existing terminal site. Canadian National Railway is proposing an expansion of their Duluth Docks and Lakehead Storage Area by filling approximately 24.3 acres of the lower estuary. This project is intended to increase storage space for materials and improve stormwater management at the site. The expansion project has potential to contribute to cumulative loss of aquatic habitat in Superior Bay when considered with Alternative 5a Short and Alternative 13. It is anticipated that the USACE and MNDNR would require Canadian National Railway to provide mitigation for this habitat loss.

4.3 Cumulative Impacts

4.3.1 Alternative 5a Short

The preferred alternative, Alternative 5a Short, would result in the placement of 7.49 acres of fill in Superior Bay, which will impact the CBRS, Lake Superior Coastal Zone and potentially impact habitat for lake sturgeon (*Ascipenser fulvescens* – state-listed special concern) and creek heelsplitter (*Lasmigona compressa* – state-listed special concern).

This project will have temporary impacts related to construction. Construction will contribute to a temporary effect on noise, dust, and traffic impacts. Construction BMPs will mitigate these impacts.

Alternative 5a Short includes minimal impacts to terrestrial native plant communities and therefore does not contribute to a cumulative impact when considered with past, present and reasonably foreseeable future projects. The potential for cumulative impacts due to fill impacts to surface waters and aquatic habitat may be offset by the beneficial impact of remediation and habitat restoration projects at Newton Creek and Hog Island. Potential DAA funding of other projects to restore habitat in the Superior Bay and/or St. Louis River AOC may also mitigate the impacts of fill.

As a result, no single impact, even when considered with other past, present and future actions, represents a substantial impact that cannot be mitigated. Therefore, Alternative 5a Short will result in any significant cumulative impacts.

4.3.2 Alternative 13

The construction of Alternative 13 would result in the cutting or topping of 370 trees (76 trees within the SNA), altering the forest habitat and shifting the land cover type to more dune/shrubland type community. This would affect the unique old-growth forest native plant community. This cutting or topping of trees would also be considered an impact to a Section 4(f) resource. Alternative 13 would also require 3.40 acres of fill in Superior Bay, which will impact the CBRS, Lake Superior Coastal Zone and potentially impact habitat for lake sturgeon and creek heelsplitter. Alternative 13 will also have temporary construction impacts. Construction will contribute to a temporary effect on noise, dust, and traffic impacts. Construction BMPs will mitigate these impacts.

Alternative 13 may contribute to cumulative impacts to native vegetation when considered with other past, present and reasonably foreseeable future projects. Alternative 13 proposes cutting or topping of trees to remove obstructions, and may contribute to a cumulative effect when considered with past, present and future tree clearing. Alternative 13 also includes impacts to surface waters and aquatic habitat due to fill. The potential for cumulative impacts due to fill may be offset by the beneficial impact of remediation and habitat

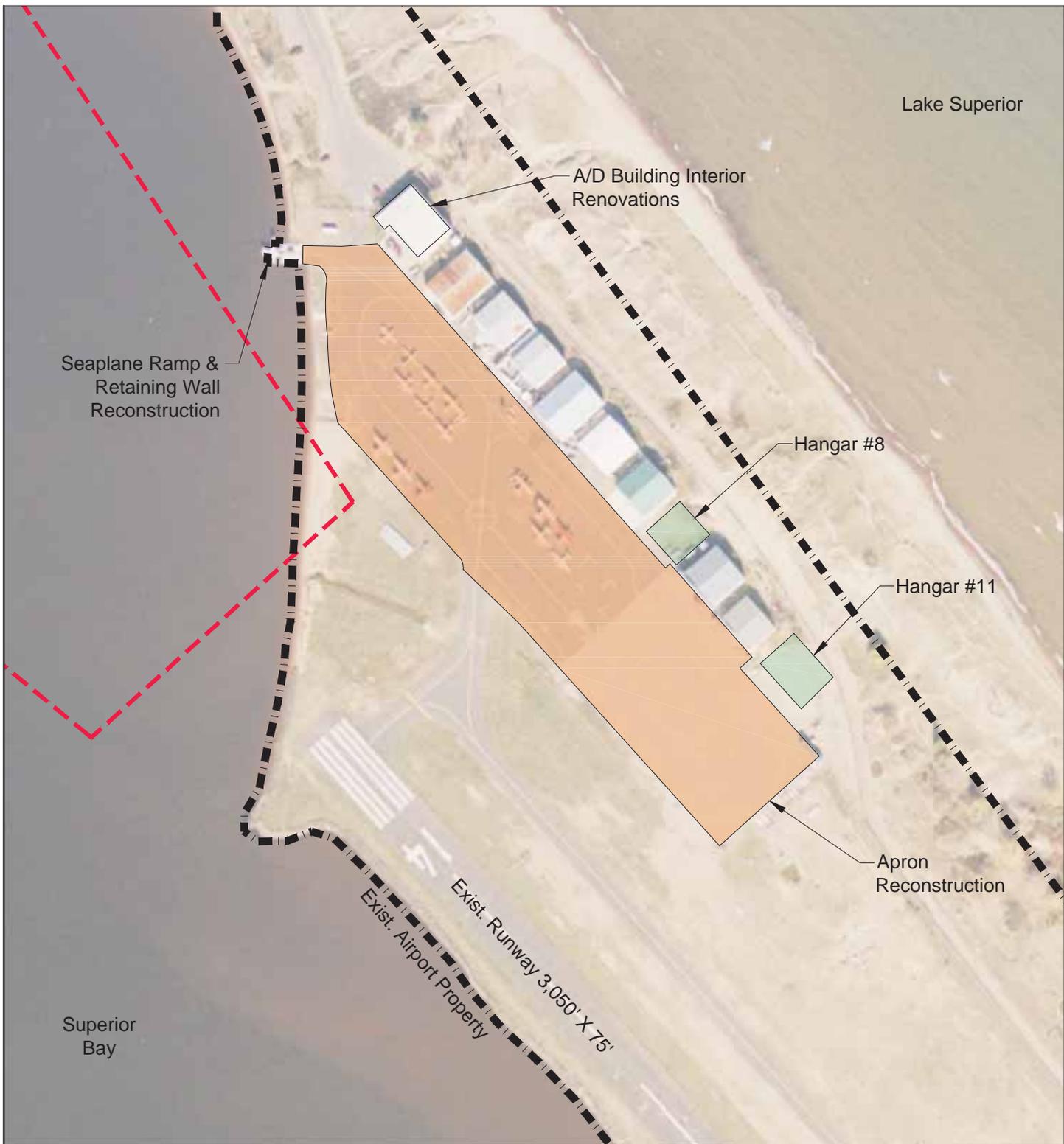
restoration projects at Newton Creek and Hog Island. Potential DAA funding of other projects to restore habitat in the Superior Bay and/or the St. Louis River AOC may also mitigate the impacts of fill.

Though Alternative 13 will result in cumulative impacts to native vegetation, old-growth trees (Section 4(f) resource) and aquatic habitat, the project would include the appropriate mitigation to offset these impacts. For this reason, Alternative 13 is not expected to result in a significant cumulative impact.

4.3.3 No Action Alternative

The no action alternative would result in loss of airport licensure and the ultimate closure of the Airport. Subsequent removal of the airport facilities would not affect the natural terrestrial vegetation surrounding the airport, and would not require fill in Superior Bay. The no action alternative would have temporary construction impacts due to removal of Airport facilities. Construction BMPs would mitigate these impacts. The no action alternative would have economic effects, with the potential loss of over 28 jobs to the county. Closure of the Airport would result in the loss of the facility's economic impact (up to \$1.5 million over a 9-month period) to the local economy.

The loss of the airport and the economic impact of the closure could result in a cumulative impact to the local community. However, it is not known at this time if this would result in a significant cumulative impact.



Aerial Source:
 MnDOT Office of Aeronautics,
 November, 2006

- MnDOT Clear Zone
- Existing Airport Property

	ADULAI0801.00	Duluth Sky Harbor Airport Environmental Assessment Duluth, MN	Figure 4-1 Reasonably Foreseeable On Airport Development	
	<i>November 2013</i>			

Chapter 5 List of Preparers

This Joint federal EA/state EAW was prepared by the following individuals with the cooperation of members of the Duluth Airport Authority, Federal Aviation Administration, Minnesota Department of Transportation Office of Aeronautics, U.S. Army Corps of Engineers, and the Minnesota Department of Natural Resources.

Organization and Name	Draft Environmental Assessment Responsibility and Qualifications
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Benita Crow, PE SEH	Consultant; Professional Engineer M.S. Civil Engineering, B.S. Civil Engineering 17 years experience in civil engineering and airport design

Chapter 6 List of Agencies and Persons Consulted

6.1 Public Environmental Assessment Scoping

Project scoping was performed with the participation of affected Federal, State, and local agencies through regular meetings of a Technical Advisory Committee (TAC) and other interested stakeholders through a Public Advisory Committee (PAC). The TAC, which met several times throughout the scoping process, included representatives from the FAA, MnDOT, U.S. Army Corps of Engineers (USACE), multiple divisions of the DNR, Minnesota Pollution Control Agency, Bois Forte Band of Chippewa Indians, 1854 Treaty Authority, Metropolitan Interstate Council, Minnesota Land Trust, City of Duluth and the DAA. The PAC included representatives from the Park Point Community Club, Congressman Oberstar's Office, Duluth Tree Commission, City of Duluth and the DAA. In addition to meeting several times throughout the scoping process, the PAC participated in visits to the existing airport site.

Preliminary meetings were held with both the TAC and the PAC as the project alternatives were developed and evaluated. The Draft Scoping Document was distributed to agency staff and other stakeholders for review and comment on November 11, 2008 and comments were accepted through December 15, 2008. Additional meetings were held with the TAC and the PAC as the Final Scoping Document was prepared. The Final Scoping Document was prepared in consideration of the comments received during public review as well as additional information gathered and developed after circulation of the Draft Scoping Document (see **Appendix D**). The Final Scoping Document was published on February 8, 2010.

6.2 Public Informational Process

6.2.1 Public Involvement

6.2.1.1 Duluth Airport Authority (DAA) Board Meetings

Frequent project updates were given at various monthly DAA Board Meetings held at both the Duluth International Airport and Duluth-Sky Harbor Airport. The meetings were advertised and open to the public.

6.2.1.2 Duluth City Council

The Duluth City Council received an update on the project and the environmental review process on June 9, 2014.

6.2.1.3 Duluth Tree Commission

The Duluth Tree Commission, an advisory group for the City Forestry Program, was consulted and kept informed throughout the scoping and environmental assessment process. The Duluth Tree Commission recommends and advises the City Administration and City Council on policies, budgetary concerns and technical tree related issues having an impact on boulevard tree placement and replacement, management maintenance and removal, reforestation, urban forest management and tree preservation. Project updates were made at several of the monthly Duluth Tree Commission meetings which are advertised and open to the public.

6.2.1.4 Duluth Planning Commission

Periodic project updates were given to the Duluth Planning Commission. The meetings were advertised and open to the public. Planning Commission staff also participated in the TAC.

6.2.1.5 Duluth-Superior Metropolitan Interstate Council (MIC)

Project updates were provided periodically to the Duluth-Superior Metropolitan Interstate Council, a Metropolitan Planning Organization (MPO), throughout the scoping and environmental assessment process.

The MIC provides guidance and leadership on transportation and land use planning issues in the Duluth-Superior metropolitan planning area.

6.2.1.6 Public Advisory Committee (PAC)

A public advisory committee (PAC) comprised of the Park Point Community Club, former Congressman Oberstar's Office, Duluth Tree Commission, City of Duluth, and the DAA was consulted throughout the scoping and environmental assessment process. The coordination included in-person meetings, written updates and an airport site visit.

6.2.1.7 Park Point Community Club (PPCC)

The Park Point Community Club, a community club of Minnesota Point residents, was consulted and kept informed throughout the scoping and environmental assessment process. Several presentations were made at monthly PPCC meetings, including two meetings hosted at the Airport, along with periodic written project updates. Project updates were also included in several Breeze newsletters (a monthly newsletter published by the PPCC).

6.2.1.8 Public Informational Updates

Several project updates were provided to the Duluth News Tribune throughout the project scoping and environmental process. Project updates were published in the Duluth News Tribune several times throughout the project development.

6.3 Agency Consultation

6.3.1 Technical Advisory Committee (TAC)

Throughout the EA process, a technical advisory committee (TAC) met several times to provide input on the EA development. Agencies invited to TAC meetings included: representatives from the FAA, MNDOT, USACE, multiple divisions of the MNDNR, MPCA, Bois Forte Band of Chippewa, 1854 Treaty Authority, MIC, Minnesota Land Trust, City of Duluth and the DAA.

The following meetings occurred during development of the Draft EA:

1. June 19, 2012 – Review of Preliminary Draft Chapters 1 & 2. Attendance included the following agencies: FAA, DAA, USACE, MNDNR, USFWS, EPA, MPCA, and Bois Forte Band of Chippewa Indians.
2. March 28, 2013 – Review of Preliminary Draft Chapters 1 through 3. Attendance included the following agencies: FAA, DAA, USACE, MNDOT Aeronautics, EPA, MNDNR, MPCA, and Minnesota Land Trust, and Bois Forte Band of Chippewa.

An Interagency and Tree Study Technical committee was convened to review and discuss methodology and results of the Tree Growth Model and Tree Fate Study (**Appendix C**). This committee included members of the Duluth Tree Commission, City of Duluth staff, MNDNR staff, and FAA representatives. Meetings were held in 2009 and 2010.

6.3.2 Early EA Coordination Regarding Potential Fill in Superior Bay

In June, 2011, a meeting was held with the USACE, USFWS, EPA, MNDNR, MnDOT, DAA and FAA to discuss the potential fill impacts associated with each of the proposed alternatives included in the Draft EA. The meeting allowed time for agencies to express concerns and questions regarding the proposed fill.

6.3.3 Combined NEPA and Clean Water Act Section 404 Permitting Process

The FAA and United States Army Corps of Engineers (USACE) have entered into a Memorandum of Understanding (MOU) to merge the NEPA and Clean Water Act Section 404 Permitting processes into one process. The intent of the MOU is to preclude the need for revisiting decisions that have already been agreed upon earlier in the EA process, to encourage early substantive participation by the agencies, and to ensure that the information is adequate to address each agency's regulatory requirements. Through this MOU, the FAA will coordinate with the USACE to gain concurrence at different points in the process (Purpose and Need, Alternatives Carried Forward, Preferred Alternative, and Preliminary Design Phase Impact Sequencing). A copy of this MOU is included in **Appendix A**. In addition, the USACE was provided the opportunity to comment on information presented various project meetings.

Prior to publication of the Draft EA, the USACE and FAA agreed upon concurrence points (1) Purpose and Need, and (2) Alternatives Carried Forward (see **Appendix A**). Prior to publication of this Final EA, the USACE and FAA completed concurrence point (3) Preferred Alternative. The Preliminary Design Phase Impact Sequencing (4) concurrence point will be completed after issuance of the FONSI/ROD but before the project permits are acquired.

6.3.4 U.S. Environmental Protection Agency (USEPA)

EPA was invited to and attended meetings to review versions of the preliminary draft EA. These meetings took place June 19, 2012 and March 28, 2013. The EPA was provided the opportunity to comment on information presented at these and various other project meetings.

6.3.5 U.S. Fish and Wildlife Service (USFWS)

The FAA received concurrence from the USFWS on July 12, 2013 that the project complies with the purposes of the CBRA and that a Section 6 exception (the maintenance, replacement, reconstruction or repair of publicly owned or publicly operated roads, structures, or facilities that are essential links in a larger network or system) under CBRA (16 U.S.C. § 3505) is applicable (see **Appendix E**).

The FAA initiated Section 7 informal consultation with the USFWS in tandem with publication of the Draft EA, with a finding that the project is anticipated to have no effect on the piping plover. The USFWS did not comment on the FAA's finding.

In addition, the USFWS was provided the opportunity to comment on information presented various project meetings.

6.3.6 Tree Growth Model and Fate Model Studies

A tree growth model (see **Appendix C**) was developed to predict the height of individual trees at future intervals. From these data, it is possible to identify trees that could penetrate the approach surface in the future and the approximate height above this surface these trees might grow. This study was intended to provide data to be used in a comparative tree penetration analysis between proposed project alternatives.

In addition, a fate model was developed (see **Appendix C**). This study was conducted to develop an individual tree condition assessment methodology to be used to predict the capacity of an individual tree to survive crown reduction pruning based on the current physical conditions and health of individual trees in the project area. This study was intended to provide a stand-level disturbance analysis and describe or predict possible effects to the forest ecology relative to the removal or pruning of select trees that have penetrated, or are anticipated to penetrate, the runway approach surface in various alternatives.

These models were developed in close coordination with the MNDNR, Duluth Tree Commission, and the City of Duluth Forester. Throughout development of these models, several meetings with the MNDNR, Duluth Tree Commission, and the City of Duluth Forester were held to allow for agency input.

6.3.7 Anchorage Area Coordination

A meeting with the USACE, the USCG, the Duluth Seaway Port Authority (DSPA), the City of Superior, the Lake Carriers Association, and the FAA was held in May, 2008 to discuss the potential impacts of each alternative to the existing anchorage area. Additional coordination between the FAA and the USACE and USGC occurred in 2011 and 2012 (see correspondence in **Appendix G**). Additional information summarizing the past coordination efforts was provided to the USACE in September 2014 (see **Appendix G**).

6.3.8 Tribal Consultation

Executive Order 13175, *Consultation and Coordination with Tribal Governments*, dated November 6, 2000 mandates for the consultation, to the greatest extent, with Tribal governments of any federal action that could significantly or uniquely affect them. The Department of the Interior, Bureau of Indian Affairs (BIA) is directed to represent Native American tribal councils with legal representation and other services for the benefit of those tribes.

Early Tribal Consultation was initiated by the FAA during the scoping process. The Bois Forte Band of Chippewa, the 1854 Treaty Authority, MnDOT Office of Government Affairs, FAA and the DAA attended one meeting during the scoping process.

A copy of the Draft EA will be provided to the Bois Forte Band of Chippewa, Mille Lacs Band of Ojibwe, and the 1854 Treaty Authority to allow opportunity for consultation. During publication of the Draft EA, the Strockbridge Munsee Band of Mohican Indians indicated they did not wish to be a consulting party for the project. In addition, White Earth Band Reservation Tribal Council indicated they wish to receive further project information as it becomes available. A copy of the SHPO concurrence, the Final EA, and FONSI/ROD will be provided to the White Earth Band Reservation Tribal Council.

6.3.9 Section 106 Coordination

The FAA issued a finding of No Historic Properties Affected in August 2011. The SHPO conditionally concurred with the finding in a letter dated September 8, 2011. The FAA revised the finding to incorporate SHPO's conditions and to reflect new information. The FAA issued a revised finding in July 2014. SHPO concurred with the FAA's finding in September 2014 (see **Appendix I**).

6.4 Public Hearing

The DAA held a Public Open House and Hearing to solicit comment on the Draft EA. The event took place on August 7, 2014 at the Inn on Lake Superior (350 Canal Park Drive, Duluth, MN). The Open House was held at 6:00 p.m. until 7:00 p.m. with the Public Hearing taking place at 7:00 p.m. The Public Notice for the hearing was included in the publication Public Notice (see **Section 6.5**) and was re-published in the Duluth News Tribune on July 31, 2014. A copy of the Public Notice is included in **Appendix J**. Eight individuals provided comment at the public hearing. A copy of the transcript is included in **Appendix K**.

6.5 Draft EA Distribution

The Draft EA was published and distributed in accordance with the requirements of the FAA and the EQB. The Draft EA was circulated for a 45-day comment period during which comments were accepted regarding the proposed project, the alternatives evaluated, and the assessment of potential effects. The Distribution List in **Section 6.5.1** identifies those agencies and individuals invited to review the Draft EA.

The public was also provided opportunity to review and comment on the Draft EA. A Public Notice identifying the availability of this Draft EA was published in the Duluth News Tribune on July 7, 2014. A copy of the Public Notice is included in **Appendix J**. Notice identifying the availability of the Draft EAW was published in the Minnesota EQB Monitor on July 7, 2014. A copy of the notice is included in **Appendix J**.

Public copies of the Draft EA were available at the following locations:

- Duluth-Sky Harbor Airport at 5000 Minnesota Ave, Duluth, MN
- Duluth International Airport (3rd floor, Administrative Office) at 4701 Grinden Dr, Duluth, MN
- Duluth City Hall at 411 W 1st St, Duluth, MN
- Duluth Public Library at 520 W Superior St, Duluth, MN
- Park Point Community Club (Lafayette Community Recreation Center) at 2026 Minnesota Ave, Duluth, MN
- The DAA website www.duluthairport.com
- SEH Duluth Office at 418 W Superior St, Ste 200, Duluth, MN

Written comments received by August 20, 2014 regarding the proposed project, the alternatives evaluated, and the assessment of potential effects were considered in preparation of the Final EA document.

6.5.1 Distribution List for the Draft EA/EAW

As part of the requirements of the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321-4347, NEPA's implementing regulations, 40 C.F.R. parts 1500-1508, and pursuant to Minnesota Rules 4410.4300, the Draft EA/EAW was circulated to the following agencies, organizations, and individuals.

Rosemary Berens Tribal Historic Preservation Officer Bois Forte Band of Chippewa Indians PO Box 16 Nett Lake, MN 55772	Darren Vogt Environmental Division Director 1854 Treaty Authority 4428 Haines Rd Duluth, MN 55811-1524
Don Berre MnDOT Office of Aeronautics 222 E Plato Blvd Mail Stop 410 St. Paul, MN 55107-1618	Gordon Nelson Airport District Office Federal Aviation Administration 6020 28th Ave S, Rm. 102 Minneapolis, MN 55450-2706
Daryl Wierzbinski U.S. Army Corps of Engineers St. Paul District 1554 Hwy 2, Ste 2 Two Harbors, MN 55616	Steve Brossert U.S. Army Corps of Engineers Detroit District 600 Lake Ave S Duluth, MN 55802

<p>Andy McDonald Metropolitan Interstate Council 221 W First St Duluth, MN 55802</p>	<p>Lisa Angelos Minnesota Department of Natural Resources 1568 Hwy 2 Two Harbors, MN 55616</p>
<p>Tom Estabrooks Minnesota Pollution Control Agency 525 S Lake Ave, Ste 400 Duluth, MN 55802</p>	<p>Tom Werner Executive Director Duluth Airport Authority 4701 Grinden Dr Duluth, MN 55811</p>
<p>Brian Madsen Sky Harbor Airport Manager 4703 Grinden Dr Duluth, MN 55811</p>	<p>Kris Larson Minnesota Land Trust 394 S Lake Ave, Ste 404 Duluth, MN 55802</p>
<p>Keith Hamre Planning Division City of Duluth 411 W First St, Rm 300 Duluth, MN 55802</p>	<p>City Forester City of Duluth 110 N 42nd Ave W Duluth, MN 55807</p>
<p>Dawn Buck President, Park Point Community Club 3101 Lake Ave S Duluth, MN 55802</p>	<p>Rick Luck Tenant Representative Sky Harbor Airport 5000 Minnesota Ave Duluth, MN 55802</p>
<p>Board of Directors Duluth Airport Authority 4701 Grinden Dr Duluth, MN 55811</p>	<p>Sharla Gardner Duluth City Council 411 W First St, Rm 330 Duluth, MN 55802</p>
<p>Congressman Nolan's Office 11 E Superior St, #125 Duluth, MN 55802</p>	<p>Jim Lemmerman Duluth Tree Commission 1316 E 7th St Duluth, MN 55805</p>
<p>Becky Balk MN Department of Agriculture 625 N Robert St St. Paul, MN 55155</p>	<p>Ray Kirsch MN Department of Commerce 85 Seventh Place E, Ste 500 St. Paul, MN 55101</p>
<p>Environmental Review Program Environmental Quality Board 520 Lafayette Rd N, 4th Fl St. Paul, MN 55155-4194</p>	<p>Michele Ross Environmental Health Division MN Department of Health 625 N Robert St St. Paul, MN 55155</p>

<p>Randall Doneen Environmental Review Unit MN Department of Natural Resources 500 Lafayette Rd St. Paul, MN 55155-4025</p>	<p>Craig Affeldt Environmental Review MN Pollution Control Agency 520 Lafayette Rd, 4th Fl St. Paul, MN 55155</p>
<p>Debra Moynihan Stewardship Team Manager MN Department of Transportation 395 John Ireland Blvd, MS 620 St. Paul, MN 55155</p>	<p>Travis Germundson MN Board of Water and Soil Resources 520 Lafayette Rd St. Paul, MN 55155</p>
<p>State Archaeologist Fort Snelling History Center 200 Tower Ave St. Paul, MN 55111-4061</p>	<p>Hennepin County Library Minneapolis Central Attn: Helen Burke Government Documents, 2nd Fl 300 Nicollet Mall Minneapolis, MN 55401-1992</p>
<p>Twin Cities Field Office E.S. U.S. Fish and Wildlife Service 4101 American Blvd E Bloomington, MN 55425-1665</p>	<p>Minnesota Historical Society State Historic Preservation Office 345 Kellogg Blvd St. Paul, MN 55102</p>
<p>Jim Jones Cultural Affairs Director Indian Affairs Council 113 2nd St NW, Ste 110A Bemidji MN 556601</p>	<p>Kenneth Westlake Office of Enforcement and Compliance Assurance U.S. Environmental Protection Agency 77 W Jackson Blvd Mail Code E-19J Chicago, IL 60604-3590</p>
<p>Pat Henderson Executive Director Arrowhead Regional Development Commission 221 W First St Duluth, MN 55802</p>	<p>Steve LaValley Water Regulations and Zoning Wisconsin Department of Natural Resources 1701 N 4th St Superior, WI 54880</p>
<p>Kevin Biami U.S. Coast Guard 600 S Lake Ave Duluth, MN 55802-2362</p>	<p>John Lindgren MNDNR – Fisheries 5351 North Shore Drive Duluth, MN 55804</p>
<p>Patty Fowler Area Hydrologist MNDNR – Waters 1568 Hwy 2 Two Harbors, MN 55616</p>	<p>Cliff Bentley MNDNR Minnesota Lake Superior Coastal Program 1568 Hwy 2 Two Harbors, MN 55616</p>
<p>Natalie Weyaus Tribal Historic Preservation Officer Mille Lacs Band of Ojibwe Indians 43408 Oodena Dr Onamia, MN 56359</p>	

6.5.2 Notification of Availability of the Draft EA/EAW

The following individuals and/or groups were notified of the availability of the Draft EA/EAW and public comment period based on their past involvement or interest in the project.

Grand Portage Band of Lake Superior Chippewa Mary Ann Gagnon, THPO Norman Deschampe, Chairman Grand Portage Reservation Tribal Council PO Box 428 Grand Portage, MN 55604	Leech Lake Band of Chippewa Indians Gina Lemon, THPO 115 6th Street NW, Suite E Leech Lake Band of Chippewa Indians Cass Lake, MN 56633 Carri Jones, Chairwoman No suite number
Lower Sioux Indian Community Grace Goldtooth-Campos, THPO Denny Prescott, President 38527 Res. Highway 1 PO Box 308 Morton MN 56270	Stockbridge-Munsee Community Band of Mohican Indians Sherry White, THPO W13447 Camp 14 Road Bowler, WI 54416 Wally Miller, President N8476 Moh-He-Con-Nuck Road PO Box 70 Bowler, WI 54416
White Earth Band of Chippewa Cayla Olson, THPO Erma Vizenor, Chairwoman PO Box 418 White Earth, MN 56569	Fond du Lac Band of Lake Superior Chippewa Leah Savage, THPO Karen Diver, Chairwoman 1720 Big Lake Rd Cloquet, MN 55720
Northern Cheyenne Tribe Conrad Fisher, Director Llevando Fisher, President PO Box 128 Lame Deer, MT 59043	Mandan, Hidatsa, & Aikara Nation Elgin Crowsbreast, THPO Tex "Red Ripped Arrow" Hall, Tribal Chairman 404 Frontage Road New Town, ND 58763
Fort Peck Tribes Darrell 'Curley' Youpee, Director AT Rusty Stafne, Tribal Chairman 501 Medicine Bear Road PO Box 1027 Poplar, MT 59255	Sisseton-Wahpeton Oyate Diane Desrosiers, THPO Robert Shepherd, Tribal Chairman 205 Oak St E, Suite 121 Po Box 907 Sisseton SD 57262
MNDOT Barbara Brodeen Government Affairs Tribal Liaison 395 John Ireland Blvd St Paul, MN 55155-1899	Bad River Band of Lake Superior Chippewa Indians Edith Leoso, THPO Mike Wiggins Jr., Tribal Chairman PO Box 39 Odanah, WI 54861

<p>Ho-Chunk Nation Bill Quackenbush, THPO PO Box 667 Jon Greendeer, President Tribal Office Building W9814 Airport Rd Black River Falls, WI 54615</p>	<p>Lac Courte Oreilles Band of Lake Superior Chippewa Jerry Smith, THPO Tribal Government 13394 W Trepania Rd Hayward, WI 54843</p>
<p>Lac du Flambeau Band of Lake Superior Chippewa Indians Melinda Young, THPO Tom Maulson, President PO Box 67 Lac du Flambeau, WI 54538</p>	<p>Menomonie Indian Tribe of Wisconsin David Grignon, Director Laurie Boivin, Chairwoman PO Box 910 Keshena, WI 54135-0910</p>
<p>Oneida Nation of Wisconsin Corina Williams, THPO Tribal Chair PO Box 365 Oneida, WI 54155</p>	<p>Red Cliff Band of Lake Superior Chippewa Larry Balber, THPO Rose Gurnoe-Soulier, Tribal Chair 88385 Pike Rd, Hwy 13 Bayfield, WI 54814</p>
<p>St. Croix Chippewa Indians of Wisconsin 24663 Angeline Ave Webster, WI 54893 Wanda McFaggen, THPO</p>	<p>1854 Treaty Authority Darren Vogt, Environmental Division Director Sony Myers, Executive Director 4428 Haines Rd Duluth, MN 55811-1524</p>
<p>Tamara Cameron U.S. Army Corps of Engineers Regulatory Functions Branch 180 Fifth St E, Ste 700 St. Paul, MN 55101-1678</p>	<p>Carol Ann Lane Secretary/Treasurer Lake Carriers' Association 20325 Center Ridge Rd, Ste 720 Rocky River, OH 44116</p>
<p>Jason Serck Planning and Development City of Superior 1316 N 14th St, Ste 210 Superior, WI 54880</p>	<p>Jim Sharrow Duluth Seaway Port Authority 1200 Port Terminal Dr Duluth, MN 55802</p>
<p>Christopher Eng Economic Development City of Duluth 411 W 1st St, Rm 402 Duluth, MN 55802</p>	<p>Jan Green 1754 Old North Shore Rd Duluth, MN 55804</p>
<p>Cathy Podeszwa 5731 E Superior St Duluth MN 55804</p>	<p>Amy Eliot 5303 Wyoming St Duluth, MN 55804</p>

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Mary Boyle Anderson maryboyleanderson@gmail.com

John & Pat Thomas 6219 E Superior St Duluth, MN 55804
(Empty)

6.6 Final EA Distribution

This Final EA and FONSI/ROD will be published and distributed in accordance with the requirements of the FAA and the EQB. The Final EA will be circulated for a 30-day comment period during which comments will be accepted regarding Final EA and FONSI/ROD. The Distribution List in **Section 6.5.1** identifies those agencies and individuals invited to review the Final EA and FONSI/ROD.

The public is also provided opportunity to review and comment on the Final EA and FONSI/ROD. A Public Notice identifying the availability of this Final EA was published in the Duluth News Tribune on May 29, 2015. A copy of the Public Notice is included in **Appendix J**. Notice of the DAA degative delcaration on the need for a state Environmental Impact Statement (EIS) was published in the Minnesota EQB Monitor on June 8, 2015.

Public copies of the Final EA are available at the following locations:

- Duluth-Sky Harbor Airport at 5000 Minnesota Ave, Duluth, MN
- Duluth International Airport (3rd floor, Administrative Office) at 4701 Grinden Dr, Duluth, MN
- Duluth City Hall at 411 W 1st St, Duluth, MN
- Duluth Public Library at 520 W Superior St, Duluth, MN
- Park Point Community Club (Lafayette Community Recreation Center) at 2026 Minnesota Ave, Duluth, MN
- The DAA website www.duluthairport.com
- SEH Duluth Office at 418 W Superior St, Ste 200, Duluth, MN

Written comments regarding the Final EA and FONSI/ROD will be received by June 30, 2015.

Please direct written comments to:

RGU Contact:
 Tom Werner
 Executive Director
 Duluth Airport Authority
 4701 Grinden Drive
 Duluth, MN 55811
 twerner@duluthairport.com

FAA contact:
 Kandice Krull
 Environmental Protection Specialist
 FAA – Denver Airport District Office
 26805 E. 68th Ave, Suite 224
 Denver, CO 80249-6361
 kandice.krull@faa.gov

6.6.1 Distribution List for the Final EA/EAW

As part of the requirements of the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321-4347, NEPA's implementing regulations, 40 C.F.R. parts 1500-1508, and pursuant to Minnesota Rules 4410.4300, the Final EA/EAW and FONSI/ROD was circulated to the following agencies, organizations, and individuals.

Tom Werner Executive Director Duluth Airport Authority 4701 Grinden Dr Duluth, MN 55811	Brian Madsen Sky Harbor Airport Manager 4703 Grinden Dr Duluth, MN 55811
Don Berre MnDOT Office of Aeronautics 222 E Plato Blvd Mail Stop 410 St. Paul, MN 55107-1618	Airport District Office Federal Aviation Administration 6020 28th Ave S, Rm. 102 Minneapolis, MN 55450-2706
Daryl Wierzbinski U.S. Army Corps of Engineers St. Paul District 1554 Hwy 2, Ste 2 Two Harbors, MN 55616	Steve Brossert U.S. Army Corps of Engineers Detroit District 600 Lake Ave S Duluth, MN 55802
Tom Estabrooks Minnesota Pollution Control Agency 525 S Lake Ave, Ste 400 Duluth, MN 55802	Craig Affeldt Environmental Review MN Pollution Control Agency 520 Lafayette Rd, 4 th Fl St. Paul, MN 55155
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Kevin Biarni U.S. Coast Guard 600 S Lake Ave Duluth, MN 55802-2362	Lisa Angelos Minnesota Department of Natural Resources 1568 Hwy 2 Two Harbors, MN 55616

Randall Doneen Environmental Review Unit MN Department of Natural Resources 500 Lafayette Rd St. Paul, MN 55155-4025	John Lindgren MNDNR – Fisheries 5351 North Shore Drive Duluth, MN 55804
Patty Fowler Area Hydrologist MNDNR – Waters 1568 Hwy 2 Two Harbors, MN 55616	Cliff Bentley MNDNR Minnesota Lake Superior Coastal Program 1568 Hwy 2 Two Harbors, MN 55616
White Earth Band of Chippewa Cayla Olson, THPO Erma Vizenor, Chairwoman PO Box 418 White Earth, MN	Sandra Ettestad Duluth Aviation Institute 5000 Minnesota Avenue Hangar 10 Duluth, MN 55804
Denny Johnson 4019 Lake Avenue Duluth, MN 55804	Mike Busch 4327 Gladstone Street Duluth, MN 55804
Bill Irving EAA Duluth-Superior Chapter 272 PO Box 3246 Duluth, MN 55803	Dave Poulin 3101 Lake Avenue South Duluth, MN 55804
Scott Wolff 4236 Minnesota Avenue Duluth, MN 55804	Mark Marino 716 East Superior Street Duluth, MN 558012
John Neukom No contact info provided	

6.6.2 Notification of Availability of the Final EA/EAW

The following individuals and/or groups were notified of the availability of the Final EA/EAW and FONSI/ROD and public comment period based on their past involvement or interest in the project.

<p>Keith Hamre Planning Division City of Duluth 411 W First St, Rm 300 Duluth, MN 55802</p>
<p>Rick Luck Tenant Representative Sky Harbor Airport 5000 Minnesota Ave Duluth, MN 55802</p>
<p>Sharla Gardner Duluth City Council 411 W First St, Rm 330 Duluth, MN 55802</p>
<p>Congressman Nolan’s Office 11 E Superior St, #125 Duluth, MN 55802</p>
<p>Becky Balk MN Department of Agriculture 625 N Robert St St. Paul, MN 55155</p>
<p>Debra Moynihan Stewardship Team Manager MN Department of Transportation 395 John Ireland Blvd, MS 620 St. Paul, MN 55155</p>
<p>State Archaeologist Fort Snelling History Center 200 Tower Ave St. Paul, MN 55111-4061</p>
<p>Twin Cities Field Office E.S. U.S. Fish and Wildlife Service 4101 American Blvd E Bloomington, MN 55425-1665</p>
<p>Jim Jones Cultural Affairs Director Indian Affairs Council 113 2nd St NW, Ste 110A Bemidji MN 556601</p>

<p>City Forester City of Duluth 110 N 42nd Ave W Duluth, MN 55807</p>
<p>Darren Vogt Environmental Division Director 1854 Treaty Authority 4428 Haines Rd Duluth, MN 55811-1524</p>
<p>Rosemary Berens Tribal Historic Preservation Officer Bois Forte Band of Chippewa Indians PO Box 16 Nett Lake, MN 55772</p>
<p>Michele Ross Environmental Health Division MN Department of Health 625 N Robert St St. Paul, MN 55155</p>
<p>Ray Kirsch MN Department of Commerce 85 Seventh Place E, Ste 500 St. Paul, MN 55101</p>
<p>Travis Germundson MN Board of Water and Soil Resources 520 Lafayette Rd St. Paul, MN 55155</p>
<p>Hennepin County Library Minneapolis Central Attn: Helen Burke Government Documents, 2nd Fl 300 Nicollet Mall Minneapolis, MN 55401-1992</p>
<p>Minnesota Historical Society State Historic Preservation Office 345 Kellogg Blvd St. Paul, MN 55102</p>
<p>Andy McDonald Metropolitan Interstate Council 221 W First St Duluth, MN 55802</p>

<p>Pat Henderson Executive Director Arrowhead Regional Development Commission 221 W First St Duluth, MN 55802</p>	<p>Steve LaValley Water Regulations and Zoning Wisconsin Department of Natural Resources 1701 N 4th St Superior, WI 54880</p>
<p>Grand Portage Band of Lake Superior Chippewa Mary Ann Gagnon, THPO Norman Deschampe, Chairman Grand Portage Reservation Tribal Council PO Box 428 Grand Portage, MN 55604</p>	<p>Leech Lake Band of Chippewa Indians Gina Lemon, THPO 115 6th Street NW, Suite E Leech Lake Band of Chippewa Indians Cass Lake, MN 56633 Carri Jones, Chairwoman No suite number</p>
<p>Lower Sioux Indian Community Grace Goldtooth-Campos, THPO Denny Prescott, President 38527 Res. Highway 1 PO Box 308 Morton MN 56270</p>	<p>Stockbridge-Munsee Community Band of Mohican Indians Sherry White, THPO W13447 Camp 14 Road Bowler, WI 54416 Wally Miller, President N8476 Moh-He-Con-Nuck Road PO Box 70 Bowler, WI 54416</p>
<p>Natalie Weyaus Tribal Historic Preservation Officer Mille Lacs Band of Ojibwe Indians 43408 Oodena Dr Onamia, MN 56359</p>	<p>Fond du Lac Band of Lake Superior Chippewa Leah Savage, THPO Karen Diver, Chairwoman 1720 Big Lake Rd Cloquet, MN 55720</p>
<p>Northern Cheyenne Tribe Conrad Fisher, Director Llevando Fisher, President PO Box 128 Lame Deer, MT 59043</p>	<p>Mandan, Hidatsa, & Aikara Nation Elgin Crowsbreast, THPO Tex "Red Ripped Arrow" Hall, Tribal Chairman 404 Frontage Road New Town, ND 58763</p>
<p>Fort Peck Tribes Darrell 'Curley' Youpee, Director AT Rusty Stafne, Tribal Chairman 501 Medicine Bear Road PO Box 1027 Poplar, MT 59255</p>	<p>Sisseton-Wahpeton Oyate Diane Desrosiers, THPO Robert Shepherd, Tribal Chairman 205 Oak St E, Suite 121 Po Box 907 Sisseton SD 57262</p>
<p>MNDOT Barbara Brodeen Government Affairs Tribal Liaison 395 John Ireland Blvd St Paul, MN 55155-1899</p>	<p>Bad River Band of Lake Superior Chippewa Indians Edith Leoso, THPO Mike Wiggins Jr., Tribal Chairman PO Box 39 Odanah, WI 54861</p>

<p>Ho-Chunk Nation Bill Quackenbush, THPO PO Box 667 Jon Greendeer, President Tribal Office Building W9814 Airport Rd Black River Falls, WI 54615</p>
<p>Lac du Flambeau Band of Lake Superior Chippewa Indians Melinda Young, THPO Tom Maulson, President PO Box 67 Lac du Flambeau, WI 54538</p>
<p>Oneida Nation of Wisconsin Corina Williams, THPO Tribal Chair PO Box 365 Oneida, WI 54155</p>
<p>St. Croix Chippewa Indians of Wisconsin 24663 Angeline Ave Webster, WI 54893 Wanda McFaggen, THPO</p>
<p>Tamara Cameron U.S. Army Corps of Engineers Regulatory Functions Branch 180 Fifth St E, Ste 700 St. Paul, MN 55101-1678</p>
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<p>Cathy Podeszwa 5731 E Superior St Duluth MN 55804</p>

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<p>Red Cliff Band of Lake Superior Chippewa Larry Balber, THPO Rose Gurnoe-Soulier, Tribal Chair 88385 Pike Rd, Hwy 13 Bayfield, WI 54814</p>
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<p>Carol Ann Lane Secretary/Treasurer Lake Carriers' Association 20325 Center Ridge Rd, Ste 720 Rocky River, OH 44116</p>
<p>Jim Sharrow Duluth Seaway Port Authority 1200 Port Terminal Dr Duluth, MN 55802</p>
<p>Jan Green 1754 Old North Shore Rd Duluth, MN 55804</p>
<p>Amy Eliot 5303 Wyoming St Duluth, MN 55804</p>

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John & Pat Thomas 6219 E Superior St Duluth, MN 55804

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Chapter 8 List of Acronyms

AC – Advisory Circular	EIS – Environmental Impact Statement
ACHP – Advisory Council on Historic Preservation	END – Endangered
A/D – Arrival/Departure	EPA – Environmental Protection Agency
ADG – Aircraft Design Group	EO – Executive Order
AIP – Airport Improvement Program	EQB – Environmental Quality Board
ALP – Airport layout plan	FAA – Federal Aviation Administration
A-O – Airport Overlay Zoning District	FAC – Facultative Plant Species
AOC – Area of Concern	FACU – Facultative Upland Plant Species
APE – Area of Potential Effect	FACW – Facultative Wetland Plant Species
ARC – Airport Reference Code	FAR – Federal Aviation Regulation
Avgas – Aviation Gasoline	FBO – Fixed based operator
AWOS – Automated Weather Observation System	FEMA – Federal Emergency Management Act
BFE – Base Flood Elevation	FICON – Federal Interagency Committee on Noise
BMPs – Best management practices	FIRM – Flood Insurance Rate Map
C&D – Construction/Demolition Debris	FONSI – Finding of no significant impact
CAA – Clean Air Act	FPPA – Farmland Protection Policy Act
CBRA – Coastal Barriers Resources Act	FY – Fiscal Year
CBRS – Coastal Barriers Resources System	GA – General Aviation
CEQ – Council on Environmental Quality	GHG – Greenhouse Gas
CFR – Code of Federal Regulations	GPS – Global Positioning System
cfs – Cubic Feet per Second	INM – Integrated noise model
CIP – Capital Improvement Plan	LCMR – Legislative-Citizen Commission on Minnesota Resources
CO – Carbon Monoxide	Leq – Equivalent Sound Level
CY – Cubic Yard	LDN – Same as DNL, Day-night average sound level
CZM – Coastal Zone Management	LL – Low Lead
CZMA – Coastal Zone Management Act	LOS – Level of Service
DAA – Duluth Airport Authority	LPV – Localizer Performance with Vertical Guidance
DNL – Day-night average sound level	MBS – Minnesota Biological Survey
DOT – Department of Transportation	MDH – Minnesota Department of Health
DYT – Duluth-Sky Harbor Airport	MEPA – Minnesota Environmental Policy Act
EA – Environmental Assessment	MHI – Median Household Income
EAW – Environmental Assessment Worksheet	MIRLs – Medium Intensity Runway Lights
ECS – Ecological Classification System	

MITLs – Medium Intensity Taxiway Lights	RSA – Runway Safety Area
MLSCP Minnesota’s Lake Superior Coastal Program	SEH – Short Elliott Hendrickson Inc.
MN – Minnesota	SDS – State Disposal System
MNDNR Minnesota Department of Natural Resources	SHPO – State Historic Preservation Office
MnDOT Minnesota Department of Transportation	SIP – State Implementation Plan
MOU – Memorandum of Understanding	SNA – Scientific and Natural Area
MPCA – Minnesota Pollution Control Agency	SPC – Special Concern
MS4 – Municipal Separate Storm Sewer System	SPCC – Spill Prevention Control and Countermeasure
MSL – Mean Sea Level	SRE – Snow Removal Equipment
NAAQS National Ambient Air Quality Standards	SRV – Soil Reference Values
NDB – Non-directional beacon	SUW – Richard I. Bong Memorial Airport
NEPA – National Environmental Policy Act	SWLP – Superior Water Light and Power
NHIS – Natural Heritage Information System	SWPPP – Storm Water Pollution Prevention Plan
NHPA – National Historic Preservation Act	TAC – Technical Advisory Committee
NOAA – National Oceanic and Atmospheric Administration	TCP – Traditional Cultural Properties
NOTAM Notice to Airmen	THR – Threatened
NPIAS – National Plan of Integrated Airport Systems	TOFA – Taxiway Object Free Area
NPDES – National Pollutant Discharge Elimination System	TSS – total suspended solids
NRCS – Natural Resource Conservation Service	UDC – Unified Development Code
NRHP – National Register of Historic Places	US – United States
NSU – Northern Superior Uplands	USACE United States Army Corps of Engineers
NWI – National Wetlands Inventory	USC – United States Code
OBL – Obligate Wetland Species	USCG – United States Coast Guard
OFA – Object Free Area	USDA – United States Department of Agriculture
PAC – Public Advisory Committee	USFWS United States Fish and Wildlife Service
PAPIs – Precision Approach Path Indicators	UST – Underground Storage Tank
PCB – Polychlorinated biphenyl	W-1 – Waterfront Zoning District
PID – Photo-ionization Detector	WCA – Wetland Conservation Act
PPCC – Park Point Community Club	WEG – Wind Erodability Group
R-1 – Residential Traditional Zoning	WLSSP Western Lake Superior Sanitary District
RGU – Responsible Governmental Unit	WI – Wisconsin
REILs – Runway End Indicator Lights	
ROD – Record of Decision	
RPZ – Runway Protection Zone	