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SOUTHWEST WASHINGTON REGIONAL AIRPORT

Final ENVIRONMENTAL ASSESSMENT

Prepared for
City of Kelso

July 2013



**Final ENVIRONMENTAL ASSESSMENT
SOUTHWEST WASHINGTON REGIONAL AIRPORT
WEST SIDE HANGAR DEVELOPMENT PROJECT**

Prepared for

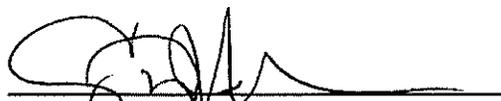
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July, 2013

**This Environmental Assessment becomes a Federal document when
evaluated and signed by the responsible FAA official**



Responsible FAA Official

Date 7/30/13

Acronyms and Abbreviations

AGC	Associated General Contractors
APE	Area of Potential Effects
BMPs	best management practices
BNSF	Burlington Northern Santa Fe
BPA	Bonneville Power Administration
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CWA	Clean Water Act
cy	cubic yards
DAHP	Department of Archaeology and Historic Preservation
DOT	Department of Transportation
DPS	distinct population segment
EA	Environmental Assessment
Ecology	Washington State Department of Ecology
EDDA	Environmental Due Diligence Audits
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FEMA	Federal Emergency Management Agency

*City of Kelso Southwest Washington Regional Airport West Side Hangar Development Project
Final Environmental Assessment*

KLS	Southwest Washington Regional Airport
KMC	Kelso Municipal Code
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NRHP	National Register of Historic Places
PHS	Priority Habitats and Species
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act
SHPO	State Historic Preservation Office
SPCC	Spill Prevention Control and Countermeasures
SWCAA	Southwest Washington Clean Air Authority
TESC	Temporary Erosion and Sediment Control
TOFA	Taxiway Object Free Area
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WHMP	Wildlife Habitat Management Plan
WSDOT	Washington State Department of Transportation

Executive Summary

ES-1 Introduction

This Environmental Assessment (EA) has been prepared to assist the Federal Aviation Administration (FAA) in evaluating the potential environmental effects resulting from proposed landside improvements at the Southwest Washington Regional Airport (KLS) in Kelso, Washington. The proposed West Side Hangar Development project consists of improvements to meet FAA design standards. These improvements include increasing the distance between the main runway and Taxiway D, increasing the width of Taxiway D, removing hangars that encroach on the Taxiway D and Taxiway E Taxiway Object Free Area (TOFA), and removing or modifying hangars that penetrate the Federal Aviation Regulation (FAR) Part 77 transitional surface¹.

ES-2 Purpose and Need for the Action

The purposes of the Proposed Actions are to make airport improvements to allow KLS to continue to operate in a safe and efficient manner, to meet FAA design and safety criteria, and to achieve its airside and landside goals. The City of Kelso has determined that the safety improvements to the west side landside facilities described above are the highest priority projects. The City will acquire private property on the north end of the airport to provide room to replace demolished hangars and add new hangars to meet forecast demand. The project would not increase flights to or from KLS.

ES-3 Alternatives

The City of Kelso is considering two alternatives for implementation of the West Side Hangar Development project—the Proposed Action and the No Action Alternative. Other alternatives were considered in developing the Airport Master Plan; however, physical constraints on the site, the need to meet FAA design standards, and the need to meet the long-term projected demand for airport hangar space limited the practical alternatives to the Proposed Action.

ES-3.1 No Action Alternative

Under the No Action Alternative, the West Side Hangar Improvement project would not be undertaken and the stated purpose and need of meeting FAA design standards would not be achieved. Taxiways D and E would continue to deviate from FAA standards and encroach on the TOFA. Existing hangars would continue to penetrate the FAR Part 77 transitional surface. No property acquisition would be required and the residential and business properties would remain on the northwest side of the airport.

¹ FAR Part 77 Surfaces refers to Federal Aviation Regulation Part 77, which establishes standards for objects affecting navigable airspace and sets requirements for proposed construction or alteration.

ES-3.2 Proposed Action

The 2011 Airport Master Plan identified proposed improvements to the west side landside facilities at KLS to address conditions that deviate from FAA standards. The proposed West Side Hangar Development project will address these deviations to meet FAA design standards. The proposed project includes:

- Increasing the Taxiway D separation distance: The required separation between the runway and taxiway is 240 feet, but Taxiway D is within 230 feet of Runway 12/30 in places. The existing Taxiway D will be removed and relocated.
- Widening Taxiway D: The standard width for ARC B-II² taxiways is 35 feet. Taxiway D is currently only 14 feet wide in places and will be removed and reconstructed.
- Removing obstructions from the Taxiway D and Taxiway E TOFA: Existing hangars encroach on the TOFA and will be removed.
- Removing obstructions from the FAR Part 77 Surfaces: Existing hangars that penetrate the Part 77 transitional surface will either be removed or modified to reduce their height to the allowable limits. Existing hangars that do not violate the Part 77 transitional height restrictions may remain.

The City will acquire private property on the northwest side of the airport to construct replacements for the demolished hangars and to provide space for additional hangars to meet forecasted demand. Existing uses within the proposed acquisition areas include residential, commercial, and vacant land.

Specific actions required to implement the project include:

- Acquisition of six residential properties and two combined residential business properties and demolition of all the buildings;
- Demolition of 30 existing hangars, one office building, and one airport support building on the west side of the airport;
- Construction of 30 replacement hangars, five new hangars, and one automobile garage building;
- Renovation of the nine remaining hangars;
- Removal of existing Taxiways D and E and construction of a new Taxiway D outside the TOFA;
- Construction of new asphalt hangar driveways and eight paved aircraft tie-down areas;
- Paving of approximately 55 automobile parking spaces;
- Installation of two new vehicle access gates and one new pedestrian access gate; and
- Installation of a new stormwater treatment system to infiltrate all stormwater.

² ARC B-II airports are those such as KLS that serve larger general aviation and commuter-type planes. The two components to the airport design aircraft are aircraft approach speed (B= 91-120 knots) and wingspan (II = 49-78 feet).

ES-4 Summary of Environmental Impacts

The West Side Hangar Development Project is expected to have few environmental impacts other than temporary impacts associated with construction. During construction there could be elevated noise levels and increased vehicle emissions and fugitive dust. Construction traffic is not expected to cause significant delays or traffic impacts.

The project will not impact fish, wildlife and plants; floodplains, wetlands, or water quality. A new stormwater system will infiltrate all stormwater and improve stormwater treatment and retention at the airport. The project will cause no impacts to historic or cultural resources, noise, light, or air quality. The project requires the acquisition of eight private properties on the northwest side of the airport. Although the property owners would be displaced, there is an adequate variety of descent, safe, and sanitary housing available in the area and relocation assistance would be provided. Therefore, no impacts to land use are expected from the property acquisition. There would also be no impacts to socioeconomics, environmental justice and children's environmental health and safety.

ES-5 Public Comment on the Draft EA

FAA held a public comment period on the Draft EA from May 28, 2013 to July 5, 2013. Notice of the availability of the Draft EA and the date of the public hearing were announced in the May 28 Daily News newspaper. The Draft EA was available for review at the Kelso City Library. A public hearing was held June 27 from 5:30 p.m. to 7:30 p.m. at the Kelso City Hall. No members of the public attended the meeting. No public comments were received on the document.

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Chapter 1 Purpose and Need

1.1 Introduction

This Environmental Assessment (EA) has been prepared to assist the Federal Aviation Administration (FAA) in evaluating the potential environmental effects resulting from proposed landside improvements at the Southwest Washington Regional Airport (KLS) in Kelso, Washington. The proposed West Side Hangar Development Project consists of improvements to meet FAA design standards. These improvements include the following:

- Increasing the distance between the main runway and Taxiway D,
- Increasing the width of Taxiway D,
- Removing hangars that encroach on the Taxiway D and Taxiway E Taxiway Object Free Area (TOFA), and
- Removing or modifying hangars that penetrate the Federal Aviation Regulation (FAR) Part 77 transitional surface¹.

The project is receiving funding from the FAA for design and environmental documentation; therefore, this EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969; (42 United States Code (USC) 4321 et seq.); the Council on Environmental Quality (CEQ) implementing regulations (40 Code of Federal Regulations (CFR) 1500 to 1508); FAA Order 1050.1E, Change 1: *Environmental Impacts: Policies and Procedures*; and FAA Order 5050.4B *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*.

1.1.1 Project Location

The Southwest Washington Regional Airport, located in Cowlitz County in southwestern Washington, lies along Parrott Way and Talley Way between the Coweeman and Cowlitz Rivers, within the city of Kelso and approximately 1 mile northwest of the Interstate 5 and State Route 432 Interchange (Figure 1).

¹ FAR Part 77 Surfaces refers to Federal Aviation Regulation Part 77, which establishes standards for objects affecting navigable airspace and sets requirements for proposed construction or alteration.



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SOURCE: Cowlitz County, 2010; Aerial (NAIP, 2009)

Southwest Regional Airport . 211061

Figure 1
Vicinity Map
Kelso, Washington

1.1.2 Airport Background

The Kelso-Longview Regional Airport (KLS) (renamed the Southwest Washington Regional Airport in 2009), was initially served by a grass landing strip that was converted to a paved runway in the 1950s. The first major upgrade to the airport occurred in the 1980s when the runway was reconstructed and realigned and the east side parallel taxiway was constructed. Talley Way was also realigned in the 1980s in anticipation of eventual extension of Runway 30. The airport is owned and operated by the City of Kelso. The Kelso City Council has the ultimate authority over the airport with day-to-day operations handled by the City Director of Public Works.

1.1.3 Airport Master Plan

The most recent Master Plan for the airport was adopted by the Kelso City Council on February 1, 2011. It replaces the previous Master Plan, which was completed in 2000. The Master Plan evaluated existing facilities at the airport, forecast demand for airport facilities, and recommended projects to upgrade and expand facilities.

The Master Plan recommended a number of improvements at the airport including improvements to landside facilities on the west side of the airport to meet FAA design standards. Some of the hangars on the West Side extend into areas determined to be Federal Aviation Regulations (FAR) Part 77 surfaces. The FAR Part 77 Regulations establish standards for determining obstructions in navigable airspace surrounding an airport. To replace the hangars removed from the FAR 77 surfaces, replacement hangar storage will be needed. Taxiways D and E on the west side do not meet FAA design standards for separation distance, width and Taxiway Object Free Area² (TOFA).

1.2 West Side Hangar Development Project

The City of Kelso proposes to implement the west side improvements recommended in the Master Plan. The proposed improvements include the following.

1.2.1 Runway to Taxiway D Separation Distance

Taxiway D is located to the west of the main airport runway, Runway 12/30. The FAA-required separation between the runway and taxiway is 240 feet, but Taxiway D is within 230 feet of Runway 12/30 in places. Taxiway D needs to be relocated to increase the separation distance.

1.2.2 Taxiway D Width

The standard width for ARC B-II³ taxiways is 35 feet. Taxiway D is currently only 14 feet wide in places and needs to be widened to meet standards.

² Object Free Areas are two-dimensional ground areas surrounding runways, taxiways, and taxilanes that are clear of objects except those whose location is fixed by function.

³ ARC B-II airports are those such as KLS that serve larger general aviation and commuter-type planes. The two components to the airport design aircraft are aircraft approach speed (B= 91-120 knots) and wingspan (II = 49-78 feet).

1.2.3 Taxiway D and Taxiway E Taxiway Object Free Area

Existing hangars on the west side of the airport encroach into the TOFA. Those hangars need to be removed.

1.2.4 FAR Part 77 Surfaces

As described above, several hangars on the west side penetrate the FAR Part 77 transitional surface. The FAR Part 77 Regulations establish standards for determining obstructions in navigable airspace surrounding an airport.

1.2.5 Hangar Replacement

As recommended in the Master Plan, the hangars removed from the FAR Part 77 surfaces and TOFA will be replaced. In addition, five new hangars will be constructed. The new hangars are intended to meet the increased demand projected in the Airport Master Plan (City of Kelso, 2011). The hangars on the west side will be developed as economy hangar storage.

1.3 Purpose and Need for Proposed Project

The purposes of the proposed actions are to make airport improvements to allow KLS to continue to operate in a safe and efficient manner, to meet FAA design and safety criteria, and to achieve its airside and landside goals. The City of Kelso has determined that the safety improvements to the west side landside facilities are the highest priority projects. These include relocation of taxiways, widening Taxiway D, removing hangars from the TOFA and FAR Part 77 surfaces, and replacing hangars demolished to meet safety standards as described above. The city will acquire private property on the north end of the airport to provide room to replace demolished hangars and add new hangars to meet forecast demand. The project would not increase flights to or from KLS.

1.4 Requested Federal Action

This EA presents an evaluation of impacts on the environment and a detailed review of the proposed development as required by FAA Order 5050.4B. The requested federal action is Airport Improvement Program (AIP) funding for the West Side Hangar Development Project at KLS.

Chapter 2 Project Alternatives

2.1 Introduction

The City of Kelso proposes to implement improvements to its landside facilities on the west side of the Southwest Washington Regional Airport (KLS). As described in Chapter 1, the project is needed to allow KLS to continue to operate in a safe and efficient manner, to meet FAA design and safety standards, and to achieve its air side and landside goals.

This chapter describes the alternatives considered for the West Side Hangar Development Project. Because of space limitations on the west side, options for meeting the Purpose and Need are limited. This chapter describes the Proposed Action, the No Action Alternative, and Alternatives Considered but Rejected.

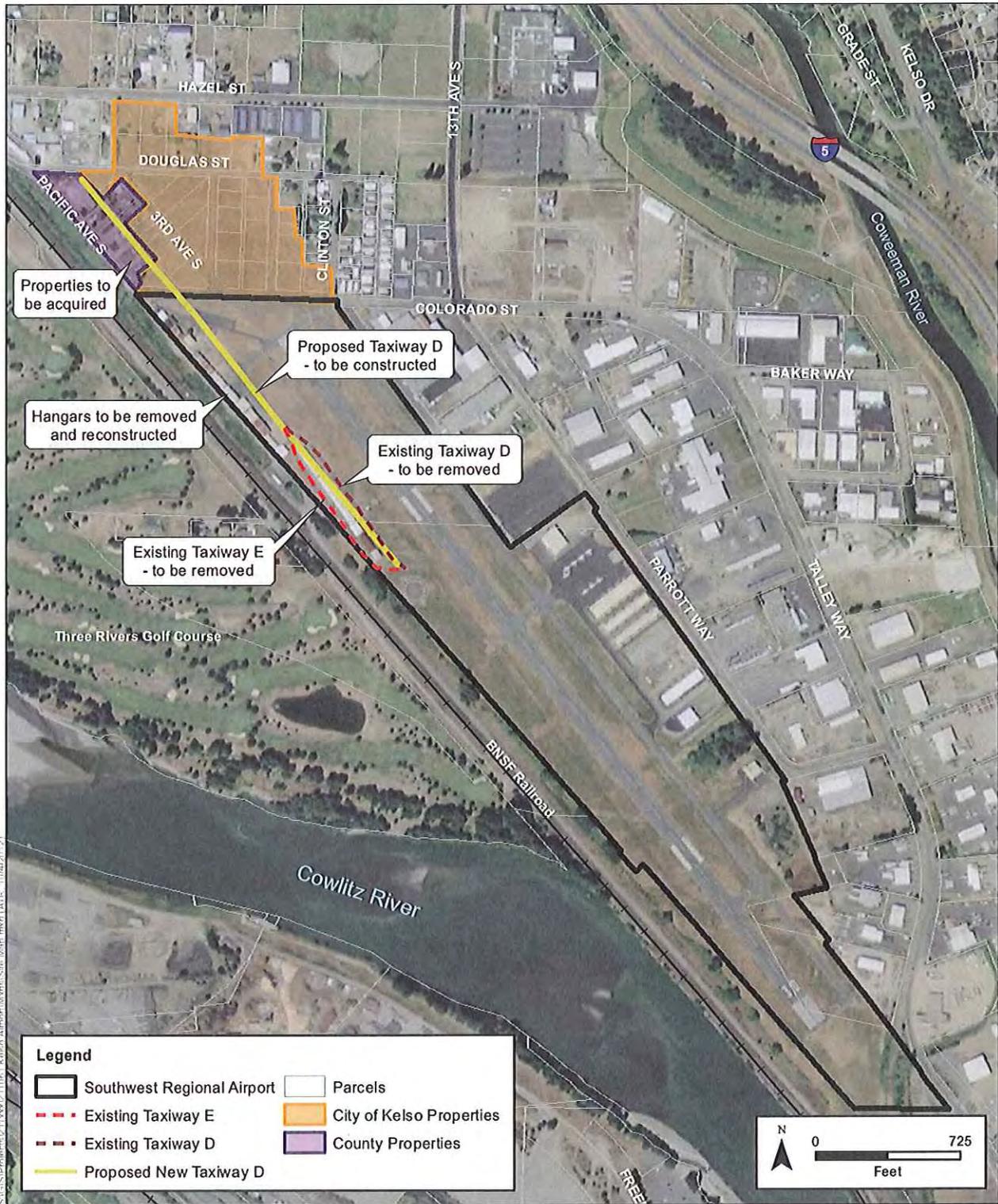
2.2 Proposed Action

The 2011 Airport Master Plan identified improvements to the west side landside facilities at KLS to address conditions that deviate from FAA standards. The proposed West Side Hangar Development Project will address these deviations to meet FAA design standards (Figures 2 and 3). The proposed project includes:

- Increasing the Taxiway D separation distance: The required separation between the runway and taxiway is 240 feet, but Taxiway D is within 230 feet of Runway 12/30 in places. The existing Taxiway D will be removed and relocated.
- Widening Taxiway D: The standard width for ARC B-II¹ taxiways is 35 feet. Taxiway D is currently only 14 feet wide in places and will be removed and reconstructed.
- Removing obstructions from the Taxiway D and Taxiway E Taxiway Object Free Area (TOFA): Existing hangars encroach on the TOFA and will be removed.
- Removing obstructions from the FAR Part 77 Surfaces²: Existing hangars that penetrate the Part 77 transitional surface will either be removed or modified to reduce their height to the allowable limits. Existing hangars that do not violate the Part 77 transitional height restrictions may remain.

¹ ARC B-II airports are those such as KLS that serve larger general aviation and commuter-type planes. The two components to the airport design aircraft are aircraft approach speed (B= 91-120 knots) and wingspan (II = 49-78 feet).

² FAR Part 77 Surfaces refers to Federal Aviation Regulation Part 77, which establishes standards for objects affecting navigable airspace and sets requirements for proposed construction or alteration.



SOURCE: Cowlitz County, 2010; Aerial (NAIP, 2009)

Southwest Regional Airport . 211061

Figure 2
Site Plan
Kelso, Washington

To provide space for replacing the demolished hangars and constructing additional hangars to meet forecast demand, the City will acquire property on the northwest side of the airport. Existing uses within the proposed acquisition areas include residential, commercial, and vacant land.

Specific actions required to implement the project include:

- Acquisition of six residential properties and two combined residential business properties;
- Demolition of all buildings on the acquired property;
- Demolition of 30 existing hangars on the west side of the airport;
- Demolition of one office building and one airport support building;
- Construction of 30 replacement and five new hangars;
- Construction of one automobile garage building;
- Renovation of the nine remaining hangars;
- Removal of existing Taxiways D and E;
- Construction of new Taxiway D outside the TOFA;
- Construction of new asphalt hangar driveways;
- Construction of eight paved aircraft tie-down areas;
- Paving of approximately 55 automobile parking spaces;
- Installation of two new vehicle access gates and one new pedestrian access gate; and
- Installation of a new stormwater treatment system to infiltrate all stormwater.

The new hangars and other aircraft facilities are intended primarily to accommodate small aircraft (ARC A-I, homebuilt and ultralight). All new facilities would comply with FAR 77 restrictions. The project would not increase flights to or from KLS.

2.3 No Action Alternative

Under the No Action Alternative, the West Side Hangar Development Project would not be undertaken and the stated purpose and need of meeting FAA design standards would not be achieved. Taxiways D and E would continue to deviate from FAA standards and encroach on the TOFA. Existing hangars would continue to penetrate the FAR Part 77 transitional surface. No property acquisition would be required and the residential and business properties would remain on the northwest side of the airport.

2.4 Alternatives Considered but Eliminated from Consideration

The City considered options to the West Side Development Project. Because of the physical constraints on the site, the need to meet FAA design standards, and the need to meet the long-term projected demand for airport hangar space, the options were limited.

Development is generally limited by the airport's location between the BNRR railroad on the west side and Talley Avenue and the commercial development on the east. Development on the west side of the airport is further constrained by the narrow space between Runway 12/30 and the tracks for the BNRR as well as the right-of-way for S. Pacific Avenue. The space for development on the west side is further limited by the FAR Part 77 surfaces. The narrow space limits the amount and configuration of hangar development that can occur on the west side.

The primary purposes of the West Side Hangar Development Project are to remove structures from the FAR Part 77 surfaces and meet the projected future demand for economy hangars at the airport. To meet the FAR Part 77 requirements, all 20 of the City-owned hangars on the west side must be removed along with 10 privately owned hangars. This would leave only nine privately owned hangars on the west side. Without replacement, KLS would not be able to meet the projected demand for hangars or provide affordable hangar space. The City's revenue from leasing City-owned hangars would be eliminated. Therefore, the City rejected the option of not replacing the removed hangars.

Constructing replacement hangars on the east side of the airport was also eliminated from consideration because of existing development plans for the east side. The proposed development on the east side is intended to accommodate A-I and B-II hangars to meet the projected need. The City rejected the option of replacing the economy hangars on the east side because there is inadequate room to accommodate both the A-I and B-II hangars needed on the east side as well as the replacements for hangars removed on the west side.

The City determined that the best location for replacing the economy hangars was on the west side of the airport. In order to replace the number of hangars that were removed and to construct new hangars to meet the projected future demand, the City determined that the properties to the north of the airport needed to be acquired. Acquisition of the properties would allow the City to meet projected demand for hangars at KLS.

Chapter 3 Affected Environment, Consequences and Mitigation

3.1 Introduction

This chapter describes the affected environment and potential impacts to environmental resources that could be caused by the West Side Hangar Development Project. Resources evaluated include fish, wildlife, and plants; floodplains; water quality; wetlands; land use; socioeconomic, environmental justice, and children’s environmental health and safety; historical, architectural, archaeological, and cultural resources; light emissions and visual impacts; noise; air quality; hazardous materials, pollution prevention, and solid waste; secondary (induced) impacts; and cumulative impacts. In addition, temporary impacts associated with construction are discussed.

The following summarizes what is included in this chapter:

- Section 3.2 and Table 3-1 summarize resources not considered in the EA.
- Section 3.3 describes construction activities associated with the project and discusses construction specific impacts to noise, air quality, water quality, and transportation.
- Sections 3.4 to 3.14 evaluate impacts to resources listed in the paragraph above.
- Sections 3.15 and 3.16 describe secondary and cumulative impacts, respectively.
- Table 3-3 at the end of the chapter summarizes the potential environmental consequences of the proposed West Side Hangar Development Project.

3.2 Resource Categories not Considered in this EA

There are several environmental resources identified in FAA Order 5050.4B that are not considered in this EA because they are not applicable to the project area or they will not be affected by the West Side Hangar Development Project. These resources are listed in Table 3-1 along with a brief explanation of why they are not evaluated.

Table 3-1. Resource Categories Not Considered in this EA

Resource	Applicable Regulation	Reason Not Evaluated
Section 4(f)	Department of Transportation Act: Section 4(f) now 49 USC Subchapter 1, section 303c	There are no publicly owned lands including a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance or land from a historic site of national, state, or local significance in proximity to the airport.
Farmlands	Farmlands Protection Policy Act	There are no farmlands subject to the act in proximity to the airport.

Resource	Applicable Regulation	Reason Not Evaluated
Natural Resource and Energy Supply		The project is unlikely to result in major changes in stationary facilities or the movement of aircraft and ground vehicles that would have a measurable effect on local supplies of energy or natural resources.
Wild and Scenic Rivers	Wild and Scenic Rivers Act	There are no rivers subject to the act in proximity to the airport.
National and State Forests		There are no national or state forests in proximity to the airport.
Coastal Barrier Resources	Coastal Barrier Resources Act	There are no coastal barrier resources in the project area.
Coastal Zone	Coastal Zone Management Act 15 CFR, Part 930 Subparts C and D	Cowlitz County is not in the Coastal Zone Management area.

3.3 Construction Impacts

3.3.1 Affected Environment

Construction is tentatively scheduled to begin in March 2016 and will last for approximately 18 months until September 2017. This schedule is only a likely representation of what the actual schedule may be and variations in work timing may occur due to delays in project funding, permitting, property acquisition, contractor delays, or adverse weather conditions. The general sequence of major construction activities is as follows:

1. Mobilization;
2. Install temporary erosion and sediment control (TESC) measures;
3. Demolish existing residences and remove hangars;
4. Remove portions of existing Taxiways D and E pavement and replant with grass;
5. Install new pavement for Taxiway D and hangar driveways
6. Construct new hangars;
7. Install airplane tiedowns and stripe parking areas;
8. Cleanup and demobilization.

It is anticipated that demolition and reconstruction of the hangars would be phased with not all construction and demolition occurring at the same time. Phasing will allow some hangars to remain in use while new ones are constructed, and will accommodate the expiration of leases of the hangars.

Construction activities will include the removal of some pavement and excavation to remove hangar foundations. Excavation depths will be relatively shallow with the maximum depth approximately 3 feet. Grading will involve approximately 10,000 cubic yards (cy) of material.

Construction machinery that will be used includes typical equipment such as wrecking balls, backhoes, flatbed trucks, loaders, excavators, dump trucks, rollers, pickup trucks, jackhammers, track hoes, forklifts, and boom trucks. No impact pile driving, blasting, or other activities that produce high noise levels will be conducted as part of this project. Construction stockpiling and staging areas for the project will be within already developed areas and cleared portions of the site.

3.3.2 Environmental Consequences

3.3.2.1 Noise

The Proposed Action is located in a light industrial area with relatively high levels of existing noise. The project is located next to the existing KLS runway and a major railroad line. Other noise sources in the project area include existing airport noises and truck traffic to and from the airport, and Interstate 5 traffic. There are no sensitive noise receptors in the project vicinity.

Construction activities would generate noise and possibly vibration. Major noise generating equipment such as excavators, dump trucks, and jackhammers would be in use most during the early stages of construction, typically during the first three or four months of construction. For most of the construction period, exterior and interior work would generate noise levels much lower than those of the heavy construction phase of the project. A temporary increase in noise will result from construction activities, including construction machinery. The noise impacts are expected to be minor given the short duration of the increased noise levels and the existing noise levels in the project area. City of Kelso and Washington State regulations state that sounds from blasting and from construction equipment are exempt from noise standards from 7 a.m. to 10 p.m. weekdays and from 9 a.m. to 10 p.m. on weekends.

Elevated noise levels can affect wildlife species and alter foraging, roosting, and nesting behavior. Because there is limited wildlife use of the area (see Section 3.4), no impacts to wildlife are anticipated.

3.3.2.2 Air Quality

Trucks and construction equipment would generate vehicle emissions during construction. Fugitive dust may arise from excavation, demolition, vehicle traffic, human activity, and wind erosion over exposed earth surfaces. Some construction activities could cause odors detectable to some people near the project site, especially during paving operations that use tar and asphalt. These odors would be localized and short-term in duration. Vehicle emissions and dust would primarily be generated by excavation and demolition during the early phases of construction. Construction vehicles would also generate increased greenhouse gas emissions, although not at a significant level in relation to regional totals because of the limited duration of construction activities, and the level of ongoing emissions throughout the region.

The following regulations and guidelines would be followed during construction to minimize air quality impacts:

- Comply with the Southwest Clean Air Authority's (SWCAA) Regulation 400-040 (8) requiring reasonable precautions to avoid dust emissions.
- Comply with the SWCAA's Regulation 400-040 (4) requiring suitable control measures to mitigate odor.

- Comply with recommendations in the Associated General Contractors of Washington (AGC) brochure titled *Guide to Handling Fugitive Dust from Construction Projects* (AGC, 2009).

Specific mitigation measures that may be used to meet these regulations include:

- Spraying dry soil with water to reduce dust,
- Minimizing idling of equipment when not in use,
- Covering dirt and gravel piles,
- Sweeping roadways to reduce mud and dust,
- Pave or use gravel on staging areas and roads that would be exposed for long periods.

3.3.2.3 Water Quality

The project area is located between the Cowlitz and Coweeman Rivers with the Cowlitz River closest to the project site at approximately 0.25 miles. See Figure 1 and additional information in Section 3.7.

Construction of the West Side Hanger Development Project will disturb a maximum of 12.36 acres, and an estimated 10,000 cy of grading will occur (Reid Middleton, 2012). Disturbing soils during construction could potentially increase erosion and sedimentation, affecting the water quality of the Coweeman or Cowlitz Rivers. Accidental spills of fuel, oils, and other construction-related chemical pollutants could also present a risk to water quality in downstream waterbodies if appropriate protective measures are not implemented. To protect downstream water quality during construction, spill prevention control measures will be utilized.

The project will not require in-water work, work adjacent to streams, or work within wetlands. The site is flat, and no substantial earth work or clearing will be required. Project activities will result in no physical modifications to wetlands, wetland buffers, streams, or riparian areas.

In order to minimize or eliminate erosion or sedimentation, a Temporary Erosion and Sediment Control (TESC) plan will be prepared and implemented during project construction. The TESC plan will specify best management practices (BMPs) for sediment and erosion control. Examples of potentially appropriate BMPs include sediment fencing, erosion control blankets, and the delineation of clearing and grubbing limits with high visibility fencing. Based on the implementation of these measures, and the distance of the project to the fish-bearing Cowlitz and Coweeman Rivers, there is no chance that sedimentation or contaminants from project construction runoff would affect ESA-listed fish species (Appendix A). Therefore, no direct or indirect effects on listed fish species due to sedimentation would occur.

3.3.2.4 Transportation

Hauling construction materials to and from the project site would generate heavy traffic on adjacent roadways for short periods. Hauling will include removal of debris from demolition of the hangars, taxiway surfaces, and residences on the north of the property and approximately 10,000 cubic yards (cy) of grading material. Imported material will include construction material for replacement hangars and paving materials for the new taxiway and parking areas. Construction employees would also generate temporary traffic and parking demand at the site.

Primary access to the airport construction site would be along Talley Way, Parrott Way, and Colorado Street (Figure 1). These streets primarily serve the airport and industrial area adjacent to KLS although there is a small residential area north of Colorado Street. The area is easily accessed from Interstate 5 and Highway 432. Several other roads provide access to residential areas to the north. Traffic volumes on these roadways are relatively low.

Construction traffic is not expected to cause significant delays or traffic impacts in the project area because of the relatively low level of existing traffic on the roadways and anticipated phasing of construction activities. In addition, there is adequate space on the KLS site to provide construction worker parking and staging areas for construction equipment. Any construction impacts would be temporary and would comply with local and state regulations for road safety, including those for signage, detours, and flagging, as necessary.

3.3.3 Mitigation Measures

Appropriate BMPs in accordance with City of Kelso requirements and permit conditions will be used to minimize construction impacts. Therefore, no substantial impacts are anticipated and no mitigation is required beyond implementation of BMPs and compliance with permit conditions. Appropriate BMPs are described in Appendices B and C.

3.4 Fish, Wildlife and Plants

Background information and analysis of fish, wildlife, and plants is provided in the Fish, Wildlife, and Plants Technical Memorandum and the Biological Assessment (Appendices A and B). Findings from the memoranda are summarized below.

3.4.1 Applicable Regulations

A number of federal, state, and local laws protect fish, wildlife, and plants. The primary federal regulations or statutes that apply to fish, streams, and wildlife in the study area are the Endangered Species Act (ESA) and the Migratory Bird Treaty Act. State and local regulations that apply to these resources include the local sensitive/critical area ordinances. A general goal of these regulations is to protect water quality, shorelines, streams, and riparian areas and associated terrestrial habitats, as well as the species that depend on these areas. More detail on applicable federal, state, and city regulations can be found in the Fish, Wildlife, and Plants Technical Memorandum (Appendix B).

3.4.2 Affected Environment

The predominant vegetation cover type in the study area is urban matrix. This cover type is dominated by commercial and residential areas with buildings, asphalt, ornamental gardens, lawns, and scattered trees and provides limited wildlife habitat. Wildlife use of the site is likely restricted to those species that have adapted to the urban environment and may include such bird species as European starlings, rock pigeons, American crow, American robin, Canada goose, and mallard as well as mammals such as opossum, raccoon, Norway rat, and coyote. The project site is dominated by mowed grass, structures, impervious surfaces, ornamental lawns and scattered nonnative vegetation. The lack of vegetation on the project site in

addition to its proximity to roadways and industrial development reduces habitat availability for many species that would generally occur in the region.

In an effort to reduce the threat that wildlife pose to aircraft operations and to mitigate these threats, KLS prepared a Wildlife Hazard Management Plan (WHMP) that presents guidelines the airport will implement in order to mitigate wildlife hazards, specifically wildlife strikes (Appendix G in City of Kelso, 2011). More information on vegetation, wildlife, and the WHMP can be found in the Fish, Wildlife, and Plants Technical Memorandum (Appendix B).

The closest waterbodies to the project site are the Cowlitz and Coweeman Rivers, located approximately 0.25 and 0.57 miles from the site, respectively (Figure 1). The Washington Department of Fish and Wildlife's (WDFW) Priority Habitats and Species (PHS) database indicates documented presence of Chinook, coho, and chum salmon, as well as steelhead, in both the Cowlitz and Coweeman Rivers (WDFW, 2012). These species use the project vicinity primarily for migration to and from their upstream spawning grounds, although some rearing may occur in the area, particularly for coho salmon and steelhead. No bull trout use of the Cowlitz or Coweeman Rivers is indicated (WDFW, 2012). Relatively large runs of eulachon also occur within the Cowlitz River, which represents a core spawning area for the population. Green sturgeon could enter the mouth of the Cowlitz, although they are distributed primarily within the mainstem Columbia River.

The proposed West Side Hangar Development Project occurs within the general range of several species listed under the federal Endangered Species Act (ESA) as well as several species that have special designations under Washington State regulations. Table 3-2 lists the threatened species with critical habitat in the project vicinity. Additional information on threatened and endangered species in the project area can be found in the Biological Assessment Letter of "No Effect" (Appendix A).

Table 3-2 ESA Species Potentially Present in the Project Vicinity

Species	Population	ESA Listing Status
Steelhead trout	Middle Columbia River Distinct Population Segments (DPS)	Threatened
Chinook salmon	Lower Columbia River Evaluatory Significant Unit (ESU)	Threatened
Chum salmon	Columbia River ESU	Threatened
Eulachon	Southern DPS	Threatened
Bull trout	Columbia River DPS	Threatened

3.4.3 Environmental Consequences

3.4.3.1 No Action Alternative

If the site were to continue in its current state, no additional impacts to vegetation, fish, or wildlife would be anticipated. Because the site provides limited habitat for wildlife and lacks native vegetation, the No Action Alternative would cause no significant impacts to fish, vegetation and wildlife.

3.4.3.2 Proposed Action

As all changes to airport activities would be minor and there is limited wildlife in the project area, no impacts to wildlife are anticipated. The project would not disturb any migratory bird habitat and would not increase air traffic and related potential for bird strikes. The Letter of "No Effect" determined that the project would not affect ESA listed species (Appendix A).

3.4.4 Mitigation

No impacts to fish, wildlife and plants are anticipated under the No Action Alternative or the Proposed Action. Therefore, no mitigation measures are required.

3.5 Floodplains

Background information and analysis of impacts to floodplains are provided in the Water Resources Technical Memorandum (Appendix C). Findings from the memorandum are summarized below.

3.5.1 Applicable Regulations

Executive Order (EO) 11988 directs federal agencies to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values served by floodplains.

The City regulates "areas of special flood hazard" through Kelso Municipal Code (KMC) Chapter 18.12 (Floodplain Management). KMC 18.12.050 defines special flood hazard areas as "the land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year." Flood hazard reduction standards are detailed in KMC Chapter 18.12, Article IV.

3.5.2 Affected Environment

The project area is not located within the 1-percent-annual-chance (100-year) floodplain, as mapped by the Federal Emergency Management Agency (FEMA) (2001). The project area is protected from Cowlitz River flooding by a levee operated by Cowlitz County Consolidated Diking Improvement District No. 3¹.

¹ Cowlitz County's floodplain maps are currently being revised by FEMA. Potential revisions under FEMA's Levee Analysis and Mapping Approach could cause the levee to be reclassified as no longer providing protection from the 1-percent-annual-chance flood. If this change occurs, KLS would be within the regulatory floodplain. FEMA has currently placed revision of Cowlitz County's maps on hold.

3.5.3 Environmental Consequences

3.5.3.1 No Action Alternative

The airport property is not in a regulated floodplain, so projects under the No Action Alternative would not affect floodplains.

3.5.3.2 Proposed Action

The project is not anticipated to affect regulatory floodplains because it is not located within a floodplain. Potential revisions to county floodplain maps could cause the levee to be reclassified and place KLS within the regulatory floodplain. If the levee is decertified prior to construction, it would be required to meet City of Kelso floodplain management regulations (KMC 18.12).

3.5.4 Mitigation

Neither the Proposed Action nor the No Action Alternative would impact the regulated floodplain, so no mitigation measures are necessary.

3.6 Water Quality

Background information and analysis of water quality impacts are provided in the Water Resources Technical Memorandum (Appendix C). Findings from the memorandum are summarized below.

3.6.1 Applicable Regulations

The federal Water Pollution Control Act, as amended (commonly referred to as the Clean Water Act [CWA]), provides the authority to establish water quality standards, control discharges, develop waste treatment management plans and practices, prevent or minimize the loss of wetlands, location with regard to an aquifer or sensitive ecological areas such as a wetlands areas, and regulate other issues concerning water quality. In Washington State, the Department of Ecology (Ecology) is responsible for administering the state water quality certification program under Section 401 of the CWA.

The City regulates stormwater runoff through KMC Chapter 13.09 (Stormwater Management). KMC 13.09.040 requires use of the *City of Kelso Engineering Design Manual* for new development, redevelopment, and construction site activities. The manual contains requirements and technical details for stormwater modeling, facility design, and pollution and flow control.

3.6.2 Affected Environment

The closest waterbody to the project site is the Cowlitz River over 1,300 feet (0.25 mile) to the west of the project site. In addition, a tributary to the Cowlitz River, the Coweeman River is located about 3,000 feet (0.57 miles) to the east of the project site. The confluence of these rivers is located approximately 1 mile to the south-southwest of the project site.

Currently, surface runoff on the project area flows generally southerly and is captured by a series of open swales, subsurface drains, and piping that flow to the City of Kelso drainage ditch system east of the airport (Reid Middleton, 2012). The city ditch system eventually discharges to a slough adjacent to the Coweeman River. A pumping station located on the slough pumps water over the levee into the river. Neither the

Coweeman nor Cowlitz Rivers have any listed water quality impairments downstream of the airport (Ecology, 2008).

3.6.3 Environmental Consequences

3.6.3.1 No Action Alternative

Under the No Action Alternative, no new stormwater treatment facilities would be installed and stormwater would continue to drain to the Coweeman River.

3.6.3.2 Proposed Action

After construction, the project will provide retention for the 100-year design storm and it is planned that all onsite surface runoff will be collected, treated, and discharged to infiltration systems (Reid Middleton, 2012). The new stormwater infiltration systems will be designed according to the current Ecology Stormwater Management Manual, and will result in improved stormwater treatment compared to the existing system. Therefore, the project is not anticipated to negatively affect water quality. Stormwater protection will meet the requirements of the Department of Ecology and the City of Kelso *Engineering Design Manual* as well as the Aviation Stormwater Design Manual developed by the Washington State Department of Transportation to minimize wildlife hazards on the airport property.

The project will result in a slight net gain of impervious surface area (0.18 acres) that will have relatively minor use by aircraft and will also include two small automobile parking areas. During normal rainfall events, all stormwater from the site will be collected and infiltrated, resulting in no negative changes to water quality or quantity. As a result, the overall pollutant loading and concentration of stormwater pollutant constituents (dissolved copper and zinc, total suspended solids) will not change as a result of the project. Similarly, because the project will infiltrate stormwater, runoff volumes within the project area would be maintained or slightly reduced, resulting in no change to the hydrology of the Cowlitz or Coweeman Rivers.

Construction impacts to water quality are discussed in Section 3.3.2.

3.6.4 Mitigation

The proposed action is not anticipated to impact water quality except potential short term impacts during construction. Therefore, no mitigation is required beyond the implementation of BMPs described in Section 3.3.3.

3.7 Wetlands

Background information and analysis of wetland impacts are provided in the Water Resources Technical Memorandum (Appendix C). Findings from the memorandum are summarized below.

3.7.1 Applicable Regulations

The U.S. Army Corps of Engineers regulates discharges of dredged or fill materials into waters of the United States, including wetlands, under Section 404 of the CWA. EO 11990 requires federal agencies to ensure their actions minimize the destruction, loss, or degradation of wetlands. The order sets forth policy that

transportation facilities should be planned, constructed, and operated to assure protection and enhancement of wetlands.

The City regulates wetlands through KMC Chapter 18.20 (Critical Areas) which requires project applicants to demonstrate that impacts to wetlands have been avoided and minimized to the extent possible before unavoidable impacts will be permitted. Mitigation for unavoidable wetland impacts is required.

3.7.2 Affected Environment

In June 2012 ESA prepared a wetland investigation of the entire KLS property and the properties to be acquired north of the airport (ESA, 2012). The wetland investigation included a review of existing wetlands information and an onsite field study, conducted in October 2011. The onsite investigation identified 16 wetlands on the airport property, but none within 200 feet of the West Side Hangar Development Project (Figure 4). The nearest wetland is over 500 feet from the project area.

3.7.3 Environmental Consequences

3.7.3.1 No Action Alternative

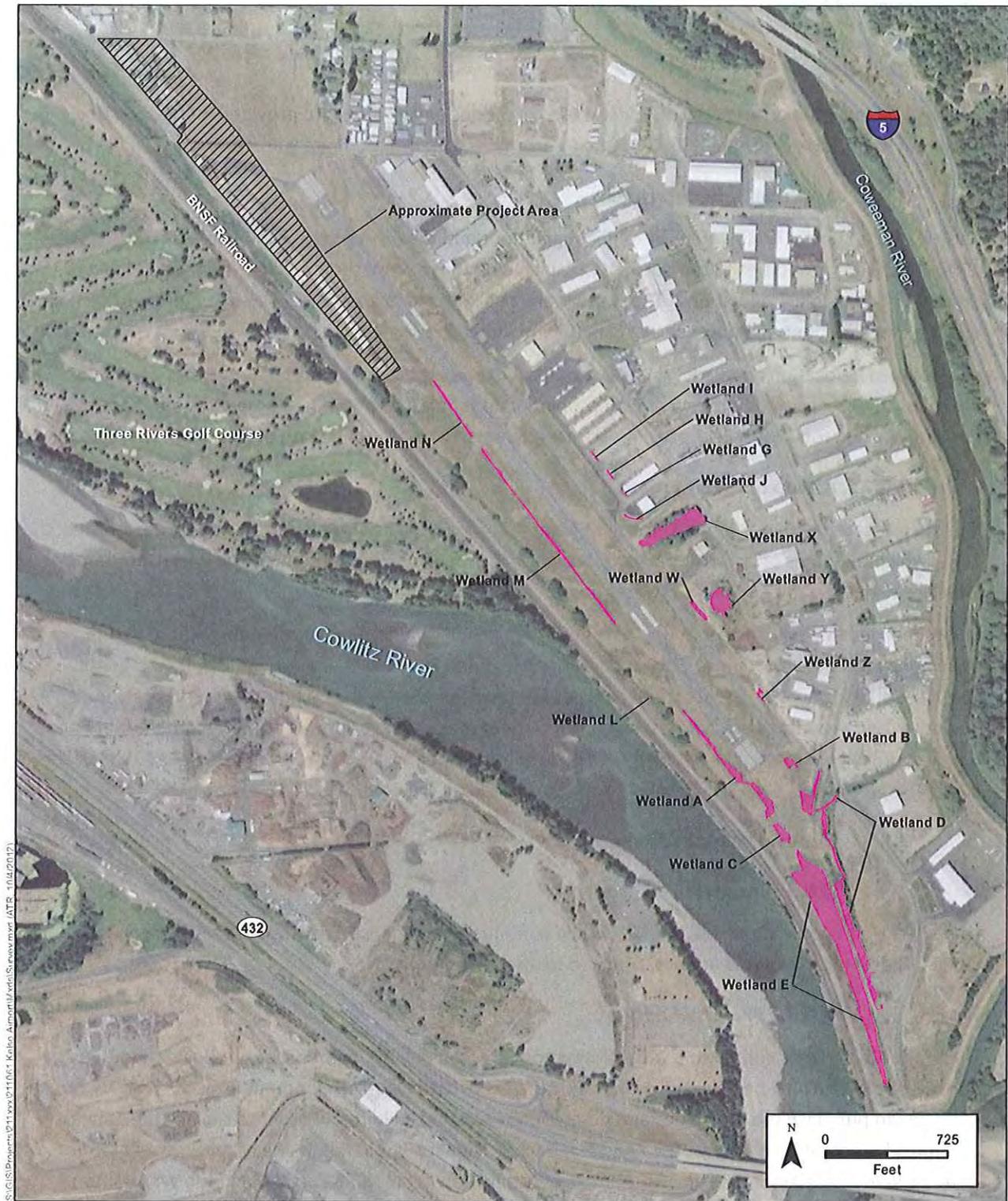
No ongoing maintenance projects at the airport are expected to impact wetlands.

3.7.3.2 Proposed Action

No wetlands are located within 200 feet of the project area; therefore, the project is not anticipated to affect wetlands and does not require further compliance with the CWA Section 404, EO 11990, or the City's Critical Areas regulations.

3.7.4 Mitigation

The Proposed Action and the No Action Alternative would not impact wetlands, so no mitigation measures are necessary.



SOURCE: Cowlitz County, 2010; ESA, 2012; Gibbs and Olson Inc, 2012; Aerial (NAIP, 2009)

Southwest Regional Airport . 211061

Figure 4
Wetland Survey Overview
Kelso, Washington

3.8 Land Use

Background information and analysis of land use conditions and impacts are provided in the Land Use Technical Memorandum (Appendix D). Findings from the memorandum are summarized below.

3.8.1 Applicable Regulations

The KLS site is subject to City of Kelso zoning regulations and the City of Kelso Land Use Map (City of Kelso, 1997). Adjacent properties to the north of KLS, including those proposed for acquisition, are subject to Cowlitz County zoning regulations. These areas are also covered by the City of Kelso Comprehensive Plan and the Cowlitz County Comprehensive Plan (City of Kelso, 1994).

The Uniform Relocation and Real Property Acquisition Policy Act 49 CFR, Part 49; FAA Order 5100.388 describes the process for acquiring private property and requires appropriate compensation. The Revised Code of Washington (RCW) 8.12 provides similar guidance to cities in the State of Washington.

3.8.2 Affected Environment

The KLS is located within a City of Kelso Light Manufacturing/Industrial zone and an Airport Hazard Overlay Zone, which regulates or controls the various types of airspace obstructions and other hazards that may interfere with the safety of aircraft operations.

The properties that will be acquired as part of the West Side Hangar Development Project are within unincorporated Cowlitz County. These properties are zoned Heavy Manufacturing (MH) by the County (Cowlitz County, undated). Six of the properties are residences, with a total population of 13 residents. The other two properties are businesses. One is a sheet metal fabrication shop and the other is a pump and well drilling business. The properties to be acquired have a total assessed value of \$632,820. For the combined properties, \$8,388 in property taxes was levied by the County in 2012.

3.8.3 Environmental Consequences

3.8.3.1 No Action Alternative

Under the No Action Alternative, the City would continue maintenance activities and safety improvements at KLS. These improvements are not expected to affect land use.

3.8.3.2 Proposed Action

The proposed action is compatible with existing zoning and planning. Eight properties located to the northwest of KLS would be acquired as part of the West Side Hangar Development Project. The City of Kelso would purchase the properties and demolish the existing buildings in order to replace the hangars that must be demolished to clear the FAR 77 surfaces. The City would follow the requirements of the Uniform Relocation Assistance and Real Property Acquisition Act (49 CFR Part 24) and the Washington State law covering property acquisition (RCW 8.12). Relocation assistance would provide:

- At least 90 days notice of the relocation,
- A written description of the relocation program,

- Relocation advisory services such as referrals to replacement properties, help in filing payment claims and other necessary assistance.

Federal requirements state that no person shall be required to move unless at least one comparable replacement dwelling has been made available. A check of properties available for rent and sale in the Kelso area indicates that there is a variety of decent, safe, and sanitary housing available, including over 100 properties for sale at less than \$200,000. Although the properties would be acquired following applicable regulations and relocation assistance would be provided, individual property owners would be impacted by the acquisitions.

The City of Kelso would not pay property taxes on the acquired property. Therefore, the tax base of Cowlitz County would be reduced by approximately \$8,388 per year. This amount is not considered substantial compared to total property tax revenues in the County and could be offset by the County not having to provide services to those properties in the future.

3.8.4 Mitigation

Mitigation measures would not be necessary for the No Action Alternative because there would be no land use impacts. Property acquisition under the Proposed Action will be mitigated by adherence with applicable federal and state regulations.

3.9 Environmental Justice, Children's Environmental Health and Safety and Socioeconomics

3.9.1 Applicable Regulations

3.9.1.1 Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, and Order DOT 5610.2, Environmental Justice, require FAA to provide for meaningful analysis, including demographic analysis, that identifies and addresses potential impacts on minority and low-income populations that may be disproportionately high and adverse.

3.9.1.2 Children's Environmental Health and Safety Risks

Executive Order 13045 requires all federal agencies to "...make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks."

3.9.1.3 Socioeconomics

FAA Order 1050.1E Appendix A, Section 16.3c lists four factors for determining socioeconomic impact: extensive relocation of residents without sufficient replacement housing; extensive relocation of community businesses that would create severe economic hardship; disruption of traffic patterns that substantially reduce levels of service; and a substantial loss in community tax base.

3.9.2 Affected Environment

3.9.2.1 Environmental Justice

While the City of Kelso and Census Tract 11 (which includes the project area) have a higher percentage of minority residents than Cowlitz County as a whole, none of the 28 residents of the project area itself are minorities. Per capita income in Cowlitz County is \$21,317, while the income for Kelso (\$19,557) and Census Tract 11 (\$16,238) are lower.

3.9.2.2 Children's Environmental Health and Safety Risks

Executive Order 13045 does not define "children." For the purposes of this EA, children are defined as "persons under 18" to correspond with U.S. Census age categories. Within Census Tract 11, Census Block 7006 contains KLS, a portion of the City-owned properties to the north, and several other properties to the northeast of KLS. Census Block 7009 contains the properties to be acquired for the Westside Hangar Development Project. None of the residents of the KLS census block (Block 7009) are under the age 18. Four out of 13 current residents of the properties to be acquired for the project (Block 7006) are under the age 18.

3.9.2.3 Socioeconomics

Six residences and two businesses would be acquired for the West Side Hangar Development Project. The eight properties to be acquired have a total assessed value of \$632,820, for which \$8,288 in property taxes was levied in 2012.

3.9.3 Environmental Consequences

3.9.3.1 No Action Alternative

Ongoing maintenance activities under the No Action Alternative are not expected to affect children's environmental health and safety, socioeconomics or cause disproportionately high impacts for environmental justice communities.

3.9.3.2 Proposed Action

3.9.3.2.1 Environmental Justice

Census data indicate that there are no minority populations in the acquisition area. Incomes in the entire Census Tract are slightly lower than those for the City and County. However, there is insufficient data to determine if the residents of the properties to be acquired are low income. Although no disproportionate impacts are expected to occur to minority or low income populations, individual property owners would be impacted by property acquisition and relocation.

3.9.3.2.2 Children's Environmental Health and Safety Risks

There are few children (or persons under the age of 18) living within the project area. While no major risks to children are anticipated, the West Side Hangar Development Project could disturb substances such as lead that would be hazardous to children. Since all residential properties would be acquired and residents relocated prior to demolition or construction, no impacts to children are anticipated.

3.9.3.2.3 Socioeconomics

The West Side hangar Development Project is not anticipated to have significant socioeconomic effects based on the FAA's four factors for determining socioeconomic impact (Section 3.9.1.3). The existing stock of housing and industrial properties in Kelso and Cowlitz County are adequate to accommodate relocations. No roads will be closed or otherwise permanently impacted by the project and any traffic impacts will be construction-related, short term, and minor. The City of Kelso is an exempt entity and would not be required to pay property taxes on acquired property, but the impact on the County tax base would be minor.

3.9.4 Mitigation

Mitigation measures would not be necessary for the No Action Alternative or the Proposed Alternative because there would be no impacts.

3.10 Historical, Architectural, Archaeological and Cultural Resources

3.10.1 Applicable Regulations

Federal funding of the West Side Hangar Development Project requires that the FAA comply with Section 106 of the National Historic Preservation Act (NHPA) (Section 106). Section 106 requires that FAA consider the effects of this undertaking upon Historic Properties within the project's Area of Potential Effects (APE). Federal code implementing Section 106, found at 36 CFR 800, includes a requirement that an effort be made to identify Historic Properties. Section 106 also requires the lead federal agency to consult with the State Historic Preservation Officer (SHPO), Native American tribes with a traditional or religious interest in the study area, and the interested public.

3.10.2 Affected Environment

The APE for the West Side Hangar Development Project encompasses the northwest corner of KLS, including the hangars and other structures adjacent to South Pacific Avenue. The APE also includes eight privately owned parcels along South Pacific Avenue (Parcel Numbers 23156, 23157, 23158, 23159, 23160, 23161, 23167, and 23168). The APE extends roughly from Douglas Street in the north to the southernmost extent of Taxiway D in the south. The western boundary is South Pacific Avenue. The eastern boundary is irregular and runs roughly from the east side of Taxiway D and follows parcel boundaries.

KLS is located within the traditional territory of speakers of the Cathlamet dialect of Upper Chinookan. Members of the Cathlamet language group share cultural traits with the larger cultural group referred to by some anthropologists as the Lower Columbia River Chinookans. The Chinookan culture group used a subsistence pattern based on hunting, fishing, berry and root gathering. Of note for the project area is the importance of swamps and lakes which were sources for gathering staples like wapato and camas. Explorers and traders began traveling through the area between 1800 and 1850. The Hudson Bay Company established a small receiving post at the mouth of the Cowlitz River in 1845. In 1849, the town of Monticello was founded on the west side of the Cowlitz River, opposite KLS. Monticello was destroyed by flooding in 1867. In the early 1920s the town of Longview was founded on the opposite side of the Cowlitz River by the Long-Bell Lumber Company.

The APE, including both the airport property and private properties to the north, contains sediment (sand) which does not appear to be native. Due to the presence of these imported sediments, which extend at least 3 feet below ground surface, the potential for encountering buried precontact cultural resources within the anticipated depth of ground disturbance (3 feet) is considered extremely low.

A Cultural Resources Assessment, including a subsurface and an aboveground survey, was conducted by ESA Paragon (Appendix E). ESA Paragon identified eight historic era buildings within the airport portion of the APE. These properties consist of airport hangars as well as an airport administration building. ESA Paragon also observed a previously recorded airport building (the Davis Texaco Air Service building) and beacon. ESA Paragon identified three historic-age buildings, two sheds and a house, located within parcels 23158 and 23168.

3.10.3 Environmental Consequences

3.10.3.1 No Action Alternative

Under the No Action Alternative, the City would continue maintenance activities and safety improvements, which would not cause impacts to historic or cultural resources.

3.10.3.2 Proposed Action

The proposed project will have no adverse effects on historic properties. The two NRHP eligible properties (Beacon and the Texaco Air Service Buildings) are eligible based on their association with the development of transportation systems in the City of Kelso. Neither will be demolished as part of the West Side Hangar Development Project. The continued development of the airport will not diminish the integrity of either structure. No other properties within the APE qualify as historic properties.

The FAA initiated consultation with the SHPO (the Washington Department of Archaeology and Historic Preservation (DAHP)) and affected tribes in October 2012. The FAA identified the Cowlitz Tribe as the tribe with traditional or religious interest in the study area. The DAHP and cultural resources managers of the Cowlitz Tribe were consulted by letter on October 19, 2012. Copies of the consultation letters are included in Appendix F. Matthew Sterner from DAHP replied on December 10, 2012 stating that DAHP concurs that no historic properties would be affected by the project.

There is an extremely low potential that unanticipated cultural resource materials may be encountered during construction (Section 3.10.2).

3.10.4 Mitigation

No impacts are anticipated for the No Action Alternative or the Proposed Action, so no mitigation would be necessary.

In the event that cultural resources are observed during implementation of the project then work should be temporarily suspended at that location and a professional archaeologist should be consulted. If ground disturbing activities encounter human skeletal remains during the course of construction, then all activity that may cause further disturbance to those remains must cease and the area of the find must be secured and protected from further disturbance (pursuant to revisions to RCW 27.44 [Indian Graves and Records] and RCW 68.60 [Abandoned and Historic Cemeteries and Historic Graves]). Anyone finding human skeletal

remains must report the discovery to the county coroner and local law enforcement in the most expeditious manner possible. The remains should not be touched, moved, or further disturbed until the coroner and law enforcement respond.

3.11 Light Emissions and Visual Impacts

3.11.1 Applicable Regulations

The KMC sets performance standards for light and glare for nonresidential uses. KMC 17.40.070.D.2 states:

Exterior lighting for all uses and signs shall be directed downward and otherwise arranged, shaded, screened, shielded, and of a design that results in the light being directed onto the site and of an intensity or brightness that does not reflect or cause glare onto any adjacent or nearby use or interfere with the safe operation of motor vehicles.

3.11.2 Affected Environment

The airport is located within in an industrial area in a very flat location with limited views. Nearby visual resources include the Cowlitz and Coweeman Rivers and the Three Rivers Golf Course. However, neither the rivers nor the golf course are visible from the airport property, and the airport is not visible from the rivers or the golf course. Lighting in the area primarily consists of existing airport lights. Lighting from nearby commercial and industrial properties does not interfere with airport lighting.

3.11.3 Environmental Consequences

3.11.3.1 No Action Alternative

Under the No Action Alternative, the City would continue maintenance activities and safety improvements, which would not cause light or visual impacts.

3.11.3.2 Proposed Action

The Proposed Action would not add any new light sources. New hangars may include exterior safety lighting, but the lighting would be similar to the lighting on existing hangars and would not create a new impact. No visual impacts are anticipated. The project area is generally not visible from offsite and contains no historic or visual resources. The project will create no new uses or increases in building height.

3.11.4 Mitigation

No impacts are anticipated for the No Action Alternative or the Proposed Action, so no mitigation would be necessary.

3.12 Noise

Information on noise is included in the Land Use Technical Memorandum (Appendix D) and is summarized below.

3.12.1 Applicable Regulations

The KMC sets performance standards for noise from nonresidential uses. KMC 17.40.070.D.1 states that no use shall exceed the maximum noise levels established by Chapter 173-60 Washington Administrative Code (WAC). According to WAC 173-60-050, sounds from blasting and from construction equipment are exempt from noise standards from 7 a.m. to 10 p.m. weekdays and from 9 a.m. to 10 p.m. on weekends. The FAA guidance for aircraft noise analysis is provided in FAA Order 1050.1E. The guidance establishes methods for analysis, defines “a significant noise impact,” and defines operations which are exempt from noise analysis.

3.12.2 Affected Environment

The project area is located within an industrial area with a relatively high level of background noise from industrial uses, including the KLS airport itself. The BNSF Railroad, located directly west of KLS, is a major noise producer in the area. Despite the industrial zoning, there are several residences near KLS, including six residences in the area proposed for acquisition. There are no other sensitive receptors in the area.

The most recent noise contours were prepared for KLS in 2000 (City of Kelso, 2011). Although this information is dated, it provides general information about existing noise levels at KLS. These contours show that the properties adjacent to the airport do not experience day-night sound levels above FAA’s 65-decibel threshold of significance.

3.12.3 Environmental Consequences

3.12.3.1 No Action Alternative

Under the No Action Alternative, the City would continue maintenance activities and safety improvements, which would not generate enough noise to create impacts.

3.12.3.2 Proposed Action

The Proposed Action is not a capacity project and would not increase air traffic at the airport. The Proposed Action, including the five additional hangars, is intended to meet the needs of increased air traffic that is projected to occur in the Airport Master Plan without the Proposed Action (see Section 1.2). The Proposed Action is intended to accommodate existing and forecast traffic in a more efficient manner and would not change noise levels at KLS.

According to the guidelines in FAA Order 1050.1E, operations at KLS do not require a noise analysis. The Proposed Action is to accommodate Design Group I and II² airplanes and forecast operations are less than 90,000 annual propeller operations or 700 jet operations (FAA Order 1050.1E, Appendix A, Paragraph 14.6a). Therefore, the airport operations do not meet the threshold triggering a noise analysis.

The project will make adjacent land uses more compatible with the airport. Residential properties to the north of the airport will be acquired and the land will be converted from residential and commercial uses to airport hangars (see Section 3.8).

The impacts from construction noise are discussed in Section 3.3.2.

² Design I aircraft have wingspans up to 48 feet and Design II aircraft have wingspans between 49 and 78 feet.

3.12.4 Mitigation

No impacts are anticipated, so no mitigation will be necessary.

3.13 Air Quality

3.13.1 Applicable Regulations

FAA projects are subject to the Clean Air Act (40 CFR, Part 93 Subpart B). The Clean Air Act establishes standards for specific air pollutants—National Ambient Air Quality Standards (NAAQS). Areas are designated as being in “attainment” or “non attainment” based on monitoring information of NAAQS. Air quality is generally assessed in terms of whether concentrations of air pollutants are higher or lower than the NAAQS that have been set to protect human health and welfare. Air pollution concentrations that are lower than the NAAQS are considered in attainment while those that are higher than the NAAQS are considered in non attainment. Three agencies have jurisdiction over ambient air quality in the project area: the U.S. Environmental Protection Agency (EPA), Ecology, and the SWCAA. These agencies establish regulations that govern both the concentration of pollutants in the outdoor air and contaminant emissions from air pollution sources. The nearest SWCAA monitoring station is in Longview on 30th Avenue.

3.13.2 Affected Environment

Air quality at the KLS site is typical for a light industrial area with pollution sources such as an airport and railroad. The KLS site is considered an attainment area for air quality.

3.13.3 Environmental Consequences

3.13.3.1 No Action Alternative

Under the No Action Alternative, the City would continue maintenance activities and safety improvements, which would not impact air quality.

3.13.3.2 Proposed Action

Operation of new facilities constructed as part of the project would not cause air quality impacts. The Proposed Action will not contribute to increased aircraft activity and therefore will not affect aircraft generated emissions. Impacts to air quality are associated with construction and are discussed in Section 3.3.2.

3.13.4 Mitigation

No impacts to air quality are anticipated; therefore, no mitigation measures are required.

3.14 Hazardous Materials, Pollution Prevention and Solid Waste

3.14.1 Applicable Regulations

FAA projects have to comply with the Comprehensive Environmental Response, Conservation and Liability Act, the Resource Conservation (CERCLA) and Recovery Act, and the Safe Water Drinking Act. None of these regulations are applicable to the West Side Hangar Development Project. There are no CERCLA sites

in the project area, the project will not generate, transport, store or dispose of hazardous materials; and the project is not located within or near a sole or principal drinking water resource aquifer area.

3.14.2 Affected Environment

A Phase 1 Environmental Site Assessment was prepared by Landau Associates (2012) on the properties to be acquired by the airport. The assessment found three recognized environmental conditions among the properties proposed for acquisition. One parcel has potential presence of petroleum-contaminated soil and groundwater as well as buried waste. The parcel with a pump and well drilling business has potential presence of contamination from petroleum products and other hazardous materials. The parcel containing a fabrication shop was historically used as an auto body shop, and some soil on the site is heavily stained, indicating the potential presence of contamination from petroleum products and other hazardous materials. This site also may have once contained a 1,000-gallon aboveground fuel storage tank and pump station.

All of the properties proposed for acquisition have been in rural residential use since the 1950s. The Phase 1 Site Assessment suggests that it is likely the properties have had or currently have asbestos-containing materials and/or lead based paint. Several of the properties are confirmed or suspected as having private water wells, and it is assumed that all of the properties have septic systems.

The existing hangars on the airport property also have the potential for contamination. Airport properties typically have a high probability of contamination from gas, oil, and other contaminants. Most of the airport hangars also date from a period when lead based paint and asbestos were commonly used.

A review of Ecology's Confirmed and Suspected Contaminated Sites List indicates that there are four contaminated sites within one mile of the project site. All four are located within the area between Parrott Way and the Coweeman River to the northeast of the airport. All four sites are listed for petroleum contamination in soil and, in two cases, groundwater. These properties are not likely to be disturbed by the project (Landau, 2012).

3.14.3 Environmental Consequences

3.14.3.1 No Action Alternative

Under the No Action Alternative, the City would continue maintenance activities and safety improvements at the airport, which would not involve excavation and therefore are not expected to have hazardous material impacts. No properties would be acquired or demolished.

3.14.3.2 Proposed Action

Demolition of structures and grading and ground excavation could expose areas of contamination on the properties to be acquired or the airport hangars to be demolished. Demolition could also expose asbestos or lead-based paint.

The Phase I Environmental Assessment indicates potential contamination on some of the properties to be acquired. Therefore, Phase II Environmental Due Diligence Audits (EDDA) should be conducted to determine whether contamination is present and the nature and extent of contamination. The EDDAs would include soil and groundwater sampling.

The extent of contamination is not expected to be significant because of the limited scale of contamination. No large scale industrial operations are located on the properties and any contamination was produced by household or small business operations. The West Side Hangar Development Project does not require deep excavation, limiting the potential for disturbing contaminated areas.

A survey of asbestos and lead-containing materials would be undertaken prior to demolition of any structures and materials containing asbestos or lead would be removed in accordance with applicable regulations including the Washington Industrial Safety and Health Act. Demolition debris would be removed in accordance with applicable federal, state and local regulations. Contaminated materials would be disposed of at licensed sites.

3.14.4 Mitigation

Proper identification of hazardous materials and removal and disposal of those materials in accordance with applicable regulations will minimize the potential for exposure and disturbance of hazardous materials. Additional measures to be taken to minimize hazardous material impacts include:

- Development of a Spill Prevention Control and Countermeasures (SPCC) Plan to identify emergency measures to prevent the accidental release of contaminants into the environment.
- Implementation of BMPs to contain any hazardous materials or chemicals.
- Development of construction management plans that include observation of excavations for potential contamination. If hazardous materials are observed, specific mitigation measures, including further investigation and appropriate disposition of contaminated material would be implemented.

3.15 Secondary (Induced) Impacts

The analysis of potential secondary (induced) impacts is intended to determine whether the proposed project would cause shifts in patterns of population movements and growth, public service demands, and changes in business and economic activity to the extent influenced by airport development (FAA Order 1050.1E).

3.15.1.1 Impact Potential

The No Action Alternative would allow for existing revenue producing elements to continue at KLS; however, it would not allow for the KLS to expand its hangar capacity and future revenue base.

Implementation of the Proposed Alternative would not cause shifts in patterns of population movements and growth, public service demands, and changes in business and economic activity. However, a temporary increase in economic activity in both the construction and building material supply sectors of the local economy is anticipated. Jobs generated by construction activities would be of a relatively short duration. However, the West Side Hangar Development Project will enable KLS to more efficiently accommodate air traffic. The improved facilities could stimulate secondary economic impacts by attracting additional use of KLS facilities. Overall, the Proposed Alternative would likely cause small positive changes to the economy of the Kelso area.

3.15.1.2 Mitigation Measures

No mitigation measures are required.

3.16 Cumulative Impacts

Cumulative impacts are the impacts that result from “the incremental impact of the action when added to other past present and reasonably foreseeable future actions regardless of the agency (federal or non-federal) or person undertaking those actions” (CEQ 1508.7). Cumulative impacts are those that are incrementally affected by the proposed action and other actions within the same geographic area and time period. For this project, the same geographic area is defined as the airport grounds and the area within 1 mile of the airport and the time period is five years.

Cumulative impacts were evaluated in the Cumulative Impacts Technical Memorandum (Appendix G). The following sections summarize potential cumulative impacts of the Proposed Alternative.

3.16.1 Reasonably Foreseeable Future Actions

Reasonably foreseeable future actions were identified by reviewing the KLS Master Plan (City of Kelso, 2011) and discussions with the City of Kelso Community Development and Public Works Departments. The following projects were identified as reasonably foreseeable.

- Extension of the main runway at KLS. The City of Kelso is exploring options for extending the main runway or constructing a stopway to allow larger aircraft to land at the airport. The proposed extension is included in the KLS Master Plan. The City currently has no funding for design or construction, so construction dates are uncertain.
- Continued implementation of the KLS Wildlife Hazard Management Plan (Appendix G in City of Kelso, 2011). The City has implemented many of the recommendations, but has not fully implemented the recommendation to fill wetlands to reduce collision hazards. There is no schedule for filling the wetlands and the project would not proceed before completion of an Environmental Assessment under NEPA.
- State of Washington high speed rail project. The project includes rail improvements and installation of new line along the Pacific Northwest Rail Corridor that extends from Eugene, Oregon to Vancouver, British Columbia. The project is intended to increase the frequency and reliability of Amtrak service between Seattle and Portland. In the Kelso area, existing track will be upgraded and a 4.5-mile segment of new track will be constructed between Kelso and Longview Junction. This new third rail would be constructed within the BNSF Railroad corridor immediately west of KLS. The Washington Department of Transportation (WSDOT) is conducting preliminary engineering and environmental work at the time of this writing.
- South Kelso railroad overpass. To increase safety in the area, WSDOT proposes to close two at-grade railroad crossings (at Yew and Mill Streets) in Kelso and replace them with a new grade separation above or below the tracks at an alignment near Hazel Street. The proposed Hazel Street crossing is approximately 1,000 feet northeast of the northern KLS boundary. At the time of this writing, the crossing project is in the early planning stages.

3.16.2 Potential Impacts

Potential cumulative impacts of the Proposed Action cannot be quantitatively assessed because no specific impact data are available for the foreseeable projects. Therefore, potential cumulative impacts are described qualitatively below. In addition, the discussion of impacts is limited to those resource categories which were identified as being impacted to some degree by the Proposed Action.

The West Side Hangar Development Project would not result in significant environmental impacts; however, the project would require property acquisition and cause minor construction impacts and increases in impervious surfaces. Potential cumulative impacts to these resources are described below.

3.16.2.1 Water Resources

The West Side Hangar Development Project will add approximately 0.18 acre of impervious surface to the KLS site. Extension of the runway would further increase the amount of impervious surface on the site although the quantity is not yet known. Because both projects will include improvements to stormwater treatment through a stormwater infiltration system, the increased impervious surface is not expected to negatively impact water resources and will likely result in cumulative improvements to stormwater treatment.

3.16.2.2 Wetlands

Both the runway extension project and the Wildlife Hazard Management Plan would result in impacts to wetlands. Extension of the runway would impact approximately 0.5 acre of wetlands. The West Side Hangar Development Project would not cause impacts to wetlands; therefore, it would not cause cumulative impacts to wetlands.

3.16.2.3 Land Use

The West Side Hangar Development Project requires acquisition of eight properties on the north end of the airport to accommodate replacement hangars. The runway extension project is located entirely on airport property. At this time it is not known if the other proposed projects will require acquisition of property or easements. Property acquisition for the proposed action is not expected to cause any significant impacts and will remove incompatible uses from near the runway. Therefore, any property acquisition required for the other proposed projects is not expected to cause significant cumulative impacts to land use. All projects would comply with applicable laws for property acquisition.

3.16.2.4 Construction Impacts

The schedules for implementation of the runway extension project, the Wildlife Hazard Management Plan and the two non-airport projects is not known, but could potentially overlap with the West Side Hangar Development Project resulting in cumulative construction impacts. The most likely construction impacts are air quality, noise, and transportation as described below.

Both the West Side Hangar Development Project and the reasonably foreseeable actions would cause temporary increases in dust and vehicle emissions during construction. It is possible that some aspects of construction could overlap, cumulatively increasing temporary air quality impacts. The projects are not expected to significantly affect air quality.

All of the proposed projects would cause temporary increases in noise from construction equipment. The proposed high speed rail and Hazel Street overpass projects would likely include construction activities that create high noise levels, such as pile driving. Noise generation at construction projects is usually generated in phases. Typically high noise generation activities occur at the beginning of a project. It is unlikely that all the proposed projects would generate high levels of noise at the same time. In addition, all projects would comply with local noise regulations and construction hours. Therefore, the projects are not likely to cause cumulatively significant noise impacts.

Transportation of equipment, materials, and debris will be required for all projects. Because of the close proximity of the projects, it is likely that trucks would use the same routes. If the projects occurred at the same time, the increased traffic could cumulatively increase traffic delays and cause potential safety issues. Although the projects may cause increased traffic of heavy trucks on local roadways, those impacts would be temporary and would comply with local and state regulations for road safety, including those for signage, detours, and flagging, as necessary. Therefore, no significant cumulative impacts to transportation are anticipated.

3.16.3 Mitigation

No significant cumulative impacts are anticipated from the West Side Hangar Development Project. All of the proposed projects would undergo environmental review under NEPA or SEPA and would obtain all required permits before they can be constructed. The projects would comply with required BMPs and permit conditions and are not anticipated to contribute to a cumulatively significant impact to environmental resources. No additional mitigation measures are required.

3.17 Matrix Comparing Environmental Consequences

Table 3-1 provides a summary of the impacts of the No Action Alternative and the Proposed Action that were presented in Chapter 3. Table 3-3 includes only the resources that are applicable to the project. It does not include Farmlands, Section 4(f) properties, coastal resources, natural resources and energy supply, Wild and Scenic River and National and State Forests. A brief description of why these resources are not impacted or included in Section 3.2.

Table 3-3. Summary of Impacts

Environmental Element	No Action Alternative	Proposed Action
Construction Noise Air Quality Water Quality Transportation	Any construction projects for ongoing maintenance would be minor and confined to airport property. Therefore, no construction impacts are anticipated.	Elevated noise levels during construction. Temporary increase in vehicle emissions and potential for fugitive dust. No water quality impacts anticipated. Construction traffic is not expected to cause significant delays or traffic impacts.

Environmental Element	No Action Alternative	Proposed Action
Fish, Wildlife and Plants	None anticipated.	As all changes to airport activities would be minor. Since wildlife and native vegetation in the project area are limited, no impacts to wildlife or vegetation are anticipated. The BA prepared for this project determined that it would have no effect on fish.
Floodplains	None anticipated.	The project is not anticipated to affect regulatory floodplains because it is not located within a floodplain.
Water Quality	Stormwater would continue to drain to the Coweeman River at current volumes.	Improved stormwater treatment through infiltration. Maintenance or reduction in run off volumes.
Wetlands	None anticipated.	No wetlands are located within 200 feet of the project area; therefore, the project will not affect wetlands.
Land Use	None anticipated.	Eight properties located to the northwest of KLS would be acquired. The tax base of Cowlitz County would be reduced by an insubstantial amount after acquisition.
Socioeconomics Environmental Justice Children's Environmental Health and Safety	None anticipated.	No significant socioeconomic impacts anticipated. No disproportionate impacts are expected to occur to environmental justice communities, though individual property owners would be impacted by property acquisition. No major risks to children anticipated.

Environmental Element	No Action Alternative	Proposed Action
Historical, Architectural, Archaeological and Cultural Resources	None anticipated.	The proposed project will have no adverse effects on historic properties. It is possible that unanticipated cultural resource materials may be encountered during construction.
Light Emissions and Visual Impacts	None anticipated.	None anticipated.
Noise	None anticipated.	None anticipated.
Air Quality	None anticipated.	None anticipated.
Hazardous Materials, Pollution Prevention and Solid Waste	None anticipated.	Demolition of airport or acquired structures could expose hazardous material impacts if appropriate mitigation measures are not taken.

Chapter 4 Agency and Public Coordination

The following table summarizes the agency coordination that occurred during preparation of this Environmental Assessment. The Biological Assessment Letter of "No Effect" (Appendix A) determined that the project would have no effect on species listed under the Endangered Species Act; therefore, no direct consultation with the US Fish and Wildlife Service of National Marine Fisheries Service was required.

Table 4-1. Agency Coordination

Resource	Date	Coordination
Fish, Wildlife and Plants	April 16, 2012	Consulted agency databases for endangered and threatened species and Priority Habitat and Species: US Fish and Wildlife Service: http://www.fws.gov/wafwo/speciesmap_new.html Washington Department of Fish and Wildlife: http://wdfw.wa.gov/mapping/phs/
Land Use	April 24, 2012	Telephone conference call with Nancy Malone, Department of Community Development and David Sypher, Department of Public Works to discuss potential land use impacts, including property acquisition.
Historical	October 19, 2012	FAA has initiated consultation with the following entities:
		Department of Archaeology and Historical Preservation (DAHP): Letter sent to DAHP on October 19, 2012 Response received from Matthew Sterner on December 10, 2012
		Cowlitz Tribe: Letters sent to Tribe on October 19, 2012 No responses received
Cumulative Impacts	April 24, 2012	Telephone conference call with Nancy Malone, Department of Community Development and David Sypher, Department of Public Works to discuss proposed projects in the area.

FAA held a public comment period on the Draft EA from May 28, 2013 to July 5, 2013. Notice of the availability of the Draft EA and the date of the public hearing were announced in the May 28 Daily News newspaper. The Draft EA was available for review at the Kelso City Library. A public hearing was held June 27 from 5:30 p.m. to 7:30 p.m. at the Kelso City Hall. No members of the public attended the meeting. No public comments were received on the document.

Chapter 5 List of Preparers

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Chapter 6 References

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Appendix A

BIOLOGICAL ASSESSMENT LETTER OF "NO EFFECT"



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July 10, 2012

Cayla Morgan
Environmental Protection Specialist
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Federal Aviation Administration
1601 Lind Avenue, S.W., Suite 250
Renton, WA 98057-3356

Subject: West Side Hangar Development Project – Draft Biological Assessment Letter of “No Effect”

Dear Ms. Morgan:

The City of Kelso (City) is proposing to construct landside improvements at the Southwest Washington Regional Airport in Kelso, Washington. The improvements are necessary to meet FAA runway safety requirements by increasing separation distance between a runway and taxiway, increasing the width of a taxiway, removal of hangars that encroach on the taxiway and its associated Taxiway Object Free Area (TOFA) and the Federal Aviation Regulation Part 77 (FAR 77) transitional surfaces, and removal or modification of additional hangars.

The City has prepared this assessment on behalf of the Federal Aviation Administration (FAA) to address project related effects to federally listed species under the jurisdiction of the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS). The project is receiving funding through the FAA, which provides the federal nexus for the project.

Listed Species Potentially Present

Both NMFS and USFWS provide listings of threatened and endangered species under their jurisdiction (Attachment A). Of these species, those listed in Table 1 could occur within the project vicinity. The remainder of the species on the USFWS species list for Cowlitz County were either not historically distributed within the action area, and/or the project vicinity does not contain suitable habitat to support these species. For example, no mature forested areas occur within the project area containing habitat elements suitable for either northern spotted owl (*Strix occidentalis*), marbled murrelet (*Brachyramphus marmoratus*), or gray wolf (*Canis lupus*). Likewise, Nelson's checkermallow (*Sidalcea nelsoniana*), a plant species, is not distributed within the project area.

For similar reasons, other marine or anadromous fish species under the jurisdiction of NMFS that have a distribution limited to the Columbia River, such as the listed Upper Columbia and Snake River ESUs for Pacific salmon will not be addressed in this report.

The potential presence of listed species within the project area was further evaluated by reviewing Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) data (WDFW 2012a), the Salmonscape database (WDFW, 2012b), and the WDFW Stock Inventory Data (WDF et al., 1993; WDFW 1998, 2004, 2006).

Table 1. ESA Species Potentially Present Within the Project Vicinity

Species <i>Scientific Name</i>	Population ¹	ESA Listing Status	Critical Habitat in Project Vicinity
Steelhead trout <i>Oncorhynchus mykiss</i>	Middle Columbia River DPS	Threatened	Yes
Chinook salmon <i>O. tshawytscha</i>	Lower Columbia River ESU	Threatened	Yes
Coho salmon <i>O. kisutch</i>	Lower Columbia River ESU	Threatened	No
Chum salmon <i>O. keta</i>	Columbia River ESU	Threatened	Yes
Eulachon <i>Thaleichthys pacificus</i>	Southern DPS	Threatened	Yes
Green sturgeon <i>Acipenser medirostris</i>	Southern DPS	Threatened	No
Bull trout <i>Salvelinus confluentus</i>	Columbia River DPS	Threatened	Yes (Columbia River)
Steller sea lion <i>Eumetopias jubatus</i>	Range wide	Threatened	No
Columbian white tailed deer <i>Odocoileus virginianus leucurus</i>	Columbia River population	Threatened	No

¹ The ESA defines a "species" to include any distinct population segment of any species of vertebrate fish or wildlife. For Pacific salmon, NMFS considers an evolutionarily significant unit, or "ESU," a "species" under the ESA. For Pacific steelhead, NMFS has delineated distinct population segments (DPSs) for consideration as "species" under the ESA.

Project Purpose and Background

The West Side Hangar Development Project addresses current clearance and setback issues at the Southwest Washington Regional Airport. A number of hangars on the west side and northern end of the airport currently penetrate the Federal Aviation Regulation Part 77, which establishes standards and notifications requirements for objects affecting navigable airspace. As a result, these hangars will be removed and replaced with new hangars that comply with the FAR Part 77 restrictions. In addition, Taxiway D, which serves as access to the northwest portion of the airport, is substandard in width, does not meet separation requirements to the runway, and encroaches on the runway object free area. The removal and reconstruction of Taxiway D is also within the scope of this project. Taxiway E is also substandard and will be removed to allow for reconstruction of Taxiway D.

Project Location and Site Description

The Southwest Washington Regional Airport (KLS), located in Cowlitz County in southwestern Washington, lies along Parrott Way and Talley Way between the Coweeman and Cowlitz Rivers, on the southeast side of Kelso approximately 1 mile northwest of the Interstate 5 and State Route 432 Interchange (Figure 1). The project site is located in the NW ¼ of Section 2 Township 7 North, Range 2 West Willamette Meridian (WM).

The project site (6th Field HUC: 170800050906) is located in Water Resources Inventory Area (WRIA) 26, the Cowlitz River basin. The closest waterbody to the project site is the Cowlitz River (WRIA # 26.0002), over 1,300 feet (0.25 miles) from the project site. In addition, a tributary to the Cowlitz River, the Coweeman River (WRIA # 26.0003), is located about 3,000 feet (0.57 miles) to the east of the project site. The confluence of these rivers is located approximately 1 mile to the south-southwest of the project site.

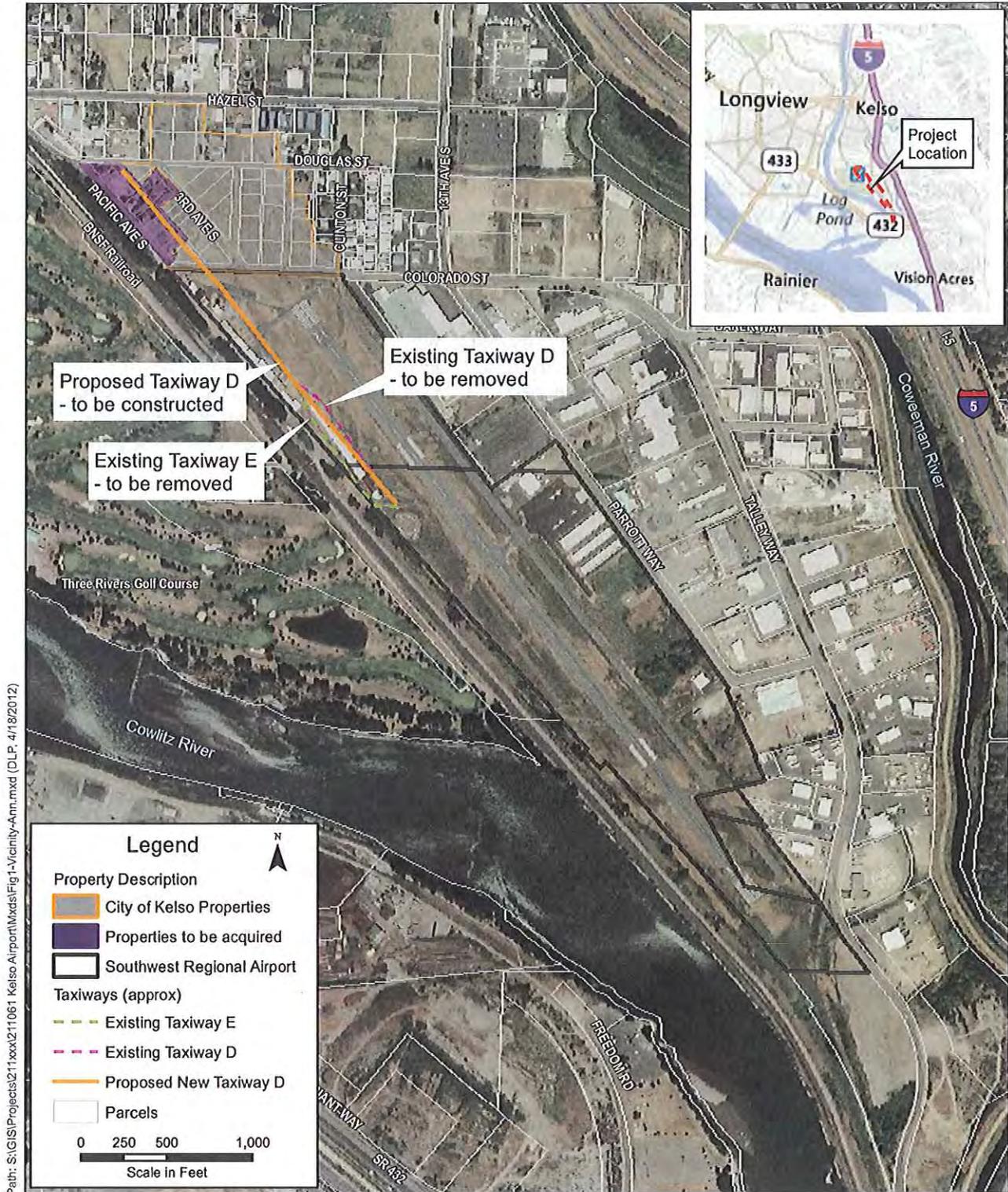
The project site is flat and is separated from the Cowlitz River by South Pacific Avenue and the BNSF railroad, both of which run parallel to the runway, as well as the Three Rivers Golf Course, which occupies the remainder of the floodplain between the project site and the river. The project site is separated from the Coweeman River by the developed portion of the airport and commercial and residential development. Residential development is present to the north of the site and Route 432 is located to the south.

A wetland delineation on airport property determined there are several wetlands in the project vicinity (ESA 2012). However, these wetlands are depressional wetlands of relatively low quality that do not contain fish habitat. The nearest wetland to the project site, Wetland N, is about 50 feet to the southeast of the project site, and is a long, linear, mowed grassy swale feature running parallel to the runway. Wetland N drains to a catch basin located at its southern extent but does not have a surface water connection with streams or other wetlands.

Land cover on the project site consists of buildings (existing hangars to the south and residential structures to the north), pavement, and bare earth. Onsite vegetation is limited to herbaceous weeds and grasses and some scattered ornamental shrubs and trees.

There are currently 39 existing airplane hangars at the project site, in addition to the other buildings on the site listed below:

- Five single family residences,
- One single family residence/ business,
- One office building (Airport Manager's office),
- One airport support building (City maintenance equipment), and
- Two auto storage/garage buildings.



SOURCE: Cowlitz County, 2010; Aerial (Microsoft Virtual Earth, 2009)

Kelso Airport . 2011061
Figure 1
 Vicinity Map
 Kelso, Washington

Project Description

The project will involve the demolition of most of the existing structures within the project area, the construction of 35 new airplane hangars, and construction of a new/replaced taxiway, farther from the airport runway (Figure 2). After project completion, the only structures on the project site will be 44 hangars (35 new and nine existing) and eight airplane tie downs. Because this site has already been partially developed, the project will require demolition of existing buildings and a substantial amount of earthwork. Grading will involve approximately 10,000 cubic yards of material, including building foundations, and will involve both cut and fill. In order to realign Taxiway D and construct other portions of the project, a small amount of impervious surface will be added to the project area. Currently, there are 5.00 acres of impervious surface (asphalt) within the project area. Post project impervious surface would be approximately 5.18 acres, an increase of 0.18 acres, representing an increase of 3.5 percent. The new and replaced impervious surfaces for the taxiway and hangar driveways will be also be constructed of asphalt. The remaining portions of Taxiways D and E that are removed will be planted with grass. The project will also involve lane striping to create auto parking in two areas (no additional impervious surface is associated with the parking areas).

Water quality treatment will be installed to treat runoff for all impervious surface areas within the project site. Stormwater runoff will sheet flow over the grass surfaces to collecting catch basins in the grassed infield. Collected storm water from the catch basin will then be distributed to an underground infiltration chamber system that will recharge groundwater. The six individual infiltration chamber systems will be approximately three feet deep, 10 feet wide and 240 feet long (Figure 2). This project will provide retention for the 100 year design storms to provide protection to the downstream drainage way inundation. The roof structure of hanger buildings will be constructed from a non-polluting roofing material to allow the rainwater that falls on the roof to be diverted directly to the infiltration galleries.

Each of the catch basins will be connected with an overflow pipe that is above the chamber system. Should there be an extreme storm event (greater than 100 year storm) in which the infiltration system is inundated the lowest catch basin will have an overflow connects to the existing drainage swale located immediately west of the runway. This north-south oriented swale eventually conveys runoff to the east, and off airport property.

Based on the scope of the project which is intended to meet FAA standards, normal airport operations on the runway should not be affected. No increase to the type or frequency of aircraft operations would occur. Access to the northwest portion of the airport may be restricted during construction, and access to existing hangars on the west side may require a detour route during construction.

Construction Equipment

Construction machinery that will be used includes typical equipment such as wrecking balls, backhoes flatbed trucks, loaders, excavators, dump trucks, rollers, backhoes, and pickup trucks. No impact pile driving, blasting, or other activities that produce high noise levels will be conducted as part of this project. Construction stockpiling and staging areas for the project will be within already developed areas and cleared portions of the site.

Construction Sequence and Schedule

Proposed construction is tentatively scheduled to begin in March 2016 and will last for approximately 18 months until September 2017. It should be noted that this schedule is only a likely representation of what the actual schedule may be and that variations in work timing may occur due to delays in project funding, permitting, property acquisition, or due to contractor delays or adverse weather conditions. The general sequence of major construction activities is as follows:

1. Mobilization;
2. Install temporary erosion and sediment control (TESC) installation;
3. Demolish existing residences and remove hangars;
4. Remove portions of existing Taxiways D and E pavement and replant with grass;
5. Install new pavement for Taxiway D and hangar driveways
6. Construct new hangars;
7. Install airplane tiedowns and stripe parking areas;
8. Cleanup and demobilization.

Listed Species/Critical Habitat Occurrence

Fish Species

The WDFW Priority Habitats and Species (PHS) database indicates the documented presence of Chinook, coho, and chum salmon, as well as steelhead, in both the Cowlitz and Coweeman Rivers (Williams et al., 1975; WDF et al., 1993; WDFW, 2012a, b). These species use the project vicinity primarily for migration to and from their upstream spawning grounds, although some rearing may occur in the area, particularly for coho salmon and steelhead. No bull trout use of the Cowlitz or Coweeman Rivers is indicated (WDFW, 2012a, b). Relatively large runs of eulachon also occur within the Cowlitz River, which represents a core spawning area for the population. Green sturgeon could enter the mouth of the Cowlitz, although they are distributed primarily within the mainstem Columbia River.

Wildlife Species

Information on federally listed wildlife species (see Table 1) were determined through a review of species information provided by various sources, including the USFWS, NMFS (Attachment A) and on habitat information provided by WDFW (WDFW, 2012a,b).

The proposed airport project occurs within the general range of several ESA listed wildlife species. Although a few harbor seals and California sea lions have been observed using haulouts at the shoals formed at the mouth of the Cowlitz River, Steller sea lion use is not known to occur in the project vicinity (Jeffries et al., 2000).

Columbian white-tailed deer are closely associated with riparian habitats in the Lower Columbia River. The deer found on islands in the Columbia River use "tidal spruce" habitats characterized by densely forested swamps covered with tall shrubs and scattered spruce, alder, cottonwood and willows (USFWS 2012). No such habitat is present within, or directly adjacent to the project site, which is heavily developed and generates substantial disturbance from air, rail, and roadway transportation activities.

Due to the urbanized land use in the project vicinity, it has been determined that suitable habitat for several species that have been identified as potentially occurring in Cowlitz County, including northern spotted owl, marbled murrelet, and Nelson's checkermallow does not exist in the action area. Therefore, the proposed action would have *no effect* on northern spotted owl, marbled murrelet, and Nelson's checkermallow.

Action Area

An action area is defined to be "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR §402.02). Based upon the geographic extent of anticipated project impacts, the action area for the project includes the project footprint and terrestrial habitat and aquatic habitat extending within a 0.5 mile radius. This represents a conservative estimate of the area in which increased noise and human presence during construction may cause disturbance, in a noisy, urban environment. The action area for hydrologic and water quality effects includes only the project footprint, as no surface water features exist within or immediately adjacent to the project site.

Impacts Assessment

This project will not require in-water work, work adjacent to streams, or work within wetlands. The nearest waterbody that supports ESA listed species is over 0.25 miles away from the project site, with a roadway, railroad corridor, and golf course in between. The site is flat, and no substantial earth work or clearing will be required. Project activities will result in no physical modifications to wetlands, wetland buffers, streams, or riparian areas.

The project site is a heavily industrialized portion of Kelso, with roadways (including Interstate 5) on either side of the site. Existing ambient noise levels are relatively high, due to airplane traffic, train traffic, and industrial activity.

The project will result in a slight net gain of impervious surface area (0.18 acres). These surfaces will have relatively minor use by aircraft and some automobile use of small parking areas. However, during normal rainfall events, all stormwater from the site will be collected and infiltrated, resulting in no negative changes to water quality or quantity. As a result, the overall pollutant loading and concentration of stormwater pollutant constituents (dissolved copper and zinc, total suspended solids) will not change as a result of the project. Likewise, because the project will infiltrate stormwater, runoff volumes within the project area would be maintained or slightly reduced, resulting in no change to the hydrology of the Cowlitz or Coweeman Rivers.

The project will include the acquisition and demolition of existing residences in the north portion of the project area. A Phase I Site Assessment was prepared for the project, indicating the potential for petroleum-contaminated soil and groundwater and buried waste on some of the privately owned parcels (Landau Associates, 2012). Further testing on the potentially contaminated materials and soils will occur if applicable and all hazardous or potentially hazardous materials or soils encountered during demolition or construction will be identified, hauled offsite, and properly disposed of at a licensed facility, meeting all local, state, and federal requirements.

In order to minimize or eliminate erosion or sedimentation, a temporary sediment and erosion control (TESC) plan will be prepared and implemented during project construction. The TESC plan will specify best management practices (BMPs) for sediment and erosion control. Examples of potentially appropriate BMPs include sediment fencing, erosion control blankets, and the delineation of clearing and grubbing

limits with high visibility fencing. Based on the implementation of these measures, and the distance of the project to fish-bearing surface waters, there is no chance that sedimentation or contaminants from project construction runoff would affect ESA-listed fish species. Therefore, no direct or indirect effects on listed fish species due to sedimentation would occur.

The proposed project is consistent with existing land use patterns and does not add transportation capacity (new roadways). No new roads, or improvements to existing roads, are planned as part of this project. Completion of the proposed project will not induce growth in the project vicinity. Although the project is one element of a larger plan to comply with FAA regulations, the project has independent utility and no other development plans or projects depend upon this project as a requirement for completion. Therefore, based on the scope and scale of the proposed project, there are no anticipated changes in land use, transportation concurrency, or induced growth that have the potential to negatively affect ESA-listed species.

Effects Determinations

Based on the information provided above, the proposed project would have *no effect* on Chinook salmon, coho salmon, chum salmon, steelhead, bull trout, eulachon, green sturgeon, and Steller sea lion for the following reasons:

- The project site and immediate vicinity is developed and does not contain habitat or features to support ESA listed species. The project site is over 0.25 miles from the Cowlitz River, the closest waterbody that supports listed fish and wildlife species.
- No in-water or near-water work will be required as part of the project and no riparian vegetation removal would occur.
- The project will only add a minor amount of new impervious surface (0.18 acre) and stormwater from the site will be infiltrated, in an area where no treatment or detention currently exists.
- Sedimentation from project runoff will not enter fish-bearing surface waters, based on the project location and implementation of a project TESC plan.
- Noise from construction activities will be at or near background levels at the project site, as it is directly adjacent to an airport runway, BNSF railroad tracks, arterial roadways, and industrial land uses.

Designated critical habitat for Chinook salmon, chum salmon, steelhead, and eulachon is present within the Coweeman and/or Cowlitz Rivers, and bull trout critical habitat is present within the mainstem Columbia River. However, based on the above discussion on the absence of potential project impacts, the project would not affect critical habitat or any individual primary constituent elements (PCEs) of critical habitat, for any of these species. Therefore, the proposed project would have *no effect* on critical habitat for these species. Critical habitat for the other species listed in Table 1 has not been designated (coho salmon, Columbian white tailed deer, and Steller sea lion) or is not designated within the project vicinity (green sturgeon).

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Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires federal agencies to consult with NMFS on activities that may adversely affect Essential Fish Habitat (EFH). The Pacific Fisheries Management Council (PFMC) has designated EFH for the Pacific salmon fishery, federally managed groundfish, and coastal pelagic fisheries. Designated EFH for the Pacific salmon fishery and groundfish occurs in the vicinity of the proposed project. Potential effects to Pacific salmon EFH, including Chinook and coho salmon habitat in the Cowlitz and Coweeman Rivers, is similar to that discussed in the body of this letter. It was determined that the project would not have *no adverse effect* on EFH for any of the managed fisheries due to the limited nature of this project.

Conclusions

Based on the above analysis, the proposed project will have *no effect* on all species discussed above. Additionally, for the same reasons discussed above, the proposed project will have *no effect* on designated critical habitat for these species.

It is our understanding that this assessment satisfies FAA's responsibility under Section 7(c) of the Endangered Species Act at this time. We are prepared to reevaluate potential project impacts if new species are listed or if the project description changes resulting in project-related affects that were not previously described in this document.

In compliance with the Magnuson-Stevens Fishery Conservation and Management Act, Essential Fish Habitat (EFH) was assessed for the proposed project. Designated EFH for the Pacific salmon fishery occurs in the vicinity of the proposed project. Potential effects to Pacific salmon EFH, including Chinook, coho, and pink salmon habitat, is similar to that discussed in the body of this letter. It was determined that the project will have *no adverse effect* on EFH for Pacific Salmon.

Please contact me if you have any questions or concerns about the proposed project.

Sincerely,



Pete Lawson, Senior Fisheries Biologist

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Attachment A – Species Lists

Endangered Species Act Status of West Coast Salmon & Steelhead

(Updated July 1, 2009)

Species ¹		Current Endangered Species Act Listing Status ²	ESA Listing Actions Under Review	
Sockeye Salmon (<i>Oncorhynchus nerka</i>)	1	Snake River	Endangered	
	2	Ozette Lake	Threatened	
	3	Baker River	Not Warranted	
	4	Okanogan River	Not Warranted	
	5	Lake Wenatchee	Not Warranted	
	6	Quinalt Lake	Not Warranted	
	7	Lake Pleasant	Not Warranted	
Chinook Salmon (<i>O. tshawytscha</i>)	8	Sacramento River Winter-run	Endangered	
	9	Upper Columbia River Spring-run	Endangered	
	10	Snake River Spring/Summer-run	Threatened	
	11	Snake River Fall-run	Threatened	
	12	Puget Sound	Threatened	
	13	Lower Columbia River	Threatened	
	14	Upper Willamette River	Threatened	
	15	Central Valley Spring-run	Threatened	
	16	California Coastal	Threatened	
	17	Central Valley Fall and Late Fall-run	Species of Concern	
	18	Upper Klamath-Trinity Rivers	Not Warranted	
	19	Oregon Coast	Not Warranted	
	20	Washington Coast	Not Warranted	
	21	Middle Columbia River spring-run	Not Warranted	
	22	Upper Columbia River summer/fall-run	Not Warranted	
	23	Southern Oregon and Northern California Coast	Not Warranted	
	24	Deschutes River summer/fall-run	Not Warranted	
Coho Salmon (<i>O. kisutch</i>)	25	Central California Coast	Endangered	
	26	Southern Oregon/Northern California	Threatened	
	27	Lower Columbia River	Threatened	• Critical habitat
	28	Oregon Coast	Threatened	
	29	Southwest Washington	Undetermined	
	30	Puget Sound/Strait of Georgia	Species of Concern	
31	Olympic Peninsula	Not Warranted		
Chum Salmon (<i>O. keta</i>)	32	Hood Canal Summer-run	Threatened	
	33	Columbia River	Threatened	
	34	Puget Sound/Strait of Georgia	Not Warranted	
	35	Pacific Coast	Not Warranted	
Steelhead (<i>O. mykiss</i>)	36	Southern California	Endangered	
	37	Upper Columbia River	Threatened	
	38	Central California Coast	Threatened	
	39	South Central California Coast	Threatened	
	40	Snake River Basin	Threatened	
	41	Lower Columbia River	Threatened	
	42	California Central Valley	Threatened	
	43	Upper Willamette River	Threatened	
	44	Middle Columbia River	Threatened	
	45	Northern California	Threatened	
	46	Oregon Coast	Species of Concern	
	47	Southwest Washington	Not Warranted	
	48	Olympic Peninsula	Not Warranted	
	49	Puget Sound	Threatened	• Critical habitat
50	Klamath Mountains Province	Not Warranted		
Pink Salmon (<i>O. gorbuscha</i>)	51	Even-year	Not Warranted	
	52	Odd-year	Not Warranted	

¹ The ESA defines a "species" to include any distinct population segment of any species of vertebrate fish or wildlife. For Pacific salmon, NOAA Fisheries Service considers an evolutionarily significant unit, or "ESU," a "species" under the ESA. For Pacific steelhead, NOAA Fisheries Service has delineated distinct population segments (DPSs) for consideration as "species" under the ESA.

**LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES AND CRITICAL
HABITAT; CANDIDATE SPECIES; AND SPECIES OF CONCERN
IN COWLITZ COUNTY
AS PREPARED BY
THE U.S. FISH AND WILDLIFE SERVICE
WASHINGTON FISH AND WILDLIFE OFFICE**

(Revised August 2, 2011)

LISTED

Bull trout (*Salvelinus confluentus*) – Coastal-Puget Sound DPS
Columbian white-tailed deer (*Odocoileus virginianus leucurus*)
Gray wolf (*Canis lupus*)
Marbled murrelet (*Brachyramphus marmoratus*)
Northern spotted owl (*Strix occidentalis caurina*)

Major concerns that should be addressed in your Biological Assessment of project impacts to listed animal species include:

1. Level of use of the project area by listed species.
2. Effect of the project on listed species' primary food stocks, prey species, and foraging areas in all areas influenced by the project.
3. Impacts from project activities and implementation (e.g., increased noise levels, increased human activity and/or access, loss or degradation of habitat) that may result in disturbance to listed species and/or their avoidance of the project area.

Sidalcea nelsoniana (Nelson's checker-mallow)

Major concerns that should be addressed in your Biological Assessment of project impacts to listed plant species include:

1. Distribution of taxon in project vicinity.
2. Disturbance (trampling, uprooting, collecting, etc.) of individual plants and loss of habitat.
3. Changes in hydrology where taxon is found.

DESIGNATED

Critical habitat for bull trout
Critical habitat for the marbled murrelet

PROPOSED

None

CANDIDATE

North American wolverine (*Gulo gulo luteus*) – contiguous U.S. DPS

SPECIES OF CONCERN

Bald eagle (*Haliaeetus leucocephalus*)

Cascades frog (*Rana cascadae*)

Coastal cutthroat trout (*Oncorhynchus clarki clarki*)

Columbia torrent salamander (*Rhyacotriton kezeri*)

Larch Mountain salamander (*Plethodon larselli*)

Long-eared myotis (*Myotis evotis*)

Long-legged myotis (*Myotis volans*)

Northern goshawk (*Accipiter gentilis*)

Northwestern pond turtle (*Emys* (= *Clemmys*) *marmorata marmorata*)

Olive-sided flycatcher (*Contopus cooperi*)

Pacific lamprey (*Lampetra tridentata*)

Pacific Townsend's big-eared bat (*Corynorhinus townsendii townsendii*)

Peregrine falcon (*Falco peregrinus*)

River lamprey (*Lampetra ayresi*)

Tailed frog (*Ascaphus truei*)

Valley silverspot (butterfly) (*Speyeria zerene bremeri*)

Van Dyke's salamander (*Plethodon vandykei*)

Western toad (*Bufo boreas*)

Cimicifuga elata (tall bugbane)

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Attachment B – Project Site Photos



Photo 1: A view looking northwest at Wetland N (in middle of foreground) and the hangars to removed/reconstructed (left side of photo in distance).



Photo 2: A view looking north at Colorado Street from South Pacific Avenue at structures to be removed and replaced with a taxiway and new hangars.

Appendix B

FISH, WILDLIFE, AND PLANTS TECHNICAL MEMORANDUM



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memorandum

date October 5, 2012

to Cayla Morgan
 Environmental Protection Specialist
 Federal Aviation Administration

from Ann Root and Pete Lawson

subject Southwest Regional Airport West Side Hangar Development Project Fish, Wildlife and Plants
 Technical Memorandum

This technical memorandum has been prepared to provide background information on fish, wildlife and plants for development of the Environmental Assessment on the Southwest Regional Airport (KLS) West Side Hangar Development project. This memorandum includes a description of the presence of critical habitats and any rare, threatened, or endangered species based on information in existing public resource data. This memorandum describes:

- Applicable regulations for fish, wildlife and plant management,
- Existing fish, wildlife and plant conditions in the project area,
- Potential impacts of the proposed project on fish, wildlife and plants, and
- Proposed mitigation measures.

Project Description

The City of Kelso (City) proposes to implement improvements to its landside facilities on the west side of the Southwest Washington Regional Airport (KLS) (Figure 1). The improvements were identified in the 2011 Airport Master Plan (City of Kelso, 2011) to address conditions on the west side of the airport that deviate from FAA standards. The proposed West Side Hangar Development project will address these deviations. The proposed project includes:

- Increasing the Taxiway D separation distance. The required separation between the runway and taxiway is 240 feet, but Taxiway D is within 230 feet of Runway 12/30 in places. Taxiway D is too close to the runway and will be removed and relocated.
- Widening Taxiway D: The standard width for ARC B-II taxiways is 35 feet. Taxiway D is currently only 14 feet wide in places and will be removed and reconstructed.

- Removing obstructions from the Taxiway D and Taxiway E Taxiway Object Free Area (TOFA): Existing hangars encroach on the TOFA and will be removed.
- Removing obstructions from the FAR Part 77 Surfaces¹: Existing hangars that penetrate the Part 77 transitional surface will either be removed, or modified to reduce their height to the allowable limits. Existing hangars that do not violate the Part 77 transitional height restrictions may remain.

The City will acquire additional property on the northwest side of the airport to construct replacements for the demolished hangars and to provide space for additional hangars to meet forecasted demand. Additional land beyond the new hangars will also be acquired by the city to assure the city can control development within the Runway Protection Zone (RPZ). Existing uses within the acquisition areas include residential, commercial, and vacant land.

Applicable Regulations

Federal, state, and local laws protect ecosystems because of the ecological and social functions and values of ecosystems (Table 1). The primary federal regulations or statutes that apply to fish, streams, and wildlife in the study area are the Endangered Species Act (ESA) and the Migratory Bird Treaty Act. State and local regulations that apply to these resources include the local sensitive/critical area ordinances. A general goal of these regulations is to protect water quality, shorelines, streams, and riparian areas and associated terrestrial habitats, as well as the species that depend on these areas.

Table 1. Federal, State and Local Regulations Pertaining to Fish, Wildlife, and Vegetation

REGULATION	OVERSEEING AGENCY	SPECIES AND HABITATS ADDRESSED
Federal		
Federal Endangered Species Act, 16 United States Code (U.S.C). 1531-1534	National Marine Fisheries Service (NMFS); U.S. Fish and Wildlife Service (USFWS)	Threatened and endangered fish, plants, animals and critical habitats
Fish and Wildlife Coordination Act	USFWS; WDFW, 16 U.S.C. 661-667	All fish and wildlife, especially riparian and aquatic wildlife
Magnuson-Stevens Fishery Conservation and Management Act, Section 305(b)(2)	NMFS	Essential fish habitat
Bald and Golden Eagle Protection Act	USFWS	Bald and golden eagles
Federal Migratory Bird Treaty Act, 16 U.S.C. 703-712	USFWS	Migratory birds
State		
Washington State Environmental Policy Act (SEPA)	City of Kelso	All fish and fish habitat.
Washington State Endangered Species Act, Washington Administrative Code (WAC) 232-12-297	Washington Department of Fish and Wildlife (WDFW)	All state-listed threatened and endangered species.
Washington State Fish and Game Code, Revised Code of Washington (RCW) Titles 75 and 77	WDFW	All state-listed priority habitats and species.
Washington Bald Eagle Protection Rules, WAC 232-12-292	WDFW	Eagle habitat

¹ Federal Aviation Regulation Part 77 (CFR 49 Part 77) which establishes standards for determining obstructions in navigable airspace.

REGULATION	OVERSEEING AGENCY	SPECIES AND HABITATS ADDRESSED
City		
Kelso Critical Areas Ordinance 18.20.090	City of Kelso	Designated fish habitat conservation areas; habitats for state- or federally listed endangered, threatened, or sensitive species and species of local importance

Fish habitat requirements are also considered under the other regulatory authority including the Water Resource Act (RCW 90.54), the state watershed planning (WRIA) process (173-500 WAC). The City of Kelso regulates fish and wildlife habitat by implementing critical areas regulations (KMC 18.20), as part of the Washington State Growth Management Act (RCW 36.70A.060). The city can also use its SEPA ordinances as regulatory protection mechanisms (197-11 WAC). Fish habitat is also addressed under both the State Shoreline Management Act (RCW 90.58) and the city's shoreline master programs KMC 18.08).

KLS is located with state-designated water resource inventory area (WRIA) 26 which includes the Cowlitz River and its tributaries, including the Coweeman River. Six species of salmonids spawn in WRIA 26. Restoration planning for these species has occurred through the *Lower Columbia Salmon Recovery and Fish & Wildlife Subbasin Plan* (LCFRB, 2004), the *Limiting Factors Analysis* (Wade, 2000), and other planning efforts. These recovery actions generally focus on improving water quality; improving freshwater, estuarine, and marine habitats; and controlling invasive plant species.

Methods

ESA biologists collected documented information on fish and wildlife species and their distribution and habitat within the project area by reviewing literature such as peer-reviewed articles in scientific journals, technical reports, and data from various state, county, and city agencies. The biologists also inspected aquatic and terrestrial habitat conditions within the project vicinity. The biologists generally looked for fish and wildlife habitat up to 0.25 mile from the proposed project, based on the approximate distance that the proposed project could affect habitat.

The biologists also reviewed reports from WDFW and other sources about the habitat associations and distribution of wildlife in the project vicinity. The WDFW Priority Habitats and Species (PHS) database provided information on specific locations of priority species and priority habitat. WDFW defines priority species as those species that are priorities for conservation and management. Priority species include state-listed endangered, threatened, sensitive, and candidate species; animal aggregations considered vulnerable; and those species of recreational, commercial, or tribal importance that are vulnerable. Priority habitats are those habitat types or elements with unique or significant value to a diverse group of species.

ESA biologists reviewed USFWS information about known or expected occurrences of species listed or proposed for listing under the ESA, as well as federal species of concern in Cowlitz County. To supplement the existing data, the biologists investigated field conditions, conducted surveys, and reviewed aerial photographs of the study area to categorize the general habitat types and to identify habitat within these cover types.

Existing Conditions

The project site is flat and is separated from the Cowlitz River by South Pacific Avenue and the BNSF railroad, both of which run parallel to the runway, as well as the Three Rivers Golf Course, which occupies the remainder of the floodplain between the project site and the river. The project site is separated from the Coweeman River by the developed portion of the airport and commercial and residential development. Residential development is present to the north of the site and State Route 432 is located to the south.

Vegetation and Wildlife

The predominant cover type in the study area is urban matrix. This cover type is dominated by commercial and residential areas with buildings, asphalt, ornamental gardens, lawns, and scattered trees and provides limited wildlife habitat. Wildlife use of the site is likely restricted to those species that have adapted to the urban environment and may include such bird species as European starlings, rock pigeons, American crow, American robin, Canada goose, and mallard as well as mammals such as opossum, raccoon, Norway rat, and coyote. The project site is dominated by mowed grass, structures, impervious surfaces, ornamental lawns and scattered nonnative vegetation. The lack of vegetation on the project site in addition to its proximity to roadways and industrial development reduces habitat availability for many species that would generally occur in the region (See Photos 1 and 2).

The most common hazardous wildlife frequenting the airport include blackbirds, European starlings, gulls (primarily glaucous-winged gulls), and waterfowl (ducks and Canada geese) (URS, 2011). Deer and coyotes irregularly use the airfield, but because of their propensity for causing damage, they are a substantial risk. Other species that may occur include American crows, bald eagles, great blue herons, rock pigeons, red-tailed hawks, and small mammals such as mice, voles, and rabbits. Coyote and deer trails are present through the two vegetated areas south of the new T-hangars (south of Taxiway N, east of Taxiway A).

Waterfowl are expected to be abundant around the airport from early fall through winter. The Columbia River and slough are natural travel corridors and feeding and resting areas. The golf course ponds, fairways, and greens also offer feeding and resting opportunities. Ditches, ponded water, and areas with temporary standing water at the airport are also attractive to waterfowl, although none of these features are present on the project site. Red-tailed hawks have been observed in the area of the airport south approach. Areas which contain unmaintained (unmowed) long grasses likely have increased rodent abundance, which likely also increases raptor use of the area. Areas of long grass are limited within the project site.

Fish and Aquatic Resources

The closest waterbody to the project site is the Cowlitz River (WRIA # 26.0002), over 1,300 feet (0.25 mile) from the project site. In addition, a tributary to the Cowlitz River, the Coweeman River (WRIA # 26.0003), is located about 3,000 feet (0.57 miles) to the east of the project site. The confluence of these rivers is located approximately 1 mile to the south-southwest of the project site.

The Priority Habitats and Species (PHS) List is WDFW's primary catalog of species and habitats of conservation and management concern. The PHS database indicates documented presence of Chinook, coho, and chum salmon, as well as steelhead, in both the Cowlitz and Coweeman Rivers (WDFW 2012). These species use the project vicinity primarily for migration to and from their upstream spawning grounds, although some rearing may occur in the area, particularly for coho salmon and steelhead. No bull trout use of the Cowlitz or Coweeman Rivers is indicated (WDFW 2012). Relatively large runs of culachon also occur within the Cowlitz River, which represents a core spawning area for population. Green sturgeon could enter the mouth of the Cowlitz, although they are distributed primarily within the mainstem Columbia River.

Existing Onsite Wildlife Management

In an effort to reduce the threat that wildlife pose to aircraft operations and take measures to mitigate these threats, KLS prepared a Wildlife Hazard Management Plan (WHMP) that presents guidelines the airport will implement in order to mitigate wildlife hazards, specifically wildlife strikes (City of Kelso, 2011). An example of measures within the WHMP to address coyotes and deer include appropriate wildlife fencing to exclude from the airfield, where feasible, and clearing and proper grading of several vegetated areas on the eastern portion of the airfield, which offer thermal and hiding cover and serve as a food source for coyotes, deer, and small mammals.

Canada geese and gulls are the species considered most hazardous at the airport. Grass management is a key approach to deterring both species from airfields. Proposed management techniques include seasonal mowing operations that will allow grass to grow taller in the fall and winter (to deter geese and gulls from loafing and feeding in these areas) while keeping it mowed in the spring summer (to deter grassland nesting birds from using the area). These species are also attracted to areas of standing water. The WHMP recommends that KLS monitor these areas and backfill or re-grade as necessary and maintain or line ditches to eliminate vegetation and enhance conveyance (City of Kelso, 2011). There are no plans at this time to remove or fill any wetlands.

As stormwater facilities can be a significant attractant for hazardous wildlife, any proposed onsite stormwater facilities will utilize proposed the Aviation Stormwater Design Manual developed by Washington State Department of Transportation. In addition, because of the extreme hazard wetlands pose (as a significant wildlife attractant), it is recommended as a basic safety obligation that, any opportunity to remove and replace onsite wetlands with offsite mitigation should be employed in the fundamental preservation of life and safety.

Since birds use many structures on an airport for perching, the airport will remove all unnecessary structures (e.g., old buildings and signage) that birds may use as perches, as well as dead trees (snags) found on airport property. Active nesting by hazardous birds, including bald eagles, will be discouraged by active harassment (under permit for eagles) and removal or modification of potential nest sites/trees.

Threatened and Endangered Species

The proposed airport project occurs within the general range of several species listed under the federal Endangered Species Act (ESA) as well as several species that have special designations under Washington State regulations. Additional information on threatened and endangered species in the project area can be found in the Draft Biological Assessment Letter of "No Effect" which determined that the project would have no effect on listed species (ESA, 2012).

Several federally listed wildlife species are known to be present within Cowlitz County, although no suitable habitat exists within the project vicinity for the majority of these species (see Appendix 1). Although a few harbor seals and California sea lions have been observed using haulout areas at the shoals formed at the mouth of the Cowlitz River, no reports of Steller sea lion use is known to occur in the project vicinity (Jeffries et al., 2000).

Listed Columbian white-tailed deer are closely associated with riparian habitats in the Lower Columbia River. The deer found on islands in the Columbia River use "tidal spruce" habitats characterized by densely forested swamps covered with tall shrubs and scattered spruce, alder, cottonwood and willows (USFWS, 2012a). Although Columbian white tailed deer utilize habitats on Cottonwood Island, about 1.8 miles south of the project area (WDFW, 2012), habitat for this species is absent within and directly adjacent to the study area (which is heavily developed and generates substantial disturbance from air, rail, and roadway transportation activities).

Bald eagle nests have been identified about 1.8 miles away to the south and east of the project site. These birds likely use the waters of the Cowlitz and Columbia River for foraging (WDFW 2012). Harbor seals, California sea lions, and osprey have also been observed at mouth of Cowlitz River.

The USFWS (2012b) identified three other federally listed wildlife species (gray wolf, marbled murrelet, and northern spotted owl), one federally listed plant species (Nelson's checkermallow), and one candidate species (North American wolverine) as occurring or potentially occurring in Cowlitz County.

Environmental Consequences

No Action Alternative

If the site were to continue in its current state, no additional impacts to vegetation, fish, or wildlife would be anticipated. The site is primarily vegetated with herbaceous weeds and grass species and on-going airport

maintenance or development would not result in significant impacts to vegetation. Wildlife use of the site is currently restricted to those species that have adapted to the urban environment and may include such species as European starlings, rock pigeons, American crow, American robin, raccoon, opossum, Norway rat, and coyote. The lack of vegetation on the site in addition to its proximity to the airport runway, roadways, and industrial development reduces habitat availability for many species that would generally occur in the region. As such, regardless of what uses might develop on the site with the No Action Alternative, no significant impacts are anticipated to fish, vegetation and wildlife.

Preferred Alternative

Construction Impacts

The discussion of construction impacts to vegetation and wildlife from the project alternative is focused on the indirect, off-site effects of grading necessary for construction of any facilities. During construction, demolition and grading would occur to remove existing structures on the sites as well as portions of existing taxiways. Clearing and grading will increase the potential for erosion in this area. In general, the potential for erosion and off-site transport of sediment is low, given the flat topography on the site. However, a ditched wetland is located near the work area on the south side of the project site (Wetland N on Figure 2). If sediment were to enter the ditch, it could eventually enter the Coweeman River through the drainage system.

Elevated noise levels can affect wildlife species and alter foraging, roosting, and nesting behavior. A temporary increase in noise will result from construction activities, including construction machinery such as backhoes, flatbed trucks, loaders, excavators, dump trucks, rollers, and pickup trucks. However, the project site is located in an urbanized industrial setting, immediately adjacent to a working airport runway and a heavily used rail line, and in the vicinity of Interstate-5 and SR 432. The site would remain mostly unvegetated and vegetation and other site conditions on airport property will continue to be managed to discourage bird and wildlife use of the site. Therefore, any noise disturbance from construction of the project will be approximately equivalent to existing noise disturbances. Wildlife located further from the project site, where suitable habitat conditions exists would not be negatively impacted.

Operational Impacts

The project will result in a slight net gain of impervious surface area (0.18 acres) that will have relatively minor use by aircraft and also include two small automobile parking areas. However, during normal rainfall events, all stormwater from the site will be collected and infiltrated, resulting in no negative changes to water quality or quantity. As a result, the overall pollutant loading and concentration of stormwater pollutant constituents (dissolved copper and zinc, total suspended solids) will not change as a result of the project. Likewise, because the project will infiltrate stormwater, runoff volumes within the project area would be maintained or slightly reduced, resulting in no change to the hydrology of the Cowlitz or Coweeman Rivers.

Mitigation Measures

No impacts to fish, wildlife or plants are anticipated as a result of the West Side hangar Development project other than temporary construction impacts. Implementation of best management practices (BMPs) described below and the distance of the project to fish-bearing surface waters would assure that no sedimentation or contaminants from project construction runoff would affect ESA-listed fish species. Therefore, no direct or indirect effects on listed fish species due to sedimentation would occur.

Applicable BMPs include:

- Development of a Temporary Sediment and Erosion Control (TESC) plan to be implemented during project construction. The TESC plan will specify BMPs for sediment and erosion control such as sediment fencing, erosion control blankets, and delineation of clearing and grubbing limits with high visibility fencing.

- Installing the TESC plan as shown by the Permit Submittal drawings.
- Complying with Sediment and Erosion Control Permit.
- Performing all land clearing activities during the dry season.
- Minimizing land disturbance to only that necessary to complete construction.
- Constructing stormwater treatment facilities to meet current design standards in accordance with applicable stormwater regulations.
- Complying with all requirements for storage, transport, and handling of hazardous waste.

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FIGURES AND PHOTOGRAPHS

reference # G:\WATER_RESOURCES\2011 Projects\211061_Kelso_Airport-Westside Hangar BA\08_CAD\dwg\KELSO_AIRPT_WTUNDS.dwg
Created by: DLP: 02/23/2012



SOURCE: ESA, 2012; GIBBS & OLSON INC, 2012

Kelso Airport . 211061
Figure 2
Wetland Survey Overview
Kelso, WA



Photo 1: A view looking northwest at Westland N (in middle of foreground) and the hangars to removed/reconstructed (left side of photo in distance).

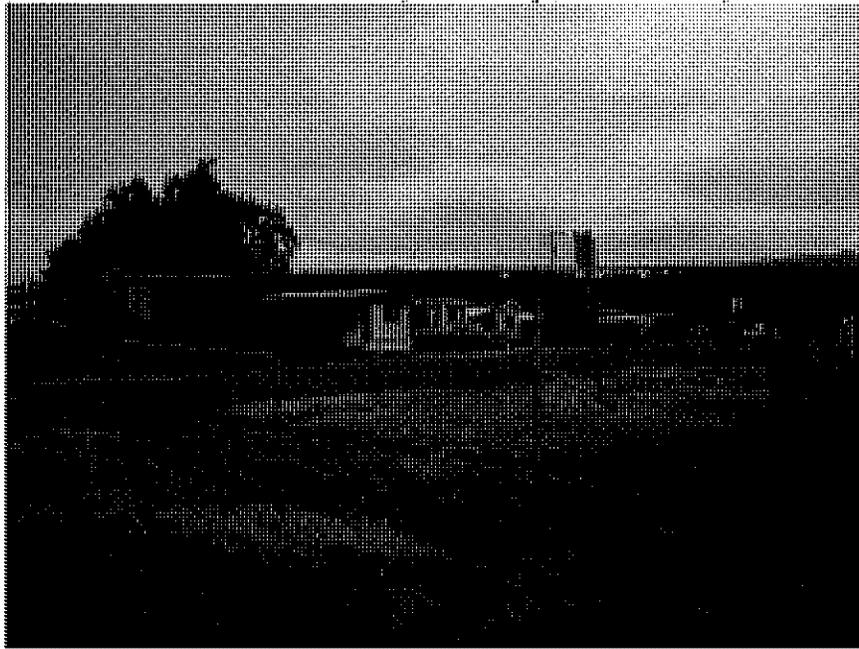


Photo 2: A view looking north at Colorado Street from South Pacific Avenue at the structures to be removed and replaced with a taxiway and new hangars.

**APPENDIX 1:
SPECIAL STATUS SPECIES LISTS**

Table A-1. Special Status Fish Species Potentially Present Within the Project Vicinity

Species (Scientific Name)	Population¹	Federal and State Status¹	Present Within Study Area? (Nearest Known Distribution)
Steelhead trout <i>Oncorhynchus mykiss</i>	Middle Columbia River DPS	FT, SC	No (Cowlitz River)
Chinook salmon <i>O. tshawytscha</i>	Lower Columbia River ESU	FT, SC	No (Cowlitz River)
Coho salmon <i>O. kisutch</i>	Lower Columbia River ESU	FT	No (Cowlitz River)
Chum salmon <i>O. keta</i>	Columbia River ESU	FT, SC	No (Cowlitz River)
Eulachon <i>Thaleichthys pacificus</i>	Southern DPS	FT, SC	No (Cowlitz River)
Green sturgeon <i>Acipenser medirostris</i>	Southern DPS	FT	No (Columbia River)
Bull trout <i>Salvelinus confluentus</i>	Columbia River DPS	FT, SS	No (Columbia River)
Coastal cutthroat trout <i>O. clarki clarki</i>	Southwestern Washington/ Columbia ESU	FCo	No (Columbia River)
Pacific lamprey <i>Lampetra tridentata</i>	N/A	FCo	No (Columbia River)
River lamprey <i>Lampetra ayresi</i>	N/A	FCo, SC	No (Columbia River)

¹ The ESA defines a "species" to include any distinct population segment of any species of vertebrate fish or wildlife. For Pacific salmon, NOAA Fisheries Service considers an evolutionarily significant unit, or "ESU," a "species" under the ESA. For Pacific steelhead, NOAA Fisheries Service has delineated distinct population segments (DPSs) for consideration as "species" under the ESA.

² FT = Federally Threatened, FE = Federally Endangered, FC = Federal Candidate, FCo = Federal Species of Concern, SC = State Candidate, SS = State Sensitive Species,

Table A-2. Special Status Wildlife Species Potentially Present Within the Project Vicinity

Species Scientific Name	Federal and State Status¹
Steller sea lion <i>Eumetopias jubatus</i>	FT, ST
Columbian white tailed deer <i>Odocoileus virginianus leucurus</i>	FT, SE
North American wolverine <i>Gulo gulo luteus</i>	FC, SC
Bald Eagle <i>Haliaeetus leucocephalus</i>	FCo, SS
Peregrine falcon <i>Falco peregrinus</i>	FCo, SS
Northern goshawk <i>Accipiter gentilis</i>	FCo, SC
Olivesided flycatcher <i>Contopus cooperi</i>	Fco
Cascades frog <i>Rana cascadae</i>	Fco
Columbia torrent salamander <i>Rhyacotriton kezeri</i>	Fco
Larch Mountain salamander <i>Plethodon larselli</i>	FCo, SS
Van Dyke's salamander <i>Plethodon vandykei</i>	FC, SC
Longeared myotis <i>Myotis evotis</i>	FC
Pacific Townsend's bigeared bat <i>Corynorhinus townsendii townsendii</i>	Fc, SC
Northwestern pond turtle <i>Emys marmorata marmorata</i>	Fco, SE

¹ FT = Federally Threatened, FE = Federally Endangered, FC = Federal Candidate, FCo = Federal Species of Concern, SC = State Candidate, SS = State Sensitive Species,

Appendix C

WATER RESOURCES TECHNICAL MEMORANDUM



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memorandum

date October 5, 2012

to Cayla Morgan
 Environmental Protection Specialist
 Federal Aviation Administration

from Ann Root, Adam Merrill

subject Southwest Regional Airport West Side Hangar Development Project Water Resources

This technical memorandum has been prepared to provide background information on water resources for development of the Environmental Assessment on the Southwest Regional Airport (KLS) West Side Hangar Development project. Water resources evaluated in this memorandum are water quality, wetlands, and floodplains. The memorandum describes:

- Water resources regulations applicable to the West Side Hangar Development project.
- Existing water quality of nearby water bodies based on existing databases.
- Potential for impacts to local water bodies from project runoff.
- Results of the Wetland Delineation Report prepared for the project (ESA, 2012).
- Extent of floodplains in the study area.

Based on this information, the memo evaluates the potential for water resources impacts from the West Side Hangar Development project and describes potential mitigation measures to minimize those impacts.

Project Description

The City of Kelso (City) proposes to implement improvements to its landside facilities on the west side of the Southwest Washington Regional Airport (KLS) (Figures 1 and 2). The improvements were identified in the 2011 Airport Master Plan (City of Kelso, 2011) to address conditions on the west side of the airport that deviate from FAA standards. The proposed West Side Hangar Development project will address these deviations. The proposed project includes:

- Increasing the Taxiway D separation distance. The required separation between the runway and taxiway is 240 feet, but Taxiway D is within 230 feet of Runway 12/30 in places. Taxiway D is too close to the runway and will be removed and relocated.
- Widening Taxiway D: The standard width for ARC B-II taxiways is 35 feet. Taxiway D is currently only 14 feet wide in places and will be removed and reconstructed.

- Removing obstructions from the Taxiway D and Taxiway E Taxiway Object Free Area (TOFA): Existing hangars that encroach on the TOFA and will be removed.
- Removing obstructions from the FAR Part 77 Surfaces¹: Existing hangars that penetrate the Part 77 transitional surface will either be removed, or modified to reduce their height to the allowable limits. Existing hangars that do not violate the Part 77 transitional height restrictions may remain.

The City will acquire additional property on the northwest side of the airport to construct replacements for the demolished hangars and to provide space for additional hangars to meet forecasted demand. Additional land beyond the new hangars will also be acquired by the city to assure the city can control development within the Runway Protection Zone (RPZ). Existing uses within the acquisition areas include residential, commercial, and vacant land.

Applicable Regulations

This section describes the water resources related regulations that are relevant to the West Side Development project. The Environmental Consequences section below describes how the project meets the requirements of these regulations.

Clean Water Act

The Federal Water Pollution Control Act, as amended (commonly referred to as the Clean Water Act [CWA]), 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.

In Washington State, the Department of Ecology (Ecology) is responsible for administering the state water quality certification program under Section 401 of the CWA. The U.S. Army Corps of Engineers regulates discharges of dredged or fill materials into waters of the United States, including wetlands, under Section 404 of the CWA.

Safe Drinking Water Act

The Safe Drinking Water Act is the main federal law that ensures the quality of Americans' drinking water. Pursuant to Section 1424(c) of the Act, the responsible FAA official needs to consult with the Environmental Protection Agency (EPA) regional office if there is potential for contamination of an aquifer designated by the EPA as a sole of principal drinking water resource for an area.

Executive Order 11990 (Protection of Wetlands)

Executive Order (E.O.) 11990 requires federal agencies to ensure their action minimize the destruction, loss, or degradation of wetlands. The order sets forth policy that transportation facilities should be planned, constructed, and operated to assure protection and enhancement of wetlands.

Executive Order 11988 (Floodplain Management)

E.O. 11988 directs federal agencies to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values served by floodplains.

¹ Federal Aviation Regulation Part 77 (CFR 49 Part 77) which establishes standards for determining obstructions in navigable airspace.

City of Kelso Municipal Code

Stormwater

The City regulates stormwater runoff through Kelso Municipal Code (KMC) Chapter 13.09 (Stormwater Management). KMC 13.09.040 requires use of the *City of Kelso Engineering Design Manual* for new development, redevelopment, and construction site activities. The manual contains requirements and technical details for stormwater modeling, facility design, and pollution and flow control.

Wetlands

The City regulates wetlands through KMC Chapter 18.20 (Critical Areas). KMC 18.20.080C requires project applicants to demonstrate that impacts to wetlands have been avoided and minimized to the extent possible before unavoidable impacts will be permitted. Mitigation for unavoidable wetland impacts is required.

Flood Hazard Areas

The City regulates “areas of special flood hazard” through KMC Chapter 18.12 (Floodplain Management). KMC 18.12.050 defines special flood hazard areas as “the land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year.” Flood hazard reduction standards are detailed in KMC Chapter 18.12, Article IV.

Existing Conditions

The project site is flat and is separated from the Cowlitz River by South Pacific Avenue and the BNSF railroad, both of which run parallel to the runway, as well as the Three Rivers Golf Course, which occupies the remainder of the floodplain between the project site and the river. The project site is separated from the Coweeman River by the developed portion of the airport and commercial and residential development. Residential development is present to the north of the site and State Route 432 is located to the south.

Water Quality

Currently, surface runoff on the project area flows generally southerly and is captured by a series of open swales, subsurface drains, and piping that flow to the City of Kelso drainage ditch system east of the airport (Reid Middleton, 2012). The city ditch system eventually discharges to a slough adjacent to the Coweeman River. A pumping station located on the slough pumps water over the levee into the river. Downstream of the airport, neither the Coweeman nor Cowlitz Rivers have any listed water quality impairments (Ecology, 2008).

Wetlands

In June 2012 ESA prepared a wetland investigation of the entire Southwest Washington Regional Airport property and the properties to be acquired north of the airport (ESA, 2012). The wetland investigation included a review of existing wetlands information and an onsite field study, conducted in October 2011. The onsite investigation identified 16 wetlands on the airport property, but none within 200 feet of the West Side Hangar Development project area (Figure 3a-c). In addition, the National Wetlands Inventory (USFWS, 2008) identifies several potential wetlands within the project vicinity, but none within 400 feet of the project area (Figure 4).

Floodplains

The project area is not located within the 1-percent-annual-chance (100-year) floodplain, as mapped by FEMA (2001). The project area is protected from Cowlitz River flooding by a levee operated by Cowlitz County Consolidated Diking Improvement District No. 3.

Environmental Consequences

No Action Alternative

Under the No Action Alternative, no new stormwater treatment facilities would be installed and stormwater would continue to drain to the Cowecman River. No ongoing maintenance projects at the airport are expected to impact wetlands. The airport property is not in a regulated floodplain, so projects under the No Action Alternative would not affect floodplains. However, Cowlitz County's floodplain maps are currently being revised by FEMA. Potential revisions under FEMA's Levee Analysis and Mapping Approach could cause the levee to be reclassified as no longer providing protection from the 1-percent-annual-chance flood. If this change occurs, KLS would be within the regulatory floodplain and future projects would need to comply with floodplain regulations (KCM 18.12). It is currently uncertain how FEMA will implement the Levee Analysis and Mapping Approach because of the controversy associated with decertifying levees.

Preferred Alternative

Water Quality

Construction

Construction of the West Side Hanger Development project will disturb a maximum of 12.36 acres, and an estimated 10,000 cubic yards of grading will occur (Reid Middleton, 2012). Disturbing soils during construction could potentially increase erosion and sedimentation, affecting the water quality of surface waters that ultimately flow to wetlands and streams. Accidental spills of fuel, oils, and other construction-related chemical pollutants could also present a risk to water quality in downstream waterbodies if appropriate protective measures are not implemented. To protect downstream water quality during construction, spill prevention and stormwater erosion control measures will be utilized (see Mitigation below).

Operation

After construction, the project will provide retention for the 100-year design stormwater and it is anticipated that all onsite surface runoff will be collected, treated, and discharged to infiltration systems (Reid Middleton, 2011) (Figure 2). The new stormwater infiltration systems will be designed according to the current Ecology Stormwater Management Manual, and will result in improved stormwater treatment compared to the existing system. Therefore, the project is not anticipated to negatively affect water quality. Stormwater protection will meet the requirements of the Department of Ecology and the City of Kelso as well as the Aviation Stormwater Design Manual developed by the Washington State Department of Transportation to minimize wildlife hazards on the airport property.

The project is not located within or near a sole or principal drinking water resource aquifer area, as identified by the EPA (2008). Therefore, the Safe Drinking Water Act does not apply to this project.

Wetlands

No wetlands are located within 200 feet of the project area; therefore, the project is not anticipated to affect wetlands and does not require further compliance with the CWA Section 404, EO 11990, or the City's Critical Areas regulations.

Floodplains

The project is not anticipated to affect regulatory floodplains. The project complies with EO 11988 and the City's floodplain regulations. As described under the No Action Alternative, potential revisions to county floodplain maps could cause the levee to be reclassified as no longer providing protection from the 1-percent-annual-chance flood and KLS would be within the regulatory floodplain and airport development would be required to meet City of Kelso floodplain management regulations (KMC 18.12).

Mitigation Measures

No Action Alternative

Any impacts to water quality, wetlands or floodplains caused by projects under the No Action Alternative would undergo separate environmental analysis and would comply with mitigation measures identified through that analysis. Projects would also comply with mitigation requirements of applicable federal, state and local regulations.

Preferred Alternative

Because the project will not impact wetlands or the regulated floodplain, no mitigation measures are necessary to protect those resources. The project is not anticipated to impact water resources except potential short term impacts during construction. The project will comply with appropriate best management practices (BMPs) to minimize construction impacts. A Temporary Erosion and Sediment Control (TESC) Plan will be developed in accordance with the State Construction Stormwater General Permit. BMPs will be designed in accordance with Ecology and City of Kelso stormwater management standards and may include:

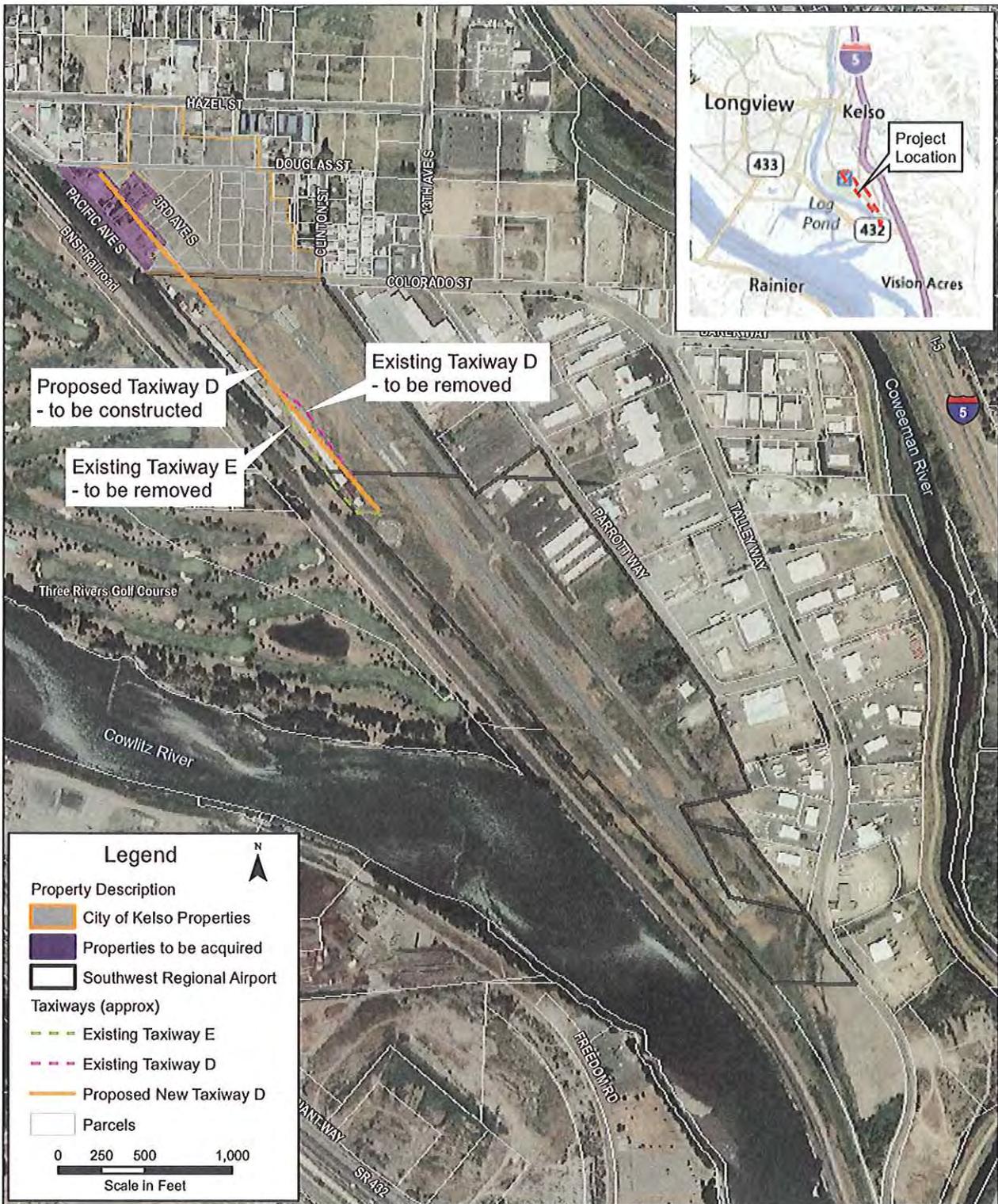
- Filter fencing,
- Inlet protection,
- Erosion control blankets, matting, and/or mulch covering,
- Chemical and solid waste handling procedures,
- Spill control and cleanup procedures,
- Construction boundary fencing to prevent the disturbance of sensitive areas,
- Temporary cover and restoration of disturbed areas, and
- Permanent cover and restoration of disturbed areas.

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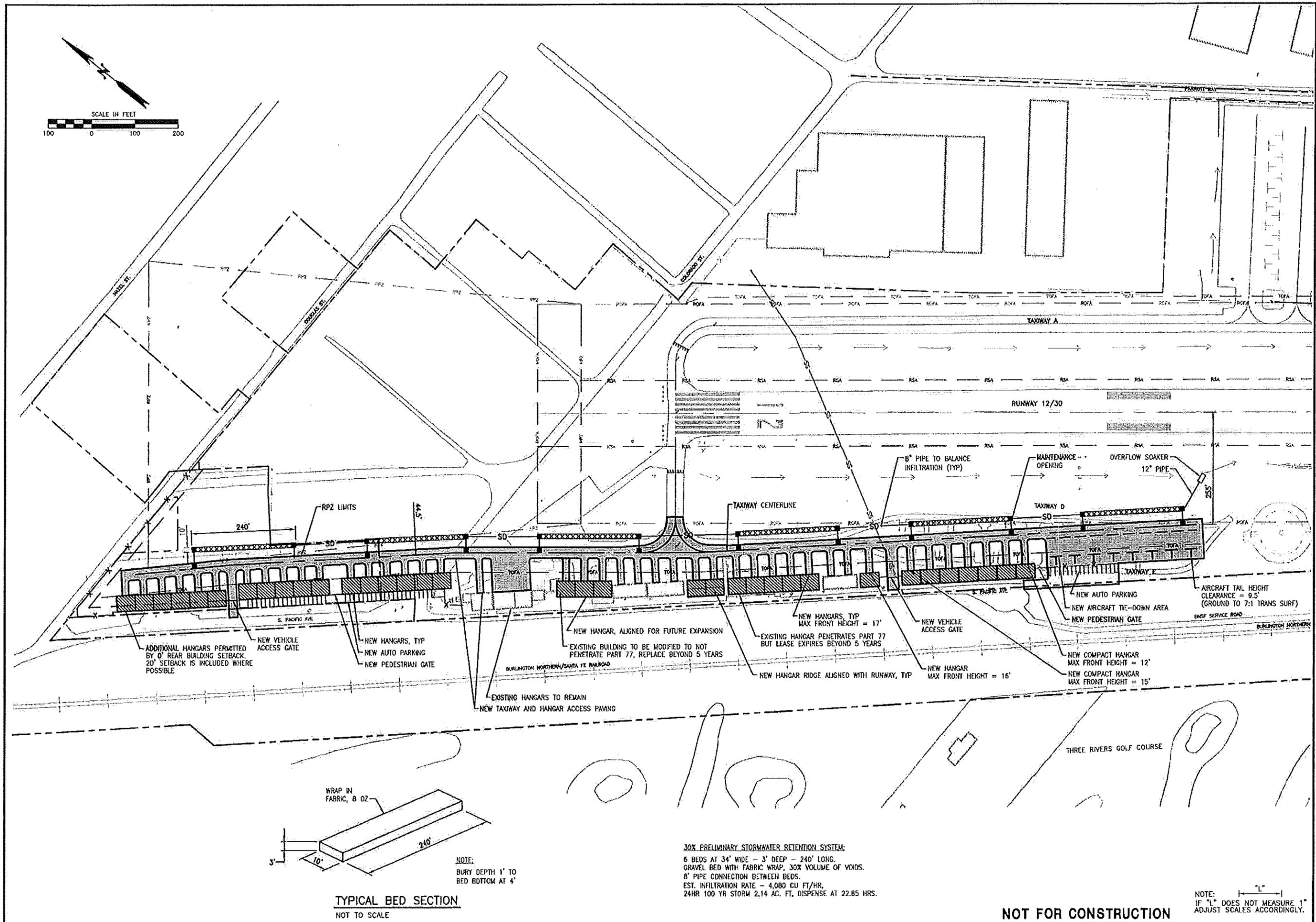
FIGURES

Path: S:\GIS\Projects\211xxx\211061 - Kelso Airport\MapDocs\Fig1-Vicinity-Arr.mxd (DLP, 4/18/2012)



SOURCE: Cowlitz County, 2010; Aerial (Microsoft Virtual Earth, 2009)

Kelso Airport . 2011061
Figure 1
 Vicinity Map
 Kelso, Washington



ADDITIONAL HANGARS PERMITTED BY 0' REAR BUILDING SETBACK. 20' SETBACK IS INCLUDED WHERE POSSIBLE

NEW VEHICLE ACCESS GATE

NEW HANGARS, TYP
NEW AUTO PARKING
NEW PEDESTRIAN GATE

NEW HANGAR, ALIGNED FOR FUTURE EXPANSION
EXISTING BUILDING TO BE MODIFIED TO NOT PENETRATE PART 77, REPLACE BEYOND 5 YEARS

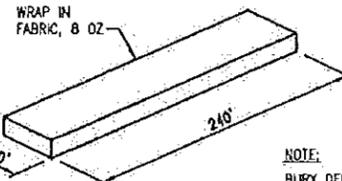
NEW HANGAR, TYP
MAX FRONT HEIGHT = 17'

EXISTING HANGAR PENETRATES PART 77 BUT LEASE EXPIRES BEYOND 5 YEARS

NEW HANGAR RIDGE ALIGNED WITH RUNWAY, TYP
NEW HANGAR
MAX FRONT HEIGHT = 16'

NEW AUTO PARKING
NEW AIRCRAFT TIE-DOWN AREA
NEW PEDESTRIAN GATE

AIRCRAFT TAIL HEIGHT CLEARANCE = 9.5' (GROUND TO 7:1 TRANS SURF)



TYPICAL BED SECTION
NOT TO SCALE

NOTE:
BURY DEPTH 1' TO BED BOTTOM AT 4'

30% PRELIMINARY STORMWATER RETENTION SYSTEM:
6 BEDS AT 34' WIDE - 3' DEEP - 240' LONG.
GRAVEL BED WITH FABRIC WRAP, 30% VOLUME OF VOIDS.
8" PIPE CONNECTION BETWEEN BEDS.
EST. INFILTRATION RATE - 4,080 CU FT/HR.
24HR 100 YR STORM 2,14 AC. FT. DISPENSE AT 22.85 HRS.

NOT FOR CONSTRUCTION

NOTE:
IF "L" DOES NOT MEASURE 1" ADJUST SCALES ACCORDINGLY.

728 134th Street SW - Suite 200
Everett, Washington 98204
Ph: 425 741-3800

Reid Middleton

CITY OF KELSO
SW WASHINGTON REGIONAL AIRPORT
WEST SIDE HANGAR DEVELOPMENT PLAN

SCALE	AS SHOWN
DES. ARM	INVENTORY NO.
DR. DJO	C4.0
CHK. DB	
DATE	NOV 2012
FILE NO.	23.2011.020

REVISION

Appendix D

LAND USE TECHNICAL MEMORANDUM



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memorandum

date October 5, 2012

to Cayla Morgan
Environmental Protection Specialist
Federal Aviation Administration

from Ann Root and Spencer Easton

subject Revised Southwest Washington Regional Airport West Side Development Project Land Use Technical Memorandum

This technical memorandum is being prepared to provide background information on land use for development of the Southwest Washington Regional Airport (KLS) West Side Hangar Development Environmental Assessment. The memorandum:

- Describes current parcel information for land areas immediately adjacent to the airport, including parcels owned by others that would be impacted by the proposed West Side Development project to determine compatibility with established land uses;
- Identifies potential impacts to land use; and
- Identifies potential Noise Sensitive Areas and compares adjoining land uses for compatibility per FAA Order 1050.1E Appendix A, Section 4 Table 1. The analysis is based on existing noise contours.

Project Description

The study area is located within the City of Kelso and encompasses the Southwest Washington Regional Airport property and smaller parcels to the north (Section 2, Township 7N, Range 2W) (Figure 1). The study area is generally bordered by the Cowlitz River, Three Rivers Golf Course, and a railway to the west; residential development to the north; industrial development, the Coweeman River, and Interstate 5 to the east; and the Coweeman River and Route 432 to the south.

The City of Kelso proposes to implement improvements to its landside facilities on the west side of KLS. The improvements were identified in the 2011 Airport Master to address conditions on the west side of the airport that deviate from FAA standards (City of Kelso, 2011). The proposed West Side Hangar Development project will address these deviations. The proposed project includes:

- Increasing the Runway/Taxiway D separation distance. The required separation between the runway and taxiway is 240 feet, but Taxiway D is within 230 feet of Runway 12/30 in places. Taxiway D is too close to the runway and will be removed and relocated.

- Widening Taxiway D: The standard width for ARC B-II taxiways is 35 feet. Taxiway D is currently only 14 feet wide in places and will be removed and reconstructed.
- Removing obstructions from the Taxiway D and Taxiway E Taxiway Object Free Area (TOFA): Existing hangars encroach on the TOFA and will be removed.
- Removing obstructions from the FAR Part 77 Surfaces¹: Existing hangars that penetrate the Part 77 transitional surface will either be removed, or modified to reduce their height to the allowable limits. Existing hangars that do not violate the Part 77 transitional height restrictions may remain.

The city will acquire additional property on the northwest side of the airport to construct replacements for the demolished hangars and to provide space for additional hangars to meet forecasted demand. The properties to be acquired are located in an unincorporated area of Cowlitz County. Existing uses within the acquisition areas include residential, commercial, and vacant land.

Applicable Regulations

Land Use and Zoning

The City of Kelso Land Use Map was adopted in May 1988 (Ord. No. 3093) and revised in July 1997. Most residential areas are east of Interstate-5 or in the north end of the city while commercial areas are generally in the north half of the city. The KLS and adjacent areas are located within an industrial area (Figure 2). The Three Rivers Golf Course area to the west of the airport is designated open space.

The KLS site is subject to City of Kelso zoning regulations. Adjacent properties to the north of KLS, including those proposed for acquisition, are subject to Cowlitz County zoning regulations. Information on KLS zoning designations is described below under Existing Conditions.

Comprehensive Plans

The City of Kelso Comprehensive Plan was adopted on September 2, 1980 and updated in 1987, 1992, and 1994. In regards to the airport, the Comprehensive Plan states:

Goal: To enhance the operations and facilities of Kelso Municipal Airport so as to better serve the industrial, commercial, and financial community of the region.

Policies:

1. The Kelso Municipal Airport should be reasonably and safely improved and maintained at a level to meet necessary service demands while limiting infringement on the residential and employment-generating industrial and economic growth occurring in South Kelso.
2. The city, through appropriate ordinances, should insure that there will be minimal conflicts between adjacent and nearby land uses and the airport.
3. If the Kelso Municipal Airport becomes capable of and desirable for supporting larger, perhaps noisier aircraft, i.e., small commercial jets, then approach zone land use restrictions should be researched and established.

¹ FAR Part 77 Surfaces refers to Federal Aviation Regulation Part 77, which establishes standards for objects affecting navigable airspace and sets requirements for proposed construction or alteration.

The Cowlitz County Comprehensive Plan was first written in 1966 and updated in 1976 and 1981. The County is currently undergoing a comprehensive update of the Plan. Transportation Goal F of the Plan is “to encourage airports and private landing strips to develop in a manner that avoids conflicts with adjacent land uses.” Goal F Policy 3 states: “Operators of airports facilities should consider acquisition of development rights, air rights (aviation easements) and land within approach and noise impacted areas to minimize encroachment problems” (Cowlitz County, 1981).

Existing Conditions

Land Use and Zoning

The KLS is located within a City of Kelso ILM (Light Manufacturing/Industrial) zone which extends from the BNSF tracks along the western boundary of the airport to the west bank of the Coweeman River on the east (Figure 2). The ILM zone extends south from the airport to State Route 432 and north, generally following along 13th Avenue South until reaching the southeast corner of the Central Business District. While ILM zoning would generally be considered compatible with airport operations, certain uses and activities permitted within the zone are not. Permitted but incompatible uses would include those sensitive to noise impacts or that allow large congregations of people. Airports are not specifically listed as a permitted or conditional use in an ILM zone.

The City of Kelso has enacted measures to protect the airport and surrounding airspace through establishment of an Airport Hazard Overlay Zone. The Overlay Zone, authorized under Section 17.56.010 of the Kelso Municipal Code, regulates or controls the various types of airspace obstructions and other hazards that may interfere with the safety of aircraft operations near KLS, including:

- The height of structures and objects of natural growth;
- Conditions or activities that may cause electronic interference with air navigation communication systems;
- Lights that may interfere with the airport lighting system;
- Conditions or activities that produce levels of smoke, dust or glare that would interfere with the safety of airport operations
- Conditions or activities that would create congregations of birds, which would create a hazard for operating aircraft (Ord. 3533 § 5, 2004; Ord. 3075 § 14.1, 1987).

The protections and land use prohibitions established under the Overlay Zone are applied to all land located beneath the FAR Part 77 Surfaces surrounding the airport within city jurisdiction.

The properties that will be acquired as part of the West Side Hangar Development project are within Cowlitz County. These properties are zoned Heavy Manufacturing (MH) by the county (Cowlitz County, undated). The properties are primarily residential. Six of the properties are residences, with a total population of 13 residents. The other two properties are businesses. One is a sheet metal fabrication shop and the other is a pump and well drilling business.

Land Values

The eight properties to be acquired have a total of ten parcel numbers. Based on information from the Cowlitz County Assessor, the total assessed land value for the ten parcels is \$320,520, while the assessed improvement value is \$312,300. For this total assessed value of \$632,820 for the eight properties, \$8,388 in property taxes was levied by the County in 2012.

Noise

The most recent noise contours were prepared for KLS in 2000 (City of Kelso, 2011). Although this information is dated, it provides general information about existing noise levels at KLS. These contours show that the properties north and east of the airport (including those to be acquired) experience between 55- and 60-decibel day-night sound levels. A portion of the Three Rivers Golf Course to the west of the airport experiences noise levels in the 60- to 65-decibel range.

Environmental Consequences

No Action Alternative

Under the No Action Alternative, the City would continue maintenance activities and safety improvements. These improvements are not expected to affect land use or increase noise.

Preferred Alternative

Zoning

The West Side Hangar Development project is compatible with City of Kelso and Cowlitz County zoning and planning. The Airport is within an industrial zoning area as well as an Airport Hazard Overlay Zone which discourages incompatible uses. The residential and commercial properties that would be acquired under the project are within the County's manufacturing zoning area. The properties would be replaced with uses more compatible to the industrial and manufacturing zoning in the area.

Property Acquisition

Eight properties located to the northwest of KLS would be acquired as part of the West Side Hangar Development project. The City of Kelso would purchase the properties and demolish the existing buildings in order to replace the hangars that must be demolished to clear the FAR 77 surfaces. The City would follow the Uniform Relocation Assistance and Real Property Acquisition Act (49 CFR Part 24) and the Washington State law covering property acquisition (RCW 8.12). These laws would apply to all property acquisitions needed for the project. Appropriate compensation would be provided consistent with applicable laws and procedures and would be available to all property owners affected by acquisition. Although the properties would be acquired following applicable regulations and relocation assistance would be provided, individual property owners would be impacted by the acquisitions.

Land Values

The City of Kelso would not pay property taxes on the acquired property. Therefore, the tax base of Cowlitz County would be reduced by approximately \$8,388 per year. This amount is not considered substantial and could be offset by the County not having to provide services to those properties in the future.

Noise

The Preferred Alternative is not a capacity project and would not change noise levels at KLS. The Preferred Alternative is intended to accommodate existing and forecast traffic in a more efficient manner. According to FAA Order 1050.1E, operations at KLS do not require a noise analysis. The proposed project is to accommodate Design Group I and II airplanes and forecast operations are less than 90,000 annual propeller operations or 700 jet operations (FAA Order 1050.1E, Appendix A, Paragraph 14.6a).

Mitigation Measures

No Action Alternative

No impacts to land use are anticipated under the No Action Alternative; therefore, no mitigation measures are required.

Preferred Alternative

Based on the analysis of zoning, land values, and noise, existing land uses are not incompatible with the West Side Hangar Development Project. Property acquisition would follow applicable federal and state regulations and adequate replacement housing and business locations are available. Therefore, there are no significant impacts that would require mitigation.

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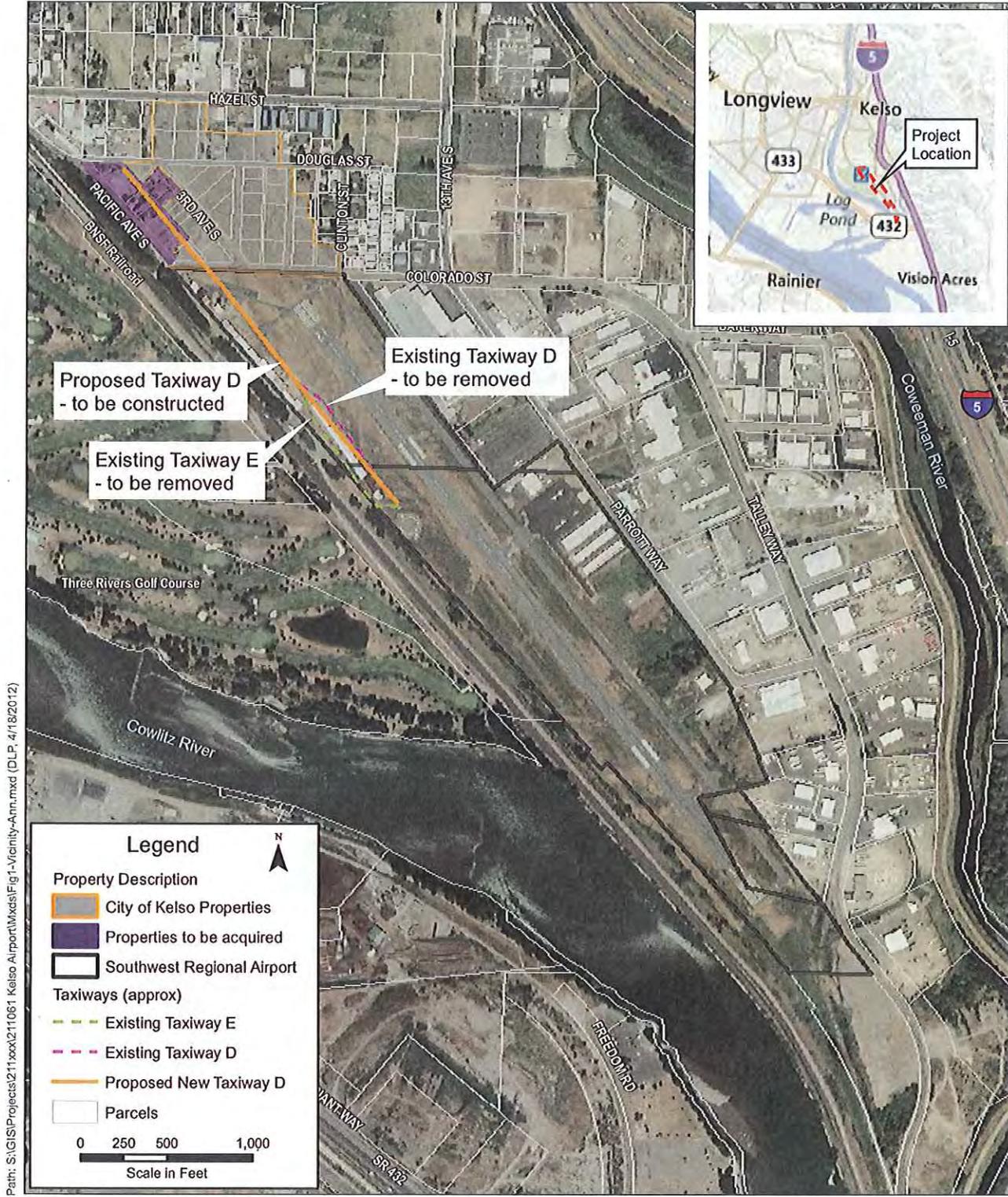
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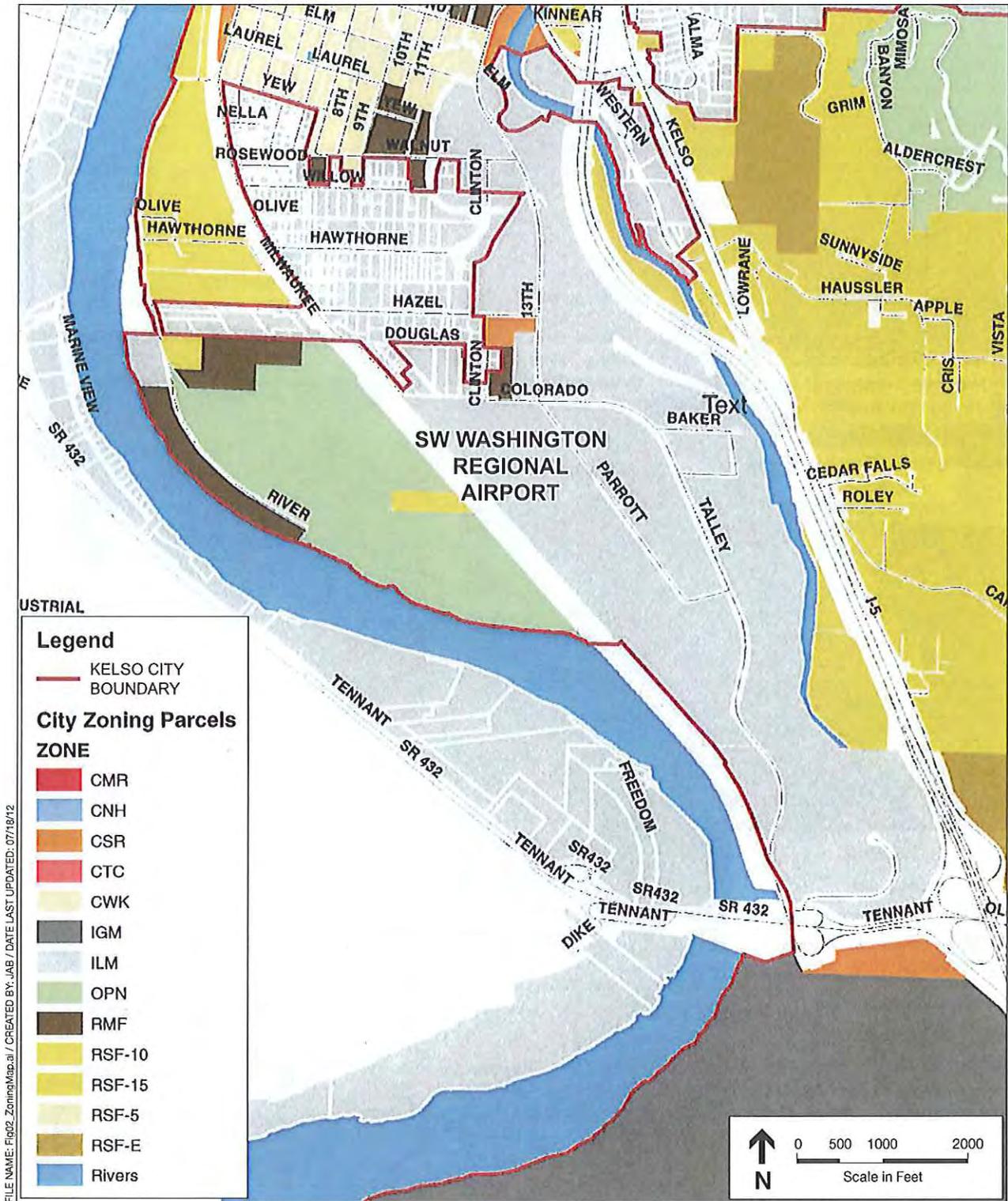
FIGURES



Path: S:\GIS\Projects\211\211061 Kelso Airport\Mxd\Fig1-Vicinity-Ann.mxd (DLP, 4/18/2012)

SOURCE: Cowlitz County, 2010; Aerial (Microsoft Virtual Earth, 2009)

Kelso Airport . 2011061
Figure 1
 Vicinity Map
 Kelso, Washington



FILE NAME: Fig02_ZoningMap.ai / CREATED BY: JAB / DATE LAST UPDATED: 07/18/12

SOURCE: City of Kelso, 2012.

Kelso Airport . 211061
Figure 2
 Kelso Zoning Map
 Kelso, Washington

Appendix E

CULTURAL RESOURCES ASSESSMENT

WEST SIDE HANGAR DEVELOPMENT PROJECT, KELSO, COWLITZ COUNTY, WASHINGTON

Cultural Resources Assessment

Prepared for
City of Kelso

October 2012

  **ESA** Paragon



West Side Hangar Development Project, Kelso, Cowlitz County, Washington

Submitted to
Reid Middleton
728 134th Street SW
Everett, WA 98204

Prepared for
City of Kelso

Prepared by
Bryan Hoyt, Katherine F. Wilson, M.A., Chris Lockwood, Ph.D. & Paula Johnson, M.A.

Contains Confidential Information – Not for General Distribution

ABSTRACT

ESA Paragon (formerly Paragon Research Associates, LLC) was retained by Reid Middleton, on behalf of the City of Kelso, Washington, to conduct a cultural resources assessment for the Southwest Washington Regional Airport (KLS) West Side Hangar Development project. The Federal Aviation Administration (FAA) is the lead federal agency for Section 106 of the National Historic Preservation Act compliance. The City of Kelso is proposing to make improvements to hangars and taxiways on the west side of the airport property to address deviations from FAA standards. The project will also involve purchasing eight parcels to the north of the airport. The project will include demolishing several existing hangars on airport property and multiple buildings currently on private property. Two structures on the airport portion of the project are considered eligible to the National Register of Historic Places; neither is slated for demolition and ESA Paragon considers that the project will result in No Adverse Effect to Historic Properties within the airport portion of the APE.

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1.0 INTRODUCTION

ESA Paragon (formerly Paragon Research Associates, LLC) was retained by Reid Middleton to conduct a cultural resources assessment for the West Side Hangar Development project at the Southwest Washington Regional Airport (KLS), City of Kelso, Cowlitz County, Washington. The airport is located near the confluence of the Cowlitz and Coweeman (aka Coweman) Rivers, in Section 2, Township 7 North, Range 2 West, on the Rainier, Oregon and Kelso, Washington 7.5' series topographic maps (Figure 1). The project encompasses 13 acres.

2.0 PROJECT DESCRIPTION

The City of Kelso proposes to implement improvements to its landside facilities on the west side of KLS. The improvements were identified in the 2011 Airport Master Plan to address conditions on the west side of the airport that deviate from Federal Aviation Administration (FAA) standards¹. The proposed West Side Hangar Development project will address these deviations. The proposed project includes:

- Increasing the Taxiway D separation distance. Taxiway D is too close to the runway and will be removed and relocated.
- Widening Taxiway D: Taxiway D is too narrow in places and will be removed and reconstructed.
- Removing obstructions from the Taxiway D and Taxiway E Taxiway Object Free Area (TOFA): Existing hangars encroach on the TOFA and will be removed.
- Removing obstructions from the FAR Part 77 Surfaces: Existing hangars that penetrate the Part 77 transitional surface will either be removed, or modified to reduce their height to the allowable limits. Existing hangars that do not violate the Part 77 transitional height restrictions may remain.

The city will acquire additional property on the northwest side of the airport to construct replacements for the demolished hangars and to provide space for additional hangars to meet forecasted demand. Additional land beyond the new hangars will also be acquired by the city to assure the city can control development within the Runway Protection Zone (RPZ). Existing uses within the acquisition areas include residential, commercial, and vacant land. Currently phased demolition is proposed for 2016 (on private property) and 2017 (on the airport property).

This work will involve demolishing seven existing hangars that violate FAR 77 surface restrictions. Residential buildings currently located on the property proposed for acquisition at the northwest corner of the airport will be demolished in the future.

The depth of disturbance for new hangar foundations and paving is not expected to exceed 3 feet.

¹ Federal Aviation Regulation Part 77 (CFR 49 Part 77) which establishes standards for determining obstructions in navigable airspace.

3.0 REGULATORY ENVIRONMENT

Federal funding of the West Side Hangar Development Project requires that the FAA comply with Section 106 of the National Historic Preservation Act (“Section 106”). Section 106 requires that FAA consider the effects of this undertaking upon Historic Properties within the project’s Area of Potential Effects (APE). Federal code implementing Section 106, found at 36 CFR 800, includes a requirement that an effort be made to identify Historic Properties. ESA Paragon conducted a cultural resources assessment of the APE in order to assist FAA in complying with Section 106 of the National Historic Preservation Act. This report documents all of the steps taken to consider the effects of the West Side Hangar Development Project on Historic Properties, and the results of the investigation.

4.0 AREA OF POTENTIAL EFFECTS

The APE for the West Side Hangar Development Project has been defined as a narrow, roughly rectangular area in the northwest corner of the Kelso Airport (Figure 1). The APE extends roughly from Douglas Street in the north to the southernmost extent of Taxiway D in the south. The western boundary is South Pacific Avenue. The eastern boundary is irregular and runs roughly from the east side of Taxiway D and follows parcel boundaries.

The APE encompasses the northwest corner of Southwest Washington Regional Airport, including the collection of hangars and other structures adjacent to South Pacific Avenue. The APE also includes eight privately owned parcels along South Pacific Avenue (Parcel Numbers 23156, 23157, 23158, 23159, 23160, 23161, 23167, and 23168).

Construction haul routes have not yet been identified; however, access will likely be from South Pacific Avenue to the west of the APE in order to avoid construction travel across the runway. Routes would follow established roads once outside the airport property.

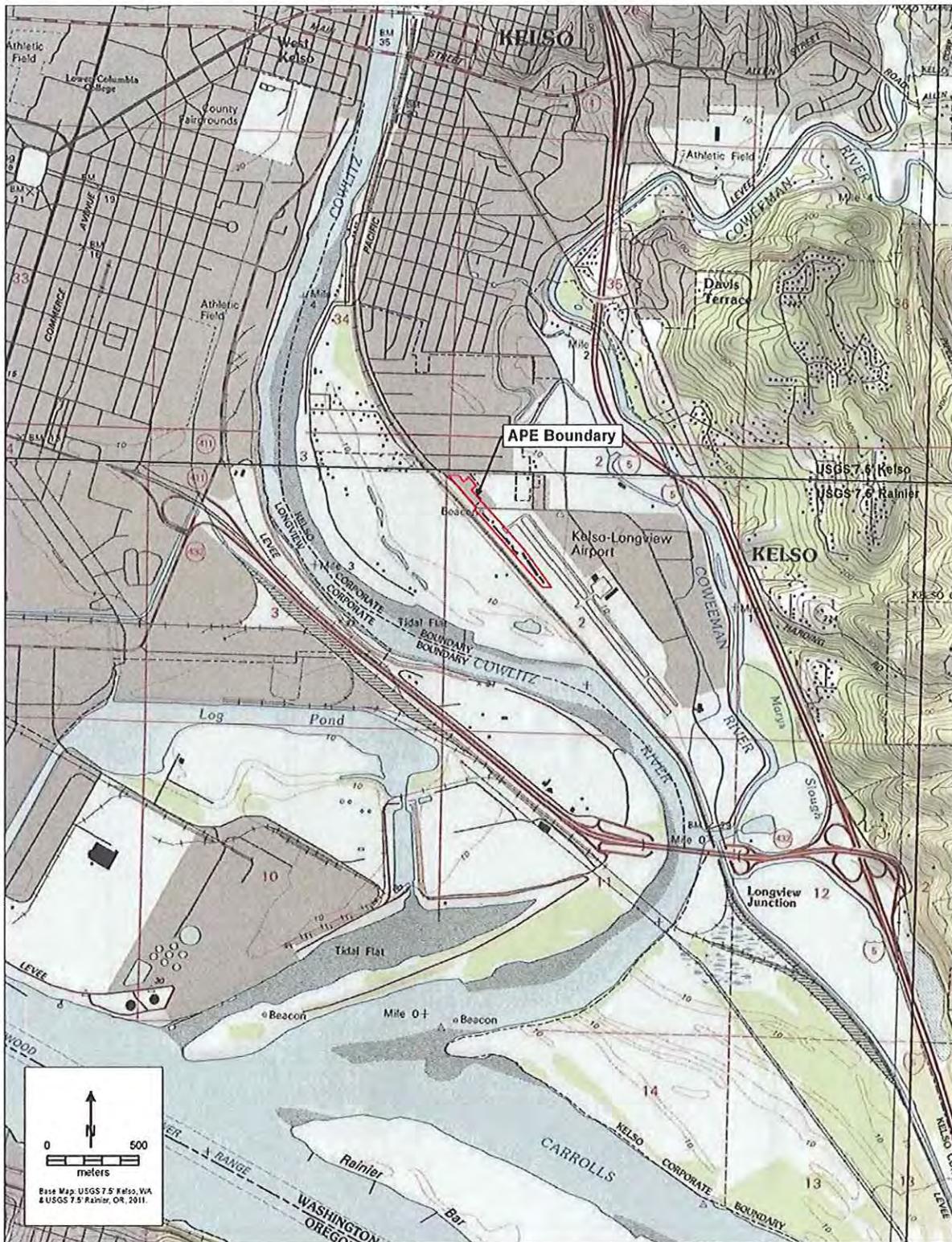


Figure 1. Location of West Side Hangar Development Project.

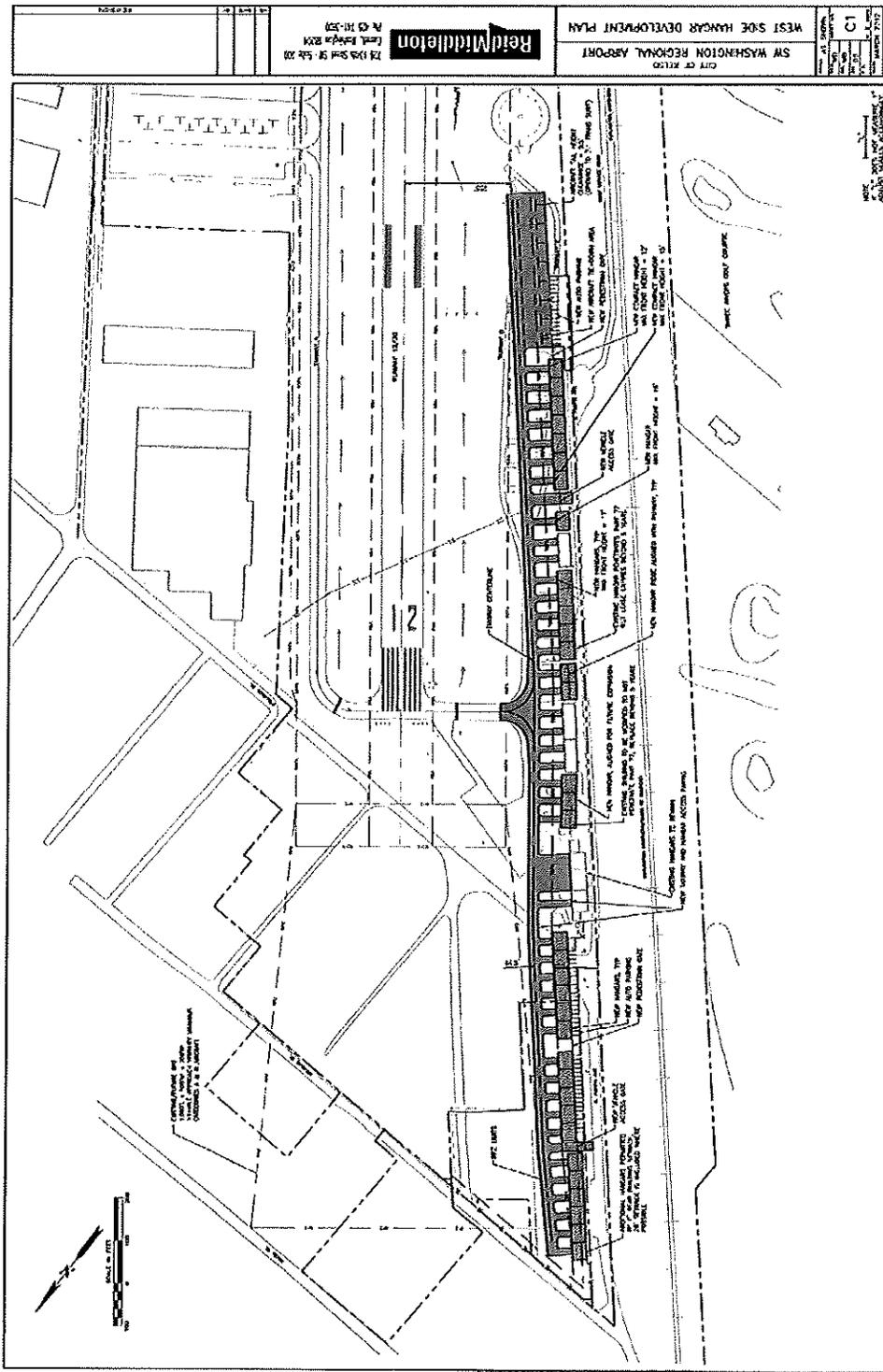


Figure 2. Schematic of proposed work at the Southwest Regional Airport Project.

5.0 BACKGROUND RESEARCH METHODS

ESA Paragon conducted a literature review of the West Side Hangar Development project vicinity (extending 1 mile in every direction from the footprint of the APE). Information reviewed included previous archaeological survey reports, ethnographic studies, historic maps, government landowner records, aerial photographs, regional histories, and environmental records. These records were reviewed in order to understand the natural and cultural history of the APE and to assess the potential for significant cultural resources within the APE. Relevant documents were examined at the Southwest Washington Regional Airport, DAHP, the University of Washington Libraries, online, and ESA Paragon's research library.

6.0 ENVIRONMENTAL SETTING

6.1 Geomorphology

The geology of the general area around Kelso consists of a sequence of Eocene through Miocene volcanics, including the well-known Columbia River Basalts, overlain by Pliocene-aged conglomerates (Livingston 1966). Retreat of the Cordilleran Ice Sheet from northern Washington and Idaho during the late Pleistocene released vast quantities of water and sediments, which found their way into the major river channels of the region, and were eventually redeposited as unconsolidated sand, silt and gravel. Occasional, ice-rafted glacial erratics are present along lower elevations of the Columbia River. During the Holocene, sediments have been reworked primarily by fluvial processes of flooding, erosion, deposition, and channel migration. The bluffs around Kelso, particularly in the vicinity of Haussler Way, are well known for landslide hazards, although there is no evidence that landslide deposits extend into the APE.

Situated on a low lying floodplain between the Coweeman River and the Cowlitz River, and near the confluence of these two rivers with the Columbia River, the geomorphology of the airport landform is especially dominated by the rivers. Large magnitude floods have occurred in the historic period. In 1867, a major flood washed away the town of Monticello, while another flood in 1933 destroyed railroad tracks, roads, and bridges in the area (Buffum et al. 2007:15). It is expected, however, that more frequent, smaller magnitude fluvial events in the past were at least as significant in contouring the landform. It is likely that seasonal floodplain inundation occurred throughout much of the Holocene, incrementally building the landscape over centuries. If people lived or engaged in subsistence activities, such as hunting, gathering, and fishing, in the vicinity of what is today the airport, traces of this human presence could be buried, perhaps deeply. Furthermore, analysis of aerial and satellite images suggest some history of channel migration by the Cowlitz and Coweeman, as well as some smaller, local streams. Therefore, in some places, evidence for past human activity (if ever present) may already have been eroded and removed by channel cutting and filling.

6.2 Soils

Soils in the vicinity of Kelso-Longview Airport tend to be relatively fine grained loamy textures—silt loam, silty clay loam, fine sandy loam, and loamy fine sand (NRCS 2011). All soil

types are developed on alluvial parent material deposited on low lying, relatively flat floodplains. Soil textures presented below are typical for soil types, and actual conditions within the APE may vary.

The northern half of the airport has been constructed on Newberg fine sandy loam, with fine sandy loam (0-10" bgs), overlying medium to very fine sandy loam (10-28" bgs), overlying fine sandy loam/loamy fine sand/loamy very fine sand. The southern half of the airport has been constructed on Clato silt loam, with silt loam from surface to termination (0-80" bgs). Both Newberg and Clato are described as well drained. To the north, small pockets of Caples silty clay loam interfinger with Newberg and Clato. Caples consists of somewhat poorly drained, silty clay loam from surface to termination (0-60" bgs).

The soils reflect a long history of alluvial deposition during flood events of variable magnitude. Compared to soil types with poor drainage (Caples and Riverwash), well drained to excessively well drained soil types (Newberg, Clato, and Pilchuck) may have represented more favorable areas for human occupation and terrestrial subsistence activities in precontact and ethnohistoric periods.

6.3 Flora and Fauna

The project falls within the *Tsuga heterophylla* vegetation zone, which encompasses most of western Washington (Franklin and Dyrness 1988). Vegetation is typical of southwestern Washington and northwestern Oregon with Douglas fir (*Pseudotsuga taxifolia*), western hemlock (*Tsuga heterophylla*), and western red cedar (*Thuja plicata*). Western red cedar prefers poorly-drained river bottoms, and the Douglas fir and western hemlock occupying well-drained valley and upland slopes (Livingston 1966:14). Additional native species characteristic of this environment include a variety of ferns, Oregon grape, ocean spray, blackberry, and red huckleberry. The natural vegetation of the APE has been largely disrupted by infrastructure development and urbanization. Native fauna of the *Tsuga heterophylla* zone include deer, cougar, elk, bear, coyotes, beaver, skunk, quail, grouse, weasel, muskrat, and river otter. The location of the APE near the confluence of two major rivers – the Cowlitz and the Columbia – as well as its proximity to the Columbia River indicates that a variety of fish, particularly salmonids, would have been seasonally available.

7.0 ETHNOGRAPHIC BACKGROUND

7.1 Overview

The Southwest Washington Regional Airport is located within the traditional territory of speakers of the Cathlamet dialect of Upper Chinookan; the Cathlamet name was derived from a village on the Lower Columbia River (Silverstein 1990:534). Members of the Cathlamet language group share cultural traits with the larger cultural group referred to by some anthropologists as the Lower Columbia River Chinookans (Silverstein 1990:533). Historically the Chinookans language group was composed of individual bands with separate villages; various and sometimes conflicting names have been used to distinguish between these bands. Names used for these people include Skilloot, Cathlamet, Kathlamet, and Seamysty (Spier

1936:21-23). Despite these confusing historical attempts at identifying and distinguishing these people from their linguistic and cultural neighbors, sources agree that they occupied villages located at the mouth of the Cowlitz River (Silverstein 1990:534).

Cultural practices among the Chinookan cultural group during 1800-1850 were documented by explorers and traders as they traveled through the area. By the beginning of the 19th century, populations had already been severely impacted by the introduction of smallpox, measles, malaria, and other devastating diseases (Silverstein 1990:535). The Chinookan culture group used a subsistence pattern based on hunting, fishing, berry and root gathering. Locations for these resources dictated where groups were at particular times of the year. Of note for the Southwest Washington Regional Airport Project is the importance of swamps and lakes which were sources for gathering staples like wapato and camas. Currency items were *Dentalium* shells, beads introduced by European traders, and beaver and sea otter pelts.

Permanent villages were occupied in the winter months and usually consisted of several gable-roofed cedar-plank houses. Seasonal housing at resource gathering locations usually consisted of temporary frame structures covered with cattail mats or cedar bark. Typical household items among the Chinookan culture group consisted of the following materials: wood, bone, shell, antler, horn, spruce roots, beargrass, cattail rushes, and cedar bark. Stone was used for net-weights and heated for cooking uses.

Burial practices among the Chinookan culture group included elevated canoe burials (on posts or in trees) and elevated burial boxes; over time the burial containers would collapse and the remains would come to rest on the ground below (Silverstein 1990:543-544).

7.2 Ethnographic Resources within the Project Vicinity

Villages reported from 1792-1850 in the project vicinity included *Wiltkwilluk* at the town of Rainier opposite the mouth of the Cowlitz River and *qašiamišti* or “those places of the beak” near the mouth of the Cowlitz River (Ray 1974; Silverstein 1990:534). Additionally, a group identified as the Skilloot in 1806 by Lewis and Clark were reported to have villages on both sides of the Columbia at the mouth of the Cowlitz River. The principal village was on the Cowlitz River a few miles from its confluence with the Columbia River (Spier 1936:22-23). Another source describes the Cowlitz villages of *Awí'mani'* at the mouth of the Coweeman River and *Manse'la* located at present-day Longview (Swanton 1984:442). The villages at the mouth of the Cowlitz River were reported by some observers to be occupied by people identified as Cowlitz and Chinookan (Hajda 1990:505).

8.0 HISTORIC BACKGROUND

8.1 Overview

Early survey maps describe the natural environment and growing settlements around the APE in the late 1800s (US Surveyor General 1857a, 1857b, 1863a, 1863b). Many small sloughs, marshes, and prairies of “course grass” were noted, along with small islands at the mouth of the Cowlitz (Figure 3). A trail was mapped along the east side of the Cowlitz River, running

roughly NW-SE, and crossing through a prairie that dominated most of Section 2, crossing the Coweeman River at its confluence with the Cowlitz, and continuing south where it then passed by a marsh. Field notes at the time identified this route as the Monticello-Vancouver Trail.

On the west side of the Cowlitz River, opposite the Southwest Washington Regional Airport, was the town of Monticello. It was described in the survey field notes as:

“a good site for a village on the claims of H. D. Huntington and R. C. Smith. It contains several houses, three stores, a Catholic Church, a Blacksmiths shop and 20 to 50 inhabitants. It is not growing very rapidly. The banks are high, and above ordinary high water. Soil 1st rate, but banks are washing away. The level of the land is higher upon the immediate bank of the river, than a short distance back” (US Surveyor General 1857a).

The field notes also describe a post office, the Monticello Hotel, and “Hudson’s Bay Company have [*sic*] a small trading post here” (US Surveyor General 1857a).

The history of Monticello has been described in detail on a National Register of Historic Places nomination form, prepared in relation to an important event that occurred here in 1852 (Gillespie 1974). Named after President Thomas Jefferson’s home, Monticello was founded in 1849 (Phillips 1972:92). The location of Monticello and the Huntington donation land claims are confirmed on early survey maps (US Surveyor General 1857a, 1863a). Monticello was destroyed by flooding in 1867. The location was within the present-day city boundaries of Longview.

The Hudson’s Bay Company (HBC) presence at the mouth of the Cowlitz River was in fact a small receiving post, not a trading post as recorded during the 1857 survey (Clanfield 1979:25). Identified as the “Caweeman Post” in some accounts, it was constructed in 1845 for the purpose of temporarily storing products in transit from the HBC farm at Cowlitz Prairie to Ft. Vancouver (Urretia 1998:28-29). Caweeman Post was small and consisted of two warehouses and a residence on the west bank of the Cowlitz River (Clanfield 1979:25-40; Urretia 1998:28-29). It was described in the journals of Kelso’s founder Peter Crawford during his first journey up the Cowlitz River in 1847 (Summers 1982:86). It was abandoned c. 1850 after the closing of the Cowlitz Farm, and left in the care of former HBC employees Joachim Thibeault and Antoine Gobin. Gobin was a stockman who tended cattle on the east bank of the Cowlitz River, near the present-day location of Kelso Airport. Both Gobin and Thibeault had Native American wives (Clanfield 1979:35).

The Cowlitz River Valley was a major transportation corridor for goods and people, used by both Native Americans and Euroamericans (Wilma 2005). In the 19th century small towns were established along the route by settlers, including Crawford. In the early 1920s the town of Longview was established on the opposite side of the Cowlitz by the Long-Bell Lumber Company (McClary 2008; Owen 1925). Taking advantage of the confluence of the Columbia and Cowlitz Rivers and extensive surrounding forests, the Long-Bell Lumber Company started operations here in 1924 and is still in use today under different ownership.

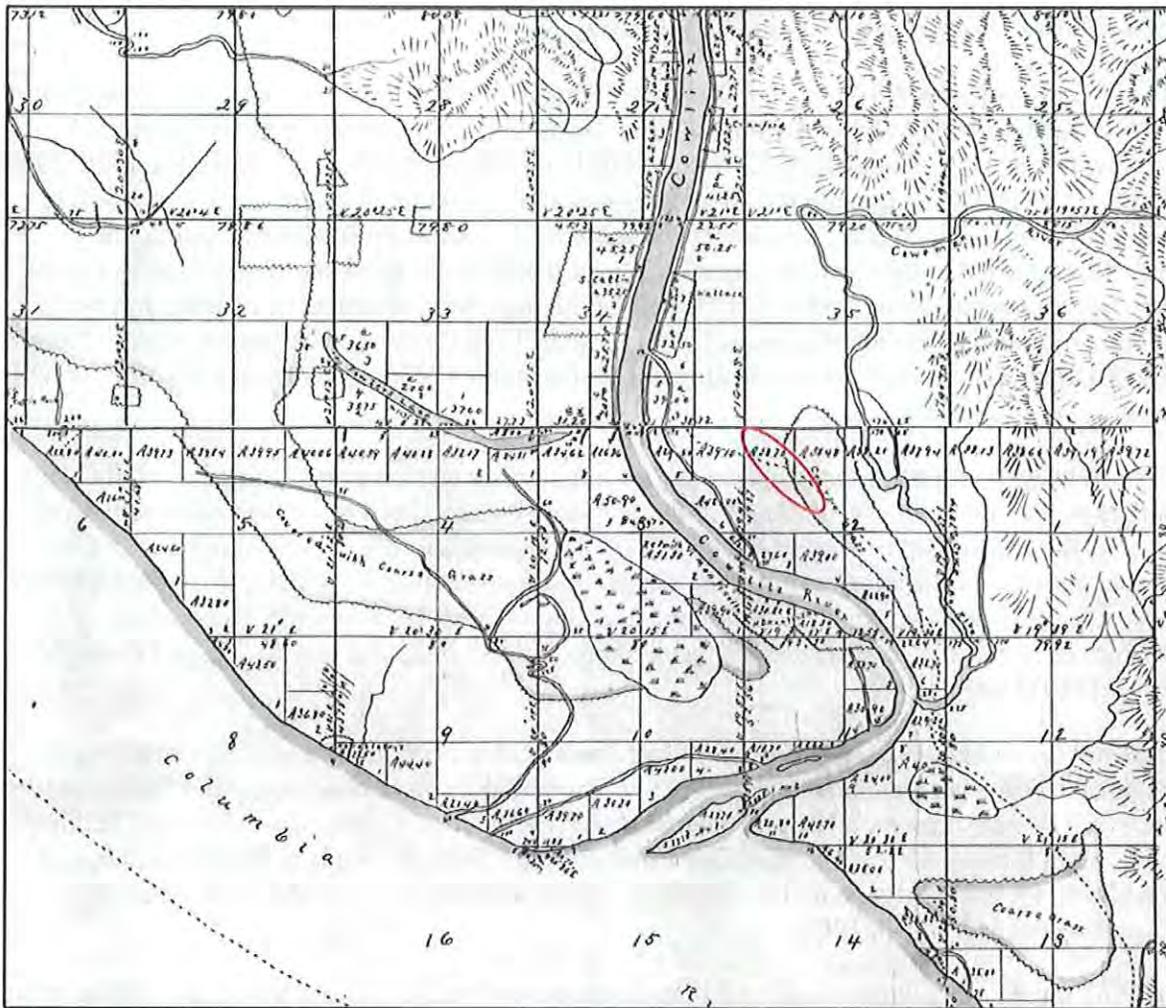


Figure 3. Red circle identifies approximate APE location on an 1857 survey map (US Surveyor General 1857a, 1857b).

8.2 Historic Resources within the Project Vicinity

Northern Pacific Railroad

The Northern Pacific Railway Company (NPRR) began surveys for its Kalama-Puget Sound segment in 1868; construction was underway by 1870 and in 1872 a station was built at Kelso by Peter Crawford; the 1872 station and expanded 1911 station were both located in downtown Kelso, well outside of the airport vicinity (Jones & Stokes 2003:2-7). The NPRR grade followed the east side of the Cowlitz River through rights-of-way obtained from property owners whose lands later became the site of the Southwest Washington Regional Airport; these landowners included Victor Wallace, Daniel Huntington, and James Huntington.

Southwest Washington Regional Airport

The Kelso-Longview Airport (later Southwest Washington Regional Airport) was founded in 1931 following the purchase of a former dairy farm. County atlases identify the previous landowners as C. A. Bradt and J. D. McGowan (Kroll Map Company 1927; Metsker 1925, 1936, 1942, 1956, 1968). Originally the airport consisted of a grass landing strip; this was paved in 1950 (City of Kelso 2011). The airport was intended for use as an emergency landing or refueling location but grew to accommodate local interests. In 1936 land was leased to Earl O. Sanders for hangar space, and in 1939 the Kelso Flying Club constructed a hangar. In 1941 a Weather Reporting Station was moved to the Airport from Castle Rock (Jones & Stokes 2003:3-3). An aerial photograph from 1944 shows a sparse number of structures at the Airport during its early years (Figure 4).

A short history of the Airport prepared for the anniversary edition of the Longview Daily News serves as the best available summary of the Airport's history (Pollock 1963). According to this source, the Kelso Airport was established in the 1930s and was not improved upon until after World War II. These improvements are visible on a map (Figure 5), which color codes features dating to 1953 or earlier in black and features dating to 1954-1970 in pink. According to this source, there are four hangars and a beacon dating to 1953 or earlier and six hangars dating to 1954-1970 (USGS 1970).

In 1960 the runway was extended 1,000 feet southward to accommodate aircraft with two engines, in 1961 runway lights were added to accommodate night operations, and finally in 1963 a 2-story administration building was constructed (Pollock 1963). The administration building measured 28 feet x 40 feet and included a waiting room, lounge, fireplace, lunch counter, and classroom for student flyers on the first floor with an apartment on the second floor for the airport manager (Pollock 1963).

In 1963 the day-to-day operation of the Airport was directed by Mr. and Mrs. Larry Davis of the Davis Flying Service. Leslie Miller served as the Kelso Airport Board President and Don Bell as Board Secretary. There were 20 to 25 planes stored in hangars at the Kelso Airport in 1963. A photograph accompanying the article shows a row of buildings in the northwest corner of the airport; these include (from south to north) the Davis Air Service building, the Twin City Flying Club building, and the Airport Beacon. Airport revenue during 1963 came from hangar rentals, gasoline sales, and occasional hay crops.

Major improvements in 1980 included reconstruction and realignment of the runway as well as construction of a parallel taxiway (City of Kelso 2011). Currently there are 70 hangars, 30 of which are on the east side and 40 on the northwest side of the runway; hangars and tie down space are leased by the Airport (City of Kelso 2011).

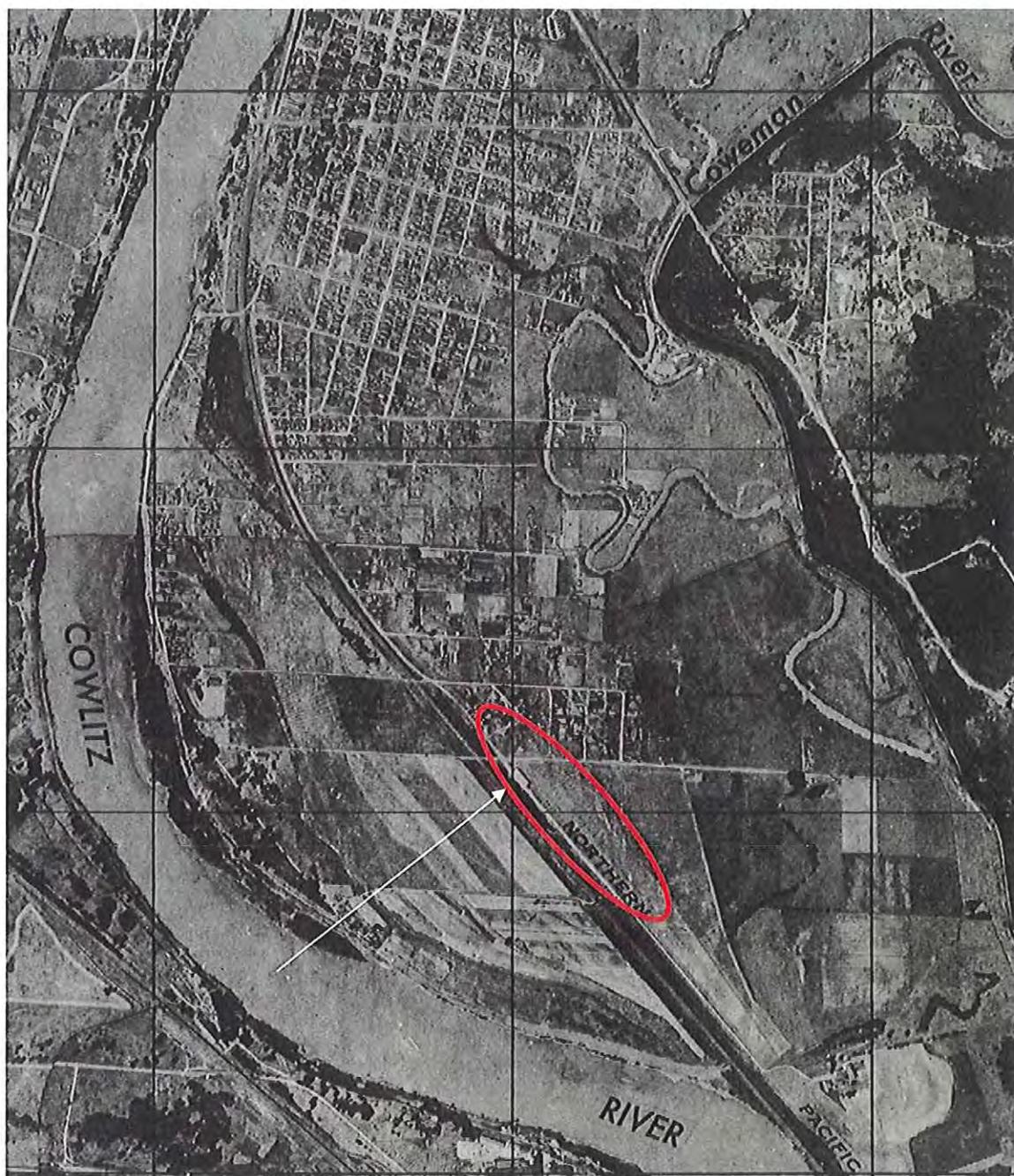


Figure 4. Aerial photograph showing the Kelso Airport and surrounding land in 1944 (USACE 1944). Arrow points to existing hangars within approximate APE boundary (red oval).

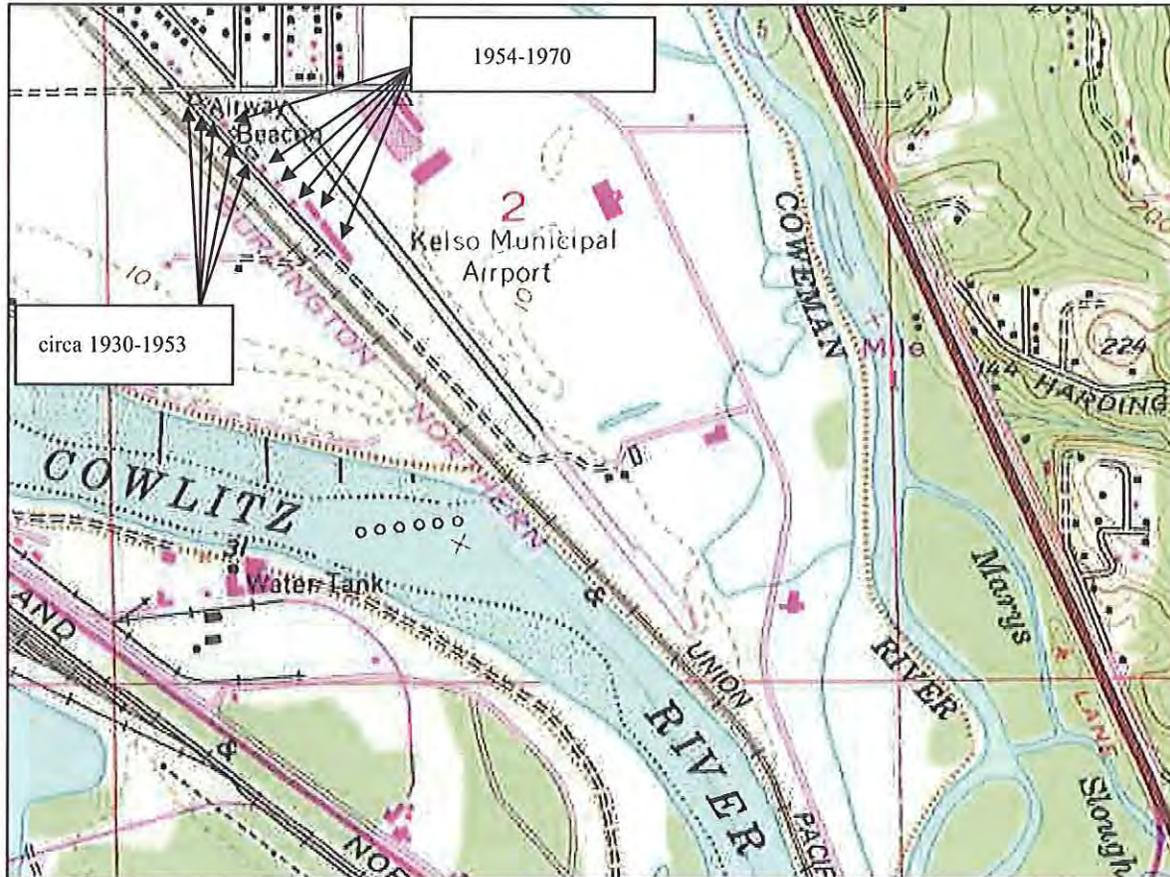


Figure 5. Airport improvements through 1970 (USGS 1970). Pink features are post-1953, black features date to circa 1930-1953.

8.3 Information from Airport Staff

During the initial day of the field survey ESA Paragon Archaeologist Bryan Hoyt met with Dan Johnson, Airport Operations Manager. Mr. Johnson stated that the southern set of hangars within the APE (five hangars located approximately 30 meters in from the airport boundary fence line) was constructed in 1965. Mr. Johnson then contacted Don Bell, Board Secretary of the airport during the 1960s, and who had worked at the airport since “the runway was dirt” (Dan Johnson, personal communication). Mr. Bell confirmed that these southern hangars were constructed sometime between 1965 and 1967.

A 1968 aerial photograph (Figure 6) at the Airport’s facilities building shows the existing airport infrastructure within the APE as of 1968. Using this in tandem with archival research, ESA Paragon identified properties which meet the age threshold of 50 years and recorded these properties on Historic Property Inventory Forms.

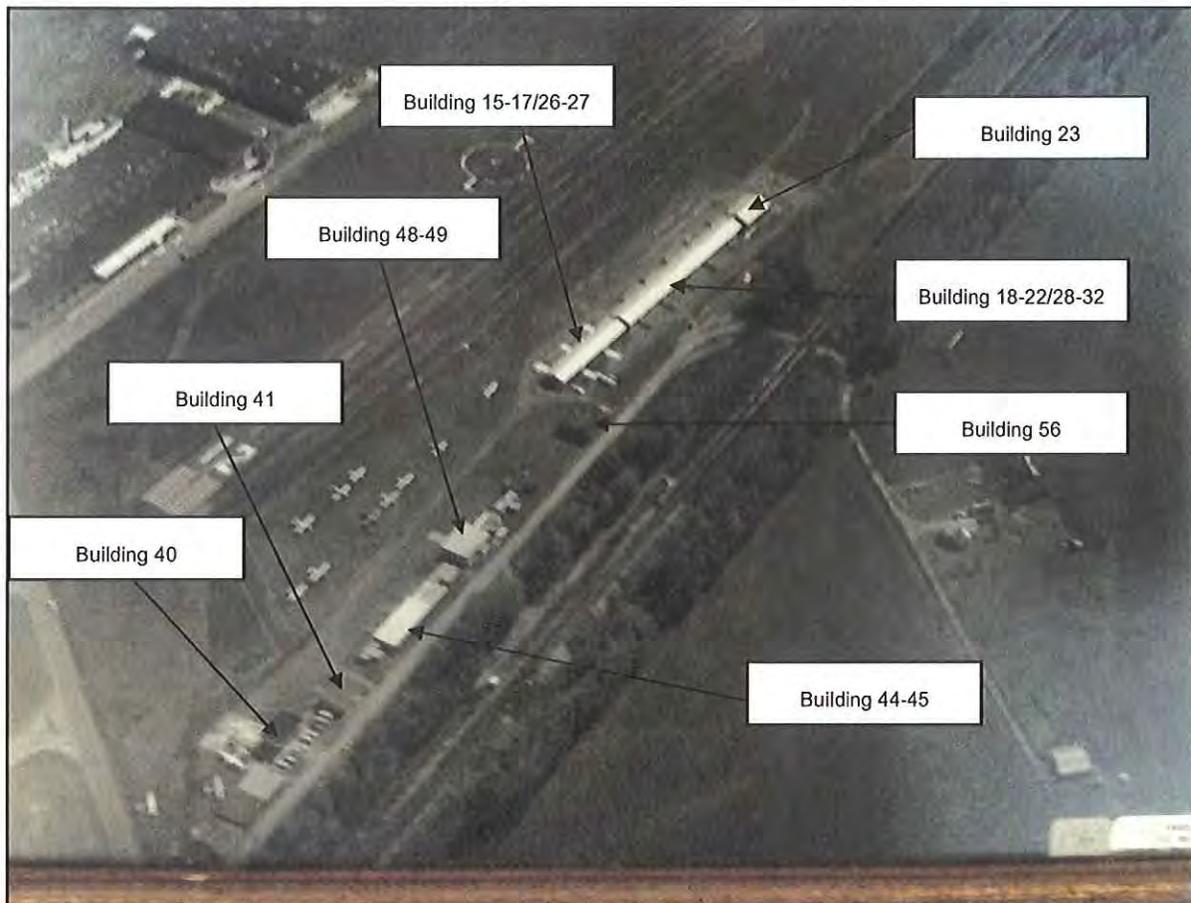


Figure 6. Detail of a 1968 aerial photograph of the Airport (photograph on display in the Airport's facilities office).

9.0 PREVIOUS ARCHAEOLOGICAL RESEARCH

9.1 Overview

In preparation for this project ESA Paragon conducted a records search of DAHP's online Washington Information System for Architectural and Archaeological Records Data (WISAARD) on October 3, 2011 to identify any previously recorded historic or precontact cultural resources within a one mile radius of the APE. ESA Paragon also reviewed records to identify any previous cultural resource surveys conducted within 1 mile of the APE.

The records search resulted in the identification of six recorded resources (both archaeological sites and historic properties) and 11 previous cultural resource surveys within a 1 mile radius of the proposed project (Tables 1 and 2). Three of the recorded resources are located within the APE. One cultural resources assessment has been conducted within the APE.

Table 1. Previous cultural resources studies within one mile of the project.

Citation	Project	Approximate Distance from Project	Cultural Resources Identified	National Register of Historic Places Eligibility Status ¹
Buffum et al. 2007	Kelso Airport Improvements Project	Within APE	None	N/A
Fagan and Freed 1988	Cultural Resource Investigations of the Cowlitz River Dredging and Disposal Sites	0.50 mile W	None	N/A
Ferguson and Root 2009	BNSF Longview Junction Project	1.00 mile SE	NPRR's Longview Junction Siding	Determined Not Eligible (12/2/2010)
Freed 1980	Cultural Resource Investigations of the Cowlitz River Dredging and Disposal Sites	0.50 mile W	None	N/A
Hartmann 1998	Washington State Department of Transportation's Rails Corridor Study	0.25 mile W	None near Airport	N/A
Hartmann 1999	Washington State Department of Transportation's Pacific Northwest Rail Corridor, Western Washington	0.25 mile W	None near Airport	N/A
Heritage Research Associates, Inc. 2007	I-5/SR 432 Talley Way Interchange	0.50 mi SE	None	N/A
Holschuh and Gall 2010	Randco Building Project Area	0.25 mile E	None	N/A
Jones & Stokes 2003	Pacific Northwest Rail Corridor: Kelso-Martin's Bluff Rail Project Cultural Resources Discipline Report	0.25 mile W	Kelso Airport Beacon; Kelso Airport Hangars	Hangars: Recommended Eligible Beacon: Not Determined
Munsell 1972	University of Washington, Washington State Department of Highways Highway Archaeological Survey	1.00 mile N	45-CW-7	Not Determined (but testing was recommended)
Musil and Tochihara 2009	Yew Street Improvements, City of Kelso	0.25 mile NW	None near Airport	N/A

¹ opinion of recorder

Table 2. Recorded cultural resources within one mile of the project.

Site No.	Site Name	Site Type	Approx. Distance from APE	Description	National Register of Historic Places Eligibility Status ¹
---	Kelso-Longview Airport Hangars/ Davis Texaco Air Service	Historic Building	Within APE	Hangars, weather reporting station, runway, and a 2-story administration building.	Recommended Eligible
---	Kelso Airport Beacon	Historic Structure	Within APE	Steel lattice frame with stationary beacon at top, circa 1960	Recommended Not Eligible
45-CW-7	<i>Tiahanakshih</i>	Permanent Village	1 mile N, opposite side of Coweeman River	Recorded in 1951 (possibly destroyed by residential construction); testing recommended in 1972	Not Determined
45-CW-32	Andrew Carlson / Leander C. Wallace House	Historic Residence	1 mile NW	Historic residence constructed circa early 1900s.	Not Determined
45-CW-41	Monticello Convention Site	Historic Event Location	0.50 mile W, opposite side of Cowlitz River	The location where in 1852 pioneers petitioned for the creation of Columbia Territory (later renamed Washington Territory), separating the land from Oregon Territory	Listed on Washington Heritage Register; Nominated to NRHP

¹ *opinion of recorder*

9.2 Previously Conducted Surveys

Surveys related to the construction and improvements of highways have been conducted within 1 mile of the APE (HRA 2007; Munsell 1972). In 1951 a village site (45-CW-7) within the Interstate 5 (I-5) right-of-way was identified; it was recommended for testing in 1972 (Munsell 1972). The site was identified at the northernmost crossing of the Coweeman River. The site is discussed further below.

During the 1980s there were several brief assessments related to dredging and the disposal of dredge materials in the Cowlitz River conducted by the US Army Corps of Engineers (Fagan and Freed 1988; Freed 1980). No cultural resources were identified during these investigations.

Railroad-focused surveys conducted along the southwest side of the APE have been conducted more recently (Ferguson and Root 2009; Hartmann 1998, 1999; Jones & Stokes 2003). These

projects recorded several historic properties including the NPRR's Longview Junction Siding just south of the Airport (Ferguson and Root 2009:1), several Kelso-Airport related structures and buildings (Jones & Stokes 2003:1-6), and other properties further than 1 mile from the APE (Hartmann 1998, 1999).

Other recent studies of the area have been conducted prior to development of cellular towers, construction, and municipal street improvements (Holschuh and Gall 2010; Musil and Tochiara 2009).

During a 2003 survey of the Kelso-Martin Bluff Rail Project (Jones & Stokes 2003), two historic properties were recorded at the Southwest Regional Airport: the Kelso-Longview Airport Hangars and the Kelso Airport Beacon. Because these properties were located within 120 feet of the railroad track, they were recorded on Historic Property Inventory Forms (HPIFs) and submitted to DAHP. A 120-foot buffer was used to identify all historic buildings/structures or districts that may encounter adverse effects from vibration and noise of the project (Jones & Stokes 2003:1-4). These properties are discussed in more detail in the following section.

In 2006-2007 a survey of the Kelso Airport was conducted for proposed improvements to the facility on the northeast side of the runway (Buffum et al. 2007). Survey methods included pedestrian surface inspection, shovel testing, and mechanical trenching. No cultural resources were identified during the assessment. Investigators conducted 18 shovel tests of varying depths and four trenches to 4-6' bgs. Trenching results indicate the uppermost 3.3 feet (1 m) of soils were fill materials associated with airport construction (Buffum et al. 2007:iii). Evidence for repeated flooding was observed in the trenches where stratigraphy could be directly observed. Despite already having been recorded with DAHP in 2003, buildings and structures at the airport were briefly described during this survey and found "not old enough or exceptional enough to be eligible for the NRHP" (Buffum et al. 2007:17).

9.3 Previously Recorded Resources

Southwest Washington Regional Airport Historic Properties Complex

The Davis Texaco Air Service building was recorded as a historic property by DAHP staff during a DAHP transportation study. The 1994 form simply states: "aircraft maintenance buildings supporting Kelso Airport on Old Highway 99" which "have moderate integrity. Three airplane hangars in a row with two small offices on either side of right end hangar. Middle hangar has canopy in front" (Garris 1994). A possible construction date of 1950 is also included. The buildings were documented again in 2003 as the Kelso-Longview Airport Hangars and recommended eligible under Criterion A for their "contribution to the development of transportation systems in the City of Kelso" (Jones & Stokes 2003:3-2). During the 2003 evaluation the hangars were documented as being built circa 1939; this appears to be a more accurate date.

The Kelso Airport Beacon was also recorded in 2003 during a survey for the railroad due to its proximity to the railroad corridor. At that time its construction date was listed as "circa 1960", an educated guess associating the beacon with the many 1960s airport improvements (Brush 2003b), however the beacon was present at the airport as early as 1953 (USGS 1970). When recorded in 2003, the beacon was not considered eligible for listing on the NRHP on account of

being considered less than 50 years old at the time (Jones & Stokes 2003:1-6). However, in light of the 1953 estimated construction date, the Kelso Airport Beacon meets the minimum age requirement.

45-CW-7 (Tiahanakshih Village)

This site is located 1 mile north of the Southwest Washington Regional Airport in the present-day Davis Terrace area of Kelso, within an oxbow of the Coweeman River along I-5. The site was briefly discussed by University of Washington archaeologists during a survey for Washington State Highways (Munsell 1972). Evidently, the site had been subject to artifact collecting by non-archaeologists, and the resulting collections suggested the site was occupied during the last 2,000 years (Munsell 1972:15-16). The site form identifies this as *Tiahanakshih* village.

45-CW-41 (Monticello Convention Site)

This site is located on the opposite side of the Cowlitz River, directly across from the Southwest Washington Regional Airport. On November 25, 1852 a convention was held at this location where the home of Harry D. Huntington once stood. Huntington was the founder of the town of Monticello (Monticello was destroyed by a flood in 1867; it was within the present-day city limits of Longview, on the west bank of the Cowlitz River). A walnut tree, planted in the 1850s next to the Huntington home, is still present at the site. The 1852 petitioners included the well known Seattle resident Dr. David S. Maynard who, among others, appealed to the United State Congress for the establishment of a new territorial government which would release lands north of the Columbia River from the authority of the Oregon Territorial Government (Gates 1941:113-119). One of the main motivations for this separation was due to the size of Oregon Territory and the obstacle of the Columbia River, which impeded the ability for residents north of the River to easily attend governmental affairs in the Territorial Government's capital in Salem. Washington Territory was established in 1853.

9.4 Expectations

The APE appears to have a high probability for precontact cultural resources due to its close proximity to the confluence of three rivers, grass prairies, marshes, trails, and fishing areas. Ethnographic accounts of the area describe villages at the mouth of the Cowlitz River and one village site has been recorded to the north of the Airport (45-CW-7). Recent archaeological investigations at and adjacent to the Southwest Washington Regional Airport indicate there have been past flood and fill events, which may have reduced the probability for intact archaeological resources, or may have deeply buried archaeological resources, placing them below the maximum anticipated depth of ground disturbance (i.e., 3 feet bgs).

Subsurface historic resources related to the NPRR, Monticello-Vancouver Trail (originally a Native American trail), and/or Hudson's Bay Company may be present within the APE.

Above-ground historic resources are present within the APE and include airport-related buildings and structures such as the beacon, hangars (one of which is the "Davis Texaco Air Service"), and Administration Building. With the construction and demolition proposed for 2016-2017,

buildings constructed in 1967 or earlier would be considered to meet the minimum age threshold of 50 years and therefore will be evaluated for their eligibility for the NRHP.

10.0 FIELD ASSESSMENT METHODS

Field assessment was conducted by Bryan Hoyt, ESA Paragon Archaeologist, on December 19-23, 2011 and September 13, 2012. Field methods included pedestrian surface survey, historic property documentation, and subsurface testing (i.e., shovel probes) (Figure 7). Weather conditions were variable, with cool temperatures and periods of light rain.

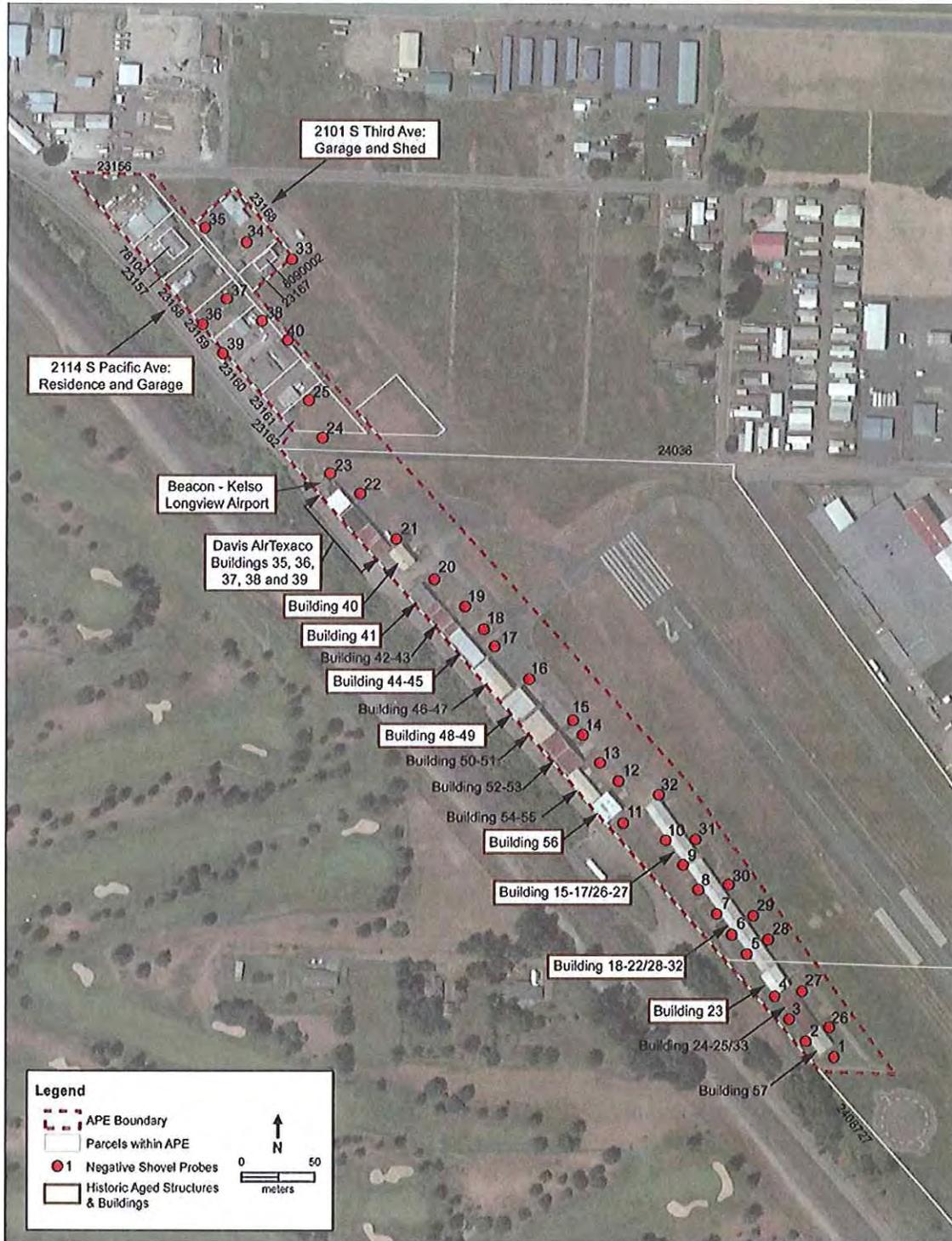


Figure 7. Aerial image depicting APE boundaries, parcel boundaries and numbers, shovel probe locations, and building id numbers.

10.1 Archaeological Survey

Pedestrian Survey

The pedestrian survey consisted of a single walking transect around existing hangars, as well as an additional two linear transects at the planned hangar construction locations. Within the private properties to which ESA Paragon had access to at the time of the assessment, the surface survey consisted of multiple sinuous walking transect across the property. Surface survey coverage is approximately equivalent to a 5 meter interval survey along portions of the APE that are not obscured by structures or paved surfaces.

Notes were taken regarding vegetation, surface sediments, surface visibility, condition of structures, and other observations.

Subsurface Survey

Subsurface survey consisted of the excavation of 40 shovel probes across the APE (Figure 7). SP 1-10 and SP 26-32 were located around the southernmost set of hangars. SP 11-25 were located along the eastern edge of the airport, primarily east of the remaining hangars. SP 33 was located within parcel #23167, SP 34-35 within parcel #23168, SP 36-37 within parcel #23159, and SP 38-40 within parcel #23160. The subsurface survey was oriented based on anticipated construction disturbances associated with the current project, as well as recent and historic construction disturbances.

Shovel probes were excavated to a target depth of 1 meter (3.3 feet) bgs. Shovel probe diameters averaged 36 cm (14 inches). Shovel probes were excavated with a round nose shovel and spoil sediments were screened through ¼ inch mesh; probes were then backfilled. For detailed description of each shovel probe, see Appendix A.

Notes were recorded regarding observations, probe location, stratigraphy, and content. Digital photographs were taken using an Olympus Stylus 790 SW 7.1 megapixel camera. Shovel probe locations were mapped within a Garmin ETrex GPS device (3-4 meter accuracy), NAD 83 Datum. All records are on file at ESA Paragon.

10.2 Aboveground Survey

ESA Paragon conducted a survey of the aboveground historic resources in the airport portion of the APE. Because phased construction and demolition is slated for 2016-2017, buildings and structures constructed in 1967 or earlier were recorded or updated on State of Washington Historic Property Inventory Forms (HPIF) per DAHP requirements (Appendix B). ESA Paragon staff was not granted access to the interior of any of the hangars, structures, or buildings.

11.0 RESULTS OF SUBSURFACE SURVEY

A total of 40 shovel probes were excavated across both the Airport and private property portions of the APE. Shovel probes excavated both within the airport property, and private properties,

exhibited very little stratigraphic variation. The standard shovel probe profile consisted of brown slightly silty sand with occasional crushed rock from 0-15 cm, slightly loose fine to coarse sands with 0-15 percent gravels from 15-100 cm below surface (Figure 8). Variation in sediment stratigraphy included varying percentages of coarse to medium sands within both layers, as well as varying percentages (and terminal depth) of imported crushed rock fill. Probes with high percentages of crushed rock were located in areas adjacent to the hangar buildings likely used for parking vehicles. Shovel probes located within the private properties contained occasional recent refuse.

Based on environmental research, natural soils within the APE were expected to be fine alluvium, specifically Newberg fine sandy loam. The observed sediments consisted primarily of sands but without laminations or other sedimentary structures characteristic of natural sedimentary deposits. However, observed sediments appear to be primarily (if not exclusively) imported/graded fill material originating with airport construction. Therefore, ESA Paragon concludes there is very little potential for precontact cultural resources within the APE.



Figure 8. Close up view of typical shovel probe, exhibiting primarily sandy sediment.

12.0 RESULTS OF ABOVEGROUND SURVEY

The APE encompasses the northwest corner of Southwest Washington Regional Airport, including the collection of hangars and other structures adjacent to South Pacific Avenue. The APE also includes eight privately owned parcels along South Pacific Avenue.

12.1 Airport Portion of APE

The northwestern corner of the Kelso Airport property consists of airport hangars, an airport administration building, paved roadways and taxiways, occasional crushed rock parking areas, and maintained grass. The NPRR track is located approximately 40 meters west of the airport boundary, and oriented parallel to the northwest/southeast airport boundary line, on an elevated railroad prism approximately 3 meters above the ground surface elevation within the APE.

There are 17 aboveground structures within the airport portion of the APE (Table 3). The structures are roughly grouped into two areas in the west side of the airport; one area is between Taxiway D and E and the other is an alignment parallel with Pacific Avenue. Of these 17 structures, ESA Paragon identified ten historic-age properties. Five of these properties, including four hangars and one administration building (Figure 6), were documented on State of Washington HPIF (Buildings 40, 41, 44-45, 48-49, and 56). ESA Paragon also updated one HPIF for a previously recorded historic property (the Kelso Airport Beacon). The Texaco Air Service building is also within the airport portion of the APE; the HPIF did not require updating.

The building numbers used throughout this report correspond to the building/structure numbering system currently used by the airport.

Hangars 35 to 56 are a linear row of hangars, buildings, and structures located along the southwest airport boundary fence line. Each hangar, building, and structure is aligned with and accessed by South Pacific Avenue (with additional access through the airport property), forming the southwestern boundary of the airport property (Figure 9). In most cases the buildings extend to within 5 meters of the edge of Pacific Avenue South, with a thin setback strip of pavement, crushed rock, or grass as a buffer. These strips appear to be used primarily for parking; several utility stubs and meters were observed in proximity to the hangars. A 6-foot tall cyclone fence forms the airport boundary between buildings. All of the seven historic age properties within the airport portion of the APE are located in this area. Descriptions of the seven historic properties follow; detailed descriptions are found in Attachment A.

Table 3. Buildings in the airport portion of the APE.

Building Number	Description	Proposed Disposition	Build Date	HPI Status
15-17/26-27	Sullivan Hangar	Remove	Circa 1965-1967 (Bell, pers. comm.)	Recorded
18-22/28-32	Sullivan Hangar	Remove	Circa 1965-1967 (Bell, pers. comm.)	Recorded
23	Sullivan Hangar	Remove	Circa 1965-1967 (Bell, pers. comm.)	Recorded
24-25/33	Sullivan Hangar	Remove	After 1970 (USGS 1970)	N/A
35-39	Hangar ("Davis Texaco Air Service")	-	1939	Previously Recorded (Garris 1994; Brush 2003a)
40	Admin bldg	Remove	1963 (Pollock 1963)	Recorded
41	Hangar	-	Circa 1953 (USGS 1970)	Recorded
42, 43	T-Hangar	-	After 1970 (USGS 1970)	N/A
44, 45	T-Hangar	-	Circa 1953 (USGS 1970)	Recorded
46, 47	T-Hangar	Remove	After 1970 (USGS 1970)	N/A
48, 49	T-Hangar	Remove	Circa 1953 (USGS 1970)	Recorded
50, 51	T-Hangar	Remove	After 1970 (USGS 1970)	N/A
52, 53	T-Hangar	Remove	After 1970 (USGS 1970)	N/A
54, 55	T-Hangar	-	After 1970 (USGS 1970)	N/A
56	Hangar	Remove	Circa 1953 (USGS 1970)	Recorded
57	Sullivan Hangar	Remove	After 1970 (USGS 1970)	N/A
Beacon	"Beacon – Kelso Longview Airport	-	Circa 1953 (USGS 1970)	Previously Recorded (Brush 2003b); Updated form to incorporate new info



Figure 9. Northwest facing overview of the street side (Pacific Avenue South) of Hangars 35 to 56; note the location of the hangars relative to the street, as well as multiple utility corridors associated with the street and hangars.

12.1.1 Beacon

Located immediately to the northwest is an airport flight beacon constructed of steel lattice with a stationary light on top (Figure 10), with associated concrete block shed. This beacon was previously recorded by Brush (2003a) as “Beacon – Kelso Longview Airport.” It appears in the 1968 aerial image (Figure 6) and the 1953 quad map (Figure 5). Its present condition is consistent with Brush’s 2003 description but the form was updated to include updated information on the build date. Current construction plans do not include its removal.

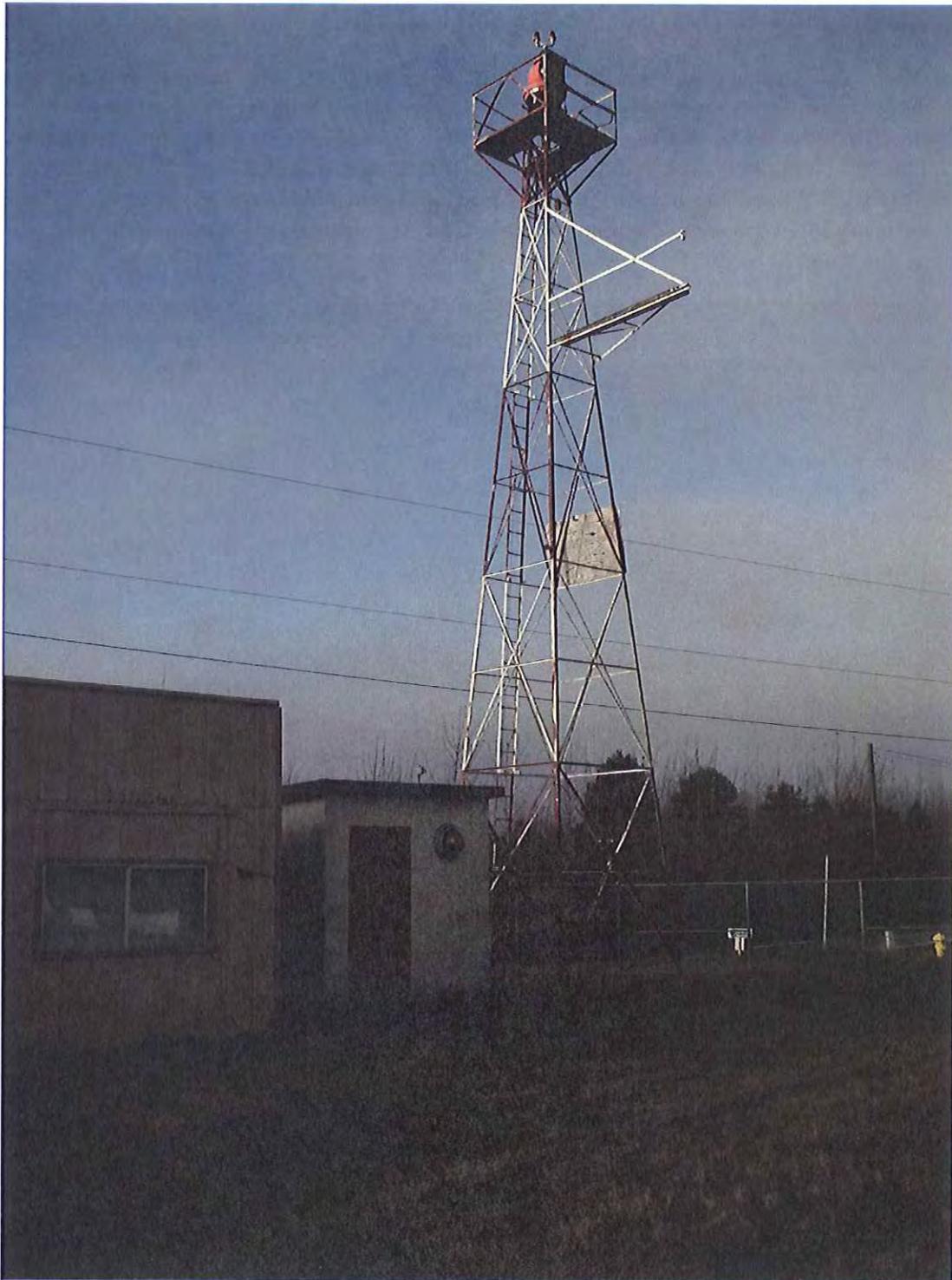


Figure 10. West facing overview of the previously recorded light beacon tower (Beacon – Kelso Longview Airport).

12.1.2 Buildings 15-17/26-27

Building 15-17/26-27 is the northernmost in the grouping of hangars near Taxiway D and E. It is entirely clad with corrugated metal sheeting, including the slide side doors. The concrete foundation is visible at the base of the walls (Figure 11). The roof is side gabled and measures 30' tall. This hangar appears to be in fair condition. This hangar was visible in the 1968 aerial photograph (Figure 6), and based on information from staff, it was constructed between 1965 and 1967 (Johnson and Bell, personal communication). Current construction plans include the removal of this hangar.



Figure 11. South facing overview of building 15-17/26-27.

12.1.3 Building 18-22/28-32

Building 18-22/28-32 is built abutting Building 23, although it is shorter, thinner, and longer (Figure 12). The cladding is constructed entirely of corrugated metal sheeting, including across the multi-panel side sliding door. It appears to have a poured concrete foundation. The roof is side gabled and measures 29' tall. Other than some rust this hangar appears to be in fair condition. This hangar was visible in the 1968 aerial photograph (Figure 6), and based on

information from staff, it was constructed between 1965 and 1967 (Johnson and Bell, personal communication). Current construction plans include the removal of this hangar.



Figure 12. South facing overview of building 18-22/28-32.

12.1.4 Building 23

Building 23 is a Sullivan style hangar with corrugated metal cladding; the multi-panel hangar door on the northeast elevation (runway side) is constructed of wood and painted red (Figure 13). The hangar is attached to Building 18-22/28-32, located to the north. The side gabled roof is composed of corrugated metal. There is no door on the western elevation. The hangar measures 34' tall. This hangar appears to have a poured concrete foundation and is taller than the other hangars within the grouping. Portions of the metal siding are rusty and the door paint is flaking; otherwise the hangar appears to be in fair condition. This hangar was visible in the 1968 aerial photograph (Figure 6), and based on information from staff, it was constructed between 1965 and 1967 (Johnson and Bell, personal communication). Current construction plans include the removal of this hangar.



Figure 13. South facing overview of Building 23 (red door).

12.1.5 Davis Texaco Air Service (Buildings 36 to 39)

Buildings 36, 37, 38 and 39 appear to be a set of three small wood and metal clad structures and a detached shed, the buildings are built directly next to each other and share walls to form a single hangar structure (Figure 14). This hangar was previously recorded on a HPIF as the Davis Texaco Air Service building built in 1939 (Brush 2003b); the form was not updated. This building appears to be in the same condition as when it was recorded last in 2003. This building appears in the 1968 aerial image (Figure 6) and the 1953 quad map (Figure 5). Current construction plans do not include the removal of this hangar.



Figure 14. North facing overview of buildings 36, 37, 38, and 39, previously recorded as the Davis Texaco Air Service building.

12.1.6 Administration Building (Building 40)

Building 40 is a two-story building (Figure 15) clad with vertical wood plank siding on the bottom half and horizontal wood siding on the top half. The building features brick cladding on the lower quarter of the northeast elevation. There are entrances on both the northeast and southwest elevations and a wooden staircase and deck on the northeast elevation provide exterior access to the second-story. The side gable roof is constructed of metal siding. Window frames on the second story are newer and of plastic; window frames on the first floor are of aluminum. A small grass yard and multiple mature trees and bushes are located adjacent to the eastern elevation. This building appears in the 1968 aerial image (Figure 6) and the 1953-1970 quad map (Figure 5). The administration building included a waiting room, lounge, fireplace, lunch counter, and classroom for student flyers on the first floor with an apartment on the second floor for the airport manager (Pollock 1963). Current construction plans include the removal of this building.



Figure 15. West facing overview of building 40, recorded as a historic aged building (building 40).

12.1.7 Building 41

Building 41 is constructed of painted cinderblock (sides and back) with a combination metal siding and corrugated metal clad canopy style door (Figure 16). The upper fifth of the side of the building is also clad with a combination of metal siding and corrugated metal. The roof appears to be constructed of metal siding and is pitched. A single door is located along the back of the building. There appears to be a concrete foundation. This hangar appears older than the hangars to the south and is in poor to fair condition (rust and dents on metal siding and corrugated metal). This hangar appears on the 1968 aerial image (Figure 6) as well as the 1953 quad map (Figure 5). Appendix D contains an extended description of hangar building 41. Current construction plans do not include the removal of this hangar.



Figure 16. South facing overview of building 41, recorded as a historic aged hangar structure (building 41).

12.1.8 Building 44-45

Building 44-45 is a T-Hangar clad with corrugated metal on the sides and back, and sheet metal on the front, slide siding door, and nearly flat roof (Figure 17). Some concrete was observed along the base of the walls although the extent of a foundation is not determined. Two garage style doors are located on the street side of the building. The hangar is in fair to poor condition with many dents and some rust on the siding. This hangar is depicted on the 1953 USGS map (Figure 5) and in the 1968 aerial image (Figure 6). Appendix D contains an extended description of hangar building 44-45. Current construction plans do not include the removal of this hangar.



Figure 17. West facing overview of building 44-45, recorded as a historic aged hangar structure (building 44-45).

12.1.9 Building 48-49

Building 48-49 is a T-Hangar with poured concrete walls, and corrugated metal cladding on the top half of the walls and entire back of the building (Figure 18). Corrugated metal also covers windows on both sides of the building. The canopy style hangar door and flat roof are constructed of sheet metal. The structure measures 39' tall. Three doors and two barred windows are located on the eastern elevation, and an additional door and window is located along the northwest elevation. The hangar appears to have a concrete foundation and is in fair condition (some dents and rust). Building 48-49 appears to be present in the 1968 aerial image (Figure 6) and the 1953-1970 quad map (Figure 5). The condition of the hangar, particularly covering of windows and differential construction materials, indicates that the hangar has been extensively modified. This hangar was recorded on an HPIF (building 48-49). Appendix D contains an extended description of hangar building 48-49. Current construction plans include the removal of this hangar.



Figure 18. West facing overview of building 48-49, recorded as a historic aged hangar structure (building 48-49).

12.1.10 Building 56

Building 56 is a T-Hangar clad with painted corrugated metal with a vertical wood panel accordion style hangar door on the east elevation and accessed by the runway, a large garage style door access by the Pacific Avenue South, wood slat vents near the roof line, and an oil tank on the southern elevation (Figure 19). The roof is flat, measures 36 feet tall, and appears to be constructed of sheet metal. Two windows, one each along the southeast and southwest elevations of the hangar, are aluminum and appear to be relatively recent additions (i.e., past 30 years). Appendix D contains an extended description of hangar building 56. Current construction plans include the removal of this hangar.



Figure 19. West facing overview of Building 56, recorded as a historic aged hangar structure.

12.2 Private Property Portion of the APE

The APE also includes eight privately owned parcels along South Pacific Avenue (Parcel numbers 23156, 23157, 23158, 23159, 23160, 23161, 23167, and 23168). At the time of the survey ESA Paragon did not have permission to enter parcels 23156 or 23157. These parcels were visually inspected from neighboring properties and the road.

A review of historic aerials suggests that the area was platted by 1944 and that buildings on two of the properties likely date to this period; these buildings are also included on the 1953 quad map for the area (USACE 1944; USGS 1953).

Table 4. Buildings in the Private Property Portion of the APE.

Parcel No.	Description	Proposed Disposition	Build Date	Historic aged buildings?
23156*	2 single-story metal sided commercial buildings	Remove	Unk.	No
23157/ 78104*	Single-story wood framed residence, wood framed outbuilding	Remove	Unk.	No
23158	Single-story wood framed residence, two wood framed outbuildings	Remove	circa 1953	Yes (pre 1953 house and garage)
23159	Mobile Home (single wide)	Remove	N/A	N/A
23160	Single-story residence, mobile home, two pole buildings.	Remove	circa 1990s ¹	N/A
23161	Single-story metal sided commercial building	Remove	circa 1969	No
23167	Mobile home (single wide)	Remove	N/A	N/A
23168	Mobile home (double wide), two wood framed sheds	Remove	circa 1953	Yes (2 pre-1953 sheds)

*No Right-of-Entry Allowed, surveyed visually only.

¹ Although Phase I Environmental Site Assessment (Syverson and Stone 2012) suggests this is a c. 1940 building, our survey did not come to this conclusion.

12.2.1 Parcel 23156

Parcel 23156 contains two single-story commercial buildings functioning as a metal shop (Figure 20). The buildings are rectangular in plan with gable roofs, corrugated metal siding, and garage doors.

This property is relatively level with crushed rock/gravel along most of the ground surface, and occasional tall grasses and shrubs. A tall, barbed wire-topped, metal cyclone fence bounds the parcel and extends along the boundary of the neighboring parcel (23157). Parcel 23156 appears to be associated with neighboring parcel 23157 which contains a residence (Figure 21). Parcel 23156 was inspected from neighboring properties and roads; ESA Paragon archaeologists did not enter the parcel.



Figure 20. East facing view of parcel 23156 (within fenced area), note metal shop and multiple vehicles.



Figure 21. South facing view of parcel 23157 containing the blue building and house beyond left of frame; tan metal building right of frame is located on parcel 23156).

12.2.2 Parcel 23157/78104

Parcel 23157/78104 contains a single-story wood frame residence and a detached wood frame outbuilding possibly functioning as either a shop/garage. The residence and outbuilding appear to have gable roofs.

This property is relatively flat with a large portion of the ground surface covered in pavement. The back and southern corner of the property contains grass and trees. As previously described, parcel 23157/78104 is fenced with parcel 23156 and appear to constitute an associated wrecking business and residence. Parcel 23157/78104 was inspected from neighboring properties and roads; ESA Paragon did not enter the parcel.

12.2.3 Parcel 23158 (2114 S Pacific Ave)

Parcel 23158 contains a wood frame single-story residence, wood frame garage, and wood frame pump house. The residence and garage near the northern corner of the property (Figure 22) appear to be historic in age based on map research, although both have been altered. The remainder of the property consists of minimally maintained landscaping (shrubbery, trees, and grass). A barbed wire fence bounds the southwest and southeast edges of the property, and a cyclone fence bounds the northeast edge of the property.

The house is a single story wood frame building which has been extensively modified with additions on the southwest and northeast elevations. The original house plan appears to have been T-shaped with a cross gabled roof (now a combination of asphalt shingle and corrugated metal), vertical shiplap joint cladding, updated aluminum windows, and a vinyl double hung window on the southeast elevation. A concrete stoop is located off of the northwest elevation.

The southwest elevation addition is rectangular in shape and contains a corrugated metal shed style roof, horizontal wood clapboard cladding, and aluminum windows. The northeast elevation addition is also rectangular in shape, with a corrugated gable style roof, small concrete porch, horizontal wood shiplap cladding, and a combination of new aluminum windows and older wooden double hung and ribbon windows.

The garage is rectangular in shape with a side gable style roof (sheet metal roofing material), vertical wood cladding, and two simple carriage style doors (also with vertical wood cladding). The cladding appears to have been stained, although the wood grain retains a natural look. An addition extends from the southeastern elevation which includes an aluminum door, two aluminum windows, and stove pipe chimney. The addition is clad with painted vertical wood siding with a sheet metal roof. The addition does not appear historic in age. The addition is not sympathetic to the original structure.



Figure 22. North facing view of the single story house and garage (brown structure on left edge of frame) at 23158.

12.2.4 Parcel 23159

Parcel 23159 contains a single-story single-wide factory-built mobile home located along the northwest edge of the property (Figure 23). The residence has a rectangular plan and features a side gable roof. The ground surface is relatively level and covered with grass and a gravel parking area adjacent to the house. Besides a patch of blackberries and tall grass along the back of the property no other vegetation exists. Parcel 23159 was accessed by ESA Paragon archaeologists.



Figure 23. North facing view of parcel 23159 containing a factory-built mobile home.

12.2.5 Parcel 23160

Parcel 23160 is a large parcel containing several residences. There is an inactive garden on the western corner, a pole shed structure covering a fifth wheel trailer on the northern corner, a pole garage over vehicles and a mobile home on the eastern corner, and a recent single-story home on the southern corner (Figure 24 and 25). The modern home features a front porch and pediment entry with columnar supports.

An expansive crushed rock gravel driveway extends down the center of the property, and several delivery trucks were parked along the back of property. The parcel is level with relatively immature landscaping vegetation surrounding the house. Each structure on the property appears relatively new (past 15 years). Parcel 23160 was accessed by ESA Paragon archaeologists.



Figure 24. North facing overview of parcel 23160 showing the structures on the northwestern half of the property.



Figure 25. East facing overview of parcel 23160, showing the structures on the southeastern half of the property.

12.2.6 Parcel 23161

Parcel 23161 contains a single-story commercial building used as a metal shop; a sign on the exterior reads “Steel Metal Products” (Figure 26). The building is clad in vertical metal sheeting and features a garage door and staff entrance. The property is flat and intermittently covered with crushed rock and grass. Several vehicles and boats are located within the property which is bounded by cyclone fencing, including portions which are topped with barbed wire. Various metal debris piles were located in the portion of the property behind the building. Parcel 23161 was accessed by ESA Paragon archaeologists.



Figure 26. Northeast facing view of parcel 23161.

12.2.7 Parcel 23167

Parcel 23167 contains a single-story, single-wide mobile home located in the center of the property (Figure 27). The residence has a side gable roof and horizontal cladding. Vegetation consists of grass and a few medium sized trees. The property is relatively level, and a gravel driveway is located northeast of the house. Parcel 23167 was accessed by ESA Paragon archaeologists.



Figure 27. South facing view of parcel 23167.

12.2.8 Parcel 23168 (2101 S 3rd Ave)

Parcel 23168 contains a double-wide mobile home (Figure 28) located on the northern corner of the parcel, a wood framed shed located near the west corner, and a wood framed garage located near the south corner. Vegetation consists of occasional shrubs and blackberries near the sheds and grass throughout. A small crushed rock gravel driveway is located next to the mobile home. The shed (Figure 29) and the garage (Figure 30) are in poor condition. The original house on this parcel burned down sometime before 1990 (Syverson and Stone2012). A depression behind the mobile home may indicate the location of the earlier residence.

The shed is rectangular in shape (measuring approximately 15x20 feet) with a corrugated metal shed style roof partially obscured by moss (Figure 29). The shed has unfinished wood horizontal flush cladding and a simple carriage style door on the northeast elevation. A small addition is located on the northwest elevation (same roofing and cladding material). The shed is leaning to the south and is heavily obscured by moss and blackberry vines. The condition of the shed is considered very poor.

The garage is rectangular in shape with a side gable style roof, deteriorating asphalt shingle roofing, shingle cladding on the upper ¼ on the southwest and northeast elevations, and vertical flush wood cladding on the remainder (Figure 30). The wood cladding is unfinished. Wood framed windows are located on the northwest, southwest, and southeast elevations, and the

northeast elevation contains two simple carriage style doors. The garage is partially covered in moss and obscured by blackberries. The condition of the garage is considered poor.



Figure 28. South facing view of building on parcel 23168.



Figure 29. Southeast facing view of shed in the back of parcel 23168.



Figure 30. Southwest facing view of the garage in the back corner of parcel 23168.

13.0 INTERPRETATION AND EVALUATION

ESA Paragon identified eight historic era buildings within the airport portion of the APE and recorded these buildings on HPIFs. These properties consist of airport hangars as well as an airport administration building. ESA Paragon also observed a previously recorded airport building (Davis Texaco Air Service) and beacon.

ESA Paragon also identified four historic era buildings within the private properties north of the airport. These properties consist of a house and garage within parcel 23158, and a garage and shed within parcel 23168. Each building was recorded on separate HPIFs.

The APE, including both the airport property and private properties to the north, contains sediment (sand) which does not appear to be native. These sediments may have been dredged from the Cowlitz River channel, deposited across the APE, and then leveled prior to construction. Archaeological trenching conducted by HRA (Buffum et al. 2007) also identified a high percentage of fill sediments along the southeastern end of the airport property to depths of 4 to 6 feet. The conjunction of HRA's findings with the results of the current assessment indicates a pattern of disturbance likely associated with the construction of the airport. Due to the presence of imported fill sediments, which extend at least 1 meter (3.3') bgs, the potential for encountering precontact cultural resources within the anticipated depth of ground disturbance (3 feet) is considered extremely low.

13.1 Evaluation for NRHP

Beacon

The property was recorded on an HPIF in 2003 (Brush 2003b), at which time it was thought to be 43 years old and not eligible for listing on the NRHP as it did not meet the minimum age threshold. Further research indicates the beacon was built circa 1953 which means the beacon meets the age threshold requirements for consideration of inclusion to NRHP.

The beacon appears to be in the same condition as when it was originally recorded in 2003. No changes to the beacon were evident during the survey. Previous inventories recommended the beacon to be eligible under Criterion A, for its contribution to the development of transportation systems in the City of Kelso.

Building 15-17/26-27

Building 15-17/26-27 was constructed between 1965 and 1967. The original occupant, architect and builder of the hangar are unknown. The exterior of the property appears to retain the original design components and material types from its original construction. The integrity of the interior of the building was not evaluated as no rights of entry were obtained. The integrity of Building 15-17/26-27 is considered fair; however, it does not appear to embody characteristics or method of construction that would warrant special recognition. Based on our review, the property does not appear eligible for listing in the NRHP for its architectural qualities either individually or as a contributor to a potential historic district.

Building 18-22/28-32

Building 18-22/28-32 was constructed between 1965 and 1967. The original occupant, architect and builder of the hangar are unknown. The exterior of the property appears to retain the original design components and material types from its original construction. The integrity of the interior of the building was not evaluated as no rights of entry were obtained. The integrity of Building 18-22/28-32 is considered fair; however, it does not appear to embody characteristics or method of construction that would warrant special recognition. Based on our review, the property does not appear eligible for listing in the NRHP for its architectural qualities either individually or as a contributor to a potential historic district.

Building 23

Building 23 was constructed between 1965 and 1967. The original occupant, architect and builder of the hangar are unknown. The exterior of the property appears to retain the original design components and material types from its original construction. The integrity of the interior of the building was not evaluated as no rights of entry were obtained. The integrity of Building 23 is considered fair; however, it does not appear to embody characteristics or method of construction that would warrant special recognition. Based on our review, the property does not appear eligible for listing in the NRHP for its architectural qualities either individually or as a contributor to a potential historic district.

Texaco Air Service Hangar (Buildings 36 to 39)

The previous evaluation of the Texaco Air Service hangar (buildings 36, 37, 38, and 39) in 2003 (Jones & Stokes 2003:3-2; Brush 2003a) recommended the building eligible for inclusion in the NRHP under Criterion A for its contribution to the development of transportation systems in the City of Kelso. DAHP has not determined the NRHP eligibility for this resource.

As this historic property appeared to be in the same condition as previously recorded and the form was not over 10 years old, the HPIF was not updated.

Administration Building (Building 40)

Building 40 was constructed in 1963 during a phase of major airport expansion. The original occupant, architect and builder of the building are unknown. The exterior of the property appears to retain some of the design components and material type from its original construction. Apparent alterations from its original design may include the addition staircase and deck along the northeast elevation, plastic windows along the second story, a newer standing seam metal roof, and multiple utility stubs. The integrity of the interior of the building was not evaluated as no rights of entry were obtained. The integrity of building 40 is considered fair; however, it does not appear to embody characteristics or method of construction that would warrant special recognition. Based on our review, the property does not appear eligible for listing in the NRHP for its architectural qualities either individually or as a contributor to a potential historic district.

Building 41

Building 41 was constructed sometime between 1930 and 1953, likely during the initial phase of airport construction. The original occupant, architect, and builder of the hangar are unknown. The exterior of the property appears to retain much of the design components and material type from its original construction. Apparent alterations from its original design include the additions of utility stubs along the southwest elevation; no other obvious alterations were noted. The integrity of the interior of the building was not evaluated. The integrity of hangar 41 is considered good; however, it does not appear to embody characteristics or method of construction that would warrant special recognition. Based on our review, the property does not appear eligible for listing in the NRHP for its architectural qualities either individually or as a contributor to a potential historic district.

Building 44-45

Building 44-45 was constructed sometime between 1954 and 1970, likely during a major airport expansion during the 1960s. The original occupant, architect and builder of the hangar are unknown. The exterior of the property appears to retain all of the design components and material type from its original construction. Apparent alterations from its original construction likely include the use of standing seam metal as cladding along the northwest, northeast, and southeast elevations. The southwest elevation is clad with corrugated metal which is likely the original material type. Multiple utility stubs along the southwest elevation appear to be the only new additions to the exterior of the hangar. The integrity of the interior of the building was not evaluated. The integrity of hangar 44-45 is considered fair, and it does not appear to embody

characteristics or method of construction that would warrant special recognition. Based on our review, the property does not appear eligible for listing in the NRHP for its architectural qualities either individually or as a contributor to a potential historic district.

Building 48-49

Building 48-49 was constructed sometime between 1954 and 1970, likely during a major airport expansion during the 1960s. The original occupant, architect and builder of the hangar are unknown. The exterior of the property appears to retain some of the design components and material type from its original construction, including walls constructed of poured concrete. However, cladding of the hangar walls and door has been updated with corrugated metal, including corrugated metal over windows on the northwest and southeast elevations. An additional alteration includes a standing seam metal roof and multiple utility stubs along the southwest elevation. The integrity of the interior of the building was not evaluated. The integrity of hangar 48-49 is considered poor due to extensive alterations to the cladding. Hangar 48-49 does not appear to embody characteristics or method of construction that would warrant special recognition. Based on our review, the property does not appear eligible for listing in the NRHP for its architectural qualities either individually or as a contributor to a potential historic district.

Building 56

Building 56 was constructed sometime between 1954 and 1970, likely during a major airport expansion during the 1960s. The original occupant, architect and builder of the hangar are unknown. The exterior of the property appears to retain some of the design components and material type from its original construction. Apparent alterations from its original design include the additions of plastic windows along the southeast and southwest elevations, a newer standing seam sheet metal roof, and multiple utility stubs. The integrity of the interior of the building was not evaluated. The integrity of hangar 56 is considered fair, and it does not appear to embody characteristics or method of construction that would warrant special recognition. Based on our review, the property does not appear eligible for listing in the NRHP for its architectural qualities either individually or as a contributor to a potential historic district.

Property 23158 Residence (2114 S Pacific Ave)

A review of historic aerial images suggests the property was platted by 1944. A building appeared to be present at this location on the 1953 quad map (USACE 1944; USGS 1953). The house has been subjected to numerous small additions as well as extensive cladding, window, and roofing modifications. The condition of the property is considered moderate to poor. The building does not appear to embody characteristics or method of construction that would warrant special recognition. Based on our review, the property does not appear eligible for listing in the NRHP for its architectural qualities either individually or as a contributor to a potential historic district.

Property 23158 Garage (2114 S Pacific Ave)

A review of historic aerial images suggests the property was platted by 1944. A building appeared to be present at this location on the 1953 quad map (USACE 1944; USGS 1953), which is likely the original house associated with this garage. Although not definitive, this garage likely dates to the same general period of the house construction. The condition of the property is considered moderate to poor. The building does not appear to embody characteristics or method of construction that would warrant special recognition. Based on our review, the property does not appear eligible for listing in the NRHP for its architectural qualities either individually or as a contributor to a potential historic district.

Property 23168 Garage (2101 S 3rd Ave)

A review of historic aerial images suggests the property was platted by 1944. A building appeared to be present at this location on the 1953 quad map (USACE 1944; USGS 1953), which is likely the original house associated with this garage. Although not definitive, this garage likely dates to the same general period of the original house construction. The condition of the property is considered poor. The building does not appear to embody characteristics or method of construction that would warrant special recognition. Based on our review, the property does not appear eligible for listing in the NRHP for its architectural qualities either individually or as a contributor to a potential historic district.

Property 23168 Shed (2101 S 3rd Ave)

A review of historic aerial images suggests the property was platted by 1944. A building appeared to be present at this location on the 1953 quad map (USACE 1944; USGS 1953), which is likely the original house associated with this shed. Although not definitive, this shed likely dates to the same general period of the original house construction. The condition of the shed is considered very poor. The building does not appear to embody characteristics or method of construction that would warrant special recognition. Based on our review, the property does not appear eligible for listing in the NRHP for its architectural qualities either individually or as a contributor to a potential historic district.

14.0 ASSESSMENT OF EFFECTS

If a property is considered eligible to the NRHP, FAA must determine if the project will affect the property and whether it would be an Adverse Effect. Two of the historic properties inventoried within the airport portion of the APE were considered eligible to the NRHP under Criterion A for their association with the development of transportation systems in the City of Kelso. When the qualities that make a property eligible for the NRHP are diminished, such a diminishment is an "Adverse Effect". To determine if the West Side Hangar Development Project would constitute an Adverse Effect on the Davis Texaco Air Service Building and the Beacon requires an analysis of the associated significance of the buildings under their respective eligibility criteria.

The quality that makes the Beacon and the Texaco Air Service Buildings eligible is their association with the development of transportation systems in the City of Kelso. Neither will be

demolished as part of the West Side Hangar Development project. The continued development of the airport will not diminish the integrity of either structure. Therefore, we consider that the proposed project within airport boundaries will have No Adverse Effects on Historic Properties.

15.0 RECOMMENDATIONS

ESA Paragon extends no recommendations for additional cultural resource studies.

The findings and professional opinions included in this report are based on standard archaeological techniques including pedestrian survey and shovel testing; however, each has its limitations. It is possible that unanticipated cultural resource materials may be encountered during construction. In the event that cultural resources are observed during implementation of the project then work should be temporarily suspended at that location and a professional archaeologist should be consulted. If ground disturbing activities encounter human skeletal remains during the course of construction, then all activity that may cause further disturbance to those remains must cease and the area of the find must be secured and protected from further disturbance (pursuant to revisions to RCW 27.44 [Indian Graves and Records] and RCW 68.60 [Abandoned and Historic Cemeteries and Historic Graves]). Anyone finding human skeletal remains must report the discovery to the county coroner and local law enforcement in the most expeditious manner possible. The remains should not be touched, moved, or further disturbed until the coroner and law enforcement respond.

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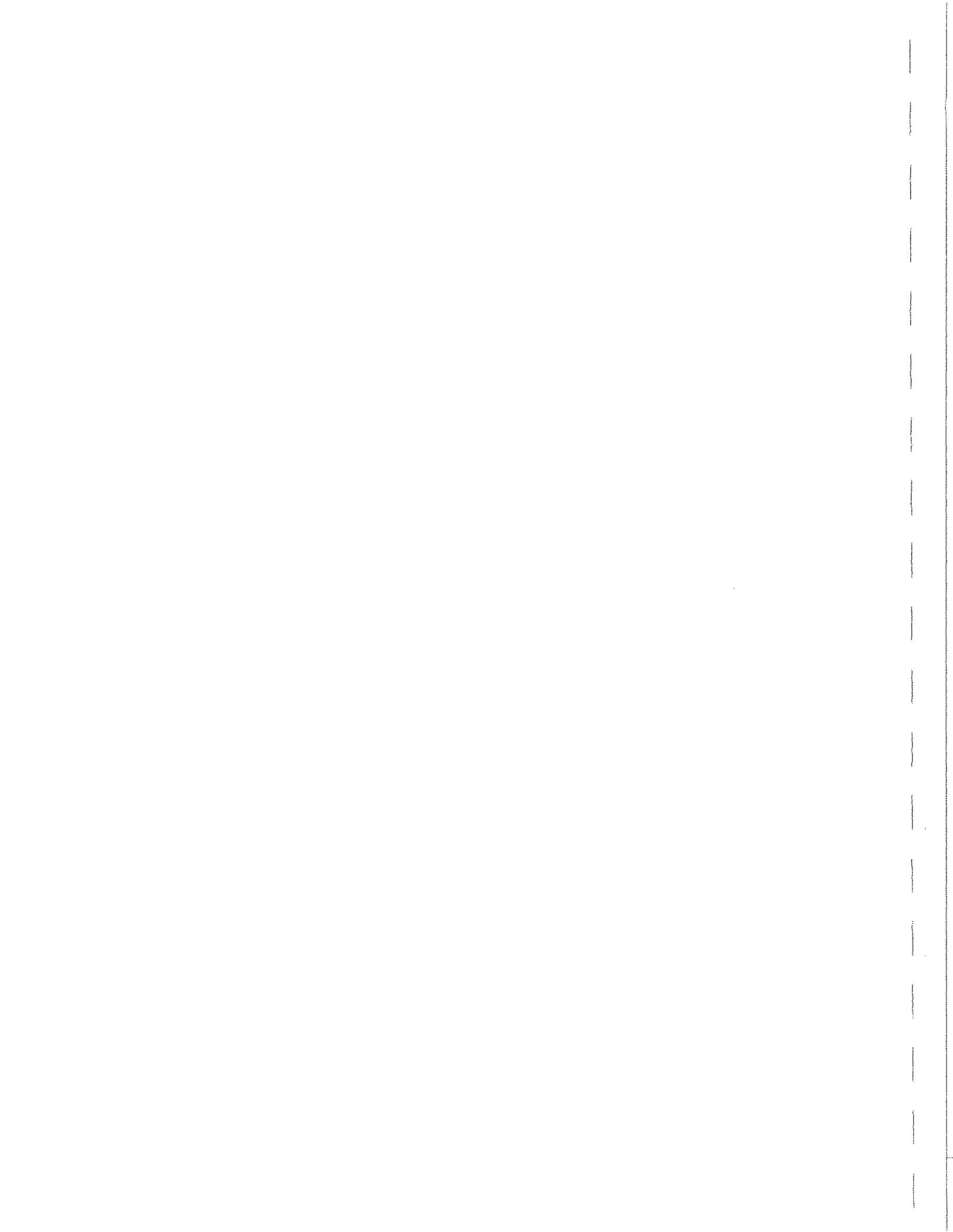
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Appendix F

CONSULTATION LETTERS



U.S. Department
of Transportation
**Federal Aviation
Administration**

Seattle Airports District Office
1601 Lind Avenue, S.W., Suite 250
Renton, Washington 98055-4056

grid copy

October 19, 2012

Mr. William Iyall
Cowlitz Indian Tribe
P.O. Box 2547
1055 9th Avenue, Suite C
Longview, Washington 98632

Southwest Washington Regional Airport
West Side Hangar Development Project
Kelso, Washington

Dear Mr. Iyall:

The Federal Aviation Administration (FAA) would like to initiate consultation with you in accordance with Section 106 of the National Historic Preservation Act of 1966, and implementing regulations 36 CFR Part 800 for the aforementioned project. We are also initiating this consultation in accordance with Executive Order 13175, Consultation and Coordination with Indian and Tribal Governments and FAA Order 1210.20, American Indian and Alaska Native Tribal Consultation Policy and Procedures.

A cultural resources assessment has been prepared by ESA Paragon Research Associates, LLC. The assessment concludes that the proposed hangar improvements will result in No Adverse Effect to Historic Properties.

We would like your concurrence with the aforementioned finding. Should you have any questions or wish to discuss aspects of the project in further detail, please do not hesitate to contact me at (425) 227-2653.

Sincerely,

Cayla D. Morgan
Environmental Protection Specialist
Seattle Airports District Office

Enclosure

cc: Dave Burlingame, Cowlitz Indian Tribe
Ed Arthur, Cowlitz Indian Tribe
Matthew Sterner, Washington Department of Archaeology and Historic Preservation
David Sypher, City of Kelso

(1) Enclosure



Allyson Brooks Ph.D., Director
State Historic Preservation Officer

December 10, 2012

Ms. Cayla Morgan
Federal Aviation Administration
1601 Lind Avenue, SW
Suite 250
Renton, WA 98057

In future correspondence please refer to:

Log: 112012-02-FAA

Property: Southwest Washington Regional Airport, West Side Hanger Development

Re: Archaeology – Not Eligible, No Historic Properties

Dear Ms. Morgan:

Thank you for contacting our office and providing a copy of the cultural resources survey report completed by ESA Paragon. We concur with their professional recommendation that none of the thirteen (13) historic properties identified during the cultural resources survey are eligible for listing in the National Register of Historic Places. As such, we concur with your finding of no historic properties affected.

We would appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4).

These comments are based on the information available at the time of this review and on the behalf of the State Historic Preservation Officer in conformance with Section 106 of the National Historic Preservation Act and its implementing regulations 36CFR800.

Should additional information become available, our assessment may be revised. In the event that archaeological or historic materials are discovered during project activities, work in the immediate vicinity must stop, the area secured, and this office and the concerned tribes notified.

Thank you for the opportunity to review and comment. If you have any questions, please contact me.

Sincerely,

Matthew Sterner, M.A.
Transportation Archaeologist
(360) 586-3082
matthew.sterner@dahp.wa.gov



Appendix G

CUMULATIVE IMPACTS TECHNICAL MEMORANDUM



5309 Shilshole Avenue NW
Suite 200
Seattle, WA 98107
206.789.9658 phone
206.789.9684 fax

www.esassoc.com

memorandum

date October 5, 2012

to Cayla Morgan
 Environmental Protection Specialist
 Federal Aviation Administration

from Ann Root

subject Southwest Washington Regional Airport West Side Development Project Cumulative Impacts
 Technical Memorandum

This technical memorandum is being prepared to provide an analysis of potential cumulative impacts associated with the Southwest Washington Regional Airport (KLS) West Side Hangar Development. A summary of this memorandum will be incorporated into the project's Environmental Assessment. This memorandum:

- Defines the project and describes the project area;
- Defines cumulative impacts;
- Identifies reasonably foreseeable future airport and non-airport projects; and
- Describes potential cumulative impacts and appropriate mitigation measures.

Project Description

The study area is located within the City of Kelso and encompasses the Southwest Washington Regional Airport property and smaller parcels to the north (Section 2, Township 7N, Range 2W) (Figure 1). The study area is generally bordered by the Cowlitz River, Three Rivers Golf Course, and a railway to the west; residential and industrial development to the north; industrial development, the Coweeman River, and Interstate 5 to the east; and the Coweeman River and Route 432 to the south.

The City of Kelso proposes to implement improvements to its landside facilities on the west side of KLS. The improvements were identified in the 2011 Airport Master to address conditions on the west side of the airport that deviate from FAA standards (City of Kelso, 2011). The proposed West Side Hangar Development project will address these deviations. The proposed project includes:

- Increasing the Taxiway D separation distance: The required separation between the runway and taxiway is 240 feet, but Taxiway D is within 230 feet of Runway 12/30 in places. Taxiway D will be removed and relocated.
- Widening Taxiway D: The standard width for ARC B-II taxiways is 35 feet. Taxiway D is currently only 14 feet wide in places and will be removed and reconstructed.

- Removing obstructions from the Taxiway D and Taxiway E Taxiway Object Free Area (TOFA): Existing hangars encroach on the TOFA and will be removed.
- Removing obstructions from the FAR Part 77 Surfaces¹: Existing hangars that penetrate the Part 77 transitional surface will either be removed or modified to reduce their height to the allowable limits. Existing hangars that do not violate the Part 77 transitional height restrictions may remain.

The city will acquire eight parcels of private property on the northwest side of the airport to construct replacements for the demolished hangars and to provide space for additional hangars to meet forecasted demand. The properties to be acquired are located in an unincorporated area of Cowlitz County. Existing uses within the acquisition area includes residential, commercial, and vacant land.

Cumulative Impacts

Cumulative impacts are the impacts that result from “the incremental impact of the action when added to other past present and reasonably foreseeable future actions regardless of the agency (federal or non-federal) or person undertaking those actions” (CEQ 1508.7). Cumulative impacts are those that are incrementally affected by the proposed action and other actions within the same geographic area and time period. For this project, the same geographic area is defined as the airport grounds and the area within 1 mile of the airport and the time period is five years.

Reasonably Foreseeable Future Actions

Two categories of projects are included in this cumulative impacts analysis—those related to the airport and those not related to the airport. Projects proposed under these categories are described below.

Airport Related Projects

The City of Kelso intends to extend the runway at KLS during the five year time span of the West Side Hangar Development Project. The proposed project will extend Runway 30 approximately 609 feet to the south. The project includes a new subdrainage system and new and relocated lighting and navigation aids. The project is expected to impact wetlands on the airport site and therefore includes an offsite wetland mitigation plan (City of Kelso, 2012). This project is in the early stages of design and environmental review with construction expected to start in late 2013 or in 2014.

It is also anticipated that the KLS Wildlife Hazard Management Plan (City of Kelso, 2011, Appendix G) would continue to be implemented. The City has implemented many of the recommendations, but has not fully implemented the recommendation to fill wetlands to reduce collision hazards. There is no schedule for filling the wetlands, but the project would not proceed before completion of an Environmental Assessment under the National Environmental Policy Act.

Non-Airport Related Projects

The City of Kelso Community Development Department was consulted about potential projects that would occur in the immediate vicinity of KLS within the same time period as the West Side Hangar Development Project. Projects identified include the State of Washington high speed rail project and the related South Kelso railroad

¹ FAR Part 77 Surfaces refers to Federal Aviation Regulation Part 77, which establishes standards for objects affecting navigable airspace and sets requirements for proposed construction or alteration.

overpass. The City also anticipates commercial and industrial development in the area to the north and east of the airport, but no specific projects have been proposed.

The high speed rail project includes rail improvements and installation along the Pacific Northwest Rail Corridor that extends from Eugene, Oregon to Vancouver, British Columbia. The project is intended to increase the frequency and reliability of Amtrak service between Seattle and Portland. In the Kelso area, existing track will be upgraded and a 4.5-mile segment of new track will be constructed between Kelso and Longview Junction. This new third rail would be constructed within the BNRR corridor immediately west of KLS. The Washington Department of Transportation (WSDOT) is conducting preliminary engineering and environmental work at the time of this writing.

To increase safety in the area, WSDOT proposes to close two at-grade railroad crossings (at Yew and Mill Streets) in Kelso and replace them with a new grade separation above or below the tracks at an alignment near Hazel Street. The proposed Hazel Street crossing is approximately 1,000 feet northeast of the northern KLS boundary. At the time of this writing, the crossing project is in the early planning stages.

Potential Impacts

None of the proposed projects can be quantitatively assessed because no specific impact data are available for the projects. Therefore, the potential cumulative impacts of the proposed projects in conjunction with other past, present, and future planned projects in the study area cannot be assessed quantitatively. Therefore, potential cumulative impacts are described qualitatively below. In addition, the discussion of impacts is limited to those resource categories under which some degree of effect was identified for the proposed action.

All of the proposed projects would undergo environmental review and will obtain all required permits before they can be constructed. The projects would comply with required BMPs and mitigation measures and are not anticipated to contribute to a cumulatively significant impact to environmental resources.

The West Side Hangar Development project would not result in significant environmental impacts; however, the project would require property acquisition and cause minor construction impacts and increases in impervious surfaces. Potential cumulative impacts to water resources and construction impacts are described below.

Water Resources

The West Side Hangar Development project will add approximately 0.18 acre of impervious surface to the KLS site. The runway extension project will further increase the amount of impervious surface on the site although the quantity is not yet known. Because both projects will include improvements to stormwater treatment through a stormwater infiltration system, the increased impervious surface is not expected to negatively impact water resources and will likely result in cumulative improvements to stormwater treatment.

Wetlands

Both the runway extension project and the Wildlife Hazard Management Plan would result in impacts to wetlands. The runway extension project would impact approximately 0.5 acre of wetlands. The West Side Hangar Development project would not cause impacts to wetlands; therefore, it would not cause cumulative impacts to wetlands.

Land Use

The West Side Hangar Development project requires the acquisition of eight properties on the north end of the airport to accommodate replacement hangars. The runway extension project is located entirely on airport

property. At this time it is not known if the other proposed projects will require acquisition of property or easements. Property acquisition for the proposed action is not expected to cause any significant impacts and will remove incompatible uses from near the runway. Therefore, any property acquisition required for the other proposed projects is not expected to cause significant cumulative impacts to land use. All projects would comply with applicable laws for property acquisition.

Construction Impacts

The runway extension project is expected to start in summer 2013 and would likely be completed before construction on the West Side Hangar Development project begins in 2016. Therefore, construction timing is not expected to overlap. The schedules for implementation of the Wildlife Hazard Management Plan and the two non-airport projects is not known, but could potentially overlap with the West Side Hangar Development project resulting in cumulative construction impacts. The most likely construction impacts are air quality, noise, and transportation.

Air quality

Both the West Side Hangar Development project and the reasonably foreseeable actions would cause temporary increases in dust and vehicle emissions during construction. It is possible that some aspects of construction could overlap, cumulatively increasing air quality impacts. The projects are not expected significantly affect air quality.

Noise

All of the proposed projects would cause temporary increases in noise from construction equipment. The proposed high speed rail and Hazel Street overpass projects would likely include construction activities that create high noise levels, such as pile driving. Noise generation at construction projects is usually generated in phases. Typically high noise generation activities occur at the beginning of a project. It is unlikely that all the proposed projects would generate high levels of noise at the same time. In addition, all projects would comply with local noise regulations and construction hours. Therefore, the projects are not likely to cause cumulatively significant noise impacts.

Transportation

Transportation of equipment, materials, and debris will be required for all projects. Because of the close proximity of the projects, it is likely that trucks would use the same routes. If the projects occurred at the same time, the increased transportation could cumulatively increase traffic delays and cause potential safety issues. Although the projects may cause increased traffic of heavy trucks on local roadways, those impacts would be temporary and would comply with local and state regulations for road safety, including those for signage, detours, and flagging, as necessary. Therefore, no significant cumulative impacts to transportation are anticipated.

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