

**SCOPE OF WORK
PACKWOOD AIRPORT
AIRPORT MASTER PLAN
FAA AIP Grant Number: 3-53-0156-012-2022**

PROJECT INTENT

Lewis County (Sponsor or County) intends to complete an Airport Master Plan for the Packwood Airport. The Airport Master Plan (AMP) will provide Lewis County with a plan to address the development needs at the airport for a 20-year planning horizon (2022-2042) and will develop a program for implementation within known funding constraints. Century West Engineering (Consultant) has been retained by the Sponsor to accomplish the Airport Master Plan. The Consultant will work in close coordination with the Lewis County staff, a Planning Advisory Committee (PAC), local business and stakeholder groups, the Federal Aviation Administration (FAA) and the Washington Department of Transportation - Aviation Division (WSDOT) to ensure that the plan truly reflects the airport's development needs.

The Sponsor has provided specific direction regarding the elements to be included in the AMP to address the current and future needs at the airport. The following work program describes the effort required to successfully complete the Airport Layout Plan Update and Narrative Report for Packwood Airport within the FAA framework and may include additional scope items identified by the County for the development and adoption of airport planning documents.

This project will provide Lewis County with an updated 2022-2042 Airport Layout Plan, Narrative Report, and a revised Airport Layout Plan (ALP) drawing set. An updated Airport Capital Improvement Program (ACIP) will provide the Sponsor with a method and proposed schedule for addressing future facility needs through use of FAA Airport Improvement Program (AIP) grants and other available funding sources.

The project will address and/or update the basic tasks and work elements as outlined in FAA Advisory Circulars [150/5070-6B, Airport Master Plans](#), [150/5300-13B Airport Design](#), or as amended, and Engineering Brief 99. The most current FAA Northwest Region Airport Layout Plan Checklist will be prepared and submitted with the draft airport layout plan drawing set. Certain Airport Master Plan elements will be streamlined due to the size and nature of the airport. The Airport Layout Plan Update will include a streamlined Aviation Activity Forecast and Public Involvement process and will not include noise contours or a Recycling and Solid Waste Management Plan per the direction of the FAA Seattle ADO.

ELEMENTS OF THE PROJECT

The AMP includes the following major work elements:

- Element 1 – Study Initiation, SOW, and Project Management
- Element 2 – Public Involvement Process
- Element 3 – AGIS Survey
- Element 4 – Existing Conditions Analysis
- Element 5 – Aviation Activity Forecasts
- Element 6 – Facility Requirements
- Element 7 – Alternatives Analysis
- Element 8 – Financial Plan & CIP
- Element 9 – ALP Drawing Set
- Element 10 – Reports and Documentation

Completion of the work elements in the Airport Layout Plan Update and Narrative Report should result in:

1. An understanding of the issues and opportunities, existing conditions, and an identified level of future aviation activity that would mandate facility improvements required to satisfy future demand.
2. A collaborative exploration of local Airport needs and facility requirements in sequence with the development of community generated ideas, solutions, and alternatives.
3. An implementation program with recommended strategies and actions for future land use, transportation, and environmental requirements; a realistic and workable CIP; and current ALP drawings that graphically depict existing conditions at the airport as well as proposed development projects.
4. A corresponding narrative report.

ELEMENT 1 – STUDY INITIATION, SOW, AND PROJECT MANAGEMENT

Task 1.1 - Refine Scope of Work, Budget and Schedule

The Consultant will develop a detailed scope of work, budget, and a detailed date-specific schedule, including adequate FAA review time. The schedule will be updated to comply with the contract time of performance as the project progresses. The scope will include approach and level of effort, to be made a part of the project contract fee negotiations. A detailed task-by-task itemization of the project budget and schedule will be provided. The Consultant will also develop subconsultant teams for applicable work for the review and approval by Lewis County.

Product: The final scope of work, which will also be used for an independent fee estimate for the project for use in contract negotiations. A breakdown of project costs for each work element will be provided.

Task 1.2 - Coordination and Control/Project Administration

Lewis County will manage, through its consultant, the administrative grant and fiscal aspects of the project. Additional responsibilities include consultant/airport coordination, facilitation of meetings, timely product review and supply of existing plans, report and electronic files relating to the airport layout, land use, property ownership, approaches, pavement and facility conditions, and previous planning studies and current development desires.

It is anticipated that the Consultant team leaders and the County's key staff will function as a work group that will facilitate all elements of the project. The Consultant will establish a schedule of bi-weekly project meetings (estimated 26 teleconferences averaging 45 minutes or less) for the work group, with an open invitation to the FAA and WSDOT to participate on an as-needed basis. The purpose of the meetings is to provide regular updates on study progress and to provide an opportunity to discuss and address issues that arise during the project. This coordination is intended to follow the overall project schedule. FAA requires compliance with grant assurances and to complete the project within the contract time of performance or as planned. Based on this, additional (continued) coordination with FAA has become increasingly important during project review.

Product: *An internal meeting schedule.*

Task 1.3 – DBE Annual Reporting

Consultant will complete the Annual Uniform DBE Report and submit via online FAA Civil Rights portal. Up to two submittals are anticipated for FY2022 and FY2023.

Product: *Updated DBE Program and annual reporting.*

Task 1.4 - Project Close Out Support

The Consultant will assist the County with preparing quarterly reports with 2-3 project payment invoices annually, as well as the documents needed to close out the AMP project with the FAA. This support includes preparing the final completion letter for the County, ARP SOP-10 Grant Closeout Documentation Review Checklist, Final Payment Summary, and the FAA Quarterly Reports for the duration of the project. The County will be responsible for preparing the SF425 – Federal Financial Reports and SF270 - Request for Reimbursements.

Product: *Project Closeout report and supporting documentation.*

ELEMENT 2 – PUBLIC INVOLVEMENT PROCESS

A comprehensive and engaging public involvement process will be a key ingredient for a successful AMP. The public involvement process element presents the tasks required to develop a collaborative public involvement and planning process that develops understanding,

explores solutions, and provides a realistic and achievable implementation plan.

Task 2.1 – Stakeholder Coordination

Effective coordination with local and regional jurisdictions and state and federal agencies is a critical element in the success of any long-term planning process. Agency coordination will be initiated at the earliest stages of the project and maintained throughout to provide effective lines of communication.

Sub-task 2.1.1 – Prepare List of Agency Stakeholders

The Consultant will work closely with County staff at the outset of the project to create a comprehensive list of agency stakeholders with their respective areas of interest/responsibility identified. A list of non-agency stakeholders will also be created.

Product: Agency stakeholder list to be utilized for project coordination and document distribution.

Sub-task 2.1.2 – Identify Planning Advisory Committee (PAC) Members

The Consultant will work closely with County staff at the outset of the project to create a PAC with approximately 5-10 members. The PAC will be assembled to provide input and allow for public dissemination of data. The PAC will include airport tenants, pilots, local & regional economic development interests, neighbors of the airport, and staff/representatives of the County. In addition to the membership composition and number noted above, representatives from the FAA Seattle Airports District Office (ADO) and WSDOT will serve as ex-officio members of the PAC.

Product: A developed PAC contact list comprised of selected PAC members.

Sub-task 2.1.3 – County Staff Coordination

The Consultant will coordinate with County staff in conjunction with project meetings and/or public hearings to brief staff on project progress to prepare staff for Commission updates or reports to Commissioners. Presentation materials from public meetings will also be made available to County staff for presentation to local stakeholder groups such as the Chamber of Commerce and Economic Development organizations as required.

Product: 26 teleconference meetings with the Lewis County staff concurrent with Task 1.2.

Task 2.2 – Planning Advisory Committee (PAC) Meetings & Open Houses

Up to three (3) PAC meetings and two (2) public open houses will be held during the course of the study. Draft materials or any relevant content required for the meeting will be electronically distributed by the Consultant one week in advance of the meetings to allow ample time for review. The Consultant will be responsible for conducting the meetings, reviewing the scope of

the project, presenting the findings and recommendations of the plan and program, preparing written meeting summaries, and responding to any technical and professional questions and concerns. The Consultant will prepare any supplemental handouts or presentation graphics needed for the meetings.

Sub-task 2.2.1 – Conduct PAC #1

The consultant will facilitate an interactive discussion with the PAC that will summarize the existing conditions of the Airport and aviation industry, identify and discuss any potential issues and opportunities not identified in the Consultant’s existing conditions analysis, and establish the framework for finalizing the aviation forecasts that will ultimately be submitted to the FAA for approval.

Product: All project related materials required to conduct PAC Meeting #1.

Meeting Attendance: 2 prime consultants

Sub-task 2.2.2 – Conduct PAC #2 & Public Open House

The consultant will facilitate a public review process that will begin with a stakeholder discussion to identify and verify the facility requirements necessary to satisfy future demands on the Airport. The facility requirements will serve as the building blocks for the development of preliminary alternative concepts capable of satisfying future demand. The preliminary development alternatives will be presented for public review and comment. The public input provided will be used to refine the concepts and based on technical evaluations, public input and coordination with local officials, the process will lead to the selection of a preferred alternative by the County that will be presented for additional public review and comment. All alternatives considered in this process must be consistent with all applicable FAA technical standards and regulations.

Product: All project related materials required to conduct PAC Meeting #2.

Meeting Attendance: 2 prime consultants

Sub-task 2.2.3– Conduct PAC #3 & Public Open House

The consultant will present the preferred alternative, a realistic and workable CIP; and current ALP drawings that graphically depict existing conditions at the airport as well as proposed development projects, based on the input provided by the County, PAC, stakeholders and public during the previous PAC and public meetings. The draft airport layout plan will be presented during this meeting.

Product: All project related materials required to conduct PAC Meeting #3.

Meeting Attendance: 2 prime consultants

Task 2.3 – Project Meetings

Additional project meetings will serve as yet another opportunity for public engagement and project coordination among a variety of stakeholders and regulating agencies. The Consultant will prepare any supplemental handouts or presentation graphics needed for the meetings.

Sub-task 2.3.1 – Federal Agency Coordination (FAA)

The Consultant will meet either virtually or in-person with FAA staff at the Forecasts, Alternatives, and ALP review stages of the project to ensure full coordination and timely review and comment on draft work products.

Product: Up-to three meetings with FAA.

Meeting Attendance: 2 prime consultants.

Task 2.4 – Public Notice and Data Distribution

Sub-task 2.4.1 – Public Meeting Notices/Press Releases

Lewis County will be responsible for coordinating and scheduling PAC and other public meetings, providing facilities for such meetings, and providing all required notification to PAC members and/or the public. The Consultant will provide the content for the announcements and notifications. Lewis County will advertise the date and time meetings to allow public attendance as desired. The County will assume all costs of advertising and press release announcements in the local media and will coordinate with the County's staff to post notices and press releases to the Lewis County website.

Product: Meeting notices and press release documentation.

Sub-task 2.4.2 – Website Content for Lewis County Website

The Consultant will provide project deliverables including draft chapters, presentation materials, meeting agendas, meeting press notices, questionnaires, and meeting summary notes on a project web page to be developed by the consultant. The County will determine what, if any, content is not meant for public consumption. The project web page will provide an opportunity for the public to review project deliverables and progress throughout the project. It can also be used to solicit public comment through posted surveys for those unable to attend the public meetings.

Product: A project web page with relevant project related materials.

Sub-task 2.4.3 – Public Meeting and Online Questionnaires

The Consultant and County staff will jointly develop up-to two (2) project specific questionnaires to solicit input from the public at key points during the project. Typically,

public input at the Facility Requirements stage prior to the development of alternatives and at the Alternatives stage is important to define needs and also get input towards the selection of the preferred alternative. Questionnaires will be distributed and collected at public meetings and can also be made available on the project website.

Product: *Two project specific questionnaires.*

Sub-task 2.4.4 – Public Meeting Summary Notes and Comment List

The Consultant will prepare notes for all meetings for the Sponsor to review. Once the meeting notes have been reviewed, edited, and approved, the Consultant will provide a PDF copy to post to the project web page. The consultant will also prepare a summary of comments received and Sponsor responses that can be posted on the website.

Product: *A summary of each meeting and comments from the public developed over the course of the project.*

ELEMENT 3 - AGIS SURVEY

The Consultant will conduct an aeronautical survey at the Airport. The project will be completed in compliance with the FAA Advisory Circulars listed below and will include an airport airspace analysis for *Runways without Vertical Guidance*. The survey will complete the tasks in the “Airport Layout Plan (ALP)” column of AC 150/5300-18B, Table 2-1.

Task 3.1 AGIS Survey

The purpose of this AGIS survey is to support ALP development and will include an FAA Airport Airspace Analysis Survey for all Obstruction Identification Surfaces (OIS) defined in FAA Advisory Circular 150/5300 - 18B: Section 2.7.1.3 Runways without Vertical Guidance. The consultant will be responsible for generating the OIS per AC 150/5300-18B.

QUALITY STANDARDS

The Advisory Circulars identified below detail the data collection methods and accuracies required for the verification process by the Federal Aviation Administration (FAA) and the National Geodetic Survey (NGS).

- AC 150/5300-16A “General Guidance and Specifications for Aeronautical Surveys: Establishment of Geodetic Control and Submission to the National Geodetic Survey.”
- AC 150/5300-17C “Standards for Using Remote Sensing Technologies in Airport Surveys.”
- AC 150/5300-18B (Change 1) “General Guidance and Specifications for Submission of Aeronautical Surveys to NGS: Field Data Collection and Geographic Information System (GIS) Standards”

PROJECT AREA

The project area encompasses all of the Airport inclusive of the obstruction surfaces as defined in AC 150/5300-18B, 2.7.1.3.

Subtask 3.1.1 - Aerial Control and Ground Survey

Ground survey is the core of an AGIS survey. In accordance with the above mentioned ACs, and the Statement of Work the Consultant will complete the following:

- Develop a Survey and Quality Control Plan
- Conduct pre-survey interviews with Airport Manager and complete interview checklists.
- Locate and validate PACS and SACS on the Airport. If PACS/SACS are not present or in usable condition, Temporary Survey Marks (TSM) will be established in accordance with AC 150/5300-16B, Paragraph 2.2.2
- Perform, Document, and Report the tie of PACS and SACS to the National Spatial Reference System (NSRS)
- Establish, record, and document aerial image control points/targets.
 - Control point/target locations to be coordinated with Aerial Survey provider.
- Establish, record, and document five (5) OPUS check points
- Survey and document all runway ends and displaced thresholds at the airport. Each runway end will be monumented if not already done.
- Determine or validate the runway width and length
- Survey the runway centerline profile at 50' stations
- Survey or validate the positions of NAVAIDs associated with the airport runway(s)
- Provide completed field documentation, checklists and annotated photos detailing field methods
- Provide Survey Narrative describing field methods, data processing steps, and results.
- Complete any other tasks not specifically listed above, as outlined in FAA AC-18B, Table 2-1 "Survey Requirements Matrix".

Consultant will reference data deliverables to the project control datums:

Horizontal: North American Datum of 1983/2011 (NAD 83(2011)), Washington State Plane Coordinate System, South Zone in U.S. Survey Feet.
Vertical: North American Vertical Datum of 1988 (NAVD 88)
Geoid: Geoid 18

Subtask 3.1.2 – Photogrammetric Mapping and Orthophotography

For this project, new vertical stereo aerial imagery will be acquired according to specifications described in FAA AC 150/5300-17C. Aerial imagery will be collected at two scales. High resolution imagery will cover the entirety of the Airport property and lower resolution imagery will cover the extent of all OIS surfaces.

From the high-resolution airport property aerial imagery, the following will be produced:

- 100 scale mapping with 1' contours of the existing airport property and Runway

Protection Zones (RPZ).

- Color digital orthophoto tiles and a single orthomosaic with a GSD of no greater than 0.25'
- Identification and mapping of obstacles within the imagery footprint
 - Include top of all structures on the airport, and ground elevations of traverseway centerlines where they intersect extended runway centerlines.

From the lower resolution OIS aerial imagery, the following will be produced:

- Landmark feature planimetric mapping
- Color digital orthophoto tiles and a single orthomosaic with a GSD of no greater than 1.0'
- Identification and mapping of obstacles within the OIS that were not captured in the high-resolution imagery.
 - Include elevations of traverseway centerlines where they intersect extended runway centerlines.

Subtask 3.1.3 – Obstruction and Planimetric Feature Collection and Submission

The Obstruction Identification Surfaces (OIS) will satisfy the following requirements of the AC 150/5300-18B, 2.7.1.3 Analysis of Runways without Vertically Guided Operations.

The specific types and quantities of obstructions for each surface are outlined and clearly defined for the particular surface in each circular section. Any obstructions that meet the requirement of the circular, but are of a nature that elevations at the highest point of the obstruction are impractical to read through photogrammetric methods (cell tower, electrical tower, etc.), will be identified and relayed to the surveyor to initiate field surveyed elevations for the obstruction.

The delivery will include the planimetric feature collection. Features to be collected will be listed on the Feature Collection Matrix. The final planimetric data will be submitted to the AGIS Portal in ESRI Shapefile format, with all required attributes populated.

***Product:** Consultant will submit all data collected and associated documentation in the formats specified in the appropriate advisory circulars to the FAA Office of Airports, Airports Surveying-GIS Program. All data submissions to the FAA will be through the program's web site <http://www.adip.faa.gov>.*

The 18B deliverables that will be uploaded to the AGIS website include:

- *Statement of Work, Imagery Plan and Survey and Quality Control Plan*
- *Imagery Shipment Tracking Information*
- *Obstruction survey data*
- *Ground survey data*
- *Planimetric data as listed in attached Feature Collection Matrix*

- *Final Report and supporting documentation*

Task 3.2 - Supplemental Information for Airport Layout Plan

In addition to the deliverables required under 18B delivery, the Consultant will provide the following supplemental information to support ALP development.

- Part 77 imaginary surfaces for future runway configuration as defined through the development alternatives process.
 - The future runway ends and profile will be provided after the selection of a preferred runway alternative.
 - Provide additional heights of features as needed based on preferred runway alternative
 - No additional imagery or obstacle collection/analysis is required.

Product: *ESRI File Geodatabase containing Part 77 imaginary surfaces and obstacles as a 3D polygon feature class.*

ELEMENT 4 – EXISTING CONDITIONS ANALYSIS

The existing conditions analysis element will present the AMP process to the public and document existing airfield facilities and conditions that affect the operation and development of the airport within the context of the region and other local factors. *The existing conditions analysis will utilize the previous Airport Layout Plan and subsequent work product to support the effort.* The findings documented in the Existing Conditions Analysis chapter will be used to support subsequent recommendations throughout the development of the AMP. It is expected Lewis County will make available any information required to conduct a thorough inventory and analysis.

Task 4.1 – Develop Report Introduction Chapter

Consultant will develop an AMP introduction chapter to summarize and depict the following information related to the AMP:

- Study Purpose
- Project Need
- Project Funding
- Project Schedule
- Public Involvement Process
- Goals of the AMP
- Known Issues & Opportunities

Product: *A summarization and depiction of relevant content.*

Task 4.2 – Data Collection and Inventory

The Consultant will collect, analyze and incorporate information from local, regional and state aeronautical or surface transportation studies, comprehensive planning documents, as related

to the development of Packwood Airport. Historic and forecast socioeconomic data will be collected from secondary sources. The Consultant will also review existing and future land use within the airport environs and existing zoning patterns, including overlay zoning designations. In addition, noise sensitive uses/areas will be identified and any natural characteristics, which could impact development and planning on and off airport property, will be documented. Existing airport traffic patterns and noise abatement procedures will be summarized.

Existing data and information, such as, but not necessarily limited to, documents, maps, studies and projects currently underway or in the planning stages (on and off airport property and in the vicinity) which may directly or indirectly influence this study effort will be identified, reviewed, and documented. Such information would, for example, include a review of any existing regional and state system plans, airport layout plans, pavement maintenance plans, surface transportation plans, utility plans, and engineering reports, among others.

The Consultant will utilize inventory data contained in the previous Airport Layout Plan Report in addition to other airport specific, regional, or state aviation system planning studies. Other data sources including the FAA Airport Record Form 5010, pavement management plan, construction drawings and other relevant documents, as provided by airport management. An on-site inspection of major components of the airport will also be performed.

Meetings: *Miscellaneous meetings with airport management, stakeholders; County and local airport users.*

Product: *Tabulated airport facilities inventory for input to later work elements.*

Task 4.3 - Evaluate and Present the Existing Regional Setting of the Airport

Consultant will evaluate and present an understanding of the issues and opportunities related to the regional setting and local context of the Airport and surrounding community for use in subsequent phases of the AMP. The following Subtasks will form the framework for examining the regional context of the Airport:

Sub-task 4.3.1 – Location and Vicinity

Consultant will develop location and vicinity maps.

Sub-task 4.3.2 – Airport History, Role, and Area Airports Contextual Analysis

Consultant will summarize and depict the Airport History; the Airport's National, State, and Local Role; and conduct a Contextual Analysis of area airports.

- Airport History – Consultant will develop a summary and depiction of the Airport's history.
- National NPIAS, State, and Local Role – Consultant will summarize and depict the Airport's role in the National and State aviation system and summarize the role of the Airport within the local community.

- Area Airports Contextual Analysis – Consultant will conduct an airport service area analysis by locating competing airports relative to Packwood Airport and population centers, assessing their role, and evaluating their facilities and services. This information will be utilized to assess the influence that surrounding airports have with respect to competing services, facilities and equipment, navigational aids, and accessibility.

Sub-task 4.3.3 – Evaluate Historical and Existing Airport Operational Data

The Consultant will compile a summary of aviation activity and operational data for Packwood Airport to indicate historical growth and present a basis for statistical analysis of based aircraft, annual aircraft operations, and related factors.

A review of the airport's current based aircraft fleet will be performed. The evaluation of airport service area contextual analysis (Sub-task 4.3.2) will be incorporated into the forecast update to reflect the potential for increased market share. The previous Airport Layout Plan Report forecasts will be compared to actual data in order to gauge the accuracy of individual projections and identify specific trends. The FAA Aerospace Forecasts (FY 2021-2041), the FAA Terminal Area Forecasts (TAF) and current State Aviation forecasts will be reviewed for comparison with current and recent historic data and summarized in the forecast narrative.

The Lewis County will provide a current list of locally-based aircraft by number and type. Specific manufacturer and model data will be gathered for the largest type of based and/or itinerant aircraft that regularly use the Airport. The Consultant will utilize other data sources including airport records, fuel sales data, on-site inventories, data provided by operators routinely using the airport, and an airport user survey/interviews to supplement airport management data, as appropriate.

The Consultant will determine the existing and future critical aircraft based on review of available data and previous airport planning documents and according to FAA AC 150/5100-17. The existing critical aircraft (or family of aircraft) will be identified, if necessary by approach category, by wingspan, and/or by weight, for different airport components. By FAA standard, the critical aircraft/family of aircraft, must conduct at least 500 annual itinerant and local operations, excluding touch and go's. In the event that more than one aircraft meets the FAA criteria for defining critical aircraft for runway length or pavement strength evaluation purposes, those aircraft will be identified. The existing critical aircraft will serve as the basis for developing updated forecasts.

***Product:** Summarization and depiction of current/historical based aircraft and pertinent operations data including the existing critical aircraft.*

Sub-task 4.3.4 – Community Socio-economic Data

Consultant will utilize available data (secondary sources) related to local and regional population, employment, and other relevant socioeconomic conditions (historic data/trends and future projections) to summarize and depict relevant local socioeconomic data. This data may include state and regional economic data, tourism activity and trends, and area military or other state or federal government activity, as appropriate. Annual estimates of population and U.S. Census data will be reviewed.

Sub-task 4.3.5 – Relevant Studies

Consultant will summarize and depict relevant content from State and local planning studies which may or may not include the following:

- County Comprehensive Plan
- Local Transportation System Plans
- Local Utility Master Plans
- Previous Airport Layout Plan Report
- Current Signed Airport Layout Plan Drawings

Sub-task 4.3.6 – Environmental Data

Consultant will summarize and depict environmental data from a variety of sources including previous environmental documents, consultant inquiries, and publicly available data to summarize and depict the data.

NEPA Analysis – Building off of previous environmental work completed for the Packwood Airport, consultant will prepare an environmental overview of the Airport’s environmental setting and operating environment based on NEPA Environmental Impact Categories outlined in FAA Order 1050.1F Policies and Procedures for Considering Environmental Impacts and FAA Order 5050.4B, FAA Environmental Handbook utilizing available data and information. No formal coordination with federal and state agencies will be conducted as part of this work element. Informal coordination may occur during the process of obtaining existing documents, etc. from various agencies.

Consultant will gather and utilizing existing maps of the airport environs and environmental documents to document existing conditions. An on-site field verification of site conditions will be conducted, and will include a reconnaissance level analysis of resources as identified in the bullet point list below. This summary is intended to reference any known or potential environmental conditions or issues that could be affected by proposed airport development that have been identified in recent environmental efforts conducted on the airfield. Consultant will request information from the U.S. Fish and Wildlife Service (USFWS) of any rare, threatened, and endangered plant and animal species that have been documented within the vicinity of the Airport.

Consultant shall summarize and depict environmental data from a variety of sources including, but not limited to, previous environmental documents, Consultant inquiries, and publicly available data to address the following environmental impact categories:

Air quality – Consultant shall briefly evaluate air quality considerations with respect to proposed master plan improvements. Air quality modeling or detailed analyses are outside of this scope of Services. Consultant shall also summarize and depict local climate data. Consultant shall request wind data from the onsite AWOS or National Climatic Data Center for the Airport, or both, if available. Consultant shall develop and update a wind rose using the FAA Airport Design program.

Biological resources (including fish, wildlife, and plants) – Consultant shall provide an overview of habitat conditions and summary and of potential impacts to any biotic resources identified in the study area.

Federally-listed Endangered and Threatened (“T&E”) Species – Consultant shall summarize known or documented existing T&E species and designated critical habitat. Consultant shall conduct a site reconnaissance to determine if potential suitable habitat occurs within the study area. Consultant shall not perform species surveys as part of this scope of Services.

Climate - Consultant will summarize and depict local climate data. Consultant will request wind data from the National Climatic Data Center for the Airport and also download available data from the onsite AWOS. A wind rose will be developed/updated using the FAA Airport Design program.

Coastal resources – Not Applicable

Department of Transportation Act Section 4(f) – Consultant shall review the Project area to identify the presence of any Section 4(f) properties in the vicinity. If there are none, Consultant shall document it. A Section 4(f) evaluation to determine if the use of any 4(f) properties would be impacted is outside this scope of Services.

Farmlands - Consultant will coordinate with Lewis County and review state and federal regulations.

Hazardous materials, solid waste, and pollution prevention - Consultant will complete a summary and assessment of any Hazardous Materials identified in the study area based on a review of previous studies and published data. The Consultant will develop recommendations for avoidance, minimization, and mitigation measures for the preferred development alternative.

Historical, architectural, archeological, and Cultural Resources Assessment (CRA) - Building off of previous environmental work completed for the Airport, Consultant shall summarize previous cultural resources surveys and identify potential areas that may require further analysis based on proposed development.

Land Use – Consultant shall review and summarize local land use compatibility and identify potential impacts of proposed improvements. Consultant shall review Lewis County plans and zoning maps. The County and County will be contacted to confirm zoning and compatible land use.

Natural resources and energy supply - Consultant shall review proposed improvements, construction techniques, and materials to assess opportunities and impacts.

Noise and compatible land use – Noise contours will not be completed as part of this study.

Socioeconomics, environmental justice, and children’s environmental health and safety risks - Consultant will review and summarize socioeconomic impacts including shifts in patterns of population movement and growth; public service demands; changes in business and economic activities; and other factors identified by the public.

Visual effects (including light emissions) - Consultant will prepare a summary of increased light emissions and visual effects created through the construction of the proposed improvements.

Water resources (including wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers)

Wetlands and Waters of the US – Consultant shall review existing information to identify potential wetland resources in the Project area including historic aerial photos, National Wetlands Inventory, and Natural Resource Conservation Service County Soil Survey. Consultant shall perform a site reconnaissance to identify potential wetland areas. Consultant shall hand draw potential wetland areas on an aerial photo. A wetland delineation is outside this scope of services.

Floodplains – Consultant shall review FEMA maps to determine if any of the study area is within the 100- year floodplain.

Stormwater and Water Quality – Consultant shall review on site drainage patterns and site uses to determine the potential for water quality impacts.

Consultant will coordinate with US Army Corps of Engineers to confirm that no protected resources exist in the vicinity of the project.

NEPA Analysis will provide a background overview of impact categories that will be used in the assessment of development alternatives. The Preferred Alternative will be reviewed to assess and document the likely impacts of the proposed improvements and serve as the basis for future Environmental Assessments. The Consultant shall recommend additional study for individual impact categories that may be required based on the Preferred Alternative selected.

Sub-task 4.3.7 – Local Surface Transportation System Analysis

Consultant will summarize and depict the existing and planned improvements for the local area surface transportation network to facilitate better understanding of the local transportation system during the facility requirements and development alternatives elements of this plan.

Sub-task 4.3.8 – Land Use Analysis

Consultant will summarize and depict the following:

- Base Zoning – Consultant will summarize and depict existing and planned on-airport and off-airport zoning/land uses covering an area 1,500' beyond the extents of the existing FAR Part 77 Surfaces.
- Overlay Zoning – Consultant will summarize and depict existing adopted County and County Airport overlay zones.

Product: *A summarization and depiction of relevant content.*

Task 4.4 - Evaluate and Present the Existing Landside Elements of the Airport

Consultant will evaluate and present an understanding of the issues and opportunities related to landside facilities and services of the Airport for use in subsequent phases of the AMP. The following sub-tasks will form the framework for examining the landside elements of the Airport:

Sub-task 4.4.1 – Utilities

Consultant will summarize and depict the existing utilities, to include water, gas, sanitary sewer, storm water, electric, telephone, communications, and any other utilities within the airport boundaries. Existing utility easements and any specified development setbacks located within airport property will be depicted and/or noted. Existing local utility provider drawings (electronic files when available) will be used to provide data for this task. Existing mapping of natural site conditions will be consolidated into a common base map for use in the project.

Sub-task 4.4.2 – Local Emergency Medical/Fire Services (EMS)

Consultant will summarize and depict local emergency response facilities and capabilities.

Sub-task Task 4.4.3 – Airport Perimeter Fencing

Consultant will summarize and depict airport perimeter fencing and access to the airport operations area. The location and configuration of controlled/uncontrolled vehicle and pedestrian access gates will be documented.

Sub-task 4.4.4 – Airport Surface Road Access, Vehicle Parking, and Pedestrian Access

Consultant will summarize and depict the location and configuration of existing auto parking; vehicle parking conformance to local standards; internal airport access roads; and pedestrian access to aircraft. The location and configuration of controlled/uncontrolled vehicle access points (gates, etc.) to the airport will be documented. Common vehicular access routes within the airport's landside areas (hangars, aprons, etc.) and planned future connections will be identified through coordination with the County.

Sub-task 4.4.5 – General Aviation (GA) Terminal Areas

Consultant will summarize and depict the GA Terminal Area facilities including; but not limited to, pilot lounge and manufacturing facilities, FBOs, flight schools, Airport administration and maintenance/vehicle storage facilities, non-aeronautical activities, and other operations on the Airport.

Sub-task 4.4.6 – Hangars

Consultant will summarize and depict the number of units, total square footage, and condition of aircraft storage units on the Airport. A summary of current hangar occupancy will be prepared based on data provided by Lewis County.

Product: A summarization and depiction of relevant content.

Task 4.5 - Evaluate and Present the Existing Airside Elements of the Airport

Consultant will evaluate and present an understanding of the issues and opportunities related to airside facilities, design standards, and airspace and approach procedures of the Airport and airspace for use in subsequent phases of the AMP. The following sub-tasks will form the framework for examining the airside elements of the Airport:

Sub-task 4.5.1 – Airside Facilities

Consultant will summarize and depict existing airside facilities data gathered from a variety of sources to provide an inventory and understanding of the issues and opportunities surrounding the following airside elements:

- Aprons – Consultant will summarize and depict airfield apron areas as well as the location, size, and number of based and itinerant aircraft parking spaces/tiedowns for the Airport’s existing apron areas.
- Taxiways and Taxilanes – Consultant will summarize and depict the existing taxiways and taxilanes on the Airport.
- Runway – Consultant will summarize and depict the existing runway on the Airport.
- Airfield Pavements – Consultant will summarize and depict pavement thickness, pavement markings, pavement strength, pavement condition, and construction history of airside facilities such as runway, taxiway/taxilane and apron pavements. The most recent WSDOT Pavement Management Plan for the airport will be utilized in addition to a review of existing design drawings.
- Support Facilities – Consultant will summarize and depict the airside support facilities such as airfield lighting, signage, weather reporting equipment, NAVAIDS, fuel tanks, and fueling facilities.

Sub-task 4.5.2 – FAA Design Standards

Consultant will summarize and depict known non-standard conditions identified in previous planning studies and any additional conformance issues based on the existing Airport Reference Code (ARC) and the approach type/category for each runway end.

Sub-task 4.5.3 –Airspace and Approach Procedures

Consultant will summarize and depict the latest available information for airspace, airport traffic patterns and procedures, TERPS/Part 77 Airspace, and approach procedures:

- Area Airspace Review - Consultant will summarize and depict Airport airspace.
- Traffic Patterns – Consultant will summarize and depict existing traffic patterns and aircraft operating procedures.
- TERPS – Consultant will summarize and depict an analysis of any existing or future TERPS surfaces and any obstructions. AGIS data will be used if available for the preliminary analysis, then incorporated into the final ALP drawing set.
- PART 77 Airspace – Consultant will summarize and depict an analysis of existing FAR Part 77 surfaces and any existing obstructions. AGIS data will be used if available for the preliminary analysis, then incorporated into the final ALP drawing set.
- Approach Procedures – Consultant will summarize and depict existing approach procedures and any known deficiencies.

Product: *A summarization and depiction of relevant content.*

Task 4.6 – Evaluate and Present the Existing Airport Administration Elements

Consultant will evaluate and present an understanding of the issues and opportunities related to the Airport Administration elements for use in subsequent phases of the AMP. The following sub-tasks will form the framework for examining the administration elements of the Airport:

Sub-task 4.6.1 – Airport Ownership & Management

Consultant will summarize and depict pertinent information as it relates to the ownership and management of the Packwood Airport, which may or may not include the following:

- Lewis County Ownership of Airport
- Airport Maintenance
- Airport Property Leasing

Sub-task 4.6.2 – Relevant State and Federal Regulations

Consultant will summarize and depict pertinent information as it relates to relevant State and Federal regulations governing the Packwood Airport, which may or may not include the following:

- Federal Regulatory Standards
- Grant Assurances/Compliance

Packwood Airport

Product: *A summarization and depiction of relevant content.*

Task 4.7 – Prepare Existing Conditions Analysis Chapter

Consultant will develop a chapter summarizing the tasks, sub-tasks, and pertinent information outlined above. The draft chapter will provide information for subsequent decisions. This chapter will be submitted to the County, WSDOT, and FAA for review and comment.

Product: *A narrative and graphical summary of the elements completed will be revised as necessary based on review comments and will subsequently become chapters of the AMP report.*

ELEMENT 5 – AVIATION ACTIVITY FORECASTS

Per FAA guidelines, the AMP will include updated activity forecasts including based aircraft, annual aircraft operations, activity peaking, fleet mix, instrument approaches and operations, and distribution between local and itinerant operations to assess the future demand at Packwood Airport. The existing and future critical aircraft will be identified through the forecast update. The base year for data will be CY 2021. Forecasts will focus on the 20-year window, with reporting in the 5-, 10-, 20- and 50- year increments. Recent previous forecasting and airport activity analysis efforts such as the FAA TAF and previous Airport Layout Plan Report Forecasts will serve as reference material during the development of the updated aviation activity forecasts.

Task 5.1 - Prepare Aviation Activity Forecasts

Based on the established baseline of the airport activity data, forecasts of future aviation demand levels will be developed by the Consultant, using trend analysis, market share analysis or similar methodologies. Socioeconomic and airport activity data collected during the existing conditions analysis will be analyzed for input into the forecasting analyses. Updated forecasts will be developed for the following Sub-Tasks:

Sub-task 5.1.1 – Based Aircraft

Consultant will summarize and depict pertinent information as it relates to the forecast number of based aircraft (single engine, multi-engine piston, single/multi-engine turboprop, business jets, air tankers, historic aircraft, helicopters, and other aircraft (light sport aircraft, gliders, ultralights). Forecast based aircraft fleet will be further organized by aircraft reference code (ARC) and operating weight.

Sub-task 5.1.2 –Aircraft Operations

Consultant will summarize and depict pertinent information as it relates to the forecast number of annual aircraft operations including mix of general aviation itinerant and local operations; commercial operations; and military operations. The distribution of fixed wing and helicopter operations will be included for each forecast year.

Sub-task 5.1.3 – Fleet Mix

Consultant will summarize and depict pertinent information as it relates to the forecast of the fleet mix for preferred aircraft operations forecast by ARC and weight.

Sub-task 5.1.4 – Critical Aircraft

Consultant will summarize and depict pertinent information as it relates to the forecast critical aircraft for each forecast year. Based on existing and future aircraft operations forecasts, the Consultant will determine the existing and future critical aircraft (500 annual operations, including local and itinerant, excluding touch and go's). The existing and future critical aircraft will determine the existing and future airport reference code, upon which FAA design standards are predicated.

Product: Preparation of general aviation forecasts in 5-year intervals for the 20-year planning period.

Task 5.2 – Preferred Forecasts

Based on a review of the updated master plan forecasts and TAF projections, the Consultant will recommend a “preferred forecast” for the update. The County, with input (as desired) from stakeholders and the Consultant, will identify the preferred forecasts to be carried forward to develop scenarios for future facilities.

Product: The selection of a preferred forecast scenario.

Task 5.3 - Develop Forecast Chapter

Consultant will develop a chapter summarizing the tasks, sub-tasks, and pertinent information outlined above. The draft chapter will provide information for subsequent decisions. This chapter will be submitted to the County, WSDOT, and FAA for review and comment.

Product: A narrative and graphical summary of the forecasting analysis and preferred aviation activity forecasts; the chapter will be revised as necessary based on review comments and will become a chapter of the Airport Layout Plan Update report.

Task 5.4 - Forecast Approval

The FAA Seattle Airports District Office (ADO) will review forecasts of aviation demand. Based on its review, the ADO will approve the forecasts and existing and future critical aircraft as submitted, or provide comments and request revisions to be made by the Consultant (for subsequent review by the FAA Seattle ADO).

The FAA spreadsheets, “Comparison to TAF” and “Forecast Summary” will be included in the forecast chapter appendix. The forecast spreadsheets may be found at the FAA web site: <http://apo.faa.gov/Contracts/AF1.DOC>, then click on “excel format.”

Product: FAA approval of Aviation Activity Forecasts for use in subsequent tasks.

Note: This element will serve as a baseline for consideration, analysis, and recommendation conducted as part of other Study elements. Aviation Activity Forecasts element documentation will be presented as part of the Study. As this element serves as a basis for subsequent Study elements, the Consultant will perform no effort and incur no expense for other elements related to the Aviation Activity Forecasts until the County has received approval and acceptance of this Aviation Activity Forecasts element.

ELEMENT 6 – FACILITY REQUIREMENTS

The facility requirements element will identify the Airport’s facility improvements required to satisfy future airside and landside demand based on updated aviation activity forecasts and the identification of the current and future design aircraft identified in Element 6. The facility element, through the public process, will iteratively identify a variety of preliminary solutions and facility improvements that could potentially satisfy future demand. The facility requirements identified will focus on the facility improvements, which will be evaluated in the subsequent development alternatives evaluation, needed to safely and efficiently accommodate projected demand for the twenty-year planning period (2022-2042).

Task 6.1 – Define Updated Airfield Design Standards and Analyze Airfield Conformance

The Consultant will conduct an evaluation of the forecast critical aircraft and appurtenant FAA airport design standards and FAR Part 77 airspace standards based and the existing approach type/category for each runway end. Any non-conforming items will be documented. Non-standard items will be addressed in the airport development alternatives evaluation.

Product: Identification of any non-conforming facility configuration based on existing and future ARC.

Task 6.2 – Define Regional Setting Requirements

Based on the existing conditions analysis, forecasts of aviation activity, demand considerations, and input from the County and PAC, the Consultant will summarize and depict a series of facility goals and requirements necessary to satisfy future demand and address any issues or opportunities identified in the Regional Setting analysis, which may include the following:

- Airport Role and Area Airports
- Airport Operational Data
- Environmental
- Local Surface Transportation System
- Land Use

Product: Formulation of “regional setting” facility requirements to serve as a guide for the preparation of the alternatives analysis.

Task 6.3 – Define Landside Requirements

Based on the existing conditions analysis, forecasts of aviation activity, demand considerations, and input from the County and PAC, the Consultant will summarize and depict a series of facility goals and requirements necessary to satisfy future demand and address any issues or opportunities identified in the Landside analysis, which may include the following:

- Utilities
- Local Emergency Medical/Fire Services (EMS)
- Airport Perimeter Fencing
- Airport Surface Road Access, Vehicle Parking, and Pedestrian Access
- General Aviation (GA) Terminal Areas
- Aircraft Storage

***Product:** Formulation of landside facility requirements to serve as a guide for the preparation of the alternatives analysis.*

Task 6.4 – Define Airside Requirements

Based on the existing conditions analysis, forecasts of aviation activity, demand considerations, and input from the County and PAC, the Consultant will summarize and depict a series of facility goals and requirements necessary to satisfy future demand and address any issues or opportunities identified in the Airside analysis, which may include the following:

- Airside Facilities Requirements
- FAA Design Standards Requirements
- Airspace and Approach Procedures Requirements

***Product:** Formulation of airside facility requirements to serve as a guide for the preparation of the alternatives analysis.*

Coordinate FAA Approval of Preferred Alternative

Consultant shall coordinate final review and approval of the preferred alternative with the County and FAA. Consultant shall modify and update figures and narrative based on comments received through the coordination process to arrive at the County preferred development alternative with FAA.

***Product:** County's selected preferred development alternative will be reflected in graphic depiction and narrative description and presented to FAA for final review and acceptance. A final approval letter from FAA personnel indicating acceptance of the preferred alternative.*

Task 6.6 – Define Airport Administration Requirements

Based on the existing conditions analysis, forecasts of aviation activity, demand considerations, and input from the County and PAC, the Consultant will summarize and depict a series of facility requirements necessary to satisfy future demand and address any issues or opportunities identified in the Airport Administration analysis, which may include the following:

- Airport Ownership & Management
- Relevant State and Federal Regulations
- Airport Financials

***Product:** Formulation of “airport administration” facility goals and requirements to serve as a guide for the preparation of the development alternatives.*

Task 6.7 – Develop Facility Requirements Chapter

The Consultant will develop a chapter describing the tasks outlined above. The draft chapter will provide information for subsequent decisions. This chapter will be submitted to the County, WSDOT, and FAA for review and comment.

***Product:** A narrative and graphical summary of the facility requirements; the chapter will be revised as necessary based on review comments and will become a chapter of the Airport Layout Plan Update report.*

ELEMENT 7 – ALTERNATIVES ANALYSIS

In coordination with the public involvement process, the purpose of this element is to evaluate the effects of the proposed development solutions identified in the facility requirements in the form of alternatives, thus providing the technical basis necessary for selecting a “preferred” development plan for the airport.

Task 7.1 – Identify and Prepare Alternatives

Consultant will, based on the facility requirements, prepare and depict potential airport alternatives for community and regulatory agency discussion.

- **Airside Alternatives:** A maximum of three (3) airside alternatives will be prepared.
- **Landside Alternatives:** A maximum of three (3) landside will be prepared.
- **No Action Alternative:** A no action alternative will be included in the narrative.

The airport alternatives will be prepared using an aerial photo base and AGIS data, when available, combined with the electronic file for the Airport Layout Plan that depicts existing conditions.

The preliminary alternatives will be presented graphically and in narrative (chapter) form, including large-scale drawings (and online) for presentation to the County, PAC, WSDOT, FAA, and the public for review and consideration.

***Product:** A summarization and depiction of airside and landside alternatives for the future development of the airport.*

Task 7.2 – Evaluation of Alternatives

Consultant will develop a detailed evaluation to summarize and depict a comparison of the

merits and deficiencies of the development alternatives under consideration. An evaluation matrix will be prepared to compare the composite rankings of each alternative. Factors to be considered in the evaluation include:

Ability to Serve Forecast Demand: Each alternative will be evaluated to determine its ability to meet forecast demand levels within accepted performance standards such as aircraft delay and airport user convenience. These evaluations will be performed for each type of facility and will be aggregated to permit comparison. The results of this evaluation process will be quantified to the extent possible for use in the evaluation matrix.

Airport Design Standards: Each alternative will be evaluated toward FAA airport design standards. Potential approach obstructions and required mitigation, if any, will be identified. Potential impacts on existing airport or tenant facilities will be addressed.

Airspace Compatibility: Using the airspace requirements developed earlier and the forecasts of aviation activity, potential impacts to airspace and related operations will be evaluated for each alternative. This will include VFR airport traffic patterns, existing instrument approach and departure (TERPS) surfaces.

Land Use, Transportation, and Environmental Compatibility: The proposed development alternatives will be evaluated to determine the impact on local land use, local transportation systems, and the environment (the environmental analysis will generally be a high-level overview of the relevant NEPA impact categories).

Development Costs: Preliminary (planning level) cost estimates associated with proposed improvements will be prepared. The capital cost estimates will provide an indication of the cost of developing the airport and also will provide a basis for comparing cost-effectiveness among the various airport alternatives. The cost of maintaining the airport and developing or relocating any required off-site roadways under various alternative scenarios will also be estimated.

Product: *A summarization and depiction of the evaluation of airside and landside development alternatives presented.*

Task 7.3 – Recommended Preferred Alternative

Consultant will facilitate a discussion amongst key stakeholders and PAC members per the public involvement process to identify a recommended preferred alternative for the Packwood Airport.

Product: *A summarization and depiction of the recommended preferred alternative.*

Task 7.4 – Environmental Analysis of Preferred Alternative

The Consultant will review and identify potential key environmental impacts of the preferred development alternative per FAA Order 1050.1E, including Change 1, Policies and Procedures for Considering Environmental Impacts, and FAA Order 5050.4B, FAA Environmental Handbook and pertinent State guidance. This analysis will not provide the detail typically required in an FAA NEPA Environmental Assessment or other study, but provides a foundation that can be used by the County for any future environmental analysis required for implementation based on the NEPA categories analyzed and depicted in the Inventory Chapter.

Product: A summarization and depiction of the preferred development alternative’s potential environmental impacts.

Task 7.5 – Prepare Alternatives Analysis Chapter

The Consultant will develop a chapter describing the tasks outlined above. This chapter will be submitted to the County, WSDOT, and FAA for review and comment as described in Element 2 Public Involvement (See Element 11 for document distribution details).

Product: A narrative and graphical summary of the alternative’s analysis; the chapter will be revised and/or amended as necessary based on review comments and will become a chapter of the Airport Layout Plan Update report.

Task 7.6 – Confirm Preferred Alternative

Based on review and comment of the preliminary alternatives presented in the chapter, the Lewis County will select a preferred alternative for the Consultant to proceed on with Implementation phase of the airport layout plan. The preferred alternative may include elements from one or more of the preliminary alternatives, or may include refinements that were created during the evaluation of the preliminary alternatives. Comments provided by the master plan PAC, FAA, County, WSDOT, airport users and tenants, and the public will be documented and summarized in memo form by the Consultant. A preferred alternative will be recommended with a description of the basis for the preference of the alternative over the others. The recommendations will be presented to the County for final review and approval of the preferred alternative. As noted earlier, the preferred alternative must be consistent with all applicable FAA technical standards and regulations.

Product: The County’s selected preferred alternative to be reflected in graphic depiction and narrative description.

ELEMENT 8 – FINANCIAL PLAN & CAPITAL IMPROVEMENT PLAN (CIP)

In this element a capital program and financial plan for implementing the preferred airport development alternative will be prepared representing recommendations that are: fiscally and operationally efficient; and environmentally and socially sustainable, implementable and defensible. The airport layout plan's 20-year Capital Improvement Plan (CIP) will summarize all development and major maintenance projects anticipated during the planning period.

The Consultant will work closely with the Lewis County to identify key development priorities to be reflected in the updated CIP. The cost of each project will be listed with the amount of anticipated FAA and WSDOT funding defined based on current funding eligibility. The CIP will provide an annual breakdown of projects for the short-term period (years 1-5); then overall groupings of projects provided for the intermediate (years 6-10) and long-term (years 11-20) periods.

Once the list of capital projects and cost estimates has been developed the Consultant will work with County staff to develop a cursory review of strategies and actions the Lewis County, and other regulating agencies could pursue to ensure the proposed improvements identified in the preferred alternative are implemented.

Task 8.1 - Capital Improvement Program

The Consultant will prepare a 20-year Airport CIP, which will include recommended phases of development, estimates of cost for each improvement, possible funding sources, including an evaluation of the airport's predicted available FAA grant funding based on current funding legislation. The CIP will also estimate local expenses associated with project implementation that are not typically eligible for FAA funding.

The short-term period of the CIP (years 1-5) will be organized with prioritized annual project listings; projects included in the intermediate and long-term periods will be prioritized within the overall timeframe. A phasing diagram will identify each development and major pavement maintenance project programmed in the 20-year planning period.

Product: A 20-year CIP (in spreadsheet form and project phasing diagram, with associated text.

Task 8.2 - Prepare Implementation Plan Chapter

The Consultant will develop a chapter describing the tasks outlined above. This chapter will be submitted to the County, WSDOT, and FAA for review and comment.

Product: A narrative and tabular summary of the implementation plan. The chapter will be revised and/or amended as necessary based on review comments and will become a chapter of the Airport Layout Plan Update report.

ELEMENT 9 - AIRPORT LAYOUT PLAN DRAWINGS

The previous Airport Layout Plan drawing set will be replaced (redrawn), to reflect current conditions, updated AMP development recommendations, and all applicable FAA requirements. The major projects proposed in the Capital Improvement Program (CIP) will be shown on the ALP in schematic form. All drawings will be created in AutoCAD Version 2018 and formatted with color imaging and use of color aerial photography and AGIS data, developed according to FAA SOP 2.00 and 3.00.

ALP Drawing Set Submittals

1. Preliminary Draft ALP Drawing Set (1 electronic copy to the County, and 1 electronic copy to FAA Seattle ADO for informal coordination with FAA ALP Checklists).
2. Draft ALP Drawing Set (1 copy to County; 1 printed copy and 1 electronic copy to FAA Seattle ADO; 1 electronic copy to WSDOT for formal coordination).
3. Draft Final ALP Drawing Set (electronic submittal of final ALP set with comments incorporated for final FAA Planner review prior to printing of final documents for signature).
4. Final ALP Drawing Set (2 printed copies to County; 1 printed copy to FAA, 1 electronic copy to County and FAA; and 1 electronic copy to WSDOT).

The Consultant will be responsible for submitting a signed copy of the FAA ALP checklist with copies of the draft ALP submittal to the FAA. Following completion of FAA and local review, the Consultant will make all necessary revisions; comments provided by Lewis County staff, PAC, and others will be addressed during the same revision period.

Consultant will provide FAA Planner one final check set of ALP drawings electronically to confirm that comments have been addressed. Upon written confirmation from FAA Planner that comments have been addressed and the ALP is ready for signature, the Consultant will submit a final approval letter to FAA and County for signature. This final approval letter signed will then be embedded onto the ALP cover sheet prior to final printing.

Task 9.1 - Airport Layout Plan

An Airport Layout Plan (ALP) drawing shall be prepared in accordance with the findings, recommendations and approvals resulting from the study. The ALP shall be developed utilizing the data collected and exported into AutoCAD, Version 2018. Additionally, the ALP will be compatible with the file format currently used by the County.

The Airport Layout Plan will contain the information as required in FAA Advisory Circular 150/5300-13B, and the most current FAA SOP 2.00 and SOP 3.00. The Airport Layout Plan will contain sufficient data to obtain approvals from the FAA. The Airport Layout Plan will be depicted as a black and white line drawing with color, as needed, to help differentiate the line work and hatching.

***Product:** Preparation of an Airport Layout Plan in AutoCAD format, compatible with the file format currently used by the Lewis County.*

Task 9.2 – On-Airport Individual Area Plans

Individual Area Plans will be prepared to depict the existing and proposed facilities for various areas within airport property. The plans will generally be comprised of, but not limited to existing general aviation facilities located on the east side of the runway and any new general aviation areas (locations to be determined through AMP evaluation). Facilities that will be shown on the drawings include:

- A. Apron Configuration and Aircraft Parking Positions
- B. Aircraft Taxiways and Taxilanes
- C. Support Facilities
- D. Access Roadways and Vehicle Parking
- E. Security Fencing and Gates

***Product:** Individual Area Plans projecting development consistent with the ALP drawing, but in greater detail.*

Task 9.3 - Airport Airspace Drawing (FAR Part 77)

The FAR Part 77 drawing depicts the plan view of the ultimate FAR Part 77 imaginary surfaces for the airport. The existing and future full-length approach plan and profile views to each runway end. Any obstructions will be listed, the amount of penetration determined (using AGIS data) and their proposed disposition will be identified. Fifty-foot contour intervals will be shown for all FAR Part 77 imaginary surfaces for full length of all approach surfaces. NOS Obstruction Chart and AGIS obstruction data will be incorporated into the drawing, as appropriate. USGS quadrangle maps or AGIS data will be utilized for the base layer on the Part 77 plan view.

***Product:** A FAR Part 77 airspace plan drawing for the airport*

Task 9.4 - Runway Protection Zone (RPZ)/Inner Approach Plan and Profile Drawings

Drawings will be prepared that show the plan view of the Runway Protection Zones (RPZ) and plan and profile views of the inner portion of the runway approach surface for each runway end. In addition, obstacle clearance surfaces (OCS) or TERPS instrument runway departure surfaces will be depicted, as applicable. Any obstructions within the RPZ or the other noted surfaces will be identified and a recommended disposition will be provided. Aerial photography and AGIS data may be used to develop these drawings. This drawing may be combined with other drawings.

Product: A Runway Protection Zone/Approach Plan and Profile drawing that shows the RPZs for each runway end at the airport.

Task 9.5 - Approach Plan and Profile for Each Runway End

Drawings will be prepared that show the existing and future full approach plan and profile for the approaches to each runway. In addition, obstacle clearance surfaces (OCS) or TERPS instrument runway departure surfaces will be depicted, as applicable. Any obstructions within the approaches will be identified and a recommended disposition will be provided. This drawing may be combined with other drawings. USGS maps and AGIS data will be utilized.

Product: An Approach Plan and Profile drawing that shows the Part 77 approaches for each runway end. The ultimate Part 77 approach plan and profile will be prepared for the most critical airfield configuration (existing or ultimate). TERPS instrument runway departure surfaces will also be depicted if applicable.

Task 9.6 – Threshold Siting Surface Drawing for Each Runway End

A Threshold Siting Surface Drawing will be prepared based on the findings and recommendations reflected in the preferred alternative. A plan showing the existing and ultimate threshold siting surface will be developed for each runway end. Plan and profile views of each area will be developed identifying all physical obstructions. Obstruction heights and locations will be noted based on AGIS data. Any obstruction requiring removal or relocation to meet FAA standards will be noted and an action plan identified. This drawing may be combined with other drawings, if appropriate.

Product: A Threshold Siting Surface drawing depicting the surfaces for each runway end.

Task 9.7 – On-Airport Land Use Plan

The Land Use Plan drawing will depict existing and recommended uses of all land within the ultimate airport property. Current zoning designations for the Airport will also be depicted. The Land Use Plan will be illustrated on a drawing (same sheet size and scale as the ALP) and described within the body of the AMP document. The Consultant will work with the County during the development of the On-Airport Land Use Plan to ensure accurate depiction of existing and proposed land uses.

The airport layout plan and on-airport land use plan drawings are intended to provide a clear path for effective and efficient facility development based on anticipated demand, while providing airport management adequate flexibility to refine facility configurations as needed to respond to changing market conditions.

Product: An On-Airport Land Use Plan for all land within the ultimate airport property.

Task 9.8 – Off-Airport Land Use Plan

The Off-Airport Land Use Plan drawing will depict existing and recommended uses of all land in the vicinity of the airport, generally identified as that area surrounding the airport, generally within ½-mile of the facility. Land uses will be depicted by comprehensive plan land use categories, including such as agriculture, residential, industrial, commercial, open space, aviation-related, public, etc. Current zoning designations may also be depicted.

Off-airport land use will be illustrated on a drawing (same sheet size as the ALP) and described within the body of the AMP document. Any findings found in this study effort will be incorporated into the environs land use recommendations, which will be provided to any affected governmental near the Airport. The Consultant will work with Lewis County planning departments during the development of the Off-Airport Land Use Plan drawing to ensure that recommendations needed to implement any changes in land use designations or zoning have been shared with local planning agencies. It is noted that the AMP addresses a 20-year planning horizon that does not typically require immediate implementation for all action items.

Product: An Off-Airport Land Use Plan for lands in the vicinity of the airport.

Task 9.9 – Airport Property Map

An Airport Property Map will be prepared depicting property ownership, aviation and surface easements. The current airport boundary along with detailed parcel information (grantor, grantee, type of interest, acreage, book & page, date of recording, and appropriate FAA project application numbers if applicable is to be provided to the Consultant by the County or secondary sources. The Airport Property Map will be prepared in accordance with FAA SOP 3.0.

Note: The scope does not include a title search or property boundary survey. Best available information will be used.

Product: Airport Property Map

ELEMENT 10 - REPORTS AND DOCUMENTATION

Task 10.1 – “Preliminary” Draft ALP Set

In order to address any concerns from the Lewis County or the FAA prior to the public meeting for the ALP presentation, a draft ALP set will be prepared for FAA and Sponsor preliminary review and comment. Formal reviews will be conducted following the preliminary coordination.

Product: “Preliminary Draft” Airport Layout Plan Set will be provided to Lewis County and FAA.

Task 10.2 - Draft Airport Layout Plan Report and Draft ALP Drawing Set

To ensure proper coordination of the planning effort and assure agreement between the Consultant, Sponsor and FAA, a Draft Airport Layout Plan Update Report and Draft ALP drawing set will be submitted for formal review. The draft report will contain all preliminary chapters (revised based on comments provided on original drafts), ALP drawings and the financial evaluation. The draft documents and plans will be submitted to the FAA for review and coordination with the appropriate FAA divisions (Air Traffic, etc.).

Once comments are received from FAA and incorporated, Consultant will provide FAA planner one final check set of ALP drawings electronically to confirm that comments have been addressed. Upon written confirmation from FAA planner that comments have been addressed and the ALP is ready for signature, the Consultant will submit final drawing sets for County signature and final submittal to FAA for signature.

Product: "Draft" Airport Layout Plan Set and "Draft" Airport Master Plan Report will be provided to Lewis County and FAA.

Task 10.3 - Final Report and ALP Drawing Set

The Final Airport Layout Plan Update Report and ALP drawings set will be prepared and distributed based on comments received from the FAA final coordination/review process and any subsequent comments received from the Sponsor. This will be the final publication of the report and plans set.

Product: "Final" Airport Layout Plan Set and "Final" Airport Layout Plan Update Report will be provided to Lewis County and FAA.

Task 10.4 – Summary of Products to FAA

<u>Product:</u>	<u>Quantity</u>
Chapter/Draft Chapters	7 – PDFs
Draft Final Airport Layout Plan Update Report	1 – PDF
Preliminary Draft ALP Print Sets & FAA Checklist	1 – PDF
Draft ALP Set & FAA Checklist	1 – Printed & 1 – PDF
Final ALP Set	1 – Printed & 1 – PDF
Final ALP CADD Files	1 – PDF
Final Airport Layout Plan Update Report	1 – Printed & 1 – PDF

Task 10.5 – Summary of Products to Sponsor

The items listed below include distribution to the Planning Advisory Committee (PAC), WSDOT, and County staff.

<u>Product:</u>	<u>Quantity</u>
Chapter/Draft Chapters	7 – PDF
Draft Final Airport Layout Plan Update Report	1 – PDF
Preliminary Draft ALP Print Sets & FAA Checklist	1 – PDF
Draft ALP Set & FAA Checklist	1 – PDF
Final ALP Set	2 – Printed & 1 – PDF
Final ALP CADD Files	1 – PDF
Final Airport Layout Plan Update Report	2 – Printed & 1 – PDF