

SCOPE OF WORK
SOUTH LEWIS COUNTY AIRPORT
AIRPORT LAYOUT PLAN UPDATE & NARRATIVE REPORT
FAA AIP Grant Number: 3-53-0078-013-2022

PROJECT INTENT

Lewis County (Sponsor or County) intends to complete an Airport Layout Plan Update and Narrative Report (Update) for the South Lewis County Airport. The Update will provide Lewis County with an AGIS survey, identify conformance issues related to changes in FAA standards and complete an updated Airport Layout Plan set. Century West Engineering (Consultant) has been retained by the Sponsor to accomplish the Update. The Consultant will work in close coordination with Lewis County staff, stakeholder groups, the Federal Aviation Administration (FAA) and the Washington Department of Transportation - Aviation Division (WSDOT) to ensure that the plan reflects the airport's development needs.

The Sponsor and FAA have provided specific direction regarding the elements to be included in the Update to address the current and future needs at the airport. The following work program describes the effort required to successfully complete the Update for South Lewis County Airport within the FAA framework and available funding.

This scope of work includes the primary elements of a complete Airport Master Plan project, but with significantly reduced scope for most of the tasks. The guidance from the FAA is to rely significantly on the 2018 Airport Master Plan (2018 AMP) and include the information by reference. The project scope was developed to include work elements critical to completing a new Airport Layout Plan and AGIS survey for the airport. The tasks included are narrowly focused to develop the information necessary to do this. A complete Airport Master Plan report or summary of the previous plan in the Update narrative report is beyond the scope of this project.

This project will provide Lewis County with an updated 2022-2042 Airport Layout Plan (ALP) drawing set and narrative report. 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. The most current FAA Northwest Region Airport Layout Plan Checklist will be prepared and submitted with the draft airport layout plan drawing set.

ELEMENTS OF THE AIRPORT LAYOUT PLAN UPDATE & NARRATIVE REPORT

The update 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 – CIP
- Element 9 – ALP Drawing Set
- Element 10 – Reports and Documentation

Completion of the work elements in the Update should result in:

1. An AGIS Survey.
2. An implementation program that includes a realistic and workable CIP; and current ALP drawings that graphically depict existing conditions at the airport and proposed development projects.
3. 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 project meetings (estimated 8 teleconferences averaging 30-60 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: DBE annual reporting.

Task 1.4 - Project Close Out Support

The Consultant will assist the County with preparing quarterly reports as well as the documents needed to close out the project with 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

The public involvement process element presents the tasks required to develop a collaborative public involvement process to provide periodic project updates to stakeholder groups and to provide an opportunity for input on the Update process.

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 to County staff and the Consultant, and to allow for public dissemination of data. The PAC may 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.

Task 2.2 – Planning Advisory Committee (PAC) Meetings

Two project information meetings will be held during the course of the study and will be held on-line. 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 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 identified in the Consultant's existing conditions analysis, and a summary of the aviation forecasts that will ultimately be submitted to the FAA for approval.

Product: All project related materials required to conduct PAC Meeting #1 in an on-line format.

Meeting Attendance: 2 prime consultants.

Sub-task 2.2.2 – Conduct PAC #2

The consultant will facilitate a stakeholder discussion to identify 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 development alternatives will be presented for public review and comment. The public input provided will then 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. 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 in an on-line format.

Meeting Attendance: 2 prime consultants.

Task 2.3 – Public Notice and Data Distribution***Sub-task 2.3.1 – 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. 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 Lewis County website.

Product: *Meeting notices and press release documentation.*

Sub-task 2.3.2 – 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: *Meeting notes and public comments will be summarized.*

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 document existing airfield facilities and conditions that affect the operation and development of the airport. *The existing conditions analysis will utilize the previous Airport Master Plan and Airport Layout Plan, and any subsequent work product to support the effort.* Data contained in the previous airport master plan document will be used to extent feasible in developing updated assessments.

The Consultant will verify the status of currently adopted drawings with the FAA Seattle Airports District Office (ADO). The findings documented in the Existing Conditions Analysis chapter will be used to support subsequent recommendations throughout the development the Update. 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 Update introduction chapter to summarize and depict the following information related to the Update:

- Study Purpose & Description of Limited Update Scope
- Project Need
- Project Funding
- Project Schedule
- Goals of the Update

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 South Lewis County Airport. Historic and forecast socioeconomic data will be collected from secondary sources. Data collection will be focused on data required to update Aviation Activity Forecasts. Generally, all other inventory elements will be carried forward from the previous Airport Master Plan

The Consultant will utilize inventory data contained in the previous Airport Master 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 County staff, airport stakeholders, and local airport users.*

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

Sub-task 4.2.1 – Evaluate Historical and Existing Airport Operational Data

The Consultant will compile a summary of aviation activity and operational data for South Lewis County 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 will be incorporated into the forecast update to reflect the potential for increased market share. The previous Airport Master Plan 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 2022-2042), 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.

Lewis County will provide a current list of locally based aircraft by number and type for 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 4.2.2 – 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 socio-economic 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 4.2.3 – Relevant Studies

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

- Previous Airport Layout Plan/Master Plan Reports
- Current Airport Layout Plan Drawings

Task 4.3 - 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 Update. The following sub-tasks will form the framework for examining the landside elements of the Airport:

Sub-task 4.3.1 – General Aviation (GA) Terminal Areas

Consultant will summarize and depict the GA Terminal Area facilities, including but not limited to designated aircraft parking areas, non-aeronautical activities, and other operations on the Airport.

Sub-task 4.3.2 – Hangars

Consultant will document existing aircraft hangars and current use on the Airport.

Product: A summarization and depiction of relevant content.

Task 4.4 - 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 Update. The following sub-tasks will form the framework for examining the airside elements of the Airport:

Sub-task 4.4.1 – 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 active runway on the Airport; decommissioned airfield pavements, including the former crosswind runway will be documented.
- 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 2018 WSDOT Airport Pavement Management System database (IDEA) for the Airport will be utilized in addition to a review of existing design drawings from recent pavement rehabilitation projects.
- 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 4.4.2 – FAA Design Standards

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

Sub-task 4.4.3 – 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 coordinate review of proposed approach procedures identified by FAA in the preliminary feasibility assessment.

Product: A summarization and depiction of relevant content.

Task 4.5 – 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 chapters 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 Airport Update report.

ELEMENT 5 – AVIATION ACTIVITY FORECASTS

Per FAA guidelines, the Update 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 South Lewis County Airport. The existing and future critical aircraft will be identified through the forecast update. The base year for data will be CY 2022. 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 Master Plan 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 – Activity Peaking

Consultant will summarize and depict pertinent information as it relates to the forecast aviation activity peaking (peak month, design hour, peak hour operations).

Sub-task 5.1.4 – 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 5.1.5 – 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 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 chapters will provide information for subsequent decisions. This chapters 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 chapters will be revised as necessary based on review comments and will become a chapter of the Airport 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.

ELEMENT 6 – FACILITY REQUIREMENTS

The facility requirements will focus on the facility improvements needed to safely and efficiently accommodate projected demand for the twenty-year planning period (2022-2042) consistent with current FAA standards.

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 Landside Elements 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 identified in the Landside Elements 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
- Hangars

***Product:** Formulation of “landside elements” facility requirements to serve as a guide for the preparation of the development alternatives.*

Task 6.3 – Define Airside Elements 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 Airside Elements analysis, which may include the following:

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

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

Task 6.4 – Develop Facility Requirements Chapter

The Consultant will develop a chapter describing the tasks outlined above. The chapters 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 Update report.*

ELEMENT 7 – ALTERNATIVES ANALYSIS

The purpose of this element is to prepare airport development alternatives to address needs identified in the facility requirements chapter.

Task 7.1 – Identify and Prepare Alternatives

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

- Airside Alternatives: A maximum of one (1) airside alternatives will be prepared.
- Landside Alternatives: A maximum of two (2) landside alternatives will be prepared.
- No-Action Alternative: A no-action alternative will be included in the narrative.

The airport development 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 summarized in narrative form, 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 and Selection of a Preferred Alternative

Consultant will present development alternatives to the County and FAA for review and comment. Consultant will attend one meeting to present development alternatives and assist the County in the selection of a preferred development alternative. Preferred development alternative may include elements of more than one alternative that will be incorporated into the final preferred development alternative.

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

Task 7.3 – Prepare Alternatives 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 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 Update report.

ELEMENT 8 –CAPITAL IMPROVEMENT PLAN (CIP)

The Consultant will work closely with 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.

Task 8.1 - Capital Improvement Plan

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.

ELEMENT 9 - AIRPORT LAYOUT PLAN DRAWINGS

The previous Airport Layout Plan drawing set will be replaced (redrawn), to reflect current conditions, updated 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 (3 printed copies [2 County and 1 FAA] with final acceptance letter signed by FAA and County embedded in the cover sheet; 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 final acceptance letter to be signed and embedded into the cover sheet of the plans set.

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 or newer. 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 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 and any recommended new general aviation areas (locations to be determined through Update evaluation). Facilities that will be shown on the drawings include:

- A. Apron Configuration and Aircraft Parking Positions (based and itinerant aircraft, including helicopter parking positions);
- B. Aircraft Taxiways and Taxilanes;
- C. Hangars and Aircraft Fueling Facilities;
- D. Access Roadways and public vehicle parking; and
- 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 or 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 Update 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 land uses in the vicinity of the airport, generally within ½-mile of the facility. Current Comprehensive Plan land use designations and zoning designations will 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 Update 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 Update 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 drawing will be prepared depicting property ownership, avigation 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.

ELEMENT 10 - REPORTS AND DOCUMENTATION

Task 10.1 – “Preliminary” Draft ALP Set

In order to address any concerns from 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.*

Task 10.2 - Draft Update 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 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 Update Report will be provided to Lewis County.

Task 10.3 - Final Report and ALP Drawing Set

The Final Airport 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. A final acceptance letter will be prepared and submitted for County and FAA signature, then this letter will be imbedded on the cover sheet of the ALP set. This will be the final publication of the report and plans set.

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

Task 10.4 – Summary of Products to FAA

<u>Product:</u>	<u>Quantity</u>
Chapters/Draft Chapters	7 – PDFs
Draft Final 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 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. All draft electronic documents will be distributed through links to the Consultant or Lewis County project webpage. Final electronic files will be provided both through website links and with physical storage media (flash drive).

<u>Product:</u>	<u>Quantity</u>
Chapters/Draft Chapters	1 – PDF
Draft Final 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 Update Report	2 – Printed & 1 – PDF