

**Airport Master Plan
Planning Advisory Committee #4
Monday, October 26, 2020 | 11:00 A.M.
Virtual via RingCentral**

Welcome

Sara Young (Director of Planning and Facilities – Port of Skagit) welcomed the members of the planning advisory committee (PAC). Ms. Young explained why it has been sometime since our last PAC meeting. Those reasons being ongoing lengthy discussions with FAA about the forecasts of aviation demand and the critical aircraft determination, the uncertainty of the impacts of the COVID-19 pandemic, and FAA staff turnover. PAC members present introduced themselves.

Introductions

Patrick Taylor (Project Manager – Coffman Associates) began by having everyone in attendance introduce themselves and the organization they represent. He reviewed the master plan process, indicating that we are now at the Draft Final stage. This meeting is the fourth of four planned PAC meetings. The ongoing public involvement plan was reviewed. The project website has been live throughout the process and has been updated with the revised draft chapters. The PAC is part of the public involvement process. There have been two in-person public information workshops and a third and final virtual workshop is planned to run from November 2 to November 27. This virtual public information workshop will include a live presentation via Zoom on November 16. Items to be covered today are a complete review of the entire plan and an explanation of the changes from the original drafts.

Review of FAA Forecast Approval

Mr. Taylor updated the PAC on the challenges to getting the forecasts approved by FAA. The original forecasts and critical aircraft determination were developed utilizing operational data obtained under a separate contract with a different consultant, prior to start of the master plan. The operational data was obtained through motion activated cameras over a three-year period. The camera data differed from the available FAA data for determination of the critical aircraft, therefore the FAA sought clarification of the data collection methodology and analysis. The original consultant was asked to revalidate a subset of the operational data. This revised data set was provided to FAA; however, FAA was unable to approve the camera operational data for use in the master plan.

Based on the FAA determination, the master plan consultant developed a new forecast utilizing more traditional forecasting methods for a non-towered airport. All analysis that flowed from the forecasts was subsequently revised as well. The new forecasts were submitted to FAA and approved on June 30, 2020.

Review of Revised Forecasts

Patrick Taylor briefly reviewed the inventory chapter and proceeded to a detailed presentation of the new forecasts for based aircraft and operations. The base year of the forecasts was updated from 2017 to 2019. **Table 1-MN4** shows original based aircraft and operations forecast compared to the revised forecast.

TABLE 1-MN4	Based Aircraft	Total Operations
Original		
2017	144	31,778
2022	154	33,949
2027	164	36,231
2037	185	40,882
Revised		
2019	134	33,500
2024	158	38,600
2029	168	46,300
2039	189	50,900

During discussion with the PAC there was a question about the impact of the revised forecast numbers and their impact to the overall plan. Mr. Taylor indicated that the revised based aircraft numbers did impact facility needs. The revised operations number had little impact because it is the quality of those operations rather than the number that will have an impact. He further clarified that an increase in large jet operations have the potential to impact elements such as the design standards and runway length needs much more than an increase of many smaller piston operations.

Critical Aircraft Determination

The critical aircraft is that aircraft or family of aircraft with similar characteristics that account for 500 annual operations. As noted previously, FAA did not support use of the camera operations study data for critical aircraft determination. Thus, the consultant used the only available operations data which was the FAA’s Traffic Flow Management System County (TFMSC) database. Mr. Taylor explained that the FAA indicated this database captures approximately 95% of jet IFR flights. This database showed that there were 288 ARC C/D jet operations in 2019 and 720 ARC B operations. Therefore, the current critical aircraft falls in the B category. In the future, jet operations are forecast to increase as a percent of the whole and within the next five years are anticipated to reach the 500 operations threshold. **Table 2-MN4** summarizes the TFMSC data used in the critical aircraft determination as well as the forecast.

TABLE 2-MN4	Jet Operations			
	Actual	Forecast		
Aircraft Type	2019	2024	2029	2039
Approach Category A/B	546	2,350	3,350	4,750
Approach Category C/D	288	650	850	1,250

Mr. Taylor indicated that the current critical aircraft (B-II) is different than what is depicted on the current airport layout plan (D-II). He also indicated that this change has no immediate impact on the future plans for the airport. Certain planned projects that require by activity in the C/D classification

may require additional justification prior to implementation. This includes the planned runway extension, which is targeted for years 6-10, which also corresponds to the forecast transition to D-II.

Facility Requirements

Patrick Taylor presented highlights from the revised draft Facility Requirements chapter, examining airside (runways and taxiways) and landside (hangars, ramps, and support facilities) facility needs.

Runway design standards were presented. The design standards for each runway is a function of the critical aircraft using the runway. As presented in the Forecasts chapter, Runway 11-29 should be designed to B-II standards currently and to D-II standards in the future. Runway 4-22 should be designed to A/B-I standards. The following are the non-standard geometries that currently exist:

- Angled threshold taxiways (A and C) to Runway 11;
- RSA windsock penetration near Runway 11 end;
- ROFA penetration by windsock, segmented circle, vault at midfield;
- ROFA penetration by windsock near Runway 29 end;
- Lead-in taxiway to Runway 4; and
- Several taxilane OFA areas do not meet standard.

There was some discussion about the separation distance between Runway 4-22 and Taxiway B. Patrick noted that, according to FAA guidance, the A/B-I are the minimum design standards for Runway 4-22 because the crosswind coverage for Runway 11-29 determines the minimum design standards for Runway 4-22. Since Runway 11-29 provides greater than 95 percent crosswind coverage at 10.5 knots, Runway 4-22 only needs to meet A/B-I(s) standards. The A/B-I(s) separation standard is 150 feet, which exists today. The previous master plan and airport layout plan considered B-II standards for Runway 4-22 (240' runway/taxiway separation standard). It is the option of an airport sponsor to exceed design standards; however, exceeding design standards adds additional maintenance and rehabilitation costs that are a local responsibility.

Taxiway B is parallel to Runway 4-22 and it serve a significant hangar development area. Some of the hangars in this area are capable of accommodating ADG II aircraft wingspans. Therefore, it is recommended that Taxiway B be planned to ADG II standards to provide an additional safety margin. This means the Taxiway Object Free Area is 131 feet wide rather than 89 feet wide for the B-I TOFA. A PAC member asked if having a runway planned to B-I(s) standards and the parallel taxiway planned to B-II standards represented a conflict and potential liability.

Mr. Taylor noted that this layout meets design standard and is not unsafe. With the runway having a pavement strength rating of 12,500 pounds, and there being few, if any B-I aircraft weighing more than 12,500 pounds, it is rare that there would be a B-II aircraft operating on Runway 4-22 and even rarer if ever, for a B-II aircraft to operate on the runway at the same time as a B-I aircraft were operating on the parallel taxiway. There is currently a note in the Facility Directory for the airport that states: "Use of

Taxiway B by aircraft with a wingspan of 49 feet or greater is prohibited when Runway 4-22 is in use.” This note can still be employed to add to the safety margin, however it is not required.

Runway eligibility was presented. It was noted that Runway 11-29 exceeds the minimum wind coverage threshold, thus making Runway 4-22 ineligible for FAA maintenance and rehabilitation funding. This has been a known situation for several years, thus any maintenance and upkeep for Runway 4-22 is a local financial responsibility.

The runway analysis did not change based on the updated forecasts. Following FAA guidelines in FAA AC 150/5325-4B, *Runway Length Requirements for Airport Design*, it was determined that the optimal length for Runway 4-22 is 2,900 feet. At 3,000 feet, this runway meets the recommended length requirements. The optimal length for Runway 11-29 is 5,500 feet based on the current fleet mix operating at the airport (100% of business jets at 60% useful load). At 5,478 feet in length, the runway nearly meets this recommended length.

The future critical aircraft is the Gulfstream IV (one of which is currently based at the airport), which has a runway length requirement of 6,300 feet. One hundred percent (100%) of business jets at 90% useful load require a runway length of 7,600 feet. Finally, the flight planning manuals for several business jet types that currently operate at the airport were consulted and a runway length of approximately 7,000 feet would accommodate these aircraft. Any of these runway lengths will require documentation of 500 annual operations by aircraft that need the length.

On the landside, calculations indicate an immediate need for an additional 200,000 square feet of new hangar space and a long-term need for a total of 370,000 square feet of hangar space. Additional aircraft parking apron is needed. Additional Jet A fuel capacity is also needed.

Alternatives

The alternatives analysis did not change based on the updated forecasts because the future airport reference code (D-II) is the same as what the airport has been planned to since 2010. The alternatives are broad concepts for airside and landside development over the next 20 years. Various segments of the airport were examined individually and then two overall airport development concepts were presented.

Recommended Concept

A single recommended development concept was presented (Exhibit 5A in the master plan). The following elements are included:

- Planned extension of Runway 11-29 to the north west for a total length of 7,000 feet (justified by 500 annual operations by aircraft needing the additional length).
- Surface road access to the “triangle area” between the runways, which requires crossing and closing a portion of Taxiway C.
- Implementation of a precision CAT-I approach to Runway 29.
- Following consultation with FAA, Taxiway A to remain at its current separation distance of 500 feet from the runway. That portion of Taxiway A to be constructed with a runway extension would be at 400 feet.

- Parallel taxiway west side of Runway 11-29.
- Maintaining Runway 4-22 for as long as feasible with cost effective maintenance.

Landside concepts include:

- Build-out of property adjacent to Runway 4-.
- Build-out of Lot 72 (south of Corporate Jet Center) using concepts from developer.
- Redevelopment of Hangars A-E, which were damaged in a wind event and are at the end of their useful life.
- Maintain existing Runway 11-29 flight line facilities around the administration building.
- Extend Runway 11-29 flight line development to the north into undeveloped and forested areas to maximize development of the flight line.
- Initial conventional hangar and apron development in the “triangle area.”
- Possible development along Taxiway C.

Capital Improvement Program (CIP)

A 20-year CIP was presented (Exhibit 6A in the master plan). The CIP is presented in fiscal years for the first five years, then projects are categorized as intermediate term (year 6-10) and long term (years 11-20). The CIP is meant to present a preferred project priority, however it will change depending of FAA funding and project justification. The intent of the CIP is to provide a list of viable projects from which airport management can prioritize, in consultation with FAA, on an annual basis. Approximately \$69 million in project cost is identified. All projects are in 2021 dollars.

Discussion

One PAC member asked about potential FAR Part 77 Transitional Surface penetrations to the east side of Runway 11-29. In particular, they were concerned about an aircraft parked at the FBO ramp penetrating that surface and the implications. Mr. Taylor addressed this concern.

FAR Part 77 surfaces, including the transitional surface, are a land use control measure that can identify obstructions to that surface. Obstructions are not inherently unsafe unless they are determined to be a hazard to air navigation by the FAA. Transitional surface obstructions to the side of runways will have little to no impact to runway operations. Typically, FAA would recommend that a red obstruction light be installed if the obstruction is a hangar or building.

The transitional surface corresponds to the building restriction line. The master plan identifies a 35-foot BRL. Currently the 35-foot BRL is 495 feet from the Runway 11-29 centerline. No facilities or parked aircraft penetrate this surface. When the airport implements a CAT-I precision approach, the 35' BRL moves to 745 feet from the runway centerline. No buildings or facilities will penetrate this surface; however, it is possible that the tail of a large business jet parked on the apron would penetrate the transitional surface. Experience and consultation with FAA have shown that this type of potential transitional surface penetration will not impact air navigation and no action is necessary by the airport. Nonetheless, future facilities and parking aprons should be constructed in a manner to avoid potential penetrations to the transitional surface.