



# TROUTDALE AIRPORT MASTER PLAN SHAPING OUR FUTURE

PLANNING ADVISORY COMMITTEE  
FINAL REPORT

JUNE 2016



May 11, 2016

*Port of Portland Executive Director,*

*Troutdale Airport: Shaping Our Future* was a complete airport master plan process that went above and beyond. While the master plan followed many of the traditional steps characteristic of an airport master plan, it also explored a broader range of issues important to the Port, City and greater region. Before the process began, the Port of Portland recognized that Troutdale Airport was a valued community asset on an unsustainable path. At the same time, the Port identified a local community need for increased economic opportunities. This master plan process was exceptional in that it not only addressed the airport resources required to continue serving aviation needs, it also evaluated how Troutdale Airport could sustainably serve local community needs as a whole for the next 20 years.

The Port of Portland invited a group of 23 stakeholders – representing diverse values of economic, environmental and social sustainability – to create a project advisory committee (PAC) charged with providing input and recommendations for the master plan process. From the spring of 2014 to the spring of 2016, I worked with these outstanding individuals and the Port to develop our recommendations on the *Troutdale Airport Master Plan*. As a PAC, we were given the opportunity to provide input on planning documents and engage in rigorous discussion about Troutdale Airport's role in the future. Our recommendations were also informed by community input collected from stakeholder meetings and public involvement activities prior to key project milestones.

This report provides a summary of the *Troutdale Airport: Shaping Our Future* process. It contains summaries of our 11 PAC meetings with an abridged narrative of our work, highlights from the resulting master plan document and our proposal to continue communication with the Port as the plan is implemented. At the end of the report you will find our PAC recommendations outlined as follows:

- The Port include Alternative C with a 4,500-foot runway and 56 acres of industrial development on the Airport Layout Plan submitted to the Federal Aviation Administration for review and acceptance in 2015
- The Port continue to manage TTD as an important part of the regional and state airport system with phased implementation of Alternative C
- The Port and City of Troutdale work with other east county interests as appropriate to maintain and enhance TTD's viability as an important part of the Portland airport system, and support both the aviation and industrial goals of the community

The PAC would like to thank the Port of Portland and the many involved stakeholders for taking the time to participate in this important community engagement process. We also thank the consultants for providing the detailed technical and policy analysis required to develop our recommendations. We look forward to watching Troutdale Airport thrive with our community in its future role.

Respectfully submitted,

*Travis Stovall*

Travis Stovall, PAC Chair

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Joe Smith, Oregon Pilots Association  
Alan Snook, Oregon Department of Transportation  
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### Non-Voting Members

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### How to read this document

For a general overview of the process and key recommendations, please read the *Executive Summary*. For more detail, please read the body of this report.

## EXECUTIVE SUMMARY



### Introduction

In 2014, the Port of Portland (Port) initiated an update to the *Troutdale Airport Master Plan* called, *Troutdale Airport: Shaping Our Future*. The Master Plan provides a roadmap for the development, operation and investment at Troutdale Airport (TTD or the Airport) over the next 20 years. This study was designed to assist the Port in determining what role the 261-acre Troutdale Airport will play in meeting the Port's mission to enhance the region's economy and quality of life by providing efficient cargo and air passenger access to national and global markets, and by promoting industrial development. In order to determine the future role of the Airport, Port management required a deeper understanding of the complex relationship between aviation uses at TTD and other nearby airports (especially Portland International Airport) and the surrounding land uses, both current and projected.

To support this planning process, the Port established a Troutdale Airport Planning Advisory Committee (PAC) made up of 23 members to help the Port assess the future and recommend an optimal role for the Airport over the next 20 years. The PAC membership represented a broad range of community, government, and commercial interests. Two members of the PAC were non-voting ex officio members representing the Port of Portland and Federal Aviation Administration. PAC engagement was supplemented with additional public input at key milestones, documented in Section II Public Involvement and Stakeholder Outreach.

Through the nearly two-year planning process, a plan emerged guided by triple-bottom line sustainability goals that balanced economic, environmental and social interests, and considered seven evaluation categories identified by the PAC. The evaluation categories included:

- Alignment with forecasts
- Community economic benefits
- Community planning compatibility
- Environmental impacts
- Financial impacts
- Fit with local airport system
- Legal feasibility

The PAC considered four development alternatives that proposed different answers to the central question of the planning process: "What is the role of the Troutdale Airport in the future?" PAC members worked with the project team to complete an initial evaluation of each alternative. The four preliminary development alternatives considered are listed on the next page.

## Development Alternatives

<b>Alternative A:</b>	<b>Maximum Commercial/Industrial</b>
	Close Troutdale Airport
	Convert all available land for commercial/industrial uses
<b>Alternative B:</b>	<b>More Commercial/Industrial, Less Aviation</b>
	Reduce and consolidate aviation land to create space for commercial/industrial uses
	Retain flight training, recreational and maintenance and repair aviation uses
	Less accommodation for large business jets compared to Alternative C
<b>Alternative C:</b>	<b>Less Commercial/Industrial, More Aviation</b>
	Reduce and consolidate aviation land to create space for commercial/industrial uses
	Retain flight training, recreational and maintenance and repair aviation uses
	More accommodation for large business jets compared to Alternative B
<b>Alternative D:</b>	<b>Maximum Aviation</b>
	Expand Troutdale Airport
	Retain flight training, recreational and maintenance and repair aviation uses
	Increase accommodation for large business jets

As a result of this evaluation, a majority of the PAC initially identified two alternatives that best addressed the sustainability goal and the seven PAC evaluation categories. Both Alternative B and Alternative C continue TTD's role as a general aviation airport and accommodate approximately 99 percent of the current and future TTD aviation operations. While the PAC continued to consider all alternatives until the end of the process, the PAC voted and directed the project team to focus their refined analysis on Alternative B and Alternative C.

### Refined Alternative B:

3,600-foot long and 75-foot wide runway. Runway length in Alternative B is determined by the critical design aircraft (Beechcraft King Air). Aviation activities relocated to the south side of the Airport with 56 acres on the north side of the Airport redeveloped for industrial/commercial use and an additional 20 acres at the far west end of the Airport reserved for future industrial or commercial use.

### Refined Alternative C:

4,500-foot long and 75-foot wide runway. Runway length is determined by the existing roadways at the east and west end of the Airport (Graham Road, Sundial Road and Marine Drive). Aviation activities relocated to the south side of the Airport with 56 acres on the north side of the Airport redeveloped for industrial/commercial use.

In discussions with the PAC and in balancing sustainability goals, the Port leadership team indicated a preference for Alternative B. This was based on interest in matching TTD facilities with the forecast aviation demand and the regional aviation system, limiting infrastructure demands and impacts on the environment, supporting jobs and economic benefits in the region and addressing the longstanding financial challenges associated with TTD.

The PAC understands the financial challenges associated with TTD and the value of an appropriate and financially efficient airport facility. The Airport has operated at a loss since the Port acquired it in 1942 (revenue compared to expenses), and is projected to do so for the foreseeable future, unless significant changes are made to revenues and expenses. The runway and taxiway infrastructure requires reconstruction and these updates are expensive and will draw upon limited Port and FAA funds. The PAC recognizes that the Port has underwritten TTD operations with PDX Aviation Funds and that private investment in TTD has been limited during the last 20 years.

## Preferred Alternative

On March 16, 2016, the PAC voted by majority to recommend Alternative C. Prior to the vote, four members noted potential modifications to the recommendation: 1) accommodate 100 percent of aviation activity, 2) use available time before runway reconstruction to seek other funding for the current runway length, but acknowledge funding may not be available, 3) include an effort to reduce TTD's approach ceiling to 800 feet and 4) preserve the ability for the Airport to expand.

After discussion, the 19 voting members who were present (two members were absent) submitted their votes. Fifteen members voted a "1," meaning they fully supported the recommendation without modification. Three members voted a "2," meaning they agreed with the recommendation but preferred to have it modified in order to give it full support. Nevertheless, the members support the recommendation. One member voted a "2+," which is short of a "3." A "3" means a refusal to support the recommendation. There is no provision for a "2+" vote in the *Collaboration Principles* (see Appendix A). However, the "2+" was considered a "3." When there is a majority-minority vote, members voting a "1" or a "2" favor the proposal and members voting a "3" oppose the proposal, which means the end result was 18 PAC members in favor and one PAC member against.

During the final PAC meeting on April 27, 2016, two PAC members changed their vote on the preferred alternative from a "2" to a "3." The end result is 16 PAC members in favor of Alternative C and three PAC members against.

<b>PAC Vote Summary on TTD Master Plan Alternative C Recommendation</b>	
Absent	2
Non-voting ex officio members	2
Full support of recommendation ("1")	15
Support recommendation with modification ("2")	1
Do not support recommendation ("3")	3
<b>Total PAC members</b>	<b>23</b>

<b>PAC Vote by Member on TTD Master Plan Alternative C Recommendation</b>	
<b>Voting Members</b>	<b>Vote</b>
Travis Stovall, Chair	"1"
Chris Berg, Hillsboro Aero Academy	"1"
Mark Brown, Northwest Aero	"1"
Mark Clark, City of Wood Village	"3"
Claude Cruz, West Columbia Gorge Chamber of Commerce	"1"
Chris Damgen, City of Troutdale	"1"
Erika Fitzgerald, City of Gresham	"1"
Bob Fowler, Toyo Tanso	"1"
Barb Jones, Fairview Neighborhood	"1"
Bobby Lee, Oregon Governor's Regional Solutions Team	"1"
Brian Lessler, Gresham Chamber of Commerce	Absent
Katherine McQuillan, Multnomah County	"1"
Erika Palmer, City of Fairview	"1"
Heather Peck, Oregon Department of Aviation	"2"
Jim Rodrigues, ProLogis	Absent
Joel Schoening, Multnomah County Drainage District	"1"
Joe Smith, Oregon Pilots Association	"3"
Alan Snook, Oregon Department of Transportation	"1"
Jose Villalpando, At-Large Community Member	"1"
Steve Wise, Sandy River Basin Watershed Council	"1"
Marvin Woidyla, Gorge Winds Aviation	"3"
<b>Non-Voting Members</b>	
Steve Nagy, Port of Portland	N/A
Jason Ritchie, Federal Aviation Administration	N/A

While recognizing that Alternative B best addresses TTD's financial sustainability challenges, the PAC recommended by majority vote Alternative C to maintain maximum flexibility for increased aviation development at TTD. In making this recommendation, the PAC recognizes that jobs and private sector investment is critical to reversing the disadvantaged economic demographics of east Multnomah County while providing the tax base for public services, and believes that both Troutdale Reynolds Industrial Park (TRIP) and TTD can play a role in that vision. Further, the PAC recognizes that managing TTD costs and securing new private investment is essential to the ongoing success of the Airport, and requires an active partnership between the community and the Port in achieving this community vision. The PAC understands that the Port will undertake another master planning process within about 10 years and will again consider the role of the Airport in light of the progress made toward financial sustainability.

### **Recommendations from the PAC – Majority Vote**

The Troutdale Airport PAC recommends that the Port of Portland's Executive Director accept the *PAC Report* and the following recommendations:

1. Accept the *TTD Master Plan* with Alternative C as the preferred alternative in which the *TTD Master Plan* would reflect a 4,500-foot by 75-foot runway and 56 acres of industrial development on the Airport.
2. Request Port Commission approval to submit the TTD Master Plan, showing an Airport Layout Plan consistent with Alternative C to the Federal Aviation Administration (FAA) for review and acceptance.
3. The Port continue to manage TTD as an important part of the regional and state airport system with phased implementation of Alternative C.
4. The Port work with tenants on the north side of TTD to allow transition of their business plans to align with implementation of Alternative C and to retain the vibrancy of TTD as a regional asset. The transition will be coordinated with tenant lease expirations.

5. The Port continue to monitor aviation issues and trends, and adapt TTD plans accordingly to meet changing industry needs.
6. The Port dedicate revenues from TTD industrial property leases on the north of the Airport and aviation development on the south side of the Airport to enhance the financial sustainability of the Airport.
7. The Oregon Department of Aviation and FAA support investments to help maintain TTD infrastructure and operations, including runway rehabilitation. The Port will keep TTD tenants updated on construction impacts related to the runway rehabilitation.
8. The Port and City of Troutdale work with other east Multnomah County interests (i.e., East Metro Economic Alliance, West Columbia Gorge Chamber of Commerce, Multnomah County, Gresham Chamber of Commerce, east county cities and other stakeholders as appropriate) to maintain and enhance TTD's viability as an important part of the Portland airport system, and support both the aviation and industrial goals of the community.
  - a. The Port continue its efforts to support existing and future TTD tenants (e.g., Fixed Based Operations, flight training), provide aviation market rate lease terms/rates at TTD and market TTD for aviation and industrial uses and compatible industrial uses at TRIP.
  - b. The City of Troutdale commit to identify ways to assist the Port of Portland to further market and incent development at TTD and TRIP.

- c. To support this partnership, the Port and City enter into an intergovernmental agreement which identifies ways to realize the aviation and industrial goals related to TTD and TRIP and defines benchmarks for measuring progress.
    - i. Benchmarks may include but not be limited to: growth in number of TTD tenants, number of TTD aircraft operations, amount of new private capital investment, TTD revenues versus expenses; TTD financial sustainability.
    - ii. Where available, the baseline for benchmark tracking will be the forecast and financial information included in the 2014-16 TTD Master Plan process.
    - iii. The goal is to realize an improvement in the revenue versus expense benchmark from the baseline measure annually.
  - d. The Port and City of Troutdale provide an annual report to review progress on their collective work toward benchmarks in support of TTD aviation and industrial development as well as TRIP industrial development. The Port and City of Troutdale will notify involved stakeholders when annual reports are available and present report findings in a public forum.
9. Finally, the PAC recommends that as part of the next master plan update (expected to be completed in approximately 10 years) that the Port plan to evaluate progress toward TTD financial sustainability with the goal of closing the gap in revenues versus expenses. If TTD continues to operate at a deficit after this good faith effort, the PAC understands that the Port will need to reevaluate alternatives consistent with the goal of financial sustainability.

On April 27, 2016 the PAC voted unanimously to approve the draft *PAC Report* and authorized the PAC Chair to approve any final substantive edits made after that date. The PAC Chair approved this final report on May 11, 2016.

### **Minority Opinions**

PAC members were given the opportunity to include minority reports with this document. One minority report was submitted and is included in *Appendix E*.

# I. BACKGROUND

## A. Context

Troutdale Airport (TTD or the Airport) is a general aviation airport located within the city of Troutdale north of I-84 near the confluence of the Sandy and Columbia rivers. TTD is one of three airports owned and operated by the Port of Portland (Port) in a system that also includes Portland International Airport (PDX) and Hillsboro Airport (HIO). TTD and PDX are eight nautical miles apart, placing TTD's Class D airspace within the Class C airspace of PDX.

TTD property includes approximately 261 acres generally bounded by Graham Road to the north, Sundial Road to the west, Frontage Road to the south and the Sandy River to the east. The north side of TTD is adjacent to the former site of the Reynolds Metals aluminum smelter, which was acquired by the Port and redeveloped as the Troutdale Reynolds Industrial Park (TRIP) in 2007. The Columbia River Gorge National Scenic Area begins on the east side of the Sandy River. The Airport is located within a managed floodplain protected by a system of levees along the Sandy and Columbia rivers.

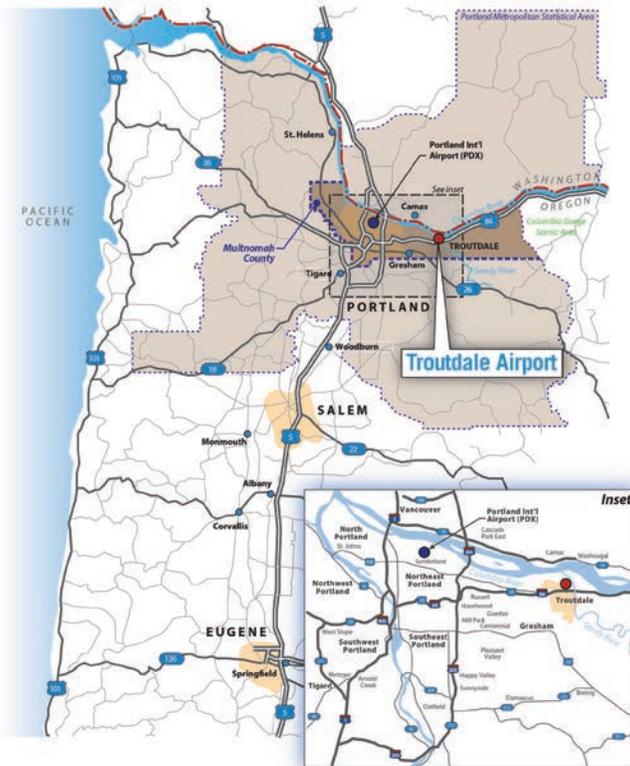
## B. History

Troutdale Airport has served many roles as demand for aviation has changed over time. The Airport began as a private airfield in 1920 and was purchased by the Port in 1942 as part of a plan to develop a system of airports to meet growing demand for commercial and general aviation. Since that time, TTD has served a variety of roles, including emergency response operations, flight training schools and recreational aviation, as well as business aviation activities.

Aviation activity decreased nation-wide, including at TTD, following the economic recession in 2008 and has slowly recovered over time. A helicopter flight training school opened at TTD in 2012, contributing to a significant increase in airport operations. In 2014, flight training operations contributed about 50 percent of all operations at TTD. This upward trend is expected to continue.

It is the Port's goal for all of its airports to be sustainable from an economic, environmental and social perspective. However, TTD faces significant financial challenges. It takes a substantial amount of resources to operate and maintain the Airport and TTD's expenses exceed its revenues. The Airport has operated at a net loss since the Port acquired it in 1942, losing between \$500,000 and \$1 million per year. For decades, the Port has supported operations at TTD using revenue generated at PDX. While aviation activity has increased in recent years, it has not made TTD profitable. This negative financial trend is projected to continue if nothing changes.

Adding to this challenge is the fact that TTD's runway and taxiway infrastructure is in need of full reconstruction. Private investment has been limited at TTD in recent decades, requiring the use of finite capital funds from the Port of Portland and Federal Aviation Administration (FAA).



Map 1 Airport Location produced by Mead and Hunt

# Project Roadmap

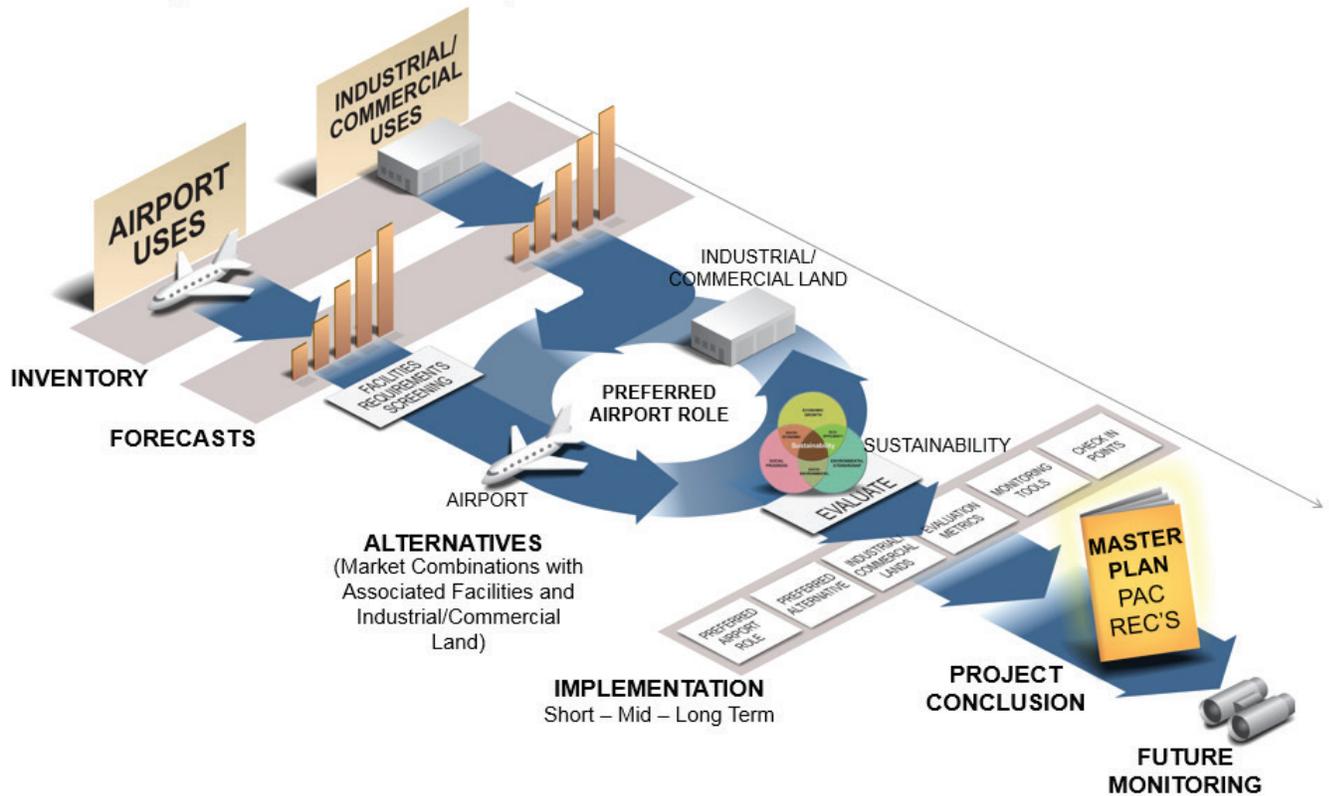


Figure 1 Project Roadmap

## C. Purpose and Assumptions

The *Troutdale Airport Master Plan (Master Plan)* will provide a roadmap for the development, operation and investment at TTD over the next 20 years. This study will assist the Port in determining what role the 261-acre Troutdale Airport will play in meeting the Port's mission to enhance the region's economy and quality of life by providing efficient cargo and air passenger access to national and global markets, and by promoting industrial development. A typical airport master plan includes several planning documents that assess the level of use expected at the airport and the facilities required to accommodate those uses. The *Troutdale Airport Master Plan* addresses this assessment in the following components:

- Inventory of facilities
- Twenty-year demand forecast of aviation activity
- Documentation of facility requirements
- Evaluation of alternatives
- Selection of a preferred alternative
- Capital Improvement Plan
- Airport Layout Plan

However, the scope of this master plan goes beyond what is typical for an airport master plan. This planning process began at a time when the runway and taxiway system at TTD was reaching the end of its useful life. Before spending significant financial resources from limited Port and FAA funds to reconstruct these facilities, the Port decided to conduct a broader master plan process to evaluate the role of Troutdale Airport within the local community and regional airport system. A primary goal of the *Master Plan* was to collect input from community members to understand what they value about the Airport and how they envision using it for the foreseeable future. As such, the Port broadened the scope of the planning process to include alternative uses for TTD property that could provide community benefits and make the Airport more sustainable.

The Port of Portland convened the Troutdale Airport Planning Advisory Committee (PAC) to represent stakeholders from a broad range of interests that could be affected by changes at TTD. The purpose of the PAC was to provide input at key milestones in the planning process and develop recommendations that answer the following questions.

What is the role of Troutdale Airport in the future?

- What markets is the Airport best suited to serve?
- Are there legal constraints that impact future operations?
- Are there environmental constraints that impact future operations?
- What are the primary development options?
- What are the financial impacts of these options?
- What is the community economic benefit of these options?
- How does the community feel about these options?
- What is the preferred development option to recommend to the Port Executive Director?

In addition to reviewing master plan elements, the PAC was asked to consider a range of development alternatives that go beyond the scope of a typical airport master plan. These development alternatives included options to develop the Airport's land for commercial and industrial uses to address demand for certain land uses, increase local economic benefits and contribute to the Airport's financial health. The PAC developed a set of evaluation categories based on the above questions and sustainability principles to score each alternative, help determine what the Airport's role should be and identify a preferred alternative recommendation for the Port of Portland's Executive Director.

This process was designed to be iterative, allowing PAC members the opportunity to provide feedback and direction at each step before moving to the next subject. Several topics were revisited as the PAC engaged in discussion about TTD's future role.



Figure 2 Triple bottom line sustainability concept

#### D. Sustainability

Early in the planning process, the PAC agreed to include sustainability in its considerations through three overlapping “lenses,” which included economic, environmental and social sustainability. The combined interests of the PAC members were represented in these three areas and used to develop the evaluation categories, which were later used to identify a preferred alternative recommendation (see section F below).

## E. Planning Advisory Committee

The centerpiece of the planning process's public involvement effort was the PAC. At the outset of the planning process, the project team met with leaders in the region to seek PAC members who could bring a variety of perspectives to the committee. The PAC was composed of 23 members representing community, government and commercial interests from economic, environmental and social perspectives. The PAC provided valuable input to help assess the future and recommend an optimal role for the Airport over the next 20 years. The mission of the PAC was to:

- Support meaningful and collaborative public dialogue and engagement on Troutdale Airport-related planning and development
- Provide an opportunity for the community to inform the decision-making of the Port
- Increase public knowledge about Troutdale Airport and impacted communities

During the two-year planning process, the PAC met 11 times to provide feedback on master plan elements as they were developed. One optional special topics meeting was held to discuss technical information of interest to a subset of PAC members. The PAC also engaged in a process to evaluate several development alternatives defining potential roles for TTD and determined a preferred alternative recommendation for the Port of Portland Executive Director to consider. Project staff provided technical information and answered questions to enable PAC members to make informed decisions at key project milestones. All PAC meetings were open to the public and time was reserved for PAC members to hear public comments at each meeting.

The PAC used a "1-2-3" consensus voting/polling system to come to consensus on decisions. Each PAC member voted a "1," "2" or "3" on proposals, which reflect the following:

- "1" indicates full support for the proposal as stated.
- "2" indicates that the participant agrees with the proposal as stated, but would prefer to have it modified in some manner in order to give it full support. Nevertheless, the member will support the consensus even if his/her suggested modifications are not supported by the rest of the group because the proposal is worthy of general support, as stated.
- "3" indicates refusal to support the proposal as stated.

A detailed description of all procedures that guided the PAC's decision-making process is contained in the *PAC Charter and Collaboration Principles* found in *Appendix A*.

The PAC Chair consulted with project staff in advance of each PAC meeting to provide feedback on agendas and general process guidance. A list of PAC members and alternates can be found in the *Acknowledgements*.

## F. Analytical Framework

The PAC members agreed on an analytical framework used to identify the appropriate role for TTD in the future. This process resulted in the PAC's preferred alternative recommendation to the Port of Portland Executive Director. The analytical framework included the following steps.

1. Identify potential development alternatives that could fit the Airport's role in the future
2. Identify evaluation categories used to score each development alternative
3. Complete a high-level evaluation of each development alternative using measurable evaluation categories
4. Identify the most favorable development alternatives for more detailed study
5. Refine evaluation of development alternatives
6. Identify preferred alternative

The analytical framework resulted in the PAC's majority vote of Alternative C as the preferred alternative. Additional recommendations are included in Section V Conclusion and Recommendations.



## II. PUBLIC INVOLVEMENT AND STAKEHOLDER OUTREACH

**Table 1 Public Involvement Schedule**

Date	Event	Location	Purpose
July 19, 2014	Troutdale Summerfest Outreach Booth	Downtown Historic Troutdale	Inform the public about the planning process
May 13, 2015	Public Open House	Troutdale Airport	Collect input on the development alternatives and evaluation categories
July 18, 2015	Troutdale Summerfest Outreach Booth	Downtown Historic Troutdale	Collect input on refined development alternatives
Oct. 2, 2015	Troutdale First Fridays Outreach Booth	Troutdale Mayor's Square	Collect input on refined development alternatives
Feb. 24, 2016	Combined Open House / PAC Meeting	McMenamins Edgefield	Collect input on development alternatives and draft implementation plan

### A. Public Involvement

The project team informed community members about the planning process and collected input at key project milestones. Input from each outreach event was summarized and presented at PAC meetings for PAC members to consider. Outreach event summaries are documented in *Appendix D*.

Additionally, all PAC meetings were open to the public and included time for public comments. A summary of public comments heard at each meeting is included in *Planning Advisory Committee Meetings*.



### B. Stakeholder Outreach

At the outset of the planning process, the project team met with leaders in the region to ensure diverse representation on the 23-member Troutdale Airport PAC. Stakeholder outreach included:

- City of Fairview
- City of Gresham
- City of Troutdale
- City of Wood Village
- East Metro Economic Alliance
- Gresham Chamber of Commerce
- Hispanic Metropolitan Chamber of Commerce
- Metro
- Mount Hood Community College
- Multnomah County
- Oregon Metro Regional Solutions Team
- Sandy Drainage Improvement Company
- Sandy River Watershed Council
- TriMet
- Troutdale Airport Users and Tenants (quarterly meetings)
- West Columbia Gorge Chamber of Commerce



## C. Project Website

The project team made information about the planning process and schedule available on the Port of Portland website. PAC meeting agendas, presentations and notes were posted to help keep interested stakeholders updated about the process. The website also included contact information people could use to reach the project team.

<https://www2.portofportland.com/Airports/Troutdale/MasterPlan>

Throughout the project, PAC members were also asked to communicate with their constituents and share feedback with the project team. Port of Portland staff briefed elected officials and other stakeholder groups on the planning process and collected feedback and suggestions. Port staff met with:

- East Metro Economic Alliance
- East Multnomah County Transportation Committee
- Fairview City Council
- Gresham City Council
- Multnomah County Commissioner Diane McKeel
- Troutdale Airport Tenants (quarterly meetings)
- Troutdale City Council
- Wood Village City Council

Additionally, Troutdale Mayor Doug Daoust solicited input from the mayors of Fairview, Wood Village and Gresham and shared this with the PAC at PAC Meeting #6.

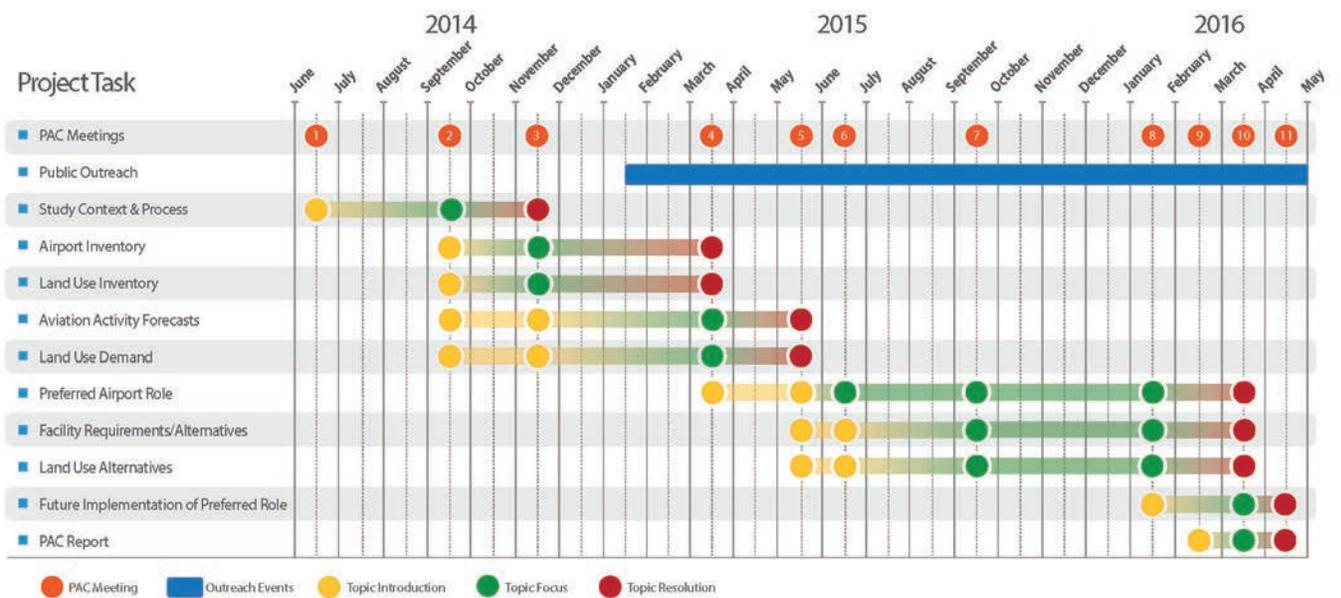


Figure 3 Project Schedule

### III. PLANNING ADVISORY COMMITTEE MEETINGS

The bulk of the PAC’s work was completed during committee meetings scheduled at key project milestones in the planning process. During these meetings, PAC members were presented with draft planning materials and asked to provide direction and feedback.

A summary of each meeting is included below. Copies of meeting agendas, detailed meeting minutes and presentation slides are compiled in *Appendix B* and *Appendix C*.

#### PAC Meeting #1 June 17, 2014

##### Meeting Topics

- Project Overview
- Schedule and Process - Introduction

##### Material Presented

###### Project Overview

Port staff provided a history of the different ways Troutdale Airport has been used by the community since its creation in 1920. The master plan process included defining the role of TTD for the next 20 years and identifying capital investments that would help the Airport meet the future needs of the community. This included exploring options to develop surplus portions of TTD property for industrial and/or commercial uses.

Port staff also provided information about work to develop the site of the former Reynolds Aluminum Plant adjacent to TTD, now known as the Troutdale Reynolds Industrial Park (TRIP). The Port convened the PAC to seek input and recommendations from PAC members to help the Port understand and address community interest in TTD and plan accordingly. The PAC’s recommendation would be considered by the Port of Portland Executive Director before any policy decisions are made.

Port staff provided an overview of findings from the 1990 and 2004 master plans and completed capital improvements. The Port also provided information about its industrial development program and explained that the Oregon Governor’s Office had identified the development of industrial land as a priority to meet the region’s demand for jobs and need for tax revenues.

### **Schedule and Process - Introduction**

Project staff reviewed the project schedule and key milestones in the planning process. The project's consulting team also reviewed its work schedule and deliverable dates. Ultimately, the PAC would develop a recommendation that answers one primary question: What is the role of Troutdale Airport in the future? The PAC would also pursue ways the Airport could achieve optimal sustainability from an economic, environmental and social perspective.

The PAC facilitator explained how the PAC would make decisions and made plans to meet with each PAC member individually to discuss the *PAC Charter and Collaboration Principles* (found in *Appendix A*) document. Once approved by PAC members, the Charter would define how PAC members work together with the Port to make a recommendation. PAC members were also invited to tour the Troutdale Airport prior to PAC Meeting #2.

### **PAC Discussion**

PAC members asked questions about TRIP infrastructure improvements and environmental findings and mitigation. PAC members also asked clarifying questions about the *PAC Charter and Collaboration Principles* (found in *Appendix A*) and the group's decision-making process. Port staff explained that the PAC is not required to come to consensus by the end of the process and that majority and minority reports would be documented for consideration.

PAC members participated in a group exercise that helped them learn about their different perspectives, values and common interests. A diagram of three overlapping sustainability circles representing economic, environmental and social sustainability was placed on the floor. PAC members were asked to stand on a point on the diagram that illustrated their priorities and explain to other members the reasons why they chose that position. The exercise demonstrated the range of sustainability values represented by PAC members.

### **Public Comment**

There were no public comments during the comment period of PAC Meeting #1.

**PAC Meeting #2**  
**September 25, 2014**

**Meeting Topics**

- Schedule and Process
- Airport and Land Use Study Area
- Inventory and Forecasting
- Finances
- Legal Considerations

**Material Presented**

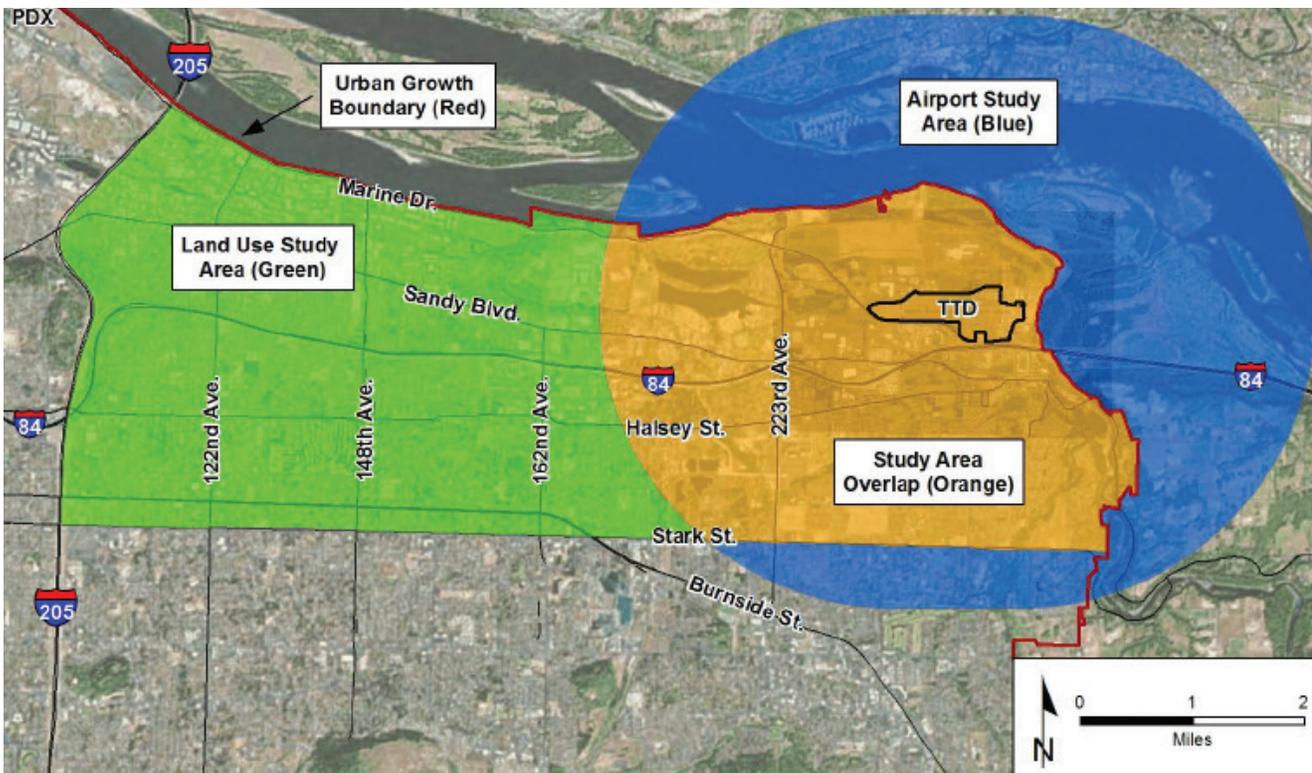
**Schedule and Process**

The project manager and consulting team reviewed the project schedule and described the master plan process designed to help the PAC develop a recommendation. This master plan process was unique in that it considered non-aviation land uses, in addition to traditional aviation facility requirements. The master plan process included taking an inventory of TTD facilities and operations and developing a forecast of the types of uses expected at TTD in the future. The forecasts would also consider the capacity of the region's airport system, its ability to accommodate the loss of an airport like TTD, as well as the Airport's ability to support the system if a different airport was closed. The forecasts are also used to develop a range of alternative airport roles for the PAC's consideration. The project team would solicit input from the public at major decision points in the process.



### Airport and Land Use Study Area

Project consultants presented the airport and land use study area for the *Troutdale Airport Master Plan*, collectively known as the East County Study Area (ECSA). Although the Master Plan only pertained to Airport property, the study considered how uses of the surrounding area could affect development possibilities at TTD. The airport study area encompassed the land around the Airport where construction of new buildings could affect TTD aviation activities depending on structure height. The land use study area was defined by I-205 to the west, the Columbia River to the north, the Sandy River to the east, and Stark Street to the south. The Portland metropolitan region's urban growth boundary ends on the west bank of the Sandy River.



Map 2 Airport Study Area and Land Use Study Area

### **Inventory and Forecasting**

Project consultants presented their current understanding of operations at the Airport. TTD is unique in that it is located beneath the Class C airspace of Portland International Airport (PDX), which constrains TTD's Class D airspace to a lower flight ceiling to avoid conflicts with PDX traffic. In recent years, there was a steep increase in operations at TTD following the opening of Hillsboro Aviation's flight training services at TTD in 2005. In the past, TTD hosted more emergency response operations for fire suppression and search and rescue. Troutdale has also accommodated television and radio news helicopters. The current number of operations exceeded the expected number of operations forecast during the 2003 master plan process.

### **Legal Considerations**

The Port's legal staff described policies and regulations that would inform the master plan process. This included federal airport regulations, Port policies, environmental policies, local ordinances and the minimum standard of aeronautical businesses, among others. At the time of the meeting, the Port held 39 Federal Aviation Administration grant encumbrances related to TTD investments, which the Port would need to satisfy if certain conditions were not met. Port staff described the challenges and process associated with the option to close the Airport.

### **Port Finances**

The Port's Chief Financial Officer explained TTD's past and current financial status. TTD loses between \$0.5 million and \$1 million annually and is currently subsidized by revenues from Portland International Airport and Hillsboro Airport. While it is the Port's goal for each of its three airports to be financially self-sustaining, it is common for general aviation airports like TTD to operate at a loss because fees from general aviation users are not adequate to cover operating expenses and capital expenditures. Although operations are increasing at TTD, many of the operations do not directly generate revenue for the Airport. The Port has sustained financial losses in consideration of the positive economic and community benefits of the Airport. Given significant future financial needs to fund many of its operations, the Port desires to achieve a positive cash flow at TTD in the future.

### **PAC Discussion**

PAC members adopted the *PAC Charter and Collaboration Principles* (found in *Appendix A*) document introduced during PAC Meeting #1 without edits.

The PAC members discussed appropriate timing to relate their specific interests in the planning process. There was some concern that defining interests too early in the planning process would restrict the range of alternatives developed by project staff. The facilitator explained there would be various opportunities for PAC input and suggested PAC members define early recommendations as short-term, interim, long-term or conditional.

PAC members discussed various topics that should be included in the planning process. This included environmental impacts and stormwater management, studies of compatible land uses and consideration of non-aviation land uses, compatibility with local comprehensive plans and demand for private airfields.

PAC members expressed interest in discussing ways to incentivize and increase the aviation market for Troutdale Airport during future meetings.

### **Public Comment**

There were no public comments during the comment period of PAC Meeting #2.

**PAC Meeting #3**  
**November 20, 2014**

**Meeting Topics**

- Study Introduction
- Airport Inventory
- Aviation Activity Forecasts - Introduction
- Land Use Inventory
- Land Use Demand - Introduction

**Material Presented**

Throughout the planning process for the *Troutdale Airport Master Plan*, PAC members were asked to review documents that would eventually become chapters in the final *Master Plan*. In advance of PAC Meeting #3, PAC members were asked to review drafts of the Study Introduction, Airport Inventory, Airport Activity Forecasts, Land Use Inventory and Land Use Demand.



### **Study Introduction**

The Study Introduction provided background information on TTD and outlined the process used to collect airport information and identify the preferred airport role.

### **Airport Inventory**

The Airport Inventory documented the number and type of past aviation operations completed at TTD, as well as some information about the facilities located at the Airport. This information would be used to inform other planning documents such as the Airport Activities Forecast and Facility Requirements. The inventory found that TTD primarily served piston propeller aircraft, helicopters and some business jets. Larger commercial and military aircraft do not operate at TTD primarily due to the runway length. In recent years, flight operations decreased by 25 percent in 2008 following the U.S. economic recession. Flight operations increased by 21 percent in 2010 and 42 percent in 2012. The increase in 2012 was due to a helicopter training school opening at TTD and induced an increase unique to TTD when compared to activity at other airports. Flight training operations contributed about 50 percent of total operations at TTD. The number of operations per year may be affected by weather conditions and the availability of navigational aids. TTD uses visual navigation and has no navigational aids.

Project staff explained that airport design standards are determined by the most demanding aircraft that use the airport at least 500 times per year, known as the “design aircraft.” The size and speed of the design aircraft determine the design features of the airport, such as the length of the runway. The inventory information indicated that TTD should be designed as a B-II airport, which is consistent with general aviation activities. A B-II airport signifies that the airport is capable of handling a certain types of generally smaller, lighter aircraft. The Category B means the airport is designed to accommodate aircraft with approach speeds of at least 91 knots (105mph), but less than 121 knots (139 mph), and the Group II means the airport can accommodate aircraft with wingspans of at least 49 feet, but less than 79 feet. Examples of aircraft in the B-II category and smaller include the Super King Air 200, Cessna 421, and beech Bonanza.

### **Aviation Activity Forecasts - Introduction**

Project staff introduced the type of information that would be included in the Airport Activity Forecasts. The forecast would be informed by the inventory including the number and type of past operations completed at TTD in recent history. The forecast would use an un-incentivized model, which would show what kind of traffic TTD could expect if there were no marketing incentives implemented to increase traffic. The forecasts would include numbers for short-term, mid-term and long-term planning periods. The forecast would also include the types of aircraft expected to use TTD in the future. Later in the process, the project team would present several forecast numbers to the PAC based on various scenarios. The project team would ask PAC members to provide input on which scenario should be adopted for planning purposes.

## Land Use Inventory

The Land Use Inventory documented the types of uses that would be allowed and could likely be developed within the study area for the *Troutdale Airport Master Plan*. It considered various constraints to development possibilities including parcel shape, available infrastructure and zoning regulations. The Land Use Inventory would inform the Land Use Demand document.

The inventory identified several lots on TTD property suitable for industrial development, including some large 25-acre lots. Only a small number of the lots met conditions that would make them developable within six months. Most lots would need infrastructure upgrades before they could be developed further, likely within a 30-month period. Overall, the available lots appeared desirable since developable land within the Portland-metropolitan region is growing scarce.

## Land Use Demand – Introduction

Project staff introduced the Land Use Demand document, which would be provided later in the planning process. They explained that there needs to be a demand for a certain type of land use development before the development should take place. One key indicator for industrial land demand is the employment growth rate. The Land Use Inventory found that the local region did not have a large supply of developed industrial lands. The Land Use Demand document would provide information on whether there is a need for more industrial land.

## PAC Discussion

PAC members provided the following comments on the Study Introduction:

- One PAC member noted that the forecast process described in the study introduction seemed to rely heavily on historical data, which could inhibit planning for a more optimized airport.
- Other PAC members said the document was useful and of good quality. The PAC members approved the document for purposes of moving forward.

PAC members provided the following comments on the Airport Inventory:

- PAC members provided input on the clarity and accuracy of figures included in the Airport Inventory, which the project team later revised.
- PAC members said it would be helpful to know how activity at TTD compared to similar airports and how TTD fits in the regional airport system.
- PAC members representing environmental interests noted that wildlife inhabit the Sandy River area east of TTD, including threatened, endangered and other significant species.

PAC members requested the following information for the Aviation Activities Forecast:

- Information about how TTD’s forecasts fit with the forecasts of other airports in the region.
- An analysis of how different land use developments could affect activity at TTD.
- Assessment of the community economic benefits of various forecast scenarios.

The project team reiterated that the forecast model assumed an un-incentivized model, but land use and economic considerations would be studied in more detail later in the planning process.

PAC members provided the following comments on the Land Use Inventory:

- Identify Oregon Department of Transportation infrastructure improvement projects within the project area.
- Include more detail on local and regional zoning laws that apply to the project.
- Include information on whether there is a demand for land use types that would be complementary to an adjacent airport.

## Public Comment

Mayor Doug Daoust of Troutdale offered to coordinate with the mayors of the four other cities in east Multnomah County to provide their unique input on the *Troutdale Airport Master Plan* process. Mayor Daoust noted that Troutdale had an urban renewal project near TTD that could affect the level of activity at the Airport in the future. He also noted that the Airport used to host successful air shows.

City Councilor Glen White of Troutdale also noted the popularity of the former Troutdale airshows. City Councilor John Wilson of Troutdale expressed his appreciation for the master plan process. City Councilor Rich Allen of Troutdale commented on the recent increase in density at another Port development project, Gresham Vista Business Park.

## **PAC Meeting #4**

**March 12, 2015**

### **Meeting Topics**

- Chapter Approval
- Public Outreach
- Land Use Demand
- Aviation Activity Forecast

### **Material Presented**

#### **Chapter Approval**

Prior to PAC Meeting #4, PAC members were asked to review and provide feedback on two chapters of the *Master Plan – Chapter 1 Airport Inventory* and *Chapter 2 Land Use Inventory*. The PAC approved the content of these chapters with revisions.

#### **Public Outreach**

Port staff provided an update on the project's outreach activities. Project staff attended public meetings and had active dialogue with public officials and local residents about the project. Much of the outreach effort included time explaining the planning process and answering clarifying questions. The Mayor of Troutdale agreed to consult with other area mayors and provide a joint recommendation on the future of TTD at an upcoming PAC meeting.

A project open house was scheduled for May 13, 2015. Project staff would be available at the open house to explain the planning process, answer questions and collect feedback. Open house attendees would be able to take a bus tour of TTD and TRIP. Project staff also planned to host an information booth at Troutdale Summerfest in July 2015 to provide information about the project and collect public input. The results of public input would be summarized and presented to PAC members during future meetings.

PAC members were invited to provide input on the project's outreach activities and help educate their individual constituents about the planning process.

#### **Land Use Demand**

A project consultant from Johnson Economics presented findings on land use demand in the project area. The study showed that industrial land would be highly marketable for office, industrial and commercial development if made available in the ECSA. Target industries identified included manufacturing, clean technology, food processing, energy storage and warehousing and distribution. Local economies were demonstrating a sustained recovery from recession, and the recovery was accelerating at the time of the study. There was regional consensus on the level of demand for industrial land, but no agreement on which area could best satisfy the demand. It was difficult to forecast the number of employers who may move near Troutdale from areas outside the region. The land plots that are over 100 acres around TTD are rare in close proximity to metro regions like Multnomah County. Plots like these are desirable for development due to the availability of amenities and large labor pools in metro regions.

The employment forecasting for the study used the State of Oregon Sectoral Forecast method and MetroScope Forecasts.

### **Aviation Activity Forecast**

The aviation activity forecasts would be used to determine whether TTD's facilities were adequate for the level of activity expected at the Airport over the planning period. Project consultants explained that the class of an airport is determined by the approach speed, wing span and tail height of an airport's design aircraft. The types of aircraft expected in the aviation activity forecast would require a B-II airport. The runway for a B-II airport would need to be at least 75 feet wide – half the width of TTD's runway at the time.

The aviation activity forecast would use a Monte Carlo model, which considered variable factors to provide different forecast scenarios. Scenarios ranged from lower to higher percentiles, with the 100th percentile assuming the highest level of activity that could be reasonably expected based on available data. At a future meeting, the PAC members would be asked to agree on which forecast percentile to assume for planning purposes at TTD. Project consultants suggested the PAC consider whether the 10th, 50th or 90th percentiles seemed most likely to occur at TTD.

The project team identified four aviation markets served by TTD, including recreational aviation, flight training, business aviation and maintenance and repair activities. The forecasts considered current activity at TTD in the form of aviation operations and based aircraft. A survey conducted by the project team found no jets based at TTD. However, TTD had served jets that fly in from other locations.

### **PAC Discussion**

PAC members asked whether emerging technologies such as electric aircraft and unmanned aerial vehicles (drones) should be included in the forecast study.

The PAC facilitator asked the committee to comment on the forecast methods proposed during the meeting and initial thoughts on which forecast scenario the project team should use. A representative from a flight training business at TTD said training activities are expected to be within the 90th percentile. Another member said more weight should be given to the business aviation forecast. Other members said the 50th percentile seemed reasonable, since TTD could lose most of its training operations if one of the few training businesses decided to relocate.

One committee member said the study should explore solutions to operational limitations at TTD that could increase the number and type of aircraft that use the Airport.

### **Public Comment**

A commenter asked the committee to preserve as much runway length as possible in the *Master Plan* to accommodate business jets in the future.

## **PAC Meeting #5 May 7, 2015**

### **Meeting Topics**

- Chapter Approval
- What-if Scenarios Analysis
- Analytical Framework
- Airport Roles and Alternatives
- Evaluation Categories
- Public Involvement

### **Material Presented**

#### **Chapter Approval**

Prior to PAC Meeting #5, PAC members were asked to review and provide feedback on two chapters of the *Master Plan – Chapter 3 Aviation Forecast* and *Chapter 4 Land Use Demand*. PAC members approved the chapters with the following revisions and clarifications.

In *Chapter 3*, the positive aviation forecast scenarios were adjusted to assume potentially higher levels of training activity from the flight training schools based at TTD. It was also clarified that the negative forecast scenarios included the assumption that the flight training schools at TTD may choose to move in the future and not be replaced. The consulting team also explained that the mid-range, 50th percentile forecast predicted TTD would continue to primarily serve single-piston aircraft, with most operations coming from local flight school activity.

The aviation demand forecast also indicated that recreational flying will decline over the next 20 years at TTD, but overall aircraft operations will increase slightly from 108,000 a year to 117,000. The forecast also indicated that the number of based aircraft will decline from 151 to 142 over the planning period.

No revisions were made to *Chapter 4*. The consulting team clarified that the land use demand forecast used five industries that had the highest correlation with the aviation industry.

#### **What-if Scenarios Analysis**

The project consultants completed several “what-if” scenario studies to inform the aviation forecasts and help PAC members and the planning team understand how potential circumstances could affect plans for TTD. PAC members asked for additional “what-if” scenarios to be completed regarding the effects of expected airport technology innovations and radical changes in the type of aircraft using TTD.

#### **Analytical Framework**

The project team proposed an analytical framework the PAC could use to answer their primary question, what is the role of Troutdale Airport in the future?

1. Identify potential development alternatives that could fit the Airport's role in the future
2. Identify evaluation categories used to score each development alternative
3. Complete a high-level evaluation of each development alternative using measurable evaluation categories
4. Identify the most favorable development alternatives for more detailed study
5. Refine evaluation of development alternatives
6. Identify preferred alternative

#### **Airport Roles and Alternatives**

The project team proposed a range of airport roles for PAC members to consider for the future of TTD called development alternatives. The four primary alternatives presented fell on a spectrum ranging from more commercial/industrial uses to more aviation uses. The proposed roles were created to address the question, what is the role of Troutdale Airport in the future? Specifications for each alternative such as percentage of industrial land developed or runway length would be refined later in the planning process.

**Table 2 Preliminary Development Alternative Concepts**

<b>Alternative A:</b>	<b>Maximum Commercial/Industrial</b>
	Close Troutdale Airport
	Convert all available land for commercial/industrial uses
<b>Alternative B:</b>	<b>More Commercial/Industrial, Less Aviation</b>
	Reduce and consolidate aviation land to create space for commercial/industrial uses
	Retain flight training, recreational and maintenance and repair aviation uses
	Less accommodation for large business jets
<b>Alternative C:</b>	<b>Less Commercial/Industrial, More Aviation</b>
	Reduce and consolidate aviation land to create space for commercial/industrial uses
	Retain flight training, recreational and maintenance and repair aviation uses
	More accommodation for large business jets
<b>Alternative D:</b>	<b>Maximum Aviation</b>
	Expand Troutdale Airport
	Retain flight training, recreational and maintenance and repair aviation uses
	Increase accommodation for large business jets

The aviation forecasts indicated TTD had more runway and aviation capacity than needed for the planning period, making some land available for other uses like commercial/industrial development. Alternative A and Alternative D served as extreme examples of what could possibly be developed on Airport property. Alternative B and Alternative C would reduce the Airport to a size that would accommodate the aviation forecasts and create opportunity for some commercial/industrial development. The proposed roles were meant to serve as a starting point for the PAC’s discussion of what the role of the Airport should be. The development alternatives would be refined over time as the project team continued its analysis under direction from the PAC.

PAC members asked a number of questions that project team members would study further as they continued refining the alternatives. These questions were related to FAA airport design requirements, assumptions about the mix of aircraft that use TTD, how aviation activity at TTD compared to other general aviation airports of its size, and geographic/airspace constraints around TTD.

**Evaluation Categories**

As part of the project’s analytical framework, the project team proposed using several evaluation categories to determine which airport role was best suited for TTD. The project team initially proposed six evaluation categories that aligned with the PAC’s secondary questions and principles of sustainability. Each category included a number of factors that would be specifically researched to develop a score for each category.

**Table 3 Proposed Evaluation Categories and Evaluation Factors**

Proposed Evaluation Categories	Proposed Factors
<b>Alignment with Forecasts</b>	Fit with short-term, mid-term and long-term aviation and land use market forecasts using the 50th percentile
<b>Community Economic Benefits</b>	Jobs and average wages at TTD
	Business revenues at TTD
	Tax revenues generated for state and local jurisdictions
	Direct, induced and indirect economic impact to local economy
	Fit with local development plans and flexibility to meet future community needs
<b>Environmental Impacts</b>	Air quality
	Water quality
	Noise
	Opportunities for environmental improvement
	Compatibility with existing environmental assets
	Natural resources
<b>Financial Impact to Port of Portland</b>	10-year capital expenditures
	Port's ability to fund required capital expenditures
	10-year operating costs
	Expected operating revenues
<b>Fit with Local Airport System</b>	Airspace impacts
	Minimize facility redundancy
<b>Legal Feasibility</b>	Compliance with local, state and federal laws
	Compliance with FAA grant assurances
	Contractual commitments

PAC members asked the project team to consider adding the following items as evaluation categories or factors.

- Accreditation of local levee system
- Alignment with local development plans
- Compatibility of commercial/industrial uses with aviation uses
- Effect of expected aviation technology innovations
- Impact to existing infrastructure
- Level of investment from other public agencies
- Level of private investment
- Workforce development opportunities

**Public Involvement**

The project team asked for the PAC's input on the questionnaire that would be used to collect public feedback during public involvement events.

**Public Comment**

There were no public comments during the comment period of PAC Meeting #5.

## PAC Meeting #6 June 17, 2015

### Meeting Topics

- Public Involvement
- Preliminary Analysis of Alternatives
- Alternative Study Time Allocation

### Material Presented

#### Public Involvement

The project team reported on the May 13, 2015 open house held at Troutdale Airport. Approximately 30 people attended and were able to talk to project staff and take a bus tour of the Airport and TRIP. Attendees were asked to rank which of the proposed development alternatives should be studied in detail and provide feedback on the categories the project team would use to evaluate the alternatives. Public input ranked alternatives A, B and C about the same, and ranked Alternative D lowest. No new evaluation categories were suggested.



### Preliminary Analysis of Alternatives

Prior to PAC Meeting #6, the project team completed a preliminary analysis of the development alternatives to provide PAC members with basic information about potential benefits and drawbacks of each development alternative. The goal of the meeting was to obtain direction from PAC members on how much time the project team should devote to studying each development alternative in further detail. PAC members would eventually use the information from the detailed studies to select a preferred alternative at a future meeting.

The project team considered the feedback PAC members provided on the evaluation categories and factors proposed during PAC Meeting #5. Many of the PAC members' suggestions were incorporated into the scope of existing categories as new factors. One new category was added called "community planning compatibility" to consider each alternative's fit with other plans in the surrounding area. The scopes of some factors such as capital expenditures and operating costs were adjusted during the analysis to better differentiate the development alternatives. The table below notes the updated evaluation categories and factors.



**Table 4 Revised Evaluation Categories and Evaluation Factors**

Evaluation Categories	Factors
<b>Alignment with Forecasts</b>	Fit with short-term, mid-term and long-term aviation and land use market forecasts using the 50th percentile
<b>Community Economic Benefits</b>	Jobs and average wages at TTD Business revenues at TTD Tax revenues generated for state and local jurisdictions Direct, induced and indirect economic impact to local economy Education, training and workforce development opportunities*
<b>Community Planning Compatibility*</b>	Surface impacts* Active transportation opportunities* Relationship to TRIP* Relationship to other surrounding land uses* Fit with local development plans and flexibility to meet future community needs*
<b>Environmental Impacts</b>	Air quality Water quality Noise Opportunities for environmental improvement Compatibility with existing environmental assets Natural resources
<b>Financial Impact to Port of Portland</b>	20-year capital expenditures Port's ability to fund required capital expenditures 20-year operating costs Expected operating revenues Private and other government investment*
<b>Fit with Local Airport System</b>	Airspace impacts Role within the Port of Portland airport system Role within the regional airport system* Assessment of FAA NextGen technology*
<b>Legal Feasibility</b>	Compliance with local, state and federal laws Compliance with FAA grant assurances Contractual commitments

\*Added as a result of PAC member feedback

For the preliminary analysis, the project team used the evaluation categories and factors to apply a score to each development alternative. The scoring system used three colors:

- **Green** indicated the alternative was well-aligned with the category and had a favorable impact
- **Yellow** indicated the alternative was neither favorable nor unfavorable and had a neutral impact
- **Red** indicated the alternative was not aligned with the category and had an unfavorable impact

The scores for each evaluation category were combined to generate an overall evaluation for each development alternative. The project team’s preliminary analysis is summarized in the decision making matrix below.

**Table 5 Preliminary Alternatives Analysis Decision Making Matrix**

Alternative	Alignment with forecasts	Community economic benefits	Community planning compatibility	Environmental impacts	Financial impacts	Fit with local airport system	Legal feasibility	Overall evaluation
<b>A: Maximum Commercial/Industrial</b>								
<b>B: More Commercial/Industrial; Less Business Aviation</b>								
<b>C: More Business Aviation; Less Commercial/Industrial</b>								
<b>D: Maximum Aviation</b>								

### Alternative Time Study Allocation

The PAC members considered the project team’s preliminary analysis in a four-step scoring process to determine study time allocation for each development alternative. PAC members were given ballots to enter their scores.

- Step 1: Category Weighting – PAC members assigned weights indicating the relative importance of each evaluation category on a scale of 1 to 10, with 1 meaning “not important” and 10 meaning “important.”
- Step 2: Alternative Ratings by Category – PAC members considered the color scores the project team presented for each category and decided whether they agreed with the preliminary analysis or thought a different score should be used based on the information presented.
- Step 3: Review PAC Polling Results – PAC members’ average ballot results were tabulated and presented to show how they scored each alternative collectively.
- Step 4: Study Time Allocation –PAC members allocated a percentage of summer study time for each alternative on a ballot. Ballot results were combined and presented for the PAC’s consideration.

PAC Poll Results	
Alignment with Forecast	11.3
Community Economic Benefit	15.0
Community Planning Compatibility	15.0
Enviromental Impact	14.4
Financial Impacts	15.5
Fit with Local Airport System	14.2
Legal Feasibility	14.4

Figure 4 PAC Evaluation Category Weighting

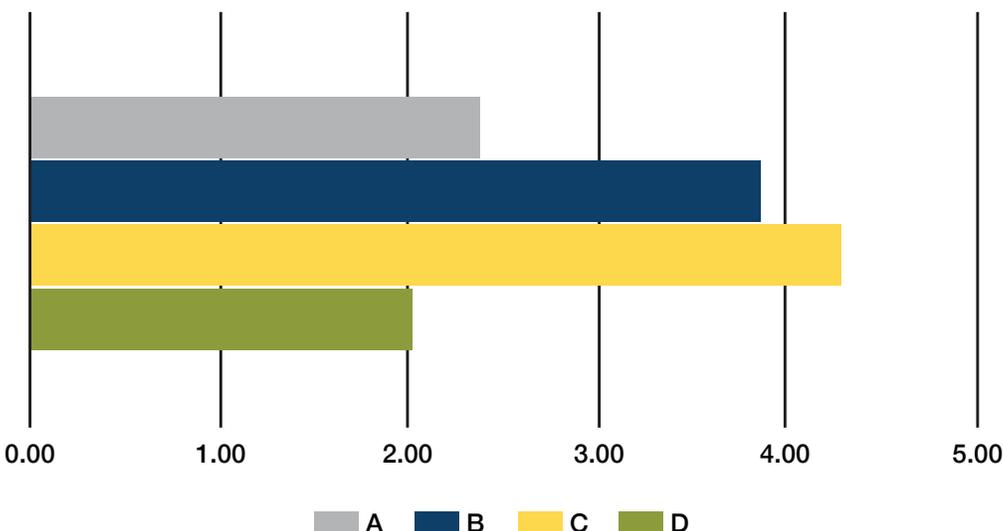


Figure 5 PAC Scores for Development Alternatives

**Table 6 Development Alternative Study Time Allocation**

<b>Alternative A:</b>	<b>Maximum Commercial/Industrial</b>
	Time allocation 9%
<b>Alternative B:</b>	<b>More Commercial/Industrial, Less Aviation</b>
	Time allocation 38%
<b>Alternative C:</b>	<b>Less Commercial/Industrial, More Aviation</b>
	Time allocation 47%
<b>Alternative D:</b>	<b>Maximum Aviation</b>
	Time allocation 7%

The results indicated that PAC members thought Alternative B and Alternative C were more aligned with the evaluation categories and wanted the majority of study time allocated to these alternatives. Only a small amount of time was allocated for Alternative A and Alternative D. PAC members unanimously approved the study time allocation results with a vote.

*Note: Two data entry errors were discovered upon reviewing the study time allocation results after PAC Meeting #6, which changed the results slightly. PAC members were notified of the correction. The correct results are included in the time allocation table above. Original results presented at PAC Meeting #6: Alternative A-12 percent, Alternative B-35 percent, Alternative C-42 percent, Alternative D-12 percent.*

**PAC Discussion**

PAC members commented on the completeness of the project team’s preliminary analysis and requested information they would like provided in the next more detailed analysis. This included more defined specifications like runway length for Alternative B and Alternative C, the ability of local airports to attract businesses, clarification on the compatibility of alternatives B and C with local city plans, and effects on social equity.

PAC members discussed the effect different types of development could produce at TTD such as whether development would focus on aviation industry or other industrial uses. They said it would be important to consider how private and other investments could be leveraged outside of the Port’s finances to accomplish the PAC’s eventual recommendation. One PAC member said the aviation forecasts should not be weighted heavily in the PAC’s considerations because the forecasts could be affected by development changes implemented at TTD.

## Public Comment

Mayor Doug Daoust of Troutdale presented feedback from himself and the mayors of Wood Village, Fairview and Gresham. Mayor Daoust noted that TRIP and other development in the area could increase demand at TTD. He said the mayors believed TTD is a great asset to the surrounding area and should be developed to include a good mix of uses and value. The mayors encouraged PAC members to expand the offerings of TTD in a sustainable and growth-oriented manner. Mayor Daoust said the compatibility of the proposed Troutdale Energy Center and the Airport would need to be addressed.

A representative from Airway Science for Kids (ASK), Inc., shared information about the organization's youth development programs, which reach children in elementary, middle and high school. The organization teaches science, technology, engineering, and math skills using airway science. The organization wanted to include outreach to youth and students in the future role of TTD.

One resident of Troutdale asked PAC members to consider how its recommendations could affect people in east Multnomah County. The commenter asked PAC members and Port staff to consider investing in TTD in order to prevent large-scale negative economic impacts.

One resident who lived near TTD encouraged PAC members to leverage TTD as a way to attract more business to the area.

## PAC Meeting #7 September 17, 2015

### Meeting Topics

- Public Involvement
- Refinement of Alternatives
- Detailed Analysis of Alternatives
- Preferred Alternative Polling

## Material Presented

### Public Involvement

The project team hosted an informational booth at Troutdale Summerfest on July 18, 2015 to inform the public about the project and collect input on the development alternatives. The more refined information distributed at the event reflected the material PAC members received at PAC Meeting #7. Approximately 100 people stopped by the booth and about 70 surveys were completed. Most people who completed a survey agreed with the focus on Alternative B and Alternative C and expressed interest in maintaining the level of aviation at TTD or finding solutions that combined aviation and commercial uses.



### Refinement of Alternatives

Since PAC Meeting #6, the project team conducted a more detailed study of each development alternative to more clearly define land use allocations and specifications such as runway length. Consistent with the PAC's recommendations of time allocation from PAC Meeting #6, the project team spent more time developing details on Alternative B and Alternative C, and spent a smaller amount of time on Alternative A and Alternative D.

For alternatives B and C, the project team found the north side of the Airport more suitable for industrial development. Aviation uses would be consolidated and transitioned to the south side of the Airport. The north side of the Airport was zoned for general industrial use and had space for large rectangular parcels amenable to warehouse, manufacturing and distribution operations. The south side of the Airport was zoned for light industrial use, which would allow a narrower scope of industry. The geometry of Graham Road on the north side was also more suitable for the turning radius of large trucks compared to Frontage Road on the south side.

**Table 7 Refined Development Alternatives**

**Refined Development Alternatives**

<b>Alternative A:</b>	<b>Maximum Commercial/Industrial</b>
	100% Commercial/Industrial
	Close Troutdale Airport
	Convert all available land for industrial uses with support commercial uses
<b>Alternative B:</b>	<b>More Commercial/Industrial, Less Aviation</b>
	65% Aviation, 35% Commercial/Industrial
	3,600-foot runway
	Visual approach
	Retain flight training, recreational and maintenance and repair aviation uses
	Accommodates turboprop business aircraft
	Less accommodation for business jets compared to Alternative C
	Runway moved as far east as possible to accommodate more industrial land
<b>Alternative C:</b>	<b>Less Commercial/Industrial, More Aviation</b>
	72% Aviation, 28% Commercial/Industrial
	4,500-foot runway
	Visual approach
	Retain flight training, recreational and maintenance and repair aviation uses
	More accommodation for small-medium business jets compared to Alternative B
<b>Alternative D:</b>	<b>Maximum Aviation</b>
	100% Aviation
	6,000-foot runway
	3/4 mile instrument approach
	Expand Troutdale Airport
	Retain flight training, recreational and maintenance and repair aviation uses
	Increase accommodation for large business jets

Alternative B's 3,600-foot runway would accommodate small business aviation operations, but would not accommodate business jets. The airfield space planned for aviation would serve the needs of all aircraft based at TTD and still have enough space for the 90th percentile of based aircraft forecasts. Training operations, recreational aviation and maintenance and repair operations would be able to continue.

Alternative C's 4,500-foot runway would accommodate small to medium-sized business jets, which account for less than one percent of operations at TTD. Alternative C's aviation layout would be similar to Alternative B with the same use accommodations – training operations, recreational aviation and maintenance and repair operations would be able to continue. Alternative C's larger runway would take the place of more industrial land available in Alternative B.

### Detailed Analysis of Alternatives

The project team applied the evaluation categories and factors to the more refined design of the development alternatives to produce an updated analysis using the same scoring system of green, yellow and red. The project team's detailed analysis is summarized in the table below. Scores that improved or declined since the preliminary analysis are indicated with an up/down arrow (up indicates improvement, down indicates decline). For instance, a green downward arrow with a yellow circle means the rating went from a green to a yellow. The financial impact analysis was not complete at the time of PAC Meeting #7.

**Table 8 Detailed Alternatives Analysis Decision Making Matrix (missing financial impacts)**

Alternative	Alignment with forecasts	Community economic benefits	Community planning compatibility	Environmental impacts	Financial impacts	Fit with local airport system	Legal feasibility	Overall evaluation
<b>A: Maximum Commercial/Industrial</b>								
<b>B: More Commercial/Industrial; Less Business Aviation</b>								
<b>C: More Business Aviation; Less Commercial/Industrial</b>								
<b>D: Maximum Aviation</b>								

## PAC Discussion

PAC members requested additional information for the analysis, including how other airports in the region were specializing, and identifying the funding sources of costs in the forthcoming financial analysis – specifically, which costs would be covered by the Port and which would be covered by federal grants. See Special Topics Meeting and PAC Meeting #8 for continued discussion.

### Preferred Alternative Polling

The facilitator asked PAC members to discuss their thoughts on the development alternatives and take a preliminary poll on which alternative they preferred at the time. PAC members were asked to assign each alternative a number of 1, 2 or 3. A “1,” means they fully supported the recommendation without modification. A “2,” means they agreed with the recommendation but preferred to have it modified in order to give it full support. A “3” means a refusal to support the recommendation.

The final poll results follow:

Alternative A: 2 supported and 15 opposed

Alternative B: 13 supported and 4 opposed

Alternative C: 17 supported and 0 opposed

Alternative D: 2 supported and 14 opposed

PAC members who submitted a “2” for Alternative A said they did not believe it was infeasible, and suggested there may be opportunity for “net positive” development that would benefit the environment and local economy.

PAC members who submitted a “2” for Alternative D said community input supported an interest in aviation and noted there seemed to be available land outside of the Airport for industrial development. They requested more information on how NextGen technology could increase the type and number of aviation operations at TTD. There was some reservation about decreasing the runway size and these PAC members asked for more information on whether an exception to FAA standards could be pursued to retain the current runway length. See subsequent meeting summaries for continued discussion.

Poll totals for Alternative B and Alternative C were similar. PAC members said it was difficult to distinguish the two alternatives. Some PAC members said Alternative C seemed to accommodate future growth at the Airport, while Alternative B seemed to maintain the current level of aviation use. Some PAC members said Alternative B was better aligned with the goal for more industry and jobs to improve equity in the local area. Some PAC members were concerned the fixed-base operator (FBO) at TTD would not be viable if larger aircraft stopped coming to TTD. Other issues PAC members brought up for consideration included the livability of the area, the effect on traffic, and the effect on existing businesses near the Airport.

Some PAC members verbally changed their preference for development alternatives during the progress of the discussion. The facilitator modified the polling scores to reflect the discussion.

**Table 9 Initial Preferred Alternative PAC Polling Results**

Alternative	A: Maximum Industrial			B: More Commercial/Industrial, Less Aviation			C: Less Commercial/Industrial, More Aviation			D: Maximum Aviation		
	1	2	3	1	2	3	1	2	3	1	2	3
Preference Level	1	2	3	1	2	3	1	2	3	1	2	3
Poll Total	0	2	15	11	2	4	12	5	0	0	4	13

**Table 10 Revised Preferred Alternative PAC Polling Results**

Alternative	A: Maximum industrial			B: More Commercial/ Industrial, Less Aviation			C: Less Commercial/ Industrial, More Aviation			D: Maximum Aviation		
	1	2	3	1	2	3	1	2	3	1	2	3
Preference Level	1	2	3	1	2	3	1	2	3	1	2	3
Facilitator Total	0	2	15	8	5	4	11	5	1	0	5	12

**Public Comment**

Mayor Doug Daoust of Troutdale recommended the *Master Plan* include information outlining why the current runway at TTD cannot be left the same length. Mayor Daoust also expressed concern that alternatives B and C may risk losing the FBO at the Airport. Mayor Daoust recommended the PAC members consider Alternative C only after analyzing the requirements needed to keep the FBO in that scenario.

## Special Topics Meeting December 10, 2015

### Meeting Topics

- Application of FAA Design Standards
- Market Potential
- NextGen Feasibility
- Industrial Development
- Role of TTD in Regional Airport System
- Financial Analysis Preview

### Material Presented

After PAC Meeting #7, the project schedule was adjusted to allow time to complete the financial analysis of the development alternatives. The project team decided to use the additional time to offer an optional special topics meeting that would focus on some of the technical questions asked during PAC Meeting #7. Five PAC members and six members of the public attended the special topics meeting. The notes from the special topics meeting were shared with PAC members who did not attend and the PAC Chair provided a verbal recap of the meeting during PAC Meeting #8.

#### Application of FAA Design Standards

Project consultants presented on the FAA's design standards that informed the design of the TTD development alternatives, which primarily relate to the Airport's level of use and safety features. They clarified that the runway length was reduced in Alternative B and Alternative C in order to bring the Airport into compliance with FAA design standards and make the Airport eligible for FAA funding.

The FAA design standards required facilities it funds to be "reasonable and justified" for the airport's level of use. The current runway length at TTD (5,400 feet) was longer than required for the majority of TTD's users. The runway dimensions of Alternative B (3,600 feet) and Alternative C (4,500 feet) would be able to accommodate over 99 percent of the users expected at TTD.

Additionally, the runway protection zone (RPZ) was brought into compliance with FAA design standards in Alternative B and Alternative C. The RPZ is an area at both ends of a runway that must be kept clear to protect people and property from accidents that may occur during aircraft operations. The Airport's RPZ on the east end of the runway was out of compliance because it crossed Graham Road and an accredited levee on the Sandy River. The RPZ on the west side was out of compliance because it crossed Frontage Road. The runway in Alternative B and Alternative C was shortened to bring the RPZ into compliance. The project team considered the potential effects of closing Graham Road and determined the impact to the local transportation system would be significant.

#### Market Potential

Project consultants used national rates for different aviation markets and compared them to the way TTD was being used to forecast the number and types of users that could be expected to operate at TTD in the future. TTD had a larger percentage of flight training activity and a smaller percentage of recreational and business aviation compared with national market rates. The FAA expected recreational aviation rates may increase as newer light sport aircraft were lowering the cost of this market. Turboprop aircraft and helicopters also represented a growing market and were common at TTD.

Alternative B would accommodate the aviation markets that make up the largest share of forecast operations at TTD. Alternative B's 3,600-foot runway would be less accommodating for jet aircraft, which are forecast to be less than 1 percent of aviation operations at TTD. Alternative C's 4,500-foot runway would be more accommodating to small- and medium-sized jet aircraft compared to Alternative B.

The market evaluation also studied whether TTD's FBO would be viable in Alternative B and Alternative C. The project team cited examples of other airports in the region that have an FBO and a runway shorter than 5,000 feet. While it is difficult to compare FBO businesses at different airports, the Port has acknowledged that an FBO at TTD is desirable and plans to continue supporting an FBO at TTD.

### **NextGen Feasibility**

NextGen is a satellite-based navigational system, differentiated from a more traditional ground-based navigational system. It has a number of significant advantages including: traffic separation, better situational awareness, and more efficient (time and fuel) operations. For certain airports, NextGen makes use of already existing satellites and avoids the costs of ground-based equipment. Troutdale Airport is located in an area that is somewhat geographically challenging, particularly coming from the east side, which could make navigation difficult.

One question the PAC members raised compared the proximity of TTD and PDX to LAX and HHR (Hawthorne, CA.). Consultants explained that Southern California was part of the FAA NextGen Metroplex, and as such, had undergone an FAA redesign that included NextGen procedures. The redesign also modified the airspace procedures to improve efficiency of access to the airports and demonstrated how the traffic flows operated to improve access and mitigate noise. In contrast, the runway orientations at PDX and TTD were not parallel and the mountains to the east of the airports limited approach corridors for aircrafts, making it difficult to develop new pathways.

### **Industrial Development**

Industrial development of excess Airport land would generate revenue to support the financial sustainability of the Airport. Lease rates for industrial land are approximately twice the rate for airport land. The proposed phasing plan would first focus on developing the north side of the Airport in a way that would not disrupt aviation activity. Eventually, all aviation uses would be consolidated on the south side of the Airport.

### **Role of TTD in Regional Airport System**

TTD is one of eight airports in the Portland metropolitan region, and one of three airports managed by the Port of Portland (comprising PDX, HIO and TTD). The Port committed itself to maintaining aviation facilities that meet the needs of the region and makes strategic investments in each of its airports. PDX currently satisfies the need of high-end, cabin class business aviation and serves as the region's primary commercial service airport. PDX also provides general aviation opportunity to comply with FAA grant assurances.

As part of the recently completed PDX master plan process, PDX's general aviation facilities were relocated to accommodate the extension of PDX's east concourse. Atlantic Aviation agreed to invest in new business aviation facilities in PDX during this process. As a result, PDX acquired new business aviation facilities that met the needs of the region. However, since it can be difficult for smaller general aviation aircraft to navigate in a commercial environment like PDX, the Port planned to continue investing in facilities for general aviation such as TTD and HIO. The Port's goal is to optimize the development of each airport to avoid significant duplication of facilities.

### **Financial Analysis Preview**

The project team provided a preview of the financial analysis findings, which would be reported in more detail in PAC Meeting #8. Due to the amount of investment needed to develop Alternative B and Alternative C, the scope of the financial analysis was extended beyond the 20-year planning period to a 40-year period to evaluate when the Port could expect a positive return on investment.

The financial analysis focused on comparing Alternative B, Alternative C and TTD status quo. The primary differentiating factors of the financial analysis were the lifecycle costs of the runway and the revenue-generating potential of industrial land. Of the three options, Alternative B was the only option that produced a positive cumulative cash flow within a 40-year period because of its smaller runway and larger amount of industrial land. Alternative C trended toward a positive cumulative cash flow over a longer timeframe compared to Alternative B. If the Port were to continue investing in the TTD status quo, the Airport would continue to lose money.



## PAC Discussion

PAC members asked about the proposed airport tenant relocation process as both Alternative B and Alternative C would consolidate aviation activities to the south side of the Airport. Project staff explained that the implementation phasing plan would avoid early termination of leases and describe how current tenants would be involved in discussing a transition as their lease agreements expired.

PAC members asked if the industrial sites developed on Airport property could be aviation-focused industries. The project team replied that aviation-focused industries would not be precluded from using the sites. However, aviation industries have not previously expressed interest in the project area.

PAC members asked the project team to consider the following feedback:

- TTD provides an important alternative for general aviation users who do not want to use PDX.
- Business aviation is an important growing market in the aviation industry.
- Emerging electric aircraft technology may make aviation more affordable and common.
- Adding an instrument approach to TTD may be a more effective way to attract new users than runway length.
- TTD should emulate what HIO provides for the west side of the region.
- Consider how each alternative would affect the FBO at TTD.
- The planning process so far used data from 2012 and 2013. The project team should consider available data from 2014 to see if it affects the team's conclusions.

## Public Comment

Multiple tenants of TTD attended the meeting and shared the following comments.

- The current size of the runway already limits the type of aircraft that use TTD.
- TTD's aviation customers prefer using smaller airports for a number of reasons including lower costs.
- TTD tenants do not want their businesses to be negatively affected by changes at the Airport. Shortening the runway may discourage customers of TTD tenants from continuing business.
- The implementation plan needs to account for how TTD tenants will be affected by the industrialization of current aviation land.
- The Port of Portland should focus more on promoting general aviation and attracting traffic to TTD and HIO.

One TTD airport tenant expressed concern about the planning process and said he was worried about industrialization of the Airport happening too soon. The project team replied that the planning process was still in progress and said there was still opportunity for public input.

A planner from the City of Troutdale asked if alternatives B and C reserved enough aviation land for the future and suggested TTD may provide relief if PDX receives an unexpected increase in activity. The project team said the implementation plan for the project would be developed with flexibility in mind should unexpected circumstances arise and reserved enough aviation development area to accommodate the 90th percentile of aviation forecasts. The implementation plan is presented in PAC Meeting #8.

## **PAC Meeting #8 January 28, 2016**

### **Meeting Topics**

- Public Involvement
- Special Topics Recap
- Airport Facility Requirements - Introduction
- Implementation Plan - Introduction
- Metrics, Monitoring and Changes in Circumstances - Introduction
- Financial Analysis
- Summary of Preliminary Analysis and Conclusions

### **Material Presented**

#### **Public Involvement**

The project team hosted an informational booth at Troutdale First Friday on Oct. 2, 2015 to share information about the project and collect input on the development alternatives. Booth visitors were able to ask questions about the planning process and complete a public survey. Seventeen people submitted surveys. The number of people who said they preferred Alternative B and Alternative C was similar. A few respondents said they preferred a mix of attributes from Alternative B and Alternative C or expressed no preference. Comments included with the surveys focused on the importance of aviation to the community and local career opportunities provided by industrial development.

#### **Special Topics Recap**

The PAC Chair provided a summary of the discussion from the optional special topics meeting. All PAC members were provided with notes from the special topics meeting, and some of the material was presented again at PAC Meeting #8.



#### **Airport Facility Requirements - Introduction**

Project consultants introduced Chapter 5 Airport Facility Requirements of the Master Plan. This chapter identified the airport infrastructure needed to accommodate activity expected from the aviation forecasts. The relevant facilities included runways, taxiways and storage areas. As recommended by the PAC, the 50th percentile forecast was used for planning purposes, but the plan is flexible to accommodate the 10th percentile and 90th percentile in contingency scenarios. The plan followed FAA guidelines by basing design around the most common users of an airport. For TTD, the design aircraft was a single engine aircraft like a Cessna Citation CJ3.

The sufficiency of runway length depends on the type of aircraft and can be affected by variables such as temperature, wind and aircraft load weight. Over 99 percent of aviation operations expected at TTD would be accommodated by a 3,600-foot runway. A 4,500-foot runway would be more accommodating for small-to medium sized jets.

In order to be eligible for FAA funding, the new design of the Airport must meet FAA design requirements, which were updated with new safety standards since the last *Troutdale Airport Master Plan*. FAA design standards advised the east end of the runway to be shortened so the eastern RPZ was not crossed by Graham Road and the accredited levee on the Sandy River. The west end of the runway would also be shortened slightly to prevent the west RPZ from crossing Frontage Road. The width of the runway and taxiways also exceeded FAA requirements and would be narrowed from 150 feet to 75 feet.

The plan provided sufficient aviation facilities to meet the 50th percentile of the aviation forecasts and reserved enough airport land to accommodate the 90th percentile, should it be needed. The plan also accounted for continued support of an airport traffic control tower, protected approach and departure corridors and continued investment in infrastructure to support fuel sales and aircraft repair.

### **Implementation Plan - Introduction**

Project consultants introduced the proposed phasing concept that would be used to implement the *Master Plan*. The implementation plan identified the timing and sequence of development and provided guidelines for evaluating investment decisions at milestone points. At each milestone, demand for airport facilities would be evaluated based on metrics identified in the plan. The plan was designed to be flexible to accommodate unexpected changes in demand for the Airport.

The implementation plan was sequenced into phases. The first phase focused on rebuilding the runway and taxiways, and beginning industrial development in the northwest portion of Airport property. The second phase would include building new aviation facilities to begin transitioning aviation uses from the north to the south of the Airport, making space for more industrial development on the north side. The third phase would fully transition aviation use to the south side and complete industrial development of the north side. The north taxiway would no longer be needed and would be converted into helicopter areas. The goal of the aviation plan would be to transition airport tenants from the north to the south as their leases expired. In Alternative B, an additional industrial parcel could be developed on the west end of the Airport. More detail is provided in the *Master Plan*.

### **Metrics, Monitoring and Changes in Circumstances - Introduction**

Between each phase of the implementation plan, the Port would evaluate the type and number of aircraft using the Airport as well as the demand for industrial land sites and determine if the plan would meet community needs or require adjustments. The Port would also track industrial development metrics and engage in a joint marketing strategy with the City of Troutdale to find tenants for industrial property at TTD. The Port would create an outreach plan to engage the community between each phase and collect input on the next phase of implementation.

## Financial Analysis Update

Project staff reported on the financial analysis, which was the final evaluation category to be completed for the development alternatives. The financial analysis focused on comparing Alternative B, Alternative C and TTD status quo. The primary differentiating factors of the financial analysis were the lifecycle costs of the runway and the revenue-generating potential of industrial land. Of the three options, Alternative B was the only option that produced a positive cumulative cash flow within a 40-year period because of its smaller runway and larger amount of industrial land. Alternative C trended toward a positive cumulative cash flow over a longer timeframe. If the Port were to continue investing in the TTD status quo, the Airport would continue to lose money.

The financial analysis of Alternative A and Alternative D were also updated. Using the same scoring system introduced in PAC Meeting #6, Alternative C was downgraded from a green to a yellow score. The financial scores of all other alternatives were unchanged compared to the preliminary evaluation. See updated evaluation summary in the next section.

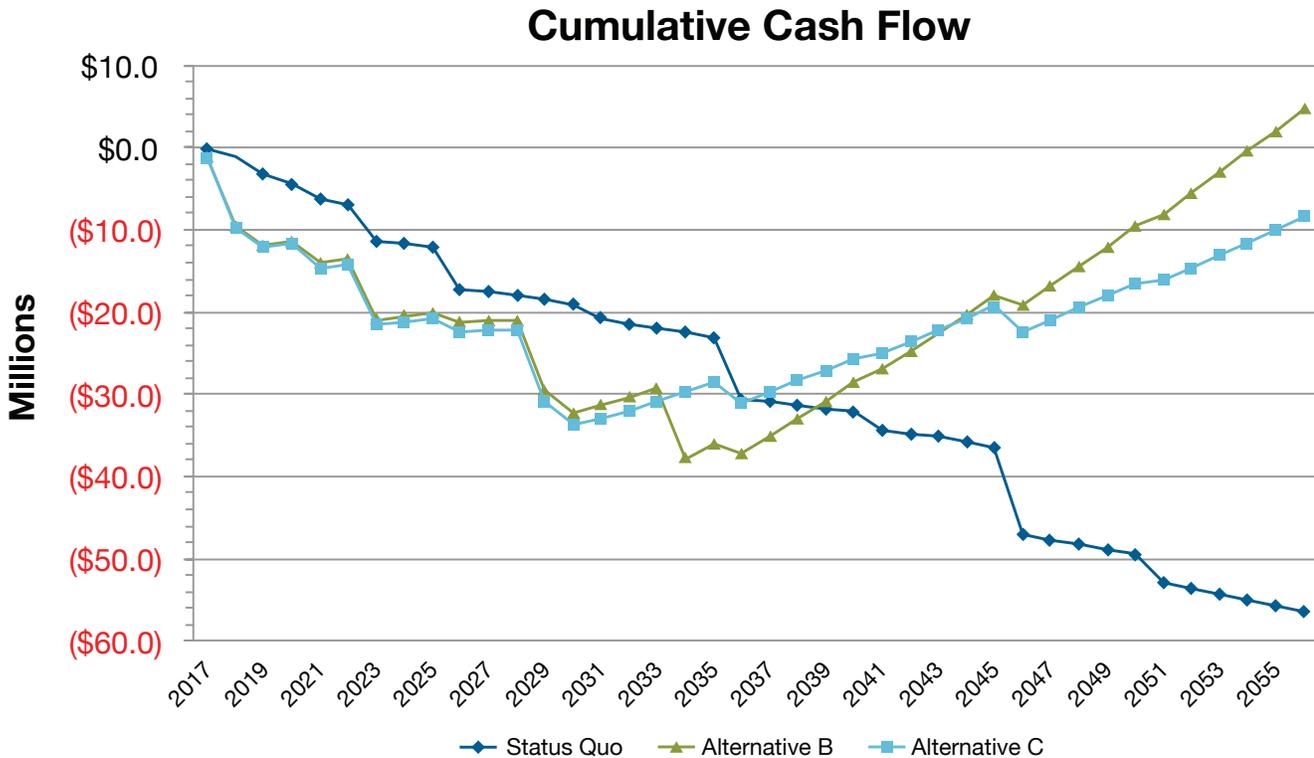


Figure 6 Expected 40-Year Cumulative Cash Flow for Alternative B, Alternative C and Status Quo

### Summary of Preliminary Analysis and Conclusions

The project team reviewed the development alternative evaluation process and presented the project team's conclusions based on the findings. The evaluation summary indicated that Alternative B and Alternative C had similar high scores overall, but Alternative B had a better financial outlook. Alternative A and Alternative D had lower overall scores.

The project team reviewed some of the key similarities and differences between Alternative B and Alternative C. The project team concluded Alternative B aligned best with the evaluation categories for the following reasons.

**Table 11 Final Alternatives Analysis Decision Making Matrix**

Alternative	Alignment with forecasts	Community economic benefits	Community planning compatibility	Environmental impacts	Financial impacts	Fit with local airport system	Legal feasibility	Overall evaluation
<b>A: Maximum Commercial/Industrial</b>								
<b>B: More Commercial/Industrial; Less Business Aviation</b>								
<b>C: More Business Aviation; Less Commercial/Industrial</b>								
<b>D: Maximum Aviation</b>								

## Alternative B

- Provides best alignment of infrastructure with 50th percentile aviation forecasts
- Provides more economic benefits to the community
  - \$1 million more in tax revenues
  - 200 more jobs
- Provides positive cumulative cash flow within 40 years
- Avoids duplicating facilities provided by other airports in the regional system

The Port of Portland Chief Operating Officer commented that the Port is challenged to meet many needs with finite resources. The *Troutdale Airport: Shaping Our Future* process had demonstrated the importance of TTD to the surrounding community, and he said the Port was dedicated to finding a way for TTD to continue serving public needs. However, the Port needed to find a way to address the substantial cost of operating TTD and move it toward financial sustainability. He explained that while the project team had presented its conclusion that Alternative B was most favorable, the PAC would still be able to submit its own preferred development alternative. He emphasized that a master plan was a living document, and the Port would continue to check with the community and make adjustments as conditions change. The Port was interested in partnering with the community to find ways to increase investment in TTD and other local economic development projects like Gresham Vista Business Park.



## PAC Discussion

PAC members provided the following feedback on the facility requirements:

- FBO operations should be characterized as “essential” instead of “desirable.”
- The FAA design aircraft is defined as the most demanding aircraft type with at least 500 operations per year. This would include jets at TTD, which had over 800 operations in 2013.
- Helicopter facilities at TTD should not be reduced because helicopter use is growing.
- The south taxiway may become congested if all aviation use is consolidated to the south side of the Airport.
- The 21-acre parcel proposed in Alternative B should not be developed to preserve the possibility of extending the runway.
- The available facilities at TTD will affect the type of users who come to the Airport.
- The FAA requires facilities it funds to be identified in an airport’s master plan. The Port may not be able to fund a longer runway in the future if it is not included in the *Troutdale Airport Master Plan*.

PAC members provided the following comments on development opportunities:

- The Port should continue working with the City of Troutdale to pursue the PAC’s economic development aspirations for TTD.
- The Port should investigate moving general aviation operations from PDX to TTD.
- The Port should investigate moving some smaller commercial flight operations from PDX to TTD.

The facilitator asked PAC members to comment on a potential compromise between Alternative B and Alternative C. PAC members offered the following considerations.

- Find a way to make the Airport financially sustainable without limiting the length of the runway.
- How can the Airport help the region meet its industrial needs?
- What are the functional differences in runway lengths? Is there added benefit in a runway length greater than 3,600 feet but smaller than 4,500 feet?
- How was financial information taken into account in past master plan processes for TTD?
- What type of uses does the Port expect to develop in the 21-acre parcel at the end of Alternative B’s runway? How would it integrate with the Airport?
- What is the role of an FBO in Alternative B and Alternative C?
- Are there other feasible development options outside the parameters of Alternative B and Alternative C? What are the benefits?

## Public Comment

Mayor of Troutdale Doug Daoust and Troutdale City Councilors David Ripma, Rich Allen and Glenn White shared the following comments.

- The City of Troutdale appreciates its relationship with the Port of Portland and wants to continue working together on development projects.
- A longer runway should be maintained at TTD to serve as an alternative to PDX in case of a large-scale emergency.
- A shorter runway may affect the long-term viability of TTD by resulting in fewer users and fewer businesses.
- Aviation operations based at TTD should be maintained. The implementation plan should consider how Airport tenants might be negatively affected.
- It is difficult for non-Port staff to understand the difference in financial impacts between industrial development at TRIP and TTD. The Port should explore whether revenue from TRIP developments could offset the need for the extra 20-acre industrial site in Alternative B.
- The Port has an obligation to maintain public amenities. Maximizing revenue should not be the only deciding factor.

One Troutdale resident also said it was difficult to understand why the Port would develop the extra 20-acre parcel in Alternative B when the Port has other properties available for development. Adding the 20-acre parcel to the end of the runway seemed to limit the possibility of extending the runway in the future.

One Troutdale resident and business owner asked for information about past levels of Port investment at TTD and questioned whether the expected runway costs were accurate. He suggested other Port-owned properties may be more profitable to develop than the 20-acre parcel at the end of the runway in Alternative B.

## **PAC Meeting #9 February 24, 2016**

### **Meeting Topics**

- Public Involvement
- PAC Work Session

### **Material Presented**

#### **Public Involvement**

A public open house was combined with PAC Meeting #9 to provide an opportunity for the general public to interact with project staff and PAC members and submit comments. Open house attendees were able to learn about the PAC process, receive an update on project work completed to date and provide input prior to the PAC's vote on a preferred alternative. Attendees were able to provide input by talking to project staff and submitting a public survey form.

About seven people attended the open house. Most attendees were primarily interested in the phasing of the project's implementation plan, the timing and logistics of consolidating aviation uses on the south side of the Airport, the location of developable land on airport property and how the Airport would accommodate helicopters after being redeveloped. One attendee submitted a comment form supporting Alternative C because he believed it could help promote Troutdale as a destination for major events and provide relief to PDX. The commenter also said he would like to see commuter flights out of TTD.

### **PAC Work Session**

The purpose of PAC Meeting #9 was to give PAC members the opportunity to have a focused discussion on the different advantages of Alternative B and Alternative C. PAC members were asked to indicate their preliminary preference for Alternative B or Alternative C in two polling activities – once at the beginning of the meeting and again at the end of the meeting. Between the two polling activities, the facilitator reviewed the project team's analysis of the two alternatives and asked each PAC member to share their reasons for their preferences. PAC members provided verbal reasons and also wrote notes on their polling ballots. The results of the polling activities are summarized below.



**Table 12 Preferred Alternative PAC Polling Activity Results**

	Alternative B	Alternative C*	Other
<b>Poll 1</b>	6	10 (includes one C+)	1 (neither)
<b>Poll 2</b>	2	14 (includes three C+)	1 (no opinion)

\*Combines results of PAC members who indicated “C” or “C+”

Some PAC members submitted other development alternatives besides Alternative B and Alternative C. In Poll 1, one PAC member submitted “C+” indicating a preference for Alternative C with a longer runway length, and one PAC member submitted “neither.” In Poll 2, three PAC members submitted “C+” and one PAC member submitted “no opinion.”

**Poll 1**

PAC members shared the following reasons for their preliminary preferences of the development alternatives.

Alternative B

- Provides most community economic benefits
- Increases the region’s economic competitiveness by providing more industrial land
- Best addresses the need for more local living-wage jobs
- Accommodates over 99 percent of aviation operations
- Provides best path to TTD’s financial sustainability
- Avoids duplication of facilities within regional airport system

Alternative C

- Retains more runway length to continue supporting aviation businesses
- Retains opportunity for local businesses to find ways to utilize the Airport
- Accommodates more aviation operations than Alternative B
- Avoids risk of industrial “overdevelopment” negatively affecting aviation uses
- Provides indirect economic benefits of jet users who spend money locally
- Makes highest and best use of airport land – other land is available locally for industrial development
- Provides some security in redundant facilities within regional airport system

Alternative C+

- Accommodates 100 percent of aviation operations
- Provides more capabilities for general aviation users looking for an alternative to using PDX

## Poll 2

Three PAC members changed their preference from Alternative B to Alternative C and gave the following reasons:

- Community economic benefits are very similar for Alternative B and Alternative C
- Community input seems to indicate a preference to retain aviation capabilities
- Alternative C retains more aviation capabilities and Alternative B limits aviation possibilities
- Alternative B could be revisited in the next planning process if TTD finances do not improve

Two PAC members changed their preference from Alternative C or “neither” to Alternative C+ and gave the following reasons:

- Prefer to keep the longest runway possible to support aviation businesses
- Accommodates 100 percent of aviation operations

One PAC member indicated his interests were satisfied with either Alternative B or Alternative C and submitted “no opinion.”

### Incentivizing increased aviation activity

The facilitator asked PAC members to offer ideas on how to incentivize increased operations at the airport.

- Present a clear vision for TTD’s purpose today and in the future
- Demonstrate a clear intent to maximize use of TTD over the long term
- Include TTD with other marketing efforts that promote the region
- Emphasize proximity of TTD when marketing industrial land near the Airport
- Create a task force that would identify industries that consider airport proximity a competitive advantage and develop marketing plan to target those industries

- Partner relevant jurisdictions with local economic development groups and private businesses
- Continue community outreach to understand how people want to use TTD
- Develop a unique “brand” for TTD
- Seek private funds to support marketing and business outreach
- Identify what makes TTD unique compared to other airports

### Public Comment

The Chair of the Troutdale City Planning Commission said Troutdale was making significant, necessary investments in a new waterfront development, convention center and hotel. He said having the Port of Portland invest in TTD would send a positive message to the community and shortening the runway may have a negative effect on existing businesses. He did not understand why the Port of Portland would develop so much industrial land in Alternative B when other industrial land was available in the surrounding area. The commenter suggested the Port could use a portion of its airport income to invest in TTD. He said the Airport was very important to the community and other community members did not attend the meeting because they felt their comments would not affect the final decision.

## PAC Meeting #10

March 16, 2016

### Meeting Topics

- Joint Collaborative Proposal
- Work on Essential Recommendation Concepts
- Preferred Alternative Vote

### Material Presented

#### Joint Collaborative Proposal

Following PAC Meeting #9, it was clear that while the project team recommended Alternative B as the development alternative most aligned with the evaluation categories, PAC members indicated a preference for Alternative C for reasons not included in the project team's analysis. The project team considered the PAC's input and worked with the PAC Chair to develop a collaborative joint proposal for PAC members to consider.

The PAC Chair and Port representatives jointly proposed building Alternative C with a 4,500-foot runway. Given the greater cost of Alternative C, the proposal included the Port of Portland's intent to seek an intergovernmental agreement with the City of Troutdale and other potential partners to help support the financial sustainability of the Airport. Other potential partners included the State of Oregon Department of Aviation, West Columbia Gorge Chamber of Commerce and East Metro Economic Alliance. The intergovernmental agreement could identify performance metrics and benchmarks to help evaluate the success of TTD. The Port of Portland would use the metrics to inform the next master plan process in 10–15 years.

#### Work on Essential Recommendation Concepts

PAC members were asked to submit recommendations to include with the proposal. Recommendations were submitted verbally and written in worksheets.

### PAC Recommendation Concepts

- Airport Layout
  - Leave TTD's Taxiway A for helicopter use (no rehabilitation needed)
- Implementation
  - Identify how the Master Plan will address racial and socioeconomic equity
  - Clarify timeline for decision, funding and construction process
  - Work closely with parties affected by airport development process such as aviation businesses
  - Balance the financial health of TTD with aviation activity
- Marketing
  - Describe how the TTD marketing task force would form and potential partners
  - Identify other Port activities that could enhance local economic development, i.e., container shipping
- Metrics and Monitoring
  - Identify TTD performance metrics and set goals / benchmarks
  - Measure how aviation activity changes after constructing 4,500-foot runway
  - Compare forecast aviation operations and lease revenues to actuals over time
  - Include social equity and diversity metrics
  - Measure how local industries depend on or benefit from TTD
  - Identify net change in impervious surfaces between Alternative C and status quo

### Preferred Alternative Vote

Prior to the vote, four members noted potential modifications to the joint collaborative proposal: 1) accommodate 100 percent of aviation activity, 2) use available time before runway reconstruction to seek other funding for the current runway length, but acknowledge funding may not be available, 3) include an effort to reduce TTD’s approach ceiling to 800 feet and 4) preserve the ability for the Airport to expand.

After discussion, the 19 voting members who were present (two members were absent) submitted their votes. Fifteen members voted a “1,” meaning they fully supported the recommendation without modification. Three members voted a “2,” meaning they agreed with the recommendation but preferred to have it modified in order to give it full support. Nevertheless, the members support the recommendation. One member voted a “2+,” which is short of a “3.” A “3” means a refusal to support the recommendation. There is no provision for a 2+ vote in the *Collaboration Principles* (see *Appendix A*). However, the “2+” was considered a “3”, which means the end result was 18 PAC members in favor and one PAC member against.

PAC members were given the opportunity to write minority reports to include with the PAC’s final report.



**Table 13 PAC Meeting #10 Preferred Alternative Vote Results**

**PAC Vote Summary on TTD Master Plan Alternative C Recommendation\***

Absent	2
Non-voting ex officio members	2
Full support of recommendation (“1”)	15
Support recommendation with modification (“2”)	3
Do not support recommendation (“3”)	1
Total PAC members	23

\*See PAC Meeting #11 for final vote results

## Public Comment

Mayor Doug Daoust of Troutdale said the City of Troutdale had strong support for Alternative C and planned to help develop a marketing task force working with the West Columbia Gorge Chamber of Commerce and East Metro Economic Alliance. The Mayor said he was confident the PAC's work would be implemented.

A pilot from Gresham said he expected the proposal would lead to the eventual closure of TTD. He said a 4,500-foot runway would be a safety risk for his aircraft and he doubted many twin engine aircraft would be able to operate on that runway length. He said TTD should be no shorter than Aurora State Airport (5,004 foot) and that other Port actions seemed to indicate a disregard for TTD.

A second pilot from Gresham said developing an industrial parcel at the end of the runway, as proposed in Alternative B, would be a safety hazard. He believed there would be demand for TTD to become a larger airport in the next 20 years. He suggested TTD could be used as an overflow airport in the future.

A local resident expressed concerns for allowing non-aviation uses on airport property, as it is difficult to build new airports in metro regions. He preferred airport property be reserved for aviation uses.

A pilot from Portland said reducing the runway length would reduce the size of aircraft that can land at TTD, and therefore reduce fuel sales. He said consolidating aviation businesses on the south side of the Airport would be difficult for small businesses if they have to incur moving expenses. He also suggested TTD may be an emergency asset if PDX is damaged.

A second pilot from Portland said TTD was a valuable flight training facility because of the diversity of weather conditions. He encouraged the Port to maintain the Airport instead of developing industrial land.

A third pilot from Portland said he would love to extend the runway at TTD. He said Troutdale used to be an attractive place to buy aircraft because Oregon has no sales tax. He said the region is growing and will need more services.

The Northwest Mountain Regional Manager of the Aircraft Owners and Pilots Association offered several recommendations. First, he recommended TTD be built as a C-II airport instead of a B-II airport because C-II would accommodate more business needs. He suggested the project's ALP include a runway as long and wide as possible when applying for FAA funding. He also recommended the Port apply for grants from the U.S. Environmental Protection Agency for any impervious surface reductions resulting from reconstruction. Last, he urged the Port to consider the economic benefits of developing more land north of TTD.

## PAC Meeting #11

April 27, 2016

### Meeting Topics

- Master Plan Process Summary
- Chapter Approval
- *PAC Report* Approval

### Material Presented

#### Master Plan Process Summary

Project staff provided the PAC a draft of this final report designed to summarize the PAC's work on the master plan process. The report demonstrated how the PAC and project team arrived at an answer to the project's central question: What is the role of Troutdale Airport in the future? In pursuit of this central question, the PAC and project team completed several outreach activities and considered economic, environmental and social sustainability as it evaluated different development alternatives. The result of this work was the PAC's preferred alternative of Alternative C.

#### Chapter Approval

Prior to PAC Meeting #11, PAC members were asked to review and provide feedback on two chapters of the *Master Plan – Chapter 6 Airport Alternatives* and *Chapter 7 Implementation*. The draft content of these chapters was presented and revised in previous PAC meetings as part of the PAC's discussion on its preferred alternative. The chapters included the PAC's preferred alternative recommendation of Alternative C, which the PAC voted on during PAC Meeting #10. The PAC approved the content of these chapters without revisions.

#### PAC Report Approval

The *PAC Report* documents the PAC's involvement in the master plan process as well as the PAC's recommendations to the Port of Portland Executive Director. Prior to PAC Meeting #11, PAC members were asked to review and provide feedback on the draft *PAC Report* via email to assure the report was an accurate and complete representation of the PAC's process. The one comment submitted by a PAC member suggested the PAC's recommendations include additional detail about how the Port will measure and report progress on work toward benchmarks in support of TTD aviation and industrial development and TRIP industrial development. A new draft was created before PAC Meeting #11 using feedback from PAC members and project staff. The revised *PAC Report* was included with the meeting materials for PAC Meeting #11. Substantive edits were highlighted to facilitate the PAC's review of the revisions. PAC members who did not vote for the preferred alternative were invited to submit minority reports to include with the *PAC Report*. One minority report was submitted and is included in *Appendix E*.

During PAC Meeting #11, the PAC facilitator asked PAC members to discuss and approve the *PAC Report*. The PAC facilitator explained that the following sections of the *PAC Report* could not be completed until after PAC Meeting #11:

- PAC Meeting #11 Summary
- Preferred Airport Alternative Highlights
- Implementation Plan Highlights
- Airport Layout Plan Highlights

The PAC Chair would review and provide final approval on these sections of the *PAC Report*. With this in mind, the PAC facilitator asked PAC members to vote on the following question: “Does the draft report, taken as a whole, accurately summarize the PAC’s work and recommendations?”

The PAC facilitator invited PAC members to propose and discuss any additional edits to the *PAC Report*. One PAC member proposed the *PAC Report* include language indicating the PAC would recommend the Port of Portland retain the current runway length at TTD if enough funding should become available. The proposed change did not pass a majority vote by PAC members (seven in support, eight opposed, six absent).

Because the majority of PAC members voted not to change the language of the recommendations in the *PAC Report*, two PAC members changed their vote on the recommendations (submitted during PAC Meeting #10) from a “2” to a “3,” indicating a refusal to support the recommendations. As a result, the final vote results were 16 PAC members in favor of Alternative C and three PAC members against.

The PAC voted unanimously to approve the draft *PAC Report* and authorized the PAC Chair to approve any final substantive edits made after that date. The PAC Chair approved this final report on May 11, 2016.

PAC members completed an evaluation of the *Troutdale Airport Master Plan* process. The process evaluation can be found in *Appendix F*.

**Table 14 PAC Preferred Alternative Vote Results**

PAC Vote Summary on TTD Master Plan Alternative C Recommendation	
Absent members	2
Non-voting ex officio members	2
Full support of recommendation (“1”)	15
Support recommendation with modification (“2”)	1
Do not support recommendation (“3”)	3
Total PAC members	23

## Public Comment

The PAC heard the following public comments before voting whether to approve the *PAC Report*.

A pilot from Gresham provided his comments as a written handout to PAC members and read them aloud. He explained he had spoken to many people about the Master Plan process and started the *Save Troutdale Airport* Facebook Page, which at the time of the meeting had been viewed nearly 5,000 times and received hundreds of responses. The commenter provided the following comments on the *PAC Report*:

- While FAA standards may allow small to medium jets to land on a 4,500-foot runway, the commenter's personal research indicated insurance companies will not insure jets that land on a runway smaller than 5,000 feet.
- The runway at TTD should not be smaller than the runway at Aurora Airport, which is 5,004 feet x 100 feet.
- Shortening the TTD runway from its current length would reduce the ability of TTD to serve east Multnomah County businesses and act as an economic engine.
- Aviation capabilities at TTD should not be compromised for increased community economic benefits on Airport property that may not relate to aviation uses.
- The *PAC Report* recommendations may result in further contraction of TTD or even Airport closure.
- The PAC should recommend transfer of TTD ownership from the Port of Portland to the Oregon Department of Aviation, as was done for Mulino Airport.

One PAC member asked if the commenter's claim was true that insurance companies will not insure jets that land on a runway smaller than 5,000 feet in length. There was no one present who could confirm the comment.

A resident of Fairview was concerned there were not more pilots represented on the PAC and said the process seemed to give too much emphasis to commercial development. He said the project should have conducted more outreach that was focused on the aviation audience. He was concerned TTD's FBO and other businesses would close if Alternative C is implemented.

A flight instructor at TTD said the Airport could be managed and planned better. He would like to see the South Terminal Building made more attractive and used for something like a restaurant to encourage activity at TTD. He gave examples of management practices that could be improved such as the time needed to modify or install Airport equipment and facilities. He had the impression that TTD was being neglected.

A pilot from Portland said he had the impression that the Port was acting in its own interests instead of the public's interests. He said the public's interests included TTD's businesses and employees. He said if more PAC members had a better understanding of aviation, the PAC's recommendation would be different.

## IV. TROUTDALE AIRPORT MASTER PLAN HIGHLIGHTS

The *Troutdale Airport Master Plan* is the result of community discussion and expert technical analysis combined in the planning process and documented in the plan's technical memorandum and Airport Layout Plan. It includes an inventory of airport assets and surrounding land uses, forecasts of airport activity and land use demand, an analysis of various development alternatives, and a plan to implement the preferred alternative that best aligns technical analysis and community vision in pursuit of sustainability.

PAC members were given the opportunity to review and provide feedback on master plan chapters. The final *Master Plan* and Airport Layout Plan are consistent with the master plan preferred alternative recommended by the PAC. The *Master Plan* and Airport Layout Plan were finalized after the PAC's final meeting.

### A. Existing Conditions: Airport Inventory

The purpose of examining existing conditions and preparing an inventory is to record airport features and conditions as they existed in 2014. This information forms the foundation for the airport facility requirements analysis and the development of airport improvement alternatives, which are identified as part of the master plan process. Key sections of the TTD inventory include Airfield and Landside Facilities, Aviation Activity, Noise and Airfield Design Standards, Airport Economic Impact and Financial Performance, and Environmental Conditions.

TTD supports various aviation uses. The type, condition, and availability of airport facilities determine which users can operate at the Airport. The existing airport markets consist primarily of general aviation activity, corporate aircraft, recreational flights, and flight training. TTD recently passed FAA safety inspections and meets most FAA design standards. Scheduled commercial passengers and cargo operators are better served by other airports in the region. Also, many buildings at TTD lie empty or are not utilized for their intended purpose due to location, condition, and the lack of demand. One example is the terminal building, which is currently being used by the Oregon Department of Transportation as office space.

Nearly all of the funding for TTD comes from the Port and the FAA, and the Airport operates at a net loss. While TTD is not performing profitably financially, the economic impacts of TTD extend outside of its general vicinity. TTD provides a positive economic impact to the surrounding community by supporting 283 jobs, \$15.9 million in wages, \$48.4 million in business sales, and \$1.2 million in annual state and local taxes.

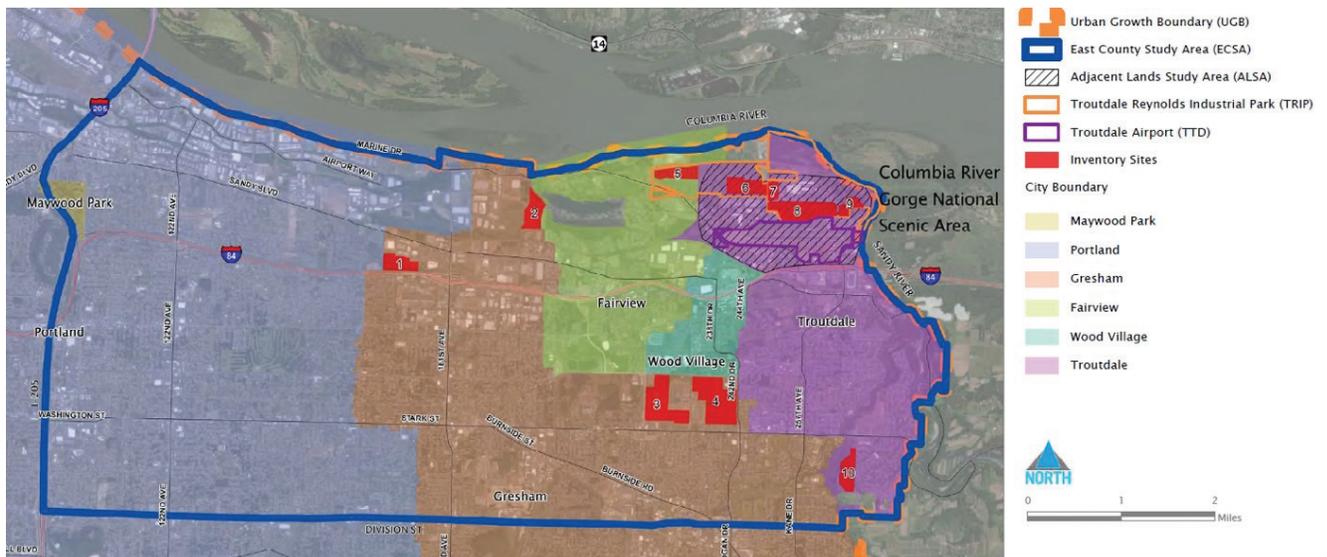
The last period of significant private sector investment in TTD was in the early 1980s, and the Port's capital expenditures since then have been directed towards meeting FAA standards, maintenance, and rehabilitation. Due to this ongoing attention from the Port, TTD is well maintained and supports safe and efficient aircraft operations. The Airport Inventory will be used in conjunction with the Aviation Activity Forecasts chapter to develop facility requirements which will guide future development at TTD.

## B. Existing Conditions: Land Use Inventory

The purpose of the Land Use Inventory is to identify land uses surrounding TTD to determine compatibility with airport operations, and to identify sites adjacent to TTD and within the East County Study Area (ECSA) that are appropriate for industrial development. The land use inventory forms the foundation for the land use demand analysis and the creation of land use alternatives. TTD is well situated among commercial and industrial properties that are generally compatible with aircraft operations. The cities of Troutdale, Wood Village, and Fairview also have airport overlay zoning which promotes land use compatibility with TTD. Furthermore, the Port has policies and procedures in place that reduce overflight of noise sensitive residential uses.

Data gathering for this chapter includes a review of available industrial development sites in the ECSA, Adjacent Lands Study Area (ALSA), and TTD/TRIP submarket. The inventory found that 10 sites are suitable for large-lot industrial development within the ECSA, eight of which are larger than 25 net acres. While there are 10 larger industrial sites in the ECSA, only three of these sites are development-ready in the near-term (within six months). Five sites are available for development from seven to 30 months, and two sites will require more than 30 months for development. Overall, the inventory identifies 443 acres of developable industrial land within the ECSA. The existing utility infrastructure provides adequate service and would require limited improvement to meet industrial development demands for the 10 sites in the inventory.

Industrial land development is desirable and beneficial for the local economy. Aviation-related land needs at TTD can be adequately served with less land area than is currently reserved. Troutdale's zoning standards would allow industrial and limited commercial uses on the surplus property. This ancillary development would support TTD's economic self-sufficiency while providing a greater social contribution to the local economy than leaving vacant land at TTD.



Map 3 East County Land Use Study Area

### C. Aviation Activity Forecast

The aviation activity forecast evaluates the future demand at TTD. This chapter forecasts the number of *based aircraft* and *airport operations* expected in the next 20 years. The forecast is expected to be a guide to future market activity based on the best information available today and will need to be updated over time as new information becomes available. Forecasts are intended to provide justification for future decisions, including analysis of alternatives to meet the long-term needs at TTD while accomplishing other economic, environmental and social goals. While traditional general aviation (GA) forecasts solely focus on future demand, this chapter is also used as part of the determination for the future role of TTD. Based on the forecast information, the PAC will provide input to the Port regarding which combination of markets TTD should serve in the future. This combination of markets defines the role of the Airport and leads to determination of facility needs, land requirements, and development options.

The forecasts are based on activity from December 31, 2003 to December 31, 2013. The 2013 base year is chosen because it is the most recent year for which data is available when the forecasting effort began. Data sources include Port of Portland and Federal Aviation Administration (FAA) records, industry forecasts, and government forecasts from the State of Oregon, the U.S. Department of Energy, and the U.S. Bureau of Economic Analysis. The FAA must review and approve these forecasts in order to be used as justification for FAA funding participation in improvement projects at TTD.

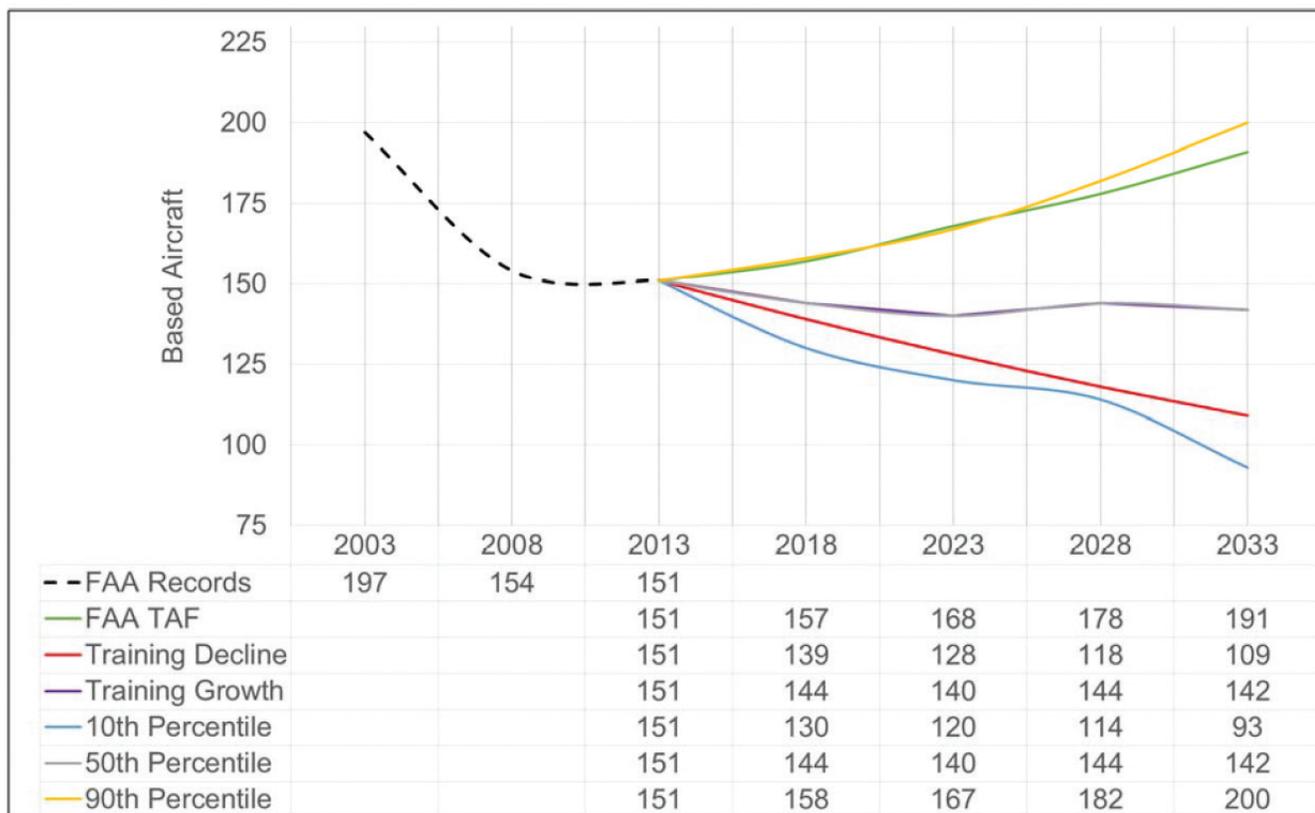


Figure 7 Based Aircraft Forecast

Aviation activity forecasts use complex statistical tools to arrive at future outputs. Forecasts are prepared by the project team, consisting of aviation planning consultants with technical input from Port staff. A probabilistic forecast expresses future activity in terms of the probabilities that a given activity level will occur in a given future year. The following graphs indicate the future levels of based aircraft (parked at TTD on a regular basis) and aircraft operations (number of takeoffs/landings) that can be expected at TTD with probabilities ranging from 10 percent to 90 percent. The 90th percentile forecast combines forecast drivers in such a way that there is less than 10 percent probability that activity levels will be greater than this curve. Similarly, there is less than a 10 percent probability that activity levels will be below the 10th percentile curve.

Aircraft operations are projected to grow at an annual growth rate of 0.4 percent. Flight training operations made up 49 percent of 2013 operations and are expected to grow at 0.9 percent per year on average. Demand for helicopter pilots will fuel training demand in the future. Local recreational operations will decline by 12 percent as older aircraft are retired, and flying becomes more common for business and training purposes than for pleasure. Forecasts project in 2033 TTD will be the fourth busiest airport in the Portland metropolitan region after Portland International Airport (PDX), Hillsboro Airport (HIO), and Aurora State Airport (UAO).

Single engine aircraft made up 88 percent of the 2013 fleet and are projected to decline by 0.2 percent per year on average. Multi-engine aircraft made up seven percent of the 2013 fleet and are projected to decline by 3.9 percent per year on average. Helicopters made up five percent of the 2013 fleet and are projected to grow by 0.7 percent per year on average. There were no jet aircraft at TTD in 2013, but jets have been based at TTD in previous years. Jet aircraft are projected to grow at two percent per year on average.

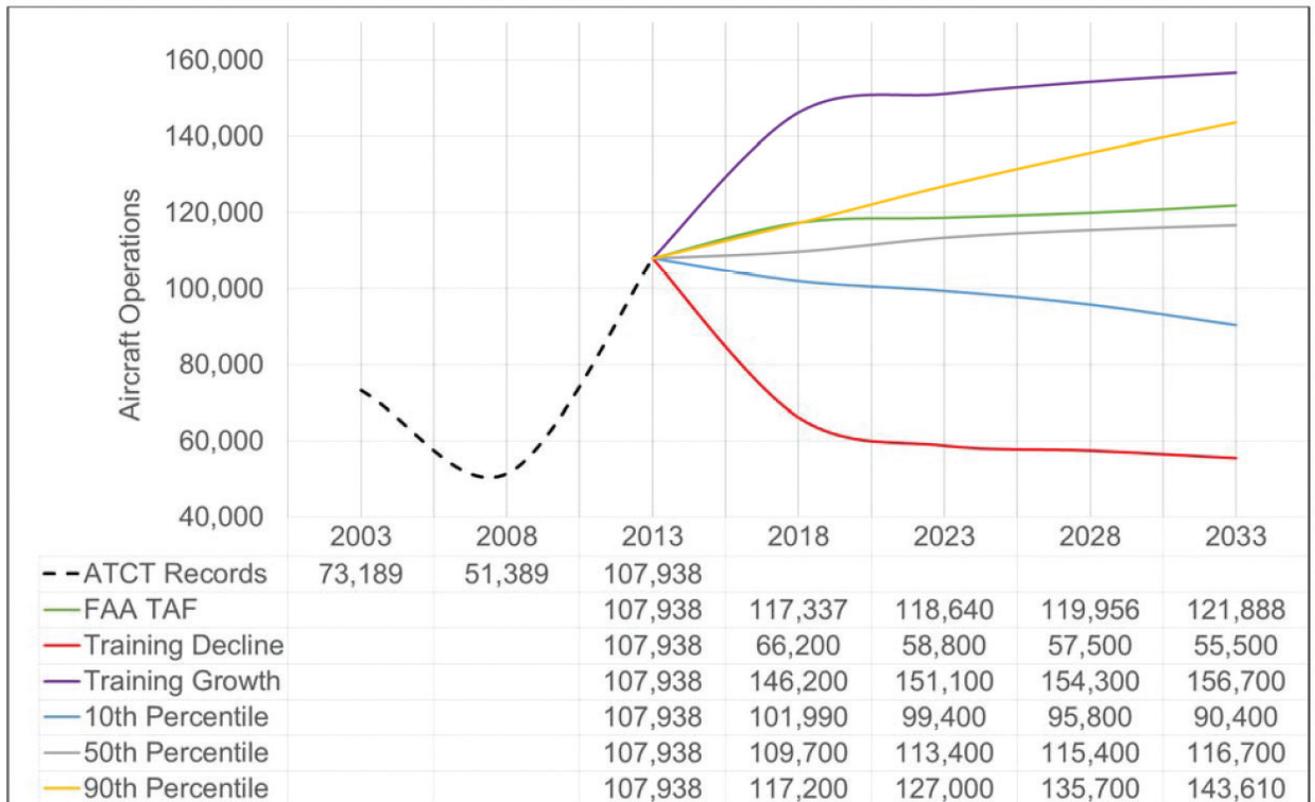


Figure 8 Aircraft Operations Forecast

	2013	2018	2023	2028	2033
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<b>BASED AIRCRAFT</b>					
Single Engine	133	127	126	130	126
Jet	0	1	1	2	3
Multi-Engine	11	9	6	5	5
Helicopter	7	7	7	7	8
<b>Based Aircraft Total</b>	<b>151</b>	<b>144</b>	<b>140</b>	<b>144</b>	<b>142</b>

<b>OPERATIONS</b>					
<b>ITINERANT</b>					
Recreational/Training/Business	29,830	30,200	31,800	31,400	30,300
Jet	908	600	600	1,300	1,900
<b>Itinerant Subtotal</b>	<b>30,738</b>	<b>30,800</b>	<b>32,400</b>	<b>32,700</b>	<b>33,100</b>
<b>LOCAL</b>					
Recreational	24,412	23,800	23,400	22,400	21,500
Fixed Wing Training	35,986	36,500	37,100	38,200	39,000
Helicopter Training	16,802	18,600	20,500	22,000	24,000
<b>Local Subtotal</b>	<b>77,200</b>	<b>78,900</b>	<b>81,000</b>	<b>82,600</b>	<b>84,500</b>
<b>Operations Total</b>	<b>107,938</b>	<b>109,700</b>	<b>113,400</b>	<b>115,400</b>	<b>116,700</b>

Figure 9 50th Percentile Forecast Summary

Industry forecasts expect strong demand for new GA aircraft and pilot training; however, the question remains as to whether this demand will be met at TTD or elsewhere. TTD provides necessary facilities to support the four key market segments (flight training, recreational, business, and maintenance/repair/overhaul activities), but faces competition from other Metro airports – some of which are located in less congested airspace. Aviation activity forecasts are based on projections for external market forces and do not consider factors to promote or limit use of TTD by certain markets that are within airport management’s control. The next step in the process is using the forecast information to determine the future role of TTD.

#### D. Land Use Demand Forecast and Analysis

The purpose of the land use demand analysis is to help plan for future land uses around TTD that are complementary to airport operations. It provides an overview of the types of businesses that could use property around the Airport, and whether the demographics and lot size of the surrounding community could support this development. This analysis presents the projected demand for employment land (land zoned for Industrial and commercial uses), both regionally and in the ECSA. Non-aviation development surrounding the Airport has a positive impact for TTD and the greater region. For example, the Troutdale Reynolds Industrial Park (TRIP) is expected to generate 7,100 jobs and \$410 million in annual wages at full build out. TRIP and similar developments help bring additional jobs into the community by supporting ancillary services such as restaurants, retail, and office space. It may also help influence businesses that operate aircraft to locate near the Airport. In essence, aviation and employment lands can work in tandem to support economic development for the region.

The analysis and forecasts are based mainly on the 2014 Urban Growth Report recently adopted by the Oregon regional government Metro, which contains regional forecasts of employment land demand and employment growth. Other sources utilized were the U.S. Bureau of Labor Statistics, U.S. Census Bureau/American Community Survey, the State of Oregon, and MetroScope, Metro's "urban simulation model". MetroScope is a series of linked models that Metro uses to assist in its planning efforts. Employment forecasts are translated into associated real estate product needs, which are then translated into aggregate land needs as well as specific site needs. Regional forecasts by industrial sector are allocated geographically, providing for a local allocation of regional growth by sector.

The lands surrounding TTD are well suited for a range of industrial and commercial development that provides access to PDX, the regional transportation system, and potential rail connections. Additionally, the I-84 Corridor provides regional access, as well as access to the I-5 Corridor. The Port has targeted the following industries for east Multnomah County:

- Manufacturing
- Clean Tech
- Professional, scientific, and technical services
- Food processing
- Warehousing/distribution
- Energy storage
- Mixed commercial and incubator sites, retail/office mixed development
- Retention and expansion of area businesses
- Suppliers to local traded-sector employers

These targeted industries are generally compatible with aircraft operations, existing industries in the area, meet long-term economic and planning goals of local jurisdictions and the Port, and have labor force requirements that can be met by local labor. Due to the increasing need for industrial capacity in the Metro region, it is expected that properties near TTD would be highly desirable to developers of industrial and commercial properties if made available to the market. Key conclusions taken from the land use demand analysis include the following:

- Both the national and local economies continue to expand at a moderate rate, with most industries well into recovery.
- Forecasted large lot (25+ acres) demand within the Metro urban growth boundary ranges between 22 and 35 sites over the next 20 years. Within Multnomah County, there will be a need for 12 – 20 sites over the same period.
- Projected employment land need in Multnomah County is between 3,940 – 4,816 acres over the next 20 years. Projected industrial land need is between 1,700 – 2,300 acres during this period. This reflects an average annual demand for industrial space in Multnomah County ranging from 1.4 – 1.9 million square feet, reflecting a land need of between 86 – 113 acres per year.
- East Multnomah County has relatively fewer sites that require substantial pre-construction work than other areas of the County.

## E. Airport Role Analysis

TTD is considered a regional reliever airport by the FAA National Plan of Integrated Airport Systems (NPIAS). The Airport is part of the local airport system and is integrated with area airports to relieve local GA traffic pressure on PDX. The presence of TTD provides GA aircraft operators with a less congested airport which may be closer to their home or place of business. It also frees arrival and departure slots at PDX so that scheduled commercial passenger and freight aircraft do not have to compete with as many flight training and GA users as they would if TTD and similar airports were not located nearby. There were 151 aircraft stored at TTD in 2014, and the Airport saw 107,838 takeoffs and landings in 2013.

The Airport supports recreational flying. Business aviation and charter services are offered at TTD along with aircraft services such as fuel, engine repair, avionics, hangars and helicopter components. The airport traffic control tower and Port staff estimate that as many as 50 percent of aircraft operations at TTD are conducted by student pilots from flight training programs based at the Airport. Students and employees at TTD spend money at businesses in the surrounding community, spreading the economic impact of TTD beyond airport property, and supporting additional jobs.

A key central question that the *Master Plan* sought to answer was, “what should the role of Troutdale Airport be in the future?” Before major investments are made in airport infrastructure, including rebuilding the runway and taxiways, the Port desired a better understanding of how the Airport should best function over the long term. To answer this, the *Master Plan* analyzed secondary questions, including:

- What markets is the Airport best suited to serve?
- What are the primary development alternatives?
- Are there environmental constraints that impact future alternatives?
- Are there legal constraints that impact future alternatives?
- What are the impacts of these alternatives over the next 20 years?
- What are the community economic impacts of the alternatives over the next 20 years?
- How does the community feel about these alternatives?
- What development alternatives will be recommended to the Port Executive Director?

To answer these questions and ultimately determine the long term role of the Airport, four alternatives representing a range of airport roles were identified. These were analyzed through the lens of sustainability utilizing seven evaluation categories. These are discussed in the following section.

## F. Preliminary Alternatives, Evaluation Categories and Decision Making Matrix

To objectively and comprehensively determine the long term role of the Airport, an analytical framework was developed and reviewed by the PAC. This framework proposed four roles/alternatives that were then evaluated through the lens of sustainability utilizing seven evaluation categories.

The four preliminary alternatives that were considered include:

These four alternatives were evaluated against the following seven evaluation categories.

- Alignment with forecasts.
- Community economic benefits.
- Community planning compatibility.
- Environmental impacts.
- Financial impacts.
- Fit with local airport system
- Legal feasibility.

**Table 15 Preliminary Development Alternative Concepts**

Development Alternatives	
<b>Alternative A:</b>	<b>Maximum Commercial/Industrial</b>
	Close Troutdale Airport
	Convert all available land for commercial/industrial uses
<b>Alternative B:</b>	<b>More Commercial/Industrial, Less Aviation</b>
	Reduce and consolidate aviation land to create space for commercial/ industrial uses
	Retain flight training, recreational and maintenance and repair aviation uses
	Less accommodation for large business jets compared to Alternative C
<b>Alternative C:</b>	<b>Less Commercial/Industrial, More Aviation</b>
	Reduce and consolidate aviation land to create space for commercial/ industrial uses
	Retain flight training, recreational and maintenance and repair aviation uses
	More accommodation for large business jets compared to Alternative B
<b>Alternative D:</b>	<b>Maximum Aviation</b>
	Expand Troutdale Airport
	Retain flight training, recreational and maintenance and repair aviation uses
	Increase accommodation for large business jets

Subject matter experts from the Port and consultants scored the four alternatives against each evaluation category individually. These scores were averaged in a decision making matrix and presented to the PAC for review and input. Analysis of the preliminary alternatives in PAC Meeting #6 revealed that Alternative A: 100% Industrial and Alternative D: 100% Aviation scored the lowest, while Alternatives B and C scored higher and relatively close to each other.

The PAC members were given a chance to discuss the analysis and vote on which alternatives to carry forward for more detailed analysis by the project team over the summer of 2015. The PAC voted and directed the project team to focus their refined analysis on Alternatives B and C. A more detailed discussion of the preliminary alternatives analysis can be found in the PAC meeting summaries presented earlier in this report.

## **G. Facility Requirements, Refined Alternatives and Analysis**

Airport facilities are divided into airside and landside facilities. Airside facilities include runways, taxiways, navigation aids, clear areas, aircraft parking and aprons, support facilities and hangar areas. Landside facilities include building (non-hangar) areas, roads, security, automobile access and airport property outside of aircraft movement areas.

The facility requirements chapter describes FAA design standards for runway and taxiway systems. It will be used to identify Airport areas that require upgrades based on levels of activity or other FAA requirements that may trigger improvements. The requirements set forth in this chapter are based on aircraft operations of the 50th percentile forecast for a 20-year time frame, as detailed in *Chapter 3 Aviation Activity Forecasts*. This chapter only describes baseline FAA requirements for the existing conditions at the Airport, and those that correlate with the 50th percentile forecasts.

A summary of the main points of the chapter is included below.

- Planning and development of airside facilities are predicated on complying with FAA design standards that stress safety and efficiency while protecting federal investment in airport infrastructure.
- Runway capacity analysis show the runway is functioning at 47 percent of capacity today, and 51 percent of capacity in 2033.
- The design aircraft and reference code determine the adequacy of the runway system and airport geometry, the taxiway system, airside support facilities, and development areas. The existing design aircraft is the Cessna Citation CJ3.
- Runway 7/25 is designated as Runway Design Code (RDC) B-II-Visual.
- Runway 7/25 meets or exceeds FAA B-II design standards except for blast pad requirements on Runway 7 and land use compliance in the RPZs at each runway end.
- The existing runway width is 150 feet, twice as wide as the FAA recommends for a RDC B-II runway.
- At the existing length of 5,399 feet, Runway 7/25 is long enough to accommodate the existing fleet mix and the 50th percentile forecasts at TTD.
- The existing VASI for Runway 7 should be replaced with a PAPI.
- The design aircraft for future runway design is the Cessna Citation CJ3 and the runway will remain RDC B-II-Visual.
- The Taxiway Design Group (TDG) takes into account the dimensions of the aircraft landing gear (the separation of the main landing gear (wheelbase) and cockpit to main gear length) to determine taxiway widths and pavement fillets to be provided at taxiway intersections. The taxiway design group for TTD is TDG 2, with 35-foot wide taxiways.
- The alignment for Runway 7/25 meets the required wind coverage for RDC B-II.
- There is a surplus of aviation parking facilities, based on existing and forecasted based aircraft.

## H. Preferred Airport Alternative

The alternatives depict a range of future layouts that propose different answers to the central question of the *Master Plan*, “What is the role of the Troutdale Airport in the future?” The alternatives were evaluated based on the PAC’s seven evaluation categories.

The analysis considers stakeholder input collected from outreach events, public meetings and PAC members. The results of the evaluation led to the PAC’s majority recommendation of Alternative C as the preferred alternative. The preferred alternative serves as a guide for capital improvement planning and is the basis of the airport layout plan.

The four development alternatives were refined to include more detail over the summer of 2015. PAC members directed project staff to spend more time studying Alternative B and Alternative C. A summary of the four refined development alternatives analyzed is included below.

Early in the alternatives evaluation process, the project team and PAC members indicated a preference for Alternative B and Alternative C over other alternatives. After further analysis, Alternative B was favored by project staff but had mixed support from PAC members. At the end of the process, the majority of PAC members voted for Alternative C as the preferred alternative. A more detailed discussion of the refined alternatives analysis can be found in the PAC meeting summaries presented earlier in this report.

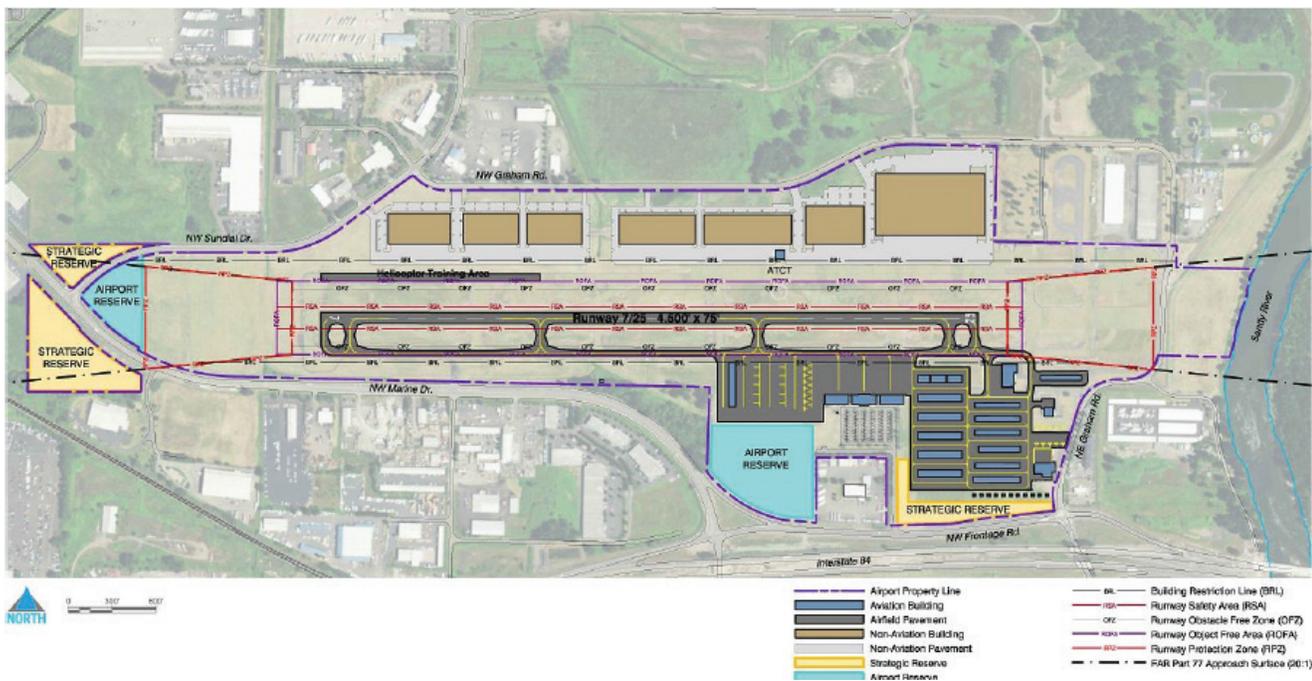


Figure 10 Preferred Alternative - Alternative C

**Table 16 Refined Development Alternatives**

**Refined Development Alternatives**

<b>Alternative A:</b>	<b>Maximum Commercial/Industrial</b>
	100% Commercial/Industrial
	Close Troutdale Airport
	Convert all available land for industrial uses with support commercial uses
<b>Alternative B:</b>	<b>More Commercial/Industrial, Less Aviation</b>
	65% Aviation, 35% Commercial/Industrial
	3,600-foot runway
	Visual approach
	Retain flight training, recreational and maintenance and repair aviation uses
	Accommodates turboprop business aircraft
	Less accommodation for business jets compared to Alternative C
	Runway moved as far east as possible to accommodate more industrial land
<b>Alternative C:</b>	<b>Less Commercial/Industrial, More Aviation</b>
	72% Aviation, 28% Commercial/Industrial
	4,500-foot runway
	Visual approach
	Retain flight training, recreational and maintenance and repair aviation uses
	More accommodation for small-medium business jets compared to Alternative B
<b>Alternative D:</b>	<b>Maximum Aviation</b>
	100% Aviation
	6,000-foot runway
	3/4 mile instrument approach
	Expand Troutdale Airport
	Retain flight training, recreational and maintenance and repair aviation uses
	Increase accommodation for large business jets

## I. Implementation Plan

Implementation of the preferred alternative is broken into phases of development. The implementation plan provides guidance on what assumptions deserve reevaluation and ongoing monitoring before the Port moves into the next phase. All improvements are demand-based, and calendar years are associated with improvements for planning purposes only. This plan is intended to be flexible and respond to changing conditions. Some improvements may not occur for many years after they are scheduled, and some may be moved forward if need materializes faster than expected. A summary of the implementation plan is highlighted below.

- Phase I: 2016-2020
  - Completion of the *Master Plan*
  - Environmental study, permitting, and reconstruction of runway
  - Conversion of Taxiway A to Helicopter Training Area
  - Phase I of industrial development (350,000 square feet)
- Phase II: 2021-2026
  - Site preparation for T-hangar and box hangars on south side
  - Transition of aviation development from north to south side of Airport
  - Rehabilitation or reconstruction of GA terminal building
  - Phase II of industrial development (224,000 square feet)
- Phase III: 2027-2032
  - Airport Master Plan update
  - Transition of aviation development from north to south side of the Airport
  - Airfield maintenance projects
  - South side apron expansion
  - Phase III of industrial development (315,000 square feet)

Evaluation will occur throughout the implementation plan, and metrics and criteria may include the following.

- Annual review of aviation demand forecast
  - Total operations, fleet mix and market distribution
  - FAA Terminal Area Forecast Aviation/ industrial development
  - Port will develop economic impact model for Troutdale Airport at the beginning and near the end of Phase I
  - Annual report on growth or decline of tenant development at TTD
  - Annual report on development in the Troutdale-Reynolds Industrial Park
  - Joint Marketing Efforts between the City of Troutdale and the Port of Portland

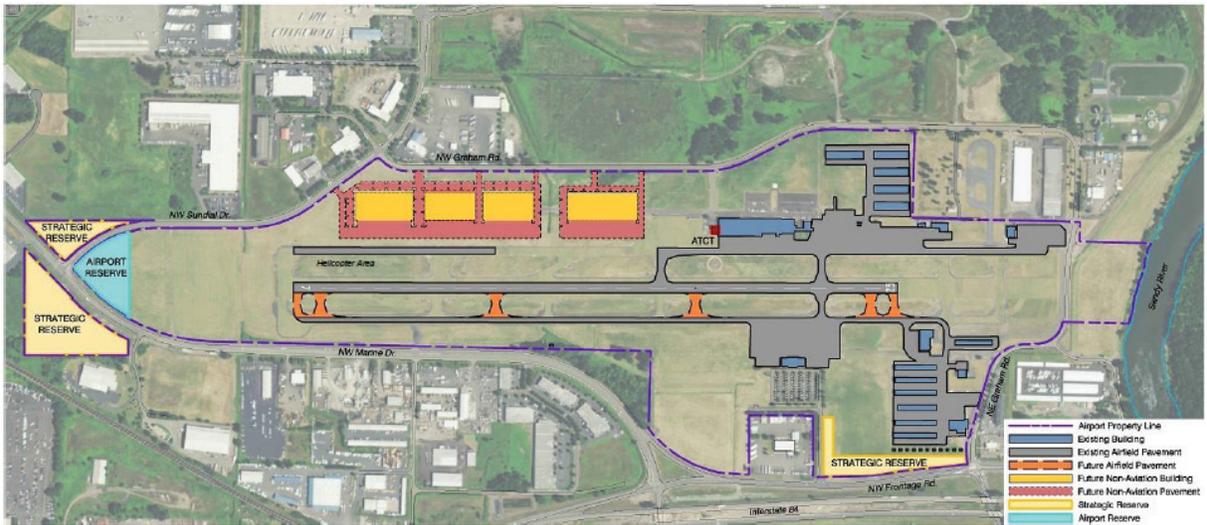


Figure 11 Phase I of Implementation: 2016-2020

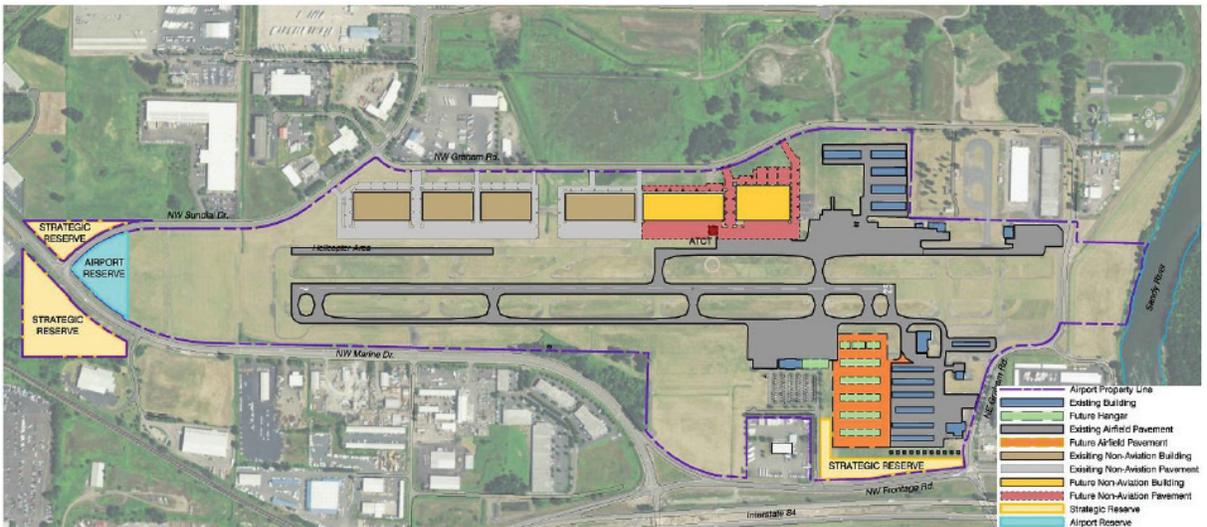


Figure 12 Phase II of Implementation: 2021-2026

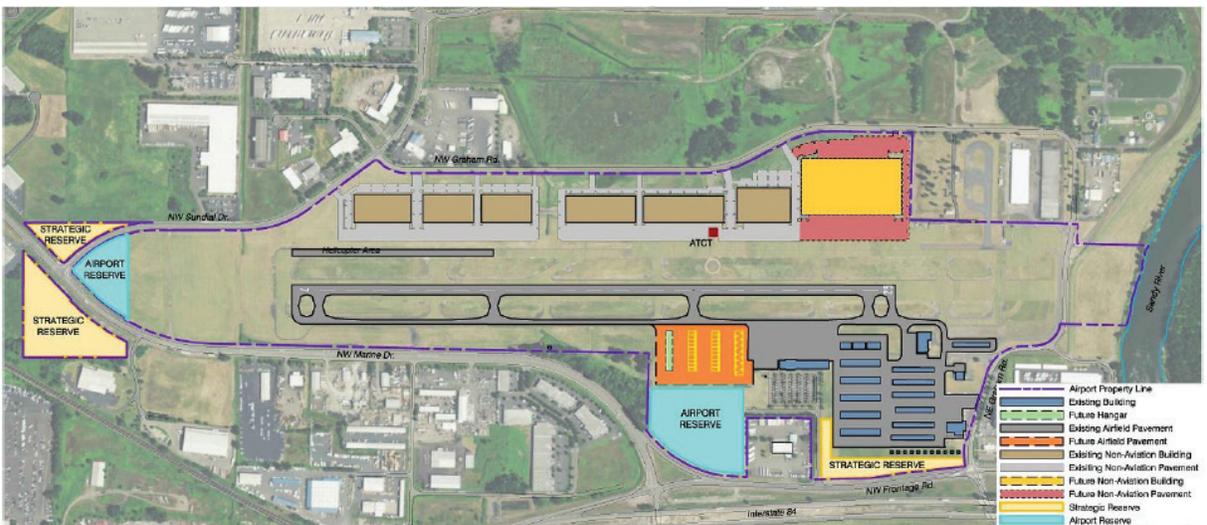


Figure 13 Phase III of Implementation: 2027-2032

## **J. Airport Layout Plan**

The Airport Layout Plan (ALP) serves as an important facility planning document that graphically depicts both existing facilities and planned development for an airport. A current FAA approved ALP is a prerequisite for issuance of a grant for airport development.

The ALP depicts existing airport facilities and proposed developments based on the *Master Plan's* preferred alternative. The ALP is reviewed and approved by the FAA. Federal law requires the airport sponsor (Port) to maintain an ALP that ensures the safety, utility and efficiency of the airport. FAA grant assurance number 29 requires that the Port keep the ALP up to date at all times. An approved ALP is necessary for the airport to receive federal financial assistance. The ALP provides a guide by which the Port can ensure that future development maintains airport design standards and safety requirements and is consistent with the preferred alternative in the most current airport master plan.

The ALP is prepared based on GIS, aerial photography, mapping and information from the *Master Plan*. The ALP is prepared using AutoCAD in two dimensional format. The ALP is also prepared per FAA guidance available from the document Standard Procedure for FAA Review and Approval of Airport Layout Plans, the FAA Northwest Mountain and FAA Advisory Circular (AC) 150/5300-6B, Airport Master Plans.

## V. CONCLUSION AND RECOMMENDATIONS

On March 16, 2016, the PAC voted by majority to recommend Alternative C. Prior to the vote, four members noted potential modifications to the recommendation: 1) accommodate 100 percent of aviation activity, 2) use available time before runway reconstruction to seek other funding for the current runway length, but acknowledge funding may not be available, 3) include an effort to reduce TTD’s approach ceiling to 800 feet and 4) preserve the ability for the Airport to expand.

After discussion, the 19 voting members who were present (two members were absent) submitted their votes. Fifteen members voted a “1,” meaning they fully supported the recommendation without modification. Three members voted a “2,” meaning they agreed with the recommendation but preferred to have it modified in order to give it full support. Nevertheless, the members support the recommendation. One member voted a “2+,” which is short of a “3.” A “3” means a refusal to support the recommendation. There is no provision for a “2+” vote in the *Collaboration Principles* (see *Appendix A*). However, the “2+” was considered a “3.” When there is a majority-minority vote, members voting a “1” or a “2” favor the proposal and members voting a “3” oppose the proposal, which means the end result was 18 PAC members in favor and one PAC member against.

During the final PAC meeting on April 27, 2016, two PAC members changed their vote on the preferred alternative from a “2” to a “3.” The end result is 16 PAC members in favor of Alternative C and three PAC members against.

<b>PAC Vote Summary on TTD Master Plan Alternative C Recommendation</b>	
Absent	2
Non-voting ex officio members	2
Full support of recommendation (“1”)	15
Support recommendation with modification (“2”)	1
Do not support recommendation (“3”)	3
Total PAC members	23

<b>PAC Vote by Member on TTD Master Plan Alternative C Recommendation</b>	
<b>Voting Members</b>	<b>Vote</b>
Travis Stovall, Chair	“1”
Chris Berg, Hillsboro Aero Academy	“1”
Mark Brown, Northwest Aero	“1”
Mark Clark, City of Wood Village	“3”
Claude Cruz, West Columbia Gorge Chamber of Commerce	“1”
Chris Damgen, City of Troutdale	“1”
Erika Fitzgerald, City of Gresham	“1”
Bob Fowler, Toyo Tanso	“1”
Barb Jones, Fairview Neighborhood	“1”
Bobby Lee, Oregon Governor’s Regional Solutions Team	“1”
Brian Lessler, Gresham Chamber of Commerce	Absent
Katherine McQuillan, Multnomah County	“1”
Erika Palmer, City of Fairview	“1”
Heather Peck, Oregon Department of Aviation	“2”
Jim Rodrigues, ProLogis	Absent
Joel Schoening, Multnomah County Drainage District	“1”
Joe Smith, Oregon Pilots Association	“3”
Alan Snook, Oregon Department of Transportation	“1”
Jose Villalpando, At-Large Community Member	“1”
Steve Wise, Sandy River Basin Watershed Council	“1”
Marvin Woidyla, Gorge Winds Aviation	“3”
<b>Non-Voting Members</b>	
Steve Nagy, Port of Portland	N/A
Jason Ritchie, Federal Aviation Administration	N/A

While recognizing that Alternative B best addresses TTD's financial sustainability challenges, the PAC recommended by majority vote Alternative C to maintain maximum flexibility for increased aviation development at TTD. In making this recommendation, the PAC recognizes that jobs and private sector investment is critical to reversing the disadvantaged economic demographics of east Multnomah County while providing the tax base for public services, and believes that both Troutdale Reynolds Industrial Park (TRIP) and TTD can play a role in that vision. Further, the PAC recognizes that managing TTD costs and securing new private investment is essential to the ongoing success of the Airport, and requires an active partnership between the community and the Port in achieving this community vision. The PAC understands that the Port will undertake another master planning process within about 10 years and will again consider the role of the Airport in light of the progress made toward financial sustainability.

### **Recommendations from the PAC – Majority Vote**

The Troutdale Airport PAC recommends that the Port of Portland's Executive Director accept the *PAC Report* and the following recommendations:

1. Accept the *TTD Master Plan* with Alternative C as the preferred alternative in which the *TTD Master Plan* would reflect a 4,500-foot by 75-foot runway and 56 acres of industrial development on the Airport.
2. Request Port Commission approval to submit the TTD Master Plan, showing an Airport Layout Plan consistent with Alternative C to the Federal Aviation Administration (FAA) for review and acceptance.
3. The Port continue to manage TTD as an important part of the regional and state airport system with phased implementation of Alternative C.
4. The Port work with tenants on the north side of TTD to allow transition of their business plans to align with implementation of Alternative C and to retain the vibrancy of TTD as a regional asset. The transition will be coordinated with tenant lease expirations.

5. The Port continue to monitor aviation issues and trends, and adapt TTD plans accordingly to meet changing industry needs.
6. The Port dedicate revenues from TTD industrial property leases on the north of the Airport and aviation development on the south side of the Airport to enhance the financial sustainability of the Airport.
7. The Oregon Department of Aviation and FAA support investments to help maintain TTD infrastructure and operations, including runway rehabilitation. The Port will keep TTD tenants updated on construction impacts related to the runway rehabilitation.
8. The Port and City of Troutdale work with other east Multnomah County interests (i.e., East Metro Economic Alliance, West Columbia Gorge Chamber of Commerce, Multnomah County, Gresham Chamber of Commerce, east county cities and other stakeholders as appropriate) to maintain and enhance TTD's viability as an important part of the Portland airport system, and support both the aviation and industrial goals of the community.
  - a. The Port continue its efforts to support existing and future TTD tenants (e.g., Fixed Based Operations, flight training), provide aviation market rate lease terms/rates at TTD and market TTD for aviation and industrial uses and compatible industrial uses at TRIP.
  - b. The City of Troutdale commit to identify ways to assist the Port of Portland to further market and incent development at TTD and TRIP.
  - c. To support this partnership, the Port and City enter into an intergovernmental agreement which identifies ways to realize the aviation and industrial goals related to TTD and TRIP and defines benchmarks for measuring progress.

- i. Benchmarks may include but not be limited to: growth in number of TTD tenants, number of TTD aircraft operations, amount of new private capital investment, TTD revenues versus expenses; TTD financial sustainability.
  - ii. Where available, the baseline for benchmark tracking will be the forecast and financial information included in the 2014-16 TTD Master Plan process.
  - iii. The goal is to realize an improvement in the revenue versus expense benchmark from the baseline measure annually.
  - d. The Port and City of Troutdale provide an annual report to review progress on their collective work toward benchmarks in support of TTD aviation and industrial development as well as TRIP industrial development. The Port and City of Troutdale will notify involved stakeholders when annual reports are available and present report findings in a public forum.
9. Finally, the PAC recommends that as part of the next master plan update (expected to be completed in approximately 10 years) that the Port plan to evaluate progress toward TTD financial sustainability with the goal of closing the gap in revenues versus expenses. If TTD continues to operate at a deficit after this good faith effort, the PAC understands that the Port will need to reevaluate alternatives consistent with the goal of financial sustainability.

On April 27, 2016 the PAC voted unanimously to approve the draft PAC Report and authorized the PAC Chair to approve any final substantive edits made after that date. The PAC Chair approved this final report on May 11, 2016.

### **Minority Opinions**

PAC members were given the opportunity to include minority reports with this document. One minority report was submitted and is included in *Appendix E*.

## APPENDICES TABLE OF CONTENTS

Document	Web Link
PAC Charter and Collaboration Principles	TBD
PAC Meeting Agendas and Minutes	TBD
PAC Meeting Presentation Slides	TBD
Outreach Summaries	TBD
Minority Report	TBD
Process Evaluation	TBD

## GLOSSARY OF KEY TERMS

**10th Percentile:** The 10th percentile is the 10 percent likelihood that the growth in aviation demand will be below the forecast.

**50th Percentile:** The 50th percentile is the 50 percent likelihood that the growth in aviation demand will be below the forecast.

**90th Percentile:** The 90th percentile is the 90 percent likelihood that the growth in aviation demand will be below the forecast.

### A

**Airport Role:** A combination of markets as defined below.

**ALP (Airport Layout Plan):** A plan required by the FAA showing current and future infrastructure and facilities at the airports.

**ALSA (Adjacent Lands Study Area):** A general land use study of property adjacent to another parcel that may inventory variable features (acreage, values, zoning, etc.).

**ATCT (Airport Traffic Control Tower):** A manned observation tower in charge of managing ground traffic and air traffic in an airport's airspace. The ATCT staff help maintain safe separation between aircraft in the air, and aircraft and vehicles on the ground.

**Aviation Demand Forecast:** A projection of aeronautical demand for aircraft operations and based aircraft at 5-, 10- and 20- year time frames.

### B

**Based Aircraft:** Aircraft that hangar or tie-down at an airport. These aircraft indicate that they are based at an airport on their registration form, and the owners typically live or work in the area.

### C

**CIP (Capital Improvement Plan):** An airport's list of planned capital expenditures over the next five years, on file with the state and the FAA. The CIP is used by federal and state agencies to plan and allocate funding, and used by airport sponsors to plan the local share of capital expenditures. The CIP is not a guarantee that projects will be funded and constructed.

**Critical Aircraft:** A critical aircraft is the most demanding aircraft, or family of aircraft, to use an airport. Facility design standards and dimensions are set to accommodate the critical aircraft. For projects requiring FAA-funding, the critical aircraft must have scheduled operations of any number per year, or over 500 non-scheduled operations per year.

### D

**Development alternatives:** Options evaluated to develop the airport aimed at serving the various airport roles. Also referred to as "alternatives."

## E

**ECSA (East [Multnomah] County Study Area):** Study area for the *Master Plan* defined by I-205 to the west, the Columbia River to the north, the Sandy River to the east, and Stark Street to the south.

**Evaluation category:** General topics used to score the development alternatives. The categories represent the spectrum of economic, environmental and social sustainability. Each evaluation category included specific measurable evaluation factors.

**Evaluation factor:** Specific measures of each evaluation categories (e.g. the economic impact category used the evaluation factors of number of jobs, average salary or wage per job, local property taxes generated, etc.).

## F

**FAA (Federal Aviation Administration):** The FAA's continuing mission is to provide the safest, most efficient aerospace system in the world (Federal Aviation Administration, 2010). The FAA is the regulatory authority on airports, airspace, aircraft, and pilots in the U.S. FAA policy is created in Washington D.C., and administered by local regional and district offices. The regional and district offices with authority for TTD are located in Renton, Washington.

**FAA Grant Assurances:** Federal Aviation Regulation Part 77 establishes standards and notification requirements for objects affecting navigable airspace.

**FBO (Fixed Base Operator):** Airport businesses that provide a variety of general aviation services including aircraft parking, fuel, maintenance, charters, aircraft rental, pilot lounge, flight instruction and sales.

## G

**GA (General Aviation):** General aviation refers to aircraft activity that is not scheduled for commercial purposes (e.g. airlines and cargo carriers), or conducted by the military. GA operations include charter and on-demand air transport, business aviation, flight instruction, recreational flying, pipeline inspection, and emergency response.

## I

**IFR (Instrument Flight Rules):** IFR governs flight procedures when there is cloud ceiling less than 1,000 feet and/or visibility less than 3 miles. These rules require pilots to be specially licensed to navigate using

instruments and air traffic control instruction, without visual reference.

**Instrument Procedures:** A series of predetermined maneuvers consisting of navigational waypoints, headings, and minimum altitudes, intended to guide aircraft between the terminal (airport area) phase of flight and the en route phase of flight.

**Itinerant Operation:** All aircraft operations at an airport other than those that are locally based operations.

## J

**Jet A:** Jet A is gasoline used in turbine engine powered aircraft. These include jets and propeller aircraft with turbine engines. Jet A is kerosene, refined to meet aviation specifications.

## L

**Land Use Demand Forecast:** Projected demand for employment land, both regionally and in the East County Study Area (ESCA). Employment lands are lands zoned for commercial and industrial uses.

**Local Operation:** Operations performed by aircraft that (1) operate in the local traffic pattern or within sight of the tower; (2) are known to be departing for or arriving from +/- light in local practice areas located within a 20-mile radius of the control tower; and (3) execute simulated instrument approaches or low passes at the airport.

## M

**Monte Carlo Simulation:** This is a form of statistical analysis that determines probabilities of outcomes using multi-variable regression. An equation which includes the variables and a predefined range within which they will occur, is run multiple times (thousands or more) to for estimates of the probabilities of specific outcomes. Monte Carlo simulations are useful in determining, high, medium, and low forecasts.

**Markets:** Areas or arenas in which commercial dealings are conducted. The identified TTD markets include: 1) business related flying, 2) flight training, 3) maintenance/repair and overhaul services (MRO), and 4) recreational flying. It is recognized that some markets overlap (e.g. recreational and business).

**MRO (Maintenance Repair and Overhaul):**

Businesses that provide maintenance repair and overhaul services for aircraft.

## N

**NAVAID (Navigational Aid):** an electronic or visual guidance system that allows pilots to maintain situational and locational awareness during periods of low visibility. NAVAIDs include airfield lights and radio beacons that convey positional information to pilots.

**NEPA (National Environmental Policy Act):** The National Environmental Policy Act (NEPA) requires federal agencies to integrate environmental values into their decision making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions. To meet NEPA requirements federal agencies prepare detailed statements known as Environmental Assessments and Environmental Impact Statements (EIS). The U.S. Environmental Protection Agency reviews and comments on EISs prepared by other federal agencies, maintains a national filing system for all EISs, and assures that its own actions comply with NEPA. (U.S Environmental Protection Agency, 2014)

**Non-Precision Instrument:** NAVAIDs and instrument procedures enabling only lateral guidance of aircraft, compared to precision instrument which provides lateral and vertical guidance. During periods of visibility below 3 a statute mile and when the cloud ceiling is below 1,000 feet above ground level, aircraft, airports, and pilots must be equipped and trained to fly non-precision instrument procedures, otherwise the airport must close until visibility improves.

## O

**OPA (Oregon Pilots Association):** The goal of OPA is to promote aviation in the State of Oregon and to provide information to pilots and anyone interested in general aviation (Oregon Pilots Association, 2014).

**Operation:** An operation is data showing how many times aircraft have taken off, landed, or performed a touch-and-go at an airport. One visit to an airport counts as two operations (landing and takeoff).

## P

**PAC (Planning Advisory Committee):** A panel of stakeholders with interests in the Troutdale Airport and East County Study Area (see ECSA) that meets at planning milestones to provide feedback and direction to the Port of Portland on key Plan elements.

**Precision Instrument:** NAVAIDs and instrument procedures enabling both lateral and vertical guidance of aircraft. During periods of visibility below a half mile and when the cloud ceiling is below 200 feet above ground level, aircraft, airports, and pilots must be equipped and trained to fly precision instrument procedures. Without precision instruments, airports experiencing these low-visibility conditions must close until visibility improves.

**PDX (Portland International Airport):** A joint civil-military airport and the largest airport in Oregon. PDX accounts for 90% of passenger travel and more than 95% of air cargo in Oregon. PDX is located 8 nautical miles from TTD and the two airports share FAA regulated airspace.

**Preferred Development Alternative (“Preferred alternative”):** The alternative recommended by the PAC that best suits the airport role and is most compatible with the project’s definition of sustainability (see definition below).

## R

**Regression Analysis:** Using projected change of one variable to forecast the change of another. Regression analysis typically identifies correlation between two variables historically, indicating whether these variables change in a similar fashion to each other, or inversely. Correlation and regression do not determine causation.

**Reliever Airport:** Airports designated by the FAA to relieve congestion at Commercial Service Airports and to provide improved general aviation access to the overall community. These may be publicly or privately-owned. TTD is classified as a reliever airport in the FAA National Plan of Integrated Airport Systems (NPIAS).

**RSA (Runway Safety Area):** The RSA is a safety area that is centered longitudinally on the runway. It must be clear of all objects, graded, drained, and capable of supporting snow removal equipment, firefighting equipment, and the passage of aircraft without damage to the aircraft (Federal Aviation Administration, 2012).

**RPZ (Runway Protection Zone):** The RPZ is a trapezoidal space at the ends of a runway that must be kept clear of incompatible uses to enhance the protection of people and property on the ground. Incompatible land uses generally include noise sensitive land uses, land uses that are characterized by high concentrations of people; and fuel and hazardous material storage.

## S

**SDIC (Sandy Drainage Improvement Company):** A Columbia corridor drainage district in which Troutdale Airport is located. The primary goal of the SDIC is to protect lives and properties from both external flooding and internal flooding, by maintaining levees along the Columbia River and managing drainage districts and pumps stations.

**Sustainability/Sustainable:** Appropriately considers the three interconnected domains: economic, environmental, and social impacts.

## T

**Tie down:** Located on aircraft parking aprons and used to secure parked aircraft so that they do not move in high winds.

**TTD (Troutdale Airport):** A public use airport, acquired by the Port of Portland in 1942, located 10 nautical

miles east of the central business district of Portland in Multnomah County, Oregon.

**TRIP (Troutdale Reynolds Industrial Park):** A zone of industrial land use located north of Troutdale Airport and owned by the Port of Portland.

## U

**UAS (Unmanned Aircraft System):** The combination of a pilotless vehicle and pilot that flies the vehicle remotely. This acronym is often used interchangeably with unmanned aerial vehicle. However, UAS refers to the vehicle and the pilot.

**UAV (Unmanned Aerial Vehicle):** A UAV is a pilotless vehicle. This acronym is often used interchangeably with unmanned aerial system; however, UAV refers to the vehicle itself, and not the pilot.

**UGB (Urban Growth Boundary):** A regional boundary, set by the local jurisdiction by mandating that the area inside the boundary be used for higher density urban development and the area outside be used for lower density development, with the intent of controlling urban sprawl.

**USFS (United States Forest Service):** An agency of the U.S. Department of Agriculture that administers the nation's national forests and national grasslands.

**USFWS (United States Fish and Wildlife Service):** USFWS is tasked with enforcing federal wildlife laws, protecting endangered birds and species, managing bird migrations and fisheries, restoring wetlands, and collecting excise taxes on fishing and hunting. (U.S. Fish and Wildlife Service, 2014)

## V

**VFR (Visual Flight Rules):** Under visual flight rules, pilots must be able to maintain separation from aircraft and objects visually, without the use of navigational aids. When weather reduces visibility below three statute miles, then pilots may not operate under instrument flight rules, and must instead use instrument flight rules.

## W

**WAAS (Wide Area Augmentation System):** A ground-based global positioning system (GPS) signal augmentation service. WAAS antennas boost strength and reliability of satellite GPS signals, enabling aircraft to use GPS to fly instrument approach procedures.





