Leigh | Fisher

In association with

Synergy Consultants, Inc.

TECHNICAL MEMORANDUM No.1 FINAL

BACKGROUND, PROCESS, GOALS, AND OBJECTIVES

Seattle-Tacoma International Airport

Prepared for

Port of Seattle
Seattle, Washington

July 2015

Sustainable Airport Master Plan
Seattle-Tacoma International Airport

Leigh | Fisher

In association with

Synergy Consultants, Inc.

TECHNICAL MEMORANDUM No.1 FINAL

BACKGROUND, PROCESS, GOALS, AND OBJECTIVES

Seattle-Tacoma International Airport

Prepared for

Port of Seattle
Seattle, Washington

July 2015

CONTENTS

TABLES

FIGURES

Background and Process Overview

The Port of Seattle will strategically plan for sustainable growth at Seattle-Tacoma International Airport.

1.1 Introduction

In accordance with Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5070-6B, Airport Master Plans, and FAA Sustainability Guidance,* the Port of Seattle (the Port) is preparing a Sustainable Airport Master Plan (SAMP) for Seattle-Tacoma International Airport (Airport or Sea-Tac Airport). This Technical Memorandum describes the goals and objectives established by the Port of Seattle commission to guide the SAMP, the SAMP process, and how SAMP goals and objectives will guide preparation of a recommended development plan.

This Technical Memorandum is organized in the following four chapters:

1. Background and Process Overview
2. National, Regional, and Local Sustainability Goals and Plans
3. SAMP Sustainability Goals and Objectives
4. How SAMP Sustainability Goals and Objectives will Guide the Vision for Long-range Airport Development

1.2 Seattle-Tacoma International Airport and the Port of Seattle

The Airport, ranked according to 2014 FAA enplaned passenger data as the 13th busiest commercial service airport in the United States, is operated by the aviation division of the Port. The Port was created in 1911 and is overseen by five Commissioners elected at large by the voters of King County. Each Commissioner serves a four-year term; together they establish Port policy. The Port owns and operates the Airport as well as a wide range of maritime and logistics facilities. The Port's mission, vision, values, and commitment are summarized in the graphic on the following page.

1.3 Sustainable Airport Master Plan Process

This section describes previous master planning at the Airport, compares the process of preparing a traditional airport master plan with the process of preparing a sustainable airport master plan, and describes how sustainability will be integrated throughout the SAMP study and plan recommendations.

*http://www.faa.gov/airports/environmental/sustainability/

1.3.1 Master Planning at Sea-Tac Airport

Typically, large air carrier airports undertake a master plan every 10-12 years or when conditions make it necessary. The Port last completed a master plan update for the Airport in 1997, which focused on the construction of the third runway (now operating as Runway 16R-34L). That master plan arose out of a prior Port study titled "Comprehensive Planning Review" that was conducted in 1988, as well as other regional studies designed to ensure that the Airport was the appropriate place for building the region's airfield capacity. While the 1997 study focused on the third runway, it also identified a long-range plan that was intended to enable the Airport to accommodate demand through 2010 as then forecast.

Airports operate in dynamic environments, as the air travel industry is subject to societal and economic changes from the global to local levels. The Port completed a Comprehensive Development Plan (CDP) in 2007 to identify a less costly and more-convenient alternative for terminal and landside improvements, which would reflect important changes in the aviation industry following its 1997 study. Those industry changes included the increased security requirements following the 9/11 terrorist events, the global financial crisis which had already begun to affect commercial air service, changes in passenger travel preferences and characteristics, and changes in the types of aircraft operating at the Airport.

Since 2007, both the air travel industry and the region Sea-Tac Airport serves have continued to change and grow (for example, advances in technology continue to redefine flight check-in processes and

facilities). Accordingly, in 2013, the Aviation Division of the Port initiated this SAMP and, at the beginning of the process, established three major goals:*

- Identify the facility requirements that would enable the Airport to satisfy air transportation demand through the next 20 years in a safe and efficient manner.
- Identify a long-term plan to achieve the Century Agenda and complement the Aviation Division Business Plan.
- Identify measures that enable the Port to build, manage, and operate facilities in ways that meet sustainability goals and objectives.

These goals were intended to guide development of the SAMP and to ensure that when concluded, the study effort has achieved its underlying objectives. The goals were targeted to the work products of the SAMP. They differ from the Port's sustainability mission and sustainability goals and objectives, which focus on issues broader than those related only to the Airport and that will likely endure after completion of the SAMP.

1.3.2 Traditional Airport Master Planning Process

An airport master plan, as defined by the FAA in AC 150/5070-6B *Airport Master Plans*, is a comprehensive study of an airport and results in airport development plans for the short-, medium-, and long-term (i.e., 5-, 10-, and 20-year planning periods). A typical airport master plan includes the following elements:

1. **Pre-Planning**—Identify need, establish goals and objectives, hire consulting team, and apply for funding, if appropriate.
2. **Public Involvement**—Establish a process and identify key stakeholders and issues.
3. **Existing Conditions Inventory**—Inventory information useful for subsequent analyses. Inventory information is collected from various sources and summarized in tables, graphs, and scaled drawings.
4. **Aviation Activity Forecasts**—Project number of passengers, volume of air cargo, and number of aircraft operations that must be accommodated in the planning periods. Typically, a forecast considers conditions 20 years into the future.
5. **Facility Requirements**—Identify types and locations of facilities needed in each of the airport's major functional areas to accommodate forecast aviation activity in the planning period. Requirements are developed using a variety of techniques ranging from spreadsheets to simulation modeling and are expressed in terms of both units (e.g., number of passenger aircraft gates) and area (e.g., a 50,000-square foot air cargo warehouse).

*SAMP goals were established by Port staff in consultation with the SAMP consultant team.

6. **Alternatives Development and Evaluation**—Develop alternatives for satisfying facility requirements during the planning period. Alternatives are (1) both physical (e.g., build a new roadway) and managerial (e.g., accommodate the demand elsewhere), (2) typically described in both narrative and graphic (i.e., drawings) formats, and (3) evaluated based on appropriate criteria (e.g., cost or environmental impact) for the purposes of comparison.

7. **Implementation Plan**—Describe proposed development plans for the planning periods, the cost of the plan elements, and triggers that will indicate need for specific facilities.

8. **Environmental Considerations**—Consider potential environmental impacts as development alternatives are identified and evaluated, and identify the likely environmental process that would be required to implement the recommended development plan.

9. **Financial Analysis**—Demonstrate how the recommended development plan will be financed, and its feasibility.

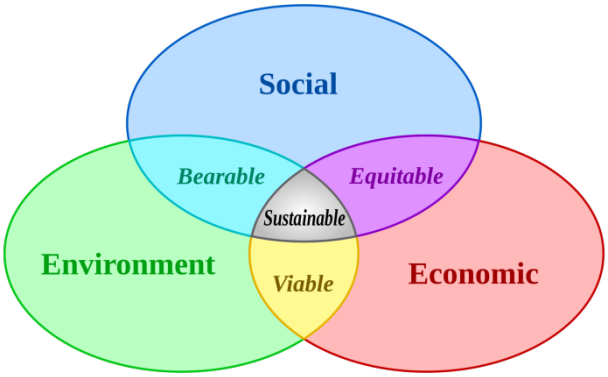
10. **Airport Layout Plan (ALP)**—Produce a set of drawings that graphically represent the plan and its conformance with FAA design criteria. The ALP is an official airport document that shows many items required by the FAA, as well as proposed future development.

1.3.3 Sustainable Airport Master Plans

This section describes how the traditional master planning approach is modified to include sustainability in the key steps of developing and screening alternatives. In the past, master planning typically focused on the financial bottom line and organizational needs/capabilities. Sustainable master planning, in contrast, captures local values as described below and incorporates environmental, social, and community outreach goals.

"Sustainability," as it relates to development, has many definitions, but generally has its origin in the 1987 United Nation's Commission on Environment and Development (known as the Brundtland Commission). The Brundtland Commission suggested that development was acceptable and necessary, but that it must be done in a sustainable manner. A plan or development is sustainable if it balances three – often competing – elements: economic/financial, environmental, and social. Development that accomplishes this is known as meeting the "Triple Bottom Line," as illustrated in Figure 1-1.

Figure 1-1
The Triple Bottom Line: Economic Environmental, and Social
Seattle-Tacoma International Airport



Source: "Sustainable development," Johann Dréo, Creative Commons, January, 2007.

Because the Airport received a grant from FAA to develop a SAMP, the FAA's approach and definition of sustainability and SAMP requirements also influence the process and integration of sustainability into the master plan. FAA defines as sustainable actions that:

- Reduce environmental impacts.
- Help maintain high, stable levels of economic growth.
- Help achieve "social progress," a broad set of actions that ensure organizational goals are achieved in a way that's consistent with the needs and values of the local community.*

The FAA also provides guidance for airports preparing sustainable airport master plans, stating that "Sustainability Master Plans (SAMPs) fully integrate sustainability into an airport's long-range planning [and] use(s) baseline assessments of environmental resources and community outreach to identify sustainability objectives that will reduce environmental impacts, realize economic benefits, and improve community relations."* For FAA funded sustainability planning efforts, the FAA requires **the sponsor to include the following:

- A written sustainability policy or mission statement.
- Categories or areas of focus as determined by each airport.
- Baseline inventory for each category.

*http://www.faa.gov/airports/environmental/sustainability/
**FAA, Airport Sustainability Master Plan, Memo from Elliot Black dated May 27, 2010 available at: http://www.faa.gov/airports/environmental/sustainability/media/interim_guidance_sustainable_master_plan_pilot.pdf

- Measureable goals for each category.
- Sustainability initiatives designed to achieve the goals.
- Public participation and community outreach.

Sustainability has been and will be integrated into the SAMP throughout the planning process in the following ways.

- Sustainability goals and objectives were developed from the Port's existing goals and objectives with guidance from the Port Century Agenda goals. This was completed during the first step of the SAMP and is documented in Chapter 3 of this Technical Memorandum.
- Sustainability goals and objectives will guide the development of alternatives and screening criteria that will be applied to identify preferred alternatives. The screening criteria will be developed considering the Airport's functional areas (e.g., terminal, airfield, landside, and cargo), potential alternatives for satisfying demand, and how objectives might be influenced by chosen alternatives.

For example, the Port has established a goal of reducing greenhouse gas emissions. Thus, the SAMP screening criteria will be used to assess the relative performance of alternatives with respect to changes in greenhouse gases. During implementation, the same criteria can be used to assess actual performance of chosen alternatives relative to all goals and objectives of the SAMP, to ensure that progress is made in a sustainable fashion.

The SAMP will include four categories of actions or initiatives that are designed to achieve the Port's sustainability goals and objectives. The four categories of actions are **what we build, where we build, how we build,** and **how we operate**. These actions:

- Involve construction (what, where, and how we build) and are reflected in the alternatives.
- Determine how the Port manages and operates the existing and future facilities (how we operate).

In a traditional master plan, the effort focuses on serving forecast demand with a preferred alternative that achieves the highest operational performance at the lowest cost. Sustainability Management Plans (SMPs) address how an airport can manage and/or operate its facilities in a sustainable fashion. The SAMP will contain alternative development actions and initiatives that will address where, what, and how the Port builds combined with how the Port manages and operates its airport facilities. All actions and initiatives will be evaluated for their contributions to achieving the sustainability goals and objectives.

The SAMP planning process parallels the traditional master plan process described in the previous section, but adds social considerations to most steps of the planning process. The SAMP process will

start with an inventory of existing conditions (across the financial/economic, environmental, and social/community outreach categories) and forecasts of aviation activity . Based on the forecasts, facility requirements (facilities needed to efficiently serve demand) will be identified. Then the planning effort will focus on how and where those requirements can be satisfied. In parallel, the planning team will begin to consider alternative management and operational initiatives to achieve the goals and objectives.

In the case of the SAMP, initial alternatives for meeting the needs of the various functional areas of the Airport (e.g., terminal, landside, cargo, etc.) will be identified. These alternatives will undergo high level screening relative to the SAMP objectives. The concepts that best achieve SAMP objectives will then continue through the planning process as preferred alternatives for functional areas.

The screening criteria for the various goals and objectives will be qualitative and quantitative, as appropriate. Criteria will be selected that best enable differentiation between alternatives, subject to a specific goal or objective. The screening results will then be summarized in a decision matrix, and either one or two alternatives will be selected as preferred based on overall performance relative to the criteria. Once preferred alternatives are selected for each functional area, initial long-range development alternatives will be developed, and one preferred alternative will be selected. The planning process will conclude with a vision for comprehensive long-range Airport development (Vision).

The Vision will reflect a balanced plan for satisfying goals and objectives across the entire Airport, rather than a plan for one or two functional areas. The Vision will identify the function, location, concept, and size of existing and planned facilities. The planning team will carefully review the Vision to determine how it performs relative to the SAMP goals and objectives (this process is referred to as a gap analysis). Any gaps between actual and desired performance will be identified and initiatives that would enable further optimization of the Vision will be identified.

Since a master plan does not include design or engineering, the sustainable facilities and gap analyses will identify initiatives that could enable the Port to further achieve SAMP objectives, further refining the preferred Vision. These initiatives may represent discrete changes in the plan as well as opportunities that a new or modified facility might enable as projects proceed into design. Total-cost-of-ownership (TCO) will be considered in light of sustainability principles.

Throughout the master planning process, the planning team and the Port will also identify existing and future management initiatives that support sustainable operations at the Airport and document their use in the Vision. These management initiatives will become the SMP portion of the SAMP and will result in an integrated Sustainability Management and Master Plan, which will be documented in Technical Memorandum No. 9. Also, Technical Memorandum No. 9 will contain the documentation requested by the FAA in its 2010 interim guidance memorandum about sustainable airport master plans, and will identify the implementation process (roles and responsibilities) for the various sustainability initiatives.

Before the Port can implement many of the recommendations of the SAMP, compliance with the National Environmental Policy Act (NEPA) and the Washington State Environmental Policy Act (SEPA)

will be required. Therefore, in tandem with preparing Technical Memorandum No. 9 to document the sustainability process and results, an Environmental Effects Overview will also be prepared. This review will provide a high level overview of the environmental effects of the Vision relative to the environmental resources considered in NEPA and SEPA, expanding upon the environmental categories reflected in the sustainability screening, and then will identify an approach to obtaining NEPA/SEPA clearance. This Environmental Effects Overview will be documented in Technical Memorandum No. 8.

This approach to including sustainability in the overall SAMP process is illustrated in Figure 1-2.

1.4 SAMP Scoping Process

Consistent with sustainability concepts, the SAMP was initiated with a series of scoping workshops involving the consultant team and both internal and external Port of Seattle stakeholders. Stakeholders included staff from the Port's Aviation Division, the Federal Aviation Administration (FAA), airlines, and local jurisdictions.

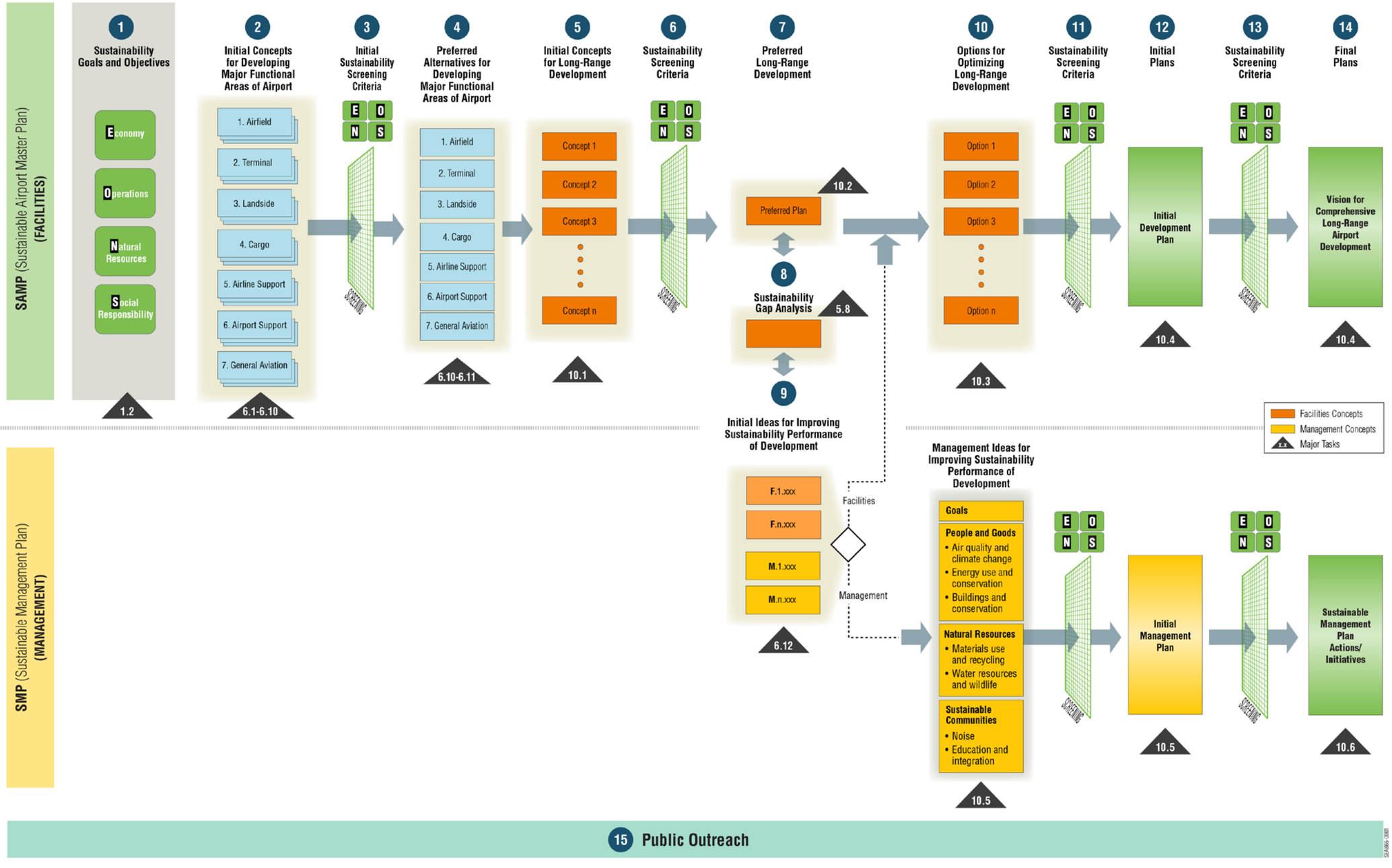
The objectives of the workshops were to acquaint the stakeholders with the master planning process and solicit input on issues of importance, which should be considered for inclusion the SAMP scope of work. The workshops were held in 2013, (July 24-26, July 30-August 1, and August 14). The results of the workshops are summarized in the document titled *Scoping Workshop Notes, Sustainable Airport Master Plan, Seattle-Tacoma International Airport*, August 7, 2013, Revised September 10, 2013.

Following the scoping workshops, a detailed draft study scope of work was prepared. The scope of work was organized by major tasks and, for each task, described:

- Objectives of the study process
- Approach
- Scope of Work
- Deliverables
- Coordination
- Schedule
- Responsibilities

The draft scope of work was the basis of an iterative process that involved (1) preparing a draft budget corresponding with the study draft scope of work, (2) comparing the study draft budget with the budget approved by the Port Commission, (3) revising the draft scope of work and budget, and (4) repeating the process until the budget was aligned with the budget approved by the Port Commission.

Figure 1-2
Process for Integrating Sustainability into the SAMP
Seattle-Tacoma International Airport



Source: LeighFisher, February, 2015

1.5 SAMP Documentation

The SAMP will be documented in nine Technical Memorandums, a summary report, an executive summary report, and an Airport layout plan. These documents and their purpose and content are summarized below.

- ***Technical Memorandum No. 1 Background, Process, Goals, and Objectives***—Defines the SAMP's purpose and desired outcome, (2) explains how the Port has made sustainability a strategic priority at the Airport, (3) communicates the results of the most recent sustainability goal-setting process as part of the SAMP, and (4) illustrates the integration of those sustainability goals into the SAMP process.

- ***Technical Memorandum No. 2 Inventory of Existing Conditions***—Documents drawings, plans and data that the planning team will use for subsequent requirements and alternatives analyses.

- ***Technical Memorandum No. 3 Air Cargo Market Assessment***—Documents (1) the composition of air carriers (and allied services) that forms the Airport's current air cargo operating environment, (2) improvements in facilities and services at the Airport that could stimulate air cargo growth beyond that reasonably expected through organic growth over the 25-year planning period, (3) competitive pressures from other gateways and other transport modes that could limit air cargo growth over the same planning period, (4) the commodity composition of exports and imports transported principally by air, as well as relevant intermodal combinations, (5) the international origins and destinations of commodities traversing regional gateways, and (6) the external economic factors that affect air cargo demand in the region.

- ***Technical Memorandum No. 4 Forecasts of Aviation Activity***—Documents forecasts of enplaned passengers, air cargo, based aircraft, and aircraft operations by type for use in the facility requirements analysis and the long-term development plan and strategy.

- ***Technical Memorandum No. 5 Facility Requirements***—Documents facilities and associated land areas required to accommodate future aviation activity for planning activity levels (PALs) corresponding with activity forecast for the 5-, 10-, 15-, and 20-year planning periods.

- ***Technical Memorandum No. 6 Alternatives***—Documents the alternatives for satisfying facility requirements that were assessed and identifies the vision for comprehensive long-range Airport development.

- ***Technical Memorandum No. 7 Facilities Implementation and Financial Feasibility***—Identifies the proposed Near-Term Projects (NTP; a subset of the Vision), their timing, phasing, cost, and rationale; summarizes the analyses that demonstrated the financial feasibility of the NTP; and recommends key actions following completion of the SAMP.

- ***Technical Memorandum No. 8 Environmental Overview***—Identifies any special purpose law that conflicts with the proposed SAMP recommendations, general project-related environmental effects (overview), and likely NEPA and SEPA processing requirements in areas such as wetlands, water quality, air quality, disturbed/ contaminated soil, site impacts to historical land, wildlife and endangered species, and noise.

- ***Technical Memorandum No. 9 Sustainability Planning and Management***—Synthesizes sustainability findings including: (1) gap analysis between impacts of forecasted growth and sustainability goals, (2) significant sustainability challenges faced by the Port, (3) important sustainability projects or project with a sustainability component identified by the SAMP, and (4) a roadmap that details the plan and processes for adopting the sustainability strategies and implementing initiatives through action plans, also known as the management plan.

- ***Executive Summary Report***—A concise document prepared to communicate essential SAMP conclusions and recommendations to the public.

- ***Airport Layout Plan***—The Airport layout plan is a set of drawings prepared according to FAA criteria. The ALP will reflect the development plan resulting from the SAMP and must be approved by the FAA.

National, Regional, and Local Sustainability Goals and Plans

The Port has already established sustainability goals, dedicated resources to achieve measurable outcomes, and reported on its progress to its stakeholders.

2.1 Introduction

This chapter further defines the concept of sustainability and identifies industry, federal, regional, and Port specific sustainability goals that were established prior to the start of the SAMP.

2.2 The Origin and Long-term Goals of Sustainability

Sustainability is related to global challenges recognized by the Port, which include climate change, economic stability, resource depletion, and environmental degradation among many others. All of these issues threaten the viability of the aviation industry, the Airport, and the communities the Port serves. The Port's challenges are also local in nature. Regional economic development, maintaining strong community relations, and investing in a healthy and prosperous workforce are crucial sustainability goals for the Port and are only achievable on the regional level. Because sustainability reflects local needs, the approach to sustainability varies from airport to airport.

The SAMP will translate the concept of sustainability into a framework useful for organizational decision-making, helping the Port understand dependencies, relationships, and trade-offs that exist when satisfying its business mission, serving its community, and protecting the environment.

Sustainability at the Airport is also shaped by external forces. Some of these are local, regional, and national government and policy organizations. Many of these organizations share the same broad vision and commitment to sustainability and some even share similar sustainability goals as the Port.

2.3 National and Airport Industry Sustainability Goals

The U.S. Federal Government exerts significant influence on sustainability programs at the Airport through regulation. In addition to regulatory influence, the U.S. Federal Government has established long-term sustainability-related goals in five focus areas: climate change, community and regional development, economy, energy, and environment. Twenty-four major Federal agencies identified these goals in their FY 2015 budgets and performance plans. At the federal level, the goals will be refined and reported against every two years.* A complete list of the federal goals can be found in Table A-1 in Appendix A.

*http://www.performance.gov/

In 2009, the Board of Directors of the Airports Council International – North America (ACI-NA) adopted a series of environmental goals. The Port is a member of ACI-NA and has been meeting many of ACI-NA's Environmental Goals.* One of two airport industry organizations, ACI-NA is the international organization that advocates policies and provides services that strengthen the ability of commercial airports to serve their passengers, customers and communities. Table A-2 in Appendix A lists ACI-NA's environmental goals, which are being updated in 2015, in the areas consistent with the Port's focus areas of: climate change and air quality, energy, environmental, noise, waste management, and water quality.

2.4 Puget Sound Region Sustainability Goals

Four major government and non-governmental organizations have set sustainability goals for the Puget Sound Region: City of Seattle, King County, Puget Sound Regional Council, and Washington State. Table A-3 in Appendix A summarizes the publicly available sustainability goals pursued by these organizations, by focus area. More information on each organization's sustainability goals can be found on their websites.

The State of Washington enacted sustainability goals through eight executive orders, as well as through regulations passed by several state agencies. These executive orders can be found in Table A-4 in Appendix A. Additional information can be found on the State of Washington Department of Ecology's sustainability website.**

In addition to what is listed in Table A-1 in Appendix A, the major focus areas and sub-focus areas of sustainability for Washington State are (1) Economic: Job Creation ("Enacting the Evergreen Jobs Act"); (2) Environmental: Climate Change, Environmentally Preferred Purchasing, Green Buildings, and Toxic Reduction; and (3) Social: Growth Management, Energy, and Affordable Housing.

2.5 The Port of Seattle Sustainability Goals

As mentioned in Section 1.1, the Port has undertaken a number of strategic planning exercises in the last five years to define its sustainability goals. The number and frequency of these separate strategic planning efforts demonstrate that the Port has strived to make sustainability local, i.e. addressing issues of particular importance to the Puget Sound Region and the Port's operation. The strategic planning exercises occurred at different levels of the organization, all offering relevant perspectives on how the Port can be more sustainable and what enhanced sustainability looks like. Furthermore, these efforts have revealed that what is considered "sustainable" is always changing. The SAMP is the next iteration in this process and will not be the last. Sustainability is built on a foundational culture of continuous performance monitoring and improvement.

The following sections describe past strategic planning exercises and present sustainability goals that were used to establish updated sustainability goals and objectives for the SAMP. Specific programs that

*http://www.aci-na.org/sites/default/files/board_enviro_goals_feb6.pdf
**http://www.ecy.wa.gov/sustainability/exeorders.html

resulted from the strategic planning exercises (1) illustrate how the Port manages and reports on sustainability and where the Port has focused efforts thus far in addressing sustainability, and (2) serve as a foundation for introducing the goals, objectives, and initiatives that were established during the SAMP sustainability goal-setting process discussed in Chapter 3.

2.5.1 Port Commission Century Agenda

As the Port neared its centennial of operation in 2011, the Port Commission undertook efforts to establish an agenda—known as the "Century Agenda"—for the next quarter century that would further its mission, vision, and commitment. The Century Agenda, shown in Table A-5 in Appendix A, includes the following strategies and objectives that relate to the Airport:

Position the Puget Sound region as a premier international logistics hub

- Triple air cargo volume to 750,000 metric tons.
- Triple the value of outbound cargo to over $50 billion.

Advance this region as a leading tourism destination and business gateway

- Make Seattle-Tacoma International Airport the West Coast "Gateway of Choice" for international travel.
- Double the number of international flights and destinations.
- Meet the region's air transportation needs at Seattle-Tacoma International Airport for the next 25 years and encourage the cost-effective expansion of domestic and international passenger and cargo service.

Use our influence as an institution to promote small business growth and workforce development

- Increase the proportion of funds spent by the Port with qualified small business firms on construction, goods and services to 40 percent of the eligible dollars spent.
- Increase workforce training, job and business opportunities for local communities in maritime, trade, travel and logistics.

Be the greenest, and most energy efficient port in North America

- Meet all increased energy needs through conservation and renewable sources.
- Meet or exceed agency requirements for storm water leaving Port-owned or operated facilities.
- Reduce air pollutants and carbon emissions: Reduce air pollutant emissions by 50 percent from 2005 levels. Reduce carbon emissions from all Port operations by 50 percent from 2005 levels and reduce aircraft-related carbon emissions at Sea-Tac Airport by 25 percent.

As a result of the Century Agenda, guiding principles and explicit strategic goals were developed for the Airport (these principles and strategic goals are summarized in Table A-6 in Appendix A). Furthermore, Port staff have included in their business plans actions to advance progress toward achieving the Century Agenda Vision, Strategies, and Objectives. These actions highlight the Port's individual business lines' contributions to the Century Agenda effort while increasing focus on their core businesses.

Because the Port Commission sets directives for the entire Port of Seattle, including the Airport, we refer to the Century Agenda Strategic Objectives as Century Agenda Goals for the purposes of the SAMP. Collectively, the Century Agenda goals and objectives are the foundation for the goals and objectives that will guide the SAMP.

2.5.2 Environmental Strategy Plan

The *Environmental Strategy Plan* (ESP), formulated in the context of the Century Agenda and completed in 2009, is a five-year roadmap for achieving greater environmental sustainability at the Airport. It established three high-level goals for the organization that could be addressed by activities related to the ESP:

- Move people and goods efficiently.
- Manage natural resources wisely.
- Promote sustainable communities.

Based on the ESP, the Port established the following focus areas or categories, each with specific goals: Air Quality and Climate Change, Energy Use and Conservation, Buildings and Infrastructure, Materials Use and Recycling, Water Resources and Wildlife, Noise, and Education and Integration. The focus areas and their goals are summarized in Table A-7 in Appendix A.

For each goal, the Port (1) identified key metrics, (2) summarized existing programs and progress to date on achieving the goal, and (3) set a target for achieving the goals by year 2014. Many elements of the ESP were leveraged during the process of establishing SAMP sustainability goals and objectives (discussed in more detail in Section 3.3).

2.5.3 25-Year Environmental Goals

As part of the Century Agenda, the Port also established Port-wide 25-year environmental goals that address pollution, energy, and land use issues most important to the Port. Many elements of the 25-year environmental goals were leveraged during the process of establishing SAMP sustainability goals and objectives, which is discussed in more detail in Section 3.3.

2.5.4 Aviation Business Plan, 2014

The *Aviation Business Plan* is a day-to-day strategic document that set the Airport's annual organizational goals across its business. A number of sustainability goals from the Aviation Business Plan were used to establish SAMP planning and sustainability goals. Table A-8 in Appendix A organizes

the Aviation Business Plan goals according to a related strategic goal in the Century Agenda and Sea-Tac Airport Purpose and Strategic Goals documents.

2.5.5 Other Historic Activities

In addition to its strategic planning exercises, the Port has implemented a number of sustainability policies and initiatives at the Airport since 2009.

The Airport's social responsibility programs are part of the Port's Office of Social Responsibility (OSR). The OSR seeks to ensure that the economic (job creation and development) and the environmental (healthy communities) gains made by the Port are done "within a framework of equity, inclusion and equal access." Social sustainability, as defined by the Global Reporting Initiative, "concerns the impacts the organization has on the social systems within which it operates."* These social systems are the communities that live within the local jurisdiction of SeaTac, Seattle, King County, and Washington State; business partners like airlines and contractors; and the Port's employees.

OSR programs and Airport specific programs are varied in size and scope. Yet, all programs strive to: (1) be a catalyst for change, (2) enhance human capital by giving people the ability to achieve their full potential, (3) remove barriers to participate in the economy, and (4) set an example in the community by reinforcing good behavior.**

The OSR goals and objectives establish broad direction on social responsibility for the Port. These goals do not easily translate into elements that can be used in the SAMP process. However, Technical Memorandum 9 will address how the recommendations of the SAMP will affect achievement of the Port's social goals.

*https://www.globalreporting.org

**http://www.portseattle.org/About/Organization/Documents/OSR_AnnualReport2014_EV1.pdf

SAMP Sustainability Goals and Objectives

Sustainability goals and objectives will help the Port achieve its sustainability vision as it develops, manages, and operates the Airport.

3.1 Introduction

The terms "goals" and "objectives" are used throughout this Technical Memorandum and the SAMP documentation. The roles in the development of these goals and objectives are summarized below, in order of the hierarchy related to their application.

- Port Commission—The Port Commission established goals for the Port and stated them in the Century Agenda (discussed in Chapter 2).
- Port Senior Management—Port senior management established the Airport's Purpose & Strategic Goals. These goals provide broad direction for the next five, ten, and twenty-five years.
- Aviation Division—the Aviation Division established goals and objectives specific to the Airport; these are reflected in the Aviation Division Business Plan, which articulates the Division's approach to achieving the Century Agenda and the Airport's strategic goals.
- Port Sustainability Team and SAMP Team— These Teams reviewed the goals and objectives established by the Port Commission, Port senior management, and the Aviation Division to determine the best way to apply them as the SAMP is developed. During this review, additional objectives were developed to better satisfy the goals, better differentiate among alternatives, and facilitate the screening of alternatives. This review, referred to as "the goal- setting process," generated sustainability goals and objectives.

This chapter summarizes the SAMP goal-setting process and key inputs and outputs and is organized in three sections

- Organization and formulation of sustainability goals and objectives.
- Summary of SAMP sustainability objectives and metrics.
- Sustainability management plan and its implementation.

It is expected that the sustainability goals and objectives will be modified over time, and will aid the Port in achieving its sustainability vision as it develops, manages, and operates the Airport. Later in the

SAMP process, initiatives will be identified that will improve performance related to meeting the sustainability goals and objectives.

3.2 Organization and Formulation of Sustainability Goals and Objectives

Following the triple-bottom line framework, the SAMP sustainability goals and objectives were organized and formulated according to three facets of sustainability: (1) Financial/Operational, (2) Environmental, and (3) Social/Community Outreach.

3.2.1 Financial/Operational Goals and Objectives

The Port's overall mission is to "create jobs by advancing trade and commerce, promoting industrial growth, and stimulating economic development" and it has established a public commitment to creating economic opportunities for all. Further, the Port has established its objective to "manage our finances responsibly." The following Aviation Business Plan goals guided the development of SAMP objectives:

- Maintain passenger airline cost per enplaned passenger (CPE) and forecasted CPE within the middle third of peer airports through 2019.
- Manage financial activity to achieve targeted metrics. Specific metrics for performance are: financial results, competitive airport costs, cash flow, liquidity, and leverage.
- Maximize non-aeronautical net operating income (NOI) consistent with current contracts, appropriate use of Airport properties, and market demand.

As noted in Chapter 1, airports in the U.S. have embraced sustainability, noting the importance of efficient airport operations within their financial/economic goals and objectives. The Port has established an operational policy of serving existing and future air travel while maintaining a safe and efficient airport. The Port's business plan matches up its Airport goals and objectives with the Commission's Century Agenda in the following way (those that are not applicable to the SAMP are not included):

- Triple air cargo volume to 750,000 metric tons (Century Agenda).
- Increase air cargo tonnage by 20 percent to a total of 364,000 metric tons in 2019. (Aviation Division Business Plan).
- Make Sea-Tac Airport the west coast "Gateway of Choice" for international travel (Century Agenda).
- Double the number of international flights and destinations (Century Agenda).
- Meet the region's air transportation needs at Sea-Tac Airport for the next 25 years (Century Agenda).
- Increase productivity of existing terminal facilities (Aviation Division Business Plan).

- Renew aging landside infrastructure. (Aviation Division Business Plan).

- Provide an efficient and updated baggage system that incorporates new technology and efficient conveyor systems necessary to improve system performance and allow for future growth. (Aviation Division Business Plan).

During meetings with Port staff managing the facilities in the functional areas of the Airport, the following objectives were identified that would assist with measuring progress toward achieving the Century Agenda and Commission goals:

- Enable the Port to achieve its financial goals in the business plan relative to Cost per Enplaned passenger (CPE) and Debt Per Enplaned passenger (DPE). It is believed that the following are important to achieving this primary objective:

  - Enable phased, incremental development.

  - Maximize use of technology to minimize the amount of new development.

  - Provide revenue-generating space in the terminal facilities in accordance with Port guidelines.

  - Ensure that that the cost of meeting facility needs does not exceed the Port's debt goals (i.e., overall affordability, but with total cost of ownership in mind).

- Minimize the effect of SAMP recommendations on cost center imbalances. This goal was identified as important because of the Airport lease agreement structure, which is based on cost centers, and it would affect the ability to afford future development.

- Reduce dwell time on the curb front and increase throughput to efficiently accommodate demand in the following ways:

  - Ensure capacity of public parking is adequate to enable the Port to increase revenue.

  - Provide cruise ship bus interfaces in ways that enhance customer service.

- Minimize aircraft taxi time and reduce airfield congestion associated with ground vehicles through the following measures:

  - Reduce runway crossings and reduce runway occupancy times.

  - Provide for efficient aircraft deicing.

  - Develop a Surface Area Management System.

  - Develop aircraft departure sequencing process vs. FAA first-come, first-served model.

  - With demand for Remain Over Night (RON) aircraft parking increasing, develop more versatile RON parking layouts and business arrangements.

- Satisfy the demand for air cargo in a manner that strives to consolidate cargo areas while minimizing congestion associated with the landside interfaces.
- Maximize efficient passenger and baggage movement throughout the passenger's trip through Sea-The Airport (garage/terminal-to-aircraft, and for connections, from aircraft to aircraft).
    - Maximize passenger throughput and level-of-service (LOS) in the terminal, including security checkpoints.
    - Maximize the passenger's ease of connection, and minimize wait time at security and check-in.
    - Maximize customer service by minimizing walking distances.
    - Minimize development by maximizing common use facilities.

When setting goals and objectives in the context of sustainability, it is important to also identify the metrics by which progress can be measured. In the case of financial objectives, those metrics would include: professional judgment, CPE, DPE, and NOI. Metrics associated with the operational goals are primarily aircraft taxi time, walking distances, wait times, level-of-service (LOS), and customer satisfaction. Technical Memorandum No. 5 will identify the facility requirements. Technical Memorandum No. 6 will identify the alternatives and their operational efficiency.

Technical Memorandum No. 9 (which presents the management plan for the sustainability plan) will identify quantifiable metrics, connected to objectives, that potentially can be used to measure and report on progress. Metrics may include: dwell/delay time, LOS, runway crossings, runway occupancy time, and customer satisfaction based on passenger surveys.

3.2.2 Environmental Goals and Objectives

Because the Airport's Environmental Strategy Plan expired in 2014, staff has been preparing the next phase of its environmental programs. This next phase would identify new objectives in light of the Century Agenda and new technological developments and ideas across the broad range of environmental sectors. The new objectives and initiatives designed to meet them will be presented in a new document entitled *Strategy for a Sustainable Sea-Tac* or S3.

Since the SAMP development timeline overlaps with S3, staff opted to integrate the two processes, and use the S3 objectives to help direct the sustainability aspects of the SAMP. The Port's S3 objectives-setting process took place in three stages. First, the Port staff working groups developed objectives and metrics to guide the continued development of the Airport's capital programs and operations. These new objectives were based on existing environmental sustainability objectives and progress to date, goals established in the Century Agenda (see earlier description), and the airport's strategic goal related to the environment. The high level goals are:

- Be the greenest and most energy efficient port in North America (Century Agenda).

- Lead the U.S. airport industry in environmental innovation and minimize the Airport's environmental impact. (Seattle-Tacoma International Airport Purpose and Strategic Goals).

The Port established working groups to structure organization-wide input into the Port's environmental objective-setting process. Each working group addressed one or more key focus areas that drive environmental performance of the Airport. Thirteen working groups were formed to guide refinement of environmental goals and objectives for use in the SAMP. The focus areas and proposed objectives from the working groups are summarized below.

Air Quality

- Reduce air pollutant emissions by 50 percent from 2005 levels by 2034.

Buildings and Infrastructure

- Seek LEED Silver for new construction, additions, and major renovations and minor renovations that modify mechanical, electrical, and plumbing systems, and encourage LEED certification for tenant improvements.

Climate Adaptation

- Complete a risk analysis of potential climate change impacts and implications for the Airport, and develop a strategic plan for avoiding/mitigating risks.

Climate Protection

- Reduce Airport-owned and controlled greenhouse gas emissions by 15 percent below 2005 levels by 2020, and 50 percent by 2034.

- Reduce aircraft-related greenhouse gas emissions by 25 percent below 2005 levels by 2034.

Construction Waste

- Divert to recycling 85 percent of construction waste by 2020, 90 percent by 2025, and reach zero waste by 2034.

Energy

- Meet all future growth in energy demand through the most practical and cost-effective conservation measures and renewable energy.

Fish and Wildlife

- Protect, enhance, and steward fish and wildlife habitat while maintaining air transportation safety.

Hazardous Waste

- Reduce the volume of hazardous waste generated from Port maintenance and operations to meet requirements for Small Quantity Generator Status by 2020.

Noise

- Increase the number of noise compatible units within the noise remedy boundary to 95 percent through the year 2030.

Terminal and Airfield Waste

- Divert 50 percent of terminal solid waste and 15 percent of airfield solid waste by 2020. (SAMP)

Transportation

- Increase the percentage of passengers accessing the Airport via environmentally-preferred modes of transportation from 60 percent in 2014 to 70 percent in 2020.

Water Conservation

- Reduce projected future consumption by 4 percent in 2020 and 12 percent in 2030.

Water Quality

- Contribute to the restoration of Puget Sound and local receiving waters by providing water quality treatment, flow control, and using green storm water infrastructure (where feasible) for Airport industrial storm water.

The working groups also established targets and metrics for each objective to monitor progress toward the goal(s). Similar to the financial/operational goals and objectives discussed in Section 3.3.1, metrics were also identified for the above SAMP goals and objectives. Metrics to be used in screening the SAMP alternatives could include professional judgment; anticipated natural resource consumption (i.e., water, energy); waste generation; emissions of criteria pollutants and greenhouse gases; filling wetlands and floodplains, etc. The initial screening of alternatives will likely occur by qualitative and professional judgment of environmental impacts. Once alternatives are narrowed to a smaller subset, it is expected that a more refined analysis of impacts will be conducted that would include selective quantification of the effects of the alternatives.

3.2.3 Social/Community Outreach

Social/community outreach, as it relates to sustainability and is defined by the Global Reporting Initiative, "concerns the impacts an organization has on the social systems within which it operates."* These social systems are the communities that live within the local jurisdiction of Sea-Tac, Seattle; King County; and Washington State; business partners like airlines, contractors, and tenants; and the Port's employees.

The Airport's social programs are part of the Port's larger Office of Social Responsibility (OSR), and are created to deliver on the Century Agenda Commitment: "The Port of Seattle creates economic opportunity for all, stewards our environment responsibly, partners with surrounding communities, promotes social responsibility, conducts ourselves transparently, and holds ourselves accountable."

*https://www.globalreporting.org

OSR ensures that gains in job creation and development made by the Port are done "within a framework of equity, inclusion and equal access." The OSR was consulted in preparing the SAMP, and three of its programs were identified in the social/community outreach goal-setting process.

The Port's goal-setting process for social/community outreach began with the existing social/community outreach goals and objectives found within the Century Agenda and Aviation Business Plan. Those goals and objectives include:

- Consistently Live by our Values (Century Agenda).
- Increase the proportion of funds spent by the Port with qualified small business firms on construction, goods and services to 25 percent of the eligible dollars spent (Century Agenda).
- Foster new aviation division opportunities for local businesses (Aviation Business Plan).
- Increase workforce training, job and business opportunities for local communities in maritime, trade, travel, and logistics (Century Agenda).
- Implement new aviation division programs that support Port-wide workforce development strategies and Commission Quality Jobs policies (Aviation Business Plan).
- Complete a Work Continuity and Succession Planning Departmental pilot program (Aviation Business Plan).
- Complete a Post-Graduate Fellowship pilot and produce recommendations for a follow on program (Aviation Division Business Plan).

In further refining the Port's overall social/community outreach goals and objectives, the following additional objectives were identified for use in the SAMP:

- Maximize the compatibility of new development with nearby lands.
- Identify benefits of proposed development to the local community.
- Enhance employee welfare, and facilitate diversity.
- Reduce off-Airport environmental impacts to nearby communities.
- Be transparent in public communications and increase outreach to the local community.

These additional goals and objectives will be measured with metrics such as jobs, payroll, economic output, environmental effects (using the metrics noted in the prior section on natural resource conservation and preservation), numbers of meeting and notices, and community feedback.

3.3 Summary of SAMP Goals and Objectives and Associated Metrics

Table 3-1 lists the SAMP objectives as well as the metrics that will be used in later Technical Memorandums to compare various alternatives and sustainability initiatives. To enable tracking the use and evolution of the goals and objectives, each is given a designation beginning with O and a sequential number (i.e., O1 through O23, with the O referring to Objective). Table B-1, located in Appendix B, summarizes how the SAMP goals and objectives in Table 3-1 relate to Port plans (i.e., the SAMP and SMP), functional areas of the Airport (i.e., airfield, terminal, landside, cargo, and support), and actions the Port can take to achieve its sustainability goals and objectives. These actions involve both construction (i.e., what, where, and how we build) and how the Port manages and operates its facilities.

Table 3-1
SAMP Goals and Objectives
Seattle-Tacoma International Airport

SAMP Goals / Objectives	Potential Metrics
O1: Enable the Port to achieve its financial goals in the business plan relative to Cost per Enplaned Passenger (CPE) and debt per enplaned passenger (DPE). The following are important to achieving this primary objective: • Enable phased, incremental development. • Maximize use of technology to minimize the amount of new development. • Provide revenue-generating space in the terminal facilities in accordance with Port guidelines. • Ensure that that the cost of meeting facility needs does not exceed the Port's debt goals (i.e., overall affordability, but with total cost of ownership in mind).	• Professional Judgment (cost, spatial allocation) • CPE • DPE • Total project capital costs • Estimated 20-year O & M costs • Total cost of ownership
O2: Minimize the effect of SAMP recommendations on cost center imbalances. This goal was identified as important, as given the Airport lease agreement structure that is based on cost centers. It would affect the ability to afford future development.	• Percentage of project cost allocated to airline cost center (for top 4 or 5 projects only)
O3: Reduce dwell time on the curb front and increase throughput to efficiently accommodate demand in the following ways: • Ensure capacity of public parking is adequate to enable the Port to increase revenue. • Provide cruise ship bus interfaces in a way that enhances customer service.	• LOS on curb front • Parking spaces • Average walk distance for cruise ship passengers—enplaning and deplaning • Average level changes for cruise ship passengers—enplaning and deplaning
O4: Minimize aircraft taxi time and reduce airfield congestion associated with ground vehicles in the following ways: • Reduce runway crossings and reduce runway occupancy times; • Provide for efficient aircraft de-icing. • Develop a Surface Area Management System. • Develop aircraft departure sequencing process vs. FAA First Come, First Serve model. • Develop more versatile parking, with RON demand increasing.	• Professional judgment (trade-offs among gate, RON, cargo, and deicing position productivity) • Professional judgment related to the availability of appropriately located runway exits, by airplane design group • Runway crossings • Runway occupancy times • Average aircraft taxi time • Average gate occupancy time during deice conditions

Table 3-1 *(continued)*
SAMP Goals and Objectives
Seattle-Tacoma International Airport

SAMP Goals / Objectives	Potential Metrics
O5: Satisfy the demand for air cargo in a manner that strives to consolidate cargo areas while minimizing congestion associated with the landside interfaces.	• Utilization ratio (metric tons per square foot of warehouse)
O6. Maximize efficient passenger and baggage movement throughout the passenger's trip through Sea-Tac Airport (garage/terminal – to-aircraft, and making connections from aircraft to aircraft): • Maximize passenger throughput and level-of-service (LOS) in the terminal, including security checkpoints. • Maximize the passenger's ease of connection, and minimize wait time at security and check-in. • Maximize customer service: Minimize walking distances. • Minimize development through maximize common use facilities.	• LOS (queuing, curbsides) • Minimum connect time • Average walking distance • Average SSCP wait time • Peak period SSCP wait time • Average distance—curb to bag drop; centroid of garage to bag drop • Last bag cutoff time
O7: Air Quality: Reduce air pollutant emissions by 50 percent from 2005 levels by 2034.	• Dwell time • Taxi time • Vehicle miles traveled • Emissions inventory (tons/year)
O8: Buildings and Infrastructure: Seek LEED Silver for new construction, additions, and major renovations and minor renovations that modify mechanical, electrical, and plumbing systems, and encourage LEED certification for tenant improvements.	• Square feet of buildings with LEED silver or higher certification.
O9: Climate Adaptation: Complete a risk analysis of potential climate change impacts and implications for the Airport, and develop a strategic plan for avoiding/mitigating risks.	• Complete risk analysis • Prepare strategic plan
O10: Climate Protection: Reduce Airport-owned and controlled greenhouse gas emissions by 15 percent below 2005 levels by 2020, and 50 percent by 2034.	• Energy consumption • Scope 1 & 2 Emissions inventory
O11: Climate Protection: Reduce aircraft-related greenhouse gas emissions by 25 percent below 2005 levels by 2034.	• Energy consumption • Scope 1 & 2 Emissions inventory
O12: Waste - Construction: Divert 85 percent of construction waste by 2020, 90 percent by 2025, and reach zero waste by 2034.	• percent of waste diverted.
O13: Waste - Terminal and Airfield: Divert 50 percent of terminal solid waste and 15 percent of airfield solid waste by 2020.	• Tons of Landfilled Waste • Tons of Recycled Waste
O14: Waste - Hazardous: Reduce the volume of hazardous waste generated from Port maintenance and operations to meet requirements for Small Quantity Generator Status by 2020.	• Kilograms of hazardous waste generated, rolling 180 days.

Table 3-1 *(continued)*
SAMP Goals and Objectives
Seattle-Tacoma International Airport

SAMP Goals / Objectives	Potential Metrics
O15: Energy: Meet all future growth in energy demand through the most practical and cost-effective conservation measures and renewable energy.	• Electricity (kWh) consumption per year • Percentage of electricity consumed that comes from renewable sources (kWhs from renewable/total kWhs). • Natural gas (therms) consumption per year • Percentage of natural gas consumed that comes from renewable sources (therms from renewable/total therms)
O16: Fish and Wildlife: Protect, enhance, and steward fish and wildlife habitat while maintaining air transportation safety.	• Acres of open space displaced • Acres of protected habitat displaced
O17: Noise: Increase the number of noise compatible units within the noise remedy boundary to 95 percent through the year 2030.	• Percentage of noise compatible units within the noise remedy boundary
O18: Transportation: Increase the percentage of passengers accessing the Airport via environmentally-preferred modes of transportation from 60 percent in 2014 to 70 percent in 2020.	• Percentage of passengers accessing the Airport under the various environmentally preferred modes (percentage of passengers using environmentally preferred modes relative to total O&D passengers) • Environmentally preferred modes: Daily parking, taxi, door-to-door van, hotel/motel courtesy vehicle, air porters, public transit, and charter/other bus.
O19: Water Conservation: Reduce projected future consumption by 4 percent by 2020 and 12 percent by 2030.	• Portable water consumption in gallons per year • Non-potable water reuse
O20: Water Quality: Contribute to the restoration of Puget Sound and local receiving waters by providing water quality treatment, flow control, and using green storm water infrastructure (where feasible) for Airport industrial storm water.	• Gallons of water treated by infiltration per year • Gallons of rainwater captured and reused per year
O21: Maximize the compatibility of new development with nearby lands.	• Consistency of propose project with existing zoning • Proximity to noise and light sensitive land uses
O22: Identify benefits of proposed development to the local community.	• Socioeconomic impact (jobs/payroll/regional economic input) • Roadway LOS/Congestion • Changes in environmental effects (O7 thru O20)
O23: Enhance employee welfare, and facilitate diversity.	• OSR office to determine – will not differentiate among MP alts
O24: Reduce off-Airport environmental effects to nearby communities.	• Changes in environmental effects (O7 thru O20)
O25: Be transparent in public communications and increase outreach to the local community.	• Number of interactions with the public (i.e., workshops) • Number of comments received

3.4 Sustainability Management Plan

The sustainability management plan will be documented in Technical Memorandum No. 9 and will include an integrated list of all goals and objectives and refinements as the SAMP progresses. It will also detail the SAMP initiatives recommended to achieve those goals and objectives, as well as action plans for accomplishing the initiatives.

SAMP initiatives will be discrete programs, actions, or investments that could be implemented to accomplish an objective. SAMP initiatives will be derived from S3, the Aviation Business Plan, and upon evaluation of needs as part of the SAMP study process.

The sustainability management plan will be organized using the Deming Cycle, a model for implementing organization change that relies on the repetition of four main steps of Plan, Do, Check, and Act:

- PLAN—The SAMP goal-setting process is the current iteration of planning work accomplished by the Port. The Port established objectives and metrics necessary to deliver results in –line with its goals.
- DO—The action plans created as part of the SAMP management plan will set the course for implementing the plan by executing initiatives.
- CHECK —As part of the S3, the Port will regularly study the results (identified by the metrics set in the objectives table in Section 3.4) and compare against the targets that were set during the Plan phase, in this case, the SAMP.
- ACT—Depending on the results of the Check phase, the Port can choose to adjust its strategy for pursuing the SAMP and any future goals it may establish. This includes any corrective actions on individual goals, objectives, targets, and initiatives as well as creating new initiatives to help achieve those goals and objectives.

In keeping with the Act step, through the SAMP, the Port has adjusted its environmental objectives (Section 3.3.2) to aid in further achieving its goals. As part of the implementation plan for the SAMP, the Port will continue to identify initiatives and actions that relate to managing the Port's environmental goals.

How SAMP Sustainability Goals and Objectives will Guide the Vision for Long-Term Airport Development

Recommendations for what and where we build, how we build, and how we operate Airport facilities will reflect the Port's sustainability goals and objectives.

4.1 Introduction

Chapter 1 of this Technical Memorandum describes the SAMP process, in which alternatives will be developed to meet the requirements for each functional area of the Airport. Requirements are the facilities and associated land areas needed to either accommodate future aviation demand or satisfy Port goals and objectives. Chapter 3 of this Technical Memorandum describes the sustainability goals and objectives to be used for the SAMP process.

As is discussed in Chapter 1, the Port intends to employ a three-part approach to achieving its sustainability goals and objectives. The first part of the approach is by building facilities, which is what a traditional master plan would consider. In the master planning process, what and where facilities would be built will be identified (**What and where we build**). The second part of the approach is to implement actions to manage the building process (**How we build**). The Port will also progress toward achieving its sustainability goals and objectives by improving the ways its facilities are managed and operated (**How we operate**); these actions are not dependent on construction. Thus, the SAMP addresses this three-part approach to sustainability.

As identified in Figure 1-2, sustainability goals and objectives will be used throughout the planning process to guide the development of physical alternatives for meeting requirements, inform the development of criteria used to screen the alternatives to a manageable number, and guide the refinement of the long-term development plan. This chapter provides conceptual examples that illustrate how SAMP sustainability goals and objectives will guide the planning process and development of the plan.

4.2 Developing Alternatives (What and Where to Build)

Developing alternatives is an iterative process. First, alternatives will be developed for each functional area of the Airport (e.g., the airfield, terminal, landside, cargo, airline support, airport support, and general aviation functions). This will consist of identifying the "what, where, and when" related to alternatives for satisfying functional requirements. Those alternatives will be screened and refined, which ultimately will result in identification of a preferred alternative for each functional area. The preferred functional area alternatives will then be assembled in different combinations to form long-

range Airport-wide development alternatives. Those alternatives will in turn be screened and refined, leading to identification of the vision for comprehensive long-range Airport development.

Goals and objectives will be used to guide the development of alternatives for both individual functional areas of the Airport and for the Airport as a whole. By understanding the Port's overall goals and objectives, the professionals developing the alternatives will have insight as to the Port's strategic direction. At the initial stage of the planning process, the influence of goals and objectives will be limited to "big picture" guidance such as the general purpose, location, and potential impact.

For example, the Century Agenda goal to "Meet the region's air transportation needs at Sea-Tac Airport for the next 25 years" will guide the planning team to identify alternatives that will accommodate all forecast air travel demand throughout the planning period. Technical Memorandum No. 4 *Aviation Activity Forecasts* presents the forecast prepared for the SAMP. Relative to the airfield functional area, for example, the planning team would interpret this goal as guidance to only identify airfield alternatives that efficiently accommodate all of the forecast activity. Alternatives that are unable to efficiently accommodate all of the forecast activity would not be developed.

4.3 Applying Screening Criteria to Identify the Vision (What, Where, and How to Build)

Two fundamental steps are involved in identifying the Vision: (a) alternatives will developed and screened in four stages, and (b) screening will occur in "rounds" (i.e., repetitions). These steps are described in the following sections.

4.3.1 Alternatives will be Identified, Refined, and Screened During a Four Stage Planning Process

Alternatives will be screened during each of four planning process stages with the objective of focusing subsequent project resources on the most promising alternatives and, ultimately, identifying the Vision. The four stages of the planning process and how they relate to the numbered process steps identified in Figure 1-2 are summarized below.

- Stage 1—Identify and screen initial alternatives for each functional area of the Airport relative to the ability to achieve the study goals and objectives. During this stage of development, experience shows that the greatest insight is learned about the performance of alternatives and the ability to achieve various goals and objectives. Stage 1 comprises steps 1 – 4 in Figure 1-2 and results in the identification of preferred alternatives for each functional area.

- Stage 2—Identify and screen initial alternatives for combining preferred functional area development into a preferred long-range Airport development plan. Stage 2 comprises steps 5 – 7 in Figure 1-2.

- Stage 3—Assess the preferred long-range Airport development plan against key sustainability goals (e.g., energy and water consumption and total cost of ownership) to identify performance gaps (i.e., failures to achieve the desired performance), and

alternatives for bridging the gaps and optimizing the preferred plan. It is expected that some of these alternatives will be discrete initiatives and others may be opportunities to be explored as the project moves into the design and engineering phase after completion of the SAMP. In Stage 3, how the facilities are built and how they are operated will be the focus. An example of how the plan might be optimized could be the application of the sustainable facilities model to identify opportunities to meet the SAMP goal of being the "greenest, most energy efficient port in North America." Stage 3 comprises steps 8 – 12 in Figure 1-2 and includes both physical plans (What and where we build) and management strategies for further improving performance related to sustainability objectives (How we operate).

- Stage 4—Screen final alternatives for opportunities to "fine tune" the preferred plan. The Vision will then be the plan that performs best relative to screening criteria across all sustainability criteria. Stage 4 comprises steps 13 – 14 in Figure 1-2 and could include both physical plans (What and where we build) and management strategies for further improving performance related to sustainability objectives (How we operate).

4.3.2 Screening will Occur in Rounds

Screening will occur in rounds within each stage of the planning process using criteria based on the sustainability goals and objectives and conditions unique to each functional area or alternative being considered. The objective will be to identify promising alternatives and move to the next stage of the process as efficiently as possible, thus making the most effective use of project resources.

The number of rounds of screening will vary, as appropriate, by functional area of the Airport (the issues to be resolved in the functional areas vary from inconsequential to complex) and by stage of the planning process. After each round of screening, both the remaining alternatives and subsequent screening criteria will be refined based on what was learned.

Early, the screening criteria will rely more on qualitative measures such as experience and professional judgment. In situations where many alternatives must be quickly reduced to a manageable number, the screening criteria may represent "threshold" tests—i.e., the criteria may represent minimum performance that must be achieved to warrant further consideration (for example, if a gate layout alternative does not deliver the required number of gates, it will be eliminated). As the number of alternatives is reduced, the depth of evaluation will increase and screening criteria will involve more quantitative measures and the use of high-level analytical tools (e.g., a gate, terminal, airfield, or roadway simulation model). Criteria derived from sustainability goals objectives will aid in comparing how well alternatives achieve desired results.

During each round of screening, attempts will be made to balance the number of criteria being considered relative to the three elements of sustainability—economic, environmental, and social. In many cases, it will not be possible to ensure an equal number of criteria for each of the elements. However, it is expected that in some instances the criteria will reflect more than one element of sustainability. For example, the criterion "reduced aircraft taxi time" could reflect a financial element (i.e., reduced fuel cost) as well as an environmental element of sustainability (i.e., reduced energy, pollution, and greenhouse gas emissions).

Appendix A
Background Information Related to National and Local Sustainability Goals

Table A-1
U.S. Federal Government Sustainability Goals
Seattle-Tacoma International Airport

Focus Areas	Goals
Climate Change	• More than double Federal government consumption of electricity from renewable sources to 20 percent by 2020 and improve energy efficiency at Federal facilities as part of the wider strategy to reduce the Federal Government's direct greenhouse gas emissions by 28 per cent and indirect greenhouse gas emissions by 13 per cent by 2020 (2008 baseline).
Community and Regional Development	• Foster quality of life in communities by integrating transportation policies, plans, and investments with coordinated housing and economic development policies to increase transportation choices and access to transportation services for all. • Increase the energy efficiency and health of the nation's housing stock. • Build strong, resilient, and inclusive communities. • Use Housing as a Platform to Improve Quality of Life. • Clean up communities, advance sustainable development, and protect disproportionately impacted low-income and minority communities. Prevent releases of harmful substances and clean up and restore contaminated areas. • Align community-based activities to provide seamless assistance to communities, both urban and rural, while maximizing efficiency and results. • Expand support of community efforts to build healthy, sustainable, green neighborhoods and reduce and prevent harmful exposures and health risks to children and underserved, overburdened communities.
Economy	• Improve federal investment tools and resources, while also increasing interagency coordination, to encourage foreign direct investment, spurring job growth. • Increase the economic impact of Federally-funded research and development by accelerating and improving the transfer of new technologies from the laboratory to the commercial marketplace. • Prepare workers for better jobs.
Energy	• Advance foundational science, innovate energy technologies, and inform data driven policies that enhance U.S. economic growth and job creation, energy security, and environmental quality, with emphasis on implementation of the President's Climate Action Plan to mitigate the risks of and enhance resilience against climate change. • Promote responsible development of renewable energy and ensure safe and environmentally responsible access to natural resources.
Environment	• Protect and restore waters to ensure that drinking water is safe and sustainably managed, and that aquatic ecosystems sustain fish, plants, wildlife, and other biota, as well as economic, recreational, and subsistence activities. • Reduce the risk and increase the safety of chemicals and prevent pollution at the source. Advance sustainable environmental outcomes and optimize economic and social outcomes through Agency decisions and actions, which include expanding the conversation on environmentalism and engaging a broad range of stakeholders. • Provide science to understand, model, and predict ecosystem, climate, and land use changes.

Table A-2
Airports Council International – North America Environmental Goals
Seattle-Tacoma International Airport

Focus Areas	Goals
Climate Change and Air Quality	• ACI-NA member airports will strive to convert airport-owned and operated ground vehicles and GSE to low emission vehicles with an industry-wide average goal of 50 percent of vehicle conversion by 2019. • By 2010, every ACI-NA member airport will strive to implement an incentive program to encourage taxi, shuttle, limo, and rental car companies to use low emission vehicles. • Half of ACI-NA member airports will strive to provide low emission vehicle support infrastructure by 2019. • Half of ACI-NA member airports will strive to provide incentives and/or reduced fee parking for low emission passenger vehicles by 2011. • Every ACI-NA member airport will strive to have at least 25 percent of its loading bridges equipped with pre-conditioned air and 400 Hz electrification by 2019. • Half of ACI-NA member airports will strive to conduct greenhouse gas emissions inventories by 2015.
Energy	• By 2014, every ACI-NA member airport will strive to implement an energy conservation program that includes adoption of an airport-specific goal to reduce non-renewable energy consumption.
Environment	• Environmental Policies: Every ACI-NA member airport will strive to have an environmental policy statement by 2010. • Environmental Management Systems: Every ACI-NA member airport will strive to have an Environmental Management System in place by: o 2014 at large airports o 2016 at medium airports o 2019 at small airports.
Noise	• Every ACI-NA member airport will strive to develop a noise and land use compatibility policy by 2019.
Waste Management	• Every ACI-NA member airports will strive to have a basic recycling program in place by 2011. Half of airports will have more extensive recycling programs by 2014.
Water Quality	• By 2014, every ACI-NA member airport will strive to implement a water conservation program that includes adoption of an airport-specific goal to reduce water consumption. • ACI-NA member airports will facilitate awareness and training with a goal of reducing spills by 25 percent from 2005 levels by 2015. ACI-NA airports will strive to have no releases of petroleum-based spills.

Table A-3
Sustainability Goals of Four Regional Governmental and Non-Governmental Organizations
Seattle-Tacoma International Airport

Focus Areas	City of Seattle [1]	King County [2]	Puget Sound Regional Council [3]	Washington State [4]
Building and Energy	• Energy conservation in residential, commercial, and city buildings. • Increase number and level of certified sustainable buildings. • Acquire 15 percent of electricity from new renewable sources by 2020. • Increase solar energy production in the community.	• Help reduce energy use by its residents, business and other partners and will support development of increasing amounts of local renewable energy. • King County will reduce energy used in government operations.	• The region will care for the natural environment by protecting and restoring natural systems, conserving habitat, improving water quality, reducing greenhouse gas emissions and air pollutants, and addressing potential climate change impacts. The region acknowledges that the health of all residents is connected to the health of the environment. Planning at all levels should consider the impacts of land use, development patterns, and transportation on the ecosystem.	• Requires that all new buildings and renovation projects that receive state funding be built to one of three green building standards. • Enhance economic competitiveness through an affordable and reliable energy supply. • Ensure the state's energy system meets the needs of its citizens. • Expand and integrate additional carbon-free and carbon-neutral generation. • Improving the energy transmission capacity serving the state. • Maintain and enhance our existing energy infrastructure. • Make state government a model for energy efficiency. • Meet statutory greenhouse gas limits and environmental requirements. • Pursue all cost-effective energy efficiency. • Reduce dependence on fossil fuel energy sources. • Support (1) access to clean energy markets (2) clean energy business and workforce development, (3) clean energy technology innovation, (4) development of cleaner energy sources, (5) clean, renewable energy and greenhouse gas-neutral operations.

[1] http://www.seattle.gov/environment/about-ose
[2] http://your.kingcounty.gov/dnrp/climate/documents/2013-King-County-Sustainability-Report.pdf
[3] http://www.psrc.org/assets/366/7293-V2040.pdf
[4] http://www.ecy.wa.gov/sustainability/exeorders.html

Table A-3 *(continued)*

Sustainability Goals of Four Regional Governmental and Non-Governmental Organizations

Seattle-Tacoma International Airport

Focus Areas	City of Seattle	King County	Puget Sound Regional Council	Washington State
Climate Change	Carbon neutral by 2050.	• Partner with its residents, businesses, local governments and other partners to reduce countywide greenhouse gas emissions by at least 80 percent below 2007 levels by 2050. • Reduce total greenhouse gas emissions from government operations, compared to a 2007 baseline, by at least 15 percent by 2015, 25 percent by 2020, and 50 percent by 2030. • Work with local cities and other partners to prepare for the effects of climate change on the environment, human health and the economy. • Plan and prepare for the likely impacts of climate change on County-owned facilities, infrastructure and natural resources.		• Return to 1990 greenhouse gas levels by 2020. • By 2035, reduce emissions to 25 percent below 1990 levels. • By 2050, reduce emissions to 50 percent below 1990 levels. • Programs to achieve goals: o Mandatory Emissions Inventory and Reporting o Creating Green Economy Jobs o Reducing Emissions from Transportation o Reducing Emissions from Electricity and Buildings o Helping Communities Save Energy and Reduce Emissions o State Agencies Reducing Emissions from their Operations o Preparing for and Adapting to Climate Change o Funding and Tax Incentives

Table A-3 *(continued)*

Sustainability Goals of Four Regional Governmental and Non-Governmental Organizations

Seattle-Tacoma International Airport

Focus Areas	City of Seattle	King County	Puget Sound Regional Council	Washington State
Development	Trees and Green Space • 1 acre of open space per 100 residents. • All residents live within 1/4 mile of a park. • 100 percent level of service for care of Seattle's green spaces. • 30 percent tree canopy cover by 2037. • 2,500 acres of forested parkland restored by 2025. • Increase volunteers caring for natural areas and trees. • Plant 1,800 trees in neighborhoods annually through community partnerships.	Forests and Agriculture • Support healthy, productive farms and privately owned forests that maximize biological carbon storage, promote public health, and are resilient to changing climate conditions. • Acquire, manage and restore its parks and other natural lands in ways that maximize biological carbon storage and are resilient to changing climate conditions.	The region will focus growth within already urbanized areas to create walkable, compact, and transit-oriented communities that maintain unique local character. Centers will continue to be a focus of development. Rural and natural resource lands will continue to be permanent and vital parts of the region.	
Economy			The region will have a prospering and sustainable regional economy by supporting businesses and job creation, investing in all people, sustaining environmental quality, and creating great central places, diverse communities, and high quality of life.	• Mobilize and enhance local assets that strengthen community ability to meet the economic and social needs of Washington's families, workers and employers. • Improve economic performance of rural areas. • Increase Washington's share of high growth, high employment, trade sectors. • Make Washington the best state in the country to start and grow a small business.
Food	• Increase healthy food access. • Increase urban food production. • Increase local food consumption.			

Table A-3 *(continued)*
Sustainability Goals of Four Regional Governmental and Non-Governmental Organizations
Seattle-Tacoma International Airport

Focus Areas	City of Seattle	King County	Puget Sound Regional Council	Washington State
Housing			The region will preserve, improve, and expand its housing stock to provide a range of affordable, healthy, and safe housing choices to every resident. The region will continue to promote fair and equal access to housing for all people.	
Public Service			The region will support development with adequate public facilities and services in a coordinated, efficient, and cost-effective manner that supports local and regional growth planning objectives.	
Transportation and Land Use	• Promote electric vehicles. • Triple the amount of bicycling in Seattle between 2007 and 2017. • Reduce the rate of bicycle collisions between 2007 and 2017. • Make Seattle the most walkable city in the United States.	• Reduce the need for driving and provide and encourage the use of sustainable transportation choices such as public transit, alternative technology vehicles, ridesharing, walking and bicycling. • Increase the efficiency of its vehicle fleets and minimize their greenhouse gas emissions.	The region will have a safe, cleaner, integrated, sustainable, and highly efficient multimodal transportation system that supports the regional growth strategy, promotes economic and environmental vitality, and contributes to better public health.	• Support reductions in vehicle miles traveled (VMT) and greenhouse gas (GHG) emissions. • Encourage more cost-effective and sustainable practices for construction and operations. • Facilitate efficient and sustainable transportation for users. • Research and promote the use of new technologies. • Promote alternative fuels and electric vehicle (EV) infrastructure. • Prepare our communities and the transportation system to adapt to climate change.

Table A-3 *(concluded)*

Sustainability Goals of Four Regional Governmental and Non-Governmental Organizations

Seattle-Tacoma International Airport

Focus Areas	City of Seattle	King County	Puget Sound Regional Council	Washington State
Waste Management	• Divert 70 percent of its waste to recycling and composting by 2020. • Increase the number of products where waste is managed by manufacturers. • Ban or discourage problem materials.	• Consumption and Materials Management • Encourage and support behaviors, purchasing, and waste management strategies that account for and minimize the life-cycle impacts of consumption and materials. • King County will minimize operational resource use, maximize reuse and recycling, and choose products and services that have low environmental impacts.		Green Purchasing • Increase purchases of environmentally preferable products. • Reduce the use of equipment, supplies, and other products that contain persistent, bio-accumulative toxic chemicals.
Water	• Use less than 105 million gallons of water per day. • Decommission 236 miles of logging roads in Cedar River watershed by 2020. • Manage 700 million gallons of runoff by 2025 with green infrastructure. • Increase pollutant removal from roadways. • Reduce sewer backups to less than 4 per 100 miles by 2025. • Reduce sewer overflows to one outflow per year by 2025.			

Table A-4
State of Washington Sustainability Executive Orders
Seattle-Tacoma International Airport

Executive Order 02-03, 2002: Sustainable Practices by State Agencies

Executive Order 04-01, 2004: Persistent Toxic Chemicals

Executive Order 05-01, 2005: Establishing Sustainability Efficiency Goals for State Operations

Executive Order 06-01, 2006: Reaffirming The Interagency Committee of State Employed Women

Executive Order 07-02, 2007: Washington Climate Change Challenge

Executive Order 08-01, 2008: Washington's New Americans Policy Council

Executive Order 08-02, 2008: Extending the State Biodiversity Council

Executive Order 09-05, 2009: Washington Leadership on Climate Change

Table A-5
Port Commission Century Agenda
Seattle-Tacoma International Airport

Regional Initiatives

- Strengthen access to global markets and supply chains for Northwest businesses.
- Make Washington a preferred destination for international travelers from countries with which we have direct flights.
- Establish an educational consortium to serve the needs of the maritime industry for workforce development, applied research, and business growth.
- Foster a coordinated effort among Puget Sound ports in support of Washington state's pursuit of a healthier Puget Sound.

Mission, Vision, and Commitment

- Our Mission: The Port of Seattle is a public agency that creates jobs by advancing trade and commerce, promoting industrial growth, and stimulating economic development.
- Our Vision: Over the next 25 years, we will add 100,000 jobs through economic growth led by the Port of Seattle, for a total of 300,000 Port-related jobs in the region, while reducing our environmental footprint.
- Our Commitment: The Port of Seattle creates economic opportunity for all, stewards our environment responsibly, partners with surrounding communities, promotes social responsibility, conducts ourselves transparently, and holds ourselves accountable. We will leave succeeding generations a stronger Port.

Strategic Goal 1

- Position the Puget Sound region as a premier international logistics hub.
- Objectives for Strategic Goal 1:
    - Grow seaport annual container volume to more than 3.5 million TEUs.
    - Structure our relationship with Washington ports to optimize infrastructure investments and financial returns.
    - Triple air cargo volume to 750,000 metric tons.
    - Triple the value of our outbound cargo to over $50 billion.
    - Double the economic value of the fishing and maritime cluster.

Table A-5 *(continued)*
Port Commission Century Agenda
Seattle-Tacoma International Airport

Strategic Goal 2

- Advance this region as a leading tourism destination and business gateway.
- Objectives for Strategic Goal 2:
  - Make Seattle-Tacoma International Airport the West Coast "Gateway of Choice" for international travel.
  - Double the number of international flights and destinations.
  - Meet the region's air transportation needs at Seattle-Tacoma International Airport for the next 25 years and encourage the cost-effective expansion of domestic and international passenger and cargo service.
  - Double the economic value of cruise traffic to Washington state.

Strategic Goal 3

- Use our influence as an institution to promote small business growth and workforce development.
- Objectives for Strategic Goal 3:
  - Increase the proportion of funds spent by the Port with qualified small business firms on construction, goods and services to 40 percent of the eligible dollars spent.
  - Increase workforce training, job and business opportunities for local communities in maritime, trade, travel and logistics.

Strategic Goal 4

- Be the greenest and most energy efficient port in North America.
- Objectives for Strategic Goal 4:
  - Meet all increased energy needs through conservation and renewable sources.
  - Meet or exceed agency requirements for storm water leaving Port-owned or operated facilities.
  - Reduce air pollutants and carbon emissions. Specifically: Reduce air pollutant emissions by 50 percent from 2005 levels. Reduce carbon emissions from all Port operations by 50 percent from 2005 levels and reduce aircraft-related carbon emissions at the Airport by 25 percent.

- Anchor the Puget Sound urban industrial land use to prevent sprawl in less developed areas.

- Restore, create, and enhance 40 additional acres of habitat in the Green/Duwamish watershed and Elliott Bay.

Table A-6
Seattle-Tacoma International Airport Purpose and Strategic Goals
Seattle-Tacoma International Airport

Purpose: Sea-Tac International Airport promotes regional economic vitality by:

- Operating a world-class international airport.
- Providing an extraordinary customer service.
- Being a model of environmental innovation for our region and our industry.

Strategic Goals:

- Operate a world-class international airport by:
  - Ensuring safe and secure operations.
  - Anticipating and meeting the needs of our tenants, passengers, and the region's economy.
  - Managing our assets to minimize the long-term total cost of ownership.
- Become one of the top ten customer service airports in the world by 2015.
- Lead the US airport industry in environmental innovation, and minimize the airport's environmental impact.
- Reduce airline costs (CPE) as much as possible without compromising operational and capital needs.
- Maximize non-aeronautical net operating income (NOI) consistent with current contracts, appropriate use of airport properties and market demand.
- Continually invest in a culture of employee development, organizational improvement, and business agility.
- Develop valued community partnerships based on mutual understanding and socially responsible practice.

Table A-7
Environmental Strategy Plan (ESP) Focus Areas and Focus Area Goals
Seattle-Tacoma International Airport

A. Air Quality and Climate Change
   a. Reduce air pollution that results from combustion and other activities.
   b. Reduce greenhouse gases (GHGs) that result from combustion and contribute to climate change.
   c. Prepare for climate change impacts.
   d. Improve the efficiency at which the community accesses the Airport.

B. Buildings and Infrastructure
   a. Increase adoption of LEED or other sustainable building performance frameworks.
   b. Improve asset management practices to minimize total cost of ownership and maximizes environmentally-sustainable development.

C. Energy Use and Conservation
   a. Reduce electricity and natural gas consumption.
   b. Increase adoption of technologies that reduce energy demand and increase efficiency.

D. Materials Use and Recycling
   a. Increase solid waste recycling rate.
   b. Reduce construction and hazardous waste.
   c. Reduce use of hazardous materials and opting for environmentally preferred products instead.

E. Noise
   a. Limit the noise impacts of its operations on the surrounding community.

F. Water Resource and Wildlife
   a. Reduce potable water consumption.
   b. Manage water treatment and flow control.
   c. Improve wildlife habitat and protections for native species not in conflict with aviation safety.
   d. Develop biologically sound approaches for managing hazardous wildlife

Table A-8
Airport Business Plan Goals and Associated Goal in Century Agenda or Port Strategic Goal
Seattle-Tacoma International Airport

Aviation Business Plan Goal	Century Agenda or Port Strategic Goal
Complete the Sustainable Airport Master Plan (SAMP) to meet the needs of our tenants, passengers and regional economy for the next 20 years.	"Leading tourism destination and business gateway"
Commence operations from new International Arrivals Facility (IAF) by December 31, 2018.	"Leading tourism destination and business gateway"
Facilitate/accommodate growth in international operations until new IAF is completed.	"Leading tourism destination and business gateway"
Complete all NorthSTAR program improvements by Q2 2000.	"Leading tourism destination and business gateway"
Increase productivity of existing terminal facilities.	"Leading tourism destination and business gateway"
Add four new international airline routes by 2019.	"Leading tourism destination and business gateway"
Renew aging landside infrastructure.	"Leading tourism destination and business gateway"
Provide an efficient and updated baggage system that incorporates new technology and efficient conveyor systems necessary to improve system performance and allow for future growth.	"Leading tourism destination and business gateway"
Identify and plan for all necessary refurbishments in the South Satellite.	"Leading tourism destination and business gateway"
Prepare a benefit/cost analysis for improvements to Minimum Connect Time (MCT).	"Leading tourism destination and business gateway"
Create a new Airport Master Record As-built Drawing System.	"Leading tourism destination and business gateway"
Complete initial comprehensive inventory of all physical assets across the Airport, continue periodic inspections to assess age and condition, and develop a system to facilitate forecasting of capital renewal projects and improve ongoing maintenance.	"Leading tourism destination and business gateway"
Achieve Top 5 ranking among 25 selected North American peers in 2018 ACI Airport Service Quality (ASQ) survey	"Leading tourism destination and business gateway"
Grow Continuous Process Improvement (CPI/Lean) across the Port.	"Leading tourism destination and business gateway"
Complete a work continuity and succession planning departmental pilot program.	"Leading tourism destination and business gateway"
Grow a mature Business Intelligence (BI) and performance management capability.	"Leading tourism destination and business gateway"
Implement noise mitigation programs consistent with updated Part 150 and Commission direction.	"Maintain community partnerships"

Table A-8 *(continued)*
Airport Business Plan Goals and Associated Goal in Century Agenda or Port Strategic Goal
Seattle-Tacoma International Airport

Aviation Business Plan Goal	Century Agenda or Port Strategic Goal
Collect accurate data to monitor compliance with noise abatement procedures and investigate stakeholder inquiries about Airport noise.	"Maintain community partnerships"
Maintain productive relationships with surrounding jurisdictions in order to facilitate support for redevelopment of Port-owned land in Airport communities. Airport community awareness of Port priorities and Commission goals 2015 – 2019. Airport jurisdictions approve Port projects 2015 - 2019.	"Maintain community partnerships"
Renegotiate the Port of Seattle/City of SeaTac Interlocal Agreement (ILA).	"Maintain community partnerships"
Implement new aviation division programs that support Port-wide workforce development strategies and Commission Quality Jobs policies.	"Maintain community partnerships"
Foster new aviation division opportunities for local businesses.	"Maintain community partnerships"
Prepare for the growing capital program to ensure program success.	"Manage our finances responsibly"
Maintain passenger airline cost per enplaned passenger (CPE) and forecasted CPE within the middle third of peer airports (list of 22 airports focusing on large hubs and Western U.S. airports) through 2019.	"Manage our finances responsibly"
Maintain Airport baseline O&M costs.	"Manage our finances responsibly"
Implement conservation practices that will enable Airport to meet all future electricity load growth (2010 baseline) through conservation and renewable energy.	"Manage our finances responsibly"
Manage financial activity to achieve targeted metrics.	"Manage our finances responsibly"
Grow Airport Dining and Retail sales per enplanement (SPE).	"Manage our finances responsibly"
Grow parking revenues.	"Manage our finances responsibly"
Grow annual revenues from leasing Airport property.	"Manage our finances responsibly"
Grow revenues from ground transportation service providers.	"Manage our finances responsibly"
Increase the revenues generated from the Airport's common-use lounge business.	"Manage our finances responsibly"
Make economical Airport cruise ship facility improvements where possible to support Seaport Division cruise business.	"Meeting needs of tenants, passengers, and the region's economy"

Table A-8 *(continued)*
Airport Business Plan Goals and Associated Goal in Century Agenda or Port Strategic Goal
Seattle-Tacoma International Airport

Aviation Business Plan Goal	Century Agenda or Port Strategic Goal
Provide adequate Airport-wide Wi-Fi infrastructure capacity.	"Meeting needs of tenants, passengers, and the region's economy"
Optimize use of Passenger Facility Charges (PFCs) to minimize CPE and to ensure that specific rates. Do not become a disincentive for airlines to operate at Sea-Tac Airport.	"Meeting needs of tenants, passengers, and the region's economy"
Increase Air Cargo tonnage by 20 percent to a total of 364,000 metric tons in 2019, in line with the Century Agenda.	"Premier international logistics hub"
Increase number and/or value of small business contracts.	"Promote small business growth and workforce development"
Improve overall safety of aircraft and vehicular movement measured by an increase in a composite annual score of 100 possible points, ranking runway incursions, wildlife strikes, taxilane and apron area surface incidents and Part 139 discrepancies.	"Safe and secure operations"
Reconstruct Runway 16C/34C by Q4 2015.	"Safe and secure operations"
Increase overall runway availability during snow events.	"Safe and secure operations"
Increase airline departure rate during snow events through centralized de-icing facilities.	"Safe and secure operations"
Ensure uninterrupted supply of jet fuel to Sea-Tac fuel farm from existing Olympic Pipeline Renton terminal through creation of redundant feed source.	"Safe and secure operations"
Mitigate risk of security breaches and associated downtime.	"Safe and secure operations"
Constantly improve overall readiness of the Port to respond to and recover from an emergency, disaster, and any event that would substantially disrupt business/operational continuity at the Airport.	"Safe and secure operations"
Provide emergency-back-up electrical power.	"Safe and secure operations"
Complete the next Sustainable Sea-Tac Strategy (S3) Plan by Q3 2015.	Be the greenest, and most energy efficient port in North America
Air Quality and Climate Change: Sea-Tac Airport will (1) reduce airport-owned and controlled greenhouse gas emissions by 15 percent below 2005 levels by 2020, and (2) implement programs with business partners to reduce emissions as much as possible.	Be the greenest, and most energy efficient port in North America
Materials Use & Recycling: Increase solid waste recycling rate to 50 percent by 2014. Develop goal for airfield recycling program.	Be the greenest, and most energy efficient port in North America
Water Conservation: Reduce operational (non-construction) potable water consumption rate 5 percent below 2008 levels.	Be the greenest, and most energy efficient port in North America

Table A-8 *(concluded)*
Airport Business Plan Goals and Associated Goal In Century Agenda or Port Strategic Goal
Seattle-Tacoma International Airport

Aviation Business Plan Goal	Century Agenda or Port Strategic Goal
Water Resources and Wildlife: Achieve and maintain Best Management Practices for water quality treatment and flow control over 100 percent of Airport industrial areas.	Be the greenest, and most energy efficient port in North America
Education & Integration: Institute an environmental education campaign to promote environmental stewardship and raise awareness of Airport environmental and sustainability initiatives. Integrate environmental and sustainability considerations into core business operations.	Be the greenest, and most energy efficient port in North America
New Airport buildings achieve high levels of environmental performance in energy, building materials, water conservation and indoor environmental quality.	Be the greenest, and most energy efficient port in North America
Complete a Post-Graduate Fellowship Pilot Program and produce recommendations for a follow-on program.	Promote small business growth and workforce development

Appendix B
Potential Applicability of SAMP Goals and Objectives to Port Plans, Functions, and Actions

Table B-1
Potential Applicability of SAMP Goals and Objectives to Port Plans, Functions, and Actions
Seattle-Tacoma International Airport

SAMP Goals / Objectives	Potential Metrics	Potential Applicability of SAMP Goals / Objectives										
		Plans		Function					Action			
		SAMP	SMP	Airfield	Terminal	Landside	Cargo	Support	What we build	Where we build	How we build	How we operate
O1: Enable the Port to achieve its financial goals in the business plan relative to Cost per Enplaned Passenger (CPE) and debt per enplaned passenger (DPE). The following are important to achieving this primary objective: • Enable phased, incremental development. • Maximize use of technology to minimize the amount of new development. • Provide revenue generating space in the terminal facilities in accordance with Port guidelines. • Ensure that that the cost of meeting facility needs does not exceed the Port's debt goals (i.e., overall affordability, but with total cost of ownership in mind).	• Professional Judgment (cost, spatial allocation) • CPE • DPE • Total project capital costs • Estimated 20-year O & M costs • Total cost of ownership	X		X	X	X	X	X	X	X	X	
O2: Minimize the effect of SAMP recommendations on cost center imbalances. This goal was identified as important, given the Airport lease agreement structure that is based on cost centers. It would affect the ability to afford future development.	• Percentage of project cost allocated to airline cost center (for top 4 or 5 projects only)	X							X			
O3: Reduce dwell time on the curb front and increase throughput to efficiently accommodate demand: • Ensure capacity of public parking is adequate to enable the Port to increase revenue; and • Provide cruise ship bus interfaces in a way that enhances customer service.	• LOS on curb front • Parking spaces • Average walk distance for cruise ship passengers—enplaning and deplaning • Average level changes for cruise ship passengers—enplaning and deplaning	X				X						X
O4: Minimize aircraft taxi time and reduce airfield congestion associated with ground vehicles: • Reduce runway crossings and reduce runway occupancy times. • Provide for efficient aircraft de-icing. • Develop a Surface Area Management System. • Develop aircraft departure sequencing process vs. FAA First-Come, First-Serve model. • With RON demand increasing, develop more versatile parking.	• Professional judgment (trade-offs among gate, RON, cargo, and deicing position productivity) • Professional judgment related to the availability of appropriately located runway exits, by airplane design group • Runway crossings • Runway occupancy times • Average aircraft taxi time • Average gate occupancy time during deice conditions	X		X					X	X		X
O5: Satisfy the demand for air cargo in a manner that consolidates cargo areas while minimizing congestion associated with the landside interfaces.	• Utilization ratio (metric tons per square foot of warehouse)	X					X		X	X		X

Table B-1 *(continued)*
Potential Applicability of SAMP Goals and Objectives to Port Plans, Functions, and Actions
Seattle-Tacoma International Airport

SAMP Goals / Objectives	Potential Metrics	Potential Applicability of SAMP Goals / Objectives										
		Plans		Function					Action			
		SAMP	SMP	Airfield	Terminal	Landside	Cargo	Support	What we build	Where we build	How we build	How we operate
O6. Maximize efficient passenger and baggage movement throughout the passenger's trip through Sea-Tac Airport (garage/terminal-to-aircraft, and for connections from aircraft to aircraft): • Maximize passenger throughput and level-of-service (LOS) in the terminal, including security checkpoints. • Maximize the passenger's ease of connection, and minimize wait time at security and check-in. • Maximize customer service: Minimize walking distances. • Minimize development through maximize common use facilities.	• LOS (queuing, curbsides) • Minimum connect time • Average walking distance • Average SSCP wait time • Peak period SSCP wait time • Average distance—curb to bag drop; centroid of garage to bag drop • Last bag cutoff time	X			X				X	X		X
O7: Air Quality: Reduce air pollutant emissions by 50 percent from 2005 levels by 2034.	• Dwell time • Taxi time • Vehicle miles traveled • Emissions inventory (tons/year)	X	X	X		X	X	X	X			X
O8: Buildings and Infrastructure: Seek LEED Silver for new construction, additions, and major renovations and minor renovations that modify mechanical, electrical, and plumbing systems, and encourage LEED certification for tenant improvements.	• Square feet of buildings with LEED silver or higher certification.		X		X		X	X			X	
O9: Climate Adaptation: Complete a risk analysis of potential climate change impacts and implications for the Airport, and develop a strategic plan for avoiding/mitigating risks.	• Complete risk analysis • Prepare strategic plan	X	X		X		X	X	X	X		
O10: Climate Protection: Reduce Airport-owned and controlled greenhouse gas emissions by 15 percent below 2005 levels by 2020, and 50 percent by 2034.	• Energy consumption • Scope 1 & 2 Emissions inventory	X	X	X	X	X	X	X	X		X	X
O11: Climate Protection: Reduce aircraft-related greenhouse gas emissions by 25 percent below 2005 levels by 2034.	• Energy consumption • Scope 1 & 2 Emissions inventory	X	X	X					X	X		X
O12: Waste - Construction: Divert 85 percent of construction waste by 2020, 90 percent by 2025, and reach zero waste by 2034.	• Percent of waste diverted.		X								X	
O13: Waste - Terminal and Airfield: Divert 50 percent of terminal solid waste and 15 percent of airfield solid waste by 2020.	• Tons of Landfilled Waste • Tons of Recycled Waste	X	X	X	X				X	X		X
O14: Waste - Hazardous: Reduce the volume of hazardous waste generated from Port maintenance and operations to meet requirements for Small Quantity Generator Status by 2020.	• Kilograms of hazardous waste generated, rolling 180 days.		X					X	X			X

Table B-1 *(concluded)*
Potential Applicability of SAMP Goals and Objectives to Port Plans, Functions, and Actions
Seattle-Tacoma International Airport

SAMP Goals / Objectives	Potential Metrics	Potential Applicability of SAMP Goals / Objectives										
		Plans		Function					Action			
		SAMP	SMP	Airfield	Terminal	Landside	Cargo	Support	What we build	Where we build	How we build	How we operate
O15: Energy: Meet all future growth in energy demand through the most practical and cost-effective conservation measures and renewable energy.	• Electricity (kWh) consumption per year • Percentage of electricity consumed that comes from renewable sources (kWhs from renewable/total kWhs). • Natural gas (therms) consumption per year • Percentage of natural gas consumed that comes from renewable sources (therms from renewable/total therms)	X	X	X	X	X	X	X	X			X
O16: Fish and Wildlife: Protect, enhance, and steward fish and wildlife habitat while maintaining air transportation safety.	• Acres of open space displaced • Acres of protected habitat displaced	X	X	X			X	X	X	X		X
O17: Noise: Increase the number of noise-compatible units within the noise remedy boundary to 95 percent through the year 2030.	• Percentage of noise compatible units within the noise remedy boundary		X									X
O18: Transportation: Increase the percentage of passengers accessing the Airport via environmentally-preferred modes of transportation from 60 percent in 2014 to 70 percent in 2020.	• Percentage of passengers accessing the Airport under the various environmentally preferred modes (percentage of passengers using environmentally preferred modes relative to total O&D passengers) • Environmentally preferred modes: Daily parking, taxi, door-to-door van, hotel/motel courtesy vehicle, air porters, public transit, and charter/other bus.	X	X			X						X
O19: Water Conservation: Reduce projected future consumption by 4 percent in 2020 and 12 percent in 2030.	• Portable water consumption in gallons per year • Non-potable water reuse	X	X		X			X	X			X
O20: Water Quality: Contribute to the restoration of Puget Sound and local receiving waters by providing water quality treatment, flow control, and using green storm water infrastructure (where feasible) for Airport industrial storm water.	• Gallons of water treated by infiltration per year • Gallons of rainwater captured and reused per year	X	X						X	X		X
O21: Maximize the compatibility of new development with nearby lands.	• Consistency of propose project with existing zoning • Proximity to noise and light sensitive land uses	X	X	X			X	X	X	X		X
O22: Identify benefits of proposed development to the local community.	• Socioeconomic impact (jobs/payroll/regional economic input) • Roadway LOS/Congestion • Changes in environmental effects (O7 thru O20)	X	X	X	X	X	X	X	X	X		
O23: Enhance employee welfare, and facilitate diversity.	• OSR office to determine – will not differentiate among MP alts		X	X	X	X	X	X			X	X
O24: Reduce off-Airport environmental impacts to nearby communities.	• Changes in environmental effects (O7 thru O20)	X	X	X			X	X	X	X	X	X
O25: Be transparent in public communications and increase outreach to the local community.	• Number of interactions with the public (i.e., workshops) • Number of comments received	X	X	X	X	X	X	X				X