

The City of Portland would like to thank the individuals and organizations who participated in the development of the Portland International Jetport Sustainable Airport Master Plan.

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SUSTAINABLE AIRPORT MASTER PLAN

Executive Summary



Best Airport
in North America





The Vision: Be the Airport of Choice for Maine!

The Portland International Jetport (PWM) is a thriving small hub, commercial service airport serving the air transportation needs of the greater Portland region and much of the state of Maine. In line with its Vision, the Jetport has adopted the following Mission Statement:

“The Portland International Jetport commits to be a premier New England Airport. We will provide a convenient, safe, and environmentally conscious gateway that exceeds our travelers’ expectations while reflecting the essence of the Maine experience.”

The City of Portland considers sustainability an integral part of the community. Accordingly, it commissioned an airport master plan update that incorporates sustainability and commits the Jetport to a long-term, comprehensive, and integrated approach that considers economic viability, operational efficiency, social responsibility, and natural resource conservation. Through this approach, the Jetport is also embracing a leadership role within the region and the airport industry to promote sustainability and improve related performance.

In recent years, the Jetport has demonstrated its commitment to sustainability through various activities. These notably include a terminal expansion that achieved Leadership in Energy and Environmental Design (LEED®) Gold certification, the installation of a geothermal heating and cooling system, the establishment of a deicing fluid recycling program to treat onsite and offsite spent glycol, and the creation of an exemplary customer service program.

Non-Stop Destinations



THE JETPORT FEATURES:

- 7,200' x 150' all-weather runway
- 6,100' x 150' crosswind runway
- Airport traffic control tower and radar approach control
- 294,000 sq. ft. passenger terminal with 12 gate positions
- 16,900 sq. yd. air cargo apron
- Two full service fixed base operators

Plan Preparation

In recognition of its historical and ongoing commitment to sustainability, the Jetport received a grant through the Federal Aviation Administration's Sustainable Master Plan Pilot Program to prepare this Sustainable Airport Master Plan (SAMP). With its first official sustainable master plan, the Jetport is taking the next step toward full sustainability integration and is recognizing the potential to improve its overall operating efficiency in a fiscally, environmentally, and socially responsible manner.

The sustainable airport master planning process integrates sustainability planning elements into the traditional airport master plan. Combined, the sustainability and master planning processes provide the flexibility necessary to consider the Jetport's operational and financial constraints with the purpose of this unified approach to:

- Ensure goals and objectives developed as part of the sustainability planning process were used to drive the recommendations of the master plan; and
- Ensure standalone sustainability strategies are not at odds with the recommendations of the master planning process.

The Jetport SAMP is of interest to local citizens, community organizations, airport users, airport tenants, area-wide planning agencies, and aviation organizations. The City identified a group of community members and aviation interest groups to serve on the Planning Advisory Committee (PAC) and act in an advisory role in

the preparation of the SAMP. The PAC met five times over the course of the study. In addition, the Jetport hosted four public information workshops to provide information and solicit input from any other interested citizens. The same working papers and presentation materials that were provided to the PAC were made accessible to the public through a link from the Jetport's website.

Demand-Based Planning

Facility planning begins with a definition of demand that may reasonably be expected in the future. For the Jetport, this involved updating forecasts to identify future aviation demand. Recognizing the realities of year-to-year fluctuations in activity, the Master Plan should be keyed more to potential demand levels than future dates in time. These planning horizons were established as levels of activity that will call for consideration of the next step in the Master Plan program. This will allow the City to adapt to unforeseen increases or declines in certain types of activity.

Sustainability Planning

The Jetport Consultant Team worked with Jetport staff and stakeholders to prioritize six sustainability focus areas. These priority categories are areas of primary importance to the Jetport and its stakeholders, as well as possessing the greatest potential for sustainability performance improvement. The Sustainability Baseline Assessment evaluated the Jetport's performance related to these categories, which include:

- Greenhouse Gas Emissions;
- Energy;
- Waste Management and Recycling;
- Ground Access and Transportation;
- Social Responsibility; and
- Governance.

The Sustainability Baseline Assessment also reviewed the Jetport's performance and made high-level recommendations related to the categories of Noise and Water Quality;

however, the Jetport already dedicates substantial resources to ensure that it mitigates its impacts in these areas to the greatest extent practicable. For instance, the Jetport has a robust noise abatement program that includes an FAA-approved CFR Part 150 Noise Compatibility Plan, the voluntary Fly Quiet Program, and a standing Noise Advisory Committee. The Jetport also employs several methods by which it protects local and regional water quality (e.g., stormwater collection and treatment, and the collection and recycling of spent aircraft deicing fluid).

Further, among all of the sustainability categories that the Jetport considered, Noise and Water Quality are the most highly regulated by governmental bodies. For these reasons, Noise and Water Quality were not identified as priority sustainability categories for this study. Still, the Jetport remains focused on maintaining and expanding related efforts.

The Jetport considered its unique operating conditions, as the Sustainability Baseline Assessment identified, along with the environmental priorities of the City of Portland, State of Maine, and the greater airport industry, in the development of sustainability goals and objectives. These elements of the Jetport's sustainability framework, reflect

stakeholder input, and will guide the organization's day-to-day operations and decision-making.

Through the stakeholder engagement process, the Jetport developed a list of actions that could improve its performance relative to its sustainability goals and objectives. These potential actions were evaluated using a custom-built Sustainability Action Evaluation Tool to assess their estimated economic, environmental, and social benefits against their expected costs.

This SAMP includes sustainability targets and metrics, along with specialized tracking tools that will assist the Jetport in understanding the level of success it is achieving through the implementation of its emerging sustainability program. In developing its sustainability targets, the Jetport considered its current performance, levels of ambition, and the potential effects of its sustainability actions, among other factors.

The Jetport is committed to reporting on its sustainability program on an annual basis. Through such reporting, the Jetport will enhance transparency, promote accountability, build stakeholder trust, and convey its leadership within its region and the airport industry.

Forecast Summary	2015	PLANNING HORIZONS		
		SHORT	INTERMEDIATE	LONG
COMMERCIAL AIRLINE BOARDINGS				
PASSENGER ENPLANEMENTS	869,700	971,324	1,010,139	1,187,969
AIR CARGO SHIPMENTS				
Enplaned (Tons)	4,889	5,700	6,000	6,700
Deplaned (Tons)	8,021	7,800	8,200	9,200
TOTAL AIR CARGO SHIPPED	12,910	13,500	14,200	15,900
ANNUAL AIRCRAFT OPERATIONS				
ITINERANT OPERATIONS				
Air Carrier	24,848	28,800	29,800	32,000
Air Cargo	3,092	3,300	3,400	3,700
Other Air Taxi	2,475	5,900	6,900	9,000
General Aviation	15,233	17,400	18,400	20,500
Military	551	500	500	500
TOTAL ITINERANT OPERATIONS	46,199	55,900	59,000	65,700
LOCAL OPERATIONS				
General Aviation	2,683	3,400	3,400	3,500
Military	16	100	100	100
TOTAL LOCAL OPERATIONS	2,699	3,500	3,500	3,600
TOTAL OPERATIONS	48,898	59,400	62,500	69,300
BASED AIRCRAFT	50	56	62	76

Recommended Improvements

Recommendations from the 2008 Master Plan led to the improvements that have occurred at the Jetport over the last several years. Among the major improvements were Runway 18-36 safety area upgrades, the east extended runway safety area on Runway 11-29, and the terminal building, apron, and parking garage expansion. In addition, the south general aviation apron and access road were developed, setting the stage for a second fixed base operator. (The centerfold exhibit shows development stages for current recommendations.)

The updated plan carries forward many recommendations and proposes others to meet changing industry and safety requirements. The evaluation of the recommendations included several criteria, including the Jetport's sustainability goals and objectives.



Airfield - Based on existing and projected uses, both runways are adequately sized to meet existing and long term demand. The pavement strength of the primary runway, however, may need to be increased in the future to accommodate some of the newer aircraft in the passenger airline and air cargo fleet. Several airfield taxiway projects have been identified to satisfy FAA airfield geometrical standards. These include: reconfigure the eastern portion of Taxiway A; realign Taxiway C to be fully parallel to Runway 18-36; construct a partial parallel taxiway on the east side of Runway 18-36 to link the cargo apron with Taxiway A; construct a new connector taxiway linking Taxiway B to Runway 29; develop an aircraft run-up apron in the southeast quadrant; and close the Runway 11 hold apron and

replace with a by-pass taxiway and an enlarged long term holding/deicing apron near the terminal.



Passenger Terminal - The recent terminal project turned development of the terminal to the northwest. The recommended plan allows for three more gates to the northwest. The plan also can support an easterly extension of the second level concourse to replace the Gate 1 boarding bridge structure. These improvements would be driven by demand and only pursued as passenger enplanements and flights reach and exceed the projected long term levels. Other terminal building modifications proposed include: adding bag claim facilities to the west to meet existing and long term needs; reconfiguring gate alignments to allow for the increased wingspans, especially for increasing use of fuel-saving winglets on the airline fleet - no internal building changes would be required; and developing a U.S. Customs and Border Protection facility for secure scheduled non-stop international arrivals at PWM. The plan would also allow for international air service out of gate areas 4 and/or 5 and secured arrival passage to facilities on the main floor beneath the gate areas.



Automobile Parking Garage - The existing public parking garage includes

the lower level floor for rental car ready-return. As parking needs grow, the garage can be extended northwest. This will also better serve rental car users by improving pedestrian access from rental return to the terminal ticketing and departure areas.



Air Cargo - The recommended plan for air cargo is just slightly updated from the previous Master Plan. The plan still includes additional apron with adjacent space for cargo buildings, allowing for two large structures. While this plan is intended now for air cargo, ultimately it could serve the same purposes for general aviation. If the plan is followed, the existing air cargo building utilized by FedEx could be repurposed for airport maintenance.



General Aviation - The bulk of the Jetport's general aviation facilities are currently located on the north general aviation ramp. The previous Master Plan recommended adding facilities on the south side of the airport. The City has since approved a leasehold development for general aviation facility development to the south of Runway 11-29. Some additional general aviation needs can also be accommodated on the north ramp. These areas should be more than adequate to accommodate projected general aviation aircraft and associated facility needs.

Capital Improvement Plan

From the specific needs and improvements that have been established for the Jetport, a realistic schedule and the associated costs for implementing the plan were determined. The implementation plan considers the interrelationships among the projects in the recommended plan in order to establish a logical master schedule that minimizes conflicts.

The capital improvement plan (CIP) covers the same years as the forecasts in the planning effort. The Short Term is programmed annually through the first six years of the plan. The remaining projects are grouped into Intermediate (years 7-11) and Long Term (years 12-20) planning horizons. By utilizing planning horizons instead of specific years for Intermediate and Long Term development, the Jetport will have greater flexibility to adjust capital needs as demand dictates.

The exhibit on the next page presents the staging of the master plan projects color-coded by Short Term, Intermediate, and Long Term planning horizons.

The CIP was reviewed from a sustainability perspective, identifying opportunities where sustainability practices could improve the economic, environmental, and social performance of included projects. As these projects move forward, the Jetport will consider the identified sustainability enhancements for potential inclusion into project specifications. Some of these enhancements include pervious and permeable pavements to improve stormwater management; incorporating resiliency measures to protect the Jetport's investments and minimize future operational disruptions; incorporating

material reuse and recyclables in infrastructure construction; and design- ing for deconstruction. (The centerfold includes the CIP projects and denotes those projects where potential sustainability enhancements were identified.)

The Jetport will also consider sustainable alternatives and life cycle costing in future CIP projects and other Jetport purchasing.

A detailed financial evaluation was also completed. The table below presents the recommended CIP and its corresponding cost estimates in 2016 dollars, inflated at 2.7 percent annually and also includes contingencies, design costs, and construction management costs. As shown in the table, the CIP is estimated at approximately \$193.3 million in 2016 dollars and approximately \$271.8 million in inflated dollars.

The master plan's financial analysis factored all proposed capital and operation/maintenance costs against proposed incomes. The result indicated that the Jetport is fully capable of generating sufficient revenues to offset future expenditures without the need for financial assistance from City of Portland taxing resources. The airport is currently and projected to remain financially self-sufficient.

"The airport is currently and projected to remain financially self-sufficient."

JETPORT CAPITAL IMPROVEMENT PROGRAM (CIP)

	PLANNING HORIZONS			Total CIP
	Short	Intermediate	Long	
PROJECT COSTS (MILLION\$)				
2016 Dollars	\$51.665	\$37.302	\$104.355	\$193.322
Inflated	\$56.827	\$48.661	\$166.264	\$271.752
FUNDING SOURCES (MILLION\$)				
FAA AIP Grants	\$28.076	\$22.197	\$78.842	\$129.115
MDOT Grants	\$1.512	\$1.233	\$4.380	\$7.125
PFCs	\$21.180	\$3.889	\$42.358	\$67.427
Jetport Revenues	\$6.058	\$21.341	\$40.685	\$68.084

DEVELOPMENT STAGING

SHORT TERM DEVELOPMENT

- | | |
|---|--|
| 1 Terminal Apron Expansion Northwest End - Phase 1 * | 16 Administrative Offices above Bag Claim - East End |
| 2 Environmental Assessment and Permitting for Airport Improvements - NS | 17 Additional Loading Bridges for Gate 11 |
| 3 Gate 1 Apron Reconstruction and Construct TW C Snow Shoulders North | 18 Long Term Hold/Deicing/RON Apron - Phase 1 |
| 4 Runway Incursion Warning System | 19 FIS Facility |
| 5 3rd Floor Bypass Auto Exit Portals | 20 Snow Melt Equipment for Contaminated Snow - SRE/Maintenance |
| 6 Gate 1 - 6 Rehabilitation Vertical Circulation Improvement | 21 Long Term Hold/Deicing/RON Apron - Phase 2 |
| 7 Pre-Conditioned Air/Lifts for Loading Bridges | 22 Runway 11 Taxiway Bypass and Perimeter Service Road Realignment |
| 8 Gate 1 Additional Loading Bridges | 23 Tree Removal for GQS on Runway 36 End |
| 9 Central Air Handling Units | 24 Expand Baggage Claim - Phase 2 |
| 10 Terminal Apron Expansion Northwest End - Phase 2 * | 25 Loading Bridge |
| 11 Environmental Assessment Mitigation Measures - NS | 26 Construct Air Cargo Taxiway - Phase 1 |
| 12 ARFF Vehicle | 27 Rehabilitate Cargo Apron |
| 13 Snow Removal Tractor for Airfield Lights/Signs | 28 Displacement Plows |
| 14 Maintenance Building Generator and Enclosure | 29 Airport Security Fence and Gate Upgrades (North East Area) |
| 15 Click to Activate Runway Lights | |
- NS - Not Shown

LEGEND

- Airport Property Line
- City Limit Line
- Airport Fence Line
- Runway Protection Zone (RPZ)
- Short Term Development
- Intermediate Term Development
- Long Term Development
- Third Party Tenant Development
- 🌿 Sustainable Projects
- * Demand-Based Projects

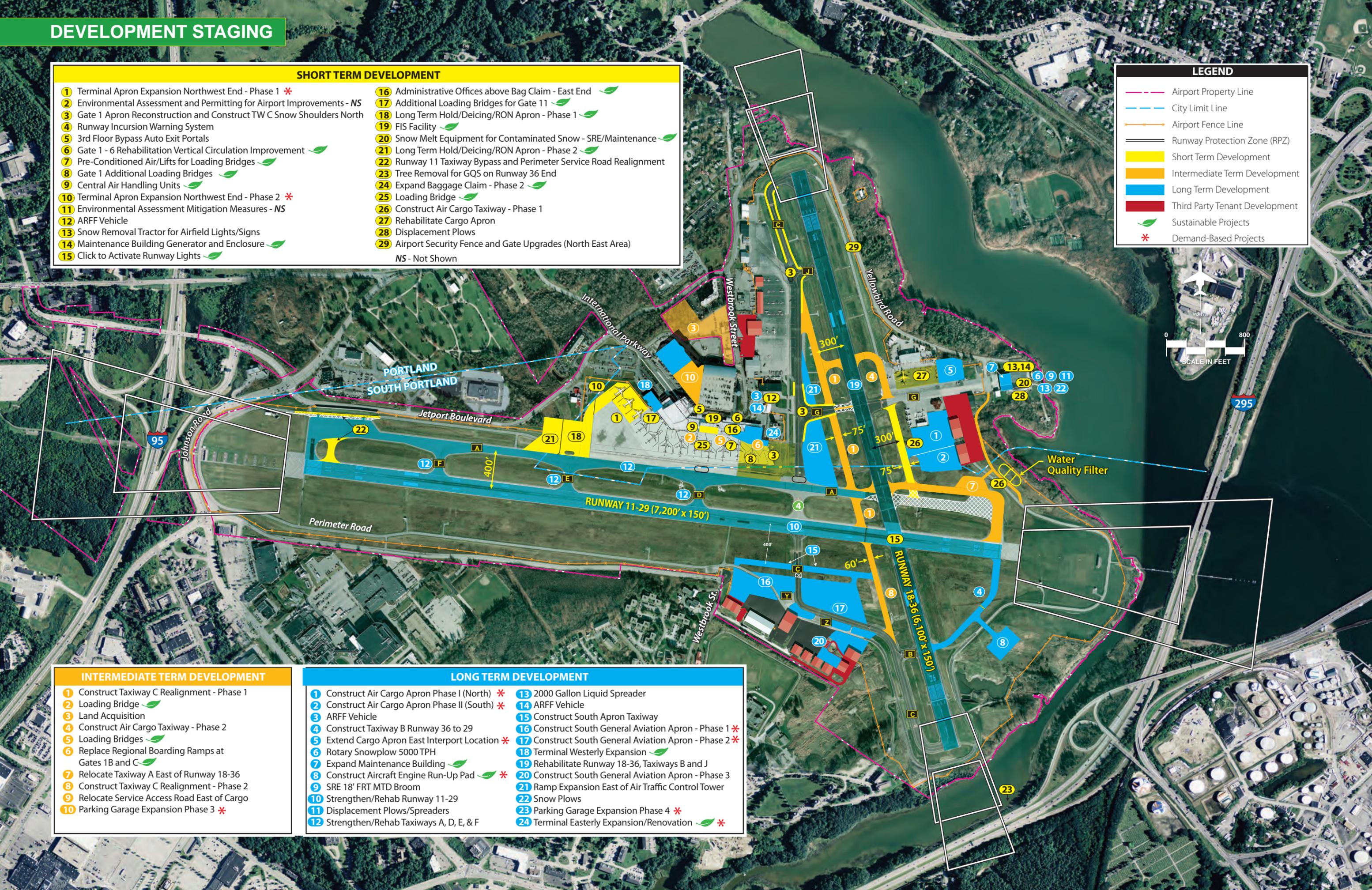


INTERMEDIATE TERM DEVELOPMENT

- 1 Construct Taxiway C Realignment - Phase 1
- 2 Loading Bridge
- 3 Land Acquisition
- 4 Construct Air Cargo Taxiway - Phase 2
- 5 Loading Bridges
- 6 Replace Regional Boarding Ramps at Gates 1B and C
- 7 Relocate Taxiway A East of Runway 18-36
- 8 Construct Taxiway C Realignment - Phase 2
- 9 Relocate Service Access Road East of Cargo
- 10 Parking Garage Expansion Phase 3 *

LONG TERM DEVELOPMENT

- | | |
|--|---|
| 1 Construct Air Cargo Apron Phase I (North) * | 13 2000 Gallon Liquid Spreader |
| 2 Construct Air Cargo Apron Phase II (South) * | 14 ARFF Vehicle |
| 3 ARFF Vehicle | 15 Construct South Apron Taxiway |
| 4 Construct Taxiway B Runway 36 to 29 | 16 Construct South General Aviation Apron - Phase 1 * |
| 5 Extend Cargo Apron East Interport Location * | 17 Construct South General Aviation Apron - Phase 2 * |
| 6 Rotary Snowplow 5000 TPH | 18 Terminal Westerly Expansion |
| 7 Expand Maintenance Building | 19 Rehabilitate Runway 18-36, Taxiways B and J |
| 8 Construct Aircraft Engine Run-Up Pad * | 20 Construct South General Aviation Apron - Phase 3 |
| 9 SRE 18' FRT MTD Broom | 21 Ramp Expansion East of Air Traffic Control Tower |
| 10 Strengthen/Rehab Runway 11-29 | 22 Snow Plows |
| 11 Displacement Plows/Spreaders | 23 Parking Garage Expansion Phase 4 * |
| 12 Strengthen/Rehab Taxiways A, D, E, & F | 24 Terminal Easterly Expansion/Renovation * |



SUSTAINABILITY PROGRAM

The following provides an overview of the Jetport's sustainability program, including its six priority categories (with examples of related past actions), goals, and select actions for potential implementation. Also included on the next page are past actions and selected actions for the future with regard to water quality and noise.

GREENHOUSE GAS EMISSIONS



Sustainability Goal: Become a national airport leader in climate change mitigation by supporting the reduction of greenhouse gas emissions generated from Jetport controlled and influenced sources.

At airports, greenhouse gas emissions typically derive from the combustion of fossil fuels related to the operation of aircraft, vehicles used for transporting passengers, ground support equipment, airport maintenance and operations vehicles, and through energy consumption, such as natural gas and electricity. Greenhouse gases have been linked to changes in the Earth's climate, and their reduction would mitigate related effects.

Example Baseline Action: The Jetport incorporated 400-hertz ground power at passenger boarding bridges, which reduced the use of on-board auxiliary power units and diesel-powered portable ground units.

Select Sustainability Actions for Potential Implementation:

- Provide pre-conditioned air at all commercial service aircraft gates
- Install public charging stations in the garage to accommodate electric vehicles

ENERGY



Sustainability Goal: Become a national airport leader in energy conservation, while considering opportunities for on-site renewable energy generation.

Energy conservation initiatives at airports directly result in energy savings. The generation and/or procurement of renewable energy minimizes an airport's dependence on fossil fuels. Both tactics could reduce the Jetport's utility costs, provide for long-term stability in those costs, and reduce associated greenhouse gas emissions.

Example Baseline Actions: The Jetport installed a geothermal heating and cooling system, which provides a source of renewable energy, and constructed an energy-efficient terminal expansion that achieved LEED® Gold certification.

Select Sustainability Actions for Potential Implementation:

- Continue to upgrade lighting within the parking garage to LEDs
- Install a pilot-controlled airfield lighting system

WASTE MANAGEMENT AND RECYCLING



Sustainability Goal: Augment the Jetport's existing waste management practices to reduce waste generation and land disposal, and continuously improve its exemplary deicing recovery and recycling program.

Airports generate varying types and amounts of waste that primarily include municipal solid waste (MSW), construction and demolition debris, compostable waste, and deplaned waste. Minimizing waste and increasing diversion activities (recycling, composting) at the Jetport could reduce related costs and minimize associated environmental impacts.

Example Baseline Action: In 2015, the Jetport initiated a back-of-the-house composting pilot program in coordination with its food and beverage concessionaires.

Select Sustainability Actions for Potential Implementation:

- Design and implement a recycling awareness campaign for employees and passengers
- Make permanent the existing composting pilot program, and expand it beyond the Jetport's back-of-the-house food preparation to include the passenger/public organic waste stream

GROUND ACCESS AND TRANSPORTATION



Sustainability Goal: Enhance the efficiency of regional and local access to and from the Jetport with an emphasis on high-occupancy modes of transportation and parking infrastructure that meets the needs of the Jetport's users.

Typically, modes of surface transportation at an airport include private passenger vehicles, rental vehicles, livery, public transit, and pedestrian or cycling access. The Jetport's passengers and employees appreciate efficient means of access, and such efficiencies have a direct benefit in reducing associated greenhouse gas emissions and improving local air quality.

Example Baseline Action: In association with the expanded terminal building, the Jetport installed covered bike parking racks and shower/changing facilities to encourage employees to bike to work.

Select Sustainability Actions for Potential Implementation:

- Promote ridesharing for employee commutes
- Continue to work with regional entities to enhance/expand public transportation service to the Jetport, and establish connections to local points of interest

SOCIAL RESPONSIBILITY



Sustainability Goal: Promote the well-being of the Jetport's employees and customers, while reflecting and supporting the social, economic, and cultural assets of the local community and greater region.

An airport's operations have a direct effect on its surrounding communities, as well as its other stakeholders, such as its employees and passengers. Topics associated with an airport's social responsibility include employee engagement and well-being, passenger experience, and community outreach and support.

Example Baseline Action: The Jetport's Above and Beyond program encourages exceptional customer service among its staff and business partners.

Select Sustainability Actions for Potential Implementation:

- Increase local collaborations by participating in local and regional partnerships and working groups
- Create indoor landscaped areas that celebrate and display flora of Maine

GOVERNANCE



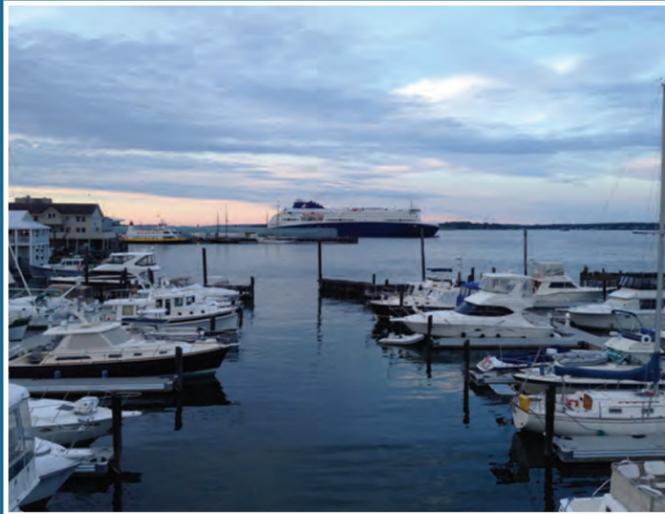
Sustainability Goal: Integrate sustainability throughout the Jetport's organizational framework.

Governance is comprised of the systems in place that enable an organization to make and implement decisions. They may be formal (e.g., related to regulations) or informal (e.g., established by organizational culture), and are profoundly influenced by the organization's leadership.

Example Baseline Action: The Jetport incorporated sustainability principles in its mission statement, which communicates its purpose.

Select Sustainability Actions for Potential Implementation:

- Include a requirement on all capital improvement applications to identify a proposed project's sustainability elements and any known alternatives that serve the same purpose with greater efficiency and/or environmental and social performance
- Incorporate sustainability guidelines into future tenant and vendor contracts, and provide training on these guidelines, as needed



In addition to the six priority goals on the previous page, the Sustainability Baseline Assessment also made recommendations related to Water Quality and Noise. The Jetport already mitigates impacts in these areas where practicable, so these recommendations emphasize maintaining and expanding ongoing efforts.

Water Quality

Like many airports, the Jetport is located near bodies of water; it borders the Fore River on the east and Long Creek on the south. With this proximity, and the expanse of impervious surfaces on an airport, the Jetport's activities have the potential to cause water quality impacts to these waterways. Sources of potential water quality contamination from airports primarily derive from stormwater runoff associated with anti-icing/deicing and construction activities.

Example Baseline Actions: The Jetport has an award-winning aircraft deicing fluid recycling facility, operated by Inland Technologies, that captures and recycles approximately 75 percent of deicing fluid (about as high as currently possible). This protects nearby water quality by limiting the amount of propylene glycol in Jetport stormwater. In addition, the Jetport employs water quality filters and a large water quality pond to further mitigate potential impacts.

Select Sustainability Actions for Potential Implementation:

- Where appropriate, install additional on-site stormwater management options, particularly "green" infrastructure projects that naturally control and/or treat stormwater, such as bioswales, rain gardens, and permeable pavements.

"The Jetport has an award-winning aircraft deicing fluid recycling facility..."

- Harvest rainwater to reduce the Jetport's stormwater volume. This would also reduce the Jetport's water consumption, if applied to non-potable uses, such as landscaping (i.e., irrigation).

Noise

Noise at airports primarily derives from aircraft operations, but may also come from other airport activities, such as construction. Noise has a big influence on an airport's relationship with its surrounding communities, particularly if those communities are densely populated. The Jetport is located within a relatively urban area, including an historic residential district, and recognizes its responsibility to mitigate airport-related noise to the greatest extent practicable. The Jetport, however, does not control aircraft operations, and like other airports, it works with the FAA, often in concert with local jurisdictions, to limit the effects of noise from these sources.

Example Baseline Actions: Through the FAA's CFR Part 150 Noise Compatibility Planning program, the Jetport has established and implemented a Noise Abatement Program that includes the voluntary Fly Quiet Program, which encourages aircraft operators to use specific flight patterns and procedures that reduce aircraft noise in nearby communities. The Jetport also supports a Noise Advisory Committee that provides an official forum for the discussion of airport noise and related issues between the Jetport and members of its surrounding communities.

Select Sustainability Actions for Potential Implementation:

- Identify noise-generating mechanical systems and relocate them away from residential areas, where feasible; consider residential communities in the positioning of new on-site noise generating mechanical equipment.
- Require all construction contractors working on the Jetport to mitigate unwanted noise and vibration to the greatest extent practicable.
- Along with the Noise Advisory Committee continue to monitor aircraft operations and fleet mix as well as effectiveness of the currently approved noise abatement procedures. When deemed necessary, apply to the FAA to update the CFR Part 150 Noise Exposure Maps (NEM), then if needed, the Noise Compatibility Plan (NCP).



Jetport's Economic Benefit

The Jetport is the primary aviation gateway for the State of Maine, welcoming commerce and visitors, while providing residents with access for outward travel to national and intercontinental destinations. The Jetport creates significant benefits that extend beyond the aviation community to impact economic growth and development, as well as the quality of life of Maine residents. Airline travelers from across the nation and around the globe come to Maine to conduct business, meet with clients and suppliers, and place orders for goods and services produced in the state. Even greater numbers come for personal reasons, to visit friends and relatives, or to hike, fish, hunt, or simply vacation in the midst of world class scenery and recreation opportunities.

Public safety and national security objectives are supported by the aviation operations of police officers and government agencies. Medical transport, search and rescue, aerial mapping, air cargo, and express delivery services are all essential functions provided at the Jetport every day of the year.

Although qualitative advantages created by an airport are important, they are also challenging to measure. In studying the economic benefits of airports and aviation, regional analysts have emphasized economic benefits that can be quantified:

- **Employment** is the number of jobs supported by economic activity created by the presence of the Jetport.
- **Payroll** includes income to workers as employee compensation (the dollar value of payments received by workers as wages and benefits) and business owners income.
- **Output** is the value of the production of private firms and public agencies.

This process is illustrated in the graphic to the right.

Summary of Economic Benefits

SOURCE	EMPLOYMENT	PAYROLL	OUTPUT
Direct Economic Benefits			
On-Airport Direct Benefits:	1,329	\$54,061,000	\$287,999,000
Air Visitor Direct Benefits:	3,929	92,960,000	351,702,000
Direct Benefits	5,258	147,021,000	639,701,000
Secondary Economic Benefits			
Indirect Benefits:	1,571	65,877,000	225,311,000
Induced Benefits:	1,432	56,667,000	178,129,000
Secondary Benefits	3,003	122,544,000	403,440,000
Total Economic Benefits	8,261	\$269,565,000	\$1,043,141,000

ECONOMIC BENEFIT STUDY PROCESS

PRIMARY/DIRECT IMPACTS

On-Airport
Aviation related and non-aviation related businesses and agencies on the Jetport generate sales and revenues, hire workers, and pay employees

Off-Airport
Air visitor spending, including: lodging, restaurants, car rental, retail items, and entertainment

+ SECONDARY IMPACTS

Indirect Impacts

Activity by suppliers and vendors who sell to Jetport businesses, along with jobs created and incomes paid to workers by these suppliers.

Induced Impacts

Consumer spending of workers who produced direct or indirect benefits.

= TOTAL ECONOMIC IMPACTS



The total annual economic benefits of the Portland International Jetport include 8,261 jobs with payroll of \$269.6 million and output of \$1.0 billion, incorporating all multiplier or secondary benefits.

The secondary and total economic benefits flowing from the initial direct benefits of on-airport commercial service and general aviation activity are detailed in the table to the left.

