5.0 INCENTIVES ANALYSIS

The Incentives Analysis reviews FAA regulations governing incentives, followed by a review of incentives introduced at other U.S. airports. The Analysis then explores types of incentives program most likely to influence ANC carriers to move to FAI.

5.1 FAA Regulation of Airport Incentives

Federal statutes and regulations define conditions in which airport revenues can be used to provide incentives to air carriers for air service to an airport. The FAA's *Air Carrier Incentive Program Guidebook: A Reference for Airport Sponsors* (TC10-0034) delineates that to be permissible, programs must enhance air carrier service and not simply general economic development.

In accordance with Federal Statutes (49 U.S.C. § 47107 (1)) and the FAA's *Policy and Procedures Concerning the Use of Airport Revenue* (64 Fed. Reg. 7696, February 16, 1999) (Revenue Use Policy), airport revenue may be used to cover:

- The full costs of activities directed at promoting competition at an airport;
- Public and industry awareness of airport facilities and services;
- New air service and competition at the airport (other than direct subsidy of air carrier operations prohibited by Section VI.B.12 of the Revenue Use Policy); and
- A share of promotional expenses such as marketing, advertising, and related activities designed to increase travel using the airport (meeting requirements prescribed in the Revenue Use Policy, Section V.A.3, and including specific information about the airport).

FAA allows promotional incentives to air carriers for new service to (a) increase travel using the airport and/or (b) promote competition at the airport. FAA defines new service as:

- Service to an airport destination not currently served;
- Nonstop service where no nonstop service is currently offered;
- New entrant carrier; and/or
- Increased frequency of flights to a specific destination.

The FAA's Revenue Use Policy distinguishes between incentives (permissible) and subsidies (prohibited). For this purpose, a subsidy is direct payment of airport revenue to a carrier or to any provider of goods or services to that carrier, in exchange for additional service by the carrier. An incentive is any fee reduction, fee waiver, or use of airport revenue for acceptable promotional costs, where the purpose is to encourage an air carrier to increase service at the airport. In essence, an airport operator may forego revenue (e.g., fee waivers) under the FAA's Self-Sustaining Requirement, but may not subsidize airlines under the Revenue Use Policy. The use of airport revenue as a "subsidy" to pay an air carrier to serve markets is expressly forbidden.

Per FAA Publication T10-0034, traditional, allowable airport sponsor incentives include:

- Landing fee waivers/reductions;
- Terminal rent waivers/reductions; and
- Fuel flowage fee waivers/reductions.

5.1.1 General Guidance for Airport Sponsored Incentives

Stated as a broad principle, airport sponsors may offer financial incentives in the form of reduced or waived landing fees, rental fees, or fuel flowage fees to attract new service to targeted airport destinations. However, any financial deficit resulting from financial incentives cannot be included in airline rates and fees for air carriers not participating in the incentive program without their express permission.

Examples of prohibited outlays would include providing aircraft parts, free or subsidized fuel, interest-free loans, and payment to third parties for services provided to airlines. State or local taxes on aviation fuel[1] are considered to be airport revenue subject to the revenue-use requirement and therefore may not be used in such an incentive program[2].

Per FAA guidance[3], an incentive program sponsored by an airport must be for a specified duration. An eligible carrier may not receive incentives for more than two years and may be

[1] Revenues from state taxes on aviation fuel may be used to support state aviation programs or for noise mitigation purposes, on or off the airport, but the incentive and subsidy programs described in the Air Cargo Incentive Program cannot be considered state aviation programs.

[2] Revenues from state taxes on aviation fuel may be used to support state aviation programs or for noise mitigation purposes, on or off the airport, but the incentive and subsidy programs described in the Air Cargo Incentive Program cannot be considered state aviation programs.

[3] Air Carrier Incentive Program Guidebook, September 2010

limited to only one year in some cases. This deadline reinforces the FAA's position that the incentive program is intended to test the viability of a market, not to subsidize air service.

Furthermore, airport sponsored incentives must benefit not only direct recipients, but all carriers serving the airport. An excellent case may be offered that a reduction in ANC delays, as well as deferral or avoidance of ANC capacity-enhancing capital projects, will constitute a universal benefit for all carriers serving AIAS.

5.1.2 Incentives Offered by Non-Airport Entities

Both the public communities and private sector companies may dispense incentives unbounded by FAA restrictions, as long as the airport sponsor is not a party to the agreement and is not involved in negotiating, implementing, or monitoring the program in any manner. In the case of FAI, this might include the city/borough/state, Chamber of Commerce, Fairbanks Economic Development Corporation, Fairbanks businesses, and businesses that would serve tech stop carriers and which would benefit from increased tech stop operations.

5.1.3 Application to the Proposed FAI Tech Stop Incentives

Because the emphasis of the FAA Guidebook and federal statutes and regulations has been on commercial O&D passenger service, much interpretation is required for application of these federal guidelines to tech stops. Furthermore, these guidelines do not cover an airport's basic right to manage capacity constraints through its rates and charges policies, and therefore, certain aspects of these rules such as duration limitations may not apply under the "incentives" envisioned for the FAI tech stop traffic.

As an example, the AIAS Operating Agreement with Signatory Airlines, historically and currently provides that non-signatory airlines operating at FAI are not subject to the 25% premium on landing fees and the additional fuel flowage surcharge that applies to non-signatory airlines operating to ANC, thus providing an "incentive" for non-signatory airlines to use FAI. However, this is not an incentive as contemplated by the federal guidance outlined above. To ensure acceptance by the FAA, AIAS should proactively solicit FAA engagement and approval when it begins to formulate its tech stop incentive policy.

5.2 Incentives at Other United States Airports

As with the FAA's Air Carrier Incentive Program Guidebook, examples of other airports' incentive programs are not tailored to tech stops for all-cargo carriers. Whereas the Guidebook scarcely mentions cargo, the following incentive programs focus on cargo development at airports.

Rickenbacker International Airport (LCK) has an incentive program focused on serving the freighter industry. In its newsletter, the airport operators suggest its incentive program saves airlines 25 to 50% on landing fees. LCK's growth incentive is in the form of a landing fee credit for year-over-year growth in charter or scheduled aircraft gross landed weight. A minimum of two flights per month is required for incentives to apply. If an operator's landed weight exceeds the previous year's landed weight for that same month, the operator will receive a 25% discount on the increased landed weight. The savings will immediately benefit the operator, which will automatically receive the credit on the subsequent monthly invoice.

The LCK Growth Incentive program also applies to new airlines. An airline with no landed weight in the same month of the previous year will receive a 25% discount on the entire landing fee. In addition, LCK has a New Market Incentive program, in which any scheduled or charter flight activity from a market that does not already have LCK service will receive a 50% discount on all corresponding landing fees for the first six months of the new market service. New market service incentives must have at least four corresponding frequencies per month for a minimum period of six months to qualify. After new market incentives expire, the air carrier remains eligible for the Growth Incentive program.

Dallas-Fort Worth International Airport (DFW) has an incentive program for new passenger and cargo service. In May 2006, DFW's Board of Directors approved an expanded Air Service Incentive Program to attract new international passenger, international cargo, and domestic passenger service. The program was capped at $7 million per year and $20 million for the period through 2009. DFW cited its initial Carrier Support Program (September 1999) as having contributed to new cargo service from Korean Air to Seoul and an increase in all-cargo frequencies by Cathay Pacific in 2007. The program includes rebated landing fees, marketing support for service launch activities, and marketing funds for new entrant carriers to promote

their brands. The enhancements included increasing support of a new daily international wide-body passenger flight with $1.4 million in marketing support and landing fee rebates, versus $250,000 in the program's earlier incarnation. The landing fee rebates were new to DFW at the time. According to a recent article[4] on DFW's former marketing chief, Joe Lopano, DFW's incentive program for Qantas to add Sydney to Dallas service cost DFW $3.1 million.

Miami International Airport (MIA) has employed a variety of incentives on behalf of cargo carriers. In support of Centurion Air Cargo's $123 million hub project at MIA, the company will earn $1 million from the county under a Targeted Jobs Incentive Fund program in exchange for creating 200 jobs. In October 2012, Miami Dade County approved MIA's Fourth Air Service Incentive Program (ASIP4). The program is capped at $3 million/year, based on a first-come, first-served basis until each cap is exhausted. Any net losses resulting from ASIP4 will be payable through the Airport's Retainage Sub-Account Improvement Fund. Miami Dade Department of Aviation has an internal Air Service Incentive Program Review Committee that meets monthly to monitor compliance by participating carriers. Beginning with ASIP2, the program was expanded to benefit cargo carriers. The current program is being replaced one year early in order to expand the program and create a new tier of benefits for targeted emerging markets. ASIP2 covered four carriers, including two all-cargo carriers and the total landing fee abatement amounted to just over $648,000. Although ASIP3 was available to all carriers, only passenger carriers participated. ASIP4 includes provisions for cargo carriers, but emphasizes international passenger service. The program is a mix of waivers for landing fees (12 to 24 months depending on destination) and advertising support. For freighter service, the incentives are offered to carriers serving Europe and Africa, but graduated for carriers serving the BRICS and Asia/Pacific markets. ASIP4 is a three-year program.

The following qualifications adhere to cargo flights to qualify for MIA's ASIP4:

- (1) Any carrier establishing scheduled, year-round cargo freighter service from Africa, Europe or the Middle East/Gulf Region on a cargo route not currently served by an all-cargo freighter to MIA qualifies for a 50% abatement of landing fees for a 12-month Promotional Period. The qualifying service must be operated for 12 consecutive months

[4] "Tampa International Airport about to enter the pay-to-play airline incentives game" by Steve Huettel, St. Petersburg Times, June 18, 2011

with originating flight numbers and aircraft (same plane service) remaining the same between the originating city and MIA.

(2) Following service commencement and continuing for a 24-month period thereafter, any additional frequencies added to the new cargo route will qualify for the 50% incentive for a full 12-month term effective from the date the additional frequencies commence.

- (1) Any carrier establishing scheduled, year-round cargo freighter service from any Brazil, Russia, India, China, and South Africa (BRICS) or Asia/Pacific destination to MIA qualifies for a 50% abatement of landing fees for a 24-month promotional period. The service must be operated for 12 consecutive months and will then qualify for an additional 12-consecutive month period for a total of 24 months of benefits. Each 12-month period of service will be evaluated for compliance under the terms of the program. The incentive is available for any city pair regardless of present service levels to and from MIA by the applicant carrier or another carrier on the specific route. Originating flight numbers and aircraft (same plane service) must remain the same between the originating city and MIA.

  (2) Any new freighter frequencies added to BRICS and Asia/Pacific cargo routes established after commencement of ASIP4 will qualify for the 50% abatement of landing fees incentive for a full 24-month term.

An example of system planning similar to what is contemplated in moving freighters from ANC to FAI, **Los Angeles World Airports (LAWA)** explored developing an incentive program to encourage and facilitate movement of freighter operations from Los Angeles International Airport (LAX) to Ontario International Airport (ONT). The program was intended to provide marketing support for a planned cargo facility expansion at ONT, provide an economic stimulus to the City of Ontario, and optimize the utilization of regional airport assets. However, a decade's decline in cargo tonnage and operations at LAX mitigated the urgency of that airport's capacity constraints. The only carrier (EVA Air) to ever declare interest in the incentive program withdrew its plans.

In a 2008 Airports Council International-North America (ACI-NA) presentation[5], **Sea-Tac's (SEA-TAC) International Air Service Incentive Program** for new service on un-served trans-oceanic routes was described as including: 100% waiver of landing fees in the first year; 75% waiver of landing fees in the second year; 75% reduction of the Federal Inspection Service (FIS) common-use charge in both the first and second year; and joint marketing funds up to $455,000 in the first three years. The program was expanded by $469,000 in the Port of Seattle's 2013 Annual Budget, which also included Sea-Tac's "Century Agenda" with the objective to make it the west coast "Gateway of Choice" for international travel and double the number of international flights and destinations. In 2012, Emirates began non-stop service to Dubai, and All Nippon Airways launched service to Tokyo. Delta launched new service to Shanghai in 2013 and up-gauged its aircraft on its Tokyo flights.

While the FAA generally limits incentives to new service, **Portland (PDX)** was allowed to provide incentives to retain international service, specifically fee waivers for any transoceanic service and non-airport revenue guarantees for trans-Pacific Service. According to InterVISTAS[6], Portland paid $3.5 million in incentives to Delta Airlines to maintain the Portland-Tokyo route service that constituted the city's only scheduled passenger service to Asia. Portland had recently lost its only trans-Atlantic service (Lufthansa to Frankfurt) and inter-American service (Mexicana to Guadalajara, Mexico) in recent years. The losses are in stark contrast to just a few years earlier when Sea-Tac specifically cited PDX's "very generous" incentive program as justification for creating its own, after Lufthansa, Mexicana, and Northwest had chosen PDX over SEA for international service.

In September 2011, the Port of Portland committed $750,000 from itself and Oregon taxpayers to support Asiana Airlines' freighter service between PDX and Seoul, described at the time[7] as "a nonstop service that will help Northwest exporters and challenge Anchorage as a transpacific pit stop." The program includes $200,000 from Governor John Kitzhaber's strategic reserve fund to cover ground-handling operations and another $200,000 from the fund to offset costs if Asiana sustains the flights for a full year. In addition, the Port waived landing fees for a year (estimated

[5] International Air Service Development at Seattle-Tacoma International Airport" by Kazue Ishiwata, Senior Manager for Air Service Development (SEA), ACI-NA International Aviation Issues Seminar, December 4, 2008

[6] "Airline Routes: How You Can Influence Their Development" by Paul Ouimet, InterVISTAS, 49th International Congress and Convention Association (ICCA) Congress & Exhibition, October 25, 2010

[7] "State, port will subsidize Asiana's flights from PDX" by Richard Read, The Oregonian, June 1, 2011

at between $350,000 and $400,000 in value) and provided advertising support. Bill Wyatt, Port of Portland Executive Director suggested the flights were particularly appealing for skipping ANC for refueling and crew changes. “For the first time, Portland will be their last departure from the U.S.” Wyatt continued, “Unlike Anchorage, we actually have cargo here that wants to go to Asia.” Given the bravado, it bears noting that the flights stop at ANC from Seoul en route to Miami before returning via PDX.

5.3 Shaping a Prospective AIAS Incentive Plan

Recognizing applicable conditions and constraints, the challenge is to form an incentive program that is at a level sufficient to cause carriers to divert some portion of tech stop traffic to FAI, without simply illuminating liabilities of ANC enough to cause carriers to explore non-Alaskan options. The fundamental question is, does the benefit received in airline operating costs savings and foregone increases in airline rates and charges due to capital construction costs exceed the cost of incentives?

Relocation to FAI is out of the question for FedEx or UPS due to their sunk costs in ANC facilities. Furthermore, any carrier with scheduled intercontinental passenger operations would be very unlikely to consider splitting (passengers via ANC, freighters via FAI) their Alaska operations. Likewise carriers with a history or expressed interest in ANC interline cargo transfers are not likely to relocate. As a result, the primary target for incentives to relocate to FAI are “pure” tech stop carriers.

Under federal regulations, the maximum incentive that the AIAS could grant would be the waiver of landing fees, fuel flowage fees, parking fees and other AIAS fees such as terminal rents, and FIS aircraft fee.

For a single daily 747-400F, the combination of those waivers could amount to a maximum of $2,832 per flight or more, depending on the then current level of AIAS airline rates and charges. Over the course of a year, that daily flight could translate into $1,030,848. While a sizable number, it must also be examined in the context of the total operating cost for the flight.

Table 5.1: AIAS Potential Incentives for One Flight Per Day

AIAS-Potential Incentives	Savings/Flight
Landing Fee (875,000 lbs. @ $2.25/1,000 lbs.)	$1,969
Fuel Flowage Fee (19,000 gallons @ $0.027/gallon)	$513
Parking (wide-body up to 4 hours)	$155
FIS	$35
Terminal Rent (951 SF @ $61.50 s.f./p.a.	$160
Total (AIAS-Potential Incentives)	$2,832
Total Carrier Savings (annualized based on one daily flight)	$1,030,848

AIAS incentives would likely represent less than (10%) of the total cost to operate the flight. Therefore, while it may be attractive, the decision to relocate to FAI would also be driven largely by other operating costs at FAI discussed below, as well as other operating factors outside of the control of AIAS and local service providers.

5.3.1 Potential Non-AIAS Incentives

In addition to the AIAS sponsored incentives, businesses in Fairbanks - in particular those who would service tech stops - may determine that it is in their economic interests to introduce new services or pricing structures to facilitate new tech stop service. Associations (Chamber of Commerce, FEDC, etc.) and governments (city, borough, and state) might also offer incentives if they believe there is economic benefit to their communities. Some examples of tech stop carrier costs, where non-AIAS incentives could be considered include:

- Fuel costs - fuel accounts for the highest expense tech stop carriers pay at AIAS;
- Ground handling - examples include marshaling, stairs, crew van, luggage, light cleaning, deicing;
- Crew lodging - lodging for crews that overnight at FAI; and
- Crew positioning - costs of flying crews to and from FAI.

5.3.2 External Factors Affecting Carriers Route Choices

Other external factors outside AIAS or local parties' control which can significantly affect the comparative economics of FAI versus ANC operations include:

1. **Route distances (via established airways, not just great circle distances).** To minimize flight time and expense, certain origins/destinations favor routings, via ANC or FAI. In general, between Alaska and Asia traditional North Pacific (NOPAC) routes favor ANC; Russian routes (G212) favor FAI. To and from the Lower 48, west coast destinations favor ANC, east coast destinations favor FAI (assuming no seasonal Eielson Air Force Base-related airspace closures), and Midwest points are more or less a wash. A cruise speed of .85 Mach (493 knots) and an average block hour cost of $12,000 yield the following approximate route distance economic impacts for a 747-400F:
   a. Alaska - north Asia westbound via NOPAC: 9 minutes in ANC's favor = $1,800;
   b. North Asia - Alaska eastbound via NOPAC: 14 minutes in ANC's favor = $2,800;
   c. Alaska - Asia via G212 (over Russia): 3 minutes in FAI's favor = $600;
   d. Alaska - LAX: 14 minutes in ANC's favor = $2,800;
   e. Alaska - ORD: 6 minutes in FAI's favor = $1,200; and
   f. Alaska - JFK: 11 minutes in FAI's favor = $2,200.

   Insofar as a carrier's route system emphasizes Russian airspace routings (e.g., to and from the PRC) and eastern North American points, route distance considerations favor FAI; insofar as a carrier's route system emphasizes NOPAC routings and west coast points, route distance considerations favor ANC. For other carriers, in the aggregate FAI/ANC route distance considerations may not be substantively different.

2. **Payload limitations**. Closely related to route distance considerations is the matter of payload limitations. At a certain range all aircraft begin "trading" revenue payload for fuel load (hence the importance of Alaska fuel stops to all trans-Pacific freighter operators). However, contrasted with "classic" 747-200Fs which formerly dominated intercontinental freighter operations via Alaska, the 747-400F is not payload limited on any Alaska - North American segment or Alaska - north Asia (Japan, Korea) segment. Payload considerations can become a significant FAI/ANC differentiator to/from non-

stop points deeper into Asia (e.g., Shanghai, Beijing, Hong Kong) - favoring FAI if flown via Russian routes, and favoring ANC via NOPAC. However, payload capacity is a softer economic consideration if a particular flight: (1) is not 100% full by weight ["grossed out"]; or (2) is "cubed out" [i.e., volume-limited] before it is "grossed out" [i.e., weight limited]. Accordingly, payload considerations may be a factor in a carrier's choice of FAI or ANC, but analysis must be done on a carrier-specific level.

5.3.3 Other Operational Considerations.

As discussed in Chapter 4.0, both ANC and FAI confront airline operators with distinctive operational challenges which have economic impacts. For ANC, operational considerations include:

- Large accumulations of wet snow (deicing delays);
- Freeze/melt cycles (braking action issues);
- Some ATC delays; and
- Volcanic ashfall.

FAI operational considerations include:

- Severe winter cold (impacting ramp operations);
- Maintenance considerations (lack of on-site parts pool, limited technical; personnel support, no wide-body-capable hangar);
- Limited hardstand (parking) and fueling capacity;
- Limited ground service equipment;
- Virtually no local origin or destination cargo; and
- Longer average taxiing distances.

These are manageable challenges, as demonstrated daily at ANC, as well as by Lufthansa, Air France, and Cargolux which collectively operated as many as 40 weekly wide-body freighters via FAI in the late 1990s. For example, the marketplace should provide the personnel, parts, ground support equipment etc., if operations relocate and there is a need. Several FAI tech stop

service providers expressed the same sentiments. FAI is currently examining tech stop infrastructure needs as part of its airport master plan.

5.4 Financial Implications of Incentives to Move Tech Stops to FAI

While financial incentives in the form of fee waivers do not require the expenditure of funds, they will have financial implications for the other carriers landing at ANC and FAI. Landing fee waivers for flights that are transferred to FAI would reduce the revenues that would otherwise be realized by those flights. Under the current Airline Operating Agreement, the landing fee rate is set so that it will be sufficient along with other revenues collected to pay the total AIAS operating and maintenance expenses and debt service payments. Since the AIAS does not collect surplus funds that can be used to offset these lost revenues, the Airline Operating Agreement would have to be amended to exempt these landings from the revenue landings. With lower certificated maximum gross takeoff weight (CMGTW) as part of the landing fee calculation, the landing fee rate applicable to all other flights would have to increase to recoup those lost revenues. Because the cargo freighters are substantially larger than the passenger aircraft serving ANC and FAI, the impact on the landing fee revenues is substantially greater than the proportionate benefit in the reduction of the operations and delays at ANC. In FY2012 cargo aircraft represented 37% of the commercial aircraft operations, but 80% of the CMGTW used to calculate landing fee rate.

In FY2012 tech stop carriers represented approximately 50% of the CMGTW at ANC. So, relocating 50% of the tech stop traffic to FAI through a landing fee waiver would result in increasing the landing fee rates paid by all of the remaining carriers at AIAS by 25%. However, as shown in the analysis described below, a landing fee waiver at FAI would cost less than building a new ANC airfield capacity, and would not constitute the permanent long-term liability of building additional airfield infrastructure at ANC.

A scenario was examined to see the potential effect of creating an incentive to shift international tech stop traffic to Fairbanks. Assuming a carrier with 16 daily flights (32 operations) during the busy times of the day at ANC shifts those flights to Fairbanks. The delay reduction to ANC passenger and cargo carriers is estimated to be 1,246 minutes per day. This represents an airline operating savings of approximately $17 million/year to ANC carriers, savings resulting from

delay reduction, based on a $65/minute average carrier cost of air and ground delay. If landing fees were waived for that carrier, which amounts to an approximately cost savings of $1,969 per flight for the carrier moving to FAI, the annual cost of waiving landing fees for the 16 flights per day would be about $11.5 million per year for the other carriers not receiving the landing fee waiver (Tables 3.5 and 5.2). If a waiver of landing fees, fuel storage fee, parking fee, and the flow fees were implemented the annual cost would grow to $16.5 million.

Table 5.2: Example of Benefits and Costs of Incentive Program That Shifts 16 Tech Stop Flights to FAI During ANC Busy Hours

Tech Stop Flights Per Day Shifted to FAI	16
Average Daily Delay Reduction at ANC	1,246 minutes/day
Annual ANC Carrier Cost Savings From Delay Reductions	$17 million/year
Annual Cost of Landing Fee Waiver to Carriers Not Receiving Landing Fee Waiver	$11.5 million
Annual Cost of Total Fee Waiver (Landing, Fuel Flowage, Parking and FIS Fees) to Carriers Not Receiving Fee Waivers	$16.5 million

Source: HNTB Estimates

5.5 Financial Costs of Building Additional Infrastructure at ANC

The design and construction of additional airfield improvements at ANC of the magnitude necessary to prevent untenable delays described in Chapter 3.0 would entail substantial costs, most likely in the magnitude of hundreds of millions of dollars. While some of these costs would likely be funded in part with Federal Airport Improvement Program (AIP) grants, the percentage of the cost covered by grants would depend upon future funding levels of AIP entitlement grants as authorized by the U.S. Congress, the availability of AIP discretionary grants, and the comparative priority of the ANC project with other projects across the nation. Under current grant award conditions, 50% grant funding would likely be the maximum amount awarded by the FAA for the construction of an additional runway and associated taxiways, etc. To the extent that airfield improvement costs are not paid through AIP grants, they would be financed through the issuance of long-term general airport revenue bonds. This debt would likely be repaid over 30 years. With cost of issuance, interest costs, etc., the annual debt service payments could be equal up to 10% of the construction costs financed.

The impact on the landing fee rate applicable for both ANC and FAI would depend upon the level of operations during the debt repayment period. Using a rough estimate of $50 million of annual debt service, the landing fee would increase by $1.10 at the operation levels forecast for

Future 2 in the Baseline Forecast, representing approximately a 50% increase over the current landing fee rate. If additional capacity was constructed and tech stop traffic left AIAS, the increase to the landing fee would jump to $3.60 from the debt service, representing a 150% increase over the current landing fee rate. There would also likely be significant additional operations & maintenance expenses associated with additional pavement that would need to be recovered through additional increases in the landing fee rate. The additional maintenance expenses are estimated to be approximately $2 million per year.

Once the funds are borrowed and the capital investment is made, the long-term debt liability continues for the period of the debt whether the capacity is required or not. Therefore, the construction of additional airfield improvements carries the highest level of financial risk. In addition to the lower cost, the benefit of the FAI relocation incentive approach is that if the Trans-Pacific cargo traffic drops and the tech stop activity is reduced, there is no ongoing long-term commitment to "pay this cost", as exists with annual debt service requirements. It naturally goes away if the potential for delays at ANC does not materialize.

Table 5.3 compares the annual debt service and operating costs of a new runway at ANC to the annual costs of a landing fee waiver or full fee waiver at FAI. An FAI landing fee waiver would cost carriers not receiving the fee waiver $11.5 million annually if it only applied to 16 flights/day and $14 million if were applied to 50% of ANC's flights. If all tech stop fees were waived, it would cost $16.5 million/year for 16 daily flights and $20.1 million/year for 50% of the tech stop flights. As noted above, this is significantly less than the $52 million annual debt service and operating costs of building a new runway. The annual airline operating cost savings of shifting 16 tech stop flights a day to FAI is estimated to be $17 million and of shifting 50% tech stop flights a day is estimated to be $41 million.

Table 5.3: Comparison of Annual Costs of an FAI Incentive Program and the Annual Costs of a New ANC Runway

	Relocate 16 Daily ANC Tech Stops to FAI		Relocate 50% of ANC Tech Stops to FAI	
	Landing Fee Waiver	**Full Fees Waiver**	**Landing Fee Waiver**	**Full Fees Waiver**
Annual Fee Waiver Costs	$11.5 million	$16.5 million	$14.0 million	$20.1 million
Annual Airline Operational Cost Savings at ANC	$17 million		41 million	
Annual Debt Service and Operating Costs if a New Runway Were Built	$52 million			

6.0 RISK ASSESSMENT

The risk of taking action or failing to take action falls upon international cargo carriers who operate at AIAS, on other AIAS carriers, on AIAS, and on Alaska residents. International cargo carriers face the greatest potential operational risk and benefit under each of the options, but all carriers (passenger and cargo) face financial risks. In turn, Alaska residents face potential consequences of reduced air service and/or economic benefits provided by air cargo operations.

Risks associated with potential options for addressing delay include:

1. **Risks of Not Taking Action** - loss of cargo traffic because capacity is not built or is built too late

2. **Risk of Taking Action** - build capacity that is not needed; incentivize cargo activity to move to Fairbanks without a corresponding reduction in ANC delays

3. **Risks of Scaring Away International Cargo Traffic** - disclosing ANC's runway capacity and delay problem

4. **Risks to Alaska** - loss of jobs, income, air service; increased fares

6.1 Risk of Not Taking Action

The primary risk of not taking action is the potential loss of international cargo traffic - a loss of traffic because inadequate airfield capacity causes delays described in Chapter 3.0 to occur frequently and long enough to severely disrupt air cargo operations at AIAS and down-line at other connecting airports. The primary effects of not providing sufficient capacity are increased airline operating costs at ANC, inefficiencies, and missed cargo sort windows at downstream airports. As a result, carriers could leave the AIAS altogether, resulting in substantial increases in landing fees for those carriers still serving AIAS. Table 6.1 briefly summarizes how runway capacity decisions could affect AIAS, airlines, and the communities.

Table 6.1: The Potential Effects of Delays on Airlines, AIAS, and Communities

Who is Affected by Delay?	Potential Effect of Delay
Airlines	• Increased operating costs • Late cargo deliveries - lost customers/lost revenue • International cargo carriers leave AIAS • Loss of airport revenue from cargo carriers - higher landing fees paid by remaining carriers
AIAS	• Higher landing fees make the airport less attractive for existing carriers to maintain marginally profitable routes and more difficult to attract new air service
Communities	• Reductions in flights and increases in fares • Loss of jobs and income, particularly from air cargo

6.1.1 Airlines Delay Costs

Airport delays increase airline operating costs, including delays on the ground and in the air. Delays affect operating costs such as fuel burn, crew time and built-in hourly rates for aircraft maintenance. Table 6.2 below, shows that delays affect both passenger and cargo carriers, but the cost of delay is about 4 times more for cargo carriers. This is because they operate the largest aircraft in the fleet and burn the highest amount of fuel on an hourly basis.

Table 6.2: Average Airline Operating Cost of Cargo and Passenger Delay at ANC

Carrier Type	Average Cost of Delay
Cargo Operations	$129/minute
Passenger Operations	$31/minute
Average of Cargo & Passenger Operations	$65/minute

Integrated cargo carriers are particularly delay-sensitive. Most of the international cargo carried by these carriers is not destined for Anchorage - it is cargo going to Asia and Lower 48 airports. Cargo hubs in Asia and the Lower 48 sort, inspect, process through customs, and reload cargo into multiple other aircraft during critical times of the day - sort windows, in order to meet delivery commitments. ANC delays can have a down-line domino effect: sort windows missed; cargo delayed; delivery commitments unfulfilled; unhappy customers; business lost.

Some airports in Asia, like Narita, have operating curfews, limits to times of day that carriers can operate. Significant delays that cause flights to arrive or depart during the curfew mean that aircraft must divert to other airports, or the flight is held even longer at ANC.

When unacceptable delays happen frequently enough, cargo carriers may question the viability of operating from an AIAS airport and look at other options, including use of alternate airports or reducing cargo loads to allow aircraft to fly non-stop and bypass Alaska. Though unlikely, even integrated carriers such as FedEx and UPS, with large investments at ANC, could dismantle their ANC hub operation in favor of another hub venue or complete overflights of Alaska. An incremental gradual shift of operations to other airports or increased overflying of AIAS would be more likely.

International tech stop carriers can easily cease operations from ANC and shift operations to other airports, since they have minimal investments at ANC. If delays grow at ANC, they would likely cease operations at ANC sooner than would integrated carriers who have sizeable investments and significant staff based in Anchorage. Examples of international tech stop carriers that formerly operated from AIAS that have shifted to other airports or that now fly non-stop include Lufthansa, and Air France. Once a carrier chooses to relocate its operations to another airport or overfly AIAS, it would be highly unlikely that the carrier would return to AIAS.

6.1.2 What is the Effect on the Landing Fee from Lost International Cargo Traffic?

If international cargo traffic left ANC, it would have a large effect on the AIAS landing fee, a fee paid by airport users at ANC and FAI that is based on the maximum gross takeoff weight of aircraft. Because their aircraft are primarily large freighter aircraft with a large maximum gross takeoff weight, international cargo carriers pay over 80% of the landing fee revenue today. Within that group, over 50% of the landing fee paid by cargo airlines is paid by the tech stop carriers. Losing international cargo traffic would mean an increase in landing fees, as a smaller group of airlines that still use the AIAS would share an increased proportion of the costs of airport operations, maintenance, and development.

For example, if all of the tech stop carriers were to leave ANC, the landing fee would double for the carriers still at AIAS. If all international tech stop carriers and half of the integrated carrier traffic were to leave ANC, the landing fee would triple. The doubling or tripling of landing fees may prompt other carriers to reduce or eliminate ANC operations, further aggravating the downward spiral in airport revenue. There would also be a corresponding loss in revenue from

fuel flowage fees, which would further increase landing fees for carriers continuing to operate from AIAS.

6.2 Risk of Taking Action

Actions that the AIAS could take, that have risks include:

- Build capacity that is not needed or build it before it is needed; and
- Incentivize a shift of traffic to Fairbanks without a corresponding reduction in ANC delays.

6.2.1 Build Capacity That is Not Needed, or Before it is Needed

If AIAS builds capacity at ANC or FAI that is not needed, or before it is needed, the costs of capacity infrastructure will be borne by AIAS airlines in the form of increased landing fees, except for that portion paid by FAA funding.

This study proposes that ANC base a decision on building runway infrastructure on a trigger point, currently defined as 258,000 operations, based on the current runway use program. If a more efficient runway use program were put in place, the trigger point would be more than 258,000 operations, but there could be non-capacity impacts such as increased noise levels. Because it takes 10 or more years to plan, permit, design and construct a new runway, a decision to build a runway would need to occur at least 10 years prior to reaching 258,000 operations. If ANC builds infrastructure prior to reaching 258,000 operations, ANC will have invested in infrastructure too soon. This premature investment would mean higher landing fees because the forecasted growth to pay for the runway had not yet materialized. Higher landing fees may encourage airlines to reevaluate AIAS versus other airports or overflights. Planning and constructing to meet any defined trigger point is extremely challenging because of the inherent difficulty in forecasting international cargo operations. Many factors influence the volume of North America-Asia air cargo, and the share of that cargo stopping at ANC. Deciding if and when to build a new runway primarily based on forecasted international cargo activity is fraught with uncertainty and risk.

To illustrate, assuming a hypothetical runway was built at ANC that had $50 million of annual debt service and a 30-year payback on the debt. The impact on the landing fee due to the

increased annual debt would depend upon the level of activity at AIAS. If traffic grew according to the Baseline Forecast, that debt service would translate into a landing fee increase of $1.10. If the runway was built, AIAS lost tech stop traffic, and operations failed to grow as forecasted, the landing fee increase could be $3.60 for those carriers still serving AIAS. In addition to the landing fee increase due to annual debt service requirements, the costs of maintenance and snow removal on the additional pavement would also increase landing fees at AIAS.

Similarly, AIAS has the risk of investing in infrastructure to support a shift of international cargo traffic to FAI, without certainty that cargo carriers will move to FAI or that they will stay there once they have moved. Investments in cargo hardstands and other non-runway infrastructure is less expensive and requires less time for advanced planning, permitting, design and construction, compared to the expense and time for a runway, so the risks are much lower.

6.2.2 Risks of Incentivizing a Shift of Traffic to FAI

As discussed in Chapter 5.0 of this report, another action AIAS could take would be to create incentives to shift traffic to Fairbanks. AIAS carriers which did not receive the incentive would bear the costs of the incentives. The risk is that the shift in traffic to FAI may not result in a significant reduction ANC delays. This might be because the amount of operations shifted is small or the reduced operations at ANC are not during the peak time of day that the highest levels of delays occur. Also, because freighter aircraft at ANC are much larger than the average ANC aircraft, the landing fee associated with each cargo operation is substantially higher than the average. As a result, the percentage increase in the landing fees to the other carriers would be higher than the percentage reduction in operations. In FY2012 cargo aircraft accounted for 37% of the commercial aircraft operations, but 80% of the certified maximum gross takeoff weight used to calculate the landing fee rate. On the other hand, the incentive could be structured to have a short timeframe, so the cost of the incentive would be short-lived when compared to the large costs and long 30 year timeframe to pay for a new runway.

6.2.3 Risks of Scaring Away International Cargo Traffic

Another risk is that discussions about ANC delays and shifting traffic to Fairbanks could cause international cargo carriers to reexamine whether the AIAS is the preferred option for transpacific cargo operations. Discussions with carriers should be positive about AIAS, that

currently there is not a capacity problem, that the AIAS is looking at long-term options, and that both airports remain good options for international cargo operations.

6.3 Risks to Alaska

The risks discussed above are risks borne by airlines that use the AIAS. Anchorage and Fairbanks residents, and potentially residents in other Alaskan communities are also at risk from taking action or not taking action to address delays for international cargo operations. These risks can be in the form of reductions in jobs, income, and potentially in air service.

6.3.1 Economic Impacts of International Cargo Operations

Improperly taking action or not taking action to address international cargo needs could clearly have a large economic effect on Anchorage. International cargo has a large economic impact on Anchorage according to economic impact studies completed in 2007 by the ISER and in 2012 by the McDowell Group.

According to the McDowell Group, international cargo contributed 3,416 jobs and $292 million to Anchorage economy in 2012 (see Table 6.3). According to ISER, international cargo was responsible for 34% of the jobs generated by ANC in 2007 and international cargo-related jobs offer higher salaries than the average Anchorage salary.

Table 6.3: ANC Direct and Indirect/Induced Jobs and Income

	Direct	Indirect/Induced	Total
Intl Cargo Jobs	2,153	1,263	3,416
Intl Cargo Income ($M)	$224.0	$67.6	$291.6

McDowell Group, 2012

According to ISER, each weekly flight by FedEx and UPS was estimated to create about 17 jobs (direct and indirect), and each weekly tech stop flights was estimated to create about 7.5 jobs.

6.3.2 Potential Air Service/Fare Impacts

While the local economy certainly receives economic benefits described above, the domestic passenger and cargo carriers also enjoy rates, fees, and charges at AIAS that are held lower because international cargo pays for approximately 70% of the airport rates and fees. AIAS receives no subsidy from local or state sources. The AIAS is self-sustaining, so any shortfall in

income must be passed along to the remaining airlines. Thus, if international cargo flights decline substantially, there could be a significant cost impact to the remaining airlines which in turn may affect both service levels and fare structures.

The correlation between airport costs and fares/service is not an exact science, but there is evidence that in some instances the former may affect the latter. Air fares, routes and schedule decisions involve complex evaluations which take into account many variables such as system-wide aircraft and crew utilization, market demand, competition, and last, but not least, capital and operating costs.

Over time, airport costs have become an increasing proportion of airlines' total expenses. As a result, airline senior management are paying more attention to airport costs when making fare and route decisions. For example, when Alaska Airlines changed the destination of its flights from Seattle to South Florida from Miami to nearby Fort Lauderdale, an Alaska official was quoted as follows:

"Miami and Fort Lauderdale airports are about 27 miles apart," Joe Sprague, Vice President of Marketing, said in a statement. "By redirecting our flight to the lower-cost Fort Lauderdale airport, we can serve the same geographic area and continue to offer our customers low fares." (*Seattle Times*, February 7, 2012)

In this case there was a close alternative, but that is not generally the case, causing airlines possibly to raise fares or discontinue/reduce service.

A commonly-used industry metric for measuring and comparing airport costs is cost per enplaned passenger (CPE), which is the total of landing fees, terminal rentals, and related costs divided by the number of passengers boarded at an airport, either for the airport as a whole, or for an individual airline. While not perfect, the CPE continues to be used as a measure of airport cost-effectiveness by both airlines and airports.

According to reports filed with the FAA (FAA Form 127) for the Fiscal Year ending June 30, 2012, the passenger carrier CPE at ANC was $9.72 and at FAI $8.44. The national average for all airports was $8.81, based on incomplete data given varying fiscal year reporting periods.

It is important to find ways to retain international cargo traffic at ANC. Failure to do so could lead to the possibility of significant cost burdens placed on the domestic passenger and cargo carriers which in turn would cause them to analyze both the fare structures for flights serving Alaska and the frequency levels of these flights. An increase in fares and/or decrease in service would have a negative impact on the people throughout the State of Alaska who rely on air transportation for basic mobility and also benefit from the revenue generated by tourism and other visitors. Nearly all of the flights serving rural parts of the state go through either ANC or FAI, so what happens at those airports can affect much of the population of Alaska.

7.0 FINDINGS/RECOMMENDATIONS

The AIAS Planning Study analysis, findings and recommendations should be used to guide future actions to retain and attract international cargo operations. For example, the analysis is already being used for the ANC and FAI Master Plans and Part 150 studies currently under way. Some of the key findings and recommendations are summarized below:

- At 258,000 operations per year and under current runway use procedures, ANC carriers are expected to experience over 30 minutes of average delay more than 10% of the time, from 11 AM to 7 PM, when tech stop and integrated cargo carriers have peak operations.
- When and if this level of operations will occur is uncertain primarily because international cargo operations are extremely difficult to accurately forecast.
- At 30 minutes of average delay in these peak hours, runway delays will likely cause some international cargo carriers to change how they operate at ANC and some may reduce or eliminate ANC operations.
- A loss of tech stop or integrated carrier traffic would significantly increase the landing fee rate paid by carriers still serving AIAS, which could also translate into increased fares and/or reduced flight frequencies by other carriers. Lost flights would also cause significant reductions in jobs and income in the local economy.
- Assuming the Baseline Forecast, shifting 50% of ANC's peak hours tech stop operations to FAI would eliminate the need for additional ANC runway capacity over the next 20 years.
- FAI's runway can handle the shifted tech stop traffic with minimal delays.
- Shifting tech stop traffic from ANC to FAI would eliminate the need for a new runway at ANC over the next 20 years, but AIAS cannot force tech stop carriers to fly from either airport. Hence, both airports should prepare for potential growth in tech stop flights. Master planning at both ANC and FAI should examine facility needs with and without a shift of tech stop flights from ANC to FAI.
- Potential expansion or improvements to tech stop hardstands, fueling, deicing, aircraft maintenance, and services to pilots should be investigated further by FAI and should be evaluated in the FAI Airport Master Plan.

- FAI should also examine if any more can be done to improve operations during diversion events. Some carriers indicated a reluctance to shift operations to FAI because prior diversions did not go smoothly.
- FAA-compliant financial incentives by the AIAS or others might induce ANC tech stop carriers to shift to FAI. FAA allows airport fee reductions, fee waivers, or use of airport revenue for certain promotional costs
- AIAS sponsored incentives come at a cost to all the other carriers operating from AIAS, but are less expensive and risky than construction of a new runway. Shifting tech stops from ANC to FAI, using an incentive program, should be tested prior to construction of a runway at ANC.
- Efforts to shift tech stops to FAI should involve private service providers on and off the airport who would serve tech stop carriers, such as hotels, aircraft maintenance, fueling and deicing, and carriers who would supply air service for crew changes. These groups might also offer incentives.
- Shifting tech stop traffic to FAI is most likely to be successful if it focuses on tech stop carriers that already see some economic/geographic advantages to operate from FAI. Carrier route systems emphasizing flights over Russian airspace, e.g., to and from the People's Republic of China, and eastern North American points would have shorter routes to FAI.
- ANC operations levels have dropped for several years, diminishing the need to address ANC capacity issues. Offering incentives to shift tech stop traffic to FAI should only be considered after ANC sees multiple years of international cargo traffic growth, and is confident growth will continue. At that time AIAS should work closely with the FAA to determine if and how the FAA incentives rules apply to AIAS' situation.
- If AIAS experiences strong growth in international cargo operations but is unsuccessful in shifting traffic to FAI, ANC should pursue other alternatives to increase airfield capacity. Other capacity enhancing alternatives that do not require capital costs or incentives costs should also be explored in the ANC Master Plan. This may include consideration of changing ANC's runway use program to maximize efficiency, reduce delays, and maximize use of existing infrastructure before making new infrastructure

investments. If a new runway is needed at ANC, a trigger point of about 10-15 years prior to reaching 258,000 operations should be used.