

EXECUTIVE SUMMARY

Introduction

The Nanaimo Airport Commission (NAC) engaged Jacobs Consultancy Canada Inc. (JC) to undertake a demand and capacity analysis of the terminal and groundside areas, which includes the existing terminal and the parking facilities. The terminal and groundside demand capacity analysis is based on the peak hour passenger forecasts that were previously developed by JC.

Passenger Terminal Demand/Capacity Analysis

Each of the processors in the passenger terminal has different processing capabilities. To measure each of the existing terminal processors capacities a series of level of service (LOS) standards were applied.

The LOS standards used in modeling the terminal are based on:

- International Air Transport Association (IATA) Airport Development Reference Manual 9th Edition, January 2004; and
- Benchmarking that JC created based on observations at other airports.

Overall, the current terminal demand is at approximately 65% of the overall terminal capacity. The areas that currently experience congestion include the security check points and arrivals baggage area.

Forecast Passenger Terminal Area Requirements

It is assumed in the forecast years that Common Use Terminal Equipment (CUTE) and/or Common Use Self Serve (CUSS) kiosks will be the standard.

The forecast terminal area requirements for each forecast peak hour scenario are highlighted below. The forecast terminal requirements are based on peak hour passenger throughput of 42, 100, and 115, which roughly corresponds to the 2006, 2020 and 2026 planning years. However, the plan is based on increasing passenger volumes which may occur sooner or later than the planning year, but which will act as the trigger point for additional capital investment. Additionally, the 186 passenger forecast represents a maximum peak hour scenario of a Dash 8/CRJ and a charter B-737 service operating concurrently.

Excluded from the space analysis are estimates for a customs and immigration facility. It is understood that there is a customs facility of approximately 115 square metres that serves the current transborder demand. Scheduled transborder flights will necessitate expansion to these facilities.

Forecast Terminal Area Requirements Based on Indicative Passenger Loading

Terminal Element	Existing Area	42 PPHP (2006)	100 PPHP (2020)	115 PPHP (2026)	186 PPHP (Max)
Processors					
Curb Length (m)	50	21	50	58	93
Check-in Counters	8	2	5	6	9
Security Points - Number	1	1	2	2	2
Hold Room Seating	65	34	80	92	148
Spaces					
Departures Concourse Area (m2)	125	74	187	214	346
Check-in Counter Space (m2)	38	14	41	46	75
Security Points Space (m2)	50	45	90	90	90
Hold Room Space (m2)	90	89	211	243	391
Concessions	25	37	56	65	84
Car Rentals	20	9	9	11	14
Bag Make up area (m2)	65	50	83	90	130
Customs/Imm. Area (m2)	115	n/a			
Domestic Bag Claim (m2)	70	140	280	280	525
Bag Claim Display Length	10	6	10	10	18
Mechanical/Elec (m2)	35	45	90	98	163
Circulation/restrooms	180	122	247	270	448
Other Agencies Support Space (m2)	20	28	33	37	37
ATO/Support/Airline Offices (m2)	97	37	66	66	95
Landside Arrivals Hall	55	39	92	105	170
Miscellaneous	236	75	85	85	125
Total Nominal Area	1,231	807	1,521	1,652	2,684

Note: PPHP = Planning Peak Hour Passengers

Source: Jacobs Consultancy, 2007. All measurements are in square metres. Red indicates areas that are deficient. Mechanical and Electrical areas are calculated based on a percentage of the total space, and may fluctuate based on the specific equipment types at the airport. Calendar Dates are indicative only.

Groundside Parking Facilities

There are currently 187 parking spaces at the airport, which includes public parking, employee parking and car rentals. A demand and capacity assessment for long-term and short-term parking was undertaken for each of the forecast scenarios. The estimated requirements, based on the annual and peak hour passenger forecasts, are shown below.

Parking Demand Estimates

Indicative Year	PPHP	Annual E/D Air PAX	Short-Term Spaces	Long-Term Spaces	Staff & Rental	Total Spaces
2006	42	137,700	46	96	45	187
2010	73	190,000	55	133	45	233
2015	84	248,000	59	174	45	278
2020	100	288,000	64	203	45	311
2026	115	334,000	68	235	45	348
Maximum	186	520,000	90	367	45	502

Note: PPHP = Planning Peak Hour Passengers
Source: Jacobs Consultancy, February, 2007.

Capital Estimates and Assumptions

Capital costs were developed for the terminal building and the groundside parking facilities. A summary of the 2005 unit prices and total costs is presented in the tables below. All unit pricing was calculated using 2006 (current) dollars and is a Class "D" estimate.

It is estimated that the total terminal expansion and existing rehabilitation costs to accommodate forecast activity to 2026 are approximately \$2.0 Million.

Terminal and Groundside Capital Costs - Maximum Peak of 115 passengers

Nanaimo Airport Unit Prices and Total Capital Estimates				
Facility	Unit	Rate (2006)	Area/Stalls	Costs
Air Terminal Building (New)	\$ per m2	\$2,500	421	\$1,052,500
Air Terminal Building (Existing)	\$ per m2	\$400	1231	\$492,400
Groundside Parking Lots	\$ per stall	\$3,000	161	\$483,000
Total				\$2,027,900

Source: Jacobs Consultancy, 2007.

Additionally, capital costs were calculated for the terminal to accommodate 186 peak hour passengers. The total capital cost to accommodate this peak is approximately \$5.1 million.

Terminal and Groundside Capital Costs – Maximum Peak of 186 passengers

Nanaimo Airport Unit Prices and Total Capital Estimates				
Facility	Unit	Rate (2006)	Area/Stalls	Costs
Air Terminal Building (New)	\$ per m2	\$2,500	1453	\$3,632,500
Air Terminal Building (Existing)	\$ per m2	\$400	1231	\$492,400
Groundside Parking Lots	\$ per stall	\$3,000	315	\$945,000
Total				\$5,069,900

Source: Jacobs Consultancy, 2007.

Further refinement of these estimates is necessary when the project progresses to the design stage.

As the airport airside and groundside infrastructure expands to meet demand, the NAC will need to develop a community water and sewer service. Preliminary cost projections are being developed. In the interim a project cost of \$3 Million is assumed.