

APPENDIX F

Terminal Area Master Plan Extract



Erie International Airport

**TERMINAL AREA ACCESSIBILITY ANALYSIS
AND TERMINAL AREA MASTER PLAN**

**4. Terminal Building and Terminal
Area Facility Requirements**

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Terminal Building and Terminal Area Facility Requirements

The following space requirements analysis and projections are based on the historical data as well as actual 1994 peak hour enplanements and aircraft with projections through year 2014. They correspond to the peak hour projections of the moderate growth forecast.

The moderate growth forecast prepared using established FAA criteria determines future needs in five-year time frames. Surpluses and deficiencies are identified. Existing and future capacity-enhancement needs are identified, as are options for providing them based on existing or future facilities demand requirements.

Landside facilities at the Airport were analyzed in terms of their capacity and ability to accommodate current demand. Using FAA guidelines, as well as consultant-developed factors, capacities of facilities such as terminal, aircraft and auto parking, and access roads were determined. To determine their adequacy, these capacities have been compared to current demand.

The terminal building and its associated support facilities, and surface access elements that determine existing and future levels of demand and capacity were analyzed. Specific terminal elements examined include airline gate positions, airline apron areas, airline passenger terminals (ticketing, baggage claim, operations areas, public space, holdrooms, concessions, amenities and canopies).

It should be noted that the 5 year increment space forecast represents an approximation.

Adjustments may be required in the drawing of concept plans, depending upon existing site and/or facility configuration. This is particularly apparent in the case of renovation/expansion of an existing terminal building where existing structure and mechanical and electrical spaces may be difficult or expensive to relocate or replace.

Adjustments are also necessitated because of new terminal concept configuration alternatives, construction phasing and construction practicalities.

TERMINAL BUILDING AREA REQUIREMENT PROJECTIONS
GROSS ENCLOSED AREA (Square Feet)
ERIE INTERNATIONAL AIRPORT
ERIE, PA

	Existing 1994	Required 1994	Forecast 1999	2004	2009	2014
FIRST LEVEL						
AIRLINE TENANT SPACE						
Ticket Counters (L.F.) Note 1	(90 LF)	(66 LF)	(87 LF)	(108 LF)	(138 LF)	(159 LF)
Ticketing	1,197	660	870	1,180	1,380	1,590
Offices, Operations & Outbound Baggage Area	4,550	4,450	4,963	5,380	5,700	6,100
Airline Office (Vacant)	<u>560</u>	<u>560</u>	-	-	-	-
Sub Total	6,307	5,670	5,833	6,480	7,080	7,690
CONCESSIONS TENANT SPACE						
Rental Car	567	750	1,000	1,000	1,000	1,250
News/Gifts/Retail (Note 2)	306	306	400	400	400	600
Food/Beverage, Kitchen (Note 3)	3,270	3,270	3,270	3,270	3,600	4,000
Lounge Bar	370	400	400	400	600	800
Games/Vending	257	257	260	260	260	260
Travel Agency	<u>225</u>	<u>225</u>	<u>225</u>	<u>320</u>	<u>320</u>	<u>320</u>
Sub Total	4,748	5,280	5,555	5,650	6,180	7,230
PUBLIC SPACE - STERILE						
Security Screening Area	276	320	320	320	400	400
Security Office	0	60	60	60	60	60
Departure Lounge	3,460	2,760	4,100	5,000*	5,800*	7,050*
Circulation (Post-Security Circulation)	<u>4,347</u>	<u>2,840</u>	<u>3,440</u>	<u>5,200</u>	<u>5,600</u>	<u>6,000</u>
Sub Total	8,330	5,980	7,920	10,580	11,860	13,710
PUBLIC SPACE - NON-STERILE						
Central Lobby Circulation, Waiting	3,150	3,150	5,370	6,250	6,250	6,250
Baggage Claim Display (L.F.)	(57 LF)	(90 LF)	(110 LF)	(130 LF)	(155 LF)	(180 LF)
Active Baggage Claim Area, Claim Device	1,182	1,800	2,200	2,600	3,100	3,600
Baggage Claim Area, Circulation	1,560	3,500	5,100	6,700	7,600	8,500
Restrooms/Janitorial Closets	1,505	1,100	1,100	1,700	1,700	2,200
Kidsport (in holdroom)	0	30	50	50	50	50
Information, Exhibits	20	400	400	400	400	400
Business Center	0	400	400	400	600	600
Ticket Lobby, Circulation, Vertical Circulation	<u>4,180</u>	<u>4,180</u>	<u>4,180</u>	<u>4,180</u>	<u>4,980</u>	<u>4,980</u>
Sub Total	11,597	14,560	16,860	19,460	24,680	26,580
SUPPORT SPACE						
Baggage Unloading Area (Enclosed)	-	960	960	960	1,260	1,400
Airport Police/Security Operations	<u>470</u>	<u>470</u>	<u>470</u>	<u>700</u>	<u>700</u>	<u>700</u>
Sub Total	470	1,430	1,430	1,660	1,960	2,100
SUB TOTAL, FIRST FLOOR	31,452	32,920	37,598	43,830	51,760	57,310

* Includes Second Level Holdroom

	Existing 1994	Required 1994	Forecast 1999	2004	2009	2014
BASEMENT LEVEL						
SUPPORT SPACE						
Building Maintenance (Note 4)	680	680	680	800	800	800
Maintenance Office	-	120	120	120	120	120
Airport Storage	1,675	1,675	1,675	1,675	1,900	1,900
Building Mechanical, Electrical	2,760	2,760	3,060	3,060	3,260	3,460
Circulation, Horizontal and Vertical	<u>610</u>	<u>610</u>	<u>610</u>	<u>610</u>	<u>610</u>	<u>610</u>
Sub Total	5,725	5,845	6,245	6,365	6,790	6,990
SECOND LEVEL A						
FAA						
FAA Offices	3,210	3,210	3,210	3,210	3,210	3,210
Circulation Corridor	745	745	745	745	745	745
Observation Room	845	845	845	845	845	845
Circulation	<u>80</u>	<u>80</u>	<u>80</u>	<u>80</u>	<u>80</u>	<u>80</u>
Sub Total	4,880	4,880	4,880	4,880	4,880	4,880
SECOND LEVEL B						
AIRPORT ADMINISTRATION						
Airport Manager	265	265	265	265	265	265
Assistant Airport Manager	208	208	208	208	208	208
Reception	210	210	210	210	210	210
Administration Area/Circulation/Storage	210	210	210	210	210	210
Conference Room/Kitchenette	560	700	700	700	700	700
Kitchenette	50	80	80	80	80	80
Restroom	0	0	0	140	140	120
Work Room	0	90	140	140	140	140
Records/Storage	90	0	0	120	120	160
Office	0	0	0	120	120	120
Circulation, Horizontal and Vertical	<u>330</u>	<u>330</u>	<u>330</u>	<u>330</u>	<u>330</u>	<u>330</u>
Sub Total	1,593	2,093	2,143	2,443	2,403	2,543
TOTAL TERMINAL AREA (Excluding FAA)	38,770	40,850	45,986	52,298	60,953	67,100
THIRD LEVEL						
FAA						
Circulation	<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>
Sub Total	1,415	1,415	1,415	1,415	1,415	1,415
CAB LEVEL						
Cab	270	270	270	270	270	270
Vertical Circulation	<u>42</u>	<u>42</u>	<u>42</u>	<u>42</u>	<u>42</u>	<u>42</u>
Sub Total	312	312	312	312	312	312
	<u>40,497</u>	<u>42,585</u>	<u>48,013</u>	<u>54,325</u>	<u>62,680</u>	<u>68,870</u>
TOTAL ENCLOSED AREA						
CURB CANOPY						
Outbound Baggage Canopy	2,108	2,108	2,108	2,108	2,520	2,940
Baggage Unloading Canopy	312	312	-	-	-	-
Ramp Equipment Canopy	840	840	840	840	-	-
NOAA (Including Tower Base)	3,078	3,078	3,078	3,078	3,078	3,078
AIRCRAFT GATES						
Jet	2	1	1	1	2	3
Regional Airline	4	3	3	4	3	3
TOTAL	6	4	4	5	5	6

Note 1: Does not include Miller Travel counters, 19 L.F. Includes 16 L.F. of vacant counter.

Note 2: Located within restaurant currently.

Note 3: Includes 1,230 S.F. in basement. Incorporate Authority preference for full service restaurant.

Note 4: Airport Maintenance in separate building.

**PASSENGER TERMINAL
PROJECTED GROUND TRANSPORTATION REQUIREMENTS
ERIE INTERNATIONAL AIRPORT
ERIE, PA**

	Existing 1994	Required 1994	Forecast 1999	2004	2009	2014
AUTO PARKING						
Public Parking Spaces - Short Term (1)	103	62	77	93	113	137
Public Parking Spaces - Long Term (1)	<u>541</u>	<u>245</u>	<u>304</u>	<u>369</u>	<u>444</u>	<u>546</u>
Subtotals	644	307	381	462	562	683
Auto Ready Rental/Return Spaces (2)	66	53	66	80	97	118
Auto Rental Storage	110	110	110	110	110	160
Employee Parking (3)	96	68	77	93	114	138
Freight Customers	0	3	4	4	4	6
Airport Administration	2	2	2	3	3	3
OTHER PARKING						
NOAA (or alternate use)	3	3	3	3	3	3
FAA, Customs	9	9	9	9	9	9
Employees (Included with Employee Parking)	8	12	12	12	12	12
ENPLANING CURB (4)						
Terminal Curb	200 LF	100 LF	120 LF	140 LF	180 LF	220 LF
Commercial Curb	<u>210 LF</u>	<u>40 LF</u>	<u>60 LF</u>	<u>60 LF</u>	<u>60 LF</u>	<u>80 LF</u>
Total	410 LF	140 LF	180 LF	200 LF	240 LF	300 LF
Auto Spaces	10	5	6	7	9	11
Taxi/Limo Spaces	<u>8</u>	<u>1+1</u>	<u>2+1</u>	<u>2+1</u>	<u>2+1</u>	<u>3+2</u>
Total	18	7	9	10	12	16
DEPLANING CURB (4)						
Terminal Curb	130 LF	120 LF	160 LF	200 LF	240 LF	300 LF
Commercial Curb	<u>240 LF</u>	<u>40 LF</u>	<u>60 LF</u>	<u>60 LF</u>	<u>100 LF</u>	<u>100 LF</u>
Total	370 LF	160 LF	220 LF	260 LF	340 LF	400 LF
Auto Spaces	6	6	8	10	12	15
Taxi/Limo Spaces	<u>8</u>	<u>1+1</u>	<u>2+1</u>	<u>2+1</u>	<u>3+2</u>	<u>3+2</u>
Totals	14	8	11	13	17	20
TOTAL ENPLANING AND DEPLANING CURB	780 LF	300 LF	400 LF	460 LF	580 LF	700 LF

- Projections utilize the 1993 estimate of spaces utilized at 60% of short term and 45% long term parking lots. Projections are increased proportional to the increase in peak hour enplanements and annual increases.

2. 1994 need based on average of current need projections supplied by existing auto rental companies and increased relative to similar airports at projected enplanement levels. Auto rental storage is assumed to be off-site or in available long term spaces.
3. It is assumed the range of employee parking positions is 25 to 40 spaces per 100,000 enplanements not including concession tenant parking.
4. Terminal curb requirements for the enplaning and deplaning curbs were calculated separately. For the enplaning curb, the vehicle mix, the percentage of each type of vehicle (auto, taxi/limo) utilizing the curb was assumed to be 80% auto, 10% taxi/limo. The curb includes 60% of the autos and 100% of the taxis/limos.

The peak 20 minutes of the peak hour (average day peak month) was assumed to be 60% of the peak hour activity. The dwell time at the curb for each vehicle type at the enplaning curb was assumed to be 3.0 minutes for autos and 3.5 minutes for taxis/limos. Dwell time at the deplaning curb was assumed to be 4.0 minutes for autos and taxis/limos.

All rental cars are assumed to be picked up and returned at the auto ready rental spaces and not to impact the terminal curbs.

**TERMINAL SPACE REQUIREMENTS
1990 AIRPORT MASTER PLAN (REFERENCE)
ERIE INTERNATIONAL AIRPORT, PA**

AIRLINE TICKET COUNTER REQUIREMENTS/SUPPORT SPACES

FUNCTIONAL AREA	AVAILABLE	1990	1995	2000	2010
Ticket Counter Frontage (L.F.)	87	70	80	90	110
Ticket counter Area (S.F.)	696	560	640	720	880
ATO/Support Area (S.F.)	2,880	3,500	4,000	4,500	5,200

TICKET AND WAITING LOBBY

Public Lobby areas include ticket and waiting lobbies. Queuing areas for ticketing should be planned to be at least twenty feet deep with additional room for lateral circulation without congestion. The recent improvements in the ticketing concourse have provided for adequate lobby area. However, additional ticketing lobby

will be necessary in the long term when the ticket counter needs expansion.

As indicated earlier, the waiting lobby is also used as departure lounge for those commuter flights that do not require security processing. Because of this, an additional waiting lobby could become necessary by 1995.

PUBLIC LOBBY REQUIREMENTS

	AVAILABLE	1990	1995	2000	2010
Ticket Lobby (S.F.)	1,740	1,400	1,600	1,800	2,200
Waiting Lobby (S.F.)	1,800	1,600	1,800	2,100	2,600

BAGGAGE CLAIM REQUIREMENTS

	AVAILABLE	1990	1995	2000	2010
Bag Input (S.F.)	1,260	1,600	1,700	1,800	2,200
Bag Claim Display (S.F.)	54	70	76	84	100
Bag Claim Lobby (S.F.)	1,100	1,050	1,200	1,300	1,500

TERMINAL SERVICES REQUIREMENTS

	AVAILABLE	1990	1995	2000	2010
Food & Beverage (S.F.)	3,000	2,500	2,800	3,200	3,900
Rental Car Counter/Office (S.F.)	440	440	440	480	480
Gift Shop (S.F.)	420	420	420	500	600
Restroom (S.F.)	1,500	1,000	1,200	1,300	1,600

DEPARTURE LOUNGE REQUIREMENTS

	AVAILABLE	1990	1995	2000	2010
Departure Lounge Area (S.F.)	1,800	2,050	2,400	3,250	4,300

**AIRCRAFT GATE REQUIREMENTS
1990 AIRPORT MASTER PLAN (REFERENCE)
ERIE INTERNATIONAL AIRPORT, PA**

AIRLINE GATE POSITION REQUIREMENTS

	AVAILABLE	1990	1995	2000	2010
Aircraft Parking Positions					
Major Airlines	2	2	2	3	4
Commuter Airlines	5	5	5	5	5
Terminal Gates					
Major Airlines	2	2	2	3	4
Commuter Airlines	2	2	2	3	3

AIRLINES OPERATIONS FORECAST

	ACTUAL 1988	1990	1995	2000	2010
SEATING RANGE					
> 155	- %	- %	- %	- %	- %
130-154	1.1%	- %	5.0%	5.0%	10.0%
105-129	31.1%	30.0%	25.0%	20.0%	20.0%
80-104	0.5%	5.0%	10.0%	20.0%	25.0%
40-79	5.5%	5.0%	10.0%	15.0%	15.0%
20-39	7.1%	10.0%	10.0%	10.0%	10.0%
10-19	53.8%	50.0%	40.0%	30.0%	20.0%
< 10	0.9%	- %	- %	- %	- %
Seats Per Departure	52.1	53.4	60.0	64.0	7.8
Boarding Load Factor	0.37	0.39	0.39	0.39	0.39
Enplanements Per Departure	19.1	20.8	23.4	25.0	28.9
Annual Enplanements (Total)	171,231	190,000	222,000	251,000	316,000
Major Airlines	116,437	132,000	160,000	186,000	253,000
commuter Airlines	54,794	58,000	62,000	65,000	63,000
Annual Departures (Total)	8,971	9,150	9,500	10,050	10,950
Major Airlines	2,934	3,200	3,800	4,500	6,000
Commuter Airlines	6,037	5,950	5,700	5,550	4,950
Annual Operations (Total)	17,942	18,300	19,000	20,100	21,900
Major Airlines	5,868	6,400	7,600	9,000	12,000
Commuter Airlines	12,074	11,900	11,400	11,100	9,900

TYPICAL AIRCRAFT

> 130	B727-200, B737-300, MD80
105-129	DC-9-30, B737-200
80-104	BAC-111, B727-100, DC-9-10, BAe 146
40-79	F-27, CV 580, ATR 42
20-39	Shorts 360, Sf340, EMB 120
10-19	Metroliner, Jetstream 31, Beech 1900
< 10	Cessna 402, Piper Navajo

**TERMINAL CURB AND PARKING REQUIREMENTS
1990 AIRPORT MASTER PLAN (REFERENCE)
ERIE INTERNATIONAL AIRPORT, PA**

TERMINAL CURB REQUIREMENTS					
	AVAILABLE	1990	1995	2000	2010
Curb Length (L.F.)	750	405	465	510	630
VEHICLE PARKING REQUIREMENTS - TERMINAL AREA					
	AVAILABLE	1990	1995	2000	2010
Public					
Short Term	106	78	91	102	129
Long Term	<u>538</u>	<u>425</u>	<u>494</u>	<u>555</u>	<u>702</u>
Sub Total	644	503	585	657	831
Employee	92	76	82	87	95
Rental Car					
Ready	31	52	61	69	86
Return	35	16	17	20	25
Storage	<u>120</u>	<u>102</u>	<u>117</u>	<u>132</u>	<u>164</u>
Sub Total	187	170	195	221	275
TOTAL PARKING	923	749	862	965	1,201