
Appendix A - Survey Results

Following is description of the methodology and results of the T.F. Green Airport 2000 departing passenger survey and terminal observation survey. The surveys were undertaken to gain a better understanding of traveler characteristics and of how the existing terminal layout is performing.

A.1 Passenger Survey

The passenger survey process consisted of developing a survey instrument (questionnaire), developing an appropriate methodology, selecting a representative sample, survey conduct, data entry and analysis, and documentation of results.

A.1.1 Passenger Survey Methodology

Survey Questionnaire

The survey questionnaire was adapted from previously used passenger survey questionnaires, and was modified as appropriate to collect specific data pertinent to future planning efforts at T.F. Green Airport. Following are the key characteristics surveyed:

- Travel party size
- Trip purpose
- Destination region
- Place of origin
- Geographic distribution of originations
- Mode of access
- Air passengers in vehicle
- Use of the parking facilities
- Method of checking-in for flight
- Number of well-wishers
- Amount of luggage
- Trip duration
- Resident/visitor status
- Amenities used
- Verbatim comments

Survey Timing

The survey was designed to provide estimates of traveler characteristics for locally originating passengers during average travel periods. Therefore, October (a month with an average number of daily passengers) was selected as the appropriate time to conduct the survey.

Due to the resource limitations, the survey was limited to a three-day period. It was decided to conduct the data collection during a Tuesday, Wednesday, and Thursday to obtain traveler characteristics of passengers during an average weekday (versus an average day, which would require surveying over the weekend).

Sampling Plan and Sample Selection

A random sample of 20 flights was drawn from a listing of flights obtained from the Official Airline Guide (OAG). The listing unit of the sample was a scheduled passenger flight departing during the survey period. The sample frame constituted the 370 passenger flights scheduled to depart T.F. Green Airport during the three-day period of October 24, 25, and 26, 2000. **Table A-1** shows the flights in the sample.

Survey Conduct

The surveys were conducted at the gate holdrooms. Approximately one-and-one-half hours before a flight's scheduled departure time, one or two surveyors (depending on the anticipated number of passengers) approached the gate area and discussed the survey procedure with the gate agent. To increase the response rate, a small sign was placed on the gate counter notifying passengers that the flight was being surveyed. Surveyors distributed questionnaires to passengers after they checked-in at the gate. Once completed, the surveyors retrieved the questionnaire from the passengers prior to boarding. After the flight "closed", the surveyors asked the gate agent for the revenue passenger originations and connections on the flight to determine the flight's response rate and to develop the appropriate weights for each record.

Data Entry/Editing/Coding

Survey results were entered into a computer database for analysis. An editing process was then conducted to correct obvious respondent errors. Missing values were entered, where possible, based on the remaining data provided by the respondent. If the record was determined to not meet a minimum level of completion (i.e., had a high item non-response rate), the record was removed from the database.

Weighting of Sample Records

Each record was weighted in a two-step process. The first weight accounted for the non-responding passengers on each flight. This "flight weight" was determined by dividing the total revenue passenger enplanements on board by the number of valid questionnaires obtained from the flight. For example, if there were 100 passengers on a particular flight and 50 valid questionnaires were returned, each valid record was weighted by a factor of 2.00. If all 100 passengers provided valid questionnaires, then each record was weighted by a factor of 1.00. The higher the response rate on the flight, the lower the flight weight; the lower the response rate, the higher the flight weight.

Table A-1
LIST OF SURVEYED FLIGHTS
T.F. Green Airport

	<u>Departure Time</u>	<u>Published Carrier</u>	<u>Flight Number</u>	<u>Destination</u>	<u>Equipment</u>	<u>No. of Seats</u>
Tuesday, October 24, 2000						
1	0600	UA	593	ORD	72S	147
2	0759	US	183	PHL	319	120
3	1030	US	473	CLT	734	144
4	1155	US	341	DCA	D9S	103
5	1315	US	4582	EWR	BE1	19
6	1700	AA	5088	JFK	SF3	34
7	1840	WN	1644	ISP	73G	137
Wednesday, October 25, 2000						
8	0700	CO	1477	EWR	M80	141
9	0755	CO	243	IAH	735	104
10	1025	US	3632	LGA	DH8	37
11	1200	DL	2063	ATL	M80	142
12	1400	WN	772	BNA	733	137
13	1505	UA	7637	IAD	CRJ	50
14	1840	US	2736	BWI	73M	111
15	1900	US	3638	LGA	DH8	37
Thursday, October 26, 2000						
16	1030	US	473	CLT	734	144
17	1154	US	2003	PIT	733	126
18	1255	WN	561	TPA	733	137
19	1600	DL	6389	LGA	FRJ	32
20	2035	US	2978	BWI	73M	111

Note: Listing based on random sample of 20 flights operating during the period.

Source: October 2000 Official Airline Guide via Back Information Services; HNTB analysis.

Each record was then weighted by the inverse of the probability of selecting the sampled flights (i.e., 370/20, or 18.500). Finally, the results were divided by three to convert three-day totals to average weekday totals, which is considered to be an easier unit to work with. *All survey results are presented using weighted responses reflecting average weekday activity.* **Table A-2** shows the number of completed questionnaires received, the number of passengers on the flights surveyed, and the total estimated passenger enplanements at T.F. Green Airport for the survey period. The overall response rate was 45 percent.

Table A-2
SURVEY WEIGHTING
T.F. Green Airport

Completed Questionnaires	558
Total Passengers on Surveyed Flights	1,235
Response Rate	45.2%
Total Estimated Departing Passengers During Three-day Survey Period	22,848
Average Daily Departing Passengers (Three-day total divided by three)	7,616

Source: HNTB analysis.

A.1.2 Departing Passenger Survey Results

Following is a summary of the results obtained from the T.F. Green Airport 2000 Departing Passenger Survey. As noted previously, the results are weighted to reflect an average weekday.

Travel Party Size

Table A-3 shows that nearly half of all passengers beginning their trip at T.F. Green Airport were traveling alone. About one-third of passengers were traveling with one other passenger (i.e., a party size of two). The average party size was 1.4.

Table A-3
AVERAGE TRAVEL PARTY SIZE
T.F. Green Airport

Party Size	Respondents ¹	Percent
1	3,564	46.8%
2	2,625	34.5%
3	733	9.6%
4	694	9.1%
5 or more	<u>0</u>	<u>0.0%</u>
Total Respondents:	7,616	100.0%
Avg. Party Size:	1.4	

¹ Weighted to reflect average weekday activity.

Source: HNTB analysis.

Trip Purpose

Due to the time of year the survey was conducted (i.e., during an average travel period), the distribution of business and pleasure travel was nearly equal, as shown in **Table A-4**.

Table A-4
TRIP PURPOSE
T.F. Green Airport

	Respondents ¹	Percent
Business/Convention/Conference	3,741	49.1%
Vacation/Personal	<u>3,875</u>	<u>50.9%</u>
Total Respondents:	7,616	100.0%

¹ Weighted to reflect average weekday activity.

Source: HNTB analysis.

Destination Region

As shown in **Table A-5**, nearly 64 percent of T.F. Green Airport passenger originations were ending their trip in the Northeast or Southeast. Approximately two percent of passengers were traveling to an international destination. (These results should be interpreted with caution, because of the limited number of flights sampled.)

Table A-5
AIRLINE PASSENGER SURVEY DESTINATION REGION
T.F. Green Airport

Region	Respondents ¹	Percent
Northeast (CT, DE, MA, MD, ME, NH, NJ, NY, PA, RI, VT)	1,860	24.4%
Southeast (DC, FL, GA, NC, SC, VA)	2,997	39.4%
Midwest (IL, IN, KY, MI, MO, OH, WI, WV)	322	4.2%
Midsouth (AL, AR, LA, MS, TN)	467	6.1%
North Central (IA, MN, MT, ND, NE, SD, WY)	23	0.3%
South Central (CO, KS, NM, OK, TX)	677	8.9%
Northwest (AK, ID, OR, WA)	151	2.0%
Southwest (AZ, CA, HI, NV, UT)	945	12.4%
International	<u>174</u>	<u>2.3%</u>
Total Respondents:	7,616	100.0%

¹ Weighted to reflect average weekday activity.

Source: HNTB analysis.

Place of Origin

Table A-6 shows that about two-thirds of passengers began their ground trip to T.F. Green Airport from a private residence. About 1-in-5 passengers began from a hotel/motel. The remaining passengers left from a place of business.

Table A-6
PLACE OF ORIGIN
T. F. Green Airport

<u>Place of Origin</u>	<u>Respondents</u> ¹	<u>Percent</u>
Private Residence	5,084	66.8%
Place of Business	972	12.8%
Hotel/Motel	1,549	20.3%
Other	<u>11</u>	<u>0.1%</u>
Total Respondents:	7,616	100.0%

¹ Weighted to reflect average weekday activity.

Source: HNTB analysis.

Geographic Distribution of Originations

Just over half of all T.F. Green Airport passengers began their ground trip to the airport from within the state of Rhode Island, as shown in **Table A-7**. Nearly 40 percent originated in Massachusetts; while about six percent came from Connecticut.

Mode of Access to Airport

As shown in **Table A-8**, about 60 percent of originating passengers came to the airport in a personal or company car. Approximately 26 percent of passengers arrived by rental car, and nearly eight percent came in a taxi. Mass transit was used by less than one percent of travelers.

Air Passengers in Vehicle

Table A-9 shows that the average number of air passengers per auto (private, company, and rental car) is 1.8.

Table A-7
GEOGRAPHIC DISTRIBUTION OF PASSENGER ORIGINATIONS
T.F. Green Airport

	<u>Respondents¹</u>	<u>Percent</u>
Rhode Island Counties		
Bristol	71	0.93%
Kent	839	11.02%
Newport	701	9.20%
Providence	1,952	25.63%
Washington	569	7.47%
<i>Subtotal Rhode Island Counties</i>	4,132	54.25%
Massachusetts Counties		
Barnstable	301	3.95%
Bristol	949	12.46%
Dukes	11	0.14%
Essex	21	0.28%
Middlesex	332	4.36%
Norfolk	700	9.19%
Plymouth	156	2.05%
Suffolk	162	2.13%
Worcester	379	4.98%
<i>Subtotal Massachusetts Counties</i>	3,011	39.54%
Connecticut Counties		
Middlesex	21	0.28%
New Haven	11	0.14%
New London	311	4.08%
Tolland	18	0.24%
Windham	74	0.97%
<i>Subtotal Connecticut Counties</i>	435	5.71%
New Hampshire Counties		
Grafton	38	0.50%
<i>Subtotal New Hampshire County</i>	38	0.50%
Total Respondents:	7,616	100.00%

¹ Weighted to reflect average weekday activity.
Source: HNTB Analysis.

Table A-8
MODE OF TRAVEL TO THE AIRPORT
T.F. Green Airport

<u>Mode</u>	<u>Respondents</u> ¹	<u>Percent</u>
Personal/Company Car	4,531	59.5%
Rental Car	1,995	26.2%
Door-to-door Shuttle Van	104	1.4%
Hotel/Motel Courtesy Vehicle	170	2.2%
Taxi	577	7.6%
RIPTA	30	0.4%
Limousine	196	2.6%
Other	<u>13</u>	<u>0.2%</u>
Total Respondents:	7,616	100.0%

¹ Weighted to reflect average weekday activity.

Source: HNTB analysis.

Table A-9
AVERAGE NUMBER OF AIR PASSENGERS PER
PERSONAL/COMPANY/RENTAL CAR
T.F. Green Airport

<u>Air Passengers per Vehicle</u>	<u>Respondents</u> ¹	<u>Percent</u>
1	3,060	46.9%
2	2,143	32.8%
3	651	10.0%
4	<u>671</u>	<u>10.3%</u>
Total Respondents:	6,525	100.0%
Average Number of Air Passengers Per Personal/Company/Rental Vehicle		1.8

¹ Weighted to reflect average weekday activity.

Source: HNTB analysis.

Private Auto Behavior

About 26 percent of all departing passengers arriving by private auto were dropped off at the curb, with the vehicle leaving the airport (**Table A-10**). An additional 16 percent of passengers reported that they were dropped off at the curb with the vehicle continuing to a parking location. The majority of passengers (58 percent) arriving by private auto responded that the vehicle in which they arrived was driven directly to a parking facility, without stopping at the curb.

Table A-10
PASSENGERS ARRIVING BY AUTO--DROP-OFF OR PARKED
T.F. Green Airport

	<u>Respondents</u> ¹	<u>Percent</u>
Dropped-off Only	1,701	26.1%
Dropped-off then Parked	1,028	15.8%
Driven Directly to Parking	<u>3,796</u>	<u>58.2%</u>
Total Respondents:	6,525	100.0%

¹ Weighted to reflect average weekday activity.

Source: HNTB analysis.

Parking Lot Use

As shown in **Table A-11**, about 27 percent of passengers reporting the vehicle in which they traveled used a parking facility used the hourly garage. About 19 percent used the daily garage, while one-third used the weekly garage. Express Valet and off-airport parking were each used by just 10 percent of passengers.

Parking Duration

More than 90 percent of the passengers reporting their vehicle was parked in the Hourly Garage indicated the vehicle was there for less than five hours, as shown in **Table A-12**. At the remaining lots, more than 90 percent of passengers indicated their vehicle would be parked at least five hours.

Table A-11
PARKING LOT DISTRIBUTION ²
T.F. Green Airport

	<u>Respondents</u> ¹	<u>Percent</u>
Hourly Lot	767	27.1%
Daily Garage	522	18.5%
Weekly Lot	942	33.3%
Express Valet (on-airport)	304	10.7%
Off-Airport Parking (includes Thrifty RC Valet Service)	<u>294</u>	<u>10.4%</u>
Total Respondents:	2,829	100.0%

¹ Weighted to reflect average weekday activity.

² Does not include Rental Car return lots

Source: HNTB analysis.

Table A-12
PARKING CHARACTERISTICS
T.F. Green Airport

<u>Duration</u>	<u>Hourly Lot</u> ¹		<u>Daily Garage</u> ¹		<u>Weekly Lot</u> ¹		<u>Express Valet (on airport)</u> ¹		<u>Off Airport Parking</u> ¹		<u>Total</u> ¹	
	<u>Total</u>	<u>Percent</u>	<u>Total</u>	<u>Percent</u>	<u>Total</u>	<u>Percent</u>	<u>Total</u>	<u>Percent</u>	<u>Total</u>	<u>Percent</u>	<u>Total</u>	<u>Percent</u>
<1 hr.	295	38.5%	42	8.0%	0	0.0%	24	7.9%	0	0.0%	361	12.8%
1-5 hrs.	404	52.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	404	14.3%
5+ hours	68	8.9%	480	92.0%	942	100.0%	280	92.1%	294	100.0%	2,064	73.0%
<i>Subtotals</i>	767	100.0%	522	100.0%	942	100.0%	304	100.0%	294		2,829	100.0%
Percentages by parking facility		27.1%		18.5%		33.3%		10.7%		10.4%	Total	100.0%

Note: ¹ Weighted to reflect average weekday activity.

Source: HNTB analysis

Passenger and Baggage Check-in Location

Eighty-four percent of T.F. Green Airport passengers checked-in at the ticket counter and 16 percent checked-in at the gate (see **Table A-13**). For passengers with bags to check, approximately two-thirds checked their bags at the ticket counter, one-third used curbside check-in, and about one percent checked a bag at the gate.

Number of Well-Wishers Entering Terminal

About 85 percent of T.F. Green Airport passengers were not accompanied into the terminal by well-wishers (although many of these passengers were dropped off). (See **Table A-14**.) The average number of well-wishers per passenger was 0.2.

Table A-13
PASSENGER/LUGGAGE CHECK-IN LOCATION
T.F. Green Airport

<u>Location</u>	<u>Respondents</u> ¹	<u>Percent</u>
<u>Passenger</u>		
Ticket Counter	6,393	84.0%
Gate	<u>1,215</u>	<u>16.0%</u>
Total Respondents:	7,608	100.0%
<u>Luggage</u>		
Ticket Counter	3,353	66.9%
Curb	1,615	32.2%
Gate	<u>45</u>	<u>0.9%</u>
Total Respondents:	5,013	100.0%

¹ Weighted to reflect average weekday activity.

Source: HNTB analysis.

Table A-14
NUMBER OF WELL-WISHERS ENTERING THE TERMINAL
T.F. Green Airport

<u>Number of Well-Wishers</u>	<u>Respondents</u> ¹	<u>Percent</u>
0 (Entered terminal alone)	6,466	84.9%
1	917	12.0%
2	180	2.4%
3	0	0.0%
4	<u>53</u>	<u>0.7%</u>
Total Respondents:	7,616	100.0%
Average Number of Well-Wishers per Passenger Entering the Terminal	0.2	

¹ Weighted to reflect average weekday activity.

Source: HNTB analysis.

Amount of Luggage

As shown in **Table A-15**, most passengers had at least one carry-on. More than 3-in-10 passengers had no checked bags. The average number of carry-on bags per passenger was 1.1; the average number of checked bags was 0.8.

Table A-15
AVERAGE AMOUNT OF LUGGAGE PER PASSENGER
T.F. Green Airport

Number of Bags	Respondents ¹	Percent
<i>Carry-on</i>		
0	595	7.8%
1	5,250	68.9%
2	1,709	22.4%
3 or more	62	0.8%
Total	7,616	100.0%
Average Number of Carry-Ons per Passenger	1.1	
<i>Checked Luggage</i>		
0	2,653	34.8%
1	3,330	43.7%
2	1,449	19.0%
3 or more	184	2.4%
Total	7,616	100.0%
Average Number of Checked Bags per Passenger	0.8	
<u>Average No. of Bags Per Passenger</u>	<u>1.9</u>	

¹ Weighted to reflect average weekday activity.
 Source: HNTB analysis.

Trip Duration

The average number of nights away on travel was 3.2, as shown in **Table A-16** (Passengers traveling for 50 nights or more were not included in the calculation.) About six percent of passengers were returning the same day.

Resident Status

Table A-17 indicates that the percentage of residents versus visitors at T.F. Green Airport was approximately evenly split.

Table A-16
TRIP DURATION
T.F. Green Airport

<u>Number of Nights</u>	<u>Respondents</u> ¹	<u>Percent</u>
0	441	5.8%
1	1,073	14.1%
2	1,249	16.4%
3	938	12.3%
4	950	12.5%
5	880	11.6%
6	474	6.2%
7-13	1,029	13.5%
14-21	310	4.1%
21+	<u>272</u>	<u>3.6%</u>
Total Respondents:	7,616	
Average Trip Duration per Passenger ² :	3.2	

¹ Weighted to reflect average weekday activity.

² Includes trips of less than 50 nights.

Source: HNTB analysis.

Table A-17
RESIDENT/VISITOR STATUS
T.F. Green Airport

	<u>Respondents</u> ¹	<u>Percent</u>
Residents	3,947	51.8%
Visitors	<u>3,669</u>	<u>48.2%</u>
Total Respondents:	7,616	100.0%

Note: ¹ Weighted to reflect average weekday activity.

Source: HNTB analysis.

Amenities Used

Table A-18 shows the concessions used. Snack food, restaurant/bar, and newsstand/gift shops were each used by about 30 percent of travelers. (It should be noted that passengers using airport amenities would naturally have less time to complete a questionnaire at the gate; these results should therefore be interpreted with caution.)

Table A-18
AMENITIES USED
T.F. Green Airport

<u>Amenity</u>	<u>Respondents</u> ^{1,2}	<u>Percent</u>
Snack Food (ice cream, pretzel, etc.)	2,195	28.8%
Restaurant/Bar	2,289	30.1%
Newsstand/Gift shop	2,301	30.2%
ATM	435	5.7%
Shoeshine	357	4.7%
Specialty Retail (book store, luggage, Nail Port)	701	9.2%
Business Service (fax, laptop hookup, etc.)	<u>58</u>	<u>0.8%</u>
Total Respondents	8,336	109.5%
Total Passengers Surveyed	7,616	

¹ Weighted to reflect average weekday activity.

² The sum of numbers in the "Respondents" column exceeds 7,616 passengers, as a number of passengers reported using more than one amenity, e.g., Newsstand/Gift Shop and ATM. Therefore, the percentages sum to greater than 100 percent.

Source: HNTB analysis.

Comments

Passengers were offered the opportunity to provide comments on the back of the survey form. **Table A-19** presents these comments verbatim. Overall, most comments about the airport and its services were positive. (In surveys of this type, most passengers do not bother to write a comment unless they have a strong opinion about something—usually negative.) Recognizing these factors, it can be inferred that the great majority of passengers have a very positive experience at T.F. Green Airport.

A.2 TERMINAL OBSERVATIONS

Following is description of the methodology undertaken to conduct the T.F. Green Airport 2000 terminal observation survey and a summary of the results of that survey.

A.2.1 Methodology

Quantitative and/or qualitative observations were made of the following functional elements of the terminal:

- Curbs
- Ticket counters
- Security
- Baggage Claim
- Terminal circulation
- Concessions

Each functional element of the terminal was observed during its scheduled peak, which was calculated based on OAG schedules. Quantitative analysis included obtaining volumes, processing rates, and queue times. Qualitative analysis was limited to observing general levels of congestion.

A.2.2 Results

Curb

Upper Level Curb

The upper (departures) and lower (arrivals) curbs were observed during their respective peak periods. Counts were made by vehicle classification in 10-minute increments. Dwell times by vehicle type were also recorded.

The upper level roadway consists of three lanes—one lane is marked for active passenger drop off, and two are marked as through lanes. The innermost lane is wider than the adjacent travel lanes to allow short-duration dwell while passengers unload luggage. The peak hour on the upper level roadway occurred between 5:20 a.m. and

Table A-19 (Page 1 of 3)
SUMMARY OF PASSENGER COMMENTS
T.F. Green Airport

General Comments

- A LOT BETTER THAN GOING TO LOGAN AIRPORT
- A PLEASANT AIRPORT
- ACCOMODATING
- AIRPORT IS BEAUTIFUL. THEY DID A GOOD JOB
- ALWAYS USE IT
- BEAUTIFUL
- BEST ALTERNATIVE TO LOGAN
- COMING TO T.F. GREEN IS MORE CONVENIENT THAN FLYING INTO LOGAN AIRPORT
- CONVENIENT AND EASY. EASIER THAN LOGAN.
- EASY IN, EASY OUT
- GOOD AIRPORT
- GOOD AND CLEAN AIRPORT
- GREAT AIRPORT
- GREAT AIRPORT/ALWAYS CLEAN/EASY IN/OUT
- GREAT SERVICE- WHEELCHAIR
- I FREQUENTLY USE TF GREEN WHEN TRAVELING BY AIR
- I LOVE THE NEW AIRPORT. MUCH IMPROVED
- I LOVE THIS AIRPORT
- I TRAVEL A GREAT DEAL. THIS AIRPORT HAS TO RATE AS ONE OF THE BEST I HAVE HAD AN OPPORTUNITY TO VISIT
- KEEP UP THE GOOD WORK
- LOVE IT. ALWAYS USE IT
- IT'S ALWAYS A PLEASURE FLYNG FROM T.F. GREENE
- NICE AIRPORT
- NICE AIRPORT. BETTER THAN BOSTON. WILL USE AGAIN
- NICE AND EASY
- NICE PLACE
- NICE, CLEAN
- NICE, CLEAN APPROPRIATE SIZE
- NICELY APPOINTED FACILITY. ROOMY AND CLEAN
- NO PROBLEMS. VERY PEACEFUL AIRPORT
- PERFECT
- PLEASANT & EFFICIENT
- PREFER TF GREEN TO LOGAN ANYDAY
- RENOVATION IS GREAT. PARKING CONVENIENT. BRADLEY AIRPORT SHOULD LEARN FROM YOU
- SIZE APPROPRIATE & VERY NICE, AND CONVENIENT.
- T. F. GREEN AIRPORT EXCELLENT IN ALL ASPECTS
- THE IMPROVEMENTS THAT HAVE BEEN MADE TO THE AIRPORT ARE FANTASTIC
- THIS WAS A ONE DAY ROUND TRIP, (VERY CONVENIENT).

Table A-19 (Page 2 of 3)
SUMMARY OF PASSENGER COMMENTS
T.F. Green Airport

- UPGRADED AND CLEANER - IMPRESSED
- VERY CONVENIENT
- VERY EASY AIRPORT TO USE. VERY ACCOMODATING
- VERY GOOD
- VERY FOND OF IT.
- VERY NICE
- VERY NICE AND CLEAN. APPROPRIATE SIZE
- VERY NICE LOOKING AND CLEAN
- WE ENJOY THE SIZE & LOCATION - IT'S VERY COMFORTABLE & THE RIDE IS PLEASANT.
- WELL ORGANIZED, WELL LAID OUT- VERY CLEAR
- YOUR LANDSCAPING IS ESPECIALLY ATTRACTIVE. THE DRIVE UP TO THE TERMINAL FROM THE HIGHWAY EXIT IS WELL PLANNED AND MAINTAINED
- APPRECIATE THE NO SMOKING WAS MADE COMFORTABLE BY GOOD SEATING & COURTEOUS PEOPLE.
- I FOUND IT SURPRISING THAT I HAD TO GO ALL THE WAY TO THE MIAN TERMINAL , OUT OF AND BACK IN THROUGH SECURITY TO GET A CUP OF COFFEE AT 7:45 PM. THE PA SYSTEM IN THE US AIR TERMINAL AREA IS SO SEGMENTED THAT ANNOUNCEMENTS FOR GATE 5 COULDN'T BE HEARD NEAR THE GATE 2 COUNTER. AS A RESULT, I MISSED A FLIGHT BY NOT HEARING THE ANNOUNCEMENT OR NOTICING THAT THE FLIGHT HAD BEEN SHIFTED FROM GATE Y TO GATE 5. SURELY WITH PEOPLE SITTING ALL OVER THAT TERMINAL ON CROWDED DAYS ALL GATES 1-8 SHOULD BE HEARD.
- CUP HOLDERS OR SMALL TABLE - FOR COFFEE - WATER, ETC WHILE WAITING FOR PLANE.
- MORE PAX CARTS
- SIGNS AT DAILY GARAGE MISLEADING. SOME INDICATED SPACES AVAILABLE; SOME FULL
- \$2.00 FOR A SMALL CART IS TOO MUCH
- WHY DOES IT SAY PROVIDENCE IF IT'S IN WARWICK?
- HAD TO WAIT A WHILE FOR AN ELECTRIC CART
- PATHETIC LONG TERM P/U SERVICE AND LOUSY RATES. LOGAN AND HARTFORT ALL BETTER
- LUGGAGE CLAIM DOESSEEM TO TAKE EXTREMELY LONG.
- YOUR PARKING VAN DRIVERS ARE VERY COURTEOUS AND HELPFUL
- LAPTOP CONNECTION NEEDED
- MORE LANES OFF 95 AND AIRPORT

Airline Comments

- NEED US AIR CLUB
- COULD USE AIRLINE CLUB. NEED MORE PARKING
- UA CHECKIN DELAYS
- US AIRWAYS STAFF DOES NOT KNOW HOW TO CREDIT THE MILEAGE INTO THE STAR ALLIANCE PARTNER. THAT WAS FRUSTRATING TO ME.
- WHEN FLIGHTS ARE CANCELLED AND CHECK-IN LINES ARE FULL OF RE-BOOKERS, I WOULD APPRECIATE A SEPARATE CHECK-IN LINE FOR THOSE OF US WHOSE FLT IS NOT DELAYED OR CANCELLED. I GAVE MYSELF MORE THAN ABOUT WHETHER I'D GET CHECK-IN IN TIME

Table A-19 (Page 3 of 3)
SUMMARY OF PASSENGER COMMENTS**T.F. Green Airport**

- WOULD APPRECIATE LATER DEPARTURE OPTIONS FOR THESE PLANNING ON SPENDING 1 DAY IN R.I.
- SW AIRLINES IS NOT SCHEDULED. NEVER AGAIN WILL I USE THIS AIRLINE. IT SUCKS, SORRY TO SAY. MY 379.50 WAS NOT WORTH THIS CRAP.
- GUY AT US AIRWAYS TICKET COUNTER WAS INCREDIBLY RUDE
- TIA TO PROVIDENCE AND PROVIDENCE TO TIA IS EXTREMELY FOR ME 3-4 TIMES A YEAR. KEEP UP THE GOOD WORK
- I INTEND TO EXPLORE THE USE OF PVD AS A TRAVEL HUB ALTERNATIVE TO LGA & JFK FOR AIR TRAVEL WITHIN THE US
- DON'T LIKE LONG LINES
- LOVE IT - DON'T GET TOO CROWDED. BRING IN MIDWEST EXPRESS
- VERY NICE. SW GOOD, GOOD CONCESSION

Security Comments

- SLOW SECURITY LINE.
- NEED MORE STAFF, (SECURITY & CHECKINS).

Rental Car Comments

- AVIS CHARGES WERE RIDICULOUS
- AVIS RETURN CLERKS WERE THE BEST CUSTOMER ORIENTED GUYS I'VE DEALT WITH. VERY FRIENDLY AND HELPFUL, COURTEOUS, AND MANNERLY.

Concessions Comments

- AIRPORT FOOD & BEVERAGES ARE TOO EXPENSIVE TO PURCHASE
- VERY NICE. SW GOOD, GOOD CONCESSION
- THE FAST FOOD COUNTER EMPLOYEES SHOULD HAVE CUSTOMER SERVICE TRAINING.
- NEED FOR A "HEALTHY" FOOD SERVICE

Smoking Comments

- MORE DESIGNATED SMOKING AREAS
- NEED SMOKING AREA ON US AIR SIDE

Curb Service Comments

- NO ONE OUTSIDE OF THE CURB EVEN THOUGH WE NEEDED ASSISTANCE WITH BAGGAGE AND A WHEELCHAIR.
- GREAT CURB SERVICE. WONDERFUL

Source: HNTB Analysis.

6:19 p.m. when 563 vehicles traversed the upper level roadway, as shown in **Table A-20**. The upper level roadway also provides access to the parking garage. As activity at the airport increased, the queue of vehicles entering the garage began to block egress from the curb. At approximately 6:00 AM, a “No Parking” sign was placed at the entrance to the garage. Prior to the placement of the sign, approximately 20 percent of the vehicles utilized the upper level roadway solely to access the garage.

Peak hour utilization of the curb (i.e., excluding vehicles using the upper level roadway to get to the garage), occurred between 5:30 a.m. and 6:29 a.m., when 498 vehicles stopped at the curb (**Table A-21**).

Approximately 75 percent of the vehicles using the departures curb were automobiles; seven percent were taxis; and the remaining vehicles were hotel/motel shuttles, parking shuttles, door-to-door shuttles, and other miscellaneous vehicles.

During the peak hour, two of the three lanes comprising the upper level roadway were frequently blocked. No enforcement was observed. During the peak hour, between 15 to 20 vehicles would be dwelling at the curb; the maximum observed was 30, which occurred at approximately 6:10 a.m.

The mean dwell time for automobiles was 3 minutes and 43 seconds; the median dwell time was 1 minute and 38 seconds, considerably lower than the mean. This suggests that the use of even modest levels of enforcement would bring the mean dwell time down and increase curbside capacity on the upper level. (One vehicle was observed to dwell at the curb for 22 minutes.)

Lower Level Curb

The lower level roadway is divided into an inner and outer roadway separated by a raised median. The inner roadway (i.e., the lanes nearest the lower level terminal entrance) comprises three lanes. As with the upper level curb, the inner lane is wider than the adjacent lanes. Vehicles utilizing the inner roadway were observed to execute several movements: 1) picking up passengers at the curb then exiting the airport, 2) stopping at the curb and then continuing into the garage, 3) driving directly into the garage (i.e., not stopping at the curb first), and 4) re-circulating (often making numerous passes of the curb without stopping). Based on a periodic sampling of vehicles, approximately 17 percent of vehicle movements on the inner roadway were vehicles utilizing the curb and then exiting the airport. An additional two percent of the vehicles stopped at the curb then continued into the garage. Forty-five percent of the inner roadway traffic was destined directly for the garage; and 36 percent of the vehicle movements on the inner roadway were through movements.

The outer roadway comprises two through lanes. At the north end of the outer roadway, a third lane, acting as a bay for RIPTA buses and courtesy vehicles is provided. At the south end of the terminal, a third lane is provided as a taxi stand.

Table A-20
PEAK HOUR UPPER AND LOWER ROADWAY VEHICLE CLASSIFICATION ¹
T.F. Green Airport

<u>Location and Time</u>	<u>Automobile</u>	<u>Taxi</u>	<u>Rental Car Shuttle</u>	<u>Hotel/Motel Courtesy Vehicle</u>	<u>Door-to-Door Shuttle</u>	<u>Airport Parking Shuttle</u>	<u>Private Parking Shuttle</u>	<u>Limousine</u>	<u>Bus</u>	<u>Other</u>	<u>Total</u>
Upper Level (Departures) (0520-0619)	433 76.9%	36 6.4%	26 4.6%	23 4.1%	5 0.9%	17 3.0%	18 3.2%	4 0.7%	- 0.0%	1 0.2%	563 100.0%
Lower Level (Arrivals) (1620-1719)	434 77.8%	34 6.1%	28 5.0%	14 2.5%	4 0.7%	11 2.0%	20 3.6%	3 0.5%	5 0.9%	5 0.9%	558 100.0%

Note: ¹ Includes all vehicular movements.

Source: HNTB analysis.

Table A-21
PEAK HOUR UPPER AND LOWER CURB USE ¹
T.F. Green Airport

<u>Location and Time</u>	<u>Automobile</u>	<u>Taxi</u>	<u>Rental Car Shuttle</u>	<u>Hotel/Motel Courtesy Vehicle</u>	<u>Door-to-Door Shuttle</u>	<u>Airport Parking Shuttle</u>	<u>Private Parking Shuttle</u>	<u>Limousine</u>	<u>Bus</u>	<u>Other</u>	<u>Total</u>
Upper Level (Departures) (0530-0629)	372 74.7%	35 7.0%	24 4.8%	22 4.4%	5 1.0%	17 3.4%	19 3.8%	3 0.6%	- 0.0%	1 0.2%	498 100.0%
Lower Level (Arrivals) (1640-1739)	56 32.2%	28 16.1%	27 15.5%	17 9.8%	5 2.9%	10 5.7%	21 12.1%	1 0.6%	6 3.4%	3 1.7%	174 100.0%

Note: ¹ Includes only vehicles stopping at curb.

Source: HNTB analysis.

The lower level roadway experienced a relatively flat peak. In the two-hour period between 3:50 p.m. and 5:49 p.m., 1,056 vehicles traversed the roadway with roughly half of these vehicle movements occurring in both of the two one-hour periods.

The peak hour for curb utilization occurred between 4:40 p.m. and 5:39 p.m, when nearly 180 vehicles stopped at the curb. About 31 percent of the vehicles using the curb were automobiles; 18 percent were taxis; 15 percent were rental car shuttles; 12 percent were off-airport parking shuttles; 10 percent were hotel/motel courtesy shuttles; and 14 percent were other vehicles.

During the peak hour, only the first lane of the inner roadway is utilized for picking up passengers. Enforcement was evident during the peak; and three tickets were issued. During the peak hour, between 15 and 19 cars were typically dwelling at the curb.

The mean dwell time for automobiles was considerably higher than the industry standard—10 minutes and 10 seconds. More than one-third of the vehicles occupied the curb for at least 10 minutes. Several vehicles were at the curb for more than 20 minutes. The median dwell time, though lower than the mean, was also fairly high at seven minutes and 37 seconds.

Ticketing

Quantitative observations were made at the US Airways and Southwest Airlines ticket counters (the two largest carriers at T.F. Green Airport). Results are shown in **Table A-22**. Qualitative observations were made at the ticket counters of the other carriers.

Table A-22
PEAK HOUR TICKET COUNTER OBSERVATIONS
T.F. Green Airport

	USAirways (0520-0619)	Southwest (0540-0639)
Passengers Processed	151	169
Average Active Positions/Total Positions	5.5 / 10	4.3 / 8
Min/Max Open Positions	5 / 6	3 / 5
Average Processing Time Per Passenger		
In Queue (min:sec)	4:47	2:32 ¹
At Counter (min:sec)	1:30	1:02 ¹
Total (min:sec)	6:17	3:34 ¹
Minimum Queue Time	1:08	0:00
Maximum Queue Time	7:59	5:35

¹ Does not include time for required processing at gate.

Source: HNTB analysis.

US Airways

During the morning peak, the US Airways counter was staffed beginning just after 5:00 a.m. Between that time and about 7:30 a.m., approximately 334 passengers visited the counter. The peak hour occurred between 5:20 a.m. and 6:19 a.m., when 151 passengers visited the counter. Queue times (i.e., the time passengers waited to be served) ranged from one minute to eight minutes in the peak hour, the higher delays experienced before staffing levels reached their typical complement of five or six agents. The average processing time per passenger was just under 1.5 minutes.

Southwest Airlines

During the morning peak, the Southwest Airlines counter was staffed beginning just after 5:30 a.m. Between that time and 6:59 a.m., 252 passengers visited the ticket counter. The morning peak hour occurred between 5:40 a.m. and 6:39 a.m., when 169 passengers visited the counter. Queue times typically ranged from one minute to five minutes in the peak hour. The average processing time per passenger was just over one minute.

Other Carriers

Although the ticketing functions of other carriers were not studied in detail, each seemed to be functioning adequately. Discussions with station managers confirmed that, as with US Airways and Southwest, facilities were appropriate to the level of passenger activity currently being experienced.

Security

Security processing is conducted in a centralized area. It consists of three magnetometers and three x-ray machines. The security area is managed by Southwest Airlines.

Between 5:00 a.m. and 6:59 a.m., a total of 2,052 people were screened. The peak hour occurred between 5:30 a.m. and 6:29 a.m., when 1,284 people were processed, as shown in **Table A-23**.

Table A-23
PEAK HOUR SECURITY SCREENING OBSERVATIONS
T.F. Green Airport

Peak Hour Volume	1,284
Peak 10-Minute Surge ¹	310
Processing Rates Per Position	
Minimum	4.6 people/minute
Average	7.1 people/minute
Maximum	9.6 people/minute
Processing Times (Including Queue Time)	
Minimum (min:sec)	0:01
Average (min:sec)	2:12
Maximum (min:sec)	6:46

¹ Estimated.

Source: HNTB analysis.

Based on observations and discussions with airline personnel, the security screening area does not provide sufficient capacity during peak periods. Queue times of over six minutes were observed. At one point, the lines for security processing extended past the FIDS and beyond the escalators; about 88 people were in line waiting to be processed.

Processing rates at the T.F. Green Airport security checkpoint are lower than those observed at other large airports. Rates varied between four and eight passengers per position per minute—well below typical rates of eight to 10 passengers per minute.

The second issue observed with security is when lines do form, they create a potential conflict with passengers accessing and egressing the escalators.

Baggage Claim

There are five baggage claim carousels on the lower level of the terminal. The five devices were monitored during both the morning and evening peak periods. The number of people queued around each device and the number of bags being displayed at any one time were recorded.

During the morning peak, a maximum of three carousels were used for a brief period. For most of the morning, most carousels were idle. The busiest morning period occurred at 11:38 a.m. when 38 people were claiming bags. (See **Table A-24.**) At that time, a total of about 30 bags were being displayed.

Table A-24
BAGGAGE CLAIM OBSERVATIONS
T.F. Green Airport

	<u>AM Peak</u>	<u>PM Peak</u>
Maximum Passengers in Active Claim Area ¹	38	170
Avg. Maximum Passengers Queued Per Device ²	15	71
Maximum Passengers at One Device ³	29	115
Maximum Devices in Use Simultaneously	3	5
Avg. Time to Clear Device ⁴	11.2 min.	14.0 min.

¹ Active claim area defined as area in vicinity of claim device occupied by passengers actively obtaining bags.

² Based on average of highest value observed at each device. Excludes oversized bag claim.

³ Highest single observed value.

⁴ Defined as when 95 percent of peak passengers have left device.

Source: HNTB analysis.

The afternoon peak saw increased activity compared to the morning. During the afternoon, three carousels were frequently active. For a short duration, all five carousels were active. Most events lasted about 15 to 20 minutes, although flights with only a few bags occupied a device for about 10 minutes. The busiest period, in terms of the number of people actively claiming bags occurred at about 5:30 p.m. when 170 people were queued around the claim devices. At that time, a total of approximately 105 bags were being presented on the baggage belts.

Terminal Circulation

Qualitative observations were made of terminal circulation in public areas, including the ticketing area, baggage claim, and the two concourses. Overall, circulation areas appeared adequate to accommodate current levels of demand. As mentioned previously, security processing partially restricts access/egress to/from the escalators and restricts flow between the two sides of the ticketing lobby during peak periods. On the secure side of the terminal, circulation was never observed to be constricted. On the baggage claim level, circulation also appeared adequate, with sufficient room for active queuing around the baggage belts and adequate room for circulation.

Concessions

Qualitative observations of concession areas suggest that, in general, concession space is adequate to accommodate demand.