APPENDIX E

Surveys

E.1 Summary

In order to effectively plan and design restrooms in an airport terminal, it is important to understand the perspective of the primary stakeholders--the passengers and the airport staff. Within these groups, however, are people with special needs or interests. Among the traveling public this includes those with disabilities, the elderly, infants, various genders, and different cultures. The airport's personnel include planners, the trades – carpenters, plumbers, etc., and of course the cleaners. Tangentially are the tenants--concessions staff, airline employees, etc., vendors, and product manufacturers, to name a few. All are in a perpetual tug-of-war trying to balance the needs and expectations of the users with the operational structure and budget of the providers.

The research team determined that a sample of stakeholders was needed from a high level (37,000 feet perhaps?) as well as microscopic. The latter were assembled in a series of focus groups consisting of people with intimate experience related to restrooms in airport terminals. These focus groups and the findings are described in Appendix B.

A significant resource for this guidebook is the lessons airports have learned through their restroom projects. To that end, a survey was developed and sent to operations managers at airports around the country. The 43 questions compiled and distributed through Survey Monkey addressed the following:

- Master Planning
- Customer service
- Maintenance
- Design Considerations

Respondents were also asked if they would be willing to share their design guidelines, restroom customer service surveys, standard operating procedures, and restroom layouts. Approximately 250 contacts were collected from the research team and sent an email with a link to the survey.

The research team also mined their personal and professional networks to survey how the typical traveler feels about the same issues asked of the airport managers on their survey. The comparison between the providers and the users would be interesting to see.

Recognizing the competition for people's time and attention, a shorter survey than the airport managers was created (also in Survey Monkey) with just ten questions. Topics included top frustrations when visiting airport restrooms, finding the restrooms, personal comfort within restrooms, basic restroom amenities, desired extra restroom features, desired amenities near the restrooms, and then an open question requesting additional insights and ideas for improvements.

Figure A-1 shows the survey invitation emailed to the airport managers. A similar version was emailed to the typical traveler survey recipients. The following pages show first the survey questions then tabulations of the responses for the two surveys.

AIRPORT RESTROOMS ARE OFTEN THE FIRST AND LAST IMPRESSION OF A DESTINATION... WE WANT YOURS!

A national research team of industry experts led by Architectural Alliance of Minneapolis has been selected by the Transportation Research Board of the National Academies to create a Guidebook for Airport Terminal Restroom Planning and Design. This resource will help airport managers and designers address customer service issues like those illustrated to the left that are encountered by every traveler.

Passenger demographics are changing: more female travelers, aging population, people with disabilities and special needs, all with higher expectations for comfort, convenience, cleanliness, and space for carry-ons. There are few things more frustrating than a restroom closed for maintenance after a three-hour flight.

We are conducting a survey of Airport Managers to collect your experiences, insight, and ideas. What doesn't work? What innovations have worked well for your airport?

Please cut and paste the following link and complete the survey by Friday, April 19, 2013:

www.surveymonkey.com/s/Airport_Terminal_Restrooms_Survey

The survey should take 10-15 minutes. It consists of 33-36 questions covering the following restroom topics:

Master Planning
Customer Service
Maintenance
Design Considerations

Thank you!

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ARCHITECTURAL ALLIANCE

Figure A-1. *Sample Survey Invitation.*

E.2 Findings

A response timeframe of 2-1/2 weeks was provided. 27 responses, 11%, were received from 16 airports of all hub sizes (some airports had multiple managers take the survey). Large hubs were most prominently represented. Respondents held were predominantly directors and managers from a variety of departments including planning, customer service, maintenance, facilities, etc.

Master Planning

Most of the airports do not have a master plan for their restrooms. Likewise, few have design standards or guidelines for their restrooms. Group III – Narrowbody/Large Regional aircraft were the majority favorite FAA design group for gates at hubs of all sizes. Many of the respondents did not know the IATA Level of Service of their airport so the only conclusion derived was that Level of Service was not a driver of customer service at these airports. The large hubs tended to have more distance between their restroom locations, possibly because they have the space to provide larger restroom sets although the average number of fixtures (toilets and urinals) per restroom set is on the large side for all hub sizes.

Customer Service

Not surprising, the responding airports have seen an increase in women as well as elderly travelers. Otherwise the number of men, children, families, people with disabilities, and international travelers has remained steady. Comments are most frequently collected via surveys, comment cards, and the airport's websites. Most of the airports include restrooms in their annual customer service surveys. Yet contrary to the often passionate comments about airport restrooms from the focus groups and case studies, the respondents noted that complaints about restrooms are "as expected" and cleanliness "rare." This could be interpreted that the airports know that restrooms are a hot button so complaints are expected.

Maintenance

Here again there appears to be a disconnect between the comments from the typical travelers focus groups and surveys with the responses from the airport managers. The majority of the manager responses regarding common maintenance issues such as cleanliness, odors, noise, adequate waste receptacles, etc. were that complaints were rare. A possible reason for this is that passengers often don't take the time to register their complaints to the airport unless the method is very convenient or the problem is significant.

The majority of airports reported that common issues such as vandalism, graffiti, non-operating plumbing fixtures, and burned out bulbs were rare. Few use any form of technology to monitor maintenance problems. Most respondents felt their restroom layouts worked well. About half of the airports had Standard Operating procedures for maintenance (SOP). Blue Grass Airport provided a copy of their SOP for Restroom Maintenance and Care, which is included in Appendix E.

Design Considerations

There was consensus that planning strategies like restroom proximity to nodes (gates, concessions, etc.), high visibility, intuitive wayfinding, etc. are important to the traveler's experience. Floor finishes, toilet partition materials, sink/counter finishes, and quality mirrors have a significant impact on travelers as do soap dispensers, hand drying (dryers and towels), baby changing facilities, etc. Accessibility and ventilation were considered important to all respondents whereas the convenience of a shelf in the toilet stall and at urinals was generally moderately important, but definitely important at the sinks. Coat hooks at urinals were less important at sinks and urinals than in toilet stalls. The latter is not surprising considering urinal usage is easily accomplished with a coat on. Space for carry-ons in the stalls is important in stalls, less so at urinals, but having belongs in constant view is nearly universally important. Ironically, having a means for travelers to register comments was considered only moderately important.

Most sustainability efforts such as lowering energy use, water consumption, and waste management were important. The use of recycled materials was less so.

Only a few airports had accommodations for traveling mothers. One location had a Mother's Room on both the air and landside. Another only had one on the concourse.

E.3 Survey Questions

The following pages show the questions as seen by the Airport Managers Survey participants. There are followed by the survey results.

1. Survey Information

One of the biggest customer service issues airports face is the quality of the restroom experience for travelers. This survey will provide important data for the development of a Guidebook for Airport Terminal Restroom Planning and Design. This resource will be used by airport planners, designers, and managers like yourself so your input is essential to its usability.

The survey should take approximately 10-15 minutes to complete. It consists of 40-43 questions covering the following topics as they pertain to airport terminal restrooms:

Master Planning
Customer Service
Maintenance
Design Considerations

Several questions ask if you are willing to share information (design guidelines, restroom layouts, operating procedures, etc.) for reference and potential use in shaping the guidebook. We appreciate your participation in this effort. Any contributed information will be acknowledged in the book.

Please answer questions based on your airport's general philosophy rather than your personal views. If you are unable to answer a question, feel free to leaver it blank.

2. GENERAL INFORMATION

1. The information you provide below will not be used outside of this ACRP project. You will only be contacted if you agree to share information about your facility requested in this survey.

Name:
Title/Role:
Airport Name:
Email Address:
Phone:

2. Indicate your FAA Airport Category:

	Category
Hub Size	

3. Indicate your IATA Level of Service for your Terminal(s):

	Level
LOS	

4. Indicate your airport's governance structure:

	Structure
Governance	

Other (please specify)

3. MASTER PLANNING

5. Indicate the status of your current Restroom Program? (choose all that apply)

- ☐ Recently renovated one or more restrooms
- ☐ Are planning to upgrade restrooms in the next 1-5 years
- ☐ There are no plans for restroom modifications

6. Describe the general capacity of your restrooms.

- ○ Often Empty
- ○ Adequate
- ○ Often Have Lines

Additional Comments:

7. On a typical single-loaded concourse or one side of a double-loaded concourse, how many gates are between each set of restrooms?

8. What is the FAA Airplane Design Group for your gates?

- ○ Group I - Small Regional
- ○ Group II - Medium Regional
- ○ Group III - Narrowbody / Large Regional
- ○ Group IIIa - B757 (winglets)
- ○ Group IV - Widebody
- ○ Group V - Jumbo
- ○ Group VI - Super Jumbo

Additional Comments:

9. What is the average number of toilets/urinals per gender at a typical AIRSIDE set of restrooms?

Women

Men

10. What is the average number of toilets/urinals per gender at a typical LANDSIDE set of restrooms?

Women

Men

11. The following three questions pertain to Design Day Peak Hour. If you don't have the data, type "?".

1. What is your Design Day DEPARTING (Enplaning) Peak Hour
2. What is your Design Day ARRIVING (Deplaning) Peak Hour
3. What is your Design Day TOTAL Peak Hour

5. MASTER PLANNING

13. What aspects are included in your master plan?

- ☐ Restroom Locations
- ☐ Prototype Layouts
- ☐ Fixture Counts
- ☐ Timeline for Modification
- ☐ Maintenance

14. What planning resources do you use?

- ☐ Aviation Industry Guidelines
- ☐ Aviation Planners
- ☐ Architects/Designers
- ☐ Internal Planners/Designers

Other (please specify)

15. Does your airport have Design Standards or Guidelines for your restrooms?

- ○ Yes
- ○ No

7. CUSTOMER SERVICE

17. Indicate changes you have seen in traveler demographics:

	Fewer	No Change	More
Women	☐	☐	☐
Men	☐	☐	☐
Children	☐	☐	☐
Families	☐	☐	☐
Elderly	☐	☐	☐
Disabled	☐	☐	☐
International	☐	☐	☐

Additional comments:

18. Rate the following customer service issues in terms of complaints

	Frequent	As Expected	Rare
Parking	○	○	○
Security Process	○	○	○
Aesthetics	○	○	○
Wayfinding	○	○	○
Variety of Amenities (play areas, lounges, etc.)	○	○	○
Concession Mix / Locations	○	○	○
Restrooms	○	○	○
Cleanliness	○	○	○

Additional Comments:

19. How do you collect comments from travelers about your restrooms?

20. Is your restroom program included in your annual customer service survey?

○ Yes

○ No

8. CUSTOMER SERVICE

21. Are you willing to share your most recent restroom survey results? If yes, we will contact you.

- Yes
- No

9. MAINTENANCE

22. Rate the following restroom maintenance issues in terms of traveler complaints:

	Frequent	As Expected	Rare
Cleanliness			
Light Levels			
Odors			
Temperature			
Noise			
Plumbing Fixture Operation			
Adequate Supply (paper towels, toilet paper, soap, etc.)			
Baby Changing Stations			
Cleaning Efficiency (ease of cleaning)			
Adequate Waste Receptacles			

Additional comments:

23. Rate the following restroom maintenance issues in terms of occurrence:

	Frequent	As Expected	Rare
Finishes (durability and ease of maintenance)			
Vandalism			
Graffiti			
Durability of Fixtures			
Non-operating Plumbing Fixtures			
Ease of Product Restocking			
Clogged Soap Dispensers			
Burned Out Light Bulbs			

Additional Comments:

10. MAINTENANCE

24. Are you able to close a partial restroom when servicing?

- Yes
- No

25. Do you provide access to plumbing chases and janitor's closets outside of the restroom spaces to avoid gender issues with maintenance staff?

- Yes
- No

26. What is the preferred minimum clear width in your plumbing chases?

27. Do you use technology to monitor maintenance problems?

- Yes
- No

If yes, please describe:

28. Do you have Standard Operating Procedures for restroom maintenance?

- Yes
- No

11. MAINTENANCE

29. Are you willing to share your restroom Standard Operating Procedures? If yes, we will contact you.

- Yes
- No

13. DESIGN CONSIDERATIONS

31. Are you willing to have your restroom layout potentially included as a conceptual prototype in this guidebook? If yes, we will contact you.

- Yes
- No

14. DESIGN CONSIDERATIONS

32. PLANNING

Rate the importance of the following restroom components to the traveler's experience:

	Important	Moderately Important	Not Important
Proximity to Nodes (gates, ticketing, baggage claim, concessions, etc.)			
Visibility			
Wayfinding			
Adjacent Family / Companion Care Room			
Adjacent Drinking Fountains			
Vestibule Entrance (no doors)			
Individual Toilet Compartments with Lavatory			
Baby Changing Station			
Close Partial Restroom for Service			

Additional Comments:

15. DESIGN CONSIDERATIONS

33. MATERIALS

Rate the importance of the following components to the traveler's experience:

	Important	Moderately Important	Not Important
Wall Finishes	○	○	○
Floor Finishes	○	○	○
Ceiling Finishes	○	○	○
Toilet Partitions	○	○	○
Door Hardware	○	○	○
Sink and Vanity Deck Finishes	○	○	○
Mirrors	○	○	○

Additional Comments:

16. DESIGN CONSIDERATIONS

34. FIXTURES

Rate the importance of the following restroom components to the traveler's experience:

	Important	Moderately Important	Not Important
Toilets	○	○	○
Urinals	○	○	○
Drinking Fountain	○	○	○
Sinks	○	○	○
Lights	○	○	○

Additional Comments:

17. DESIGN CONSIDERATIONS

35. ACCESSORIES

Rate the importance of the following restroom components to the traveler's experience:

	Important	Moderately Important	Not Important
Soap Dispensers	○	○	○
Hand Dryers	○	○	○
Paper Towels	○	○	○
Trash Containers	○	○	○
Mirrors	○	○	○
Make-up Mirror	○	○	○
Full Length Mirror	○	○	○
Baby Changing Stations	○	○	○
Sanitary Products Vending	○	○	○
Sanitary Disposal	○	○	○
Adult Diaper Disposal	○	○	○
Bio-hazard Disposal (e.g. Sharps)	○	○	○
Shelf for Belongings	○	○	○
Hook(s) for Bags, Coats, etc.	○	○	○

Additional Comments:

18. DESIGN CONSIDERATIONS

36. COMFORT

Rate the importance of the following restroom components to the traveler's experience:

	Important	Moderately Important	Not Important
Accessibility	○	○	○
Touchless Environment (toilet and urinal flushing, faucets, soap dispensers, paper towel dispensers, hand dryers, etc.)	○	○	○
Automatic Doors at Accessible Compartments	○	○	○
Urinal Screens	○	○	○
Lighting	○	○	○
Daylight	○	○	○
Heating/Cooling	○	○	○
Ventilation	○	○	○

Additional Comments:

19. DESIGN CONSIDERATIONS

37. CONVENIENCE

Rate the importance of the following restroom components to the traveler's experience:

	Important	Moderately Important	Not Important
Shelf in Toilet Stall	○	○	○
Space for Carry-on in Toilet Stall	○	○	○
Coat Hook in Toilet Stall	○	○	○
Trash in Toilet Stall	○	○	○
Shelf at Urinal	○	○	○
Space for Carry-on at Urinal	○	○	○
Coat Hook at Urinal	○	○	○
Shelf at Sink	○	○	○
Coat Hook at Sink	○	○	○
Bottle Filler at Drinking Fountain	○	○	○
Security of Having Belongings in Sight	○	○	○

Additional Comments:

20. DESIGN CONSIDERATIONS

38. AMENITIES

Rate the importance of the following restroom components to the traveler's experience:

	Important	Moderately Important	Not Important
Art	○	○	○
Center for Passenger Needs (e.g. Flight Information, AED, Information Desk, Mother's Room, etc.)	○	○	○
Adjacent Waiting Area	○	○	○
Simple Means for Traveler's to Register Comments	○	○	○

Additional Comments:

21. DESIGN CONSIDERATIONS

39. SUSTAINABILITY

Rate the following considerations:

	Important	Moderately Important	Not Important
Energy Use	○	○	○
Water Consumption	○	○	○
Environmentally Friendly Materials	○	○	○
Cleaning Supplies	○	○	○
Recycled Materials	○	○	○
Waste Management	○	○	○
Light Control	○	○	○

23.

41. How are the Mother's Rooms distributed? (e.g. one per concourse)

42. How do you control access to your Mother's Rooms (e.g. key, code to type in, etc.)?

24. FINAL THOUGHTS

43. Please comment on what features in a restroom planning and design guidebook like this would be most useful to you.

E.4 Survey Responses

The following pages tabulate the question responses from the Airport Managers Survey participants. The table below summarizes the information collected from questions 2) through 4). The names listed submitted in question 1) have been kept confidential. However, the titles are used in the subsequent tables for context.

GENERAL INFORMATION		
	3. IATA Level of Service	4. Airport's Governance Structure
Large Hub		
DEN	C	Municipal
DFW	B	Authority/ Quasi-government
FLL	C	County
MCO	E	Authority/ Quasi-government
MSP	Don't Know	Authority/ Quasi-government
PHX	C	Authority/ Quasi-government
SAN	A	Authority/ Quasi-government
SLC	Don't Know	Municipal
Medium Hub		
AUS	B	Municipal
IND	Don't Know	Authority/ Quasi-government
PBI	Don't Know	Municipal
Small Hub		
LEX	Don't Know	Authority/ Quasi-government
SAV	Don't Know	Authority/ Quasi-government
SYR	Don't Know	Municipal transitioning to public authority in
TUS	C	Authority/ Quasi-government
Non-hub		
HTS	Don't Know	Authority/ Quasi-government
ROA	Don't Know	Commission

Airport Managers Survey

MASTER PLANNING

	5. Status of Current Restroom Program			6. General Capacity of Restrooms			7. No. of Gates Between Sets	8. FAA Airplane Design Group for Gates						
	Recently Renovated	Planning Upgrade in 1 - 5 years	No Plans for Restroom Modifications	Often Empty	Adequate	Often Have Lines		Group I - Small Regional	Group II - Medium Regional	Group III - Narrowbody/Large Regional	Group IIIa - B757 (winglets)	Group IV - Widebody	Group V - Jumbo	Group VI - Super Jumbo
Large Hub														
DEN - Deputy Mgr	x				x		8						x	
DFW - VP Customer Service														
DFW - Asst VP Planning	x				x		500 ft. Ideal			x				
DFW - Infrastruct Contracts Mgr	x				x		8							
DFW - Infrastruct Service Mgr														
FLL - Dir of Cap Improv	x					x	5					x		
FLL - Dir of Ops														
FLL - Dir of Maint														
FLL - Principal Planner		x			x		10			x				
MCO - Dir of Airport Ops														
MSP - Asst Dir of Ops/Facilities														
PHX - Super Ops Planning	x				x		4			x				
SAN - Mgr Airport Planning														
SAN - Prog Mgr / Agency Owner														
SLC - Airport Architect														
SLC - Airport Maint Ops Super														
Medium Hub														
AUS - Mgr Eng and Const		x			x		4			x				
IND - Dep Dir of Planning & Dev														
PBI - Dep Dir														
PBI - Arch Field Rep														
Small Hub														
LEX - Dir of Eng and Maint		x		x			3		x					
SAV - Ops Mgr		x		x			3			x				
SYR - Commissioner of Aviation														
TUS - Mgr of Arch Serv	x				x		2				x			
TUS - Station Mgr														
Non-hub														
HTS - Airport Dir	x				x					x				
ROA - Terminal Mgr	x						Only 1 set	x						

Airport Managers Survey

MASTER PLANNING

	9./10. Average Toilets/Urinals Per Restroom Set				11. Design Day Peak Hour			12. Rest-room Master Plan?		13. Aspects Included in Master Plan					14. Planning Resources Used				15. Design Standards or Guidelines?	
	Airside - Women	Airside - Men	Landside - Women	Landside - Men	Departing (Enplaning)	Arriving (Deplaning)	Total	Yes	No	Restroom Locations	Prototype Layouts	Fixture Counts	Timeline for Modification	Maintenance	Aviation Industry Guidelines	Aviation Planners	Architects/Designers	Internal Planners/Designers	Yes	No
Large Hub																				
DEN - Deputy Mgr	12	16	8	8	140	140	180		x						x	x	x	x		x
DFW - VP Customer Service																				
DFW - Asst VP Planning	10	12	6	8	0	0	0	x		x	x				x	x	x	x	x	
DFW - Infrastruct Contracts Mgr																				
DFW - Infrastruct Service Mgr																				
FLL - Dir of Cap Improv								x		x		x	x			x	x			x
FLL - Dir of Ops																				
FLL - Dir of Maint																				
FLL - Principal Planner	17	22	18	22	18	18	18		x						x	x	x	x	x	
MCO - Dir of Airport Ops																				
MSP - Asst Dir of Ops/Facilities																				
PHX - Super Ops Planning	4	4	4	4	450	750	750		x								x			x
SAN - Mgr Airport Planning																				
SAN - Prog Mgr / Agency Owner																				
SLC - Airport Architect																				
SLC - Airport Maint Ops Super																				
Medium Hub																				
AUS - Mgr Eng and Const	14	15	12	11			3500	x			x	x	x	x	x	x	x	x	x	
IND - Dep Dir of Planning & Dev																				
PBI - Dep Dir																				
PBI - Arch Field Rep																				
Small Hub																				
LEX - Dir of Eng and Maint	10	10	10	10	1	1	1		x								x	x		x
SAV - Ops Mgr	10	10	6	6	12	17	17		x								x	x		x
SYR - Commissioner of Aviation																				
TUS - Mgr of Arch Serv	16	16	7	7																
TUS - Station Mgr																				
Non-hub																				
HTS - Airport Dir	6	6	10	10					x											x
ROA - Terminal Mgr	8	10	5	5	600	1000	10000	x		x	x	x	x	x	x	x	x		x	

Airport Managers Survey

CUSTOMER SERVICE

17. Changes Seen in Traveler Demographics

	Women			Men			Children			Families			Elderly			Disabled			International			Additional Comments	
	Fewer	No Change	More	Fewer	No Change	More	Fewer	No Change	More	Fewer	No Change	More	Fewer	No Change	More	Fewer	No Change	More	Fewer	No Change	More	This data represents averages and estimates that change with seasonal demands.	We continue to grow at a robust rate.
Large Hub																							
DEN - Deputy Mgr			x	x					x			x			x			x			x		
DFW - VP Customer Service																							
DFW - Asst VP Planning		x			x			x			x			x			x			x			
DFW - Infrastruct Contracts Mgr																							
DFW - Infrastruct Service Mgr																							
FLL - Dir of Cap Improv		x			x			x			x			x			x			x			
FLL - Dir of Ops																							
FLL - Dir of Maint																							
FLL - Principal Planner			x		x			x			x				x		x				x		
MCO - Dir of Airport Ops																							
MSP - Asst Dir of Ops/Facilities																							
PHX - Super Ops Planning		x			x				x			x			x		x						
SAN - Mgr Airport Planning																							
SAN - Prog Mgr / Agency Owner																							
SLC - Airport Architect																							
SLC - Airport Maint Ops Super																						x	
Medium Hub																							
AUS - Mgr Eng and Const						x			x			x			x			x		x			x
IND - Dep Dir of Planning & Dev																							
PBI - Dep Dir																							
PBI - Arch Field Rep																							
Small Hub																							
LEX - Dir of Eng and Maint			x		x			x				x		x			x				x		
SAV - Ops Mgr		x			x			x				x		x			x			x			
SYR - Commissioner of Aviation																							
TUS - Mgr of Arch Serv																							
TUS - Station Mgr																							
Non-hub																							
HTS - Airport Dir			x		x				x			x			x			x		x			
ROA - Terminal Mgr			x		x			x			x			x			x						

Airport Managers Survey

CUSTOMER SERVICE

	18. Frequency of Complaints for Customer Service Issues																							
	Parking			Security Process			Aesthetics			Wayfinding			Variety of Amenities (play areas, lounges, etc.)			Concession Mix/ Locations			Restrooms			Cleanliness		
	Frequent	As Expected	Rare	Frequent	As Expected	Rare	Frequent	As Expected	Rare	Frequent	As Expected	Rare	Frequent	As Expected	Rare	Frequent	As Expected	Rare	Frequent	As Expected	Rare	Frequent	As Expected	Rare
Large Hub																								
DEN - Deputy Mgr		x		x					x		x			x			x			x				x
DFW - VP Customer Service																								
DFW - Asst VP Planning		x			x				x		x				x			x		x				x
DFW - Infrastruct Contracts Mgr																								
DFW - Infrastruct Service Mgr																								
FLL - Dir of Cap Improv	x			x			x				x			x		x			x					
FLL - Dir of Ops																								
FLL - Dir of Maint																								
FLL - Principal Planner		x			x		x			x				x			x			x			x	
MCO - Dir of Airport Ops																								
MSP - Asst Dir of Ops/Facilities																								
PHX - Super Ops Planning		x			x			x		x					x			x		x			x	
SAN - Mgr Airport Planning																								
SAN - Prog Mgr / Agency Owner	x				x			x		x				x			x		x				x	
SLC - Airport Architect																								
SLC - Airport Maint Ops Super			x		x				x		x		x					x		x				x
Medium Hub																								
AUS - Mgr Eng and Const		x		x					x			x		x			x			x				x
IND - Dep Dir of Planning & Dev																								
PBI - Dep Dir																								
PBI - Arch Field Rep																								
Small Hub																								
LEX - Dir of Eng and Maint			x		x				x			x			x		x			x				x
SAV - Ops Mgr			x		x				x			x			x			x			x			x
SYR - Commissioner of Aviation																								
TUS - Mgr of Arch Serv																								
TUS - Station Mgr																								
Non-hub																								
HTS - Airport Dir		x			x				x		x				x			x		x				x
ROA - Terminal Mgr		x			x			x			x		x			x					x			x

Airport Managers Survey

CUSTOMER SERVICE

	19. How Do You Collect Comments from Travelers About Your Restrooms?									20. Are Restrooms in Annual Customer Service Survey?	
	Email	Surveys	Comment Cards	Website	Letters	Social Media	Police Department	Weekly Walk-throughs	Social Media	Yes	No
Large Hub											
DEN - Deputy Mgr										x	
DFW - VP Customer Service											
DFW - Asst VP Planning	x									x	
DFW - Infrastruct Contracts Mgr											
DFW - Infrastruct Service Mgr											
FLL - Dir of Cap Improv		x								x	
FLL - Dir of Ops											
FLL - Dir of Maint											
FLL - Principal Planner		x									x
MCO - Dir of Airport Ops											
MSP - Asst Dir of Ops/Facilities											
PHX - Super Ops Planning								x			x
SAN - Mgr Airport Planning											
SAN - Prog Mgr / Agency Owner		x		x						x	
SLC - Airport Architect											
SLC - Airport Maint Ops Super					x				x		x
Medium Hub											
AUS - Mgr Eng and Const				x						x	
IND - Dep Dir of Planning & Dev											
PBI - Dep Dir											
PBI - Arch Field Rep											
Small Hub											
LEX - Dir of Eng and Maint	x		x							x	
SAV - Ops Mgr			x	x						x	
SYR - Commissioner of Aviation											
TUS - Mgr of Arch Serv											
TUS - Station Mgr											
Non-hub											
HTS - Airport Dir							x				x
ROA - Terminal Mgr			x							x	

Airport Managers Survey

MAINTENANCE

	22. Traveler Complaints Regarding Maintenance Issues														
	Cleanliness			Light Levels			Odors			Temperature			Noise		
	Frequent	As Expected	Rare	Frequent	As Expected	Rare	Frequent	As Expected	Rare	Frequent	As Expected	Rare	Frequent	As Expected	Rare
Large Hub															
DEN - Deputy Mgr			x			x			x			x			x
DFW - VP Customer Service															
DFW - Asst VP Planning			x			x		x				x			x
DFW - Infrastruct Contracts Mgr			x			x			x			x			x
DFW - Infrastruct Service Mgr															
FLL - Dir of Cap Improv	x				x		x				x			x	
FLL - Dir of Ops															
FLL - Dir of Maint															
FLL - Principal Planner			x			x	x					x			x
MCO - Dir of Airport Ops															
MSP - Asst Dir of Ops/Facilities															
PHX - Super Ops Planning		x				x			x			x			x
SAN - Mgr Airport Planning															
SAN - Prog Mgr / Agency Owner															
SLC - Airport Architect															
SLC - Airport Maint Ops Super		x				x			x			x			x
Medium Hub															
AUS - Mgr Eng and Const		x				x		x				x			x
IND - Dep Dir of Planning & Dev															
PBI - Dep Dir															
PBI - Arch Field Rep															
Small Hub															
LEX - Dir of Eng and Maint		x				x			x			x			x
SAV - Ops Mgr			x			x			x			x			x
SYR - Commissioner of Aviation															
TUS - Mgr of Arch Serv															
TUS - Station Mgr															
Non-hub															
HTS - Airport Dir			x			x		x				x			x
ROA - Terminal Mgr			x			x			x			x			x

Airport Managers Survey

MAINTENANCE

	22. Traveler Complaints Regarding Maintenance Issues														
	Plumbing Fixture Operation			Adequate Supply (Paper products, soap, etc.)			Baby Changing Stations			Cleaning Efficiency (ease of cleaning)			Adequate Waste Receptacles		
	Frequent	As Expected	Rare	Frequent	As Expected	Rare	Frequent	As Expected	Rare	Frequent	As Expected	Rare	Frequent	As Expected	Rare
Large Hub															
DEN - Deputy Mgr			x			x			x			x			x
DFW - VP Customer Service															
DFW - Asst VP Planning			x			x			x			x			x
DFW - Infrastruct Contracts Mgr			x			x			x			x			x
DFW - Infrastruct Service Mgr															
FLL - Dir of Cap Improv	x			x				x		x				x	
FLL - Dir of Ops															
FLL - Dir of Maint															
FLL - Principal Planner			x		x							x			x
MCO - Dir of Airport Ops															
MSP - Asst Dir of Ops/Facilities															
PHX - Super Ops Planning			x			x			x			x		x	
SAN - Mgr Airport Planning															
SAN - Prog Mgr / Agency Owner															
SLC - Airport Architect															
SLC - Airport Maint Ops Super			x		x				x			x			x
Medium Hub															
AUS - Mgr Eng and Const			x		x			x			x				x
IND - Dep Dir of Planning & Dev															
PBI - Dep Dir															
PBI - Arch Field Rep															
Small Hub															
LEX - Dir of Eng and Maint		x				x			x			x		x	
SAV - Ops Mgr			x		x				x			x			x
SYR - Commissioner of Aviation															
TUS - Mgr of Arch Serv															
TUS - Station Mgr															
Non-hub															
HTS - Airport Dir		x				x			x			x			x
ROA - Terminal Mgr		x			x				x			x			x

Airport Managers Survey

MAINTENANCE

23. Occurrence of Maintenance Issues

	Finishes (Durability and Ease of Maintenance)			Vandalism			Graffiti			Durability of Fixtures			Non-operating Plumbing Fixtures			Ease of Product Restocking			Clogged Soap Dispensers			Burned Out Light Bulbs		
	Frequent	As Expected	Rare	Frequent	As Expected	Rare	Frequent	As Expected	Rare	Frequent	As Expected	Rare	Frequent	As Expected	Rare	Frequent	As Expected	Rare	Frequent	As Expected	Rare	Frequent	As Expected	Rare
Large Hub																								
DEN - Deputy Mgr	x					x			x		x				x			x		x				x
DFW - VP Customer Service																								
DFW - Asst VP Planning			x			x			x			x			x		x				x			x
DFW - Infrastruct Contracts Mgr			x			x			x			x			x			x			x			x
DFW - Infrastruct Service Mgr																								
FLL - Dir of Cap Improv	x					x			x		x				x	x				x				x
FLL - Dir of Ops																								
FLL - Dir of Maint																								
FLL - Principal Planner		x				x			x		x				x		x			x			x	
MCO - Dir of Airport Ops																								
MSP - Asst Dir of Ops/Facilities																								
PHX - Super Ops Planning		x			x			x			x			x			x			x			x	
SAN - Mgr Airport Planning																								
SAN - Prog Mgr / Agency Owner																								
SLC - Airport Architect																								
SLC - Airport Maint Ops Super		x				x			x		x			x			x				x			x
Medium Hub																								
AUS - Mgr Eng and Const		x				x			x		x			x			x			x				x
IND - Dep Dir of Planning & Dev																								
PBI - Dep Dir																								
PBI - Arch Field Rep																								
Small Hub																								
LEX - Dir of Eng and Maint			x			x			x		x			x				x		x			x	
SAV - Ops Mgr			x			x			x			x			x			x			x			x
SYR - Commissioner of Aviation																								
TUS - Mgr of Arch Serv																								
TUS - Station Mgr																								
Non-hub																								
HTS - Airport Dir		x				x			x		x				x			x			x			x
ROA - Terminal Mgr		x				x			x		x				x			x			x			x

Airport Managers Survey

MAINTENANCE

	24. Finishes (durability and ease to maintain)		25. Access to Pipe Chase and Janitor's Closet Outside Restroom		26. Preferred Clear Width in Pipe Chase	27A. Use Technology to Monitor Maintenance Problems		27B. Describe Monitoring Technology	28. Standard Operating Procedures for Restroom Maintenance		30. Restroom Layouts That Work Well	
	Yes	No	Yes	No		Yes	No		Yes	No	Yes	No
Large Hub												
DEN - Deputy Mgr	x		x		4 ft.		x		x			x
DFW - VP Customer Service												
DFW - Asst VP Planning				x	36"		x		x		x	
DFW - Infrastruct Contracts Mgr						x		Infor EAM				
DFW - Infrastruct Service Mgr												
FLL - Dir of Cap Improv			x				x			x		x
FLL - Dir of Ops												
FLL - Dir of Maint												
FLL - Principal Planner			x		3 ft.		x		x			x
MCO - Dir of Airport Ops												
MSP - Asst Dir of Ops/Facilities												
PHX - Super Ops Planning				x	?		x			x		x
SAN - Mgr Airport Planning												
SAN - Prog Mgr / Agency Owner												
SLC - Airport Architect												
SLC - Airport Maint Ops Super			x		24"	x			x		x	
Medium Hub												
AUS - Mgr Eng and Const				x		x		MMS	x		x	
IND - Dep Dir of Planning & Dev												
PBI - Dep Dir												
PBI - Arch Field Rep												
Small Hub												
LEX - Dir of Eng and Maint			x		30"		x		x		x	
SAV - Ops Mgr				x			x			x	x	
SYR - Commissioner of Aviation												
TUS - Mgr of Arch Serv												
TUS - Station Mgr												
Non-hub												
HTS - Airport Dir				x			x				x	
ROA - Terminal Mgr				x		x				x	x	

Airport Managers Survey

DESIGN CONSIDERATIONS

32. **PLANNING:** Importance of Restroom Components to Traveler's Experience.

	Proximity to Nodes (gates, concessions ticketing, etc.,)			Visibility			Wayfinding			Adjacent Family/ Companion Care Room			Adjacent Drinking Fountains			Vestibule Entrance (No Doors)			Individual Toilet Compartments with Sink			Baby Changing Station			Close Partial Restroom for Service		
	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important
Large Hub																											
DEN - Deputy Mgr	x			x			x			x			x			x			x			x				x	
DFW - VP Customer Service																											
DFW - Asst VP Planning		x			x			x		x				x									x				x
DFW - Infrastruct Contracts Mgr	x			x			x			x				x									x				
DFW - Infrastruct Service Mgr																											
FLL - Dir of Cap Improv	x			x			x			x				x		x			x				x		x		
FLL - Dir of Ops																											
FLL - Dir of Maint																											
FLL - Principal Planner	x			x			x			x			x			x				x		x				x	
MCO - Dir of Airport Ops																											
MSP - Asst Dir of Ops/Facilities																											
PHX - Super Ops Planning		x		x			x			x				x		x				x		x				x	
SAN - Mgr Airport Planning																											
SAN - Prog Mgr / Agency Owner																											
SLC - Airport Architect																											
SLC - Airport Maint Ops Super	x			x			x				x			x				x			x	x				x	
Medium Hub																											
AUS - Mgr Eng and Const	x			x			x			x				x		x			x			x				x	
IND - Dep Dir of Planning & Dev																											
PBI - Dep Dir																											
PBI - Arch Field Rep																											
Small Hub																											
LEX - Dir of Eng and Maint	x				x			x				x	x			x				x		x			x		
SAV - Ops Mgr	x			x			x				x			x			x			x		x				x	
SYR - Commissioner of Aviation																											
TUS - Mgr of Arch Serv																											
TUS - Station Mgr																											
Non-hub																											
HTS - Airport Dir	x			x			x				x			x			x			x		x					x
ROA - Terminal Mgr	x			x			x			x			x			x			x			x			x		

Airport Managers Survey

DESIGN CONSIDERATIONS

33. **MATERIALS:** Importance of Restroom Components to Traveler's Experience.

	Wall Finishes			Floor Finishes			Ceiling Finishes			Toilet Partitions			Door Hardware			Sink and Vanity Deck Finishes			Mirrors		
	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important
Large Hub																					
DEN - Deputy Mgr		x			x				x	x			x			x			x		
DFW - VP Customer Service																					
DFW - Asst VP Planning	x			x				x		x				x		x			x		
DFW - Infrastruct Contracts Mgr		x			x				x	x				x			x		x		
DFW - Infrastruct Service Mgr																					
FLL - Dir of Cap Improv	x			x				x		x				x		x			x		
FLL - Dir of Ops																					
FLL - Dir of Maint																					
FLL - Principal Planner	x			x				x		x			x			x			x		
MCO - Dir of Airport Ops																					
MSP - Asst Dir of Ops/Facilities																					
PHX - Super Ops Planning	x			x					x	x			x			x			x		
SAN - Mgr Airport Planning																					
SAN - Prog Mgr / Agency Owner																					
SLC - Airport Architect																					
SLC - Airport Maint Ops Super		x			x			x		x			x			x			x		
Medium Hub																					
AUS - Mgr Eng and Const		x			x			x		x				x		x			x		
IND - Dep Dir of Planning & Dev																					
PBI - Dep Dir																					
PBI - Arch Field Rep																					
Small Hub																					
LEX - Dir of Eng and Maint		x		x				x		x			x				x		x		
SAV - Ops Mgr	x			x			x			x			x			x			x		
SYR - Commissioner of Aviation																					
TUS - Mgr of Arch Serv																					
TUS - Station Mgr																					
Non-hub																					
HTS - Airport Dir		x		x				x			x			x		x				x	
ROA - Terminal Mgr		x		x				x		x				x		x			x		

Airport Managers Survey

DESIGN CONSIDERATIONS

34. **FIXTURES:** Importance of Restroom Components to Traveler's Experience.

	Toilets			Urinals			Drinking Fountains			Sinks			Lights		
	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important
Large Hub															
DEN - Deputy Mgr	x			x			x			x			x		
DFW - VP Customer Service															
DFW - Asst VP Planning	x			x			x			x			x		
DFW - Infrastruct Contracts Mgr	x			x				x		x			x		
DFW - Infrastruct Service Mgr															
FLL - Dir of Cap Improv	x			x				x		x			x		
FLL - Dir of Ops															
FLL - Dir of Maint															
FLL - Principal Planner	x			x			x			x			x		
MCO - Dir of Airport Ops															
MSP - Asst Dir of Ops/Facilities															
PHX - Super Ops Planning	x			x				x		x				x	
SAN - Mgr Airport Planning															
SAN - Prog Mgr / Agency Owner															
SLC - Airport Architect															
SLC - Airport Maint Ops Super	x			x				x			x		x		
Medium Hub															
AUS - Mgr Eng and Const	x			x			x			x			x		
IND - Dep Dir of Planning & Dev															
PBI - Dep Dir															
PBI - Arch Field Rep															
Small Hub															
LEX - Dir of Eng and Maint	x			x			x			x			x		
SAV - Ops Mgr	x				x			x			x			x	
SYR - Commissioner of Aviation															
TUS - Mgr of Arch Serv															
TUS - Station Mgr															
Non-hub															
HTS - Airport Dir	x				x			x		x				x	
ROA - Terminal Mgr	x			x			x			x			x		

Airport Managers Survey

DESIGN CONSIDERATIONS

35. **ACCESSORIES:** Importance of Restroom Components to Traveler's Experience.

	Soap Dispensers			Hand Dryers			Paper Towels			Trash Containers			Mirrors			Make-up Mirror			Full-length Mirror		
	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important
Large Hub																					
DEN - Deputy Mgr	x			x				x		x			x				x				x
DFW - VP Customer Service																					
DFW - Asst VP Planning	x			x			x			x			x					x	x		
DFW - Infrastruct Contracts Mgr	x			x			x			x			x				x				x
DFW - Infrastruct Service Mgr																					
FLL - Dir of Cap Improv	x			x			x				x			x			x		x		
FLL - Dir of Ops																					
FLL - Dir of Maint																					
FLL - Principal Planner	x			x			x			x			x			x			x		
MCO - Dir of Airport Ops																					
MSP - Asst Dir of Ops/Facilities																					
PHX - Super Ops Planning	x			x			x			x			x					x		x	
SAN - Mgr Airport Planning																					
SAN - Prog Mgr / Agency Owner																					
SLC - Airport Architect																					
SLC - Airport Maint Ops Super	x				x		x			x			x				x			x	
Medium Hub																					
AUS - Mgr Eng and Const	x				x			x		x			x				x			x	
IND - Dep Dir of Planning & Dev																					
PBI - Dep Dir																					
PBI - Arch Field Rep																					
Small Hub																					
LEX - Dir of Eng and Maint	x			x			x			x			x				x			x	
SAV - Ops Mgr	x			x			x			x				x				x			x
SYR - Commissioner of Aviation																					
TUS - Mgr of Arch Serv																					
TUS - Station Mgr																					
Non-hub																					
HTS - Airport Dir	x				x			x		x				x				x			x
ROA - Terminal Mgr	x					x		x		x			x				x			x	

Airport Managers Survey

DESIGN CONSIDERATIONS

35. **ACCESSORIES:** Importance of Restroom Components to Traveler's Experience.

	Baby Changing Station			Sanitary Products Vending			Sanitary Disposal			Adult Diaper Disposal			Biohazard Disposal (e.g. Sharps)			Shelf for Belongings			Hook(s) for Bags, Coats, etc.		
	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important
Large Hub																					
DEN - Deputy Mgr	x				x			x				x	x			x			x		
DFW - VP Customer Service																					
DFW - Asst VP Planning	x			x			x			x					x	x			x		
DFW - Infrastruct Contracts Mgr		x		x			x				x										
DFW - Infrastruct Service Mgr																					
FLL - Dir of Cap Improv		x			x		x				x			x			x			x	
FLL - Dir of Ops																					
FLL - Dir of Maint																					
FLL - Principal Planner	x			x			x				x			x		x			x		
MCO - Dir of Airport Ops																					
MSP - Asst Dir of Ops/Facilities																					
PHX - Super Ops Planning	x			x			x			x			x			x			x		
SAN - Mgr Airport Planning																					
SAN - Prog Mgr / Agency Owner																					
SLC - Airport Architect																					
SLC - Airport Maint Ops Super	x			x			x			x			x			x			x		
Medium Hub																					
AUS - Mgr Eng and Const	x			x			x				x		x			x			x		
IND - Dep Dir of Planning & Dev																					
PBI - Dep Dir																					
PBI - Arch Field Rep																					
Small Hub																					
LEX - Dir of Eng and Maint	x			x			x				x		x			x			x		
SAV - Ops Mgr	x			x			x				x			x			x		x		
SYR - Commissioner of Aviation																					
TUS - Mgr of Arch Serv																					
TUS - Station Mgr																					
Non-hub																					
HTS - Airport Dir		x		x			x			x				x			x			x	
ROA - Terminal Mgr	x			x			x			x			x			x			x		

Airport Managers Survey

DESIGN CONSIDERATIONS

36. **COMFORT:** Importance of Restroom Components to Traveler's Experience.

	Accessibility			Touchless Environment			Automatic Doors at Accessible Compartments			Urinal Screens			Lighting			Daylight			Heating/ Cooling			Ventilation		
	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important
Large Hub																								
DEN - Deputy Mgr	x			x					x	x			x					x	x			x		
DFW - VP Customer Service																								
DFW - Asst VP Planning	x			x				x		x			x					x		x		x		
DFW - Infrastruct Contracts Mgr	x				x								x						x			x		
DFW - Infrastruct Service Mgr																								
FLL - Dir of Cap Improv	x			x			x			x				x			x			x		x		
FLL - Dir of Ops																								
FLL - Dir of Maint																								
FLL - Principal Planner	x			x				x		x			x				x		x			x		
MCO - Dir of Airport Ops																								
MSP - Asst Dir of Ops/Facilities																								
PHX - Super Ops Planning	x			x			x			x				x			x		x			x		
SAN - Mgr Airport Planning																								
SAN - Prog Mgr / Agency Owner																								
SLC - Airport Architect																								
SLC - Airport Maint Ops Super	x				x		x				x			x				x	x			x		
Medium Hub																								
AUS - Mgr Eng and Const	x				x			x		x				x		x			x			x		
IND - Dep Dir of Planning & Dev																								
PBI - Dep Dir																								
PBI - Arch Field Rep																								
Small Hub																								
LEX - Dir of Eng and Maint	x				x				x	x			x					x		x		x		
SAV - Ops Mgr	x				x			x			x			x				x		x		x		
SYR - Commissioner of Aviation																								
TUS - Mgr of Arch Serv																								
TUS - Station Mgr																								
Non-hub																								
HTS - Airport Dir	x				x		x				x			x				x		x			x	
ROA - Terminal Mgr	x			x					x	x			x			x			x			x		

Airport Managers Survey

DESIGN CONSIDERATIONS

37. **CONVENIENCE:** Importance of Restroom Components to Traveler's Experience.

	Shelf in Toilet Stall			Space for Carry-ons in Toilet Stall			Coat Hook in Toilet Stall			Trash in Toilet Stall			Shelf at Urinal			Space for Carry-on at Urinal			Coat Hook at Urinal		
	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important
Large Hub																					
DEN - Deputy Mgr	x			x			x					x		x			x				x
DFW - VP Customer Service																					
DFW - Asst VP Planning	x			x			x					x	x			x			x		
DFW - Infrastruct Contracts Mgr		x			x		x					x		x			x				x
DFW - Infrastruct Service Mgr																					
FLL - Dir of Cap Improv		x			x					x				x			x			x	
FLL - Dir of Ops																					
FLL - Dir of Maint																					
FLL - Principal Planner		x		x			x			x			x			x				x	
MCO - Dir of Airport Ops																					
MSP - Asst Dir of Ops/Facilities																					
PHX - Super Ops Planning	x			x			x				x			x		x				x	
SAN - Mgr Airport Planning																					
SAN - Prog Mgr / Agency Owner																					
SLC - Airport Architect																					
SLC - Airport Maint Ops Super		x			x		x					x		x				x			x
Medium Hub																					
AUS - Mgr Eng and Const		x		x			x				x		x				x			x	
IND - Dep Dir of Planning & Dev																					
PBI - Dep Dir																					
PBI - Arch Field Rep																					
Small Hub																					
LEX - Dir of Eng and Maint		x		x			x				x			x		x					x
SAV - Ops Mgr		x		x			x				x			x			x			x	
SYR - Commissioner of Aviation																					
TUS - Mgr of Arch Serv																					
TUS - Station Mgr																					
Non-hub																					
HTS - Airport Dir		x		x			x					x		x			x				x
ROA - Terminal Mgr	x			x			x				x		x			x			x		

Airport Managers Survey

DESIGN CONSIDERATIONS

	37. **CONVENIENCE:** Importance of Restroom Components to Traveler's Experience.												38. **AMENITIES:** Importance of Restroom Components to Traveler's Experience.											
	Shelf at Sink			Coat Hook at Sink			Bottle Filler at Drinking Fountain			Security of Having Belongings in Sight			Art			Center for Passenger Needs (e.g. FIDS, AED, Info Desk, Mother's Room, Etc.)			Adjacent Waiting Area			Means for Travelers to Register Comments		
	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important
Large Hub																								
DEN - Deputy Mgr		x				x	x			x					x			x			x		x	
DFW - VP Customer Service																								
DFW - Asst VP Planning	x			x					x	x					x		x			x			x	
DFW - Infrastruct Contracts Mgr		x				x			x	x					x		x				x		x	
DFW - Infrastruct Service Mgr																								
FLL - Dir of Cap Improv		x			x			x			x			x		x			x				x	
FLL - Dir of Ops																								
FLL - Dir of Maint																								
FLL - Principal Planner	x				x		x			x				x		x				x			x	
MCO - Dir of Airport Ops																								
MSP - Asst Dir of Ops/Facilities																								
PHX - Super Ops Planning	x				x				x	x				x		x			x			x		
SAN - Mgr Airport Planning																								
SAN - Prog Mgr / Agency Owner																								
SLC - Airport Architect																								
SLC - Airport Maint Ops Super			x			x		x		x				x			x				x		x	
Medium Hub																								
AUS - Mgr Eng and Const	x					x		x		x			x				x			x			x	
IND - Dep Dir of Planning & Dev																								
PBI - Dep Dir																								
PBI - Arch Field Rep																								
Small Hub																								
LEX - Dir of Eng and Maint		x				x		x		x				x			x				x			x
SAV - Ops Mgr	x					x		x		x				x			x				x		x	
SYR - Commissioner of Aviation																								
TUS - Mgr of Arch Serv																								
TUS - Station Mgr																								
Non-hub																								
HTS - Airport Dir	x				x				x		x				x			x			x		x	
ROA - Terminal Mgr	x			x				x		x				x		x			x			x		

Airport Managers Survey

DESIGN CONSIDERATIONS

38. **SUSTAINABILITY:** Importance of the Following Considerations.

	Energy Use			Water Consumption			Environment Friendly Materials			Cleaning Supplies			Recycled Materials			Waste Management			Light Control		
	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important	Important	Moderately Important	Not Important
Large Hub																					
DEN - Deputy Mgr	x			x				x		x				x		x				x	
DFW - VP Customer Service																					
DFW - Asst VP Planning	x			x			x			x			x			x			x		
DFW - Infrastruct Contracts Mgr	x			x			x			x			x			x			x		
DFW - Infrastruct Service Mgr																					
FLL - Dir of Cap Improv	x			x			x				x		x				x			x	
FLL - Dir of Ops																					
FLL - Dir of Maint																					
FLL - Principal Planner	x			x			x			x				x		x			x		
MCO - Dir of Airport Ops																					
MSP - Asst Dir of Ops/Facilities																					
PHX - Super Ops Planning	x			x				x		x				x		x			x		
SAN - Mgr Airport Planning																					
SAN - Prog Mgr / Agency Owner																					
SLC - Airport Architect																					
SLC - Airport Maint Ops Super		x		x				x			x			x			x			x	
Medium Hub																					
AUS - Mgr Eng and Const	x			x			x			x			x			x			x		
IND - Dep Dir of Planning & Dev																					
PBI - Dep Dir																					
PBI - Arch Field Rep																					
Small Hub																					
LEX - Dir of Eng and Maint	x				x			x			x			x		x			x		
SAV - Ops Mgr	x			x			x			x			x			x			x		
SYR - Commissioner of Aviation																					
TUS - Mgr of Arch Serv																					
TUS - Station Mgr																					
Non-hub																					
HTS - Airport Dir	x			x				x		x				x		x				x	
ROA - Terminal Mgr	x			x			x			x			x			x			x		

Airport Managers Survey

DESIGN CONSIDERATIONS	40. Does Your Terminal Have a Mother's Room(s)?		41. How Are Mother's Rooms Distributed?		42. How Do You Control Access to Mother's Room?
	Yes	No	One Landside/ One Airside	One on the Concourse	Free Access with Lock
Large Hub					
DEN - Deputy Mgr		x			
DFW - VP Customer Service					
DFW - Asst VP Planning	x				x
DFW - Infrastruct Contracts Mgr					
DFW - Infrastruct Service Mgr					
FLL - Dir of Cap Improv		x			
FLL - Dir of Ops					
FLL - Dir of Maint					
FLL - Principal Planner		x			
MCO - Dir of Airport Ops					
MSP - Asst Dir of Ops/Facilities					
PHX - Super Ops Planning	x		x		
SAN - Mgr Airport Planning					
SAN - Prog Mgr / Agency Owner					
SLC - Airport Architect					
SLC - Airport Maint Ops Super		x			
Medium Hub					
AUS - Mgr Eng and Const		x			
IND - Dep Dir of Planning & Dev					
PBI - Dep Dir					
PBI - Arch Field Rep					
Small Hub					
LEX - Dir of Eng and Maint		x			
SAV - Ops Mgr		x			
SYR - Commissioner of Aviation					
TUS - Mgr of Arch Serv					
TUS - Station Mgr					
Non-hub					
HTS - Airport Dir	x				
ROA - Terminal Mgr	x			x	x

E.5 Findings

The research team received 184 responses during the two weeks the survey was open. They came from all over the country, and one as far away as Thailand. Almost twice as many males as females took the survey. One transgender person participated. Ages ranged from the 20s to 80s, with a fairly even distribution in each of the first ten-year groups. In this sampling, the respondents rarely, if ever, traveled with children or people with special needs (such as persons with disabilities, infants, or the elderly). Only four traveled with children and two of the elderly had mobility issues. Most people traveled alone.

Over half of those between ages 31 and 60 had some level of frequent flyer status. Slightly more of the people traveled for business than leisure. For business, a third made less than five trips per year. 17% made more than 20. Predictably, the majority of leisure and family trips were less than five per year.

Frustrations When Visiting Airport Restrooms

Of the choices listed, the most common frustrations were cleanliness, odors, and dispensers for paper towels, toilet paper, and soap being empty. Additional comments were quite varied and insightful: need for more space, need a place for belongings, issues with paper products, etc.

Finding the Restrooms

Wayfinding was an important consideration. The majority of the responses indicated that signage was at least moderately important. Similarly, the distance of the restrooms from gates, concessions, baggage claim, etc. and being able to see the restroom from a distance was an important aspect of locating restrooms.

Comfort within Restrooms

All of the restroom aspects related to passenger comfort within the restrooms--maneuvering space, touchless environment, privacy, accessibility, and having your belongings in sight--were considered at least moderately important.

Basic Restroom Amenities

Expectations included coat hooks, a shelf for belongings, and space for carry-ons at the sinks, toilets, and urinals as well paper dispensers and trash. These were all highly desired, although coat hooks and carry-on space at the urinals was less important. There was a slight preference for foam versus liquid soap. The preference for paper towels versus hand dryers was fairly split. However, the majority of additional comments pertained to hand dryers indicating experiences that were indifferent or negative.

Extra Restroom Features

A variety of “extras” such as a full length mirror, calming music, daylight, outlets, etc. were listed. Some responses appeared to reflect the personal needs of the individuals as reflected in responses regarding biohazard disposals, adult diaper disposals, dressing rooms, and adult changing tables, which were all otherwise deemed unimportant. The additional comments section revealed a design consideration that is often overlooked: it’s often difficult to get close to the mirrors for grooming, brushing teeth, etc. Related to this was the comment that brushing your teeth with warm water does not work well. Then there was the plea, “Please god, do NOT add any more noise.”

Amenities to Have Near Restrooms

Related amenities such as Family Rooms, Companion Care Rooms, and drinking fountains were generally important to have near the restrooms. Conveniences, like vending machines and a waiting area were less important. Flight information near the restrooms was considered a useful amenity. There was some confusion about the difference between lactation and nursing rooms. Having them near the restrooms was not considered important.

Other Insights and Ideas for Improvement Related to the Design of Airport Restrooms

Many thoughts were shared around a few common issues. Space was lacking in both the stalls for circulation throughout the restrooms. People bump into each other with their belongings and have no place to put their belongings when using the restroom. Related to this is the lack of fixtures, which creates lines, thus making circulation even more difficult. A big theme was cleaning, or more often, the lack of it, and fixtures needing repair.

Typical Traveler Survey

1. About You:

Gender

Age

Special Needs

"Home" Airport

Airline Status (none, elite, etc.)

2. Flying trips per year:

	1-5	6-10	11-20	20+
Business	☐	☐	☐	☐
Leisure	☐	☐	☐	☐
Family	☐	☐	☐	☐

3. Who do you travel with in a typical year (percentage of the time - e.g. 50)?

Alone

Companion (significant other, co-worker, etc.)

Kids

Person with Special Needs (disabilities, baby, elderly, etc.)

Typical Traveler Survey

4. Top frustrations when visiting airport restrooms (select only three):

- ☐ Cleanliness
- ☐ Light Levels
- ☐ Odors
- ☐ Temperature
- ☐ Noise
- ☐ Plumbing Fixture Operation
- ☐ Adequate Supply (paper towels, toilet paper, soap, etc.)
- ☐ Adequate Waste Receptacles
- ☐ Looks Dated

Additional Comments:

5. Rate the importance of the following regarding finding the restrooms:

	Very Important	Moderately Important	Not Important
Distance from gates, ticketing, baggage claim, concessions, etc.	○	○	○
Visibility from a Distance	○	○	○
Signage to the Restrooms	○	○	○

Additional Comments:

6. Rate the importance of the following regarding comfort within the restrooms:

	Very Important	Moderately Important	Not Important
Maneuvering Space	○	○	○
Touchless Environment	○	○	○
Urinal Partitions	○	○	○
Belongings in Sight	○	○	○
Accessibility for Travelers with Disabilities	○	○	○

Additional Comments:

7. Rate the importance of the following regarding basic restroom amenities:

	Very Important	Moderately Important	Not Important
Shelf in Toilet Stall	○	○	○
Space for Carry-on in Toilet Stall	○	○	○
Coat Hook in Toilet Stall	○	○	○
Trash in Toilet Stall	○	○	○
Shelf at Urinal	○	○	○
Space for Carry-on at Urinal	○	○	○
Coat Hook at Urinal	○	○	○
Shelf at Sink	○	○	○
Coat Hook at Sink	○	○	○
Liquid Soap Dispensers	○	○	○
Foam Soap Dispensers	○	○	○
Hand Dryers	○	○	○
Paper Towels	○	○	○
Adequate Trash Container (s)	○	○	○

Additional Comments:

Typical Traveler Survey

8. Rate the importance of these extra restroom features:

	Very Important	Moderately Important	Not Important
Make-up Mirror			
Full Length Mirror			
Biohazard Disposal (e.g. Sharps)			
Outlet by Sink			
Adult Diaper Disposal			
A way to Register Complaints / Comments			
Dressing Room			
Calming Music			
Warm Water for Hand Washing			
Adult Changing Table			
Daylight			

Additional Comments:

9. Rate the importance of having the following near the restrooms:

	Very Important	Moderately Important	Not Important
Family Room: primarily for adult with child(ren)	○	○	○
Companion Care Room: primarily for adult with adult companion with special needs	○	○	○
Lactation Room	○	○	○
Nursing Room	○	○	○
Drinking Fountains	○	○	○
Vending Machines	○	○	○
Flight Information	○	○	○
Waiting Area	○	○	○

Additional Comments:

10. Please share any other insights or ideas for improvement related to the design of airport restrooms:

E.6 Survey Responses

The following pages tabulate the question responses from the Typical Traveler Survey participants.

1. ABOUT YOU															
Age	21-30			31-40		41-50		51-60		61-70		71-80		81-90	
Gender	F	M	T	F	M	F	M	F	M	F	M	F	M	F	M
Responses	13	25	1	16	25	18	28	15	30	4	6		2		1
Special Needs															
Travel w/child	2			2											
6'-2" and 22 # - Need space to move								1	1						
Wheelchair for long walking distances											1				
Mobility issues													1		
Home Airport															
MSP	5	14		13	11	8	6	6	12	1					
BKK	1														
DTW		1													
ORD					2	1	1		2						
STL	3	2		1			1	1	2						
MCO					1										
MSN					2				1						
MKE		2			3		2	1							
DFW	1						1								
PHX	1								1						
MCI		2													
BNA				1		2	2	1	2		1		1		
BOS		1		1			1								
CVG		2			1	1		1	1		1				
DRO					1										
SFO	1						1								
IAH					1		2								
DCA	1								2						
SEA					1		1								
MEM		1													
RDU						1	1								
PWM					1										
DEN					1	2	3	1	1	1					
PDX					1	1									
IAD						1				1					
SNA						1			1		1				
DAL							1								
DLH							1		1						
BOI							1								
GOT					1		1								
PIT								1							
TPA					1		2								
HNL								2	1	1	1				
MHT								1							
ATL			1						1						
TRI									1						
BWI									1						
DCA											1				
SDF											1				
BJI													1		
N/A					1		1								
Airline Status															
Sky Priority (Delta)	1														
Elite		1		2	7		7	2	4	1	1				
Gold Elite (Delta)	1				1		1	1	2						
A-List	1								1						
Platinum		1				1	1				1				
Gold Medallion		1			2										
Platinum Elite (Delta)		1													
Expert				1											
Diamond (Delta)						1									
Premier						1	1	1	1						
Silver Elite							1		2						
Frequent Flier						1	2		2						
Eurobonus Gold									1						
SWA A+									1						
United Premier Gold											1				
United Million Miler Platinum							1								
Silver Medallion															1
Gold Medallion	1	21	1	13	15	14	14	11	16	3	3		2		

Typical Traveler Survey

Typical Traveler Survey

Typical Traveler Survey

Typical Traveler Survey

Typical Traveler Survey

Age	21-30			31-40		41-50		51-60		61-70		71-80		81-90	
Gender	F	M	T	F	M	F	M	F	M	F	M	F	M	F	M
Responses	13	25	1	16	25	18	28	15	30	4	6		2		1
7. BASIC RESTROOM AMENITIES															
Shelf in toilet stall															
Very important	6	6		9	4	10	12	4	12	4	2		1		
Moderately important	5	13		4	11	4	15	9	14		2		1		
Not important	2	6	1	3	6	4	1	2	2		1				
N/A					4				2						
Sapce for carry-on in toilet stall															
Very important	11	16	1	15	18	17	19	13	24	3	6		2		
Moderately important	1	9		1	3	1	8	2	5	1					
Not important	1				1										
N/A					3		1		1						
Coat hook in toilet stall															
Very important	11	21	1	15	15	17	26	13	24	3	5		2		
Moderately important	1	4		1	7	1	2	2	4		1				
Not important	1								1						
N/A					3				1	1					
Trash in toilet stall															
Very important	6	1	1	12		6	2	4	3	1					
Moderately important	5	6		2	11	9	6	5	8	2	2		1		
Not important	2	18		2	11	1	19	6	15	1	4		1		
N/A					3	2	1		4						
Shelf at urinal															
Very important	1	5		1	2	1	6		4						
Moderately important	2	14	1	4	14	2	15	2	15	1	3		1		
Not important	10	6		7	6	8	5	8	10	2	3		1		
N/A				4	3	7	2	5	1	1					
Space for carry-on at urinal															
Very important	2	14		2	8	2	12	1	10	1	3				
Moderately important	1	7	1	3	11	2	13	1	14		1		2		
Not important	10	4		7	3	8	3	8	5	2	2				
N/A				4	3	6		5	1						
Coat hook at urinal															
Very important	2	2	1			1		1	1						
Moderately important	1	4		3	4	3	6	1	7	1					
Not important	10	19		8	18	8	20	7	21	2	6		2		
N/A				5	3	6	2	6	1						
Shelf at sink															
Very important	3	10	1	6	5	11	13	5	5	3					
Moderately important	8	11		3	9	4	9	7	18	1	2		1		
Not important	2	4		7	8	3	6	3	6		4		1		
N/A					3				1						
Coat hook at sink															
Very important	1	3	1	3		3		4	1						
Moderately important	5	4		6	5	4	7	4	11	3					
Not important	7	18		6	17	9	19	6	17		6		2		
N/A				1	3	2	2	1	1	1					
Liquid soap dispensers															
Very important	4	5	1	5	6	8	12	5	9	1	3		1		
Moderately important	4	11		4	11	6	10	8	15	3	3				
Not important	5	9		7	5	2	5	2	4				1		
N/A					3	2	1		2						
Foam soap dispensers															
Very important	2	8		11	7	5	10	6	7	1	2				
Moderately important	6	11	1	3	12	7	12	3	17	3	3		1		
Not important	5	6		1	3	5	4	5	5		1		1		
N/A				1	3	1	2	1	1						
Hand dryers															
Very important	3	9	1	11	10	6	13	4	9		1		1		
Moderately important	6	12		4	8	5	8	7	9	4	2				
Not important	4	4		1	4	7	6	4	11		3		1		
N/A					3		1		1						
Paper towels															
Very important	8	13		9	6	13	15	10	13	4	4		1		
Moderately important	2	7	1	6	11	4	6	4	12		2		1		
Not important	3	5		1	5		5	1	3						
N/A					3	1	2		2						
Adequate trash containers															
Very important	10	15	1	14	9	14	21	11	21	4	5		2		
Moderately important	2	9		2	13	3	7	4	7		1				
Not important	1	1													
N/A					3	1			2						

Typical Traveler Survey

Typical Traveler Survey

Typical Traveler Survey

Typical Traveler Survey

Typical Traveler Survey

Age	21-30			31-40		41-50		51-60		61-70		71-80		81-90	
Gender	F	M	T	F	M	F	M	F	M	F	M	F	M	F	M
Responses	13	25	1	16	25	18	28	15	30	4	6		2		1

10. OTHER INSIGHTS OR IDEAS FOR IMPROVEMENT RELATED TO THE DESIGN OF AIRPORT RESTROOMS															
Having more than one entrance to a single restroom location has been convenient in some airports as it provides for a better "flow" of people traffic.	1														
Outlets/shelf away from the sinks. Small area away from sinks/toilets for "adjusting" before/after a flight.	1														
Courtyards.		1													
It would be nice to use your foot to press down a pedal that allows water to flow.		1													
There is some awful mosaic tile work at the entrance of a few MSP restrooms.		1													
Not having an entrance door will make for easier access. However, when designing the entrance turn-around (for privacy) make it wide enough for two-way traffic. Some airports have a narrow hallway that travelers like to walk in the middle.		1													
#1 issue: congested circulation. Everyone has a roll aboard and there is little to no room to maneuver.		1													
More private space for nursing mothers				1											
The diaper disposal should be closed to prevent smells. Another nice feature in restrooms that I have seen is the toddler suspended strap in seat located inside the restroom stall.				1											
It would be nice if diaper changing facilities were available in both men and women's restrooms.				1											
Updated colors that are not dull like gray (because you just sat on a plane for many hours that has a gray interior). Lighting that is not dim.				1											
Please be aware of placement of the "feminine hygeine" disposal box and how it relates to sitting on the toilet. It's impossible to use the disposal box if it's too far away, behind and out of reach.				1											
The general public is disgusting. The easiest way to improve airport restrooms is to have much more frequent cleaning routines and much more thorough. Take 10 minutes to watch current cleaning practices and you will likely notice the restroom isn't "cleaned" just wiped down. Cleaning would include disinfecting (think Lysol). When you clena your house it smells clean and looks fresh. Airport restrooms never have that feeling even minutes after they have been "cleaned."					1										
Pretty bathrooms are better.					1										
More cleaning needed all around. Need the autoflushers to function better as they are always broken. More privacy, no spaces under stall walls. European bathrooms are all separate stalls.					1										
Anything that is presented verbally to make sure it also has sub title or captioning for the hearing impaired and deaf.						1									
The most important things to me are space and cleanliness - but I definately notice when a restroom facility offers a bit more...like a place to put my "stuff" when I'm in the stall and daylight...make it a much more enjoyable experience.						1									
So many of the US airports need to be upgraded						1									
Larger stalls that would be easier to accommodate carry-on luggage						1			2						

Typical Traveler Survey

Age	21-30			31-40		41-50		51-60		61-70		71-80		81-90	
Gender	F	M	T	F	M	F	M	F	M	F	M	F	M	F	M
Responses	13	25	1	16	25	18	28	15	30	4	6		2		1

10. OTHER INSIGHTS OR IDEAS FOR IMPROVEMENT RELATED TO THE DESIGN OF AIRPORT RESTROOMS															
Quiet, quiet, quiet, quiet, quiet, quiet, quiet, quiet						1									
TP Dispensers higher!!!!						1									
When having a large carry-on in stall, need to make sure the door can actually open and close with the carry-on within the stall. so either have more handicap access or have out-swinging doors to facilitate actually having room to open and close the door to keep laptop bags/carry-on within the stall and still be able to stand while opening/closing door.						1									
Tired of bathrooms that need rehab and aren't getting it. Partitions that have been drilled all over to rehang doors, hooks, etc. they are beat up because too small for suitcases that are constantly being pushed on and against. DEN good example almost all bathrooms are original construction. Need to remodel. A few new bathrooms in the terminal.						1									
As many touchless features as possible, and if doors are required, make them outswing on exiting so that you do not have to pull the door to exit						1			1						
Top priorities: stalls that are large enough to bring suitcases and carry-ons in with you; hooks that are strong enough to hold heavy bags/multiple bags; unscented soap in soap dispensers; good lighting; mirrors that you can actually get close to (for those of us with poor vision); easy in/out access to the restroom; easy to tell if a stall is occupied or unoccupied (without having to bend over to look for feet under the door; sanitary; paper towels or really good hand dryers (even then, sometimes it's really nice to have paper towels if you are trying to wipe off a little kid's sticky face or hands); enough stalls so there's not a long line; wide enough entry ways and aisles inside so that if there is a line, it's easy for people to exit without tripping over the people and suitcases of those waiting in line. I really like the plastic seatcovers on the toilets at O'Hare Airport - you simply wave your hand over the sensor before you sit down, and the plastic cover advances so that you know you are always getting a hygenic seat, but you don't have the mess that comes with disposable paper seat covers. Thank you for doing this survey - the quality of airport bathrooms can really be annoying for travelers.						1									
I think having big signs to know where the restrooms are and having arrows pointing to where the restrooms are. Cleanliness would be my no. 1 concern.						1									
Just need to get in and out seamlessly without having to go against traffic. A dry spot to put down belongings. A trash container that is not already full. No doors is best.							1								
Adequate space for 2 travelers to pass each other entering/exiting the restroom with rollerbags, etc.							1								

Typical Traveler Survey