Appendix 1 Data Collection Survey



ACRP 11-03 S02-18 Airport Waste and Recycling Practices

Welcome

The Transportation Research Board (TRB) is preparing a synthesis on airport waste management and diversion practices. This is being done for the Airport Cooperative Research Program (ACRP), an industry-driven, applied research program that develops near-term, practical solutions to problems faced by airport operators. ACRP is administered by TRB and sponsored by the Federal Aviation Administration.

If you are not the appropriate person at your organization to complete this survey, please forward it to the correct person.

Please compete and submit this survey questionnaire by September 30, 2017. This survey will take approximately 60 minutes to complete.

In order to complete the survey, you will need access to qualitative and quantitative information about your airport's recycling and waste management program, including:

- drivers and challenges
- policies and goals
- reduction, reuse, and donation strategies
- recycling, composting, energy recovery, and disposal practices
- airline, food and beverage operators, retail stores, and other tenant activities
- planned program enhancements
- communication, education, and training practices
- roles and responsibilities
- economics and purchasing
- monitoring, measurement, and tracking as well as reporting
- studies and tools

Confidentiality: All answers provided by survey respondents will be treated as confidential and aggregated with other responses in the reporting.

If you have any questions, please do not hesitate to contact our principal investigator:

Morgan Turner
Mead & Hunt
Morgan.Turner@meadhunt.com
517-908-3130

Thank you very much for participating in this survey!

The National Academies of

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Instructions

1. To view and print the entire questionnaire prior to beginning your response, click on the following link and print using "ctrl + p" or the print command in your web browser:

https://surveygizmolibrary.s3.amazonaws.com/library/64484/ACRP 1103 S0218 Airport Waste FINALSurvey.pdf

2. To save your partial answers, click on the "Save and Continue Later" link in the upper right hand corner of your screen. A link to the partially completed questionnaire will be emailed to you from SurveyGizmo. To return to the questionnaire later, open the email from SurveyGizmo and click on the link.

We suggest using the "Save and Continue Later" feature if there will be more than 15 minutes of inactivity while the survey is opened, as some firewalls may terminate due to inactivity.

- 3. To invite a colleague to complete part of the survey, simply click on the "Save and Continue" link and enter your colleague's email address. Please note that the questionnaire can be saved and passed around multiple times, but respondents must use the link emailed from SurveyGizmo.
- 4. You will have an opportunity to view your answers before submitting the survey. Print using "ctrl + p" or the print command in your web browser.
- 5. To submit the survey, click on "Submit" on the last page.

Your	Information		
1) Abo	1) About You		
	Prefix:		
	First Name*:		
	Last Name*:		
	Title:		
	Department/Division:		
	Email*:		
	Phone:		

Airport or Organization

Please limit responses to one commercial service airport per survey entry.

If you are responsible for multiple airports:

- 1. Submit one response which describes your most comprehensive program or
- 2. Complete one survey entry for each of your commercial service airports.

2) About Your Airport or Organization

Airport or Organization*:

Airport Identifier:

Case Study Invitation

Are you interested in having your airport's practices described in a case study?

This would require one 60-minute telephone interview in September 2017. Case study airports will be asked to review associated text prior to publication.

Airport participation in this survey and the interviews will provide valuable information and contribute to a central knowledge base on this important topic. We are interested in hearing from airports of all sizes and locations and with all forms of waste management programs.

Yes No

Definitions

For this project, "management of waste" or "waste management" is defined as the oversight of the collection of waste materials and coordinating their transport for recycling or disposal.

It also involves planning and implementing waste reduction, reuse, recycling, composting, and other waste programs.

The scope of this survey is focused on the management of municipal solid waste, defined for this project as:

- Everyday items that are used and discarded
- Items that can be legally disposed of in a 42 U.S.C. 6941-6949a landfill or equivalent
- Organic compostable material such as food and yard/green wastes
- Deplaned waste (except from international flights)
- Recyclable items (e.g. aluminum, steel, glass, plastics, paper, and cardboard)

This project is <u>not</u> intended to address construction and demolition debris or hazardous, universal, or industrial waste; the scope also excludes waste from international flights regulated by the United States Department of Agriculture.

Your Airport's Waste Management Program

3) Please describe your airport's waste management program in a few sentences.					
4) Does your airport have a recycling program or employ other waste management strategies?					
	Yes No				
5) In wh	at ways has your recycling program/waste management efforts been successful?				
	Low or reduced total waste generation				
	High or increased landfill diversion				
	High or increased recycling capture rate				
	High or increased number of material types recycled or composted				
	Low or reduced contamination rate				
	High or increased management support				
	High or increased employee participation				
	High or increased concessionaire/retail participation				
	High or increased airline participation				
	High or increased passenger compliance				
	Other:				
6) (Optio	onal) Please explain your answer.				

Drivers 7) Why did your airport establish its waste diversion program? Select all that apply. Required To reduce costs To address environmental impacts Requested by employees Requested by airlines Requested by food and beverage/retail tenants Requested by passengers Other: None of these 8) (Optional) Please explain your answer. 9) Which of the following affect or influence your airport's waste management program? Select all that apply. Federal mandate or requirement County incentive Federal initiative Other county program Federal incentive City mandate or requirement City initiative Other Federal program State mandate or requirement City incentive State initiative Other city program State incentive Airport mandate or requirement Other state program Airport initiative County mandate or requirement Other:

None of these

10) (Optional) Please explain your answer.

County initiative

Challenges 11) Which of the following are or have been obstacles to your program's success? Select all that apply. Security regulations Availability of food composting facilities Availability of green waste composting Costs facilities Janitorial contract(s) Ability to comingle recyclables Airport employee compliance City regulations Airport management / Airport State laws administration ☐ Concessionaire/retail compliance Material markets Airline compliance Food donation Passenger participation Other: Availability of recycling facilities None of these 12) (Optional) Please explain your answer. 13) From your perspective, what are the biggest challenges to implementing a successful and comprehensive waste management program in the airport environment? 14) Please rank the following waste streams in order of difficulty to address, from most to least difficult: Public/passenger waste and recyclables Airline operations waste and recyclables

Concessionaire pre-consumer (back of house) waste and recyclables, including compostables

15) (Optional) Please explain your ranking.

Airline deplaned waste and recyclables

Other tenant waste and recyclables

Airport administration waste and recyclables

16) Please rank the following materials in order of difficulty to address, from most difficult to least difficult:
Aluminum
☐ Cardboard
☐ Food waste
Glass
☐ Green/Yard waste
☐ Metal
☐ Paper
☐ Plastic
Comingled recyclables
17) (Optional) Please explain your ranking. 18) What actions have you taken to overcome obstacles to your program?
Resources
19) Where do you get ideas for ways to expand and improve your program?
20) How do you obtain information about recycling, composting, diversion, donation, and waste reduction practices?
21) How do you obtain information about tipping fees, recycling fees, rebates, incentives, requirements, and other waste management information?

Challenges

Polici	ies	and (Goals	5									
22) Do	oes	your	airpo	rt hav	e enviro	nmental ar	nd/or v	waste m	anageı	ment policies?	•		
	In this context, a "policy" is an organization's statement of principles which guide decision making as well as the establishment of objectives and procedures.												
						Yes		No		Not Sure			
23) If <u>y</u>	yes	s, plea	ise de	escribe	e your a	irport's env	/ironm	nental an	ıd/or w	aste manager	nent polici	es.	
24) Pl	leas	se des	scribe	your	airport's	s specific o	bjectiv	ves or go	oals for	:			
	Waste reduction (minimizing overall total amount of waste created):												
	Waste diversion (diverting waste from landfill):												
	Recycling (collecting items for use as a raw material in manufacturing):												
	О	ther:											
Proce	edu	ires											
25) Do	oes	your	airpo	rt hav	e writtei	n procedure	es for	waste m	nanage	ment or elem	ents there	of?	
In this	s cc	ontext,	a "pi	rocedu	ıre" is a	set of writt	en ins	structions	s to be	followed in or	der to read	ch an end i	result.
						Yes		No		Not Sure			
26) If <u>y</u>	yes	s, plea	ise de	escrib	e your a	irport's writ	tten pi	rocedure	es relat	ed to waste m	anagemer	nt.	
Reduc	ctic	on											
27) Do	oes	s your	airpo	rt pra	ctice wa	ste reducti	on?						

For this project, waste reduction is defined as efforts to minimize the overall total amount of waste created; therefore, reducing the amount of waste that needs to be recycled, composted, landfilled, or otherwise managed.

Yes No Not Sure

28) If yes, please describe your airport's waste reduction strategies.

29) Does your airport reuse materials?					
For this project, reuse is defined as using materials, equipment, or other items several times either for their original purpose or another purpose in place of single-use alternatives. Reuse lowers the total number of items that need to be recycled, composted, landfilled, or otherwise managed.					
	Yes	No	Not Sure		
30) If yes, please describe your airp	oort's reuse str	ategies.			
Donation					
31) Does your airport recover and d	onate food?				
	Yes	No	Not Sure		
32) If yes, please describe your airport's food donation program. For example: Which tenants donate food? What is the annual quantity of food donated annually? What infrastructure is in place to support food donation (i.e. coolers)? Who collects the food? Where is the food donated?					
33) Does your airport collect and do	nate other iter	ms such as toil	etries, supplies, or materials?		
	Yes	No	Not Sure		
34) If yes, please describe your airp	oort's donation	program for ite	ems other than food.		
Recycling					
35) Does your airport practice any of the following recycling strategies? Select all that apply.					
☐ Mixed waste collection (recommend) ☐ On-site material sorting ☐ Single material recycling ☐ Mixed stream recycling	yclables and w	vaste comingle	d for future processing)		
Other:					

Reuse

Recycling

36) What is the annual quantity of material (by stream) recycled by your airport? Please indicate units.

	Annual quantity	Not sure	Not recycled
Aluminum			
Cardboard			
Food waste			
Glass			
Green waste			
Metal			
Paper			
Plastic			
Commingled recyclables			

37) Please list additional materials and quantities which are recycled at your airport.

Recycling

38) What infrastructure is in place to support recycling?

	Airport Owned	Provided by Airport Contractor	Provided by Tenant or their contractor
Recycling bins			
Recycling dumpsters			
Recycling compactors			
Recycling balers			
Scales			
Hauling equipment (designated trucks or trailers)			

39) Please describe other recycling infrastructure not listed above.

Composting

40) Does your airport practice any of the following composting strategies? Select all that apply.
Pre-consumer (back of house) food waste composting
☐ Back of house paper towel composting
Pre-consumer (back of house) coffee ground composting
Post-consumer (public) food waste composting
☐ Public paper towel composting
☐ Green/yard waste composting
Airport employee food composting
Other:
☐ None of these
41) What is the annual quantity of material composted (including units)?

Composting

42) What infrastructure is in place to support composting?

	Airport Owned	Provided by Airport Contractor	Provided by Tenant or their contractor
Composting bins			
Composting dumpsters			
Composting scales			
Food waste recycling equipment (digester or vessel composter, for example)			
On-site composting			
Hauling equipment (designated trucks or trailers)			

43) Please describe other composting infrastructure not listed above.

Energy Recovery

44) Does your airport send waste to a facility that converts it into energy?					
	Yes I	No	Not Sure		
45) If yes, what material or stream	is converted to e	nergy?			
46) If yes, what is the annual quant	ity of material co	nverted to ene	ergy (includin	g units)?	
Disposal					
47) What infrastructure is in place t	o support waste	disposal?			
For this project, disposal is defined	as placement in	a landfill or in	cineration wit	hout energy capture	
		Airport Owi	ned Provi	ded by Contractor	Other
Garbage cans					
Garbage dumpsters					
Trash compactors					
Trash balers					
Scales					
Hauling equipment (designated tr	ucks or trailers)				

Other

Disposal
48) Please describe other garbage infrastructure not listed above.
49) What is the final disposition of waste generated at your airport that is not recycled, composted, donated, or otherwise diverted?
For example, it is disposed of at a local landfill or it is transferred to a landfill in the region, etc.
Program Organization
r rogram Organization
50) Which of the following best or most closely describes your airport's waste management program?
Centralized - The airport provides containers for the collection of waste, recyclables, compostables, and other streams and contracts for transportation by a single hauling company.
Decentralized – The airport provides containers and contracts hauling for waste materials in airport operated spaces. Airlines, concessionaires, retail shops, and other tenants manage the waste from their leased areas (supply their own containers and contract directly for hauling).
51) Please explain how your program differs from the scenario you selected above.
Airlines
52) Who manages waste generated by the airlines operating at your airport?
☐ Airlines manage
☐ Airport manages
Combination
Other:
☐ Not applicable

Airlines	
53) Do the airlines operating at your airport partic	pate in the recycling program?
Yes - Most	
☐ Yes - Some	
☐ No - None	
☐ Not sure	
54) Do the airlines operating at your airport recycl	e materials from deplaned waste?
☐ Yes - Most	
☐ Yes - Some	
□ No - None	
☐ Not sure	
Food and Beverage Operators and Retail Store	es
55) Which of the following companies operate for Select all that apply.	od and beverage spaces and/or retail shops at your airport?
☐ AirMall/Fraport USA	☐ Pacific Gateway Concessions
☐ Airport Concessions	☐ SSP Group
☐ Areas	☐ Tastes on the Fly
Crews	☐ The Marshall Retail Group
☐ Dan Food Service Corporation	☐ The Paradies Shops
☐ Delaware North	☐ Westfield Corporation
☐ HMSHost Corporation	☐ World Duty Free Group
☐ Hudson Group	Other:
☐ Marketplace Development	☐ None of these
☐ OTG EXP	☐ Not sure

Food and Beverage Operators and Retail Stores

56) Who manages waste gene	rated	by the foo	od ar	nd beverage	spaces and r	etail shops at your airport?
Operators manage						
☐ Airport manages						
☐ Combination						
Other:						
☐ Not applicable						
57) Do the food and beverage	and	retail opera	ators	at your airp	ort participate	in the recycling program?
				Food and Beverage	Retail	
	Ye	s - Most				
	Ye	s - Some				
	No - None					
	Not sure					
					<u> </u>	
Food and Beverage Operato	rs ar	nd Retail S	Store	S		
58) Do the food and beverage	oper	ators at yo	ur ai	rport donate	or compost for	ood?
				Donate	Compost	
		Yes - Most				
		Yes - Some				
		No - None				
		Not sure				

Other Tenants			
59) Besides airlines, food and beve significantly to the waste stream at y	-	s, and/or retail	stores, are there other tenants that contribute
Consider rental car companies; flight cargo carriers; charter operations; A		•	ators; Specialized Aviation Service Operations; ting; etc.
	Yes	No	Not Sure
60) If yes, please describe other tentheir waste is managed.	ants that contr	ibute significar	ntly to the waste stream at your airport and how
Planned Enhancements			
61) Are you considering implementi	ng new waste	management s	strategies in the near term (1-2 years)?
	Yes	No	Not Sure
, , ,	•	•	g for the near term (1-2 years). Why are you al material streams to recycling, reduce carbon
63) Are you considering implementi	ng new waste	management s	strategies in the long term (3+ years)?
	Yes	No	Not Sure
, , ,		_	n the long term (3 or more years)Why are you al material streams to recycling, reduce carbon

Communication, Education and Training

65)) How is information about waste and recycling communicated to passengers? Select all that apply.
	☐ Container labels
	Signage
	Public Address (PA) System announcements
	Other:

Communication, Education and Training
66) How is information about waste and recycling shared with employees? Select all that apply.
On-boarding/new employee training
Recurring/regular training
☐ Emails
Container labels
Signage
Other:
67) How is information about waste and recycling communicated to tenants? Select all that apply.
☐ Training
Container labels
Signage
Other:
Roles and Responsibilities
68) Which departments/divisions administer the waste and recycling contract(s)? Select all that apply.
☐ Purchasing/Procurement
☐ Facilities
☐ Environmental/Sustainability
Other:

69) Who is responsible for janitorial services (specifically servicing waste and recycling containers) at the airport? Select all that apply. ☐ Airport staff Airport janitorial contractor(s) ☐ Tenant janitorial contractor(s) Other: 70) Who is responsible for the collection and transfer of waste from the airport? Select all that apply. Private waste hauling contractor(s) City or County department Other: 71) Who is responsible for the collection and transfer of recyclables from the airport? Select all that apply. ☐ Private recycling company(ies) ☐ City or County department Other: **Economics** 72) What is your airport's approximate annual total cost for waste to landfill? 73) What is your airport's approximate annual total cost for recycling? 74) What is your airport's approximate annual total cost for composting?

Roles and Responsibilities

Economics 75) Please indicate which of the following elements are included in the values provided above. Select all that apply. ☐ Direct labor ☐ Container rental and service ☐ Scheduled material pick up On-call material pick up ☐ Transfer to disposal site/recycler ☐ Tipping or processing fee Educational programs ☐ Program evaluations Other: 76) What is your airport's approximate annual total cost of other waste management elements not captured above in landfill, recycling, and composting costs? 77) Which departments fund waste management in their operating budgets? 78) How are waste management costs passed on to airlines; food and beverage concessionaires; retail shops; and other tenants? Select all that apply. ☐ Direct bill ☐ Included in lease rate ☐ Not sure

79) Do you receive any rebates, incentives, or refunds for recycled materials?

Yes

No

Not Sure

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Other:

80) If yes, please describe the rebates, in	ncentives,	or refunds.	
Purchasing			
81) Does your airport purchase supplies, all that apply.	products,	or other items	which meet any of the following criteria? Selec
Reusable			
Recycled content			
Recyclable			
Compostable			
☐ Sustainably sourced			
☐ Packaged in bulk			
Other:			
☐ None of the above			
☐ Not sure			
82) If yes, please describe airport purcha	ases which	meet such cr	iteria.
83) Does your airport have a green purch	nasing or s	similar policy ir	n place?
Yes		No	Not Sure
84) If yes, please describe your airport's food and beverage operators/retail stores	•	• • •	v. Does this policy apply to airport employees enants?
Monitoring, Measurement, and Tracking	ng		
85) Which department is primarily respon	nsible for n	nonitoring the	status of waste management activities?
86) Which department is primarily respor	nsible for n	neasuring and	tracking waste metrics?

Economics

Metrics and Calculations

87) Please complete the following table based on the most current data available.

	Annual total generation (wgt or vol)	Annual quantity landfilled (wgt or vol)	Annual landfill diversion (wgt or vol)	Annual recycling rate (%, wgt or vol)	Per passenger waste generation (wgt or vol)
Airport Total					
Airport Administration					
Airport Operations and Maintenance					
Passenger Terminal Public Areas					
Concessionaire and Retail Back of House					
Airline Areas					
Deplaned Waste					
Flight Kitchens					
Other					

88) How do you get raw data related to your airport's waste, recycling, and compost?
☐ Estimate from industry averages
☐ Estimate from annual costs
☐ Estimate from container sizes and collection schedule
☐ Estimate from previous studies or prior audits
☐ Data provided by hauling contractor
On-site scale(s)
Other:
☐ Do not track
☐ Not sure

Metrics and Calculations

89) If you estimate your metrics,	please descrik	be how you	calculate this information.	
Reporting				
90) Do you receive information al	oout the fate c	of your waste	e, recyclables, compostables, and other s	treams?
For example, do you receive info processes your material?	ormation abou	t the landfil	recycling center, compost site, or other	facility that
	Yes	No	Not Sure	
91) If yes, please describe the inf and other streams.	ormation you	receive abo	ut the fate of your waste, recyclables, cor	npostables
For example, describe the information facility that processes your mater	-	ceive about	the landfill, recycling center, compost si	te, or other
92) Does your airport have <u>intern</u>	<u>al</u> reporting pr	ractices for v	vaste related information?	
For example, monthly recycling during management meeting, etc		d to all airp	ort employees or annual diversion rate is	s presented
	Yes	No	Not Sure	
93) If yes, please describe your p	rogram's inter	rnal reportin	g practices for waste related information.	
For example, monthly recycling during management meeting, etc		d to all airp	ort employees or annual diversion rate is	s presented
94) Does your airport have exterr	nal reporting p	ractices for	waste related information?	
For example, public notification	∕ia airport web	osite or pres	s release, etc.	
	Yes	No	Not Sure	

Reporting
95) If yes, please describe your program's external reporting practices for waste related information.
For example, public notification via airport website or press release, etc.
Studies and Reports
96) Have you conducted or developed any of the following? Select all that apply.
☐ Waste stream composition study
Passenger interviews or behavior study
Airline, concessionaire, retail, or other tenant survey
Audit of recycling or composting facility
Airport Recycling, Reuse, and Waste Reduction Plan (element of Master Plan)
Recycling or waste management report
☐ Sustainability report
☐ Sustainable Master Plan
Other:
☐ None of these

Tools and Sample Documents

report appendix?

These materials will be credited or anonymized prior to inclusion in the project report, where appropriate or requested. → Photos Container labels Signage Marketing campaigns Public announcements Press releases **Educational materials** "Green Team" agendas Training materials Online information Written policy(ies) or procedure(s) Lease provisions related to waste management ☐ Recycling documents from airlines, food and beverage operators, or retail companies or contacts within these organizations Requests for Bids/Requests for Proposals, etc. (i.e. for containers, related services, etc.) Specifications (i.e. for containers, related services, etc.) Hauling contracts Reports from haulers Studies ☐ Recycling or waste management report Sustainability report Sustainable Master Plan Other: None of these

97) Which of the following tools or sample documents are you willing to provide for inclusion in this project's

Tools and Sample Documents
98) Are you ready to upload your documents at this time?
You can upload up to ten files directly via the online survey.
The project team can also contact you to collect additional items via email or online dropbox.
☐ Yes - All ☐ Yes - Please contact me to request additional files. ☐ No - Please contact me to request these files.
99) Please click "Browse" and select up to 10 files to upload. (Online only.)
Accepted file types include: png, gif, jpg, jpeg, doc, docx, xls, xlsx, and pdf.
Additional Study Topics
100) In your experience, what information gaps exist with regard to airport waste management?
101) What other information does your airport need to make progress in managing waste?
Additional Comments
102) Please use the space below to provide any other pertinent information about the current state of airport waste and recycling management.
Review Your Answers
Your survey responses are summarized below for your review. (Online only.)

Case Study Scheduling

Thank you for considering being featured in a case study for this project!

Interviews will be held September 15 - 30, 2017 via telephone.

Please use the link below to select a date and time for your case study interview via Calendly.

www.calendly.com/morgan-turner/recycling-case-study-interview

Alternatively, the project team will contact you to schedule the interview.

Thank You

You have completed the ACRP 11-03 S02-18 Airport Waste Management and Recycling Practices synthesis project survey.

Thank you for your time and input; we appreciate your participation.

If you have any questions about the survey or would like to share additional thoughts, please contact:

Morgan Turner
Principal Investigator
Mead & Hunt

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517-908-3130