TOOLS FOR MAKING THE BUSINESS CASE

Martin Seaman, RRS

RRS
recycle.com

Managing change

in a resource-

constrained world.

ORGANICS MANAGEMENT

WASTE RECOVERY

GLOBAL CORPORATE SUSTAINABILITY

since 1986

INTRODUCTIONS

DISCUSSION OUTLINE

- Tools Development with Region 4-EPA
- What's Been Developed
    - Enterprise Fund Accounting
    - Analytical Tools
- What's being developed-Training
- What are we going to do with these Tools?

Proposed ISWM Tools

Marty Seaman, RRS/Executive Vice President

RRS

Proposed ISWM Tools

1. Roadmap to ISWM for State Governments
2. Roadmap to ISWM for Local Governments
3. Case Studies of Successful ISWM Programs
4. A Guide to Integrated Solid Waste Management Accounting
5. Benchmarking Analytics for New Program Expansions

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Roadmap to ISWM for Local Governments

- A handbook on ISWM for local governments – what successful ISWM looks like and how to get there

- Will include planning and goal setting, funding mechanisms, laws and policies, barriers, best practices, and average costs

- Decision Tree-guideposts for program development

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Case Studies of Successful ISWM Programs

- A compendium of case studies of states and local governments that implemented ISWM

- Includes research, interviews, and write ups

- Includes rural and urban success stories from a number of states

RRS

A Guide to ISWM Accounting

- A tool to help make the business case for ISWM

- How to identify costs and savings from ISWM

- Will include a sample spreadsheet book

- Includes webinar / in person training session

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- A tool to analyze various components of ISWM using existing data sources

- Includes a series of spreadsheets to calculate basic program changes, such as curbside recycling, multi-family recycling, organics collection, etc.

RRS ◆

RECYCLING BUSINESS CASE/ ENTERPRISE FUND ACCOUNTING

A TRAINING ON FUNDING AND ACCOUNTING FOR ISWM

- Currently under development

- Facilitate the transformation of the current disposal centric system

- Delivered in person, by webinar, and for use by local programs

- Making the Business Case

A TRAINING ON FUNDING AND ACCOUNTING FOR ISWM

- Ways to Fund Solid Waste Management

- Full Cost Accounting Explained

- Accounting Terminology

- GASB and GAAP

- Collecting and Compiling Your Data

A TRAINING ON FUNDING AND ACCOUNTING FOR ISWM

- Framing the question of how to improve, transform and over time achieve:

  Sustainable Materials Management

- Making transparent costs, benefits and implications of program investment choices

OPERATIONS & MAINTENANCE EXPENSES

Year:

	Description of Expenditure	Total Annual Cost	Allocation of Annual Wages and Benefits Expenses by Program Area							
			Collection		Disposal		Recycling		Composting	
			%	$	%	$	%	$	%	$
1				$0.00		$0.00		$0.00		$0.00
2				$0.00		$0.00		$0.00		$0.00
3				$0.00		$0.00		$0.00		$0.00
4				$0.00		$0.00		$0.00		$0.00
5				$0.00		$0.00		$0.00		$0.00
6				$0.00		$0.00		$0.00		$0.00
7				$0.00		$0.00		$0.00		$0.00
8				$0.00		$0.00		$0.00		$0.00
9				$0.00		$0.00		$0.00		$0.00
10				$0.00		$0.00		$0.00		$0.00
11				$0.00		$0.00		$0.00		$0.00
12				$0.00		$0.00		$0.00		$0.00
13				$0.00		$0.00		$0.00		$0.00
14				$0.00		$0.00		$0.00		$0.00
15				$0.00		$0.00		$0.00		$0.00
16				$0.00		$0.00		$0.00		$0.00
17				$0.00		$0.00		$0.00		$0.00
18				$0.00		$0.00		$0.00		$0.00
19				$0.00		$0.00		$0.00		$0.00
20				$0.00		$0.00		$0.00		$0.00
21				$0.00		$0.00		$0.00		$0.00
22				$0.00		$0.00		$0.00		$0.00
23				$0.00		$0.00		$0.00		$0.00
24				$0.00		$0.00		$0.00		$0.00
25				$0.00		$0.00		$0.00		$0.00
26				$0.00		$0.00		$0.00		$0.00
27				$0.00		$0.00		$0.00		$0.00
28				$0.00		$0.00		$0.00		$0.00
29				$0.00		$0.00		$0.00		$0.00
30				$0.00		$0.00		$0.00		$0.00
31				$0.00		$0.00		$0.00		$0.00
32				$0.00		$0.00		$0.00		$0.00
33				$0.00		$0.00		$0.00		$0.00
34				$0.00		$0.00		$0.00		$0.00
35				$0.00		$0.00		$0.00		$0.00
36				$0.00		$0.00		$0.00		$0.00
37				$0.00		$0.00		$0.00		$0.00
38				$0.00		$0.00		$0.00		$0.00
39				$0.00		$0.00		$0.00		$0.00
40				$0.00		$0.00		$0.00		$0.00
	Total	$0.00		$0.00		$0.00		$0.00		$0.00

INDIRECT COSTS

Year:

Ratio of ISWM Employees to Total Local Government Employees	
Total Number of ISWM Employees	
Total Number of Local Government Employees	
Ratio of ISWM Employees to Total Local Government Employees	#DIV/0!

Support Service	Total Budget for Support Service ($)	Total Indirect Cost to ISWM ($)
Accounting		#DIV/0!
Management		#DIV/0!
Budget Office		#DIV/0!
Building Operations		#DIV/0!
Administrative		#DIV/0!
Clerk's Office		#DIV/0!
Communications		#DIV/0!
Contracts		#DIV/0!
Information Technology		#DIV/0!
Insurance		#DIV/0!
Attorney's Office		#DIV/0!
Payroll		#DIV/0!
Human Resources		#DIV/0!
Purchasing		#DIV/0!
Other		#DIV/0!
Total Indirect Costs	$0.00	#DIV/0!

Program Area	Number of ISWM Employees by Program Area	Ratio of Employees in Program Area to Total ISWM Employees	Total Indirect Costs ($)	Indirect Cost by Program Area ($)
Collection		#DIV/0!	#DIV/0!	#DIV/0!
Disposal		#DIV/0!	#DIV/0!	#DIV/0!
Recycling		#DIV/0!	#DIV/0!	#DIV/0!
Composting		#DIV/0!	#DIV/0!	#DIV/0!
Total		#DIV/0!	#DIV/0!	#DIV/0!

COST SUMMARY

Year:

Costs					
	Total Annual Cost to ISWM Program ($)	Allocation of Costs by Program Area ($)			
Category		Collection	Disposal	Recycling	Composting
B. Wages and Benefits	$0.00	$0.00	$0.00	$0.00	$0.00
C. Operations & Maintenance	$0.00	$0.00	$0.00	$0.00	$0.00
D. Capital Outlays	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
E. Future Outlays	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
F. Indirect Costs	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
G. Other Costs					
TOTAL COSTS	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Non-Fee Based Revenues					
	Total Annual Revenues to ISWM Program ($)	Allocation of Revenues by Program Area ($)			
Category		Collection	Disposal	Recycling	Composting
Interest Income					
Sale of Recyclables					
Salvage of Equipment					
Micellaneous Revenues					
TOTAL REVENUES					

Total Cost					
TOTAL NET COST	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

A TRAINING ON FUNDING AND ACCOUNTING FOR ISWM

- Organize and utilize the tools available to help make the business case

- Need to continue to develop robust financial understanding of the system

- Need to continue to understand established and emerging models that succeed.

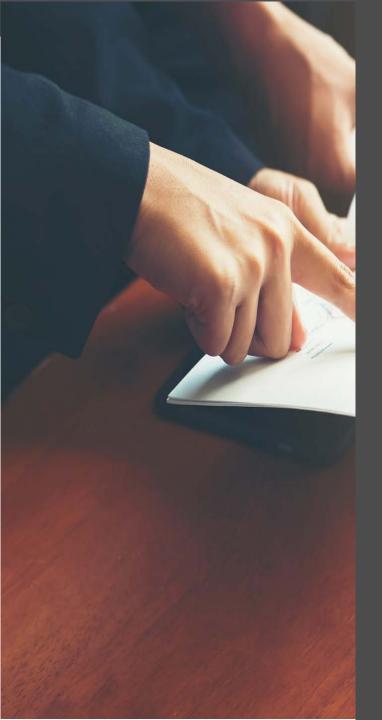- Create the conditions for making investments in achieving SMM-

BENCHMARKING ANALYTICS

GOALS

- Deliver a set of decision tools for local governments

Five Options:

- Residential dual stream
- Residential single stream
- Changing from Bins to Carts
- Comprehensive Drop-off
- Hub and Spoke

ASSUMPTIONS

- Compares scenarios, not changes

- Directional model to fit wide range of users

- SF residential service

- Municipal or contracted service, not open market

- Target audience

- Limited outputs and inputs for simplicity

- Fixed assumptions on a number of determining factors

INSTRUCTIONS FOR EPA REGION 4 ISWM DRAFT MODEL

The following instructions will guide the user through the EPA Region 4 ISWM spreadsheet. This spreadsheet is designed to be used by local governments as a decision making tool. By entering data about your community, including location, community description, number of households and other information, the model will provide an output with directional insights for comparing costs and impacts of various programs. The outputs are designed to help local governments compare the costs and impacts of one ISWM program choice versus another.

GENERAL INSTRUCTIONS

1. Open the 'Inputs' worksheet.
2. Complete all eleven questions.
3. You must fill in responses for Questions 1 through 3.
4. If you do not know the answer to Questions 4 through 11, choose the "Default" setting for each.
5. Open the 'Results - Collection' page to see the model results for collection, and 'Results - Transfer & Processing' to see the hub & spoke results.
6. Once you have completed a single model run, consider changing some of the inputs to understand what impacts the choices you make will have on the overall costs and impacts of your program.

DETAILED INSTRUCTIONS

Q1. Enter your community name: Type the name of your community in the cell. The community name will appear in the model's printable output.

Q2. Choose your State from the drop down list: Each state has individual attributes that will impact the model outputs, you must choose an option.

Q3. Enter the number of households in your community: Enter the number of single-family households and the number of multi-family units served by your residential solid waste program. The model is designed to estimate the costs and impacts of residential programs only, it is *not* designed to estimate the impacts of large multi-family or commercial programs which are generally handled as commercial accounts (i.e. dumpster service). Be sure to enter the number of **households**, not the total population.

Q4. Estimate the level of participation in your recycling program: Recycling participation in the model is defined as the

EPA REGION 4 ISWM DRAFT MODEL - INPUTS

INPUTS

1. Enter community name.
Asheville

2. Choose your state from this drop down list.
North Carolina

3. Enter the number of households in your community served by your solid waste program. *(See "Instruction Page" for more information.)*
22,000

4. Estimate the level of participation in your recycling program. *(See "Instruction Page" for more information.)*
High participation

5. Select your community type. *(See "Instruction Page" for more information.)*
Urban

6. Will glass be included in recycling collection?
Yes (Default)

7. How "much" do you think people will recycle in your community? *(See "Instruction Page" for more information)*
Medium low (Containers about half full, Default setting)

8. Do you know your landfill tip fee per ton?
No (model will use default)

9. Do you know your recycling processor gate fee or revenue per ton?
No (model will use default)

10. Is the Material Recovery Facility you use, or plan to use to process recyclables more than 25 miles from your municipality?
Yes

11. Do you know the distance to the Materials Recovery Facility you use or would use to process recyclable materials?
No (model will use default)

ISWM COLLECTION OUTPUT FOR: *Asheville*

IMPACTS	Recycling Drop Off Program	Implementing a Dual Stream Program Using Bins		Implementing a Dual Stream Program Using Carts		Implementing a Single Stream Residential Curbside Program	
		Dual Stream, Bins, Every Other Week Collection	Dual Stream, Bins, Weekly Collection	Dual Stream, Carts, Every Other Week Collection	Dual Stream, Carts, Weekly Collection	Single Stream, Carts, Every Other Week Collection	Single Stream, Carts, Weekly Collection
1. Tons of Recycling per Year	445.9	406.2	724.7	707.2	1,198.1	1,092.0	1,500.9
2. Pounds of Recycling per Household per Year	178	162	290	283	479	437	600
TOTAL COLLECTION COST							
3. Annual Net Cost (Total)	$ (84,000)	$ (187,000)	$ (359,000)	$ (178,000)	$ (410,000)	$ (120,000)	$ (230,000)
4. Annual Net Cost (O&M Only)	$ (81,500)	$ (151,900)	$ (313,100)	$ (72,000)	$ (261,600)	$ (56,700)	$ (145,100)
5. Cost per Household per Year	$ (16.80)	$ (37.40)	$ (71.80)	$ (35.60)	$ (82.00)	$ (24.00)	$ (46.00)
6. Cost per Ton Recycled	$ (188)	$ (460)	$ (495)	$ (252)	$ (342)	$ (110)	$ (153)
7. Capital Cost (Total)	$ (296,000)	$ (458,000)	$ (739,000)	$ (949,000)	$ (1,668,000)	$ (654,000)	$ (1,014,000)

DETAILS							
8. Total Number of Vehicles (Including back-up and support)	1	1	2	1	3	1	2
9. Total Number of Staff	1	2	4	1	3	1	2
10. Total Number of Drop-Offs	1	-	-	-	-	-	-
11. Capital Cost Vehicles (Including back-up and support)	$ (179,800)	$ (280,900)	$ (561,800)	$ (359,500)	$ (1,078,600)	$ (359,500)	$ (719,100)
12. Capital Cost Containers	Included below	$ (177,000)	$ (177,000)	$ (589,900)	$ (589,900)	$ (294,900)	$ (294,900)
14. Annual Cost for Drop-Off Sites (Total)	$ (20,500)	-	-	-	-	-	-

INTERPRETING YOUR RESULTS

INTERPRETING YOUR RESULTS

1. Tons of Recycling per Year: The total number of tons recycled in the community per year. This does not include large multi-family, commercial or industrial sectors.

2. Pounds of Recycling per Household per Year: The total number of pounds recycled in the community per year, divided by the total number of households.

3. Annual Net Cost (Total): The total annual cost to run the program. This includes the cost of container purchase, assembly, delivery, inventory, change outs, maintenance, and replacement for carts or bins, the cost of vehicle purchase, operations, insurance and fees, fuel, maintenance, and mileage (collection, support, and back-up vehicles), the cost of collection staff, the cost of a basic level of outreach, a contingency amount for capital and operations expenses, and the cost of servicing loans (all loans are assumed to use a seven-year payback period at 3.00% interest). It also includes the cost savings at the landfill achieved from *not* landfilling recyclables. This cost does *not* include administrative or support staff, billing costs, recyclable material processing cost/revenue, or fleet replacement costs. The costs/revenues of the recyclables collected are included in the Transfer & Processing model.

4. Annual Net Cost (Operations & Maintenance only): Removes the purchase and loan servicing cost of all capital equipment (vehicles and containers) from the Annual Net Cost (Total).

5. Cost per Household per Year: The Annual Net Cost (Total) divided by the total number of households in the community. *Note: This is not the same as the fee that would be charged to households for a program.*

6. Cost per Ton Recycled: The Annual Net Cost (Total) divided by the total number of tons recycled per year. Allows the user to easily compare the cost per ton for each program option.

7. Capital Cost (Total): The total cost for all capital equipment.

8. Total Number of Vehicles: The total number of vehicles, including collection vehicles (split bodied rear load or fully automated side load), back-up collection vehicles for larger fleets, supervisor pick-up trucks for route checks in larger communities, and cart delivery and maintenance vehicles in larger communities.

9. Total Number of Staff: Includes the total number of staff needed to provide collection services, route supervisors and cart maintenance. Does not include administrative staff, fleet maintenance, billing staff or other support staff.

10. Total Number of Drop-Offs: This is the number of recycling drop-off locations, based on an assumption that a drop-off location is required for a specific number of households, depending on the selected community type.

11. Capital Cost Vehicles: The total capital cost of all vehicles, including interest.

12. Capital Cost Containers: The total capital cost of containers, including interest.

13. Annual Cost for Drop-Off Sites (Total): The total annual cost to build and outfit enough drop-off sites to adequately service the entire community. Includes cost to pave, signage, and minimum three roll-off containers. Does not include full time staff at each site or power. Drop-off site building costs are amortized over 20 years and includes interest and inflation. Container costs are amortized over 7 years and include interest.

INTERPRETING YOUR RESULTS

DETAILED DESCRIPTIONS OF PROGRAMS

DROP-OFF

Comprehensive Drop-Off – A comprehensive drop-off is a facility for the collection of single-stream or dual-stream materials at a developed site that is paved, has a minimum of three roll-off recycling containers, and is serviced on a regular schedule with the material then taken to a transfer station of an existing regional MRF that is within 15 miles of the location

DUAL STREAM WITH BINS

Dual Stream Program with Bins, Every Other Week Collection: Recyclables are collected manually in two 18-gallon open-topped containers. Collection occurs at the curb or in the alley and containers are emptied into split-bodied manual rear load trucks. Each truck requires two staff members, one to drive and one to empty containers. Each household in the community is provided with two containers, one container is used to collect fibers (paper, cardboard, paperboard, newspapers and magazines) and the second container is used to collect containers (aluminum, tin and steel cans, plastic jugs and tubs, and glass bottles). Collection occurs on an every-other-week basis, meaning that on Week 1, half of the community is provided service and on Week 2, the other half of the community is provided service.

Dual Steam Program with Bins, Weekly Collection: Same as program above except collection occurs for the entire community on a weekly basis.

DUAL STREAM WITH CARTS

Dual Stream Program with Carts, Every Other Week Collection: Recyclables are collected in two 65-gallon lidded and wheeled carts. Collection occurs at the curb or in the alley and containers are emptied using fully automated side loading trucks. Each truck is staffed by one employee. Each household in the community is provided with two containers: one container is used to collect fibers (paper, cardboard, paperboard, newspapers and magazines) and the second container is used to collect containers (aluminum, tin and steel cans, plastic jugs and tubs, and glass bottles). Collection occurs on an every-other-week alternating basis, meaning that on Week 1 the entire community receives collection of their fibers cart, and on Week 2, the entire community receives collection of their containers cart.

Dual Steam Program with Carts, Weekly Collection: Same as program above except collection occurs for both carts (fibers and containers) for the entire community on a weekly basis.

SINGLE STREAM WITH CARTS

Single Stream Program with Carts, Every Other Week Collection: Recyclables are collected in a single 95-gallon lidded and wheeled cart. Collection occurs at the curb or in the alley and the container is emptied using fully automated side loading trucks. Each truck is staffed by one employee. Each household in the community is provided with one container and all recyclables (paper, cardboard, paperboard, newspapers, magazines, aluminum, tin, and steel cans, plastic jugs and tubs, glass bottles) are collected together. Collection occurs on an every-other-week basis meaning that on Week 1, half of the community is provided service and on Week 2, the other half of the community is provided service.

Single Stream Program with Carts, Weekly Collection: Same as program above except collection occurs for the entire community on a weekly basis.

ISWM TRANSFER OUTPUT FOR: *Asheville*

INPUTS: Choose your recycling program to view your Hub and Spoke options

Choose your program type:	Dual Stream, Bins, Every Other Week Collection
Your estimated tons of recyclables diverted is:	406.224

IMPACTS	Direct Haul	Build Transfer	Build MRF
1. Cost per Ton	$ (75.50)	$ (165.00)	$ (567.00)
2. Cost per Household per Year	$ (30.20)	$ (66.00)	$ (226.80)
3. Total Cost	$ 22,000	$ 375,000	$ 1,200,000
DETAILS			
4. Additional Round Trip Miles to Make Next Level Efficient	-	84	265
5. Additional Tons to Make Next Level Efficient	-	5,500	9,555

INTERPRETING YOUR RESULTS

NEXT STEPS

TRAINING SESSION AGENDA

Total Time: 2 hours 30 Minutes

EPA Rep – Intro [15-20 min]

– State of Recycling for local area

– *Requires research, slide deck creation for each local area

RRS Rep – Lecture Demo [20-30 min]

– Highlight issues/problems

– Demo tools as solutions

– *Requires slide deck creation (same for all areas – possible slight variations if issues are different)

Break [10 min]

Audience - Interactive Demo [20-30 min]

– Break into small groups

– Assign each group to a laptop/tablet kiosk

– Provide sample situation/question and data on handouts to input into tools (setup sample situations to demonstrate different real-world scenarios)

– RRS/EPA reps assist groups as they work with the tools

– *Requires laptops/tablets preloaded with tools, pre-designed handouts with sample situations and data

TRAINING SESSION CONT'D

Audience Report Out [20-30 min]

- Each group reports findings based on sample situation and tool output
- *Requires ability for each group to plug kiosk laptop/tablet into projector to share output

Break [10 min]

Audience Feedback [15 min]

- How do you see yourself using these tools?
- What would you want to see in the next version?
- What other tools would help?

RRS Rep – Resources [10 min]

- Website walk through - online/email tech assistance, video demos, download tools, peer network chat forum
- How to share tools with peers

DELIVERY SYSTEMS

At SRO Annual Conferences
- Workshops
    - Typical Training Session
    - *Requires Pre-conference and conference brochure/program advertising to draw audience to workshop
    - *Requires Handouts to drive to website to download tools OR jump drive with tools preloaded
- Booth/Exhibits
    - Interactive Demos of Tools (Large TV Touchscreens? Laptop/Tablet Kiosks?)
    - RRS/EPA Rep Assist with Interactive Demos, Highlights Tool Benefits
    - *Requires Pre-conference and conference brochure/program advertising to draw audience to booth
    - *Requires Handouts to drive to website to download tools OR jump drive with tools preloaded

DELIVERY SYSTEMS

EPA Hosted Free Standalone Workshops

- Divide states so audience doesn't have to drive more than 1.5 hours?
- Research targets
- Invite via snail mail, mass email, personal outreach
- Typical Training Session
- *Requires venue, A/V, food/drink costs; travel; technical assistant (running/managing technology); time for execution
- *Requires advertisement via SRO/mass email, contact list development

Webinars

- Typical Training Session
- *Requires Pre-webinar advertising to draw audience to webinar
- *Requires technical assistant (run technology for webinar); time for rehearsals and execution

DELIVERY SYSTEMS

Personal Outreach

- Develop Solid Waste Director/Recycling Coordinator contact list
- Personal call and/or email to each contact
- Drive to website or to upcoming geographically-feasible workshop (SRO or EPA hosted)
- *Requires research, script writing, execution time

Website

- Video intro by EPA Rep
- Live/animated demo of each tool
- Download tools direct from website
- Technical assistance via live online chat and/or email
- Peer Network Chat Forum
- *Requires website development/maintenance, video creation, forum moderation, tech assistance service
- *Requires Advertising via EPA/SRO/Association membership outreach, social media, mass email

QUESTIONS AND DISCUSSION

- Are these tools the right ones?

- How can we get them developed here?

- What do you need to succeed?

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