

### Presentation of *RecycleNow* to 2015 PARTNERS CONFERENCE Session: Increasing Participation by Getting the Message Out

Business Case, Strategies and Opportunities for Expanded Municipal Recycling

June 30, 2015

### Approach and Solution Approach

Assemble in one place community-specific...

- direct and indirect economic impacts of MSW recycling,
- monetized estimates of environmental and social impacts from MSW recycling, and
- environmental and social amenity values of MSW recycling

### **Solution**

- Excel model incorporating above impacts
- Innovative tool for analyzing expanded MSW recycling scenarios in terms of the full spectrum of EES impacts



# RecycleNow

### Targeted Recyclables included (can be expanded) Paper Steel Glass Aluminum Plastic Organics

## **RecycleNow-Impacts Estimated**

### **Direct Economic Impacts**

- Sale of recyclables
- Tipping fees avoided

### **Indirect Economic Impacts**

- Income tax revenue
- Sales tax revenue

### **Induced Economic Impacts**

- Induced income tax revenue
- Induced sales tax revenue

### **GHG Social Costs Avoided**



### **RecycleNow-Impacts Estimated**

#### **Environmental Impacts**

- GHG emissions avoided
- Water saved

#### **Social Impacts**

- Direct jobs created
- Indirect jobs created
- Induced jobs created

#### **RecycleNow-Excel Model Relationships**





## **Demonstration of RecycleNow**

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The pie represents the percentage breakdown of all types of waste materials generated in 2012 regardless of their fate (landfill, recycled, incinerated, composted). Multiplying the percentage by 251 million gives an estimate of the amount of that specific material that was generated as waste. 8

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The three segments removed from the pie are solid waste that is not currently a target material of the RecycleNow app.

#### **Example Application**

- <u>Role</u>: City Service Director for city of 100,000 population
- <u>Challenge</u>: State goals for waste reduction being ratcheted up; constituents are asking for more recycling opportunities; no money for expanded recycling; city budget already under pressure
- <u>Typical response</u>: Seek grants, cut costs and services, Band-Aid approach
- <u>Opportunity</u>:
  - Scenario analysis with RecycleNow can show all of the economic, environmental and social benefits of increased recycling
  - The real problem is people are putting their discards in the wrong container; the total generation is constant
  - The money saved through increased recycling is "found money"
  - The savings can be used to develop marketing campaign, buy new containers, etc.
  - Increased recycling can pay its own way.
  - RecycleNow can "show the way"



#### **New Recycling Goals**

Hypothetical MSW recycling program expansion for average community of 100,000 people

Goal is to increase recovered materials as follows:

Paper ~ 10 % increase Glass ~ 10 % Steel ~ 9.4 % Aluminum ~ 100 % Plastic ~ 0 % Organics ~ 10 %



# Start the RecycleNow App





Why RecycleNow?

This is the Home Page once the App is loaded.

 Image: RecycleNow



Scenario analysis can now be performed by moving the sliders left or right to increase or decrease the amount of recovered material. For example, Aluminum was increased from 224 to 450 tons.

RecycleNow

Adjust Recycling					
Paper 15444 / 21708 tons					
Glass 1117 / 3660 tons					
Steel 1916 / 5314 tons					
Aluminum 450 / 1132 tons					
Plastic 885 / 10044 tons					
Organics 7423 / 22268 tons					
Res	e				

PIE CHAR	т	TABULAR SUMMARY	ECONOMIC IMPACTS	ENVIRONMENTAL IMPACTS	SOCIAL IMPACTS
Materials	Total	Weight Generated (tons)	Weight Recycled (tons)	Weight Discarded (tons)	
Paper		21708	15444	6264	
Glass		3660	1117	2543	
Steel		5314	1916	3398	
Aluminum		1132	450	682	
Plastic		10044	885	9159	
Organics		22268	7423	14845	

Here it is in Tabular Summary form with all of the desired increases in recovered materials applied.

RecycleNow ENVIRONMENTAL ECONOMIC IMPACTS PIE CHART TABULAR SUMMARY SOCIAL IMPACTS IMPACTS Adjust Recycling Direct Economic Impacts (Millions of \$) 15444 / 21708 tons Paper 1117 / 3660 tons Glass 1916 / 5314 tons Steel Estimated (1.74) Current (1.37) Overall increase: 0.37 Millions of \$ Aluminum 450 / 1132 tons Indirect Economic Impacts (Thousands of \$) 44 885 / 10044 tons Plastic 33 7423 / 22268 tons Organics 22 Reset 11

Pairs of bar graphs compare various parameters for each of the three major impacts (Economic, Environmental and Social). These are displayed such that it requires scrolling to see all of the charts. Two sets of charts fill the screen at a time.

Current (15.73)

Estimated (18.39)



And, GHG Social Costs Avoided are estimated to be \$23,760.

RecycleNow



More EES results can be obtained by pressing the Environmental Impact tab. This reveals the estimated 7.92 thousands of MTCO2e of GHG Emissions Averted by recycling more material over the baseline.



Scrolling down the screen reveals that the amount of Water Saved is estimated to be 19.91 million gallons over the baseline for each year that this increased recycling program continues.

RecycleNow



Pressing the last tab will show the Social Impacts of increased recycling. The parameters here are Direct Jobs (8) and Indirect Jobs (4) Created on the first screen with the Induced Jobs Created displayed when the screen is scrolled down... 20



The bottom of the Social Impacts screen shows an increase of 3 Induced Jobs.



## Example

#### **Results**

#### Economic Impacts per year

Direct	\$3	370,000
Indirect	\$	2,660
Induced	\$	1,680
GHG social costs avoided	\$	24,790
Environmental Impacts		
GHG emissions avoided (thousand MT CO2e/year)		7.92
Water saved (million gallons/year)		19.91
Social Impacts		
Direct jobs created		8
Indirect jobs created		4
Induced jobs created		3



## **Future Vision**

### **Potential Collaborators**

• Ex. - Recycling Partnership

RecycleNow managed by a commercial or nonprofit entity (e.g. NRC, KAB, ZWA, ReTrac, new entity)

- Fee based and/or subscription model to generate revenue.
- Sales/promotion
- Maintenance/updating
- Training
- Enhancements