BACKGROUND
Chippewa County Recycling Division is assessing where changes could be made to evaluate the viability of material recycling facilities (MRFs).

• Determine the effectiveness of the household recycling programs and MRFs in Chippewa County.
• Provide the County with information and options for future changes.

The Study has the following three components:
• Market Analysis Report that contains market analysis for historic, current and projected market values for single sort, commingled and source separated recyclable materials.
• Recyclable Materials Volume Analysis Report that will evaluate the recyclable waste stream and volume of recyclable materials in Chippewa County.
• MRF Options Analysis Report that summarizes the anticipated costs, benefits, and feasibility of the three management options to expand the utility of material recovery facilities
RECYCLABLE MATERIALS VOLUME ANALYSIS

• The Recyclable Materials Volume Analysis includes an evaluation of the current recyclable waste stream as well as an estimate of potential recyclable material volumes that could be achieved if household recycling collection methods followed “best practices.”

• Chippewa County is designated to be the Responsible Unit (RU) by 28 of 31 municipalities. Of the 28 municipalities that provide recycling programs there are 5 municipalities that utilize curbside collection provided by the private sector.
TREND TO DUAL OR SINGLE SORT

Dual Stream is collection with all containers in one bin and paper fiber in the other. Single Stream collects all material in a single bin or cart.

- Reinvigorate Recycling Program – Increase the Quantity of Material Collected
- Best practices including changes in collection systems, container set out options, processing options, and recycling incentive programs
- More Efficient Collection
- Can New Materials be Added
- Expand Program without Increasing Operating Costs
- Possible Route Reduction for Waste and Recycling
- Reduce Waste Disposal Costs thru decrease in disposal volumes
REQUIREMENTS OF CURRENT PROGRAMS

• Drop-Offs MRFs
  – Municipalities less then 5,000 population must provide a either curbside or drop-off collection service or a combination of the two

• Curbside Collection
  – Municipalities* with a population of 5,000 or greater must provide for a system for curbside collection of the materials from each single-family residence and 2 to 4 unit residence
  – Provided through Municipal Program or Contract
  – Provided through Subscription – Individual Residents Contract for service**

* Municipalities with greater then 5,000 population must provide curbside collection unless granted an exemption by the State
** Not Eligible for Grant Reimbursement
# CURRENT RECYCLING PROGRAMS

<table>
<thead>
<tr>
<th>Drop-Off Recycling Center – 18</th>
<th>Single Municipality</th>
<th>Multi-Municipality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arthur</td>
<td>Howard</td>
<td>Bloomer Area</td>
</tr>
<tr>
<td>Birch Creek</td>
<td>Lafayette</td>
<td>City of Bloomer</td>
</tr>
<tr>
<td>Cleveland</td>
<td>Lake Holcombe</td>
<td>Town of Bloomer</td>
</tr>
<tr>
<td>Colburn</td>
<td>Ruby</td>
<td>Town of Auburn</td>
</tr>
<tr>
<td>Cooks Valley</td>
<td>Sigel</td>
<td>Town of Auburn</td>
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<td>Tilden</td>
<td>Town of Woodmohr</td>
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<td>Wheaton</td>
<td>Town of Sampson</td>
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<td>Estella</td>
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<td>Hallie Area</td>
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<td>Goetz</td>
<td></td>
<td>Village of Lake Hallie</td>
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<tr>
<td></td>
<td></td>
<td>Town of Hallie</td>
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<tr>
<td>Curbside Service – 5</td>
<td>Anson</td>
<td></td>
</tr>
<tr>
<td>Boyd</td>
<td>Boyd</td>
<td></td>
</tr>
<tr>
<td>Cadott</td>
<td>Cadott</td>
<td></td>
</tr>
<tr>
<td>Chippewa Falls</td>
<td>Stanley</td>
<td></td>
</tr>
</tbody>
</table>

11/14/2012
ANNUAL (2011) BASELINE VOLUMES FOR CHIPPEWA COUNTY RECYCLING

<table>
<thead>
<tr>
<th>Municipal Recycling Programs</th>
<th>Participating Population</th>
<th>Percent of Total Population</th>
<th>Participating Households</th>
<th>Percent of Total Households</th>
<th>Tons of Recyclables</th>
<th>Percent of Total Tons</th>
<th>Lbs. per person per Year</th>
<th>Lbs. per Household per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>57,697</td>
<td>100.0%</td>
<td>20,335</td>
<td>100.0%</td>
<td>3,436.5</td>
<td>100.0%</td>
<td>119.1</td>
<td>338.0</td>
</tr>
<tr>
<td>CURBSIDE</td>
<td>33,653</td>
<td>58.3%</td>
<td>11,588</td>
<td>57.0%</td>
<td>2,224.4</td>
<td>64.7%</td>
<td>132.2</td>
<td>383.9</td>
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<tr>
<td>SUBSCRIPTION CURBSIDE</td>
<td>12,281</td>
<td>21.3%</td>
<td>4,469</td>
<td>22.0%</td>
<td>1,174</td>
<td>34.2%</td>
<td>191.1</td>
<td>525.2</td>
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<tr>
<td>DROP-OFF</td>
<td>36,325</td>
<td>63.0%</td>
<td>13,216</td>
<td>65.0%</td>
<td>1,212.1</td>
<td>35.3%</td>
<td>66.7</td>
<td>183.4</td>
</tr>
<tr>
<td>CURBSIDE PROGRAM WITHOUT DROP-OFF</td>
<td>21,372</td>
<td>37.0%</td>
<td>7,119</td>
<td>35.0%</td>
<td>1,051</td>
<td>30.6%</td>
<td>98.3</td>
<td>295.2</td>
</tr>
<tr>
<td>PERCENTAGE OF CURBSIDE TO DROP-OFF</td>
<td>93%</td>
<td>88%</td>
<td></td>
<td></td>
<td>184%</td>
<td></td>
<td>198%</td>
<td>209%</td>
</tr>
</tbody>
</table>

- Total Participating Households are used to calculate Drop Off MRF lbs. per household
- Participating Households does not include Multi-Family households
The Chippewa County Average of 338 lbs. per Household is Below State Average of 514 lbs. per Household

The average pounds per household for the curbside recycling programs are 384 pounds per household and the total tons collected represent 65% of the total tons collected.

The average pounds per household for the MRF Drop-off recycling programs are 183 pounds per household and the total tons collected represent 35% of the total tons collected.

57% of Chippewa County households have curbside recycling.

39% of the households with curbside programs also have access to MRF Drop-off programs.

65% of Chippewa County households have access to MRF Drop-Off recycling.

Subscription Curbside Collection is utilized by 22% of the households and recovers 34% of recyclables that are collected.
# Recyclable Materials Banned from Disposal in Wisconsin

## Paper, Cardboard and Containers
- Aluminum containers
- Bi-metal containers (i.e. containers made from a combination of steel and aluminum)
- Corrugated cardboard or other containerboard
- Glass containers
- Magazines and other materials printed on similar paper
- Newspaper and other materials printed on newsprint
- Office paper
- Plastic containers #1 and #2 - milk jugs, laundry detergent bottles, soda and water bottles, etc.
- Steel containers (tin cans)

## Additional Materials
- Electronics, including computers, televisions, desktop printers, computer peripherals, DVD players, digital video recorders, VCRs, fax machines and cell phones.
- Lead acid batteries
- Major appliances including air conditioners, clothes washers and dryers, dishwashers, refrigerators, freezers, stoves, ovens, dehumidifiers, furnaces, boilers, water heaters and microwave ovens
- Waste oil, except when incinerated with energy recovery
- Used oil filters
- Waste tires (except when incinerated with energy recovery)
- Yard waste, including grass clippings, leaves, yard and garden debris and brush under 6 inches in diameter*

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# MATERIALS AT DROP-OFF MRFS

## Basic Recycling
Standard recyclables accepted in curbside program
- Mixed containers (glass, metal, #1,2 plastics)
- Paper / Cardboard / News / Magazines

Other recyclables not accepted in curbside program:
- Polystyrene
- Plastic bags
- Vehicle batteries
- Inkjet/laser cartridges
- Motor oil & oil filters
- Hard cover books
- Large ferrous scrap
- Large non-ferrous scrap

## Fee Based
Electronics (Computers / electronics / monitors / TVs)
- Cassette, video tapes
- Laser, ink-jet cartridges
- Fluorescent lamps
- Appliances
- Auto fluids with fees

## Bulk Drop-off Fee Based Programming
- Bagged trash
- Clean wood, pallets
- Heavy bulk waste
- Yard waste
- Light bulk waste
- Propane tanks
- Concrete
- Tires
New Materials
An expanded or new facility could allow the expansion into new materials not currently accepted at the Drop-Off MRFs. These could include, but not be limited to:

Home toxics
Sharps/pharmaceuticals: These are currently accepted at some pharmacies, but on a limited basis.
Latex paint recycling
Carpet recycling: no outlet currently
Compost bagging/bag sales
Document shredding: large demand for this; not currently being offered
Agricultural container recycling: not currently being offered in Chippewa County
Drywall recycling
Tire chipping, small scale processing
CURBSIDE COLLECTION OPTIONS

• Single and Dual Sort Collection
  – Automated and Semi-Automated Trucks
  – Bi Weekly or Weekly
  – 96, 64 and 32 gal curb carts
  – Lbs. per Household (HH)

• Collection Constraints
  – Distance Between Stops and Population Density (Rural Areas)
  – Winter Snow
  – Road Type (Narrow Streets in Urban Areas)

• Contract Approaches
  – Municipally Operated
  – Municipality Contracts with Private Sector
  – Private Sector Subscription Based
TYPES OF TRUCKS

Dual or Single Sort Options

Semi-automated
Currently Used for Waste Collection

Automated
All trucks are compacting

Semi-Automated or Fully-Automated

Dual Sort Options

Single Sort Options
### TYPE OF CURBSIDE RECYCLABLE MATERIALS

**Fiber**
- Old corrugated cardboard (OCC)
- Dry Food Boxboard (cereal, cracker, pasta, cake mix, etc.)
- Food and Beverage Cartons (Milk, Juice, Soup, Broth, Wine, Aseptic)
- Gift Wrapping paper
- Kraft paper bags
- Residential Mail
- Old newspaper (ONP) including supplements, inserts and advertisements
- Office and Copy paper
- Old magazines (OMG) and Catalogues
- Phone books
- Refrigerator Food Boxes
- Retail boxes (shoe, gift, electronics)
- School papers
- Shredded office paper
- Shredded paper (in closed paper bag)
- Toiletry Boxes (toothpaste, soap)
- Writing Paper

**Glass**
- Amber glass
- Clear glass
- Green glass
- Glass bottles & Glass Jars

**Plastics**
- All closed mouth plastic containers
- Plastic bottles numbered 1 through 7 with caps or lids
- Plastic containers numbered 1 through 7 with caps or lids
- Plastic jugs numbered 1 through 7 with caps or lids
- Plastic medicine bottles numbered 3 through 7 with caps or lids
### TYPE OF RECYCLABLE MATERIALS (CONTINUED)

<table>
<thead>
<tr>
<th>Metals</th>
<th>Possible Optional Materials in Future</th>
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<tbody>
<tr>
<td>• Aluminum cans</td>
<td>Frozen Food Boxes</td>
</tr>
<tr>
<td>• Aluminum foil (clean)</td>
<td>Pizza boxes</td>
</tr>
<tr>
<td>• Steel cans</td>
<td>Pop and Beer Cartons</td>
</tr>
<tr>
<td>• Tin cans</td>
<td>Paper Cups</td>
</tr>
<tr>
<td>• Other aluminum</td>
<td>Plastic Cups</td>
</tr>
<tr>
<td>• Other incidental household scrap metal</td>
<td>Egg cartons (Paper or Polystyrene)</td>
</tr>
</tbody>
</table>
<pre><code>                                    | Window glass                                                 |
                                    | Microwavable Trays                                           |
                                    | Bags of Plastic Bags (includes newspaper sleeves)            |
                                    | Ziploc, Freezer or Sandwich Bags                             |
                                    | Consumer Packaging                                           |
                                    | Plastic Films                                                |
                                    | Large Rigid Plastics                                         |
</code></pre>
## POTENTIAL QUANTITIES

<table>
<thead>
<tr>
<th>Municipal Recycling Programs</th>
<th>Participating Households At 90% Participation Rate</th>
<th>Pounds per Household</th>
<th>High Performing SS Side Automated Weekly</th>
<th>High Performing DS Side Automated Weekly</th>
<th>Single Sort (SS) Carts Semi Auto Biweekly</th>
<th>Dual Sort (DS) Carts Semi Auto Biweekly</th>
<th>Dual Sort Bins</th>
<th>BASELINE</th>
<th>Drop Off</th>
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<td>750</td>
<td>650</td>
<td>600</td>
<td>550</td>
<td>450</td>
<td>340</td>
<td>200</td>
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<tr>
<td>Arthur</td>
<td>239</td>
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<td>72</td>
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<td>126</td>
<td>95</td>
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<tr>
<td>Chippewa Falls</td>
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<td>1,628</td>
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<td>923</td>
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<tr>
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<td>296</td>
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<td>Colburn</td>
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<tr>
<td>Cooks Valley</td>
<td>238</td>
<td>89</td>
<td>77</td>
<td>71</td>
<td>65</td>
<td>53</td>
<td>40</td>
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<tr>
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<tr>
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<td>71</td>
<td>54</td>
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<tr>
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<td>53</td>
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<tr>
<td>Hallie Area</td>
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<td>642</td>
<td>588</td>
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<tr>
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<td>70</td>
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<td>642</td>
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<td>Sigel</td>
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<td>103</td>
<td>95</td>
<td>87</td>
<td>71</td>
<td>54</td>
<td>32</td>
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<tr>
<td>Stanley</td>
<td>1,250</td>
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<tr>
<td>Tilden</td>
<td>396</td>
<td>149</td>
<td>129</td>
<td>119</td>
<td>109</td>
<td>89</td>
<td>67</td>
<td>40</td>
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<tr>
<td>Wheaton</td>
<td>885</td>
<td>332</td>
<td>288</td>
<td>265</td>
<td>243</td>
<td>199</td>
<td>150</td>
<td>88</td>
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</tr>
<tr>
<td>TOTAL</td>
<td>20,101</td>
<td>7,538</td>
<td>6,533</td>
<td>6,030</td>
<td>5,528</td>
<td>4,523</td>
<td>3,417</td>
<td>2,010</td>
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</tr>
</tbody>
</table>

11/14/2012
FINDINGS FOR INCREASED RECOVERY

• The potential increase in the quantity of material that could be recovered in Chippewa County, based on the best practices exhibited by peer communities, indicates that overall performance could be increased to 600 pounds per household per year.

• Chippewa County could almost double the amount of recyclable material that is recovered.

• This level of recovery is achievable if communities implement well-designed single stream curbside collection programs with appropriate incentives and pricing and make recycling as convenient as possible.

• The larger communities may need to achieve somewhat higher recovery rates to achieve this recovery level on a countywide basis.
MOVE TO SINGLE SORT COLLECTION

• Single Sort collection can reinvigorate the recycling program
• Single Sort collection is a more efficient collection System
• Education of residents on how materials should be set out will maximize the benefit of the program.
• Single Sort will Increase volume of material and it is easy to add materials
• Market Based Approach (Procurement and Billing) can expand programs without increasing operating costs for Municipalities
• Possible route reduction may be realized for both waste and recycling collection
• Increasing recycling can reduce waste disposal costs
• Single sort programs can engage regional material processors (MRFs)
• Commercial & multi-family Is easily integrated into single stream
• Cart Based collection is compatible with yard and food waste collection
ECONOMICS OF RECYCLING

• Overall, the economics of recycling continue to work in favor of the communities and the refuse haulers.
• A transition to a market based approach will get the best value from private sector for both waste and recycling collection
• A market based pricing approach would encourage community residents to participate in the recycling program
• Arrangements with area haulers should be based on the cost per household pricing through standardized contracting.
• An incentive or reward program can further increase recovery
• Costs for curbside collection and drop-off programs should be allocated on an equitable basis among participating municipalities
• The value of commodities in the recycling stream are not being captured by municipalities in Chippewa County
• A revenue sharing arrangement will provide an incentive for both the MRF and haulers to maintain high quality and market standards and
QUESTIONS

Thank you for your Attention

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