RCA RECYCLING COUNCIL OF ALBERTA

RCA Measurement and Reporting Workshops
March 8, 2016 in Calgary & March 10, 2016 in Edmonton

Workshop Notes

Why do you measure waste?

- To track program performance
  - To know breakdown of materials and destinations
  - Set targets
  - Assess programs
  - Determine if programs are working
  - Accountability
  - Develop more efficient and effective processes
  - To be able to report back to Council and inform residents
  - To compete with other institutions
  - Be able to improve performance
  - Determine gaps such as seasonal fluctuations
- Ensure environmental compliance
  - Reporting - surveys, reports
- Celebrate success
  - Awards and acknowledgement
  - Inform residents of benefits
- Planning
  - Assist with infrastructure planning – landfills, transfer stations, equipment
  - Education programs
  - Program development – needs and timing
  - Develop budgets and set rates
- To develop baselines for measuring effectiveness of future programs
  - Benchmarking
  - Progress
- To inform policy
  - Identify trends
  - Identify new streams
    - New methods for recycling and new packaging that is available
  - Create new programs to divert different materials
- Because you can't manage what you don't know

What are you currently tracking?

- Costs
  - Overhead, management
  - Rates, tip fees
  - Commodity markets
- Diversion
  - Diversion / capita or household
  - Overall diversion rates
  - Waste characterization
- Residential
  - Organics
  - Recycling
  - Special programs (e.g., Xmas trees)
  - Landfill waste
  - Curbside and depot
  - Infrastructure
    - Challenges of different carts, cart damage and replacement, cart rejection

- ICI waste
    - Organics and recycling
    - Trips – vehicle counts, weights
    - Tonnage of streams
    - Multi family, C&D, ICI – varying success in tracking
- HHW, E-waste
    - Eco-station
    - Small businesses
    - Individual units for HHW, e-waste
- Transfer sites
    - Source of disposed material by location
- Contractors
    - Collection contractors
    - Performance
    - Fleets – track GPS, fuel, tips/truck, staff performance
    - Contractor data if contracted out
    - Contractors are tracked to varying extents
    - Some have contractor data where waste is collected by contractors to the city
    - Challenges with getting contractor data
- Education, outreach efforts, service information
    - Public education, safety stats
    - Participation rates
    - Set out dates
    - Customer satisfaction
        - Number of calls (e.g., 3-1-1)
        - Public complaints such as missed collections
    - Number of users, residents, dwellings
    - Service requests

What waste data do you currently report to the public?

- Disposal
    - Kg/ household of waste
    - Stats Can measures
    - Expected lifespan of the landfill
    - Leachate waste kg produced/capita
- Diversion
    - Diversion percentage and diversion/ capita
    - AEP – disposal/capita
    - Estimated diversion numbers
    - Diversion and waste numbers compared to targets
- Education
    - Percent satisfaction with services provided
    - Media, website, education, 3-1-1 stats and usages
    - Participation at landfills and eco-stations
    - Reliability of curbside services (percent of missed collections)
    - Organics cart refusal rates
    - Waste characterization/ audits
    - Environmental perception survey
    - Website, utility bills
- Cost
    - Commercial fleets
        - Fuel economy
    - Cost/tonne data
    - Rates and fees
    - Annual O&M cost of waste collection per household
    - Annual O&M cost of waste disposed at landfills per tonne

- Annual reports
    - Provide historical tracking, comparison against targets
    - Residential, curbside, organics, transfer stations – recyclables and waste numbers
- Sustainability report –volumes, GHG, weights, diversion numbers, corporate/office reductions (e.g., weight of office paper recycled)
- Alberta benchmarking initiative

Do you track reporting to targets?

- Not all organizations have targets
- Twice a year
    - justifies the cost of the program
- Comparison done only for internal purposes
- Tracking as a percent diversion for disposal by community
- Council policy

What performance measures do you incorporate?

- Benchmarking - Alberta Initiative, OMBI, AECOM
- Disposal
    - Kg/capita
    - Kg/household
    - Tonnes of waste disposed
    - Odour, litter, water contamination, surface water, landfill gas capture for GHG credits, leachate volumes
- Diversion
    - Recyclables
    - Organics
- Participation
    - Return rates
    - Measure per household
- Residuals, contamination
    - Gets backed out of data
    - Residuals added to disposal
    - Do regular audits to verify
- Environmental indicators
    - GHG generated based on landfill tonnage
    - Don't track GFG reduction from diversion
- Equivalency indicators
    - E.g., X number of trees saved for x amount of paper diverted
- Program operations
    - Carts collected per hour and per driver or truck
    - Complaints per customer
    - Complaints per sector

How do you measure waste diversion?

- How much is shipped out from transfer station – garbage and recycling. The processor informs them how much was recycled and what was residuals.
- 24 material types for waste, 12 for recycling
- Baseline disposal data (kg/cap)
- Estimate waste generation rate
- Landfill information
    - Collect data on waste disposal / diverted from available sources (own vehicles, landfills and contractor vehicles)
    - Numbers (scale tickets) are provided by collection contractor and cross-referenced with processing contractor for all material types including waste

- Tonnage
  - % of overall waste generation
  - Curbside waste collected vs. curbside recycling collected
  - tonnages by stream
  - tonnages from recycling depots
- Measurement
  - No reporting on ICI, C&D
  - Make assumptions for multifamily, ICI and C&D
  - Residential diversion (GAP)
  - Totals diverted and per capita diversion
- Waste/ capita vs. recycling/capita
  - Percent and kg / capita
  - Allows year to year comparison within a city

How do you account for residuals?

- Many municipalities do not account for residuals
- MRF residuals may be backed out
  - Organics residuals assumed at 5%
- Stewardship residuals backed out on a percentage of processed materials
- Some municipalities mentioned (not specified) they do waste audits – performed to determine contaminants/residuals

What data gaps do you currently have?

- Mixed loads
  - Multiple sectors in the same load
    - A combination of ICI, multifamily, single family – need an estimation of how much from each stream is in a load
  - Multi-family vs. commercial – pick up the same way – don't know total tonnages from multi-family
  - Weight on trucks
- Events, festivals, stewardship programs, special and voluntary program information
  - Grass weights
  - Backyard composting data
  - Grasscycling
  - Weights from mattress, electronics, textiles programs
  - Eco station – materials come out on a per load basis, it is difficult to get tonnages of loads
  - Want to know what percentage or amount of stewardship program materials go to landfill or other
- Measurement information
  - Consistent measurement of data at the provincial and federal level as well as at the municipal level
    - Standardized data
    - Easy to access data
    - Consistent reporting of data
  - Accountability
    - Third-person verification of weights
    - Assurance that data is reported
    - Data quality assurance
  - Actual numbers and not averages or numbers based on audits
  - Some data is collected in volumes (i.e. HHW, oil) vs. weight and hard to report out to public when trying to give one diversion number/target
  - Definitions of what is acceptable and not acceptable and need to know the conditions that would make a material unacceptable
- ICI measurements
  - Haulers take to own facility – municipalities don't know weights
  - Have to depend on driver for accurate data - May not be accurate because it's only recorded as wet vs. dry and not where it came from or what the materials stream is
  - Differentiation at landfill sites of C&D waste vs. ICI waste
  - Numbers broken down by business: hotels, strip malls, grocery stores, etc.

    - Information from businesses and big box stores
        - Who is diverting and what are they diverting
    - What is the leakage out of the community?
    - Unknown what diversion is happening with reuse stores, salvation army, value village and other second hand stores
- Residuals
    - What are they?
    - Unknown at what point residuals are measured
    - How is this information delivered to the municipality?
    - Weight of residuals
    - Want to know residual calculations
- Processors
    - Share the tonnages of material processed – by hauler, by community
        - This information would help to correlate recycling tonnages tonnages they are recording to get diversion rates
    - Tonnes of recycling and organics processed
        - Want to know residuals by sector (SF, MF, ICI, C&D) and by source
- Hauler information
    - Weight of garbage hauled
    - Average fullness of bins to help determine frequency of pickup service
    - Tonnes of waste, recyclables and organics
        - By sector: SF, MF, ICI, C&D
        - By source location: area, municipality
    - Leakages to other sites
- Market information
    - Want to know all markets that are available for compost
    - Want to know all end use products of recyclables
    - Reliable information about end markets
    - How much is processed locally, regionally, internationally
- Landfill information
    - Waste characterization – what is actually being landfilled
        - Assist with targeting material types, customer groups, etc.
    - What do residents drop off/throw out and weights
- Measurement protocol
    - A standard protocol
        - Ability to compare apples to apples
    - A national standard
        - Need a legislative backdrop
    - Defined terms
        - Consistency in definitions is needed.
        - Reporting requirements and definitions change for different benchmarking exercises from year to year, making comparisons over time difficult
            - Differences in required data between benchmarking groups
    - Regional harmonization
        - Same materials can be diverted