Missouri Department of Natural Resources

Solid Waste & Materials Management Forum

March 4th, 2011
Bennett Springs/Roaring River Conference Rooms
1730 East Elm Street
Jefferson City, Missouri

DNR staff in attendance:

Dru Buntin – Deputy Department Director Policy
Davis Minton – Deputy Department Director Operations & Environmental Quality
Crystal Lovett – General Counsel's Office, Facilitator
Aaron Schmidt – Acting Division Deputy, Environmental Quality
Chris Nagel – Director Solid Waste Management Program (SWMP)
Brenda Ardrey – Operations Section Chief, SWMP
Larry Lehman – Compliance and Enforcement Section Chief, SWMP
Charlene Fitch – Engineering Section Chief, SWMP

Chris Nagel – Welcomed everyone to the meeting and introduced Aaron Schmidt, the Acting Division of Environmental Quality Deputy Director.

Aaron Schmidt – The forums are being used to reach out to stakeholders. We want to listen to stakeholder concerns. The agenda topics were chosen by the stakeholders. Aaron introduced Dru Buntin and turned the meeting over to Mr. Buntin for a department update.

I. Department Update – Changes in Department Personnel

Dru Buntin – Thanked everyone for attending. He encouraged everyone to participate in the stakeholder process. Sara Parker Pauley sends her regrets for not being able to attend today. The MDNR is committed to forums and regular dialogue with stakeholders. We are working on remote participation. We have new department personnel. They include Aaron Schmidt, Steve Feeler, Leanne Tippett Mosby, Davis Minton, Mike Wells, John Madras, David Lamb, and Bryan Hopkins. Dru then introduced Crystal Lovett from the Department's General Counsel's Office who is the meeting moderator.

II. Program Updates

Chris Nagel – We are looking at priorities while staying within funding levels. Charlene Fitch, is the Engineering Section Chief, is dealing with streamlining the permitting process and revitalizing the review manual. Larry Lehman, is the new Compliance and Enforcement Section Chief, is working on the methane migration policy and a USDA grant for assessing old landfills. Brenda Ardrey, is the Operations Section Chief, is working with green businesses, the district grant program, and overseeing the solid waste management fund.

III. Solid Waste Funding Distribution and Uses

A. Funding and Allocation (Brenda Ardrey)

- Current tonnage fees collected by sanitary landfills, transfer stations transporting waste out-of-state, construction and demolition landfills, and infectious waste fees.
- Allocation of funds to SWMP, Districts, and EIERA

- *QUESTION: How many Districts receive funding from the $200,000 allocated as Hold Harmless funding as a result of the change in the funding allocation formula in 2005?*
- *RESPONSE: The number of districts receiving a share of the $200,000 varies from year-to-year based upon a comparison between the present allocation formula and the pre-2005 formula.*
- *QUESTION: Are the funding amounts (provided in the presentation) just for grants or do they include operations funding for the Districts as well?*
- *RESPONSE: The formula provides for district's to fund their operations from up to 50% of the total funding amount allotted to them.*

III. How to Get and Keep Recycling in Rural Communities

A. Laclede Industries (Linda Kimrey)

1. Types of recycling services offered
   - Cardboard, paper, aluminum, plastics (24 hr. drop-off)
2. Types of equipment used
   - Modified boat trailers, concrete bays, balers
3. Area (geographic) covered – Camden, Laclede, Miller, Morgan, and Pulaski
4. Collection data – good reporting is essential
5. Keys to success
   - Mission, marketing, easy for customer, good grant writing

B. Purdy High School Recycling Project (Gerry Wass and Students)

1. Provides a service for both the school and community
2. Begun 5 years ago with just classroom aluminum and plastics recycling
3. Conducts recycling classes and education
4. Ten point system to ensure program sustainability with students
5. Current focus/area of concern is used oil filter recycling
   - Many filters going to landfills that can be recycled
   - Currently no economic incentive for recyclers & very time consuming
   - Need regulation enacted to restrict disposal and encourage recovery

- *QUESTION: How often is the school recycling center open?*
- *RESPONSE: We started a model last year of recycling on Mondays.*
- *QUESTION: What happens to operations in the summer?*
- *RESPONSE: The program continues in conjunction with summer school at a slower pace. This also involves the training of new students.*
- *QUESTION: How much revenue does the program generate annually?*
- *RESPONSE: The program has collected $13,000 over the last five years. These funds have gone into program maintenance, club activities to motivate students, and scholarships.*
- *QUESTION: Is the Community Foundation of the Ozarks (CFO) Youth Empowerment Program involved in this?*
- *RESPONSE: Yes, with the addition of a leadership element.*
- *QUESTION: Does the CFO provide any funding for the program?*
- *RESPONSE: Yes, the CFO provided $16,000 for new equipment.*
- *QUESTION: What does it take/will it take to keep the project sustainable?*
- *RESPONSE: At least $500/month income, partnerships with community businesses for paying jobs for students, and developing products made from recycled materials to earn extra income.*

Our contact information is Recycling@Purdy.k12.mo.us and our website is PurdyRecyclingProject.org

C. Ozark Foothills Regional Planning Commission (Felicity Brady, Executive Director)
1. Description of District area
2. Grant funding down due to recent landfill closing
   - Went from $200,000 allocation to $95,000 (minimally funded) in 1 year
3. Reorganization of the District
   i. Determined what required subsidization and cost the most
   - Stopped glass collection service
   - Curbside pickup discontinued
   - Reduced number of collection trailers in service
   - Tire collections reduced due to high transportation cost
   ii. Received USDA Solid Waste grant to begin white paper collection service
4. Lessons Learned
   - Regionalization of programs is important
   - Shift to a "for-profit" mentality
   - Enhance public/private partnerships (joined area community & business recycling committee)

❖ *QUESTION: When you decided to discontinue curbside service, did you consider charging instead?*
❖ *RESPONSE: Yes, we conducted a detailed analysis. It was determined that we would need a full time employee to do it, and even at charging customers $5 a day, we would only be breaking even. With limitations to what residents were willing to pay, it was not a viable option.*

D. East-Central Missouri Recycling Center
1. Key decisions during development & research
   - Select a manager passionate about recycling
   - Chose location centrally located in service area
   - Decided not to have a 24 hour drop off location
   - Made it easy for the customer
2. Start up of operations
   i. Deciding on appropriate layout of facility and equipment to use
   ii. Publicity
   - Radio
   - Speaking at rotary groups
   - Placed banners near major intersections
   - Involved local officials and media in opening event
3. Operations
   - Use Missouri Career Center youth participants
   - Only do targeted pickup of cardboard from businesses
   - Storage of products on-site in a clean and dry area prevents selling of "short-load"
4. Expanding Operations
   - Bidding on used trailers
   - Begin conducting Household Hazardous Waste (HHW) collection events
   - Conduct educational tours of the facility
5. Key to success

- Keep operation simple

IV. Diversion Calculation

A. Diversion Calculation Methodology (Brenda Ardrey)

1. Missouri uses a formula that factors in total population, personal consumption, solid waste disposed at facilities, and solid waste imported/exported to determine diversion.
2. For FY2009, diversion rate was 53%

- *QUESTION: Why does Missouri have a high rate of solid waste exported?*
- *RESPONSE: The two largest cities in Missouri are located on the border with other states. With the bulk of the population on the Missouri side, there is less room in Missouri and more room a short distance away across the state border.*
- *PUBLIC COMMENT: Measuring by diversion alone is not a good tool for determining overall environmental impact. We should look at the holistic picture, including air and water quality, and think about where the products are going when environmental impact measurements are often lost once the products/waste are shipped overseas.*
- *QUESTION: How is the initial figure for personal consumption determined, is it purely manufactured product?*
- *RESPONSE: No, it includes both goods and services as a percent of activity.*
- *QUESTION: Does the formula account for goods retained/not disposed?*
- *RESPONSE: The factoring in of historical data helps account for this.*
- *PUBLIC COMMENT: Part of determining a better method includes getting good reporting. Currently the industries are not providing anything beyond tonnage based on fees.*

B. Zero Waste (Lisa Danbury, MARC Solid Waste Management District)

1. Definition of Zero Waste
   - includes upstream of product and downstream-disposal impacts
2. Involves managing sustainable materials
3. Study determined that current Solid Waste hierarchy is still valid
4. Highlights continued focus on waste diversion
5. Need for improvements in the national market for plastics
6. Waste diversion calculations modified to include survey of recycling providers
7. Need to strengthen local and regional recycling markets as well

C. Waste Inventory Update & Diversion Calculation (St. Louis Dept. Health)

1. 2003 contracted study of diversion
   - Calculated diversion rate of 31%
   - Based on initial study, used economic factors to adjust the amount of waste generated for following years (since 2003)

- *QUESTION: How much of Missouri's recyclables are exported?*
- *RESPONSE: Plastics and metals are generally exported based on price/current market. In 2002, approximately 26% of the national waste recovery stream was diverted to China.*

V. Integrated Materials Management

A. Anheuser Busch (Kirby Kraft)

1. Environmental Priorities

i. Environmental stewardship

- Minimize waste
- Support conservation
- Maintain position as the world's largest operation using bio-energy (utilize methane generated by brewing process)

2. Leader in waste reduction and recycling

- Currently recycle 99% of solid waste generated at brewery
- Member of EPA Wastewise program (Hall of Fame inductee)
- Partnership with EPA in using WARM model. The WARM model can convert data on solid waste diversion to impact on other types of media (fossil fuel, greenhouse gas)

3. Maintain Recycling Awareness

- Focus on byproduct generation and use

4. Maximizing Revenue

- Sale of spent grain accounts for 75% of revenue from recyclables
- Currently exploring contracts for a commodities market similar to the OCC "yellow sheet"
- New system in place to better track and share best practices throughout the company

B. Hallmark (Rick Robson)

1. Waste Re-use and Recovery

- Conduct annual collection events for employees

2. Searching for the next drivers

- Wal-Mart sustainable operations mandate reinvigorated efforts
- Set corporate environmental goals

3. Current Efforts

- Paper is 50% of waste generated
- Increase diversion by allowing some contamination
- Part of city-wide project connecting businesses. Includes waste to energy partnership with Lafarge Cement
- Food waste program that diverts to Missouri Organics composting facility
- Zero waste office pilot program to achieve over 90% diversion in project zone using "green spots", replacing traditional waste receptacles with a row of recycling containers

❖ *QUESTION: What are the "burnables" used in the waste to energy program?*

❖ *RESPONSE: Lafarge Company takes all of the non-recyclable plastics (Styrofoam) and other non-recyclable materials, and burns them for energy.*

❖ *QUESTION: How far are the "green spots" from the office floor, and how many are there per floor or per square ft?*

❖ *RESPONSE: The pilot program has a rule that one is at least 75-100 ft from the farthest person. There are 15 of these green spots for an area with 350 people.*

❖ *QUESTION: What is the By-product Synergy Program?*

❖ *RESPONSE: It is a program where member come together to find processes and waste opportunities that match the needs of each other. It identifies high-probability*

matches every couple of months. Food waste composting and waste to energy are the most common results of this process.

- ❖ *QUESTION (to DNR): Is waste delivered to Missouri Organics Compost Facility covered under a storm water permit.*
- ❖ *RESPONSE: All of the compositing sites are required to have standard storm water permits and permits for discharge, including Missouri Organics.*

C. Organix Recycling (Don Justiss)

1. Food Waste Composting as part of Wal-mart Landfill Diversion Initiative
   i. Deals with pre-consumer food waste
   - Not enough volume to handle quantity generated
   - Not enough permitted facilities to process and receive (regionally)
   - Normally pick up 8 cubic yards per week per location
   - Have to have a locking bar on dumpsters to prevent contamination
   - To solve problem with liquids (milk), milk is now being taken to pantries/shelters 3 days before expiration

D. City of Sedalia Compost Facility (Bill Beck)

1. New facility
   - Process combines city wastewater with yard waste to create class A compost
   - Uses computers and monitoring probes to ensure time to aerate compost piles for improved quality

E. City of Springfield Integrated Solid Waste Management System (Barbara Lucks)

1. Components
   - 3 recycling centers
   - HHW collection events
   - End user program
   - Springfield SLF
   - Education program
   - Market development program
   - Business assistance program
   - Yard waste processing center
2. Yard waste processing center
   - Receives 8,000 to 9,000 visitors a year
   - Charges minimal tipping fees
   - Generates rough and screened mulch
   - Sells compost to public with minimal revenue (service to the community)
   - Project has exceeded expectations with increased demand
3. Renewable Energy Program/ Landfill Gas to Energy
4. Conducts Tours of facilities and education programs in schools
5. Philosophy
   - Helping businesses build a strong private sector infrastructure

F. City of Columbia (Cynthia Mitchell)

1. Organics handling
   - Two yard waste drop off sites
   - Compost facility takes clean drywall from construction
   - Compost facility takes hot dog castings from nearby Kraft plant
   - Has an outdoor education center

- Uses mulch as an alternate daily cover (ADC) in bioreactor landfill

2. Road to Composting
   - Correspondence with DNR
   - Made changes to NPDES permit
   - Obtained Solid Waste District Grant for collection containers
   - Started collection route to food service businesses
   - Constantly recruiting participants

- ❖ *QUESTION: Is methane generated by the composting process?*
- ❖ *RESPONSE: If done correctly the composting process does not emit methane, just carbon dioxide, and landfills if properly designed can capture methane with only 1-2% emissions.*

VI. Special Events Recycling

A. St. Louis Earth Day (Cassie Phillips)

1. Recycling On-the-go Program
   - Primarily recycling, some composting
   - Covers 133 events over 296 days
2. Funding
   - Funded through Solid Waste Management District
   - Initially attempted to subsidize 100% of events, now asks event organizers to contribute which increases their participation and leads to more successful events
3. Event Recycling
   - Want to see an increase in the amount of products made with recyclable materials
   - Can only use the open recycling and compost bins in enclosed events, due to risk of contamination
   - Satellite bin method pairs a recycling bin with a waste receptacle on a 1:1 ratio
   - Waste station method used in open events. 1-3 attendants are present to help people choose the right disposal method
   - Improve communication with public regarding the on the go event service

- ❖ *QUESTION: Do you do outreach training for other municipalities?*
  RESPONSE: Not yet, but we have the tools to do it in the future.
- ❖ *QUESTION: How big is the Earth Day event, and how many station do you have?*
  RESPONSE: The event is about 15,000 people, with 5 waste stations.

VII. How to Build and Sustain a Higher Education Sustainability Program

A. St. Louis Community College (Peggy Moody)

1. Recycle-Mania
   - 18 schools participating
   - Provides tools for improving recycling at campuses
   - Holds a competition every January through March in various recycling categories
2. Reporting Diversion
   - Difficult to convert volume of waste to weight
   - Partially full containers create challenges when trying to get haulers to provide data
   - Saint Louis University has a contractual agreement with their waste hauler to only pick up their waste, which helps in getting accurate numbers
3. Improved cooperation between universities on waste solutions benefits all

- ❖ *COMMENT: The EPA Wastewise program could help a program like this with long-term sustainability.*

VIII. Wrap Up

A. Recommendation for additional topic
- Discussion of "Pay as you throw" system of payment for solid waste
- Developing regional markets for commodities

B. Review of the topics for prioritization and voting
- How to get and keep recycling in rural communities (8 votes)
- Diversion calculation (7 votes)
- Organics (21 votes)
- Special event recycling (4 votes)
- How to build and sustain higher education recycling programs (0 votes)
- Pay as you throw (6 votes)
- Developing regional markets for commodities (7 votes)

C. Re-vote for tied topics
- Diversion calculation (12 votes)
- Developing regional markets for commodities (19 votes)

D. **TOP THREE TOPICS:**
1. Organics
2. How to get and keep recycling in rural communities
3. Developing regional markets for commodities

- ❖ *COMMENT: The SWMP will send emails to all stakeholders for those interested in participating in workgroups.*

E. Scheduling Next Meeting
1. Next proposed meeting at MORA conference (Branson, MO)
   - Tentatively, June 8, 2011, 2 p.m. to 4 p.m.
   - Proposed that future meetings be conducted quarterly