



Integrated Solid Waste Management in Iowa: Challenges, Changes, & New Visions

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Drivers of Change

- Changes in Waste Management Technologies
- Changes in Waste Streams
- Federal Regulations / Mandates
 - 1965-Solid Waste Disposal Act
 - 1970-Resource Recovery Act
 - 1976-Resource Conservation & Recovery Act (RCRA)
 - 1984-Hazardous & Solid Waste Amendments to RCRA
 - 1991-EPA Subtitle D regulations promulgated
- Iowa Laws
 - 1987-Groundwater Protection Act
 - 1989-Waste Reduction & Recycling Act
 - 1994-SF 2300 (goal progress incentive & disincentives)
- Public Policy and Priorities



1987 Groundwater Protection Act

- State policy: reduced reliance on landfilling
- Waste management hierarchy established
- Landfills required to file comprehensive plans
- Landfill requirements
 - Closure/post-closure
 - Leachate collection and treatment
 - Financial assurance
- Household Hazardous Materials program created
- 7/1/97-No new landfill permits issued unless needed as part of an integrated system
- Revised state solid waste tonnage fee from \$.25/ton to current \$4.25/ton (5-year phase-in)



1989 Waste Reduction & Recycling Act

- Established state reduction goals
- Local governments responsible for establishing comprehensive reduction programs
- Landfills must file plans in conjunction with all local governments using facility
 - established planning area boundary concept
- Plans detail programs designed to meet goals
- Established landfill bans (yard waste, waste oil, lead-acid batteries, whole waste tires, deposit beverage containers)



State Reduction Goals

- Solid waste landfilled in 1988 used as baseline
- Reduce
 - 25% by July 1, 1994
 - 50% by July 1, 2000
- Through source reduction and recycling practices.



1994 Senate File 2300

- Consequences for attaining / failing to attain 25% goal
- Incentive for attaining 50% goal
- Revised hierarchy
 - volume reduction at the source
 - recycling and reuse
 - combustion for energy recovery and volume reduction, landfilling and “other approved techniques”



Protecting Human Health & Environment How Have We Done?

■ 1975

- Onsite burial on private land common
- Approximately 2,000 town dumps
- Burning and burial
- Permitting Sanitary Landfills in 1975
- Up to 1981 hazardous waste legally accepted

■ 1987

- 89 Permitted MSW Landfills
- 36 Permitted non-MSW Landfill Sites



Protecting Human Health & Environment How Are We Doing?

- 35 Solid waste-related rulemakings since Sept '99
- Currently about 300 permitted solid waste facilities & operations
- 84 permitted sanitary landfills
 - **59 MSW (54 PUBLIC, 5 PRIVATE)**
 - 19 mono-fills (12 CCR, 4 C&D, 3 foundry sand)
 - 6 industrial (single generators)
- 30 solid waste transfer stations
- 17 Regional Collection Centers for HHMs



Protecting Human Health & Environment

How Are We Doing?

- 76 Appliance Demanufacturing Sites
- 21 CRT Collection Sites & 3 Recycling Facilities
- 10 Composting operations
- 3 Material Recovery Facilities
- 6 Waste Tire Processing and Storage Sites
- 38 Land Application Permits (cover 700 sites)
- Non-permit but regulated activities
 - Yard waste and animal mortality compost sites
 - 31 registered waste tire haulers
 - Beneficial use determinations
 - Special Waste Authorizations



Resource Conservation

How Are We Doing?

- Biocycle's 2006 "State of Garbage in America"
 - 28.5% of MSW generated recycled or composted
 - 11% increase from 2002
 - MSW generated increased 5% (369 to 388 M tons)
 - MSW landfilled increased 3% (242 to 249 M tons)
- 71 pounds of waste produced for every 1 lb of finished product
- 1% of total North American materials flow that is still being used within a product after 6 months from sale



State's Goal Progress Status

- 46 SW Comprehensive Planning Areas
- 26 planning areas met or exceeded 25% goal
 - 5 of these have exceeded 50% goal
- 20 have not attained 25% goal
- State at 29% (compilation of planning areas' FY 2004 data)
- Status at 25% and 50% Goal Dates
 - 7/1/94 = 28%
 - 7/1/2000 = 36%



What Does the Percentage Mean?

- 2.68 million tons landfilled in FY04
- Solid waste generation estimated @ 3.91 million tons
- Approximately 29% or 1.135 million tons diverted from landfilling through source reduction, recycling and composting
 - <1% from rdf
- Actual amount landfilled since 1993 increased 30% (644,000 tons)



Resource Management Vision: Revamp Hierarchy

- From Waste to Resource Management Hierarchy
- Initial emphasis on materials “upstream”
- Multi-media – need to consider impacts from
 - Mineral extraction
 - Resource depletion
 - Energy and water usage
 - Water and air quality
- Within reuse and recycling, need to differentiate “higher value” from “lower value” or marginal disposal uses
- 2006 legislation moved up waste-to-energy



Resource Management Vision: Empowerment of Local Authorities

- Establish local resource management authorities
- Enforcement powers
- Responsibility and authority for all waste generation sectors
- Organize around “wastesheds” or watersheds rather than landfill service areas
- Dedicated funding source established in legislation



Resource Management Vision: Sustainable and Equitable Funding

- Current system requires landfilling to fund state and local waste reduction and recycling programs
- Tonnage Fee applies only to Iowa landfilling
- Landfill users subsidize permitting and inspection costs for other sanitary disposal projects
- Decreasing / static funding for state programs
 - Total fee collected +9% since 1993
 - Amount remitted -14% since 1993 (-\$950,000)
 - Solid Waste Administration Account
 - Average since 1993 - \$1,842,137
 - FY '06 - \$1,839,620



Resource Management Vision: Sustainable and Equitable Funding

- Place tonnage fee on all waste generated within Iowa that is landfilled
- Alternative to tonnage fee – generator fee
- Permit fees to fund regulatory programs
- Funding strategies and fee systems with economic incentives and disincentives that support state goals
 - Unit-based pricing with fees established through full-cost accounting
 - Deposits, rebates, advanced disposal fees
 - Performance based resource management contracts



Resource Management Vision: Focus on Specific Sectors

- 70% of Landfilled Waste from Commercial, Industrial and Institutional Sectors
- “Upstream” resource conservation opportunities
- Encourage/Promote Product Stewardship Principles
- Promote Environmental Management Systems



Resource Management Vision: Focus on Specific Materials

- 2005 Waste Characterization Study Results
 - 18% of materials being landfilled are:
 - Corrugated Cardboard (6.7%)
 - Mixed paper (6%)
 - Plastic film/wrap/bags (5.2%)
 - Organics comprise 20.3% of landfilled materials
 - Food waste (8.5%)
 - Compostable paper (5.2%)
 - Wood (6.6%)
 - C & D wastes = 515,646 tons or 19% of landfill total
- Toxic & “Problem” Product Waste



Resource Management Vision: Use State Resources Strategically

- Focus SWAP on sectors & waste streams where largest opportunities exist
- Broaden SWAP to include resource management
- Market supporting & complementary programs as a single portfolio of services to specific customer groups
 - DNR's Pollution Prevention Services
 - Iowa Waste Exchange
 - SWAP
 - Other business assistance entities



Resource Management Vision: Revitalize Mandates & Regulations

- Eliminate statutory provisions that
 - Have been completed
 - No longer relevant
 - Are not feasible
- Remove barriers to moving materials from wastes to resources
- Ensure that lower valued uses are not provided a competitive advantage
- **Goals of protecting human health and the environment are not being compromised**



Resource Management Vision: Continued Support for Successes

- Residential recycling efforts
 - Goal Progress increased 28% to 36% from '94 to '00
 - Number of municipal curbside recycling programs increased from 240 to 608 during same time
 - Currently 662 municipalities with curbside and additional 505 drop-off recycling sites
 - Monitor and revise to maximize impact
- Regional Collection Center Network
 - 17 Household Hazardous Materials RCCs Established
 - Mobile capabilities and satellite locations
 - Serve 76 of state's 99 counties
 - Increase convenience and participation



Resource Management Vision: Measuring Performance of IRMS

- Challenges with current methodology
 - 1988 baseline
 - actual disposal tonnage vs. comparing current year landfill amount to an increasing baseline (solid waste generation) adjusted for changes in:
 - ① POPULATION
 - ② EMPLOYMENT (place of work)
 - ③ RETAIL SALES TAX
 - “Unaccounted” out-of-state landfiling
 - Assumption: no change in sectors’ waste generation



Resource Management Vision: Measuring Performance of IRMS

- Toxicity Reduction – lack of credit
- Anti-Illegal dumping / burning bans “penalize” planning areas
- 50% goal “ceiling”
- Diversion vs. low value uses
 - When is it disposal? When not?
- Landfill diversion: Is this a true measure of integrated waste management success?



Resource Management: Vision for the Future

- Revamp management hierarchy
- Empowerment of local authorities
- Sustainable & equitable funding
- Optimize efforts by focusing on specific materials & sectors
- Use statewide resources strategically
- Revitalize mandates and regulations
- Continue to support successful programs & strategies
- Environmental metrics for evaluating improvements



THANK YOU!

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