Solid Waste Issues, Siting, and Infrastructure North Dakota

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Background: Waste Management in North Dakota:

- Into the 1950s, most communities had an "open dump" for dumping and burning garbage. While waste amounts and materials were more innocuous than now, such facilities resulted in serious pollution of air and water, spread of vectors and disease.
- Upgrading of landfills and their operation continued in the next several decades as we learned more about waste management and pollution caused by landfills.
- Volume of waste materials increased and became more troublesome as plastics, pesticides, and chemicals became more prevalent.

3 Background:

1990s: Waste Management in North Dakota

EPA approved North Dakota's Rules for Municipal Solid Waste (MSW) Landfills which meet the Federal Subtitle D requirements which include:

- Location Standards
- Operation Requirements
- Design Requirements
- Ground water Monitoring/Corrective Action Requirements
- Closure/Post-closure Requirements
- Financial Assurance Requirements

Waste Management in North Dakota: 1990s

North Dakota Solid Waste Planning effort:

- 8 planning districts established;
- Regional plans helped identify landfills that could meet new federal/state rules while minimizing cost;
- North Dakota Solid Waste Plan identified 13 landfills for continued operation;
- The plans called for the advancement of Integrated Waste Management and for city and county inert solid waste facilities.



North Dakota Solid Waste Plan Identified:

- Preferred Hierarchy of Integrated Waste Management:
 Solid Waste Reduction, Recycling, Energy Recovery and Disposal.
- Communities and Counties encouraged to ensure local capacity for bulky "inert" wastes that do not readily contaminate water.
- Some existing landfills and old dumps converted to inert facilities.

6 Present Situation for Solid Waste

- Some MSW facilities see capacity shortfall;
- Limited capacity for inert solid waste management in many areas/counties;
- Many local leaders note Declining Building and Solid Waste issues (NDLC and NDACO meetings - 2007);
- New facilities are increasingly difficult to site or develop anywhere in North Dakota
 - □ Last two new MSW landfills over 20 tons/day were sited in the 1980s;
 - □ Few inert landfill sitings in last 10 15 years.

7 Present Situation for Solid Waste

- Some MSW facilities see capacity shortfall;
- New facility Siting:
 - □ Newest MSW landfills over 20 tons/day are:
 - Williston, 1985 (former mine area);
 - Dickinson, 1986 (former mine area);
 - □ Newest MSW Landfills under 20 tons/day:
 - MCKENZIE COUNTY, 1990s
 - MERCER COUNTY 1990s (former Mine area)

Few inert landfill sitings in last 10 - 15 years.

8 Present Situation for Solid Waste

- Some MSW facilities see capacity shortfall;
- Most MSW landfills are regional facilities serving area ranging from a county to 10 counties, up to 100 mile radius or more.
- Jamestown, Minot, Gwinner (WM) and McDaniel (WM) Landfills have limited capacity of about 15-18 years;
- Grand Forks Landfill is schedule to close in 2008-9.



Present Situation for Solid Waste

- Lack of solid waste capacity could result in:
 - □ Decreased viability of small communities;
 - ☐ Impacts to economic activity and development;
 - Inability to deal with declining buildings;
 - □ Increased illegal disposal;
 - ☐ Health, Safety and Environmental Challenges;
 - □ Social impacts.

Present Situation for Solid Waste

- Problems of Abandoned and Dangerous Buildings is serious in rural communities;
- Many areas have limited capacity for construction and demolition materials;
- Economic development or viability could be hampered due to lack of

affordable services;

■ Limited ability to respond to emergencies (storms, floods, etc), accidents, animal disease, etc.

12 Management Hierarchy- Abandoned Buildings

- Repair/rehabilitate building
- Sell to someone who will repair/care for building;
- Recover/salvage metal, lumber, wood (energy), concrete and brick (aggregate) etc.
- Restore land to useable property;
- Properly demolish/dispose of materials.

13 Integrated Waste Management - Inert Landfills

- Stock pile wood for public use as fuel
- Stock pile wood chips for use
- Stock pile concrete for crushing
- Stock pile asphalt for grinding
- Yard waste material can be composted
- Metal and appliances for recycling

14 Siting of Solid Waste Facilities In North Dakota

- Article 33-20 NDAC "Solid Waste Rules" are approved by U.S. EPA;
- Solid Waste rules and Permit Process address Environmental Issues and do not supersede zoning;
- Department supports pro-active local zoning.

15 SITE CHARACTERISTICS

- >GEOLOGY,
- >SOILS,
- >DEPTH TO GROUNDWATER
- **≻**TOPOGRAPHY
- >SURFACE WATER

16 LOCATION RESTRICTIONS: EXCLUDED AREAS

- >WITHIN AQUIFERS
- >WELLHEAD PROTECTION AREAS
- **▶100 YEAR FLOODPLAIN**
- **➤ UNSTABLE AREAS (CHANNELS, RAVINES, UNDERGROUND MINES)**
- >WOODY DRAWS

17 LOCATION RESTRICTIONS: EXCLUDED AREAS

- ➤ Endangered Species Habitat
- >< 10,000' To Airports Used by Jet Aircraft
- >< 5,000' To Airports Used by Piston Engines
- >< 25' TO Utility Easements
- ➤ Other areas deemed unsuitable
- 18 LOCATION RESTRICTIONS: Avoidance Areas
 - **➢OVER OR NEAR AQUIFERS**
 - >< 1,000' TO DOWNGRADIENT WELL
 - >< 200' TO SURFACE WATER
 - >FINAL CUTS of SURFACE MINES
 - >< 1,000' TO NATIONAL or STATE PARKS
- 19 SW Siting: 5 Mile Airport Notification
 - Owner or operators proposing a new site or lateral expansions for a municipal waste landfill within a five-mile [8.05-kilometer] radius of an airport must notify the affected airport and the federal aviation administration.
- 20 NDDH Permitting Process/Flow

Pre-Application Review for New Facilities

- Assess Site Zoning;
- Applicant has legal access to property;
- Site Topography and Site Assessment acceptable to NDDH;
- Pre-Application Approved or Disapproved

 ☐ Has opportunity for revision
- 21 NDDH Permitting Process/Flow -

Application Received by NDDH:

- Applicant shall publish a public notice;
- Application reviewed for Completeness:
- Application Routed to review team;
- Review Team reviews and comments;
- Technical Review, Compliance and Reviews Prepared
- 22 NDDH Permitting Process/Flow:

Positive review, Draft permit

- NDDH publishes public notice, opportunity for public hearing:
 □Public hearing held if sufficient interest.
- NDDH notifies County Commission of intent to issue permit:

	 □ County may schedule a public election, □ If election fails, permit must be denied. Very few new public landfills permitted in recent years
23	NDDH Permitting Process/Flow:
	Positive review, Draft Permit
	 ■ If County decides not to conduct election or election passes: □ NDDH may proceed with permit process; ■ Based on results of multi-agency review and public comment and hearing (if held): □ Approve or deny permit based on record;
	□ Applicant has right of appeal.
24	Dangerous and Abandoned Buildings and other Material - Background Local governments are grappling with dangerous and/or abandoned buildings and discarded or unwanted materials left due to population shifts. Often buildings and materials pose a risk to public safety, health and the environment, can inhibit productive use of property, and may inhibit use or enjoyment of surrounding property. Some are being handled in a manner that may further impact human health, safety, the environment and future use of property;
25 25	 Dangerous and Abandoned Buildings and other Material - <u>Background</u> ■ Severe weather events, natural disasters, or accidents may also create or aggravate the issue. ■ Local Government may also need to deal with closed industrial facilities, military facilities, failed economic development ventures, buildings impacted by fires, etc. ■ Ability to deal with agricultural disaster, disease etc. may also be an issue.
26	Dangerous and Abandoned Buildings and other Material Proper management of these issues can: Help hold down costs, Increase protection of public health, Reduce liability due to improper management
27	 ■ Encourage revitalization or redevelopment Dangerous and Abandoned Buildings and other Material - Background Problems plague many communities with limited ability to address issues: □Lack of equipment and infrastructure; □Lack of manpower; ■ Local recycling and disposal capacity often inadequate; ■ Counties often end up with buildings and liability for back taxes.

28 Safety Issues

- Access Control: Trespassing, vandalism

 □ Children may play in structure
- May have structural deficiencies
- Hazards: Fall, Cut, Collapse, Weak Stairs, etc.
- May attract illegal activity
- Structural instability may lead to collapse
- Fire hazard

29 Health, Environmental and Liability Issues

- Disease: vermin, skunks, cats, etc.
- Mold, Mildew, Odors

 □ rotting grain, food, filth
- Chemicals pesticides, liquid paint, lead paint, auto fluids, batteries, industrial chemicals, oil, fuel oil, etc.
- Gas and Diesel Underground Storage Tanks
- Asbestos Key issue in many facilities

30 Liability Issues:

Dangerous and Abandoned Buildings

Local government may become liable for abandoned buildings;

- Safety and Health Hazards;
- Assessment and cleanup:
- Potential Injuries
- Building Demolition and disposal

31 Health and Environmental Issues

Illegal Demolition and/or Disposal

Improper Management of materials or debris may make exposure much worse;

- Injury to residents, workers etc. during cleanup:
- May make cleanup/disposal much more expensive;
- Building owner and local government must recognize <u>potential liability</u> for health and environmental issues
- Examples:

32 Health and Environmental Issues Natural Disasters &

Accidents

- Severe weather, natural disasters, or accidents also create issues;
- Local governments and emergency responders need to be aware of issues:
- May pose challenges for cleanup:
- Work together to find solutions.
- Need management capacity for emergencies;

33 Northwood Tornado – Cleanup

- Food Waste Separate Collections;
- Processing clean wood at Inert Landfill to save space;
- Segregating metal for recycling;
- HHW and Electronic waste collection;
- Segregating and processing Concrete and Brick at Inert Landfill;

34 Lessons Learned:

Debris Management

- Integrated Waste Management Key issue to control costs
 - ☐ Trees, Wood Debris can be ground for mulch,
 - ☐ Metal, can be segregated for recycling,
 - ☐ Concrete, Brick can be stockpiled for crushing
 - □ Food Waste Clean Appliances, remove food
 - ☐ HHW, Electronics, Oil Spills, etc.

35 💹 Lessons Learned

Debris Management

- Important issue for Political Subdivisions, Staff, Emergency Managers;
- Availability of Contractors;
- Availability of Trained Staff;
- Availability of Equipment;
- Response Procedures;
- Availability of Adequate Solid Waste Facilities
- Constraints on City/County Staff.

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