North Dakota Legislative Council
Advisory Commission on
Intergovernmental Relations
February 25, 2010

Grand Forks Solid Waste Landfill Siting Stories

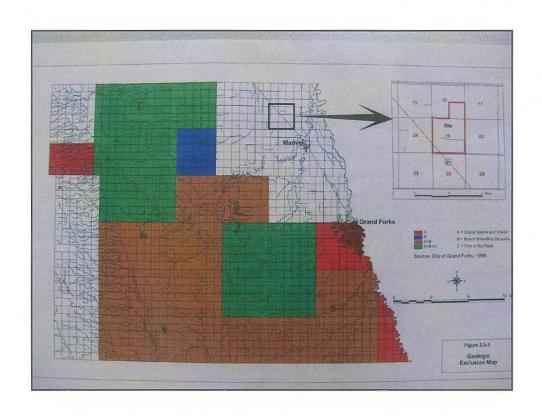
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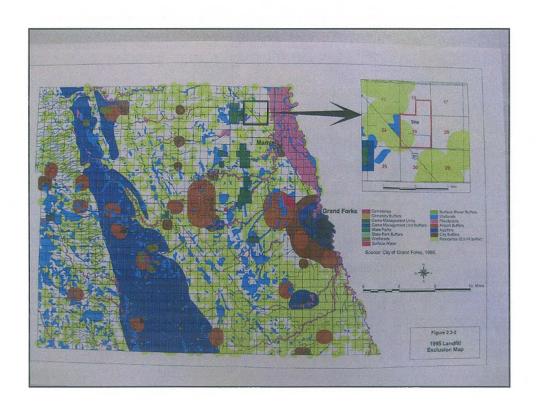
Todd Feland OTKS

City of Grand Forks Public Works Director

Regional Landfill – Attempt #1
Turtle River Township Siting,
Permitting Process
1990-2005

Public Works





The Modern Landfill 1991 EPA Subtitle D Regulations Include:

- Location Restrictions
- Proximity to Airports
- Floodplains
- Wetlands
- Fault Areas
- Seismic Impact Zones
- Unstable Areas
- Closure of existing MSWLF Units
- Operating Criteria
- Hazardous Waste Exclusion
- Daily Cover Requirements
- Disease Vector Control
- Explosive Gases Control
- · Air Criteria

- Access Requirements
- Storm water Control Systems
- •Surface Water Requirement
- ·Liquid Restrictions
- •Recordkeeping Requirements
- •Design Criteria
- •Ground Water Monitoring System
- Applicability
- Monitoring Systems
- Sampling and Analysis

Requirements

- Closure & Post-Closure Care
- •Financial Assurance

Small surrounding landfills were essentially priced out of the market as it was economically unfeasible to attempt to fund the mitigations required to meet regulations.

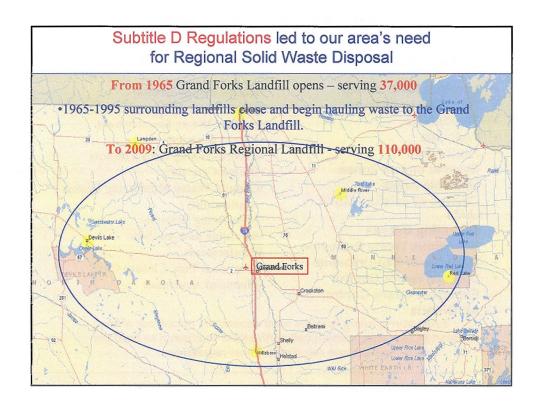


Regional Solid Waste Planning History

- January 1992 North Dakota Department of Health publishes Guidelines for Solid Waste Management Planning in North Dakota
 - District Plans established in 1993
 - •July 1993 North Dakota Solid Waste Management Plan from October 1991 to May 1995, the number of MSW landfills in ND went from 45 to 15
 - "District 4 will be served by one MSW landfill, the City of Grand Forks Municipal Landfill."
 - $^{\circ}$ Elimination of six of eight Solid Waste Districts 1995 Legislature, two remaining being our area NE corner of ND
 - "The primary reason for the continuation of the two districts is to plan for future disposal capacity for the area because of the limited capacity currently available."

May 31, 1995 Letter to Karl Karlsbratten, Esmond, ND

from Bob Wetsch, Planner, Solid Waste, Division of Waste Management, NDDH



Disposal Type	Cost/Ton
VTE Mass Burn – 30% Residual Landfilled* Considerations: Year-round markets, Air Quality standards, Cost	\$56-\$71
VTE RDF/Fluidized bed combustion – 32% Residual Landfilled* Considerations: Underdeveloped technology, limited markets, Cost	\$70÷
ASW Composting – 31% Residual Landfilled* Considerations: Product quality, odor & fires, Cost	\$62
expanded Recycling - 67 % Landfilled* Considerations: Variable markets, Cost-effective complement to landfill	\$43
Organics Composting – 57 % Residual Landfilled* Considerations: Outdoor processing climate-dependent, litter potential	\$32
Densified paper production – 63% Residual Landfilled* Considerations: Underdeveloped technology, unknown market, Cost not demo	\$38 instrated
learby Landfill with Improved Recycling Considerations: Land Availability, Zoning Issues	\$22

Site Selection Process

tential sites narrowed from 200 to 15, then 11, 8, and 4.

Siting Criteria evaluation factors utilized:

Run-on potential
Residential Density
Traffic Impact
Road Upgrades
Distance from centroid of waste generation
Land Availability

Scenic areas
Parcel size availability

Site Selection Process

September 6, 1996

Rating/Scoring Results:

Rank	Location		Score
1	Turtle River Section 19		231
2	Levant Section 25	226	
3	Levant Section 21	210	
4	Levant Section 20	210	

- Land owners notified
- 3rd Landfill Latest Newsletter mailing list of officials, area interested parties/nearby residents
- Letter to GF County Commission, Planning &Zoning,
 Water Resources Board

Site Selection Process
All Final Four Sites Receive Pre-Application approval from the ND Department of Health

I see no reason why the city of Grand Forks should not proceed to the landfill application phase for one of these sites. Please contact me if you have any questions on this review. Edward C. Murphy, Geologist, ND Geological Survey

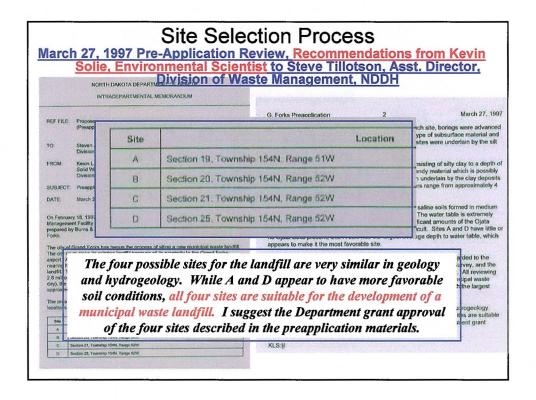
The proposed sites are well located with respect to topography.

The proposed sites are well located with respect to the distance from known glacial aquifers.

Samples collected during the auguring revealed a similar lithology at the proposed sites up to 20 feet depth, namely silty clay from land surface to about five feet depth, underlain by about ten feet of highly plastic clay, underlain by similar plastic clay with some intermixed fine sand.

> The proposed sites are well located with respect to the lithology underlying the area.

...only one water well within one mile of any of the proposed sites, that from a flowing head Dakota well. The proposed sites are well located with respect to area Alan Wanek, Hydrologist, ND State Water Commission water use.



Landfill Relocation Requirement – Government Agency Involvement



🌒 North Dakota Department of Health

 Current landfill was expected to reach capacity in 2008.



 FAA, USDA Wildlife Service, GF Regional Airport, ND Department of Health recommending the Grand Forks landfill be relocated due to the threat of bird strikes at the nearby Grand Forks Regional Airport.







Turtle River Twp Landfill Siting Zoning Process

<u>December 11, 1998</u> – City of GF closes on the purchase of the Turtle River Township site

December 28, 1998 -Turtle River Township amends its

"Township Land Development Code, Zoning Ordinance & Subdivision Regulations" to include specifics related to landfill zoning.



Landfill Siting Process - Zoning

March 14, 2000 – City of GF submits a
Petition for Issuance of a Conditional
Use Permit to the Turtle River Township
Board of Supervisors



May 31, 2000 - Turtle River Township
Board votes unanimously to deny the City
of GF a hearing until an
Environmental Impact Statement is
submitted.



Landfill Siting Process - Zoning

June 8, 2000 Letter

To Howard Swanson, City Attorney
From

Jay Fiedler, City's Attorney in Landfill Siting Process

"It seems to me that a favorable Environmental Impact Statement will only serve to assist us in achieving our real goal; that is, construction and operation of a new, modern, landfill at the best site available. We also believe that the City can demonstrate its absolute good faith in the process by commissioning the study. Hopefully that would encourage the Township to do the same."

Landfill Siting Process - Zoning

November 2000 Public Service Committee

Burns & McDonnell provided Solid Waste Management Alternatives and reaffirmed City's decision to seek a Nearby balefill,

Expanded Recycling and Yard Waste Composting

Supporting Factors:

Economics, longevity of disposal capacity, environmental/regulatory issues, future liability, and control factors.

EIS - Milestones of NEPA Process

Aug 6, 2001

Issue Notice of Intent

Aug 22 - 23, 2001

Conduct scoping meetings

Aug 6 - October 19, 2001

10-week public comment period

Dec 2002

Complete EIS Preparation Plan

July 2003

Complete Preliminary Draft EIS

Sept 30, 2003

Issue Draft EIS

Oct 28 - 29, 2003

Conduct public open houses

Sept 30 - Nov 30, 2003

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period

62-day public review and comment

May 2004

Issue Final EIS

Solid Waste Disposal Alternatives 2004 Update Waste-to-energy (mass burn)

- Mass burn technology predominates
- Currently used for 8% of US MSW
- Tipping Fee range \$60-\$80 per ton vs.
- GF Landfill tipping fee of \$33.50)
- Residue (ash) landfilled at 20 to 30 %
 percent (by weight of incoming waste)
- Conclusion Not selected, not costeffective, continue to evaluate

Solid Waste Disposal Alternatives 2004 Update, cont'd

Waste-to-energy (Other technologies)

- Refuse-derived fuel (RDF)
- Anaerobic Digestion
- Plasma Torch
- Gasification (Pyrolysis)
- Conclusion Not selected, not cost-effective, not commercially developed, unknown real costs, continue to evaluate

Solid Waste Disposal Alternatives 2004 Update, cont'd

MSW Composting (General)

- Currently used for less than 1% of MSW in USA
- Still requires a landfill for residual disposal
- Tipping Fees typically one tipping fee for landfilled and composted waste
- Larger facilities are normally co-composting, using both MSW and biosolids (Wastewater Treatment Plant sludge) as feedstocks

Solid Waste Disposal Alternatives 2004 Update, cont'd

MSW Composting - Summary of 9 larger North American co-composting facilities

- Diversion from landfill (including recycling/reuse) - 52% to 75%
- Tipping fees \$35/ton to \$100/ton (average \$60/ton) vs. City of GF Tipping Fee \$33.50
- Compost sales revenue (-\$10/ton to \$10/ton)
- Primary markets agriculture, soil blending

Solid Waste Disposal Alternatives 2004 Update, cont'd

MSW Composting - Case History of Rapid City, South Dakota Facility

Operating Data (Jan - Sep. 2004)

- Facility Tipping Fee \$45/ton
- Landfill Cost \$24.03/ton of landfilled waste
- MRF/Co-composting Cost \$168/ton (includes credits for recyclables sale and biosolids handling fee)

Solid Waste Disposal Alternatives 2004 Update, cont'd

MSW Composting - Case History of Rapid City, South Dakota Facility

Operating Data (Jan-Sept, 2004)

Landfill Diversion (total) - 51.8%

Reused materials - 42.3% Recyclables & Compost - 9.5%

Landfilled Waste - 48.2%

Solid Waste Disposal Alternatives 2004 Update, cont'd

MSW Composting Conclusions

- Not selected
- Not cost effective
- Continue to evaluate

Solid Waste Disposal Alternatives 2004 Update, cont'd

Landfill

- Currently used for over 91% of all United States Municipal Solid Waste
- Tipping Fee ranges in ND from \$30-40 per ton
- Federal Subtitle D Regulations have resulted in a level playing field geographically and for price stability
- Conclusion selected along with Improved Recycling Operations

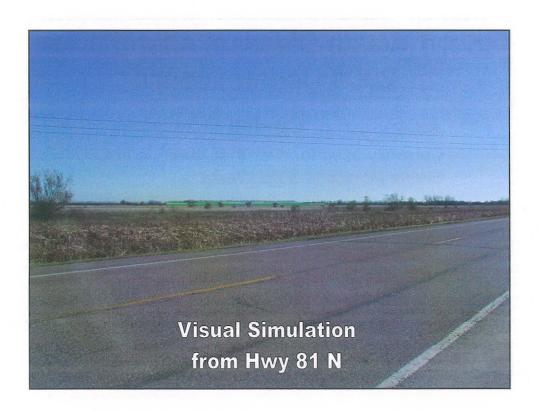
Township/County Zoning Approval

May 17, 2004

Grand Forks City Council <u>approves the final EIS</u> and gives authorization to proceed to Grand Forks County and the Turtle River Township Board for appropriate and necessary zoning approvals, permits, and/or variances from the Turtle River Township Board of Supervisors/Zoning Commission and the Grand Forks County Commission.

September 14, 2004

The Grand Forks County Commission/Planning & Zoning Commission deferred to the decision of the Turtle River Township.



The City of Grand Forks offered a brief in support of a Conditional Use Permit:



- The landfill will be limited to non-hazardous municipal solid waste, substantially all of which will be baled by the City of Grand Forks. The City will not accept hazardous waste, radioactive waste, or regulated infectious waste.
- The City shall remain responsible for transporting all MSW to the landfill in covered vehicles. The City will not accept waste transported to the site by rail.

The City of Grand Forks offered a brief in support of a Conditional Use Permit:



3. The City will be responsible for providing primary fire protection, including the control and extinguishing of fires that may occur in the landfill. The City will enter into good faith negotiations with the Manvel Voluntary Fire Department for the purposes of entering into a joint powers agreement or mutual aid agreement for additional fire protection at and near the proposed landfill site.

The City of Grand Forks offered a brief in support of a Conditional Use Permit:



- The City will operate and maintain the landfill so as to keep waste on-site and pick up all debris, litter, and/or blown waste.
- 5. The site will be secured and patrolled to prevent improper dumping.
- 6. An adequate security fence and gate will be erected around the site of the landfill.

The City of Grand Forks offered a brief in support of a Conditional Use Permit:



- 7. Adequate measures will be taken in the design, construction, operation, and closure of the landfill to control and manage any surface water and storm water falling on or crossing the landfill site so as not to negatively impact other property.
- 8. The depth of the excavation for the landfill, the liner to be installed, and the materials to be used for fill (cover) shall not have any adverse effect on the supply or quality of the groundwater on or surrounding the site.

The City of Grand Forks offered a brief in CRA support of a Conditional Use Permit:



- The City shall provide adequate monitoring of the site during construction, operation, and closure to ensure no environmental contamination from the landfill.
- 10. The City shall pay the Township a quarterly host fee in the amount of \$0.40 per ton beginning at the end of the first quarter following the initiation of placing bales in the landfill by the City of Grand Forks. The City will agree to increase the host fee on an annual basis in direct proportion with changes to the consumer price index, all Midwest urban consumers, as published by the United States Department of Labor on each anniversary date of the execution of the host agreement.

The City of Grand Forks offered a brief in support of a Conditional Use Permit:



- The City will own and operate the landfill serving the areas of the northeast North Dakota and northwest Minnesota, only.
- 12. The City will maintain at all times during the construction, operation, maintenance, and closure of the landfill, adequate insurance or other earmarked funds, as determined from time to time by the Township Board in good faith negotiations with the City, to clean up any unexpected environmental damage that may occur with respect to the landfill.
- 13. The City will comply with all applicable state and federal laws and necessary approvals.

The City of Grand Forks offered a brief in support of a Conditional Use Permit:



- 14. The City will acquire ownership of the residential premises located within one-half (1/2) mile of the proposed waste boundaries by negotiation and/or eminent domain. Alternatively, the City will obtain an easement, waiver, or other written approval for the construction and/or operation of a landfill from said property owner.
- The City will retain an independent inspector to oversee construction, operation, and maintenance of the landfill.
- 16. The City will improve County Road 1 beginning at Highway 81 easterly for approximately one-quarter mile to the entrance to the landfill.

The City of Grand Forks offered a brief in support of a Conditional Use Permit:

- The City will ensure that all loaded trucks transporting municipal solid waste to the landfill will access the site from Highway 81.
- The City will take reasonably necessary steps to minimize visual, litter, odor, vector, rodent, and/or dust impacts resulting from the construction or operation of the municipal solid waste landfill.
- 19. The City will designate a City contact person for the Township or others to contact in the event of emergency or other concerns. The City will also designate a City employee or officer to receive and distribute communications between the City and the Township.

The City of Grand Forks offered a brief in support of a Conditional Use Permit:



- 20. Except for extraordinary circumstances or needs, the City will establish landfill operating hours of 7 a.m. to 5 p.m. Monday through Friday and 7 a.m. to 12 p.m. Saturday. The landfill will be closed on Sundays and on major holidays during which the City's Sanitation Department does not operate.
- 21. The City will indemnify and hold harmless the Township from any and all claims, suits, or causes of action against the Township resulting from the City's construction, operation, maintenance, or closure of the landfill.

The City of Grand Forks offered a brief in support of a Conditional Use Permit:



22. The City will continue to make payments in lieu of taxes to the Turtle River Township in an amount equivalent to Township taxes that would be levied against the premises if privately owned. In 2004, such amount was \$6,430.70. Such payments would continue to the closure of the landfill.

Township/County Zoning Decision

November 17, 2005

The Turtle River Township Board voted unanimously to deny a Conditional Use Permit to operate the landfill.

Grand Forks District Court Decision

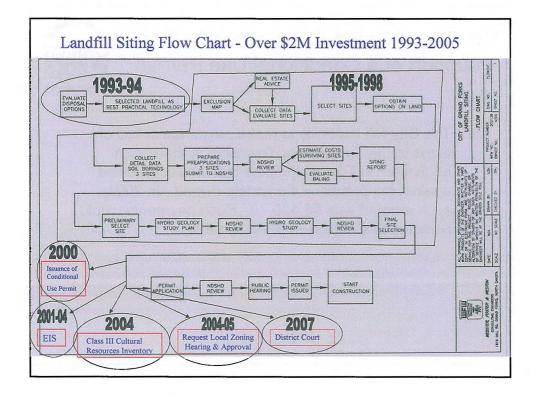
April 16, 2007

Grand Forks County District Court ruled that the Turtle River Township's zoning ordinance is not arbitrary, capricious, and unreasonable and that the Township's decision is valid.

Grand Forks City Council Decision

May 7, 2007

The City of Grand Forks City Council decided not to pursue the matter any further and to pursue other opportunities.





Timeline for the Proposed Grand Forks Balefill

August 2007 – Approval to prepare Pre-applications for three (3) potential landfill areas within the City of Grand Forks (City) Extraterritorial Zone (ET).

September – November 2007 – Request and receive United States Department of Agriculture (USDA) input regarding landfill/airport siting issues.

September – December 2007 – Prepare and submit pre-applications to the North Dakota Department of Health (NDDH).

December 2007 – February 2008 – NDDH review of & approval/denial of pre-applications.

December 2007 – February 2008 – Select proposed landfill site.

March – April 2008 – Prepare and submit Sub-surface Investigation Work Plan to NDDH. April – May 2008 – NDDH review and approval of Work Plan.

May – September 2008 – Perform Subsurface Investigation (including soil survey), Prepare Report, and submit all to NDDH.

June - July 2008 - Prepare Landfill Design Criteria Report

June - September 2008 - Prepare Landfill Permit Application and submit to NDDH.

September - November 2008 - NDDH review of Application.

December 2008 - February 2009 - Provide responses to comments from NDDH.

April 2009 - Receive a NDDH Solid Waste Management Permit.

January – March 2009 – Prepare Initial Facilities and Initial Balefill Cell Construction Documents and Bid.

June 2009 – Award construction contract for Initial Facilities and Initial Cell Construction.

June 2009 - October 2009 - Complete Initial Facilities and Initial Cell Construction.

October 2009 - Begin Balefill Operations.

Recycling/Diversion Program

These materials will continue to be handled/processed at the current Grand Forks Facilities:

Grand Forks recycling opportunities

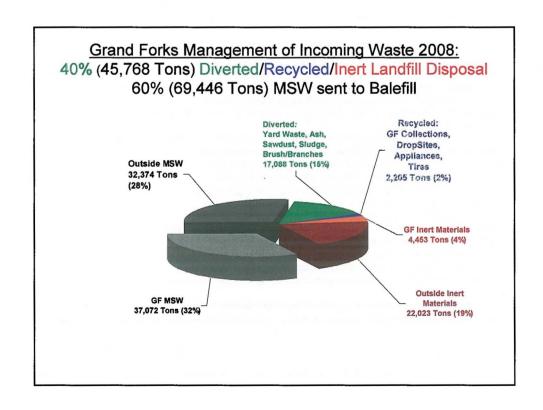
Curbside commingled recycling
Recycling drop-sites
Yard Waste curbside pickup & drop-off sites
Batteries, Waste Oil, Propane Tanks
Appliances, Tires
Electronics Collection Event

Grand Forks Inert Waste Landfill

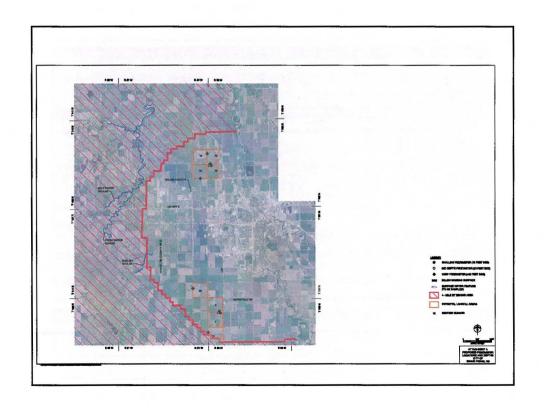
Construction & Demolition debris

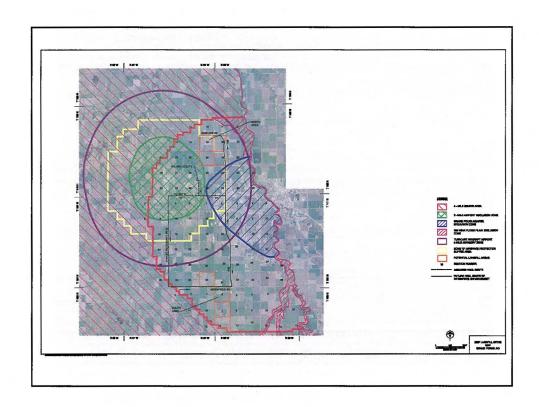
Diversion program

Asbestos, Ash, Yard Waste Composting, Woody debris

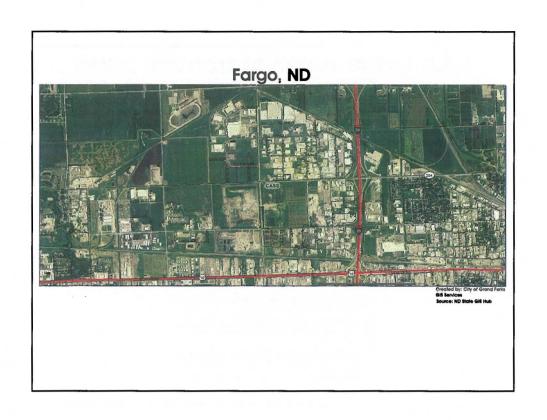


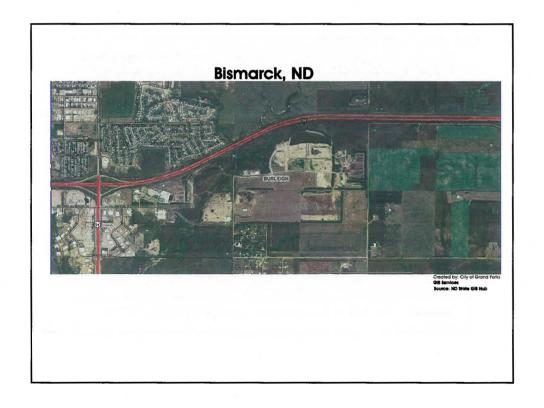


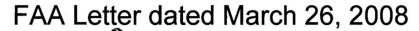














Mr. Todd Feland City of Grand Forks Public Works Director PO Box 5200 Grand Forks, ND 58206-5200





Dear Mr. Felant

The Federal Aviation Administration (FAA) has reviewed your letters direct January 18

The FAA has no objection to the request to extend the current MWS landful operation until the date the Grand Forks International Airport runway 8R-26L is operational (but no later than October 2009) provided the conditions of your letters above and the following conditions are met

The City has also provided the City Council Staff Report presented at the February 11, 2008 City Council Meeting which considers extension of the landfill until the date the Council Forks Insernational Airpan runway 88-201, is operational.

The FAA has no objection to the request to extend the current MWS familial operation until the date this Grand Forks (international Airport narrows 88/26), is operational that ne later than Orbothe 2009 provided the conditions of your letters above and the following conditions are user

The Cry recorporates the "Bird Control Mingation at Potential North Engl Grand Forks MSW Leadiff Sixes Plan October 19, 2007" as standard to the October 25, 2007 Tests from the Cry to the USMA Widdle Services into the continging MSW leadiff operations in 2008. The Widdle Actions Log (Oppositions Plans steel) contained to be recisioned regularly to determine if control mentates are effectively keeping and actions at a minimal, now hay adopted to the properties.

FAA Letter dated April 28, 2008



Mr. Todd Feland City of Grand Forks Pablic Works Director PO Ros \$200 Grand Forks, NO \$8206-3200

Dear Mr. Feland

In general, the FAA recommends against locating MSWLF within 5 statute miles between the farthest edge of the airport's air operations area and the MSWLF. However, we understand the City of Grand Forks (City) has limited options available within their 4 mile extraterritorial zone and have been unsuccessful in their attempts to establish a MSWLF outside of the City's zoning control. Therefore, based on the City's limited siting options available and the November 21, 2007, United States Department of Agriculture, Animal and Plant Health Inspection Services, Wildlife Services (WS), Wildlife Hazard Site Visit and Assessment report, the FAA has no objection to the establishment of the MSWLF as proposed, provided:

- tise of gasons repulsion methods
 Dee of exclusion devices overload vitos and balding as further described in Courons 1 and 3 of the assessment report.
- 4 The City incorporates the "Bard Control Magazine at Potential North Frad Guard Forks registered Solal Worst Landfill Sons Plac" dated October 13, 2007, and the

City of Grand Forks Municipal Solid Waste "Good Neighbor" Policy Guide Rye Township Section 13 (Approved by GF City Council February 2008)

- The landfill will be limited municipal solid waste (MSW), substantially all
 of which will be baled by the City of Grand Forks (City). The City will not
 accept hazardous waste, radioactive waste, or regulated infectious
 waste.
- The City shall remain responsible for transporting all the MSW to the landfill in covered vehicles. The City will not accept waste transported to the site by rail.
- 3. The City will be responsible for providing primary fire protection, including the control and extinguishing of fires that may occur in the landfill. If needed, the City will enter into good faith negotiations with the Manvel Voluntary Fire Department for the purposes of entering into a joint powers agreement or mutual aid agreement for additional fire protection at and near the proposed landfill site.
- The City will operate and maintain the landfill so as to keep waste-on-site and pick up all debris, litter, and/or blown waste.
- 5. The site will be secured and patrolled to prevent improper dumping.
- 6. An adequate security fence and gate will be erected around the site of the landfill.

City of Grand Forks Municipal Solid Waste "Good Neighbor" Policy Guide Rye Township Section 13 (Approved by GF City Council February 2008)

- Adequate measures will be taken in the design, construction, operation, and closure of the landfill to control and manage any surface water and stormwater falling on or crossing the landfill site so as to not negatively impact other property.
- The City shall provide adequate monitoring of the site during construction, operation, and closure to ensure no environmental contamination from the landfill.
- 9. The City will own and operate the landfill primarily serving the areas of Northeast North Dakota and Northwest Minnesota.
- The City will maintain during construction, operation, maintenance, and closure of the landfill, adequate insurance or other earmarked funds regarding the landfill.
- The City will comply with all applicable state and federal laws and necessary approvals.
- 12. The City will retain an engineering consultant to assist in the oversight of the construction, operation, and maintenance of the landfill.
- The City will improve and maintain any necessary township roadways, which are currently maintained by the township.

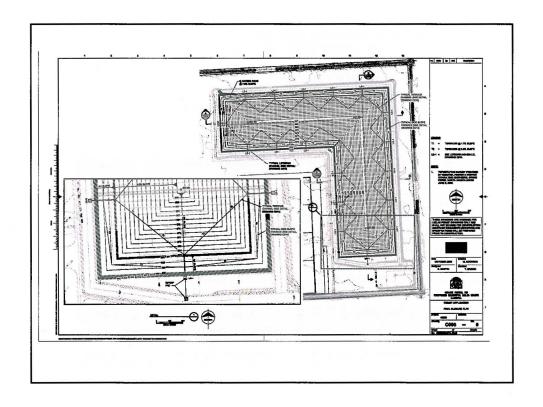
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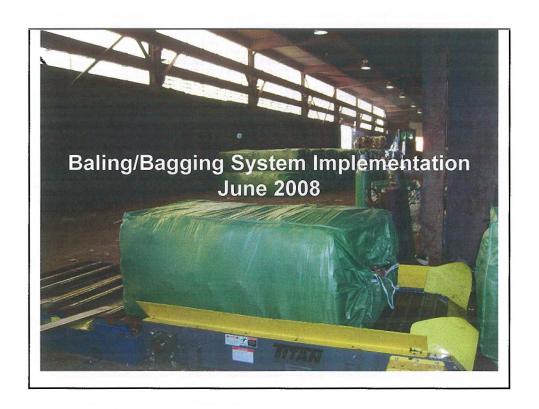
- The City will take reasonably necessary steps to minimize the visual litter, odor, vector, rodent, and/or dust impacts resulting from the construction or operation of the landfill.
- 15. The City will designate contact person(s) for the Rye Township or others to contact in the event of an emergency or other concerns. The City will also designate a contact person(s) to receive and distribute communication between the City and Rye Township regarding landfill activities to include planning, construction, and operation of the landfill.
- 16. Except for extraordinary circumstances or needs, the City will establish landfill operating hours of 7:00 a.m. to 5:00 p.m. Monday through Friday and 7:00 a.m. to 12:00 p.m. (noon) Saturday. The landfill will be closed on Sundays and on major holidays during which the City's Sanitation Division does not operate.
- 17. The City will indemnify and hold harmless Rye Township from any and all claims, suits, or causes of actions against the Rye Township resulting from the City's construction, operation, maintenance, or closure of the landfill.
- The City will continue to make payments in lieu of taxes to the Rye Township in an amount equivalent to Rye Township taxes that would be levied against the property if privately owned.
- 19. The City will fairly and reasonably compensate the property owner(s) of Rye Township 13 regarding the market value of their property. City officials and administrative staff will work with the City Attorney's Office regarding negotiations with the property owner(s) to resolve the land purchase in a reasonable and appropriate manner.

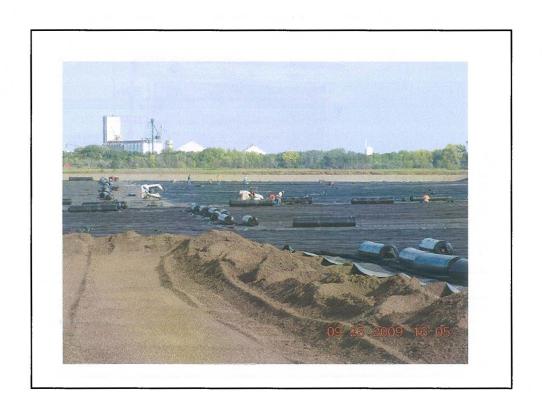
City of Grand Forks Municipal Solid Waste "Good Neighbor" Policy Guide Rye Township Section 13 (Approved by GF City Council February 2008)

- 20. The City will negotiate reasonable terms with nearby and adjacent occupied residences regarding mitigation issues. Rye Township occupied residences within 1,000 feet of the landfill are as follows: 5502 70th Avenue North (Ryan Scott), 5702 70th Avenue North (Richard and Linda Klein), and 5850 70th Avenue North (Steven and Susan Jose). Rye Township occupied residence within 2,500 feet of the landfill is as follows: 6502 70th Avenue North (Arthur Wixo). City officials and administrative staff will work with the City Attorney's Office regarding negotiations with the adjacent and nearby occupied residential property owners.
- 21. The City will continue to explore and study integrated waste management plans, which combine, divert, and/or recycle waste streams. The City will continue to study and implement reasonable waste management strategies, which divert and recycle waste streams more efficiently and effectively.
- 22. Upon request, the Public Works Director will be available to meet monthly with the supervisors of Rye and Falconer Townships to review progress and hear their concerns, and that County officials receive an agenda of noted township meetings.

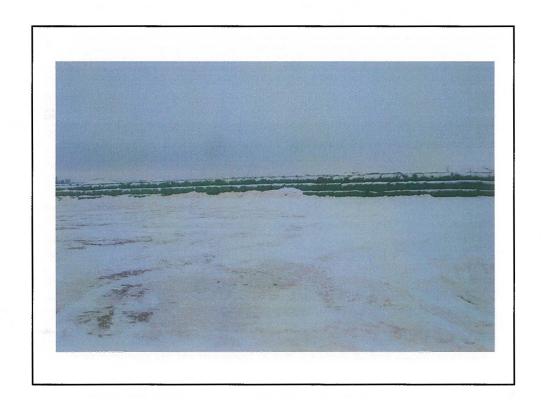
















Public Policy Lessons Learned

- Do not lose momentum
- Provide humble leadership
- Have the authority to complete the project
 - · Regional authority vs. local control
 - Prepare for the unknown
 - Inform and include local stakeholders in process
 - Maintain positive inter-governmental relationships.
- Public Policy can be positive and productive for society as a whole, as long as the course is defined, understandable, and reasonable.

Positive Outcomes

- Landfill Siting Process, Preapplication, Hydrogeologic Investigation, Permit Application, Final Design, NDDH Review & Permit Award, Construction Project Award for a regional landfill projected to serve the area for over 80 years.
- Permitting process survived an Environmental Justice Appeal, A Claim of Denial of Equal Protection, and FAA Landfill Siting Review.

