



Minnesota Pollution Control Agency

MONTROSE WASTEWATER TREATMENT PLANT EXPANSION

NONDEGRADATION REVIEW

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ISSUE STATEMENT

Montrose is expanding its wastewater treatment plant to accommodate new residential growth and the addition of wastewater from Waverly's and 12-Hi Estates Mobile Home Park's (A.K.A. Montrose Investments) wastewater treatment plants. This will be a regional treatment facility.

Treatment capacity will increase from a baseline nondegradation average wet weather design flow of 0.145 million gallons per day (mgd) to 0.781 mgd. The future average dry weather flow will be 0.411 mgd. The receiving water is a large wetland, the Woodland Wildlife Management Area (Minnesota Department of Natural Resources protected wetland Number 86-85).

The proposed project meets the definition of a "significant expanded" discharge under Minnesota Rules 7050.0185 (Minn. R. 7050.0185). This rule deals with the nondegradation of all (Non-Outstanding Resource Value) waters of the state. Subpart 2 (subp. 2) defines a significant "expanded" discharge of wastewater as one where the future average wet weather flow is more than 0.200 mgd over its baseline flow. This proposed expansion increases the average wet weather flow by 0.636 mgd over the nondegradation baseline flow. Therefore this proposal requires a nondegradation-to-all-waters review. Under subp. 4 the agency must determine, if it is reasonable to require additional treatment beyond that needed to protect water quality.

I. Background

The existing Montrose wastewater treatment plant is a stabilization pond system comprising of two primary ponds plus a two-pond secondary. The secondary pond is operated as a single cell. The receiving water is the Woodland Wildlife Management Area.

The proposed regional facility will be an aerated pond system with chlorination/dechlorination. The existing outfall pipe will be used by the future facility.

Waverly operates a contact stabilization activated sludge treatment plant with a design average wet weather flow of 0.237 mgd. The receiving water is Carrigan Lake. This is a small lake that is heavily impacted by the city's discharge. Waverly has a variance from phosphorus removal requirements. The new regional facility will eliminate the discharge to Carrigan Lake.

The 12-Hi Estates Mobile Home Park operates two extended aeration activated sludge "package" wastewater treatment plants. The 180-day retention time polishing pond that follows the package two plants discharges as a controlled discharge. This facility's design average daily flow is 0.019 mgd. The receiving water is a Class 7 (nonfisheries protected) ditch that flows to the North Fork of the Crow River. The regional facility will also eliminate this discharge.

II. Discussion

The intent of Minn. R. 7050.0185 is to protect against significant water quality degradation. This rule requires the agency to consider the following:

- the importance of economic and social development impacts
- the impact of the discharge on the quality of the receiving water
- the characteristics of the receiving water
- cumulative impacts
- the costs of additional treatment beyond what is required of non-significant dischargers
- other matters as shall be brought to the agency's attention

- Importance of Economic and Social Development Impacts

The attached June 2, 2000, letter from the project's consulting engineer Seth A. Peterson of Bolton & Menk, Incorporated, discusses the economic and social impacts.

- Impact of the Discharge on the Receiving Water's Quality

The receiving water is a 0.91 square mile wetland. An agency wetland's expert examined the project, and recommended that the outfall have a flow-dispersing device. This will prevent adverse localized impacts from the future discharge.

- Characteristics of the Receiving Water

The Woodland Wildlife Management Area is not a "listed" wetland in Minn. R. 7050.0470, Subpart 4 (the list of classified waters in the Upper Mississippi River drainage basin). Under Minn. R. 7050.0425 such "unlisted" wetlands are classified as 2D (Aquatic life and recreation), 3D (Industrial consumption), 4C (Irrigation and animal watering), 5 (Aesthetic enjoyment and navigation), and 6 (Other uses) waters. The quality of such a water should permit the propagation and maintenance of a healthy community of species indigenous a wetland habitat.

- Cumulative Impacts

No other wastewater treatment plants discharge to the Woodland Wildlife Management Area.

- Costs of Additional Treatment beyond What Is Required of Non-significant Dischargers

No additional treatment is recommended. There is a brief discussion of this aspect in part II. A. of the engineering consultant's June 2, 2000 letter.

- Other Matters as Shall be Brought to the Agency's Attention

Nonpoint source pollution from both the construction activity and the land use change, resulting residential growth, is handled under this part. This aspect is dealt with by the city providing information demonstrating that they have enacted adequate erosion and storm water pollution control rules.

Waverly enacted a new storm water controls ordinance on April 10, 2001 and Montrose on April 23. Both new ordinances are virtually identical to the agency's example storm water controls ordinance. Therefore the cities' storm water control rules as good as any in Minnesota.

III. Inference and Recommendation

This review's recommended effluent limitations should be incorporated into the discharge permit.

Recommended Effluent Limitations and Monitoring

The proposed effluent limitations are:

Characteristic or Substance	Monthly Average or Range ¹
5-day Carbonaceous Biochemical Oxygen Demand (CBOD ₅)	25 mg/L
Total Suspended Solids (TSS)	45 ² mg/L
Fecal Coliform Bacteria (March 1-October 30)	200 Organisms/100 mL
Maximum Total Residual Chlorine	0.038 mg/L
pH	6.0-9.0

The discharge's terminus needs a flow-dispersing device to minimize the adverse localized wetland impacts associated with a single outfall opening.

(Personal note: at the urging of MDNR Ecological Services a 1.0 mg/L phosphorus effluent limit was added during or around the public notice period.)

Note: 1.) Unless otherwise specified.

2.) An aerated pond system will be used.

Attachment 1

October 2, 2000 Nondegradation-to-All-Waters Response
from the Project's , Seth A. Peterson
of Bolton & Menk, Incorporated,
Dealing with the Economic and Social Development Impacts
Of the Proposed Expansion of Montrose's Wastewater Treatment Plant

(Note: This document was digitally reproduced. The spacing has been changed from that of the original document.)

BOLTON & MENK, INC.

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October 2, 2000

Mr. Gary Rott
Monitoring and Assessment Section
Water Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road N.
St. Paul, MN 55155

RE: Non-degradation Response
Wastewater Facility Plan
Montrose, Minnesota

Dear Gary:

This letter addresses non-degradation requirements for the proposed discharge to an unnamed creek via an unnamed wetland from the proposed wastewater treatment facility for the City of Montrose, Minnesota. The upgraded wastewater facility at Montrose will be a regional treatment facility serving the City of Waverly and other areas. The design flow as presented in the Facility Plan for the new wastewater treatment facility is 540,000 gpd, thus making it a significant discharge.

The following addresses the information as requested in Attachment 2 of your letter.

1. Economic and Social Development Impacts

A. Jobs

1. It is anticipated that 20 to 30 construction jobs will be created during the 12 to 18 month construction of the project.
2. It is anticipated that one permanent job will be created directly from the project. The number of additional jobs, which will be created indirectly to this project is not known. However, additional jobs will be created in housing construction, retail sales and service, and commercial development. This growth would not be possible without an expanded wastewater treatment facility.

B. Taxes

1. The additional homes and businesses will add to the tax base of the project area. The larger tax base will strengthen the area economically and increase their ability to create a growing infrastructure. Community commerce and trade will increase. New businesses will increase the amount of dollars spent in the area by residents and the amount imported from outside clients. The increase in trade will strengthen existing business and business diversity.

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- a. The project will be designed for the year 2020 or a 20-year design life. A 20-year design life provides a balance between present construction cost, operation and maintenance and future upgrade construction costs. Additionally, the facility will be designed with flexibility for future expansion for treatment of additional flows and loadings.
- b. The estimated annual equivalent costs for the capital costs are nearly \$210,000 and the annual O&M costs are estimated at \$140,000 (the preceding costs based on 20 years and seven percent interest). The existing monthly user charge is approximately \$20.80 and is expected to be as high as \$40.00 per month if funding is not available:

C. Recreational Opportunities

The discharge point for the City of Waverly will be eliminated in this project. The current wastewater discharge point is to Carrigan Lake. By eliminating the discharge to the lake, the recreational opportunities may improve on Carrigan Lake.

D. Other Impacts

As described earlier, without the proposed improvements, the proposed service area has limited expansion capabilities. This will not only impact the tax base but also the employment in the area. Additional growth will create new housing developments which will also create construction employment opportunities. This area is expected to grow at a constant rate which would create fairly continuous construction employment opportunities within the service area. Additionally, this project will eliminate two wastewater discharge points. The discharge point for Waverly and 12-Hi Estates will be eliminated which will be environmentally beneficial.

- II. A. There would be additional costs for meeting more stringent limits than the proposed 25mg/l CBOD₅ limit. Dependent upon the CBOD₅ limit, the additional costs would range from \$350,000 to \$750,000. These changes needed for a more stringent limit would include adding a recirculation line for the proposed alternative to building a mechanical facility as was described in Alternative 4.
 1. The present worth of the proposed project is \$2,859,500.
 2. Chemical phosphorus removal has been included in the process design. Therefore, the present worth of the project does not change.
 3. The present worth of upgrading the existing stabilization pond is \$4,286,000.

4. The communities of Montrose and Waverly do not have severe problems with inflow and infiltration. However, old sanitary piping is being replaced on a regular basis in both communities and all new sanitary piping is being placed with today's latest technologies to minimize inflow and infiltration.

Much of the area is currently practicing water conservation.

- III. The combined business and residential development will lead to an overall positive social impact. New businesses will require new employees and vice versa. This type of development creates a healthy social environment. The increased number of jobs will aid the communities in fulfilling their development goals.

The proposed service area realizes the impacts associated with growing. The impacts are perceived as positive and in no way will the growth, wastewater volume or treated discharge degrade the area's existing economic and social framework.

As mentioned previously, two existing wastewater discharge points will be eliminated which will benefit the respective receiving streams.

Should any additional information be required, please do not hesitate to give me a call.

Sincerely,
BOLTON & MENK, INC.

Seth A. Peterson

Seth A. Peterson, P.E.
Project Engineer

SAP/bc