

Attachment B: Supplemental Information for the Antidegradation Rule Economic Impact Analysis, Board Order No. WY-13-20

WDNR, November 16, 2022

Maximum Annual Costs: \$1,271,538

Maximum 2-Year Costs: \$1,987,038

The proposed rule package intends to update Wisconsin's antidegradation policy and implementation procedures to establish an effective, transparent process for conducting antidegradation reviews consistent with federal regulations. Antidegradation reviews are a federally required component of surface water quality standards. They are established to protect existing uses and prevent degradation in high quality surface waters. A state's antidegradation policy and implementation procedures do not prohibit all activities that would otherwise lower water quality in high quality waters. However, they require a demonstration that lowering of surface water quality is necessary to support important social or economic development in the area where the waterbody is located. States are required to adopt an antidegradation policy and implementation procedures that are consistent with the Clean Water Act and federal regulations promulgated under the Act (33 USC 1313(d)(4)(B), 40 CFR 131.12, and 40 CFR 132 Appendix E).

This document outlines cost areas for three types of WPDES permittees: wastewater, stormwater, and concentrated animal feeding operations (CAFOs). All costs identified in this document are in 2022 dollars.

Wastewater Permittees

Summary of Cost Estimate Methodology

In determining the statewide economic cost of this proposed rule, the department evaluated three primary areas of costs: 1) the costs to develop an alternatives analysis, 2) sampling costs incurred by facilities needing to evaluate the background (ambient) quality of the receiving waterbody or waterbodies, and 3) the costs incurred by facilities that choose an alternative based on the alternatives analysis.

1) To estimate the costs of developing alternatives analyses, the department first evaluated the most recent 30 Wisconsin Pollutant Discharge Elimination System (WPDES) permit water quality-based effluent limit (WQBEL) memos in the state to assess the number of facilities that made an antidegradation demonstration. Staff examined which of these facilities would be required to show that significant lowering of water quality cannot be prevented in a cost-effective manner by means of an alternatives analysis. Then, the department applied the percent of facilities required to complete

alternatives analyses in the sample set to the total number of permittees in the state whose permits were reissued each year in order to extrapolate the total number of facilities that would potentially be affected by this rule. After obtaining this number, the department then solicited cost information for the creation of an alternatives analysis from several private sector consultants in the wastewater industry working in Wisconsin.

2) For costs of sampling background water quality to quantify assimilative capacity, the department first received cost estimates from the Wisconsin State Laboratory of Hygiene that were determined to be representative of the typical suite of parameters that permittees seeking an antidegradation demonstration would likely sample. To evaluate the likely increase in the number of facilities that may be required to monitor background water quality, the department made the assumption that, of those facilities submitting an alternatives analysis, twice as many would need to evaluate background water quality. This is a conservative assumption because the department has conducted sufficient monitoring to quantify assimilative capacity in most of the main waterbodies in the state. Monitoring would not be required on waterbodies without background flow, so this requirement would most likely apply to new or increased discharges on certain moderately small waterbodies. Therefore, the number of facilities required to monitor to quantify assimilative capacity is expected to be fairly rare.

3) In order to estimate the occurrence of facilities changing their plans due to selection of one of the alternatives identified in the alternatives analysis, the department internally polled all WPDES permit drafters statewide to see how often this situation occurs under the current code requirements. No facilities were identified as having done this to date, so this situation may not have occurred under the current rule, or at least has not occurred in recent years. However, with the anticipated increase in the number of facilities submitting an alternatives analysis due to the change in the significance threshold, the department made the conservative assumption that approximately one publicly-owned treatment work (POTW) per year would choose an alternative.

Affected Facilities - Wastewater

After reviewing the 30 most recent water quality-based effluent limit memos in the state, the department identified two facilities that would potentially have been affected by the new rule language.

The first permittee proposed to change the location of an outfall from one waterbody to another. Prior to doing this, the permittee was required to submit a demonstration that the relocation was necessary to accommodate one or more of the important economic or social development conditions currently listed in s. NR 207.04(1)(c), Wis. Adm. Code. The proposed rule will not change these requirements, because the discharge from the relocated outfall is considered a “new” or “increased” discharge under both the current and proposed rule, which requires an antidegradation review. The one area where this permittee is affected by the proposed ch. NR 207, Wis. Adm. Code, rule change is in the calculation of WQBELs for phosphorus, although this would not result in additional costs for the permittee. Under the current rule, two sets of phosphorus WQBELs for this permittee were calculated using both 33% of the available assimilative capacity and 100% of the available assimilative capacity, with the permittee needing to submit an alternatives analysis in order to receive a limit based on the latter. Under the proposed rule, this permittee would instead have a 60% reduction in the calculated WQBEL (using 10% of the assimilative capacity versus 33%), or would need to submit an alternatives analysis to get less

stringent limits. Due to the permittee's current effluent levels, the permittee would need to submit an alternatives analysis under both the current or proposed rule, and thus would experience no additional costs under the proposed rule.

The second identified permittee is a temporary new discharger which has demonstrated that one or more of the important economic or social development conditions listed in s. NR 207.04(1)(c), Wis. Adm. Code, has been satisfied. Under the current rule, this permittee's discharge has been shown to not use more than 33% of the available assimilative capacity for any of the parameters which are sampled, and thus the department has determined that the discharge will not result in significant lowering of water quality and the permittee can receive WQBELs calculated under ch. NR 106, Wis. Adm. Code. However, under the proposed rule, the department would likely make the determination that this discharge would result in significant lowering of water quality because more than 10% of assimilative capacity is used in the receiving water. Therefore, under the proposed rule this permittee would incur an additional economic cost in the form of development of an alternatives analysis.

Based on the above analysis, we expect that 2/30 facilities (or 6%) would be subject to different requirements as a result of this rule package, and although only 1/30 of the facilities analyzed (or 3%) incurred costs as a result of this, the department estimates that *at least* half of all facilities subject to different requirements as a result of the rule would incur the cost of developing an alternatives analysis. This amounts to 3 – 6% of permit issuances or reissuances each year, or about 5 to 10 facilities per year, that may need to develop an alternatives analysis where they previously would not have been required to do so. See below for an explanation of forecasted costs for these impacted facilities.

The department assumed that more facilities will need to sample to determine background water quality than will be required to develop an alternatives analysis. To determine the number of affected facilities, the department estimates that half of the facilities that perform sampling as part of the antidegradation demonstration would ultimately be required to also submit an alternatives analysis. This is due in part to the limited number of facilities already under the current code which perform background water quality sampling. This results in a range of 6 – 12% of facilities statewide performing this sampling, or 10 – 20 facilities per year.

As stated previously, the department is assuming that one POTW per year would both submit an alternatives analysis and choose one of those options.

Sampling Compliance Costs

A summary of the sampling costs the department obtained from the State Laboratory of Hygiene can be found below in Table 1. This lab did not provide a dissolved oxygen sampling cost, so the department obtained the cost of these field test kits from a search through online vendors.

These parameters were chosen based on existing parameters identified in ch. NR 207, Wis. Adm. Code, with the addition of phosphorus, given the potential for phosphorus to be a contaminant of concern for facilities seeking antidegradation evaluations. The facility will need to sample those parameters that they are proposing to increase in their discharge. In some cases, sampling of surrogate parameters directly related to the impact of the pollutant of concern may be required (for instance, dissolved oxygen (DO) and 5-day biochemical oxygen demand (BOD5), or metals and hardness).

Table 1 - Sampling Cost Estimates

Parameter	Cost per Sampling Event
Dissolved Oxygen (Field Test Kit)	\$54.00
5-day Biochemical Oxygen Demand (BOD5), Total	\$72.00
Nitrogen, as Ammonia	\$32.00
Copper, Total Recoverable	\$39.00
Phosphorus, Total	\$28.00
Shipping	\$75.00
Total:	\$300.00

The number of sampling events a permittee would need to perform is likely site-specific and dependent on factors such as variability of the data and how much data has already been collected onsite. The department estimates these facilities will need to take anywhere from 2 – 12 samples in a year.

Alternatives Analysis Compliance Costs

This analysis did not take alternatives analysis costs into consideration for new municipal dischargers due to practicable alternatives already being extensively considered as part of the facility planning process. The department does not anticipate that the proposed changes to ch. NR 207, Wis. Adm. Code, will result in additional costs to facility plans.

This analysis also did not take into account costs pertaining to the anticipated increase in the number of facilities that will need to make a demonstration that the appropriate social and economic development conditions are satisfied. Because this demonstration requires less time and effort to complete compared to the development of an alternatives analysis, the department anticipates that this type of work can be accomplished using existing personnel and under current operating budgets.

To determine the cost of retaining a consultant to create an alternatives analysis, the department solicited cost information from consultants with experience drafting alternatives analyses for various other pollutants such as facility upgrades for phosphorus. Compliance costs may vary widely based on several factors, including: facility type (industrial or municipal), facility size, community size, treatment technologies currently utilized, and the impairment status of the receiving waterbody. To account for these variables, the department used cost estimates that were reasonably expected to be applicable based on the average size of a facility in the state, in addition to incorporating a range of expected values. The department reached out to 10 private sector consulting firms that have experience in alternative analysis evaluations in Wisconsin and received cost estimates from two of them. The first firm placed the expected cost for this type of analysis at \$25,000. The second firm placed the expected cost in the range of \$30,000 to \$80,000, with a 1 – 2 million gallons per day (MGD) wastewater treatment plant anticipated to incur around \$50,000. Most POTWs in the state have design flows less than 2MGD. Additionally, a bidding process typically occurs when facilities are seeking a consulting firm for this type of work, and the department anticipates that the mid-to-lower range of the second consultant's estimates to be representative of the actual costs to be incurred on a statewide basis.

Based on this solicitation, the department estimates that each affected permittee would spend \$35,000 - \$50,000 on a alternatives analysis. This is a one-time cost. Multiplying this range by the 5 to 10 facilities affected each year, the total statewide compliance cost for wastewater WPDES permittees is likely in the range of \$175,000 - \$500,000/year. This is a conservative statewide estimate due to the low likelihood that up to 10 permittees each year will be required to perform a full antidegradation review.

Chosen Alternative Compliance Costs

Under the proposed updated code language, an alternatives analysis would require the following:

- 1) A description and analysis of a range of practicable alternatives that have the potential to prevent or lessen the degradation associated with the proposed discharge. Include a description of any alternative determined to be impracticable, and why that determination was made.
- 2) For each of the practicable alternatives above, identification of receiving water quality and accompanying environmental impacts on the receiving and downstream waters, including impacts to aquatic life and public health in downstream communities.
- 3) Evaluation of the cost for each of the practicable alternatives in 1).
- 4) Identification of a proposed practicable alternative that prevents or lessens water quality degradation while also considering accompanying cross-media environmental impacts (example: impacts to air quality). If the applicant has selected an alternative that results in no degradation to the receiving water, the social or economic importance analysis is not required.

In determining which practicable alternatives might be available to facilities for cost estimation purposes, the department identified the following categories of potential practicable alternatives: (1) operational measures such as source reduction, conservation, or recycling measures, and (2) additional wastewater treatment.

The costs applicable to conservation measures, recycling measures, source reduction measures, operational changes and use of other pollution minimization alternatives are grouped together as similar cost areas, as staff time devoted to them would generally be the same. Staff time is the long-term cost driver for implementing source reduction, conservation, and recycling measures, in addition to operational changes. It will take staff time to review relevant historical documents on potential recycling and contamination routes, and reach out to various organizations/suppliers/pretreatment industries for resources with regards to pollutant source reduction and operational changes to the facility. With an assumed pay of \$23/hr (based on the median pay of Wastewater Operators in the state of Wisconsin in 2022), the department estimates that 10% - 25% of these individuals' time (1 individual per facility) would be devoted to implementing actions identified in the alternatives analysis. As opposed to sampling and other cost areas, this specific cost area is an ongoing cost instead of a one-time cost. These costs are summarized below in Table 2.

Table 2 - Cost Estimates for Pollution Control Measures

Pay Rate (\$/hour)	Low End Staff Time (hours/year)	High End Staff Time (hours/year)	Low End Cost Per Facility	High end Cost Per Facility
\$23.00	208	520	\$4,784	\$11,960

The costs of the use of other applicable wastewater treatment processes as an alternative are more nebulous, as these costs could mean the installation of new treatment systems or the replacement of old equipment. This scenario is not anticipated based on the department's experience with facilities seeking an antidegradation determination.

Stormwater Permittees

Summary of Cost Estimate Methodology and Background

The department's storm water program covers most construction and industrial facilities under general permits and has proposed rule language that is intended to continue to allow most permittees to be eligible for coverage under these general storm water permits. Under the proposed rule, the department shall condition general permits to meet the antidegradation policy. As part of this process, the department would make a preliminary determination that the permit conditions satisfy the antidegradation policy during the public notice period and would make a final determination during general permit issuance.

A permittee would incorporate or implement these conditions into their plans or operations to prevent a lowering of water quality if there were a proposed new or increased discharge to a receiving water identified as a high quality water in the proposed rule within one-quarter mile of their facility.

Permittees are currently required to identify receiving waters, including downstream waters, that are designated as an exceptional resource water, an outstanding resource water, or an impaired water. The storm water construction program currently has site map requirements for construction sites that require an applicant to show where stormwater is discharged to a surface water within one-quarter mile downstream of the construction site. To create a standardized approach for all facilities, the storm water program assumed that this distance would represent a conservative value for identifying discharges likely to reach a receiving water during a storm event.

Proposed practices a permittee may be required to implement to prevent a lowering of water quality include the same practices commonly used by construction and industrial permittees currently; however, the practices may need to be modified in time scale or measure depending on site characteristics. The program expects a nominal increase in costs for a permittee that will be covered under a general permit for construction and industrial activities. For a facility that was unable to meet the general permit conditions, additional costs would be incurred and are separately accounted for in the analysis under the affected facilities section.

In determining the economic costs to storm water discharges under the proposed rule, the department considered costs associated with application fees, sampling, data collection and analysis, engineering/consultant costs, costs associated with the installation of treatment best management

practices, and costs associated with operation and maintenance of specialty filtration systems related to non-conventional pollutants.

The department evaluated the number of permitted construction and industrial facilities (Tier 1, Tier 2, Non-Metallic Mining, Dismantling of Vehicles for Parts Selling and Salvage, and Recycling of Scrap and Waste Materials) located within a one-quarter mile of a waterbody defined as a high quality water under the proposed rule language. The department did not conduct additional analysis on municipal permittees, as most new discharges within a municipality's permitted area would fall into the construction analysis.

The department conducted the following spatial analysis for discharges that would constitute a new or increased discharge:

- Permitted construction sites during State Fiscal Year (SFY) 2021 and 2022, within one-quarter mile of an outstanding resource water (ORW), exceptional resource water (ERW), great lakes water (GLW), and tribal waters (TOERW) that have been approved by the United States Environmental Protection Agency (USEPA).
- Total permitted Tier 1 Industrial facilities within one quarter mile of an ORW, ERW, GLW and TOERW, and newly permitted facilities during SFY 2021 and 2022.
- Total permitted Tier 2 Industrial facilities within one quarter mile of an ORW, ERW, GLW and TOERW, and newly permitted facilities during SFY 2021 and 2022.
- Total permitted Non-Metallic Mining Facilities (NMM) classified as externally drained located within one quarter mile of an ORW, ERW, GLW and TOERW, and newly permitted facilities during SFY 2021 and 2022.
- Total permitted Auto Dismantling Industrial facilities within one quarter mile of an ORW, ERW, GLW and TOERW, and newly permitted facilities during SFY 2021 and 2022.
- Total permitted Scrap Recycling Industrial facilities within one quarter mile of an ORW, ERW, GLW and TOERW and newly permitted facilities during SFY 2021 and 2022.

The following table represents the number of permitted construction (359) and industrial facilities (145) that are located within a one-quarter mile of a water body proposed to be defined as a high quality water in the proposed rule.

Table 3 - Number of Permitted Facilities Located within One-Quarter Mile of Specified Water Type

	ORW	ERW	GLW	TOERW	Total
Construction Permits (SFY 21 and 22 only)	82	161	112	4	359
Tier 1 Permits	4	10	7	0	21
Tier 2 Permits	4	30	42	0	76
Externally Drained NMM Permits	9	22	6	0	37
Scrap Recycling Permits	0	2	0	0	2
Auto Dismantling Permits	1	8	0	0	9

The following table represents the number of facilities permitted in SFY 2021 and 2022 located within one-quarter mile of a waterbody proposed to be defined as a high quality water that could be considered a new discharge.

Table 4 - Number of Permitted Facilities in SFY 2021 and 2022 Located within One-Quarter Mile of Specified Water Type that could be considered a new discharge

	ORW	ERW	GLW	TOERW	Total
Construction Permits (SFY 21 and 22 only)	82	161	112	4	359
Tier 1 Permits	0	1	0	0	1
Tier 2 Permits	1	2	0	0	3
NMM Permits*	3	0	0	0	3
Scrap Recycling Permits	0	0	0	0	0
Auto Dismantling Permits	0	0	0	0	0

*Note: This number includes all permitted NMM facilities in SFY 2021 and 2022 as most facilities are classified as externally drained for the first few years of permit coverage until they contain storm water discharges for a minimum of a 24 hour, 25-year storm event.

Construction

Most construction sites will qualify as a new discharge. However, department staff assume that most facilities will be able to meet permit conditions designed to prevent a lowering of water quality in the receiving high quality water where no additional costs would be incurred beyond what a facility is currently paying.

Department staff identified circumstances where the permit conditions reflective of performance standards in ch. NR 151, Wis. Adm. Code, may not prevent a lowering of water quality. This circumstance could occur when a construction site permittee requests to implement the total suspended solids (TSS) performance standards of ch. NR 151, Wis. Adm. Code, to the maximum extent practicable (MEP).

For SFY 2021 and 2022, department staff estimated that an average of 1.31% and 1.43%, respectively, of construction sites sought department approval to implement the TSS performance standards of ch. NR 151, Wis. Adm. Code, to the MEP. For purposes of this analysis, the department assumed that annually 1.5% of construction sites would seek department approval to implement the TSS performance standards of ch. NR 151, Wis. Adm. Code, to the MEP. As shown in Table 3, the department permitted a total of 359 construction sites in SFYs 2021 and 2022 within one-quarter mile of a waterbody proposed to be a high quality water under the proposed rule. The department applied the assumed 1.5% of sites implementing pollutant reductions to MEP to the total number of permitted construction sites within one-quarter mile of a high quality water in SFYs 2021 and 2022. The result identified 5.38 construction sites over a two-year period that would likely discharge to a waterbody proposed to be defined as a high quality water. The program has rounded this approximation to six sites every two years for cost analysis purposes.

The department expects that permittees seeking a TSS MEP option may choose to conduct additional modeling and analysis to demonstrate a lowering of water quality is not occurring under the general permit. Alternatively, a permittee may demonstrate the discharge is less than or equal to the average annual load from the construction site in the pre-development condition to be eligible for coverage under a general permit.

The storm water program assumed an average engineering rate of \$100 per hour, and that it would take three hours total to complete the analysis, compile the data, and incorporate the data into the construction submittal materials. Under these conditions, the department estimates the additional costs under the proposed rule would be 900 dollars as shown in Table 5:

Table 5 - Estimated Construction Permittee Costs Associated with an MEP Claim

	\$/hour	Estimated Number of Hours per Facility	Total Cost (\$)
Assumed Average Hourly Billing Rate for an engineer to conduct analysis	100	3	300
Number of Facilities Per Year	3		900

Industrial, New Discharge

As shown in Table 4, in SFY 2021 and 2022, the department permitted seven industrial facilities that were located within one-quarter mile of a water proposed to be defined as a high quality water under the proposed rule. The storm water program is proposing to draft permit conditions that are expected to continue to cover most facilities under the general storm water permit, therefore, no additional costs would be incurred for facilities that qualify.

However, the department has assumed, for the purpose of this analysis, that at least one industrial facility every two years would be unable to utilize the conditions of the general permit to prevent a lowering of water quality and that the receiving waterbody had water quality better than a water quality standard for an existing or designated use (e.g., assimilative capacity for the discharge exists within the waterbody).

In this scenario, an industrial permittee would be required to obtain an individual permit (IP) for the discharge, which would result in a \$500 application fee. The department assumed that water quality data was not available and would need to be collected to determine background in-stream concentrations. Cost assumptions of \$3,600 per year were associated with determining the background concentration of the receiving water, where in-stream water samples were collected and sent to a laboratory for chemical analysis at a cost of \$300 per sampling event (Wastewater Table 1), and that it was necessary to collect monthly samples over a period of one year.

The permittee would also be required gather and provide sufficient information to demonstrate that the project is needed to accommodate important social or economic development in the area where the receiving water is located, consider a suite of alternatives, and select the least degrading alternative for

implementation. The department assumed that costs between \$3,000- \$20,000 would be a reasonable lump sum for consultant/engineering fees associated with labor for sample collection, social or economic justification, consideration of alternatives, modeling, analysis, and reporting. The department chose to utilize the highest value (\$20,000) for this analysis.

Since treatment BMPs represent the higher end of costs, the department chose to reflect the implementation of a treatment BMP as the permittees, that this option was the least degrading to the receiving water, and that the acquisition of land is not necessary. The department utilized average construction cost data reported from urban grant recipients from 2016 through 2019 to determine the average cost of implementing treatment BMPs (roughly \$134,948 per treatment device). When adjusted for inflation as of August 2022, the cost to implement a treatment BMP is approximately \$161,246. Since these BMPs are largely used for conventional pollutants (TSS, phosphorous), the program assumed that additional treatment technology (enhanced media filtration) and operation and maintenance costs would be incurred for specialty filtration systems related to metals and other non-conventional pollutants. The storm water program estimated an additional \$30,000 of costs for annual operation and maintenance associated with treatment of non-conventional pollutants.

The total annual estimated costs for year one and year two for a permittee seeking coverage under an IP is represented in Table 6.

Table 6 - Annual Estimated Cost Associated with one Permittee Covered Under an Individual Industrial Storm Water Permit

Costs	Dollars (\$) Year One	Dollars (\$) Year Two
Individual Permit Application Fee	500	
Data Collection to determine background concentration*	3,600	
Modeling, Analysis, and Engineering Costs (Lump Sum)	20,000	
Average Cost to Implement a Structural BMP (Adjusted for Inflation)	161,246	
Annual Operation and Maintenance Costs for Specialty Filtration	30,000	30,000
Total	215,346	245,346

*Based on costs associated with Table 1.

Industrial, Increased Discharge

In SFYs 2021 and 2022, department staff estimated that an average of 0.07% and 0.14%, respectively, of permitted industrial facilities requested an amendment that could be considered an increased discharge. The spatial analysis results shown in Table 4 indicate 145 industrial facilities are located within one-quarter mile of a of water proposed to be defined as high quality water in the proposed rule language. The storm water program is proposing to draft permit conditions that continue to cover most facilities that seek an amendment under the general storm water permit, therefore, no additional costs would be incurred for facilities that qualify.

However, if a conservative percentage of 1% of amendment requests were applied to the 145 industrial facilities located within one-quarter mile of waters proposed to be defined as high quality water in the proposed rule language, 1.45 industrial facilities (rounded to two), would be affected every two years. The department assumes, for the purpose of this analysis, that similar costs would be incurred by an industrial facility that had a new discharge and was unable to meet the conditions of the general permit. In this scenario, the same assumptions represented in a new industrial storm water discharge were applied to industrial permittees with an increased discharge.

The total annual estimated costs for year one and year two for a permittee seeking coverage under an IP is represented in Table 6. However, since two facilities would be affected every two years, the total estimated costs associated with permit coverage under an IP is represented in Table 7.

Table 7 - Two-Year Estimated Costs Associated with Two Permittees Covered Under an Individual Industrial Storm Water Permit

Costs	Dollars (\$)	Number of Permittees	Total
Annual Cost per Permittee	215,346	2	430,692
Year Two Operation and Maintenance	30,000	2	60,000
2-year Total	245,346	2	490,692

Summary of Storm Water Costs

The maximum annual estimated cost associated with the proposed rule includes the estimated construction annual permittee costs associated with a proposed pollutant reduction to MEP as shown in Table 5 (\$900), the annual estimated cost associated with one permittee covered under an individual industrial storm water permit that would be considered a new discharge shown in Table 6 (\$245,346) every two years, and the annual estimated cost associated with two permittees covered under an individual industrial storm water permit that would be considered an increased discharge Table 7 (\$430,692), assuming that both facilities would be affected in a single year.

The maximum two-year cost associated with the proposed rule includes the estimated construction annual permittee costs associated with an MEP claim shown in Table 5 (\$900 per year for two years for \$1,800 total), the annual estimated cost associated with one permittee covered under an individual industrial storm water permit that would be considered a new discharge as shown in Table 6 (\$245,346) every two years (value includes year two operation and maintenance fees), the annual estimated cost associated with two permittees covered under an individual industrial storm water permit that would be considered an increased discharge (\$430,692) assuming that both facilities would be affected in a single year, and in year two, an additional \$60,000 in operation and maintenance costs for both facilities as shown in Table 7 (\$490,692).

Table 8 summarizes the estimated total expected statewide storm water costs from this rule:

Table 8 - Estimated Maximum Annual and Maximum Two-Year Estimated Costs Associated with the Proposed Rule

Program Area	Maximum Annual Dollars (\$)	Maximum Two-Year Dollars (\$)
Construction, New Discharge	900	1,800
Industrial, New Discharge	215,346	245,346
Industrial, Increased Discharge	430,692	490,692
Total	646,938	737,838

Concentrated Animal Feeding Operation (CAFO) Permittees

There are no anticipated cost impacts for typical CAFO permittees that do not discharge to surface water under alternative discharge limits (ADLs). Typical CAFO permits contain production area discharge limitations that are sufficient to prevent antidegradation of surface waters and, therefore, additional analysis is not necessary.

Antidegradation analysis is currently required for CAFOs seeking an alternative discharge limitation because they treat manure and/or process wastewater and recurrently discharge treated effluent to surface water. CAFO permittees seeking to establish a new discharge to surface water under ADLs may need to assemble a demonstration (submitting a social or economic determination and an alternatives analysis) under the proposed rule, where they did not before, in situations where 10-33% of assimilative capacity will be used. Based on the number of these systems permitted or proposed to be permitted in recent years (9 systems in the last 5 years), the department anticipates that 2-3 CAFO permittees will seek to establish surface water discharges under ADLs in each year. Of those, none discharged or are proposing to discharge to waterbodies in which their discharge would use between 10% and 33% of assimilative capacity. This analysis was performed by comparing BOD5, ammonia, and temperature limits calculated using both 10% and 33% of the assimilative capacity. Metals were also considered, but the department's experience has been that CAFOs discharging would need to add hardness to their effluent to avoid triggering metals limits in their WPDES permits; this is the case regardless of whether an antidegradation demonstration is needed.

The department expects that no CAFOs discharging to surface water would need to install more stringent treatment as a result of an alternatives analysis, as treatment systems proposed to date for these permittees have been advanced systems, typically including reverse osmosis.

Local Governmental Units Costs

All costs to POTWs that are municipally owned are estimated in this section. Of all wastewater (i.e. non-CAFO and non-stormwater) WPDES permittees in the state, approximately 75% are POTWs, which are municipally owned. To estimate the costs to local governmental units, the department assumed that 8 of the 10 facilities incurring additional costs for the alternatives analysis, and 16 of the 20 facilities incurring additional sampling costs each year, were POTWs. As stated previously, one permittee per year anticipated to choose an alternative is assumed to be a POTW. These costs are summarized in Table 9 below.

Table 9 – Cost Summary for Local Governmental Units

Cost Area	Low End Number of POTWs Per Year	High End Number of POTWs Per Year	Low End Cost Per Facility	High End Cost Per Facility	Low End Total Statewide Annual Costs to POTWs	High End Total Statewide Annual Costs to POTWs
Alternatives Analysis	4	8	\$35,000	\$50,000	\$140,000	\$400,000
Sampling	8	16	\$600	\$3,600	\$4,800	\$57,600
Choosing an Alternative	1	1	\$4,784	\$11,960	\$4,784*	\$11,960*
Total:			\$40,384	\$65,560	\$149,584	\$469,560

*The cost to implement a chosen alternative is an ongoing annual cost that is incurred by one new additional permittee each year for up to five years.

Public Utility Rate Payers Costs

The expected increase in annual sewer rates for the four to eight identified municipalities that may both perform sampling of the receiving waterbody and develop an alternatives analysis is \$3.86/person/year up to \$5.81/person/year for one year. This was derived by dividing the estimated cost range per affected POTW (\$35,600 - \$53,600) by the average population of a municipality in Wisconsin (5,900,000 Wisconsinites/639 facilities = 9,233 Wisconsinites/municipality).

Four to eight POTWs will not incur the cost to develop an alternatives analysis and will only incur water quality sampling costs, so the expected increase in annual sewer rates for individuals within these communities is \$0.06/person/year up to \$0.39/person/year.

Since the chosen alternative compliance option relies on continued implementation of source reduction measures, the one POTW assumed to implement these actions will incur these additional costs for up to five years after the first permit term, but will only incur the costs related to the alternatives analysis and sampling for one year. The individuals within these communities may experience an increase in their rates in the range of \$4.37/person/year up to \$7.10/person/year for one year, with the rate increase lessened to \$0.52/person/year up to \$1.29/person/year thereafter for 4 more years.

Small Business Costs

The department is making the assumption that all affected industrial facilities (both wastewater permittees and stormwater permittees) are small businesses as part of this analysis due to the anticipated low number of economically affected industrial facilities statewide overall. This analysis does not separate these small businesses by sector since the rule will apply to all sectors equally.

Table 10 - Cost Summary for Small Businesses

Cost Area	Low End Number of Small Businesses Per Year	High End Number of Small Businesses Per Year	Low End Cost Per Small Business	High End Cost Per Small Business	Low End Total Statewide Annual Costs to Small Businesses	High End Total Statewide Annual Costs to Small Businesses
Alternatives Analysis (Wastewater Permittees)	1	2	\$35,000	\$50,000	\$35,000	\$100,000
Sampling (Wastewater Permittees)	1	2	\$600	\$3,600	\$600	\$7,200
Construction, New Discharger (Stormwater Permittees)	0	1	\$0	\$900	\$0	\$900
Industrial, New Discharger (Stormwater Permittees)	0	1	\$0	\$245,346	\$0	\$245,346
Industrial, Increased Discharge (Stormwater Permittees)	0	2	\$0	\$245,346	\$0	\$490,692
Total:			\$35,600	\$545,192	\$35,600	\$844,138

Total Costs

The tables provided below summarize the total expected statewide costs from this rule.

Table 11 - Total Cost Summary for Rule

Type of Facility	Maximum Annual Cost	Maximum 2-Year Cost
Wastewater	\$624,600*	\$1,249,200*
Stormwater	\$646,938	\$737,838
CAFO	\$0	\$0
Total:	\$1,271,538	\$1,987,038

*These Wastewater costs are derived from the "High End" numbers for wastewater facilities identified in Tables 9 and 10 above. Additionally, these costs assume a period of five years where facilities that choose an alternative option are incurring those additional implementation costs (\$400,000 + \$57,600 + \$107,200 + 5x \$11,960 for the maximum annual cost, and 2x (\$400,000 + \$57,600 + \$107,200 + 5x \$11,960) for the maximum 2-year cost).

Table 12 – Total 10-year Cost Summary for the Rule

Cost Area	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Alternatives Analysis (Wastewater Permittees)	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
Sampling (Wastewater Permittees)	\$64,800	\$64,800	\$64,800	\$64,800	\$64,800	\$64,800	\$64,800	\$64,800	\$64,800	\$64,800
Choosing an Alternative (Wastewater Permittees)	\$11,960	\$23,920	\$35,880	\$47,840	\$59,800	\$59,800	\$59,800	\$59,800	\$59,800	\$59,800
Construction, New Discharger (Stormwater Permittees)	\$900	\$900	\$900	\$900	\$900	\$900	\$900	\$900	\$900	\$900
Industrial, New Discharger (Stormwater Permittees)	\$215,346	\$30,000	\$215,346	\$30,000	\$215,346	\$30,000	\$215,346	\$30,000	\$215,346	\$30,000
Industrial, Increased Discharge (Stormwater Permittees)	\$430,692	\$60,000	\$430,692	\$60,000	\$430,692	\$60,000	\$430,692	\$60,000	\$430,692	\$60,000
Total:	\$1,223,698	\$679,620	\$1,247,618	\$703,540	\$1,271,538	\$715,500	\$1,271,538	\$715,500	\$1,271,538	\$715,500
10-Year Cumulative Total: \$9,815,590										