Uses and Variances - Evaluating Substantial and Widespread Economic and Social Impacts: Public Sector Entities

Purpose

The purpose of this spreadsheet is to help states, tribes, and stakeholders implement the recommendations in EPA's Interim Economic Guidance for Water Quality Standards, Workbook (1995).

Federal regulations allow the lowering or removal of certain designated uses if the pollution controls needed to attain those uses will result in substantial and widespread economic and social impacts (CFR 40 131.10(g)(6)). The EPA developed guidance (EPA-823-B-95-002 Interim Economic Guidance for Water Quality Standards, Workbook (1995)) to help states, tribes, and stakeholders evaluate the potential for substantial and widespread economic and social impacts (hereafter termed "The Guidance"). The Guidance recommends methods for calculating socioeconomic and financial indicators and ways to evaluate and interpret them. Worksheets are provided in the appendix to facilitate the calculation, evaluation, and interpretation of these recommended indicators.

This spreadsheet supplements The Guidance by guiding the user through the necessary calculation steps to successfully implement The Guidance recommendations. The spreadsheet provides instructions on what information needs to be obtained and how to obtain it, organizes and stores the information in a sensible and relevant format, performs the required calculations on numeric information wherever feasible, and evaluates the results. The spreadsheet also clearly displays the information, methodology, and analytical results in a way that can be used to compile needed documentation when applying for variances or changes in designated uses.

Below are general instructions on how to use this spreadsheet. The worksheet tabs along the bottom of the screen provide access to each sequential step in the analysis that is recommended in the Guidance. In all worksheets, only **cells marked with an asterisk (*)** require input. Worksheets that do not require input refer to information from other cells for the purpose of providing supplementary information and documentation. Information is automatically transferred to the appropriate worksheets for analysis and display of results.

Instructions

1. Enter information about the proposed project in the tab named: "1. Project Information" (only **cells marked with an asterisk (*)** require input).

The most cost-effective approach to meeting water quality standards should be considered in the analysis. The analysis should include assumptions about excess capacity, population growth, and consideration of alternative technologies. An accurate estimate of project costs may be available from the project's design engineers. If site-specific engineering cost estimates are not available, preliminary project cost estimates can sometimes be derived from a comparable project in the State or from the judgment of experienced water pollution control engineers. See Section 2.1.a in the Guidance for more information.

2. Enter information that will be used to calculate the municipal preliminary screener (MPS) value in the tab named: "2. MPS Inputs" (only **cells marked with an asterisk (*)** require input).

The MPS is the average annualized pollution control cost per household within the affected community. The affected community is defined as those who will pay the compliance costs. Current costs of pollution controls must be considered along with the projected annual costs of the proposed pollution control project. The existing cost per household usually can be obtained from municipal records. If project costs were estimated for a prior year, these costs should be adjusted to reflect current year prices using the average annual national Consumer Price Index (CPI) inflation rate for the period available from the Bureau of Labor Statistics. See Section 2.3 in the Guidance for more information.

3. Evaluate the MPS in the tab named: "3. MPS."

The MPS helps determine whether or not the community can clearly afford the pollution control project. The MPS is an estimate of the total annual pollution control costs per household (existing annual pollution control costs per household plus the incremental cost related to the proposed project) as a percentage of median household income. If the MPS is less than 1.0 percent, the project is unlikely to impose a substantial economic hardship on households; do not continue to the secondary analysis. If the MPS exceeds 2.0 percent, then the project may place an unreasonable financial burden on households within the community; continue with the Secondary affordability test to demonstrate substantial economic impacts. If the MPS is between 1.0 and 2.0 percent, the project may or may not impose a substantial economic hardship on households; continuing to the Secondary Test is optional. See Section 2.3 in the Guidance for more information.

4. **If the MPS indicates substantial impacts may occur** (i.e. it exceeds 1.0%), continue with the Secondary Test by entering socioeconomic data for the affected community in the tab named: "4. Secondary Test Inputs" (only **cells marked with an asterisk (*)** require input).

The resulting Secondary Test Score is calculated on tab "5. Secondary Test Score." See Section 2.4 in the Guidance for more information.

5. Evaluate the combined outcome of the MPS and Secondary Test in the tab named: "6. Substantial Impacts Matrix."

If the matrix suggests that substantial economic impacts are unlikely, then do not continue with the widespread analysis. If the matrix indicates that impacts may be or are likely to be substantial, proceed with evaluating whether the impacts are also likely to be widespread.

6. **If the substantial impacts matrix suggests that impacts may be substantial**, determine if the impacts will be widespread in the tab named: "7. Widespread Impact Analysis" (**cells marked with an asterisk (*)** require input).

There are no standard economic tests or benchmarks to evaluate whether or not substantial economic impacts will also have widespread effects. Instead, describe relative changes in socioeconomic conditions such as unemployment, local economic activity, household income, tax revenues, indirect effects on other businesses, and sewer fees. This worksheet helps collect and organize the types of information that can be considered when evaluating impacts on the surrounding community. See Section 4 in the Guidance for additional information.

Explanation of Tabs

Name	Description	Requires Input?

Summary Checklist	Steps and information required for demonstrating substantial and widespread economic and social impacts of attainment of designated uses (**Table 4-1** in the Guidance).	No
Overview	Overview of the steps involved in determining if the costs of the proposed project will likely result in substantial and widespread impacts (**Figure 2-1** in the Guidance).	No
1. Project Information	Information regarding the proposed pollution control project and other projects considered. (See Section 2.1.a and **Worksheet A** in the Guidance.)	Yes
2. MPS Inputs	Numerical data needed to calculate the MPS, which helps to determine whether or not the community can clearly pay for the project without incurring any substantial impacts. (See Section 2.3 in the Guidance.)	Yes
3. MPS	Calculates and evaluates the MPS. (See Section 2.3 and **Worksheet D** in the Guidance.)	No
4. Secondary Test Inputs	Numerical data needed to calculate the secondary test scores. (See Section 2.4 and **Worksheet E** in the Guidance.)	Yes

5. Secondary Test Score	Calculates the secondary test score. (See Section 2.4 and **Worksheet F** in the Guidance.)	No
6. Substantial Impacts Matrix	Determines whether substantial impacts are likely using the MPS and secondary test score.	No
7. Widespread Impact Analysis	Descriptions of estimated change in socioeconomic conditions due to the substantial economic impacts resulting from the proposed pollution control project. This information is used to describe how substantial economic impacts would affect the community. (See Section 4 and **Worksheet M** in the Guidance.)	Yes
Supplementary Information		
Annualized Project Cost	Calculation of total annualized project costs, based on inputs in other worksheets; provided for informational purposes. (See Section 2.1.b and **Worksheet B** in the Guidance.)	No
Per-Household Cost	Calculation of total annual pollution control costs per household; provided for informational purposes. (See section 2.2 and **Worksheet C** in the Guidance.)	No
Potential Data Sources	Additional information on potential sources of data for tab "4. Secondary Test Inputs" (**Worksheet E**).	No
Example Data Sources	Example data sources for "4. Secondary Test Inputs" (Worksheet E).	No

Changelog	Describes bug fixes and other modifications that have been made since the original spreadsheet was posted to the EPA web site.	No

Comparison to Worksheets in the Guidance

These worksheets provide suggested information and methods to conduct an analysis of potential substantial and widespread economic and social impacts when public sector entities must meet certain water quality standards. The worksheets are not exhaustive of all appropriate economic analyses. Alternative or additional information and tests may be necessary or desirable in certain circumstances.

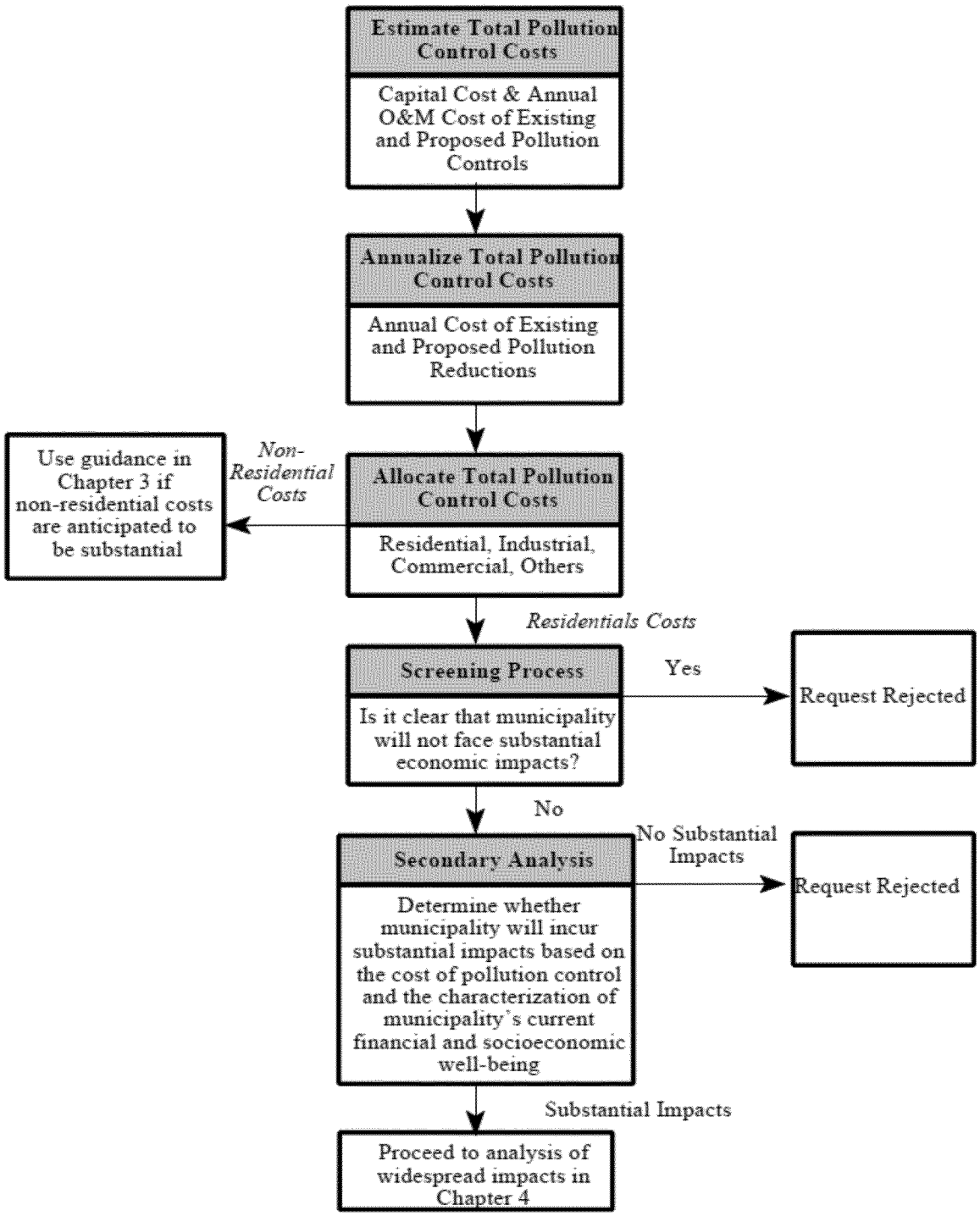
The principles and methods used to evaluate substantial and widespread economic impacts in this spreadsheet are the same principles and methods used in the Guidance. Although the EPA attempted to maintain the same general structure as the Guidance, it adopted some organizational and format modifications to increase clarity and functionality. Whenever possible, see the appropriate pages in the Guidance for assistance on specific topics or calculations. The EPA intends for this spreadsheet to be used in conjunction with the complete Guidance and not as a substitute.

[1]The Guidance is available at:
http://water.epa.gov/scitech/swguidance/standards/upload/2007_06_18_standards_econworkbook_complete.pdf

Demonstration of Substantial and Widespread Economic and Social Impacts of Attainment of Designated Uses (Table 4-1 from the Guidance) Checklist
Description: This sheet lists the steps and information required for demonstrating substantial and widespread economic and social impacts of attainment of designated uses. No input is required.

Steps	Information That Will be Required
1. Demonstrate that designated use is a potential use and not an existing use.	Data from State Water Quality Assessment Documents and water quality standards regulations.
2. Demonstrate that entity will incur substantial economic impacts.	This is a blank cell used for formatting purposes.
a. Identify all reasonable pollution reduction options,	Information on end-of-pipe treatment, possible treatment upgrades, additions to existing treatment, and pollution prevention activities including the following: • change in raw materials, • substitution of process chemicals, • change in process, • water recycling, reuse and efficiency, • pretreatment requirements, and • public education
b. Evaluate costs of all reasonable pollution reduction options,	Assumptions about water demand, treatment capacity, expansion plans, population growth, and effectiveness of control in reducing pollution for each option. Estimate of project costs from design engineers, costs of comparable projects in the State, or judgement of experienced water pollution control engineers.
c. Identify lowest cost pollution reduction option that allows entity to meet water quality standards.	Information on treatment efficiencies for alternative pollution reduction techniques. Cost estimates for all alternatives.
3. Evaluate entity's financial health:	This is a blank cell used for formatting purposes.
a. determine method of financing,	Information on user fee financing mechanisms such as Revenue Bonds. Information on tax based financing mechanisms such as General Obligation Bonds.
b. annualize pollution reduction project costs,	Information on appropriate interest rates and period of financing.
c. allocate project costs,	Information on user groups, wastewater flow by user group, and surcharges on industrial users.
d. apply Municipal Preliminary Screener test,	Information on average total annual pollution control cost per household and median household income.
e. Depending on the results of the Municipal Preliminary Screener test, apply Secondary Test.	Information on results of Municipal Preliminary Screener test, overall net debt as a percent of full market value of taxable property, median household income, bond rating, community unemployment rate, property tax collection rate, and property tax revenues as a percent of full market value of taxable property.
4. Determine whether impacts are widespread:	This is a blank cell used for formatting purposes.
a. Evaluate change in socioeconomic conditions that occur as a result of compliance.	Information on changes in median household income, community unemployment rate, overall net debt as a percent of full market value of taxable property, percent of households below the poverty line, impact on community development potential, and impact on community property values resulting from compliance.
5. Evaluate economic benefits of cleaner water.	Information on potential benefits of cleaner water including enhanced recreational opportunities, reduced treatment costs for downstream users, and increased property values.
6. Public comment and debate period.	Be prepared to supply backup information on the application to modify or change a designated use to the public.
7. If substantial and widespread economic and social impacts are demonstrated, determine which pollution reduction option should be implemented.	Information on the cost and efficiency of affordable pollution reduction alternatives.
8. Redesignate uses.	Uses will be determined by the level of "affordable" pollution reduction.
9. Standards will be adopted to protect new uses.	Once uses are established, standards should be revised to protect those uses.
10. Effluent limits and permits will be modified.	Limits will be modified to reflect effluent concentrations associated with the "affordable" pollution reduction technique.
11. Re-evaluate water quality standards in three years.	Per federal regulations, water quality standards must be revised every three years to determine if there is any new information or technology that allows attainment of the full designated uses without causing a substantial and widespread economic and social impact.

Evaluating Substantial and Widespread Impacts: Overview (Figure 2-1 from the Guidance)
Description: This flowchart is an overview of the steps involved in determining if the costs of the proposed project will likely result in substantial and widespread impacts. No input is required.



Pollution Control Project Summary Information (Worksheet A in the Guidance)

Description: This worksheet identifies and documents the pollution control project(s) needed to meet water quality standards. See the Guidance documentation below for more information.

Instructions: Enter information in the **cells marked with an asterisk (*)** about the most cost-effective approach to meet water quality standards. The most accurate estimate of project costs may be available from the discharger's design engineers. If site-specific engineering cost estimates are not available, preliminary project cost estimates may be derived from a comparable project in the State or from the judgment of experienced water pollution control engineers.

Discharge management options to consider include:
- Pollution prevention
- End-of-pipe treatment
- Upgrades or additions to existing treatment.

Types of pollution prevention activities to consider are:
- Public education
- Change in raw materials
- Substitution of process chemicals
- Change in process
- Water recycling and reuse
- Pretreatment requirements.

Whatever the approach, the information should demonstrate that the proposed project is the most appropriate means of meeting water quality standards and fully document project cost estimates. If at least one of the options that meets water quality standards will not have a substantial financial impact, then do not proceed with the analysis.

Current Capacity of the Pollution Control System (MGD)

Design Capacity of the Pollution Control System (MGD)

Current Excess Capacity (%)

Expected Excess Capacity after Completion of Project (%)

Projected Groundbreaking Date (MM/DD/YYYY)

Projected Date of Completion (MM/DD/YYYY)

Describe the proposed pollution control project.

Describe the other pollution control options considered, explaining why each option was rejected.

Guidance Documentation

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Documentation of Other Options Considered	2.1.a	2-3
Annual Cost of Pollution Control (overview)	2.1.b	2-4

A in the Guidance)

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Data Needed to Calculate the MPS (Worksheets B and C in the Guidance)

Description: This worksheet contains the information needed to calculate the municipal preliminary screener (MPS). The MPS is the average annualized pollution control cost per household in the affected community. The MPS helps to determine whether or not the community can clearly pay for the project without incurring any substantial impacts. See the Guidance documentation below for additional information.

Instructions: Enter the requested information into the **cells marked with an asterisk (*).** The affected community is the governmental jurisdiction or jurisdictions responsible for paying compliance costs. Current costs of pollution controls can also be considered in addition to the projected annual costs of the proposed pollution control project. The existing cost per household usually can be obtained from municipal records. If project costs are estimated for a prior year, these costs should be adjusted to reflect current year prices using the average annual national Consumer Price Index (CPI) inflation rate for the period available from the Bureau of Labor Statistics.

Capital Cost		
Capital Cost of Project ($)	$3,240,000	*
Other One-Time Costs of Project (list below, if any):		
Description of Cost Element	*Cost ($)*	
*	*	
*	*	
*	*	

Capital Costs to be Paid by Grants ($)	$0	*
Type of Financing (e.g., G.O. bond, revenue bond, bank loan)	MT SRF	*
Interest Rate for Financing (%)	2.50%	*
Time Period of Financing (years)	20	*

Annual costs of operation and maintenance (including but not limited to: monitoring, inspection, permitting fees, waste disposal charges, repair, administration and replacement; list below.)

Description of Cost Element		*Cost ($)*	
O&M including labor	*	$79,900	*
	*		*
	*		*
	*		*
	*		*

Total Annual Cost of Existing Pollution Control ($)	$446,863	*
Amount of Existing Costs Paid by Households ($)	$446,863	*
Number of Households (do not use number of hook-ups)	694	*

Will households provide revenues for the new pollution control project in the same proportion that they support existing pollution control? (Check a, b or c, below.)

◉ a) Yes		*
○ b) No, they will pay a different percentage. Enter to right.		*
○ c) No, they will pay based on flow. Answer three questions to right. (Corresponds to **Worksheet C, Option A**.)	1. Total Usage of Project (e.g., MGD for wastewater treatment)	*
	2. Usage Due to Household Use (MGD of household wastewater)	*
	3. Industrial Surcharges, if any ($ total per year)	*

Median Household Income (from Census)	$37,656	*
Current CPI	236.736	*
CPI for the year of the Census	232.957	*
Adjustment Factor [current CPI / CPI for the year of the Census]	1.02	
Adjusted Median Household Income [Median Household Income x Adjustment Factor]	$38,267	

Guidance Documentation

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Municipal Preliminary Screener (Worksheet D in the Guidance)

Description: This worksheet calculates and displays the Municipal Preliminary Screener (MPS), which is the total annual pollution control costs per household (existing annual cost per household plus the incremental cost related to the proposed project) as a percentage of median household income.

Total Annual Pollution Control Cost per Household / Adjusted Median Household Income × 100

The MPS indicates if a public entity would clearly not incur substantial economic impacts as a result of the proposed pollution control project.

Instructions: Evaluate the MPS by noting which cell is highlighted in orange and **marked with an asterisk (*).** If the MPS is less than 1.0 percent of median household income, the EPA does not expect the pollution control project to impose a substantial economic impact on the community; do not continue to the secondary affordability test. If the MPS is greater than 2.0 percent of median household income, then the pollution control project may result in a substantial economic impact to the community; continue to the secondary affordability test. If the MPS is between 1.0 and 2.0 percent of median household income, the community may incur a mid-range economic impact; continuing to the secondary affordability test is optional. See the Guidance documentation below for more information.

A. Calculation of the MPS

Total Annual Pollution Control Cost per Household [**Worksheet C**, (11) or **Worksheet C: Option A**, (10)]	$1,059.05	(1)
Adjusted Median Household Income	$38,267	(2)
MPS [[(1) / (2)] × 100]	2.8%	(3)

B. Evaluation of the MPS

Note column of cell highlighted in orange and **marked with an asterisk (*)** below:

Little Impact	Mid-Range Impact	Large Impact
Less than 1.0%	1.0% - 2.0%	Greater than 2.0%
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Indication of no substantial economic impacts	Proceed to Secondary Test	
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Interpreting MPS	2.3	2-7
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Data Needed to Calculate the Secondary Test Score (Worksheet E in the Guidance)

Description: This worksheet contains the numerical data necessary to calculate the secondary test score. The secondary test score characterizes the community's current financial and socioeconomic condition. See the Guidance documentation below for additional information.

Instructions: If the MPS indicates substantial impacts may occur (i.e. it exceeds 1.0%), proceed with the secondary test by entering socioeconomic data for the affected community in the **cells marked with an asterisk (*)**. Additional information on potential sources of data are provided in the tab named: "Potential Data Sources," and example data sources are provided in the tab named: "Example Data Sources." If one or more of the six indicators is not developed, provide an explanation as to why the indicator is not appropriate or not available.

A. Socioeconomic Data

Data	Sources and Notes	Value		
Direct Net Debt ($)		$1,375,625	*	(1)
Overlapping Debt ($)		$0	*	(2)
Market Value of Taxable Property ($)	Montana Revenue Dept. 2015 report	$81,174,681	*	(3)
Bond Rating (for uninsured bonds)	Not an issuer listed on EMMA		*	(4)
Community Unemployment Rate (%)	June 2015 rate for Blaine County from BLS Local Area Unemployment Statistics	4.8%	*	(5)
National Unemployment Rate (%)	June 2015 rate for United States from BLS Labor Force Statistics	5.3%	*	(6)
Community Median Household Income (not adjusted for inflation)		$37,656		(7)
State Median Household Income (for same time period as Community MHI) ($)	US Census Bureau (2013a) [DP03]	$46,230	*	(8)
Property Tax Collection Rate (%)	actual amount divided by final budgeted amount for general, major, and nonmajor funds (see L18:P25 on this tab)	98.2%	*	(9)
Property Tax Revenues ($)	AFR page 17 of pdf	$585,430	*	(10)

If any cell above is left blank, explain why the indicator is not appropriate or not available:

Some states have statutory limits on property tax collections and/or rates, or data on full-market value of taxable property are not available. If this is the case, select "yes" below and provide the number of people residing in the affected community.
Are there statutory limits on property tax collections and/or rates in the state, or are data on the full-market value of taxable property not available?

- (●) a) No
- ( ) b) Yes (enter the number of residents in the affected community below)

Population (#)	Census of Population		*	(Pop.)

B. Calculated Indicators (for informational purposes only)		
1. Overall Net Debt as a Percent of Full Market Value of Taxable Property		
Overall Net Debt [(1) + (2)]	$1,375,625	(11)
Overall Net Debt as a Percent of Full Market Value of Taxable Property [[(11)/(3)] × 100]	1.69%	(12)
1a. Overall Net Debt Per Capita (Alternative Indicator)		
Overall Net Debt Per Capita [[(11) / (Pop.)] × 100]	N/A	(12 Alt.)
2. Property Tax Revenues as a Percent of Full Market Value of Taxable Property		
Property Tax Revenues as a Percent of Full Market Value of Taxable Property [[(10)/(3)] × 100]	0.72%	(13)

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Alternative Indicators	2.4	2-11
Use of Secondary Test	2.4	2-11

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Calculation of the Secondary Test Score (Worksheet F in the Guidance)

Description: This worksheet calculates the secondary test score, which characterizes the affected community's current financial and socioeconomic condition. The secondary test score is used in combination with the MPS to evaluate whether or not substantial economic impacts are likely to occur. See the Guidance documentation below for additional information.

Instructions: Verify that the appropriate cell is selected in each row and in the "Score" column to be summed below (highlighted in orange and **marked with an asterisk (*)**).

Indicator	Secondary Indicators			Score
	Weak [a]	Mid-Range [b]	Strong [c]	
Bond Rating **Worksheet T**, (4)	Below BBB (S&P) Below Baa (Moody's)	BBB (S&P) Baa (Moody's)	Above BBB (S&P) Above Baa (Moody's)	N/A
Overall Net Debt as Percent of Full Market Value of Taxable Property **Worksheet T**, (12)	Above 5%	2% - 5%	Below 2%	3
Overall Net Debt Per Capita[1] **Worksheet T**, (12 Alt.)	Greater than $3,000	$1,000 - $3,000	Less than $1,000	N/A
Unemployment[2] **Worksheet T**, (5) & (6)	Above National Average	National Average	Below National Average	2
Median Household Income[3] **Worksheet T**, (7) & (8)	Below State Median	State Median	Above State Median	1
Property Tax Revenues as a Percent of Full Market Value of Taxable Property[4] **Worksheet T**, (13)	Above 4%	2% - 4%	Below 2%	3
Property Tax Collection Rate[4] **Worksheet T**, (9)	< 94%	94% - 98%	> 98%	3
Average of Financial Management Indicators[4] **Worksheet T**, (13) and (9)				3

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a. Weak is a score of 1 point

SUM **9**

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c. Strong is a score of 3 points

AVERAGE **2.3**

Notes:

[1] If the state has statutory limits on property tax collections and/or rates or data on full-market value of taxable property are not available, "Overall Net Debt as Percent of Full Market Value of Taxable Property" is replaced with "Overall Net Debt Per Capita" and "Property Tax Revenues as a Percent of Full-Market Value of Taxable Property" is dropped.

[2] If the community's employment rate is equal to the national average unemployment rate, plus or minus 1%, then the community's unemployment rate is assessed as being equal to the national rate.

[3] If the community's median household income is equal to the state median, plus or minus 10%, then the community's median household income is assessed as being equal to the state's median household income.

[4] If one of the debt or socioeconomic indicators is not available, the two financial management indicators are averaged and this averaged value is used as a single indicator with the remaining indicators.

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Conclusion for Community
Description: This matrix evaluates the likelihood of substantial economic impacts due to implementation of the pollution control costs. See the Guidance documentation below for additional information. **Instructions:** Evaluate the combined results of the MPS and the secondary test by noting which cell in the Substantial Impacts Matrix below is highlighted in orange and **marked with an asterisk (*)**. If the matrix indicates the pollution control project is not likely to impose a substantial economic impact on the community, do not continue to the widespread analysis. If the matrix indicates the pollution control project is likely to impose a substantial economic impact on the community, continue to the widespread analysis. If the matrix indicates the pollution control project may or may not impose a substantial economic impact on the community, continuing to the widespread analysis is optional.

Assessment of Substantial Impacts Matrix (Table 5-2 from the Guidance)

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Secondary Test Score: 2.3 a blank cell used for formatting purp

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Secondary Test Score	MPS		
	Less than 1.0 Percent	Between 1.0 and 2.0 Percent	Greater than 2.0 Percent
Less than 1.5	?	X	X
Between 1.5 and 2.5	✓	?	X
Greater than 2.5	✓	✓	?

Key:
✓ : Impact is not likely to be substantial
X : Impact is likely to be substantial
? : Impact is unclear

Guidance Documentation

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Determining Need for Widespread Analysis	2.5; Figure 2-1	2-12; 2-14

Qualitative Description of Estimated Change in Socioeconomic Indicators Due to Pollution Control Costs (Worksheet M in the Guidance)
Description: This worksheet indicates whether the substantial economic impacts will also be widespread. The EPA considers substantial economic impacts to be widespread if they will have significant adverse impacts on the local community. See the Guidance documentation below for additional information. **Instructions:** Enter information in the **cells marked with an asterisk (*)** to determine if the substantial economic impacts would result in widespread adverse economic impacts to the local community. Because there are no standard economic tests or benchmarks that evaluate socioeconomic impacts for the widespread demonstration, describe the relative changes in indicators such as unemployment, the local economy, household income, tax revenues, indirect effects on other businesses, and sewer fees. This worksheet will help collect and organize the types of information that can be used to determine and demonstrate whether substantial economic impacts will also be widespread.

Estimated change in Median Household Income (MHI)	*
Estimated change in the unemployment rate	*
Estimated change in overall net debt as a percent of full market value of taxable property	*
Estimated change in % of households below the poverty line	*
Impact on commercial development potential	*
Impact on property values	*

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Economic Benefits of Clean Water	4.5; Appendix C	4-6; Appendix C

Calculation of Total Annualized Project Costs (Worksheet B in the Guidance)
Description: This worksheet displays the total annualized project costs. This worksheet is for informational purposes only. No input is required.

A. Capital Costs		
Capital Cost of Project	$3,240,000	used for formatti
Other One-Time Costs of Project (please list, if any):		used for formatti
	$0	used for formatti
	$0	used for formatti
	$0	used for formatti
Total Capital Costs (sum column)	$3,240,000	(1)
Portion of Capital Costs to be Paid with Grant Monies	$0	(2)
Capital Costs to be Financed [(1) - (2)]	$3,240,000	(3)
Type of Financing (e.g., G.O. bond, revenue bond, bank loan)	MT SRF	used for formatti
Interest Rate for Financing	2.50%	(i)
Time Period of Financing (in years)	20	(n)
Annualization Factor = $i/((1+i)^n - 1) + i$	0.0641	(4)
Annualized Capital Cost [(3) × (4)]	$207,837	(5)

B. Operating and Maintenance Costs	This is a blank cell used for formatting purposes.	
Annual Costs of Operation and Maintenance (including but not limited to: monitoring, inspection, permitting fees, waste disposal charges, repair, administration and replacement; list below).		
O&M including labor	$79,900	used for formatti
	$0	used for formatti
	$0	used for formatti
	$0	used for formatti
	$0	used for formatti
Total Annual O & M Costs (sum column)	$79,900	(6)

C. Total Annual Cost of Pollution Control Project		
Total Annual Cost of Pollution Control Project [(5) + (6)]	$287,737	(7)

Guidance Documentation		
Component	***Section***	***Page***
Capital Cost	2.1a	2-3
Financing	2.1.b	2-4
Interest Rate for Financing	2.1.b	2-4
Debt	2.1.b	2-4
Total Annual Cost of Pollution Control	2.1.b	2-5
Operating and Maintenance Costs	2.1.b	2-5

Calculation of Total Annual Pollution Control Costs Per Household (Worksheet C)

Description: This worksheet displays the total annual pollution control costs per household calculated from data entered in other spreadsheets. This worksheet is for informational purposes only. No input is required.

If the option in the tab named "2. MPS Inputs" indicates that households will provide revenues for the pollution control project in the same or different proportion that they support existing pollution control (choice a or b), then the spreadsheet uses **Worksheet C** parts A, B, and C. However, if households pay based on flow (choice c), then the spreadsheet uses **Worksheet C** part A and **Worksheet C: Option A**.

A. Current Pollution Control Costs

Total Annual Cost of Existing Pollution Control	$446,863	(1)
Amount of Existing Costs Paid by Households	$446,863	(2)
Percent of Existing Costs Paid by Households	100.00%	(3)
Number of Households *	694	(4)
Annual Cost Per Household [(2)/(4)]	$644.23	(5)

* Do not use number of hook-ups.

B. New Pollution Control Costs

Will households provide revenues for the new pollution control project in the same proportion that they support existing pollution control?

X	a) Yes [fill in percent from (3)]	100.00%	(6a)
	b) No, they will pay	0.00%	(6b)
	c) No, they will pay based on flow. (Continue on Calculation of Total Annual Pollution Control Costs Per Household Based on Flow.)		
Total Annual Cost of Pollution Control Project [Line (7), **Worksheet B**]		$287,737	(7)
Proportion of Costs Paid by Households [(6a) or (6b)]		1.00	(8)
Amount to be Paid by Households [(7) × (8)]		$287,737	(9)
Annual Cost per Household [(9)/(4)]		$414.82	(10)

C. Total Annual Pollution Control Cost per Household

Total Annual Cost of Pollution Control Project per Household [(5) + (10)]	$1,059.05	(11)

Calculation of Total Annual Pollution Control Costs Per Household Based on Flow (Worksheet Q: Option A)		
A. Calculating Project Costs Incurred by Households Based on Flow		
Total Usage of Project (e.g., MGD for wastewater treatment)	0.0	(1)
Usage Due to Household Use (MGD of household wastewater)	0.0	(2)
Percent of Usage Due to Household Use [(2)/(1)]	0.00%	(3)
Total Annual Cost of Pollution Control Project	$287,737	(4)
Industrial Surcharges, if any	$0	(5)
Costs to be Allocated [(4) - (5)]	$287,737	(6)
Amount to be Paid by Households [(3) × (6)]	$0	(7)
Annual Project Cost per Household [(7) / **Worksheet C**, (4)]	$0.00	(8)

C. Total Annual Pollution Control Cost per Household		
Annual Existing Costs per Household [**Worksheet C**, (5)]	$644.23	(9)
Total Annual Cost of Pollution Control per Household [(8) + (9)]	$644.23	(10)

Guidance Documentation		
Component	***Section***	***Page***
Defining Affected Community	2.2	2-5
Adjusting Prior Year's Estimates	2.2	2-5
Impact of Cost Distribution in Community	2.2	2-6
Approaches to Calculating Current Costs	2.2	2-6
Total Annual Cost of Pollution Control Project	2.1.a	2-3
Industrial Surcharges	2.2	2-6

Potential Data Sources for Secondary Test Inputs
Description: This worksheet provides potential sources for the socioeconomic data required to perform the calculations in this spreadsheet. This worksheet is for informational purposes only. No input is required.

Indicator	Potential Data Source
Direct Net Debt	Community Financial Statements
Overlapping Debt	Community Financial Statements
Market Value of Property	Community Financial Statements. If community-specific information cannot be found, median property values by state can be found through American Community Survey Reports: http://www.census.gov/prod/2009pubs/acsbr08-6.pdf Combine data with the number of properties in the community.
Bond Rating	Standard and Poor's or Moody's
Community Unemployment Rate	U.S. Department of Labor, Bureau of Labor Statistics: Local Area Unemployment Statistics: http://www.bls.gov/lau/#tables
National Unemployment Rate	U.S. Department of Labor, Bureau of Labor Statistics: Labor Force Statistics from the Current Population Survey: http://data.bls.gov/timeseries/LNS14000000
Community Median Household Income	U.S. Census Bureau: State & County QuickFacts (select state, then county or city within state): http://quickfacts.census.gov/qfd/index.html
State Median Household Income	U.S. Census Bureau: State Median Income: http://www.census.gov/hhes/www/income/data/statemedian/
Property Tax Collection Rate	Community Financial Statements. If community-specific information cannot be found, statewide data can be found at the U.S. Census Bureau's Quarterly Summary of State & Local Taxes: http://www.census.gov/govs/qtax/
Property Tax Revenues	Community Financial Statements. If community-specific information cannot be found, statewide data can be found at the U.S. Census Bureau's Quarterly Summary of State & Local Taxes: http://www.census.gov/govs/qtax/ Scale according to size of community relative to state.

Example Data Sources for Secondary Test Inputs

Description: This worksheet provides two specific examples of where socioeconomic data required to perform the calculations in this spreadsheet may be obtained for two communities. This worksheet is for informational purposes only. No input is required.

Indicator	Example Data Sources for Fairfax County, Virginia	Example Data Sources for Brookings County, South Dakota
Direct Net Debt	Fairfax County's 2011 Comprehensive Annual Financial Report (CAFR) is available from the county's Finance website: http://www.fairfaxcounty.gov/finance/cafr.htm It provides detailed financial information for the county's primary government, including debt (page 20).	The Community Financial Statement is not available online; however the financial statements were audited in 2010 for the year ending in December 2009, and the audit report is available online: http://legislativeaudit.sd.gov/Reports/County/Brookings%20County%202009.pdf As such, the 2009 financial data, including debt, from 2009 can be used.
Overlapping Debt	Fairfax County's 2011 Comprehensive Annual Financial Report (CAFR) is available from the county's Finance website: http://www.fairfaxcounty.gov/finance/cafr.htm It provides detailed financial information for "component units" such as public schools, park authorities, and others which may be counted as overlapping entities (page 21).	The Community Financial Statement is not available online; however the financial statements were audited in 2010 for the year ending in December 2009, and the audit report is available online: http://legislativeaudit.sd.gov/Reports/County/Brookings%20County%202009.pdf This includes financial data on component units. As such, the 2009 financial data, including debt, from 2009 can be used.
Market Value of Property	Fairfax County's 2011 Comprehensive Annual Financial Report (CAFR) is available from the county's Finance website: http://www.fairfaxcounty.gov/finance/cafr.htm It provides detailed financial information for the county, including an additional statistical section which shows the assessed value of all taxable and nontaxable property in the county (page 246).	The Community Financial Statement is not available online; however, the state of South Dakota provides a recapitulation of property tax statistical information, and Brookings County has links to those documents available on its property tax website: http://www.state.sd.us/drr2/propspectax/property/publications.htm (page 60 contains the relevant information on the market value of property, as well as the property tax collection).
Bond Rating	Fairfax County's 2011 Comprehensive Annual Financial Report (CAFR) is available from the county's Finance website: http://www.fairfaxcounty.gov/finance/cafr.htm provides the county's credits cores from both Standard and Poor's and Moody's (page XVII).	Standard and Poor's: http://www.standardandpoors.com/ratings/en/us/ Allows a search of government entities (by state under "Public Finance U.S.) to registered users (at no cost) and provides a summary of credit issuances and their associated ratings.
Community Unemployment Rate	The American Factfinder: http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml	The American Factfinder: http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml

Community Unemployment Rate	Allows the user to find specific census data sets. To identify the community unemployment rate for Fairfax County, select the topic "People:Income/Earnings (Households)"; narrow the geography to Fairfax County, Virginia; and within the Search results, search for: DP03: Selected Economic Characteristics.	Allows the user to find specific census data sets. To identify the community unemployment rate for Brookings County, select the topic "People:Income/Earnings (Households)"; narrow the geography to Brookings County, South Dakota; and within the Search results, search for: DP03: Selected Economic Characteristics.
National Unemployment Rate	The Bureau of Labor Statistics provides national unemployment rate: http://data.bls.gov/timeseries/LNS14000000	The Bureau of Labor Statistics provides national unemployment rate: http://data.bls.gov/timeseries/LNS14000000
Community Median Household Income	The American Factfinder: http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml Allows the user to find specific census data sets. To identify the community median household income for Fairfax County, select the topic "People:Income/Earnings (Households)"; narrow the geography to Fairfax County, Virginia; and within the Search results, search for: DP03: Selected Economic Characteristics.	The American Factfinder: http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml Allows the user to find specific census data sets. To identify the community median household income for Brookings County, select the topic "People:Income/Earnings (Households)"; narrow the geography to Brookings County, South Dakota; and within the Search results, search for: DP03: Selected Economic Characteristics.
State Median Household Income	The American Factfinder: http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml Allows the user to find specific census data sets. To identify the community median household income for Virginia, select the topic "People:Income/Earnings (Households)"; narrow the geography to Virginia; and within the Search results, search for: DP03: Selected Economic Characteristics.	The American Factfinder: http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml Allows the user to find specific census data sets. To identify the community median household income for South Dakota, select the topic "People:Income/Earnings (Households)"; narrow the geography to South Dakota; and within the Search results, search for: DP03: Selected Economic Characteristics.
Property Tax Collection Rate	Fairfax County's 2011 Comprehensive Annual Financial Report (CAFR) is available from the county's Finance website: http://www.fairfaxcounty.gov/finance/cafr.htm and provides the county's property tax collection rate on page 247.	The Community Financial Statement is not available online; however the state of South Dakota provides a recapitulation of property tax statistical information, and Brookings County has links to those documents available on its property tax website: http://www.state.sd.us/drr2/propspectax/property/publications.htm (page 60 contains the relevant information on the market value of property, as well as the property tax collection).
Property Tax Revenues	Fairfax County's 2011 Comprehensive Annual Financial Report (CAFR) available from the county's Finance website: http://www.fairfaxcounty.gov/finance/cafr.htm and provides the county's property tax revenue data (page 8).	The Community Financial Statement is not available online; however the state of South Dakota provides a recapitulation of property tax statistical information, and Brookings County has links to those documents available on its property tax website: http://www.state.sd.us/drr2/propspectax/property/publications.htm (page 60 contains the relevant information on the market value of property, as well as the property tax collection).

Changelog

Description: This worksheet describes bug fixes and other modifications that have been made since the or
was posted to the EPA web site.

June 2013

On “2. MPS Inputs” and “4. Secondary Test Input” tabs, made minor formatting changes for consistency (b
instruction boxes, and number format in cells F32 and F33)

On “5. Secondary Test Score” and “7. Widespread Impact Analysis,” corrected minor formatting issues (ce

Unlocked cell B17 (description of missing data) in “4. Secondary Test Inputs”

Fixed minor formatting issues for printer compatibility on several tabs

Fixed two typos in cells B20 and B21 in “Purpose and Instructions”

July 2015

Changed calculation of average in "5. Secondary Test Score" to reflect replacement of two financial manag
a single average financial management indicator when one debt or socioeconomic indicator is unavailable.