

Appendix F: Examples of Justification of Social or Economic Importance

Example 1: Publicly owned treatment works

The community of Edgewater has a publicly owned treatment works discharging to a high quality water body that is identified as requiring Tier 2 antidegradation protection. This water body fully supports both aquatic life and contact recreation uses. Recent growth in the community has created a need for the POTW to increase its discharge to the receiving water body. The increase in discharge is greater than the 10% assimilative capacity defining insignificance so the POTW is undertaking a Tier 2 analysis. Alternatives to the discharge were reviewed and the preferred alternative selected. This preferred alternative is not a no-discharge alternative so the justification for degradation needs to be performed. This justification has three main parts;

1. identification of the affected community,
2. identification of the important social or economic development associated with the activity, and
3. identification of the relevant social, economic and environmental health benefits and costs associated with the proposed degradation.

Affected community:

The most impacted community is the residents of Edgewater. Other affected communities include the residents of City of Crosswater which is located 5 miles downstream of the discharge point for the treated water from the Edgewater POTW. This community pulls water from the affected water body and treats it for drinking water purposes. Degradation of the receiving water body will cause an increase in the treatment costs for the downstream community.

Important social or economic development:

Important social development is associated with this activity. The increase in discharge for the wastewater treatment plant is necessary to accommodate an increased population. The City of Edgewater which is growing at rate significantly higher than the state average, 66.4% increase from 2000 to 2010 compared to state increase of 13.3% (<http://www.quickfacts.census.gov/qfd/states/16/1652120.html>). Disallowing an increase in the surface discharge would effectively terminate the project and produce unfavorable social and economic impacts to the community.

Relevant social, economic and environmental health benefits and costs:

Residents of the City of Edgewater have a median household income of \$53,276. Current census results show that 5.6% of the population in the city is below the poverty threshold as compared to the state average of 11.8%. Three alternatives were addressed in the alternatives analysis. These correspond to a no degradation (most costly) alternative, the preferred alternative (least degradation) and a no-treatment option (most degradation). The total annual costs for these projects are \$8.6M, \$4.3M and \$2.2M, respectively. There are approximately 12,293 housing units within the city that would share the burden of increased utility rates for these alternatives.

Table 1: City of Edgewater Economic Indicators

Treatment of the Edgewater POTW Effluent by Household Income Class

Annual Household Income & Description	Household Disposable Personal Income ⁽¹⁾	Cost of Three Alternatives as Percentage of Annual Disposable Personal Income % of DPI		
		No degradation	Least degradation	Most degradation
\$22,050 Poverty Line Household ⁽²⁾	\$18,191	3.2	1.9	1.0
\$42,621 Low Income Household ⁽³⁾	\$35,162	2.0	1.0	0.5
\$53,276 Median Household Income ⁽⁴⁾	\$43,953	1.6	0.8	0.8
\$79,914 150% Median Household Income ⁽⁵⁾	\$65,929	1.1	0.4	0.5

(1) Calculated as 82.5% of household income.

(2) 2009 U.S. Dept. of Health and Human Services poverty guideline income level for a four person household (www.aspe.hhs.gov/poverty/09poverty.shtml).

(3) Low income is defined as 80% of the median household income for an area (U.S. Dept. of Housing and Urban Development).

(4) Median household income from 2010 Census adjusted to 2009 dollars (<http://www.quickfacts.census.gov/qfd/states/16/160579.htm>).

(5) 150% of Median income.

Reductions in the DPI in the local economy due to the financing of the no-degradation alternative would result in fewer dollars being spent on non-essential goods and services by those ratepayers required to fund this alternative. Decreased spending within an economy ultimately leads to decreases in labor demand, which further impacts household spending due to losses in employment. Further the actual realized economic impact of the no degradation alternative treatment requires specialized disposal of hazardous wastes.

The preferred alternative is a least degrading treatment process that would increase the financial burden on low income households by half a percent. This translates to a monthly increase of \$14 in the overall rates paid by residents of Edgewater. This is significantly less than the \$43/month increase that would be required to fund the no-degradation alternative.

Environmental costs of implementing the least degrading alternative

Example 2: Mine

The Aurum mine is a gold mine located in Heyworth County, ID, east of Oro Creek and approximately 5 miles east of the City of Easten. The mine and mill are owned and operated by the Goldwater Mining Company (GMC). GMC is applying for a NPDES permit to authorize a new discharge to the Oro River. This water body fully supports both aquatic life and contact recreation beneficial uses and is being provided Tier 2 antidegradation protections.

This new discharge is greater than the 10% assimilative capacity defining insignificance so the mining company is undertaking a Tier 2 analysis. Alternatives to the discharge were reviewed and the preferred alternative selected. This preferred alternative is not a no-discharge alternative so the justification for degradation needs to be performed. This justification has three main parts;

1. identification of the affected community,
2. identification of the important social or economic development associated with the activity, and
3. identification of the relevant social, economic and environmental health benefits and costs associated with the proposed degradation.

Affected community:



The area affected by the discharge of the mine to the Oro River includes the communities immediately downstream as well as the community of Easten where most of the mine employees will be residing. The affected area is shown on the enclosed map.

Important social or economic development:

This project will result in substantial public benefits that will outweigh the impacts on water quality. The Aurum Mine Project will create significant economic benefits for an economically depressed area of the state by generating jobs, economic activity and tax revenue. Construction of the mine and related facilities is predicted to create 75 jobs in the local area. During the 9 to 10 years of mining operations the mine is estimated to employ up to 250 people. Mine reclamation after operations have ceased will continue to employ approximately 25 people for another 5 years.

In addition to the direct employment of up to 250 people during mining operations, the project is estimated to generate economic activity in the area and result in 20 indirect jobs during the construction phase, 180 indirect jobs during the operation phase and 15 indirect jobs during the reclamation phase. The economic benefits of this indirect job creation along with the direct employment rates will decrease the unemployment rate of Heyworth County.

Relevant social, economic and environmental health benefits and costs:

The average salary of a mine employee is estimated at \$54,000 (<http://www.bls.gov/oco/cg/cgs004.htm#earnings>). This is greater than the median household income in Heyworth County and is expected to increase the median household income for the county as well as increase the tax revenue generated for city and county governments. Along with employment of county residents in both direct and indirect jobs, the project will increase the overall economic activity of businesses in the area.

Table 2: Heyworth County Economic Indicators

	County	State
Population, 2010	4,368	1,567,582
Population, percent change, 2000 to 2010	0.6%	21.1%
Housing units, 2009	3,049	647,502
Homeownership rate, 2005-2009	81.5%	71.2%
Housing units in multi-unit structures, percent, 2005-2009	4.3%	14.6%
Median value of owner-occupied housing units, 2005-2009	\$131,400	\$166,700
Households, 2005-2009	1,969	552,726
Persons per household, 2005-2009	2.1	2.64
Per capita money income in past 12 months (2009 dollars) 2005-2009	\$22,681	\$22,262
Median household income, 2009	\$41,773	\$44,644
Persons below poverty level, percent, 2009	13.4%	14.4%
Business QuickFacts	County	State
Private nonfarm establishments, 2008	159	46,246
Private nonfarm employment, 2008	1,016	537,952
Private nonfarm employment, percent change 2000-2008	19.5%	19.3%
Nonemployer establishments, 2008	453	110,461
Total number of firms, 2007	318	151,671

Manufacturers' shipments, 2007 (\$1000)	0	18,010,976
Merchant wholesaler sales, 2007 (\$1000)	0	14,286,715
Retail sales, 2007 (\$1000)	35,092	20,526,631
Retail sales per capita, 2007	\$8,542	\$13,691
Accommodation and food services sales, 2007 (\$1000)	11,270	2,415,951
Building permits, 2009	12	4,863
Federal spending, 2008	39,323	11,227,185
Geography QuickFacts	County	State
Land area, 2000 (square miles)	4,925.45	82,747.21
Persons per square mile, 2010	0.9	18.9
NA: Not available		
Source: US Census Bureau State & County QuickFacts		

Example 3: Industrial discharge

Jefferson Semiconductor, Inc. (JSI) owns, operates and has maintenance responsibility for a semiconductor manufacturing facility located in Star County in central Idaho. JSI is applying for a permit to increase their discharge from 5 MGD to 7 MGD along with a process change that will increase the overall concentration of fluoride in their effluent. This facility discharges to Silicon Creek in central Idaho, a water body that is listed on the Integrated Report as not fully supporting aquatic life beneficial uses due to temperature exceedances but does fully support recreational uses. After further analysis this water body was identified as qualifying for Tier 2 protections for aquatic life uses based on the presence of a healthy biological community and Tier 2 protections for recreational uses based on the fully supporting status for those uses.

The increase in discharge is greater than the 10% assimilative capacity defining insignificance so the industrial discharger is undertaking a Tier 2 analysis. Alternatives to the discharge were reviewed and the preferred alternative selected. This preferred alternative is not a no-discharge alternative so the justification for degradation needs to be performed. This justification has three main parts;

1. identification of the affected community,
2. identification of the important social or economic development associated with the activity, and
3. identification of the relevant social, economic and environmental health benefits and costs associated with the proposed degradation.

Affected community:

Important social or economic development:

Relevant social, economic and environmental health benefits and costs: