



Small Business Economic Impact Statement

1995 NPDES and State General Permits
for Storm Water Discharges Associated with
Industrial Activities and Construction Activities

September 1995
Publication No. WQ-95-67



printed on recycled paper

The Department of Ecology is an equal opportunity agency and does not discriminate on the basis of race, creed, color, disability, age, religion, national origin, sex, marital status, disabled veteran's status, Vietnam era veteran's status, or sexual orientation.

If you have special accommodation needs or require this document in alternative format, please contact Linda Matlock at (360) 407-6437 (Voice). Ecology's telecommunications device for the deaf (TDD) number is (360) 406-6006.

Table of Contents

Executive Summary	i
1. Introduction	1
1.1 Elements of the SBEIS	1
1.2 Purpose of the SEIS.....	1
1.3 Cost Reduction for Small Businesses.....	2
2. The Industrial Stormwater Permit Program	3
2.1 The Industrial Stormwater Permit Program	3
2.2 The Stormwater General Permits for Industrial and Construction Activities	4
2.3 Facilities Subject to the General Permits	4
2.4 Facilities Not Subject to the Industrial General Permit.....	6
3. Requirements of General Permit for Industrial Activities	8
3.1 Introduction	8
3.2 Permit Requirements	8
4. Requirements of General Permit for Construction Activities.....	12
4.1 Introduction	12
4.2 Permit Requirements	12
5. Economic Analysis: Introduction.....	14
5.1 Introduction	14
5.2 Definitions of Small and Large Businesses.....	14
5.3 Measure of Proportionate Cost Impact.....	14
5.4 Compliance Costs That Must Be Included in the SBEIS.....	15
5.5 Compliance Costs That Must Be Excluded from the SBEIS	15
5.6 Baseline for Calculating Cost Impact.....	15
6. Economic Analysis: Industrial Activities	17
6.1 Introduction	17
6.2 Cost Estimates	17
6.3 Calculation of Cost-to-Sales Ratios	27
6.4 Conclusion on Disproportionality of Cost Impact	27
7. Economic Analysis: Construction Activities	32
7.1 Introduction	32
7.2 Cost Estimates	32
7.3 Conclusion on Disproportionality of Cost Impact	35
8. Reduction of Economic Impact On Small Business	36
8.1 Introduction	36
8.2 Necessity to comply with State and Federal Laws.....	36
8.3 Effectiveness of Permits in Controlling Water Pollution.....	37
8.4 Cost-Reduction Measures	37
Appendix A: Method of Estimating Sales	A-1

Executive Summary

INTRODUCTION

This Small Business Economic Impact Statement (SBEIS) examines the economic impact of the two general permits for industrial and construction stormwater that are being issued in 1995. These two permits replace the baseline general permit for stormwater discharges associated with industrial activity which was issued in 1992.

The SBEIS describes the costs of complying with the permits and compares the compliance costs of small and large businesses. The purpose of the SBEIS is to reduce the economic impacts of the general permits on small businesses when reduction is legal and feasible in meeting the stated objectives of the federal Clean Water Act and the State Water Pollution Control Act. A small business is defined as "any business entity, including a sole proprietorship, corporation, partnership, or other legal entity, that is owned and operated independently from all other businesses, that has the purpose of making a profit, and that has fifty or fewer employees" (RCW 19.85.020(1)).

The SBEIS compares the costs of compliance for small and large businesses in order to determine whether the general permits disproportionately impact small businesses. The SBEIS uses the ratio of compliance costs to annual sales as the measure of the general permits' proportional impact. If the cost-to-sales ratio is higher for small business than for large business, then small businesses are disproportionately impacted and cost-reduction measures are necessary.

REQUIREMENTS OF THE TWO GENERAL PERMITS

The general permit for industrial activities requires the development and implementation of a stormwater pollution prevention plan (SWPPP). The plan must identify potential sources of stormwater discharges of pollutants. The plan may require the use of operational, source control, and/or treatment best management practices. Permitted facilities must conduct two annual inspections. The permit prohibits discharges to a storm drain or surface water of process wastewater or non-contact cooling water unless they are covered by a NPDES permit. No monitoring of stormwater discharges is required by the permit.

The general permit for construction activities requires the development and implementation of a SWPPP. The SWPPP is mostly an Erosion and Sediment Control Plan (ESCP). The ESCP lists the erosion and sediment control BMPs that will be used at the construction site.

The requirements of the 1995 general permits are virtually the same as the initial baseline permit issued in 1992.

INDUSTRIES COVERED BY THE GENERAL PERMITS

Most of the industries covered by the industrial permit are located in the manufacturing sector of the economy (SICs 20 to 39). Mining of ores and coal (SICs 10 to 14) is also covered by the permit. Several transportation industries (SICs 40 to 45 and 5171) are covered by the permit. Construction sites that disturb 5 or more acres of land are also required to obtain coverage under the construction permit. Both private and government facilities are covered by the permit.

CONCLUSIONS OF ECONOMIC ANALYSIS

The SBEIS analysis for the two general permits shows that in almost every industry, the cost-to-sales ratio of small businesses is greater than the cost-to-sales ratio for large businesses. As measured by the cost-to-sales ratio, the general permits have a proportionally greater impact on small businesses than on large businesses.

REDUCTION OF IMPACT ON SMALL BUSINESS

Ecology took the following steps to reduce the impact on small businesses of the requirement to obtain and comply with the two stormwater general permits:

1. Use of general permits rather than individual permits.
2. Certain industries are given additional time to comply with permit conditions.
3. The permits do not contain monitoring requirements or effluent limits.
4. The permits require only minimal reporting and recordkeeping. However, they do not require submission of the reports and records to Ecology.
5. The permits emphasize application of reasonable operational and source control best management practices (BMPs) in order to minimize instances where more costly treatment BMPs must be used.
6. The permits allow the permit holder to select equivalent BMPs for the purpose of cost-effectiveness or for other reasons.
7. The permits' application forms are short (one page) and the application procedure is simple. They require minimal time and cost to complete.

1. Introduction

1.1 *Elements of the SBEIS*

This small business economic impact statement examines the economic impact of the two stormwater general permits for industries and construction that are being issued in 1995. These permits replace the baseline general permit for stormwater discharges associated with industrial activity which was issued in 1992. The rule that governs the writing of general permits (Chapter 173-226 WAC, Waste Discharge General Permit Program) requires the Department of Ecology to write a small business economic impact statement (SBEIS) for all general permits that directly cover small businesses. A small business is defined as “any business entity, including a sole proprietorship, corporation, partnership, or other legal entity, that is owned and operated independently from all other businesses, that has the purpose of making a profit, and that has fifty or fewer employees” (RCW 19.85.020(1)).

The SBEIS contains the following elements:

- Description of the two permit’s requirements.
- Estimates of the costs of complying with the permits’ requirements.
- Comparison of the permits’ cost impacts on small and large businesses.
- List of cost reduction measures for small businesses.

1.2 *Purpose of the SEIS*

The purpose of the SBEIS is to determine whether the cost impacts of the general permits on **small** business should be reduced (WAC 173-226-120(2)). The SBEIS requirement is only concerned with small businesses. It is not concerned with the economic impact of the permits on large businesses or governments. The SBEIS only examines the private sector of the economy.

The SBEIS compares the costs of compliance for small and large businesses in order to determine whether the general permits disproportionately impact small businesses. This comparison is the primary purpose of the SBEIS. The cost comparison compares **proportionate** compliance costs for small businesses and large businesses. Usually, the cost-to-sales ratio is the correct measure of proportionate cost. To calculate the ratio, annualized compliance cost is divided by annual sales. The comparison determines whether reduction of the general permits’ economic impact on small business is necessary. If the compliance cost ratio is higher for small businesses than for large businesses, then small businesses are disproportionately impacted. Disproportionate impacts of permits on small businesses must be reduced when there are disproportionate cost impacts and when mitigation is legal and feasible in meeting the stated objectives of the federal Clean Water Act and the State Water Pollution Control Act. Economic impact is reduced by modifying some of the conditions of the permit in order to reduce compliance costs.

Note that the SBEIS does not examine the profits or net income of any business. It never compares costs to profits. It does not directly investigate the impact of costs on profits. This is an important point that must be understood in order to understand the type of analysis carried out in the SBEIS.

1.3 Cost Reduction for Small Businesses

Reduction of the cost impact of the permits on small businesses is required when there are disproportionate cost impacts on small businesses and when mitigation is ***legal and feasible in meeting the stated objectives*** of the federal Clean Water Act and the State Water Pollution Control Act. The legality of cost reduction measures is an important constraint on the amount of reduction that can be granted. Cost-reduction measures cannot allow violations of: 1) federal National Pollutant Discharge Elimination System (NPDES) regulations; 2) the AKART (All Known, Available, and Reasonable Treatment) requirement of the state Water Pollution Control Act (RCW 90.48.010); or 3) the state surface water quality, ground water quality, and sediment management standards.

2. The Industrial Stormwater Permit Program

2.1 *The Industrial Stormwater Permit Program*

USEPA's National Pollution Discharge Elimination System (NPDES) permit regulations for stormwater went into effect in 1990.¹ As an NPDES delegated state, Washington must administer stormwater permits.

USEPA's industrial stormwater permitting program will be phased in over time. The program will be implemented in four phases or tiers:

1. **Tier I: Baseline Permitting.** One or more general permits will be developed initially to cover the majority of industrial stormwater discharges.
2. **Tier II: Watershed Permitting.** Facilities within watersheds shown to be adversely impacted by industrial stormwater will be targeted for individual permits or watershed-specific general permits.
3. **Tier III: Industry-Specific Permitting.** Specific industry categories will be targeted for individual permits or industry-specific general permits.
4. **Tier IV: Facility-Specific Permitting.** A variety of factors will be used to target specific facilities for individual permits.

The chief objective of Tier I is to issue general permits to industrial dischargers. USEPA issued a baseline general permit that is applicable to all types of industrial stormwater dischargers. In 1992 Ecology issued a baseline general permit using USEPA's general permit and additional information. Presently Ecology is replacing the baseline permit with two general permits: 1) a permit for industrial activities; and 2) a permit for construction activities.

The industrial stormwater general permit applies to discharges directly related to manufacturing, processing, or raw materials storage areas at industrial plants. Most industries that discharge stormwater associated with industrial activities to surface waters of the state or to storm drains are required to obtain stormwater general permits. Construction sites disturbing five acres in area or larger are required to obtain coverage under Ecology's construction activity stormwater general permit if the stormwater from the site is discharged to a storm drain or to a surface water. The two permits also regulate stormwater discharges to the ground from facilities that also have stormwater discharges to storm sewers and surface waters.

¹ 55 **Federal Register** 47990-48090. November 16, 1990. 40 CFR Parts 122, 123, and 124. National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges; Final Rule.

2.2 *The Stormwater General Permits for Industrial and Construction Activities*

Federal NPDES regulations establish minimum permit conditions for industrial stormwater discharges. Federal regulations require the application of Best Pollutant Control Technology (BCT) for conventional pollutants and Best Available Technology Economically Achievable (BAT) for toxic and unconventional pollutants. Ecology's two general permits for stormwater must impose a level of pollution control that is at least as strict as that set by federal regulations.² Thus, most of the conditions of these general permits are required by federal regulation.

In both permits Ecology requires the permittee to prepare, implement, and maintain a Stormwater Pollution Prevention Plan (SWPPP). For the industrial permit, the SWPPP must include implementation of technology-based Best Management Practices (BMPs) if applicable. If after these BMPs have been implemented there is still a concern that water quality standards will be violated, additional BMPs will be necessary.

For the construction activities permit, the permittee must implement technology-based BMPs. Dischargers must also not cause violations of the State surface water quality standards (chapter 173-201 WAC), the state ground water quality standards (chapter 173-200 WAC), and the state sediment standards (chapter 173-204 WAC). The latter two-regulations are not minimum requirements of federal regulations for stormwater permits.

2.3 *Facilities Subject to the General Permits*

General Permit for Industrial Activities.

Many different industries are covered by the industrial stormwater general permit. The permit applies to both privately-owned businesses and state and local governments. Facilities in the categories of activities listed below are required to obtain coverage under the industrial stormwater NPDES general permit³ if they discharge stormwater to storm drains or to surface waters unless their stormwater discharges are regulated under another NPDES permit. The industries for which USEPA has promulgated stormwater effluent limitation guidelines are: cement manufacturing (SIC 3241), feedlots (SICs 021, 0241, and 025), fertilizer manufacturing (SICs 2873 and 2874), petroleum refining (SIC 2911), phosphate manufacturing (SIC 2819), steam electric generating facilities (SIC 4911), coal mining (SIC 12), ore mining (SIC 10), mineral mining (SIC 14), and paving and roofing materials (SIC 295).

² USEPA's draft general permit was published in the August 16, 1991 **Federal Register**.

³ The federal regulation that lists the facilities that must obtain storm water permits is 40 CFR 122.26(b)(14). That regulation contains the full details on which facilities must obtain permits.

1. Facilities with the following manufacturing Standard Industrial Classifications (SICs):

SIC	INDUSTRY
24	Lumber and Wood Products Except Furniture (except 2434, and 2491)
26	Paper and Allied Products (except 265 and 267)
28	Chemicals and Allied Products (except 283 and 285)
29	Petroleum Refining and Related Industries
311	Leather Tanning and Finishing
32	Stone, Clay, Glass, and Concrete Products (except 323)
33	Primary Metal Industries
3441	Fabricated Structural Metal Products
373	Ship and Boat Building and Repair

2. Facilities in the following industries: metal mining (SIC 10), coal mining (SIC 12), oil and gas extraction(SIC 13), and mining and quarrying of nonmetallic metals (SIC 14).
3. Hazardous waste treatment, storage, or disposal facilities.
4. Landfills, land application sites, and open dumps that receive or have received any industrial wastes.
5. Facilities involved in the recycling of materials including metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards. These facilities include, but are not limited to: Wholesale Trade Activities of Motor Vehicle Parts, Used (SIC 5015); and Scrap and Waste Materials (SIC 5093).
6. Steam electric power generating facilities, including coal handling sites.
7. Transportation facilities classified under the following SICs and that have vehicle maintenance shops, equipment cleaning operations, or airport de-icing operations:

SIC	INDUSTRY
40	Railroad Transportation
41	Local and Suburban Transit and Interurban Highway Passenger Transportation
42	Motor Freight Transportation and Warehousing (except 4221 and 4225)
43	United States Postal Service
44	Water Transportation
45	Transportation by Air
5171	Petroleum Bulk Stations and Terminals

Only those portions of these facilities that are involved in vehicle maintenance, equipment cleaning, or airport deicing are subject to the permit.

8. Any treatment works treating domestic sewage that has a design flow of 1.4 mgd or more. Any treatment works required to have an approved pretreatment program.
9. The following industries are exempt from NPDES stormwater permit requirements provided that material handling equipment or activities, raw materials, intermediate products, waste materials, by-products, or industrial equipment are not exposed to stormwater. If any of those activities or materials are exposed to stormwater, the facility must obtain a general permit.

SIC	INDUSTRY
20	Food and Kindred Products
21	Tobacco Products
22	Textile Mill Products
23	Apparel
2434	Wood Kitchen Cabinets
25	Furniture and Fixtures
265	Paperboard Containers and Boxes
267	Converted Paper and Paperboard Products
27	Printing, Publishing, and Allied Industries
283	Drugs
285	Paints, Vanishes, Lacquers, Enamels, and Allied Products
30	Rubber and Miscellaneous Plastic Products
31	Leather and Leather Products (except 311)
323	Glass Products Made of Purchased Glass
34	Fabricated Metal Products (except 3441)
35	Industrial and Commercial Machinery and Computer Equip.
36	Electronic and Other Electrical Equipment and Components
37	Transportation Equipment (except 373)
38	Measuring, Analyzing, and Controlling Instruments
39	Miscellaneous Manufacturing Industries
4221	Farm Product Warehousing and Storage
4222	Refrigerated Warehousing and Storage
4225	General Warehousing and Storage

Under the 1995 general permit, "auxiliary facilities" must obtain coverage under the industrial general permit. Under the 1992 permit, such facilities were not required to obtain permit coverage. "Auxiliary facilities" carry out activities which are classified within the industries (and SIC codes) which must obtain permit coverage but whose parent company is classified within an industry which is not required to obtain permit coverage.

General Permit for Construction Activities

The general permit for construction activities applies to clearing, grading, excavation and any other activity which results in a disturbance of 5 acres or more of land area.

2.4 Facilities Not Subject to the Industrial General Permit

Facilities in several industries presently hold permits for their stormwater discharges. Some have individual permits. Many have industry-specific general permits. Facilities in these industries are not be required to obtain coverage under the industrial stormwater general permit.

In the past few years, Ecology has written general permits for dairy farms, boatyards, and gravel pits and concrete batch plants. It has also written a model permit for wood preservers. These permits contain conditions that address stormwater discharges. Facilities with coverage under one of these general permits do not need to obtain coverage under the general permit for industrial stormwater.

Facilities that only have stormwater discharges from office building roofs and accompanying parking lots do not require stormwater permits of any type. Parking lots that are used for materials handling, etc. that are located at facilities in the industries listed in Section 2.3 are subject to the industrial stormwater general permit.

Facilities that discharge stormwater only to ground water (no discharge to surface water or storm drains) are exempt from coverage under the industrial stormwater general permit.

Silvicultural activities such as timber harvesting, road construction and maintenance, reforestation, and use of forest chemicals are not subject to the general permits (Condition S2). These activities are regulated by the state Forest Practices Rules.

Facilities that discharge stormwater exclusively to sanitary sewers or combined sewers are exempt from the industrial general permit coverage requirements.

3. Requirements of General Permit for Industrial Activities

3.1 Introduction

The SBEIS must include a brief description of the compliance requirements of the general permit. The description must include:

1. Minimum state and federal technology based treatment requirements. Both treatment processes and source-control BMPs must be included.
2. Monitoring requirements.
3. Reporting and recordkeeping requirements.
4. Plan requirements.

This chapter describes the requirements of the general permit for industrial activities.⁴

3.2 Permit Requirements

The requirements of the new industrial activity general permit are virtually the same as the initial baseline permit issued in 1992. The changes in the industrial permit are:

- Primary auxiliary facilities must obtain permit coverage regardless of the SIC code of the facility ownership or parent company.
- Establishment of compliance schedules for: 1) facilities determined to be significant contributors of pollutants; and 2) facilities not in compliance with the permit.
- Extensions of compliance, deadlines for log yards and vehicle recyclers and consideration of extending compliance deadlines by up to 12 months for industries.
- Requiring separate permit coverage for construction activities disturbing 5 or more acres of land area at permitted industrial facilities.
- Inclusion of runoff quantity control requirements.
- Use of discharge targets.
- Modification of the definition of significant amounts.
- Inclusion of a listing of authorized unpermitted discharges.

⁴ This description does not contain all the details of the permit. It only contains summary and selective descriptions of the permit requirements which impose costs. The permit itself is the authoritative source for its conditions.

Facilities Covered by the Permit and Their Compliance Schedules

Facilities that are covered under this permit and their schedule requirements are as follows:

- Existing facilities that must maintain their stormwater pollution prevention plan (SWPPP);
- New facilities which must submit a Notice of Intent (NOI) permit application and prepare and implement their SWPPP no later than 31 days prior to commencement of the industrial activity at the facility.
- Facilities determined by Ecology to engage in primary auxiliary activity regardless of the SIC code the facility ownership or parent company, and facilities determined to be significant contributors of pollutants, must submit a NOI within 30 days of notification by Ecology and must complete implementation of their SWPPP's in 18 months from the date of permit coverage.
- Facilities determined to be in violation of permit coverage or permit requirements must submit their NOI within 30 days of notification by Ecology and must complete implementation of their SWPPP as expeditiously as possible but no later than 18 months from the date of permit coverage.
- Facilities can apply for schedule extensions of up to 12 months for completion of capital improvements if they demonstrate reasonable progress toward meeting permit requirements.
- Existing log yards are given until November 18, 1996, and vehicle recyclers until May, 1996, to complete BMPs requiring capital improvements.

Stormwater Pollution Prevention Plans

Every permitted facility must develop, implement, and maintain a stormwater pollution prevention plan (SWPPP). (Condition S9). Generally, the plan is intended to:

1. Identify potential sources of stormwater pollutants and discharges of unpermitted water.
2. Describe, implement, and maintain (operational, source control, and treatment BMPs, etc. to reduce, eliminate, and/or prevent pollution of surface water, ground water, and sediments by stormwater discharges.
3. Implement and maintain stormwater runoff quantity control BMPs, where needed.

The table below lists the elements that must be contained in the pollution prevention plans of all facilities other than construction activities.

Stormwater Pollution Prevention Plan Elements	
1.	An assessment and description of existing and potential pollutant sources. The assessment and description must include: A. A certification that the facility has been investigated for the presence of non-stormwater discharges. B. A site map showing: stormwater conveyance and discharge structures; outlines of stormwater drainage areas; paved areas; areas of pollutant contact; and surface water locations. C. A list of pollutants that may potentially be present in stormwater discharges in significant amounts. The plan must identify the areas that may be potential significant pollutant sources.
2.	A description of the stormwater management controls needed for the facility. The description must include the following elements: A. Operational BMPs. A Pollution Prevention Committee responsible for developing and implementing the SWPPP must be established. A preventive maintenance program must be developed. The facility must practice good housekeeping. Employee training programs must be developed. Inspection and recordkeeping procedures must be described in the plan. B. Source Control BMPs. C. Erosion and Sediment Control BMPs. The plan must identify areas which have a high potential for erosion and identify BMPs to limit erosion. D. Stormwater Peak Runoff Rate and Volume Control BMPs.
3.	A description of additional stormwater management controls that the facility may need. These controls may include treatment or innovative BMPs such as oil/water separators, biofiltration, infiltration basins, and detention facilities.
4.	An implementation schedule for the BMPs and other activities described in the plan.

Annual Inspections

All industrial permit holders must conduct two annual inspections. One inspection must be conducted during the wet season; the other must be conducted during the dry season. The wet weather inspection must:

1. Verify that the description of potential pollutant sources is accurate.
2. Verify that the site map required by the SWPPP has been updated to reflect current conditions.
3. Verify that stormwater controls have been implemented and are adequate.

The dry season inspection must determine whether non-stormwater discharges to stormwater conveyances exist. Such discharges must be either eliminated or an NPDES permit to regulate them must be obtained. (Condition S9).

Prohibition of Non-Stormwater Discharges

Discharges to a storm drain or surface water of process wastewater or non-contact cooling water is prohibited unless covered by a NPDES permit. Illicit discharges are not authorized by this permit, nor does the permit relieve entities responsible for illicit discharges, including spills of oil or hazardous substances, from obligations under state and federal laws and regulations pertaining to those discharges. Discharges of stormwater to sanitary sewers must be approved by the municipality that owns the sanitary sewer system (Condition S4).

Solid and Liquid Waste Disposal

Disposal of waste materials from maintenance of BMPs, including liquids and solids from cleaning catch basins, must be conducted in accordance with: 1) chapter 173-304 WAC, Minimum Functional Standards for Solid Waste Handling; and 2) chapter 173-303 WAC, Dangerous Waste Regulations.

Leachate from solid waste handling and disposal sites must not be discharged to ground or surface waters without providing all known, available, and reasonable methods of treatment. Leachate must not cause violations of the state surface and ground water quality standards (Condition S10).

Assessment of Potential for Water Quality and Sediment Standards Violations

Permittees who are in compliance with the state ground water, surface water, or sediment quality standards must remain in compliance. Permittees who implement and maintain a SWPPP in accordance with the requirements of the industrial general permit will be considered to be in compliance.

The industrial stormwater general permit may be modified prior to November, 2000 to require industrial permit holders to make an assessment of the potential for their stormwater discharges to violate state ground water, surface water, or sediment quality standards. The permit may also be modified by that date to require permit holders whose discharges are determined to have a high potential for violating state ground water, surface water, or sediment quality standards to monitor their discharges (Condition S7).

Sampling and Analysis

The general permit does not require monitoring of stormwater discharges for pollutants. However, sampling and analysis is encouraged and may be an appropriate part of developing and implementing the SWPPP (see Condition S6).

4. Requirements of General Permit for Construction Activities

4.1 Introduction

The SBEIS must include a brief description of the compliance requirements of the general permit. The description must include:

1. Minimum state and federal technology-based treatment requirements. Both treatment processes and source-control BMPs must be included.
2. Monitoring requirements:
3. Reporting and recordkeeping requirements.
4. Plan requirements.

This chapter describes the requirements of the general permit for construction activities.

4.2 Permit Requirements

The only important change between the 1992 baseline general permit and the new construction activity permit is a clarification of the requirement that water quality and sediment management standards must be met during construction.

Facilities Covered by the Permit and Their Compliance Schedules

For construction activities Ecology is proposing that the site owner be the permittee. Owners of construction sites subject to the construction permit requirements must submit a NOI and must have prepared and implemented their stormwater pollution prevention plan (SWPPP) at least 31 days prior to commencement of the construction activity.

Stormwater Pollution Prevention Plans

Every permitted construction activity must develop a SWPPP. The SWPPP is mostly an Erosion and Sediment Control Plan (ESCP).

The Erosion and Sediment Control Plan must satisfy the following requirements:

Erosion and Sediment Control Plan Requirements	
<u>STABILIZATION PRACTICES</u>	
1.	All exposed and unworked soils must be stabilized using applicable BMPs.
2.	Existing vegetation should be preserved where possible. Setbacks and sensitive areas must be marked in the field.
3.	Cut and fill slopes shall be designed and constructed to minimize erosion.
4.	Stabilization adequate to prevent erosion of outlets and adjacent stream banks shall be provided at the outlets of all conveyance systems.
5.	All storm drain inlets used during construction shall be properly maintained.
6.	Provisions must be made to minimize transport of mud onto paved roads by construction vehicles.
7.	Prior to leaving the site, stormwater runoff must pass through a sediment pond, trap, or other appropriate BMP.
8.	Adjacent properties must be protected from sediment deposition.
9.	Sediment ponds and traps, perimeter dikes, sediment barriers, and other BMPs intended to trap sediment on-site must be constructed as a first step in grading. These BMPs must be operational before land-disturbing activities take place.
10.	Properties and waterways downstream from the construction site must be protected from erosion due to increases in volume, velocity, and peak flows of stormwater runoff from the site.
11.	All temporary erosion and sediment control BMPs must be removed within 30 days after final site stabilization or after they are no longer needed. Trapped sediment shall be removed or stabilized on-site.
<u>OTHER REQUIREMENTS</u>	
1.	All BMPs must be inspected, maintained, and repaired to assure their continued performance.
2.	Reports summarizing the scope of inspections, the personnel conducting the inspection, the date of the inspection, observations, and actions taken as a result of the inspection must be prepared and retained.
3.	All pollutants other than sediment used on-site during construction must be handled and disposed of in a manner that does not cause pollution of stormwater.

5. Economic Analysis: Introduction

5.1 Introduction

The SBEIS must estimate the costs of complying with the general permit. It also must compare the costs of complying with the permit for small businesses to the costs of compliance for large businesses in order to determine whether the permit disproportionately impacts small businesses. This chapter contains introductory remarks on cost estimation and explains how average sales for small and large facilities are estimated. Chapter 6 examines the economic impact of general permit requirements for industrial activities. Chapter 7 examines the economic impact of general permit requirements for construction activities. .

5.2 Definitions of Small and Large Businesses

A small business is defined as a corporation, partnership, sole proprietorship, or other legal entity which has the purpose of making a profit, which is independently owned and operated from all other businesses, and which has fifty or fewer employees. Approximately 2,400 facilities currently have coverage under the baseline general permit for stormwater discharges. The 2,000 facilities include both industrial facilities and construction sites. Many industrial stormwater dischargers are small businesses: in some industries more than 90 percent of the businesses in the industry are small.

5.3 Measure of Proportionate Cost Impact

The cost comparison compares **proportionate** compliance costs for small businesses and large businesses. In many cases, absolute compliance costs will be greater for large businesses than for small. Therefore, costs are normalized in order to make the comparison valid. Any one of the following three ratios may be used to compare costs:

- Cost per employee.
- Cost per hour of employee.
- Cost per one hundred dollars of sales.

Using the cost-to-sales ratio as the measure of proportionate impact usually makes the most sense. It is an approximate estimate of the percentage rise in costs caused by the permit. This is how the permit holder looks at compliance costs. To calculate the ratio, divide annualized compliance cost by annual sales. If the compliance cost ratio is higher for small business than for large business, then small businesses are disproportionately impacted. Chapters 6 and 7 use the ratio of the annualized cost of complying with the general permit to a facility's annual sales as the measure of the permit's proportional impact.

In Chapters 6 and 7, estimates of annual total compliance costs were made for average small (50 or fewer employees) and large (more than 50 employees) businesses. These cost estimates were then divided by estimates of annual sales in order to calculate cost-to-sales ratios for small and large businesses. Data sources for the sales estimates are described in Appendix A.

5.4 Compliance Costs That Must Be Included in the SBEIS

According to WAC 173-226-120(3), the SBEIS must estimate the costs of the following items:

- Minimum state and federal technology-based treatment requirements. This includes treatment processes as well as source-control BMPs.
- Monitoring requirements.
- Reporting and recordkeeping requirements.
- Plan requirements.

The cost estimates must include the costs of equipment, supplies, labor, and increased administrative costs. They include the cost of professional services needed to comply with the permit.

5.5 Compliance Costs That Must Be Excluded from the SBEIS

The costs of complying with permit conditions required by the following laws and rules are not required to be included in the SBEIS's compliance costs:

- State Ground Water Quality Standards (WAC 173-200).
- State Surface Water Quality Standards (WAC 173-201A).
- State Sediment Management Standards (WAC 173-204).
- Wastewater Discharge Permit Fees (WAC 173-224).
- Federal laws and rules, in particular the Clean Water Act and federal NPDES regulations.

See WAC 173-226-120(4). The justification for excluding compliance costs related to these laws and rules is that permit holders cannot be exempted from these laws through the permit process and, therefore, any cost impacts of these laws and regulations cannot be reduced. Estimation of such costs serves no purpose. It cannot be **used** as a basis for making cost-reduction decisions.

The SBEIS is legally required to estimate the compliance costs for the permit conditions that exceed baseline conditions at permitted facilities. The above conditions are the baseline to be used for estimation of compliance costs. The baseline consists of the items that cost estimates are **not** made for. Cost estimates are made for the permit conditions above the baseline.

5.6 Baseline for Calculating Cost Impact

The SBEIS is legally required to estimate the compliance costs for the permit conditions that exceed baseline conditions at permitted facilities. What is the legally-required baseline?

As noted above, the SBEIS is not legally required to analyze the costs of complying with federal regulations. USEPA's stormwater rules impose BCT and BAT levels of pollution control. Ecology's stormwater general permit must be at least as strict as USEPA's rules. Thus, with

respect to federal regulations, the SBEIS only needs to analyze the costs of complying with the conditions of Ecology's general permit that are stricter than those of USEPA's general permit.

The general permit must also impose an "AKART" level of pollution control. This a requirement of the state Water Pollution Control Act (RCW 90.48.010). AKART stands for "All Known, Available, and Reasonable Methods of Treatment." AKART is a state, not a federal, requirement. For the industrial stormwater general permit, Ecology has decided that , AKART equals BCT/BAT. The writers of the general permit have no authority waive the requirement that dischargers use AKART levels of treatment. In addition, all permits issued by Ecology must ensure that dischargers do not violate the state surface water quality standards; the state ground water quality standards; and the state sediment management standards. The writers of the general permit have no authority to alter these standards.

Therefore, the legal baseline for cost impact analysis is the requirements imposed by USEPA's regulations, AKART, and the surface water, ground water, and sediment quality standards. Only costs imposed by requirements that exceed these levels need to be analyzed in the SBEIS. Federal regulations do not need to be analyzed. Requirements of already existing state laws and rules that are being placed in the permit do not need to be analyzed. The general permit cannot be used to alter these rules and laws or to allow violations of them.

However, the cost estimates used in this SBEIS will assume that the baseline is zero. The estimates calculate the ***full*** cost of complying with the permit, assuming that no water pollution control costs of any sort have already been incurred. Because the baseline is assumed to be zero, the cost estimates will overestimate the cost of meeting the state and federal requirements contained in the two permits.

Some conditions of the permit merely state existing regulations, such as solid and hazardous waste regulations, process wastewater discharge effluent limits, and regulations dealing with stormwater discharges to sanitary and combined sewers. Because these are existing regulations (that is, they would be in place and facilities would have to comply with them even if the general permit was not issued), the compliance costs of such conditions is zero.

Some unknown proportion of stormwater dischargers are presently in partial compliance with the permits to some, unknown degree. They have already incurred some of the costs of complying with the permit. This is the case for both small and large businesses. In particular, many local governments have erosion control requirements for construction activities that are similar to those contained in the general permit. These facilities have already incurred some of the costs of complying with the general permit. For such facilities, the cost estimates made below are overestimates. Therefore, cost-to-sales ratios for businesses that are already partly in compliance with the permit are less than the ratios calculated here: The cost-to-sales ratios calculated below for small and large businesses are maximum or worst case ratios. They assume that the permit holder has taken no steps in the past to comply with the permit.

6. Economic Analysis: Industrial Activities

6.1 Introduction

This chapter examines the economic impact of the general permit for industrial activities. This permit applies to stormwater discharges directly related to manufacturing, processing, or raw materials storage areas at industrial plants. This chapter presents estimates of compliance costs, sales estimates, and cost-to-sales ratios. The impacts of the general permit on small and large businesses are compared.

Many different industries are covered by the industrial stormwater general permit. The permit applies to both privately-owned businesses and state and local governments. See Chapter 2 for a detailed explanation of which industries are covered by the permit.

6.2 Cost Estimates

This section presents estimates of compliance costs for small and large businesses. Major assumptions used in making the cost estimates are presented.

The Department lacks detailed knowledge of the actual pollutant loads and the applicable BMPs needed to comply with the permit requirements for all the industrial categories subject to the industrial permit. Some pollutant loads, applicable BMPs, and costs were considered in issuing BMP guidance documents for vehicle recyclers and log yards. However, Ecology has only very general knowledge of the source control, treatment, and operational BMPs, etc. that many of the other industrial categories may have to use to comply with the general permit. As a result, without a detailed survey of each industrial category the ability to make accurate estimates of compliance costs is limited. Estimates have been made of: 1) the costs of the operational BMPs needed to carry out the SWPPP; and 2) the capital costs of cover and containment; and costs of oil/water separator systems. Actual costs to most businesses should be within a range of the costs of these types of BMPs. The cost estimates presented here are intended to be typical for small and large businesses. Actual costs at specific facilities in each size category could vary widely.

Capital costs are annualized in order to be able to compare them to annual sales. It is necessary to annualize costs because some costs are annual (that is, recurring) costs while some costs are capital (one-time) costs. For example, the installation of an oil/water separator is a one-time capital cost, while the cost of visual inspections is an annual cost that must be incurred every year.

Stormwater Pollution Prevention Plans

Permittees must develop, implement, and maintain stormwater pollution prevention plans (SWPPPs). The SWPPP identifies sources of pollution of stormwater discharges and describes and implements BMPs to prevent pollution. The SWPPP must include the following elements:

STORMWATER POLLUTION PREVENTION PLAN ELEMENTS	
1.	An assessment and description of pollutant sources. A. A non-stormwater discharges certification. B. A site map. C. Identify areas that are significant pollutant sources.
2.	List of stormwater management controls needed. A. Operational BMPs. B. Source Control BMPs C. Erosion and Sediment Control BMPs. D. Stormwater Peak Runoff Rate and Volume Control BMPs.
3.	List of additional stormwater controls that the facility may need. These controls may include treatment BMPs.

The facility may have to implement operational and source control BMPs. Operational BMPs include: good housekeeping practices; use of drip pans; maintenance of hoses and piping; cleanup of spilled materials; employee education; preventive maintenance; and inspection and recordkeeping.

Source control BMPs include: roofing storage areas; constructing berms around storage areas and tanks; and constructing collection and conveyance systems. Source controls can include modifications of manufacturing process. Source controls include discharge of certain waste streams to sanitary sewers.

The facility may have to construct stormwater treatment facilities. Treatment facilities include: oil/water separators, biofiltration, infiltration basins, and detention facilities.

It is expected that the majority of facilities' SWPPPs will use relatively low cost baseline controls.⁵

The cost estimates apply to: 1) existing permit holders who only need to operate and maintain BMPs that they have already installed; and 2) new permit holders who must incur both the cost of installing BMPs and the costs of operating and maintaining those BMPs.

⁵ This is USEPA's judgement. See 56 **Federal Register** 40988. August 16, 1991. NPDES General Permits and Reporting Requirements of Storm Water Discharges Associated with Industrial Activity; Proposed Rule.

It is estimated that writing the SWPPP will cost \$2,000.⁶ Small businesses may have to implement operational and source control BMPs. For the purpose of estimating costs, it is assumed that small businesses will have to: 1) build containment structures and roofs for loading/unloading areas; 2) build containment structures and roofs for outside waste and liquid chemical storage areas; 3) undertake equipment cleaning BMPs; and 4) install a small oil/water separator for uncovered oil-pollutant-generating areas such as processing, fueling, and maintenance areas.

Annual Inspections

Permit holders must conduct two annual inspections. The inspections: verify that the SWPPP's description of pollutant sources is accurate; update the site map; and verify that stormwater controls have been implemented. They also determine whether non-stormwater discharges to stormwater conveyances exist.

The cost of these inspections is included in the annual cost of operational BMPs (see tables below).

Prohibition of Non-Stormwater Discharges

Discharges to a storm sewer or surface water of process wastewater or non-contact cooling water is prohibited unless covered by a NPDES permit.

This condition merely states requirements of existing law and rules. Discharges of process wastewater or non-contact cooling water are illegal unless covered by a NPDES permit. They are illegal regardless of the general permit. The general permit imposes no new requirements with respect to these discharges. Therefore, this condition imposes no new costs.

Solid and Liquid Waste Disposal

Disposal of waste materials from maintenance of BMPs--for example, sludge from catch basins--must be conducted in accordance with state rules regulating solid and dangerous waste disposal (chapter 173-304 WAC and chapter 173-303 WAC). Leachate from solid waste handling and disposal sites must comply with AKART treatment standards and must not cause violations of the state surface and ground water quality standards.

This condition merely states requirements of existing law and rules. Discharges that violate the solid and hazardous waste disposal rules are presently illegal. They are illegal regardless of the general permit. The general permit imposes no new requirements with respect to these discharges. Therefore, this condition imposes no new costs.

⁶ It is assumed that writing the SWPPP takes 40 hours of professional staff time at \$50 per hour.

Compliance with Water Quality and Sediment Standards

Permit condition S5 clarifies the general permit requirement related to compliance with the state ground water, surface water, and sediment quality standards. Although, an unknown number of facilities covered by the permit may not be in compliance with these standards, the requirements to come into compliance with the standards are contained in other sections of the general permit, and will be contained in a modification or reissuance of this permit which may occur before the expiration date of this permit, November 18, 2000. Therefore, this condition imposes no new costs.

Assessment of Potential for Water Quality and Sediment Standards Violations

The general permit may be modified prior to November 18, 2000 to require permit holders to make an assessment of the potential for their stormwater discharges to violate state ground water, surface water, and sediment quality standards. The permit will also be modified by that date to require permit holders whose discharges are determined to have a high potential for violating state ground water, surface water, or sediment quality standards to monitor their discharges.

Compliance costs for this condition will not be estimated because: 1) the precise content of these conditions is unknown at the present time; and 2) these conditions are not part of this industrial permit.

Total Compliance Costs

This section presents the total costs of compliance for small and large businesses. The two tables on pages 22 and 23 present compliance cost estimates for small industrial facilities that are new permit holders. These permit holders must currently incur both the capital and O&M costs of complying with the general permit. The two tables on pages 25 and 25 present details of the cost estimates for small businesses.

The table on page 22 shows the ***minimum*** cost estimate for small businesses that are new permit holders. For this estimate, it is assumed that the facility only needs to write a plan and institute management BMPs. No source control or treatment BMPs are needed. The table on page 23 shows the ***maximum*** cost estimate for small businesses that are new permit holders. For this estimate, it is assumed that the facility needs to write a SWPPP and install source control, treatment, and management BMPs. In particular, it must install an oil/water separator.

The table on page 24 shows the cost estimate for large businesses.

Compliance Costs for New Permit Holders. The "annual total cost" figures in these two tables are used for the endpoints of the compliance cost range for small businesses that are *new* permit holders. The "annual total cost" figures are the annualized costs of: 1) writing the SWPPP; 2) capital purchases, if necessary; and 3) O&M expenses. Thus the cost range for new permit holders is: \$3,628 to \$10,047 per year. The maximum estimate assumes that capital investments are necessary to install BMPs.

Compliance Costs for Existing Permit Holders. The "annual cost" figures in these two tables are used for the endpoints of the compliance cost range for small businesses that are *existing* permit holders. In this case "total cost" figures include only the annualized costs of O&M expenses. It is assumed that existing permit holders have already written their SWPPP and made any needed capital investments. Thus, the cost range for existing permit holders is: \$3,100 to \$5,800 per year.

These cost estimates are used for all industries. The Department lacked adequate information to make industry-specific cost estimates (except for vehicle recyclers). Therefore, except for vehicle recyclers, the cost estimates are only intended to represent typical ranges of costs. The cost of developing SWPPPs and implementing BMPs is highly variable. The cost will depend on a number of factors, including: facility size; precipitation levels in the area; types of chemicals stored at the facility; nature of plant operations, methods of materials handling; materials storage facilities; production processes; housekeeping measures used at the facility; and nature of existing stormwater collection, conveyance, treatment, and disposal facilities.⁷ All of these factors can vary greatly across different industries. They can vary greatly among facilities of the same size within a single industry. They can vary greatly among different sizes of facilities within a single industry: Therefore, compliance costs can vary significantly both between and within industries. However, the compliance cost ranges calculated above should contain the compliance costs for the majority of the holders of the general permit.

⁷ 56 **Federal Register** 40988. August 16, 1991. NPDES General Permits and Reporting Requirements of Storm Water Discharges Associated with Industrial Activity; Proposed Rule.

COMPLIANCE COSTS: New Industrial Facilities				c:/ws/sb_indsw.xls->costs
Small Businesses				
Minimum Cost				
PERMIT REQUIREMENT	INITIAL COST	ANNUALIZED INITIAL COST*	ANNUAL COST	ANNUAL TOTAL COST**
SWPPP	\$2,000	\$528	\$50	\$578
Management BMPs	0	0	3,050	3,050
Source Control BMPs	0	0	0	0
Treatment BMPs	0	0	0	0
Erosion & Sediment Control BMPs	0	0	0	0
Non-Storm Water Certification	0	0	0	0
Prohibition of Non-Storm Water Discharges	0	0	0	0
Solid & Liquid Waste Disposal	0	0	0	0
Compliance with WQ Standards	0	0	0	0
Assess Potential for WQ Stndrds. Violations	0	0	0	0
TOTALS	\$2,000	\$528	\$3,100	\$3,628
* Annual Initial Costs are calculated using a 10 percent interest rate and are allocated over a 5 year lifetime.				
** Annual Total Cost is the sum of annual O&M costs and annualized initial costs.				
<u>ASSUMPTIONS</u>				
These businesses only need to write the SWPPP and carry out management BMPs. No source control or treatment BMPs are necessary.				
See tables K_Cost_Detail and Maint_Cost_Detail for details of the cost estimate.				

COMPLIANCE COSTS: New Industrial Facilities Small Businesses Maximum Cost					c:/ws/sb_indsw.xls->costs
PERMIT REQUIREMENT	INITIAL COST	ANNUALIZED INITIAL COST*	ANNUAL COST	ANNUAL TOTAL COST**	
SWPPP	\$2,000	\$528	\$200	\$728	
Management BMPs	1,100	290	5,220	5,510	
Source Control BMPs	13,000	3,429	380	3,809	
Treatment BMPs	0	0	0	0	
Erosion & Sediment Control BMPs	0	0	0	0	
Non-Storm Water Certification	0	0	0	0	
Prohibition of Non-Storm Water Discharges	0	0	0	0	
Solid & Liquid Waste Disposal	0	0	0	0	
Compliance with WQ Standards	0	0	0	0	
Assess Potential for WQ Stndrds. Violations	0	0	0	0	
TOTALS	\$16,100	\$4,247	\$5,800	\$10,047	
* Annual Initial Costs are calculated using a 10 percent interest rate and are allocated over a 5 year lifetime. ** Annual Total Cost is the sum of annual O&M costs and annualized initial costs.					
ASSUMPTIONS These businesses only need to write the SWPPP. These businesses need source control, treatment, and management BMPs. The source control BMPs are assumed to be: containment/cover for loading/unloading; waste storage; liquid chemical storage; and equipment cleaning BMPs. The treatment BMP is an oil/water separator. See tables K_Cost_Detail and Maint_Cost_Detail for details of the cost estimate.					

**COMPLIANCE COSTS: Industrial Facilities
Large Businesses**

c:/ws/sb_indsw.xls->costs

PERMIT REQUIREMENT	INITIAL COST	ANNUALIZED INITIAL COST*	ANNUAL COST	ANNUAL TOTAL COST**
Preparation & Implementation of SWPPP	NA	\$84,075	\$22,028	\$106,103
Revision of SWPPP	NA	8,408	2,203	10,610
Material Inventory/Risk Assessment	0	0	717	717
Spill Prevention/Respons Procedures	0	0	785	785
Employee Training	0	0	1,250	1,250
Visual Inspections	0	0	1,149	1,149
Preventive Maintenance/Housekeeping	0	0	4,663	4,663
Storm Water Management	NA	5,605	561	6,166
Sediment & Erosion Prevention	NA	561	1,121	1,682
Recordkeeping	NA	112	112	224
Non-Storm Water Certification	NA	15,694	0	15,694
Prohibition of Non-Storm Water Discharges	0	0	0	0
Solid & Liquid Waste Disposal	0	0	0	0
Compliance with WQ Standards	0	0	0	0
Assess Potential for WQ Stndrds. Violations	0	0	0	0
TOTALS	\$0	\$114,454	\$34,588	\$149,043

* Annual Initial Costs are calculated using a 10 percent interest rate and are allocated over a 5 year lifetime.

** Annual Total Cost is the sum of annual O&M costs and annualized initial costs.

ASSUMPTIONS

The primary source for these cost estimates is table 5 of the fact sheet for USEPA's industrial stormwater general permit, which was published in 56 Federal Register 40988 on August 16, 1991..

The original estimates have been inflated using the Means City Cost index in order to account for inflation since 1990.

COMPLIANCE COSTS: Industrial Facilities Capital & Initial BMPs	
Best Management Practice	Cost
Impervious Containment for Liquid Storage and Vehicle Washing	\$7,000
Oil/Water Separator	3,500
Loading/Unloading Cover	2,500
Drip Pans	250
Oil Spill Kit	350
Tarp	500
SWPPP Preparation	2,300
TOTAL	\$16,100
c:/ws/indstm2/sb_indsw.xls->K_Cost_Detail	

COMPLIANCE COSTS: Industrial Facilities Operation and Maintenance BMPs		
	ANNUAL COST	
Best Management Practice	Minimum	Complete System
SWPPP Modification (4 hrs.*)	\$50	\$200
Inspections (4-8 hrs.*)	200	400
Cleanup Leaks & Spills (90-180 hrs.**)	1,440	2,880
Cleanup BMPs (24 hrs.**)	0	380
Maintenance of Oil/Water Separator (24 hrs.**)	0	380
Employee Training (4 hrs.* and 24 hrs**)	580	580
Recordkeeping (1-4 hrs.*)	50	200
Pollution Prevention Team Mtngs. (8 hrs.* and 24 hrs**)	780	780
TOTAL	\$3,100	\$5,800
* Supervision at \$50 per hour (includes salaries, benefits, rent, supplies & overhead).		
**Employee cost at \$16 per hour (includes salaries, benefits, rent, supplies & overhead).		
ASSUMPTIONS <u>Minimum Cost:</u> Maintaining good housekeeping; and no treatment BMPs. <u>Complete System:</u> more frequent spill/leak cleanups; treatment BMP maintenance; SWPPP modification; and recordkeeping.		
c:/ws/indstm2/sb_indsw.xls->Maint_Cost_Detail		

6.3 *Calculation of Cost-to-Sales Ratios*

The SBEIS uses cost-to-sales ratios to compare the impact of the general permit on small and large businesses. The tables on pages 28 through 31 calculate estimated cost-to-sales ratios for small and large permit holders for most of the industries covered by the industrial stormwater general permit. The industries in the table are in order by SIC code. The table on pages 28 and 29 contain ratios for new permit holders. The table on pages 30 and 31 contain ratios for existing permit holders.

Appendix A, Method of Estimating Sales, explains how the sales estimates are made for use in calculating cost-to-sales ratios. Because the data sources that were used to estimate sales usually do not include data on railroads, railroads are not examined in the SBEIS.

For holders of the industrial stormwater general permit, most of the cost-to-sales ratios are estimated at the two-digit SIC level. Estimation at the two digit level is sufficient to determine whether small businesses are disproportionately impacted by the general permit: Calculation of ratios at the three- or four-digit SIC level would add little information and would not affect the conclusion on disproportionality.

6.4 *Conclusion on Disproportionality of Cost Impact*

The SBEIS compares the costs of compliance for small and large businesses in order to determine whether the general permit disproportionately impacts small business. This is the fundamental requirement that the SBEIS satisfies. This comparison determines whether reduction of the cost impact of the general permit is necessary. If the compliance cost ratio is higher for small business than for large business, then small businesses are disproportionately impacted. (See WAC 173-226-120(3)(c).)

The data in the tables on pages 28 through 31 show that in almost every industry the cost-to-sales ratio for small businesses is greater than the cost-to-sales ratio for large businesses. In particular, the high cost-to-sales ratio for small businesses generally exceeds both the low and high ratios for large businesses. As measured by the cost-to-sales ratio, the general permit has a proportionally greater impact on small businesses than on large businesses. The permit imposes a disproportionate impact on small businesses.

COST-TO-SALES RATIOS: INDUSTRIAL ACTIVITIES**Stormwater General Permit for Industrial Activities****New Permit Holders**

INDUSTRY	SIC Code	SMALL BUSINESSES (50 or fewer employees)						LARGE BUSINESSES (more than 50 employees)					
		Cost Range (\$)		Sales Range (\$ millions)		Cost-To-Sales Ratio (%)		Cost Range (\$)		Sales Range (\$ millions)		Cost-To-Sales Ratio (%)	
		Minimum	Maximum	Low	High	Low	High	Minimum	Maximum	Low	High	Low	High
<u>MINING AND QUARRYING</u>													
Metal Mining	10	\$3,628	\$10,047	0.4	5.9	0.0614	2.3474	\$149,043	\$149,043	12.8	29.9	0.4985	1.1644
Coal Mining	12	3,628	10,047	0.3	4.7	0.0774	2.9550	149,043	149,043	10.1	101.8	0.1464	1.4757
Oil & Gas Extraction	13	3,628	10,047	0.3	4.7	0.0774	2.9550	149,043	149,043	10.1	23.7	0.6288	1.4729
Nonmetallic Minerals, Except Fuels	14	3,628	10,047	0.3	4.3	0.0845	3.2305	149,043	149,043	9.3	46.6	0.3199	1.6081
<u>MANUFACTURING</u>													
Food Products	20	3,628	10,047	0.5	7.2	0.0504	1.9284	149,043	149,043	15.5	208.5	0.0715	0.9593
Textile Mill Products	22	3,628	10,047	0.2	2.1	0.1728	5.9804	149,043	149,043	4.5	22.5	0.0624	3.3121
Apparel	23	3,628	10,047	0.2	2.2	0.1666	6.3589	149,043	149,043	4.7	47.3	0.3150	3.1691
Lumber & Wood Products	24	3,628	10,047	0.4	4.8	0.0750	2.8706	149,043	149,043	10.4	105.1	0.1418	1.4269
Furniture & Fixtures	25	3,628	10,047	0.2	2.3	0.1554	5.9450	149,043	149,043	5.0	11.8	1.2619	2.9560
Paper & Allied Products	26	3,628	10,047	0.6	8.6	0.0423	1.6153	149,043	149,043	18.5	248.8	0.0599	0.8041
Printing & Publishing	27	3,628	10,047	0.2	2.5	0.1446	5.5203	149,043	149,043	5.4	72.7	0.2050	2.7514
Chemicals	28	3,628	10,047	0.3	4.7	0.0766	2.9292	149,043	149,043	10.2	137.4	0.1085	1.4565
Petroleum Refining	29	3,628	10,047	4.0	54.8	0.0066	0.2529	149,043	149,043	118.4	595.1	0.0250	0.1259
Rubber & Plastic Products	30	3,628	10,047	0.2	3.3	0.1092	4.1863	149,043	149,043	7.2	16.8	0.8872	2.0770
Leather & Leather Products	31	3,628	10,047	0.2	3.0	0.1209	5.0235	149,043	149,043	6.5	15.2	0.9805	2.2930

COST-TO-SALES RATIOS: INDUSTRIAL ACTIVITIES**Stormwater General Permit for Industrial Activities****New Permit Holders**

INDUSTRY	SIC Code	SMALL BUSINESSES (50 or fewer employees)						LARGE BUSINESSES (more than 50 employees)					
		Cost Range (\$)		Sales Range (\$ millions)		Cost-To-Sales Ratio (%)		Cost Range (\$)		Sales Range (\$ millions)		Cost-To-Sales Ratio (%)	
		Minimum	Maximum	Low	High	Low	High	Minimum	Maximum	Low	High	Low	High
Stone, Clay, Glass, & Concrete Products	32	\$3,628	\$10,047	0.3	4.1	0.0881	3.3715	\$149,043	\$149,043	8.9	89.5	0.1666	1.6760
Primary Metal Industries	33	3,628	10,047	0.5	7.3	0.0497	1.8992	149,043	149,043	15.8	211.6	0.0704	0.9456
Fabricated Metal Products	34	3,628	10,047	0.3	3.9	0.0934	3.5754	149,043	149,043	8.4	42.2	0.3532	1.7773
Machinery, Except Electrical	35	3,628	10,047	0.2	3.2	0.1145	4.3683	149,043	149,043	6.8	68.8	0.2166	2.1784
Electronic Equipment	36	3,628	10,047	0.2	3.1	0.1166	4.4653	149,043	149,043	6.7	90.2	0.1653	2.2182
Transportation Equipment	37	3,628	10,047	0.5	7.6	0.0477	1.8992	149,043	149,043	16.4	219.5	0.0679	0.9088
Measuring, Etc. Instruments	38	3,628	10,047	0.3	3.8	0.0962	3.6802	149,043	149,043	8.1	1090.3	0.1364	1.8308
Miscellaneous Manufacturing	39	3,628	10,047	0.2	2.5	0.1463	5.5817	149,043	149,043	5.4	53.9	0.2767	2.7832
<u>TRANSPORTATION, COMMUNICATION, AND UTILITIES</u>													
Local & Interurban Passenger Transit	41	3,628	10,047	0.2	2.5	0.1451	5.0742	149,043	149,043	5.5	27.5	0.5420	2.7099
Motor Freight Transportation & Warehousing	42	3,628	10,047	0.2	3.0	0.1209	4.1689	149,043	149,043	6.6	88.7	0.1680	2.2582
Water Transportation	44	3,628	10,047	0.3	4.4	0.0825	3.2410	149,043	149,043	9.6	128.5	0.1160	1.5525
Air Transportation	45	3,628	10,047	0.1	1.2	0.3023	12.4037	149,043	149,043	2.6	34.3	0.4345	5.7324
Electric, Gas, and Sanitary Services	49	3,628	10,047	1.8	24.7	0.0147	0.5582	149,043	149,043	53.3	536.7	0.0278	0.2796
Electric Services	491	3,628	10,047	2.1	29.0	0.0125	0.4784	149,043	149,043	62.6	629.4	0.0237	0.2381
<u>WHOLESALE TRADE</u>													
Motor Vehicle Parts, Used	5015	3,628	10,047	0.2	2.6	0.1395	5.6444	149,043	149,043	5.6	5.6	2.6615	2.6615
Scrap & Waste Materials	5093	3,628	10,047	0.5	6.6	0.0550	2.0673	149,043	149,043	14.2	33.4	0.4462	1.0496
Petroleum Bulk Stations & Terminals	5171	3,628	10,047	2.9	39.2	0.0093	0.3442	149,043	149,043	84.6	425.4	0.0350	0.1762

COST-TO-SALES RATIOS: INDUSTRIAL ACTIVITIES**Stormwater General Permit for Industrial Activities****Existing Permit Holders**

INDUSTRY	SIC Code	SMALL BUSINESSES (50 or fewer employees)						LARGE BUSINESSES (more than 50 employees)					
		Cost Range (\$)		Sales Range (\$ millions)		Cost-To-Sales Ratio (%)		Cost Range (\$)		Sales Range (\$ millions)		Cost-To-Sales Ratio (%)	
		Minimum	Maximum	Low	High	Low	High	Minimum	Maximum	Low	High	Low	High
<u>MINING AND QUARRYING</u>													
Metal Mining	10	\$3,100	\$5,800	0.4	5.9	0.0524	1.3551	\$149,043	\$149,043	12.8	29.9	0.4985	1.1644
Coal Mining	12	3,100	5,800	0.3	4.7	0.0662	1.7059	149,043	149,043	10.1	101.8	0.1464	1.4757
Oil & Gas Extraction	13	3,100	5,800	0.3	4.7	0.0662	1.7059	149,043	149,043	10.1	23.7	0.6288	1.4729
Nonmetallic Minerals, Except Fuels	14	3,100	5,800	0.3	4.3	0.0722	1.8650	149,043	149,043	9.3	46.6	0.3199	1.6081
<u>MANUFACTURING</u>													
Food Products	20	3,100	5,800	0.5	7.2	0.0431	1.1132	149,043	149,043	15.5	208.5	0.0715	0.9593
Textile Mill Products	22	3,100	5,800	0.2	2.1	0.1476	3.4524	149,043	149,043	4.5	22.5	0.6624	3.3121
Apparel	23	3,100	5,800	0.2	2.2	0.1423	3.6709	149,043	149,043	4.7	47.3	0.3150	3.1691
Lumber & Wood Products	24	3,100	5,800	0.4	4.8	0.0641	1.6571	149,043	149,043	10.4	105.1	0.1418	1.4269
Furniture & Fixtures	25	3,100	5,800	0.2	2.3	0.1328	3.4320	149,043	149,043	5.0	11.8	1.2619	2.9560
Paper & Allied Products	26	3,100	5,800	0.6	8.6	0.0361	0.9325	149,043	149,043	18.5	248.8	0.0599	0.8041
Printing & Publishing	27	3,100	5,800	0.2	2.5	0.1236	3.1868	149,043	149,043	5.4	72.7	0.2050	2.7514
Chemicals	28	3,100	5,800	0.3	4.7	0.0654	1.6910	149,043	149,043	10.2	137.4	0.1085	1.4565
Petroleum Refining	29	3,100	5,800	4.0	54.8	0.0057	0.1460	149,043	149,043	118.4	595.1	0.0250	0.1259
Rubber & Plastic Products	30	3,100	5,800	0.2	3.3	0.0933	2.4167	149,043	149,043	7.2	16.8	0.8872	2.0770
Leather & Leather Products	31	3,100	5,800	0.2	3.0	0.1033	2.9000	149,043	149,043	6.5	15.2	0.9805	2.2930

COST-TO-SALES RATIOS: INDUSTRIAL ACTIVITIES**Stormwater General Permit for Industrial Activities****Existing Permit Holders**

INDUSTRY	SIC Code	SMALL BUSINESSES (50 or fewer employees)						LARGE BUSINESSES (more than 50 employees)					
		Cost Range (\$)		Sales Range (\$ millions)		Cost-To-Sales Ratio (%)		Cost Range (\$)		Sales Range (\$ millions)		Cost-To-Sales Ratio (%)	
		Minimum	Maximum	Low	High	Low	High	Minimum	Maximum	Low	High	Low	High
Stone, Clay, Glass, & Concrete Products	32	\$3,100	\$5,800	0.3	4.1	0.0753	1.9463	\$149,043	\$149,043	8.9	89.5	0.1666	1.6760
Primary Metal Industries	33	3,100	5,800	0.5	7.3	0.0425	1.0964	149,043	149,043	15.8	211.6	0.0704	0.9456
Fabricated Metal Products	34	3,100	5,800	0.3	3.9	0.0798	2.0641	149,043	149,043	8.4	42.2	0.3532	1.7773
Machinery, Except Electrical	35	3,100	5,800	0.2	3.2	0.0979	2.5217	149,043	149,043	6.8	68.8	0.2166	2.1784
Electronic Equipment	36	3,100	5,800	0.2	3.1	0.0996	2.5778	149,043	149,043	6.7	90.2	0.1653	2.2182
Transportation Equipment	37	3,100	5,800	0.5	7.6	0.0408	1.0964	149,043	149,043	16.4	219.5	0.0679	0.9088
Measuring, Etc. Instruments	38	3,100	5,800	0.3	3.8	0.0822	2.1245	149,043	149,043	8.1	1090.3	0.1364	1.8308
Miscellaneous Manufacturing	39	3,100	5,800	0.2	2.5	0.1250	3.2222	149,043	149,043	5.4	53.9	0.2767	2.7832
<u>TRANSPORTATION, COMMUNICATION, AND UTILITIES</u>													
Local & Interurban Passenger Transit	41	3,100	5,800	0.2	2.5	0.1240	2.9293	149,043	149,043	5.5	27.5	0.5420	2.7099
Motor Freight Transportation & Warehousing	42	3,100	5,800	0.2	3.0	0.1033	2.4066	149,043	149,043	6.6	88.7	0.1680	2.2582
Water Transportation	44	3,100	5,800	0.3	4.4	0.0705	1.8710	149,043	149,043	9.6	128.5	0.1160	1.5525
Air Transportation	45	3,100	5,800	0.1	1.2	0.2583	7.1605	149,043	149,043	2.6	34.3	0.4345	5.7324
Electric, Gas, and Sanitary Services	49	3,100	5,800	1.8	24.7	0.0126	0.3222	149,043	149,043	53.3	536.7	0.0278	0.2796
Electric Services	491	3,100	5,800	2.1	29.0	0.0107	0.2762	149,043	149,043	62.6	629.4	0.0237	0.2381
<u>WHOLESALE TRADE</u>													
Motor Vehicle Parts, Used	5015	3,100	5,800	0.2	2.6	0.1192	3.2584	149,043	149,043	5.6	5.6	2.6615	2.6615
Scrap & Waste Materials	5093	3,100	5,800	0.5	6.6	0.0470	1.1934	149,043	149,043	14.2	33.4	0.4462	1.0496
Petroleum Bulk Stations & Terminals	5171	3,100	5,800	2.9	39.2	0.0079	0.1987	149,043	149,043	84.6	425.4	0.0350	0.1762

7. Economic Analysis: Construction Activities

7.1 Introduction

This chapter examines the economic impact of the general permit for construction activities. This chapter presents estimates of compliance costs, sales estimates, and cost-to-value ratios. The impacts of the general permit on small and large businesses are compared.

All construction activities that disturb five or more acres of land and that have a discharge to state surface waters or storm drains are subject to the general permit. There are many types of construction activities of this size. The permit covers construction undertaken by both state and local governments and private business. It covers residential, commercial, and industrial construction. It covers construction of roads by state and local governments. It covers construction of office buildings, factories, shopping malls, housing of all types, warehouses, roads, water and sewer lines, motels, stores, etc.

7.2 Cost Estimates

This section presents estimates of compliance costs for small and large construction sites. Major assumptions used in making the cost estimates are presented.

The cost of developing SWPPPs and implementing BMPs is variable. The cost will depend on a number of factors, including: project size; project type; precipitation levels in the area; housekeeping measures used at the site; and nature of existing stormwater collection, conveyance, treatment, and disposal facilities.⁸ All of these factors can vary significantly from site to site and from project to project. They can vary greatly between projects of different types on similarly-sized sites. Therefore, compliance costs can vary significantly.

The Department used one compliance cost estimate. It obtained an estimate of the cost of complying with the general permit at a typical 20 acre site regardless of the type of project under construction and regardless of the characteristics of the site. As a result, the estimate of compliance costs is approximate.

To make the cost estimate, the Department modified USEPA's compliance cost estimate for a 20 acre site.⁹ The site covers 20 acres; however, only 10 acres are disturbed. The site has two entrances. This cost estimate is used for all types of projects on 20 acre sites.

This chapter's analysis uses the ratio of total compliance cost to the value of the construction project as the measure of the permit's impact. Costs are not annualized as they were in the

⁸ 56 **Federal Register** 40988. August 16, 1991. NPDES General Permits and Reporting Requirements of Storm Water Discharges Associated with Industrial Activity; Proposed Rule.

⁹ The site description is contained in table 7-7 of **Analysis of Implementing Permitting Activities for Storm Water Discharges Associated with Industrial Activity** (USEPA, 1991).

chapter on industrial facilities. The compliance-cost-to-value ratio is an estimate of the percentage increase in the cost of the construction activity caused by the general permit.

Stormwater Pollution Prevention Plans: Cost Estimates

Every permitted construction activity must develop a stormwater pollution prevention plan (SWPPP). The SWPPP has is primarily an Erosion and Sediment Control plan (ESCP).

The ESCP contains two parts: 1) a narrative; and 2) a site plan. Among other things, the narrative describes the construction project and the existing conditions at the site. It also lists the erosion and sediment control BMPs that will be used at the site.

Erosion and sediment control BMPs include: sediment ponds and traps; perimeter dikes; sediment barriers; check dams; plastic covering; rip rap; seeding; construction road stabilization; surface roughening; gradient terraces; and wash racks. These BMPs must be inspected and maintained.

Other Permit Requirements: Cost Estimates

See Chapter 6 for background on the cost estimates for the non-SWPPP requirements.

Total Compliance Costs

The table on page 34 shows the estimated total costs of compliance for a 20 acre construction site. The cost estimates are those used in the SBEIS for the 1992 baseline general permit adjusted for inflation. The cost per acre is \$3,049.¹⁰

In this analysis, compliance costs are compared to the value of the construction project. The value is a capital cost. Therefore, compliance costs are not annualized in this table..

The cost estimate for stormwater management devices assumes that a sediment basin will be converted to a stormwater management pond upon completion of construction activity.

This cost estimate is used for all types of projects on 20 acre sites.

¹⁰ In 1992 the Association of General Contractors estimated that compliance costs are \$1,000 to \$2,300 per acre for 20 to 40 acre sites.

COMPLIANCE COSTS: Construction Activities 20.Acre Site	
PERMIT REQUIREMENT	COST
Preparation of SWPPP	\$2,242
Temporary Seeding	5,605
Permanent Seeding	5,605
Entrance Stabilization	5,605
Wash Rack	2,242
Sediment Trap	28,025
Stormwater Management Devices	5,605
Tree Protection	448
Rock Outlet Protection	5,045
Pipe Slope Drain	561
Prohibition of Non-Stormwater Discharges	0
Solid & Liquid Waste Disposal	0
Compliance with Water Quality Standards	0
TOTAL	\$60,982
The sources of these estimates are: 1) 7-7 of Analysis of Implementing Permitting Activities for Stormwater Discharges Associated with Industrial Activity (USEPA,1991); and WSDOT Erosion Control Report (Washington State Department of Transportation 1990). The original estimates have been inflated using the Mans City Cost Index in order to account for inflation since 1990. c:\wsl\indstm2\sb_indsw.xls->Constr_Costs	

7.3 Conclusion on Disproportionality of Cost Impact

The SBEIS compares the costs of compliance for small and large businesses in order to determine whether the general permit disproportionately impacts small business. This is the fundamental requirement that the SBEIS satisfies. This comparison determines whether reduction of the cost impact of the general permit is necessary. If the compliance cost ratio is higher for small business than for large business, then small businesses are disproportionately impacted. (See WAC 173-226-120(3)(c).)

This analysis uses the ratio of compliance cost to the value of the construction project as the measure of the permit's impact. It should be readily apparent that the general permit has a proportionately higher impact on lower value projects. Different types of projects can be built on a 20-acre site. A shopping center, warehouses, office buildings, housing developments, apartments, etc. can be built. A mix of different types of buildings can be built. The value of these different projects varies; the value can vary significantly both between different types of projects and between similar types of projects. Land values will differ for different 20-acre sites. The ability of different 20-acre sites to produce income varies (the ability to produce income determines the value of the land and buildings). A shopping mall can be worth far more than an apartment complex.

However, the compliance cost estimate made in the preceding section assumes that compliance costs are the same for all types of 20-acre projects. Because the value of 20-acre construction projects varies more than compliance costs do (it is assumed that compliance costs do not vary), cost-to-value ratios vary. As the value of the project rises, the cost-to-value ratio falls. (Even if compliance costs are not constant, as long as they vary less than the value of 20-acre projects, cost-to-value ratios will fall as project value rises.)

The cost-to-value ratio falls as the value of the construction project rises. The impact of the general permit on lower-value projects is larger than its impact on higher value projects. As measured by the cost-to-value ratio, the general permit has a proportionally higher impact on low value projects than on high value projects. The permit imposes a disproportionate burden on lower-value projects.

Most of the construction projects under permit are probably undertaken by companies with more than 50 employees. An examination of the list of construction projects that currently hold stormwater general permits shows that most are large. Most would employ more than 50 employees.

8. Reduction of Economic Impact On Small Business

8.1 Introduction

The rule governing the writing of general permits requires that disproportionate economic impacts of general permits, on small businesses be reduced when it is legal and feasible in meeting the stated objectives of the federal Clean Water Act and the state Water Pollution Control Act. If the cost-to-sales ratio is higher for small business than for large business, then small businesses are disproportionately impacted. Cost-reduction measures must include one or more of the following measures:

- Use of differing compliance or reporting requirements or timetables for small businesses.
- Clarify, consolidate, or simplify the general permit's compliance and reporting requirements for small businesses.
- Establish performance rather than design standards.
- Exempt small businesses from some conditions of the general permit.

Cost impacts on small businesses are reduced by modifying conditions of the permit. Note that the law states that mitigation only needs to be undertaken when ***it is legal and feasible in meeting the stated objectives of the federal Clean Water Act and the state Water Pollution Control Act***. This provision is an important restriction.

Ecology took the following steps to reduce the impact on small businesses of the requirement to obtain and comply with the two stormwater general permits:

1. Use of general permits rather than individual permits.
2. Certain industries are given additional time to comply with permit conditions.
3. The permits do not contain monitoring requirements or effluent limits.
4. The permits require only minimal reporting and recordkeeping. However, they do not require submission of the reports and records to Ecology.
5. The permits emphasize application of reasonable operational and source control best management practices (BMPs) in order to minimize instances where more costly treatment BMPs must be used.
6. The permits allow the permit holder to select equivalent BMPs for the purpose of cost-effectiveness or for other reasons.
7. The permits' application forms are short (one page) and the application procedure is simple. They require minimal time and cost to complete.

These cost reduction measures are described below.

8.2 Necessity to comply with State and Federal Laws

The general permit rule states that mitigation only needs to be undertaken when it is ***legal and feasible*** in meeting the stated objectives of the Clean Water Act and Chapter 90.48 RCW, the State Water Pollution Control Act. This provision is an important restriction. If a proposed

mitigation measure violates federal law or regulations or if it violates state statutory law or rules, then it cannot be undertaken.

The conditions of the general permit that are based on federal regulations are requirements of federal law. Significant mitigation of these conditions would be a violation of federal NPDES program regulations, which establish effluent standards. Because these conditions are a consequence of federal law, they cannot be mitigated and the compliance costs associated with them cannot be reduced. Only the compliance costs associated with permit conditions that are stricter than those of federal regulation can be mitigated.

Permit conditions required to meet the AKART (All Known, Available, and Reasonable Treatment) requirement of the state Water Pollution Control Act (RCW 90.48.010) are also legal requirements that Ecology cannot allow permit holders to violate. Thus, compliance costs related to permit conditions based on the AKART requirement also cannot be mitigated.

Ecology also places conditions in general permits to ensure that dischargers do not violate the state surface water quality, ground water quality, and sediment management standards. These conditions are legal requirements that Ecology cannot allow permit holders to violate. Compliance costs associated with these permit conditions cannot be mitigated.

Compliance costs associated with permit conditions based on these state and federal laws and regulations cannot be mitigated. These laws and regulations are not at issue here: the general permit has no authority to alter them or to allow violations of them. These circumstances restrict the Department's ability to reduce cost impacts on small businesses. Only costs imposed by permit conditions that are stricter than those required by these laws can legally be mitigated.

8.3 *Effectiveness of Permits in Controlling Water Pollution*

The general permit rule states that mitigation only needs to be undertaken when it is legal and feasible ***in meeting the stated objectives*** of the Clean Water Act and Chapter 90.48 RCW, the State Water Pollution Control Act. Even if a proposed mitigation measure is legal, if it would limit the general permit's effectiveness in controlling water pollution too much, it should not be undertaken.

8.4 *Cost-Reduction Measures*

Differing Compliance or Reporting Requirements

The Federal Clean Water Act and federal NPDES regulations establish some minimum requirements for the discharge of industrial stormwater. The Federal Clean Water Act requires the application of Best Available Technology Economically Achievable (BAT) prior to the discharge of toxic or unconventional pollutants. It requires the application of Best Conventional Pollutant Control Technology (BCT) for conventional pollutants. And it requires more stringent limitations if necessary to meet water quality standards.

For the baseline general permit for industrial stormwater, USEPA has decided that the implementation of Best Management Practices (BMPs) constitutes the application of BAT and BCT. In USEPA regulations, permittees are given the responsibility to make a judgement as to which source control and treatment BMPs are necessary to reduce the amount of pollutants discharged with stormwater and to comply with water quality standards. The combination of the general permit approach and the ability to select appropriate BMPs provides industrial stormwater discharges more flexibility and is less burdensome than the customary individual permit approach. That customary approach involves more administratively complex individual permits and specific technology-based effluent limitations.

USEPA holds, therefore, that the cost of complying with its general permit will be lower than the cost of complying with an individual permit.¹¹

On the basis of the position that the general permit lowers costs, USEPA's general permit was exempted from the federal Regulatory Flexibility Act, which is the federal counterpart to the state Regulatory Fairness Act. Due to this exemption, USEPA was not required to write a Regulatory Impact Analysis, which is the federal counterpart to a SBEIS.

In its approach to writing permits for industrial stormwater discharges, Ecology is adopting the same general approach as USEPA. It does not have the option to do less. Because Ecology's industrial stormwater general permit is applicable to a wide range of industry types and business sizes, its requirements are minimums that are applicable to even the smallest industries. This approach has been crafted with the intent of being as accommodating to small businesses as possible, without compromising the intent of federal law. The ease of permit application, the absence of effluent monitoring requirements and effluent limitations, permittee flexibility in developing appropriate BMPs, and the relief from initial Ecology review and approval of Stormwater Pollution Prevention Plans are all examples of aspects of the permitting approach which have minimal impacts to industries when compared to the traditional system of permits.

Differing Compliance Timetables

Ecology is proposing to allow up to eighteen months for new facilities to complete implementation of their Stormwater Pollution Prevention Plans (see Condition S1.B.2). Additional time for small businesses may be considered (see Condition S1.B.3.C).

In many cases, Ecology anticipates that the application of technology based BMPs will result in compliance with surface water, ground water and sediment standards. However, in some cases we anticipate that they will not be sufficient, and that more source control or treatment will be necessary. Ecology cannot predict which facilities will be in that situation. Therefore; Ecology will establish a process, to be employed in either this or the next permit cycle, to identify those facilities and to bring them into compliance (see Condition S7). This approach will result in an

¹¹ USEPA states that the general permit "would generally make the NPDES regulations more flexible and less burdensome for permittees." 56 **Federal Register** 40991. August 16, 1991.

unknown number of facilities not achieving compliance with state surface water, ground water, and sediment quality standards until they are identified and have implemented additional BMPs. However, Ecology does not see any reasonable alternative to its proposed approach. In developing its strategy for bringing these facilities into compliance, Ecology will consider whether the size of the business should be a factor in determining its compliance schedule.

For industrial facilities and construction activities that begin operations after issuance of the permit, Ecology is requiring development and implementation of the Stormwater Pollution Prevention Plan prior to initiating operations. This is also required in USEPA's baseline industrial stormwater general permit. It is reasonable, practical, and, in some cases, cost-effective to design BMPs into the project or the facility rather than to retrofit them.

Clarify, Consolidate, or Simplify the Permits' Compliance and Reporting Requirements

The permit does allow for judgements to be made by the permittee concerning selection and implementation of BMPs. Because water pollution control is a new concept to many small businesses, Ecology anticipates a need for supplying technical assistance to permit holders. Ecology has written a guidance document describing how to prepare a stormwater pollution prevention plan. It is sent to all new permit holders. Ecology also has two technical/regulatory assistance staff who help permit holders to understand the permits, complete forms, and select BMPs.

Partly in response to the requirement for simplification of compliance and reporting requirements, the permit's monitoring and reporting requirements have already been greatly simplified. The routine chemical and biological monitoring which is required by most NPDES permits is not required by the two stormwater general permits. Neither is reporting to Ecology. Two self-inspections per year are the only on-going monitoring requirements.

Establish Performance Rather Than Design Standards

For the stormwater industrial general permit, establishing performance guidance-that is, discharge targets-would probably not prove more costly to small businesses than the requirement for application of BMPs without specified discharge targets. The inclusion of these discharge targets should provide helpful guidance to permittees in implementing technology-based BMPs. Ecology has not included mandatory effluent limits in the permit because it does not have the technical basis to establish technology-based mandatory effluent limitations for the hundreds of industry types or the thousands of businesses covered by the federal industrial stormwater permit regulations..

Exempt Small Businesses from Any or All Requirements of the Permits

Federal NPDES regulations (40 CFR 122.26(b)(14)) identify the categories of industries which are required to have permits for stormwater discharges for their industrial activities. Ecology does not have the authority to exempt these industries from the requirement to obtain permit coverage: With the exception of sewage treatment plants and construction sites, the federal regulations apply to all sizes of businesses in those industrial categories.

With regard to the requirements of the permit, there is no subset of requirements which small businesses can be exempted from. All businesses should apply the reasonable operational and source control BMPs to prevent pollution. If significant pollutants remain in the discharge after such prevention based BMPs are applied, then treatment BMPs should be applied, regardless of the size of the business. The treatment BMPs are needed in order to comply with federal (BCT/BAT) and state (AKART) requirements.

The Ecology permits for industrial and construction activity go beyond the federal regulatory requirements with regard to the types of facilities that must obtain permit coverage. Ecology has decided to apply the permit requirements to discharges of stormwater to ground waters, in addition to a discharge to surface waters, for those industries which have both types of discharges. Federal NPDES regulations only apply to discharges to surface waters. Ecology does not know how many businesses have both types of discharges on one site, and, therefore, does not know the extent to which its permit goes beyond the federal minimum requirements.

This additional coverage aspect should not add a significant cost burden. These industries will already be required to comply with permit requirements for that portion of their facility which drains to a surface water or to a storm conveyance which discharges to a surface water. Identifying and implementing pollution control measures in those areas of the facility which drain to ground water can and should be most easily done at the same time.

Also, under the 1995 general permit, "auxiliary facilities" must obtain coverage under the industrial general permit. Under the 1992 permit, such facilities were not required to obtain permit coverage. "Auxiliary facilities" carry out activities which are classified within the industries (and SIC codes) which must obtain permit coverage but whose parent company is classified within an industry which is not required to obtain permit coverage.

Additionally, Ecology may in the future issue a separate permit which is applicable to those industries which only have stormwater discharges to the ground: Therefore, relieving industries which have surface and ground water discharges from the requirement to address ground water in this permit may only delay a portion of their cost impact. Ecology is not issuing such a permit now because the scope of the federal stormwater program is already administratively burdensome.

Conclusion

The economic analysis shows that the general permit has a disproportionate impact on small industrial facilities and on lower value construction projects. Therefore, mitigation must be considered for these facilities and projects. Ecology believes that the preceding sections of this chapter list all the mitigation measures that are legal and feasible.

Many aspects of the proposed industrial stormwater permit are required by federal law and regulation and by state law. Ecology is not empowered to change those requirements. The

general permitting approach and the general permit's content have been geared to minimize impacts to all industries while complying with the intent of the federal law. The general permit's minimum requirements were written from the perspective that many industries--in particular many small businesses--should be able to significantly reduce the amount of pollutants in their stormwater by applying reasonable, low-cost source control measures. Therefore, the permitting approach and the permit requirements allow them to focus their available resources on effecting those solutions rather than on bureaucratic details, monitoring, and reporting requirements.

Appendix A

Method of Estimating Sales

INTRODUCTION

The SBEIS uses the ratio of a business's compliance cost to its annual sales as the measure of the general permits impact. This appendix contains an explanation of how the sales estimates for small and large businesses are made.

In order to calculate cost-to-sales ratios for each industry, estimates of the range of sales were made for small and large businesses in each industry. Then, for both the small and large businesses in each industry, an estimate of the low end point of the cost-to-sales ratio range was calculated by dividing the low end point of the cost range by the high end point of the sales range. Similarly, an estimate of the high end point of the cost-to-sales ratio range was calculated by dividing the high end point of the cost range by the low endpoint of the sales range.

DATA SOURCES AND SALES ESTIMATES

In order to make sales estimates for small businesses (50 or fewer employees) and large businesses (more than 50 employees) for each industry, data from the **1987 Census of Manufacturers: Washington**, the **1987 Census of Mineral Industries: Pacific States**, (U.S. Department of Commerce, Bureau of the Census, 1990), and the **1992 Census of Wholesale Trade: Washington** (U.S. Department of Commerce, Bureau of the Census, 1995) were used to calculate sales-per-employee ratios. These publications did not contain information on several industries. For these industries, data from the **Quarterly Business Review: Calendar Year 1993** (Washington State Department of Revenue) and from **Employment and Payrolls in Washington State by County and Industry: 1993 Annual Averages** (Washington State Employment Security Department) were used to calculate sales-per-employee ratios.

Data from **County Business Patterns, 1992: Washington** (U.S. Department of Commerce, 1994) were used to estimate the range of the number of employees per business in small and large businesses. **County Business Patterns** contains data on the number of businesses with certain numbers of employees for all sectors of the economy. For example, it presents data on the number of inorganic chemical manufacturers with between 1 and 4 employees, between 5 and 9 employees; etc.

Then, the sales-per-employee ratio was multiplied by the median number of employees in each employee-size class to yield the sales estimate for that employee-size class. These calculations yield ranges, of sales for small and large businesses in each industry.

The **Washington Manufacturers Register, 1992** (Database Publishing Co., 1992) was also used as a source of sales and employment data for most industries. In particular, data from this publication were used to estimate the sales and employment of large companies and to determine whether there were any small companies in certain industries.

For some industries, employment and sales data could not be obtained because of the disclosure rules of the Bureau of the Census. Information on individual firms cannot be disclosed.

The sales estimates were made using a limited amount of data, and, therefore, their accuracy is limited. Generally, upper and lower limits were placed on sales for small and large businesses. A fairly high degree of confidence can be placed in these limits.