



DEPARTMENT OF
ECOLOGY
State of Washington

Revised Small Business Economic Impact Statement

Chapter 173-400 WAC

General regulation for air pollution sources

Chapter 173-460 WAC

Controls for new sources of toxic air pollutants

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Revised Small Business Economic Impact Statement

**Chapter 173-400 WAC
General regulation for air pollution sources**

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Controls for new sources of toxic air
pollutants**

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Table of Contents

Note: Due to size limitations relating to the filing of documents with the Code Reviser, the SBEIS does not contain the appendices that further explain Ecology’s analysis. Additionally, it does not contain the raw data used in this analysis, or all of Ecology’s analysis of this data. However, this information is being placed in the rule-making file, and is available upon request.

TABLE OF CONTENTS	III
EXECUTIVE SUMMARY	1
1. BACKGROUND	1
2. COMPLIANCE COSTS FOR WASHINGTON BUSINESSES	6
3. QUANTIFICATION OF COSTS AND RATIOS	7
4. ACTION TAKEN TO REDUCE SMALL BUSINESS IMPACTS	7
5. SMALL BUSINESS INVOLVEMENT	8
6. NAICS CODES OF IMPACTED INDUSTRIES	9
7. IMPACT ON JOBS	9

Executive Summary

Based on research and analysis required by the Regulatory Fairness Act – RCW 19.85.070 – Ecology has determined that the amendments to Chapters 173-400 and 173-460 WAC have a disproportionate impact on small business. Therefore, we must include cost-minimizing features in the rule where it is legal and feasible to do so.

1. Background

General Air Pollution Regulations and New Source Review

In order to protect air quality in the state, Washington law requires permitting of significant sources of criteria pollutants, and new sources of toxic air pollutants (TAPs). Criteria pollutants are pollutants for which EPA has set National Ambient Air Quality Standards to protect human health and welfare. TAPs are airborne chemicals that have been shown to be hazardous to human health. These chemicals are associated with a wide variety of ailments and disorders when people are exposed to them.

Washington State has been regulating new sources of these pollutants since 1991 via the permitting process. The regulation was last updated in 1994 to reflect scientific knowledge current at that time. Proposed projects which will establish a new source of air pollution may be required to obtain a new source review (air quality) permit prior to beginning construction.

Ecology or the local clean air agency with jurisdiction is responsible for reviewing projects that will install a new source or modify an existing source of TAPs. Applicants proposing to install a new source—or modify an existing source—of TAPs are required to submit a Notice of Construction (NOC) application to Ecology or the local air authority.

The application must include a detailed description of the project, and include process equipment information, type and amount of air contaminants that would be emitted, air pollution control practices, and air pollution control equipment. Some types of projects—such as residential uses, or projects emitting less than specific emission thresholds of particular TAPs—are exempt.

Criteria Air Pollutant Exemption Limits

The baseline rule (WAC 173-400, prior to the adoption of this amended rule) describes the standards for defining exempt sources of criteria air pollutants. Listed sources emitting below these levels are exempt from program requirements for criteria air pollutants. The current rule contains exemption limits (essentially de minimis limits) for carbon monoxide, nitrogen oxides, sulfur dioxide, particulate matter, fine particulate, and volatile organic compounds.

Exemption limits in the existing regulation were calculated by dividing the Environmental Protection Agency's (EPA's) Prevention of Significant Deterioration (PSD) increment levels by 20 (setting them at 5 percent of the EPA's PSD increment levels). Increment is the maximum amount of pollutant (measured in tons per year) that a PSD permit can allow to be emitted and not break the modeled ambient concentrations. PSD increment levels are designed to:

- Protect public health and welfare;
- Preserve, protect, and enhance the air quality in national parks, national wilderness areas, national monuments, national seashores, and other areas of special national or regional natural, recreational, scenic, or historic value;
- Insure that economic growth will occur in a manner consistent with the preservation of existing clean air resources; and
- Assure that any decision to permit increased air pollution in any area to which this section applies is made only after careful evaluation of all the consequences of such a decision and after adequate procedural opportunities for informed public participation in the decision making process.¹

Three Existing Tiers of Toxic Air Permitting

There are three levels of review when processing a permit application for a new or modified emissions unit emitting TAPs:

- Toxic Screening (First Tier)
- Health Impacts Assessment (Second Tier)
- Risk Management Decision (Third Tier)²

First Tier Analysis

All projects are required to undergo a First Tier toxic screening analysis as required by WAC 173-460-040. There are two ways to perform a First Tier analysis:

- Determine if proposed emissions are below the Small Quantity Emission Rate (SQER) tables. If yes, then further analysis is not required.
- If emissions of a TAP are greater than the relevant SQER, those emissions must be modeled, and the resultant ambient concentration is compared to the appropriate Acceptable Source

¹ EPA Prevention of Significant Deterioration (PSD) Basic Information website:

<http://www.epa.gov/nsr/psd.html#air>

² The amended rule changes the names of these levels of review to the names in parentheses. For clarity, this document uses "First Tier", "Second Tier" and "Third Tier" throughout when referring to these levels of review.

Impact Level (ASIL). If the ambient concentration is below the ASIL, then no further analysis is required.

- If the modeled ambient concentration of a TAP is above the relevant ASIL, the permit moves to Second Tier review, below.

It is most common for NOC permit applications to require only First Tier review. Based on recent permitting data, approximately 400 – 450 First Tier permits are issued in Washington State each year.³

Second Tier Analysis

A Second Tier analysis (WAC 173-460-090) is a site-specific Health Impacts Assessment of the emissions resulting from a proposed project. The objective of a Second Tier analysis is to quantify:

- The increase in lifetime cancer risk for persons exposed to the increased concentration of any carcinogenic TAP
- The increased health hazard from any non-carcinogenic TAP in ambient air

Once quantified, the cancer risk is compared to the maximum risk allowed by a Second Tier analysis (one in one hundred thousand). The concentration of any non-carcinogenic TAP that would result from the proposed project is compared to a risk-based concentration.

This level of permitting is considerably less common than First Tier analysis. Based on recent permitting data, approximately six Second Tier permits are issued in Washington State each year.⁴

Third Tier Analysis

If the emissions of a carcinogenic TAP result in a cancer risk of greater than one in one hundred thousand, then an applicant may request Ecology Headquarters to perform a Third Tier analysis. A Third Tier analysis is basically a risk management decision, in which the director of Ecology makes a decision that the risk of the project is acceptable, based on determination that emissions will be maximally reduced through:

- Available preventive measures
- Assessment of environmental benefit
- Disclosure of risk at a public hearing

³ Based on a survey of clean air authorities in Washington State. Clean air authorities/agencies: Benton, Northwest, Olympic Region, Puget Sound, Southwest, Spokane Regional, and Yakima. Ecology regional offices administering NOC permits: Central Regional Office and Eastern Regional Office. Most recent, or averaged most recent number of completed NOC permits, and number involving TAPs, if available.

⁴ Second Tier NOC permit review is performed by Ecology. Average of six permits annually based on completed NOC permits.

- Related factors associated with the facility and the surrounding community

There has never been an NOC permit application that has required Third Tier review.

Regulatory Baseline

The baseline for all analyses of the amended rule is the regulatory environment in the absence of any changes. Under the previous regulatory framework, the permitting process for New Source Review would remain as is described above (see [New Source Review](#)). Without the adoption of the amended rule, the existing permitting process would remain in place.

Changes under the Amended Rule

The amendments to Chapters 173-400 and 173-460 WAC make a number of changes to the permitting process, air quality screening standards, applicability, and organization and consistency of regulatory language. Each of these actions is authorized by the Clean Air Act (Chapter 70.94 RCW).

Specific changes under the amendments include:

- Updating the TAPs and screening levels (Acceptable Source Impact Level, or ASIL; Small Quantity Emissions Rate, or SQER) involved in the permitting process with current scientific knowledge.
- Establishing de minimis values for emissions.
- Adding exemption emissions level for Particulate Matter - 2.5 (PM-2.5) as a criteria pollutant.
- Optional emissions netting within and across facilities.
- Expanding applicability of New Source Review.
- Streamlining language and procedures.

Each of these is describe in detail, below.⁵

Updating TAPs, ASIL values, and SQER values

The amended rule updates the list of regulated TAPs and their associated ASIL values based on a four-step procedure and three established sources of toxicological and health information. The process Ecology used in selecting

⁵ Third Tier analysis is only performed for carcinogens under the existing baseline, and all risks of non-carcinogenic TAPs are evaluated in the Second Tier analysis. Under the amended rule, both carcinogens and non-carcinogens are included in Third Tier analysis. As there has never been an NOC permit application that has required Third Tier review, Ecology does not expect future Third Tier review, and therefore does not expect an impact from this rule amendment.

ASIL values and which TAPs to include in the amended list sourced risk-based concentrations from:

- US Environmental Protection Agency.
- Agency for Toxic Substances and Disease Registry.
- California Office of Environmental Health Hazard Assessment.

Ecology determined that if TAPs were not addressed by these sources, they did not have an ASIL, and therefore did not include them in the amended regulatory list for this rule.

Ecology updated SQERs based on the relevant amended ASIL values. Like ASILs, SQERs are additional screening levels, used to determine the necessary level of review.

Establishing De Minimis Values for Emissions

Ecology calculated de minimis emissions rates based on the relevant amended ASIL values. De minimis emissions values are minimum emissions rates for first Tier review. If a proposed new source of TAPs has expected emissions below de minimis levels for a TAP, the NOC permit application does not require First Tier review for that TAP. For new sources of TAPs with expected emissions below de minimis levels for all TAPs, no evaluation by Ecology or a local clean air authority is necessary.

Adding exemption emissions level for Particulate Matter - 2.5 (PM-2.5)

The amended rule includes the addition of an exemption level for PM-2.5 to the exempt emissions rates for criteria air pollutants. Since this rule was last revised, the EPA established a Prevention of Significant Deterioration (PSD) emissions rate and increment level for PM-2.5. Ecology updated the rule to reflect this change.

Ecology calculated the emissions rate of 0.5 tons/year in the same way that it calculated existing exemption levels for the other criteria pollutants. Ecology multiplied the PSD increment level recently set for PM-2.5 by the EPA (10 tons/year) by 5 percent, resulting in an exempt level of emissions of 0.5 tons/year.

Under the baseline, new sources are required to calculate emissions rates for the criteria pollutants, and compare them to the exemption levels. If all emissions – including PM-2.5 are below exemption levels (for PM-2.5, the baseline exempt emissions rate is zero), then the project is exempt from registration program requirements. This means, if any PM-2.5 is going to be emitted, the project cannot be exempt under the existing rule.

Emissions Netting

Where proposed new sources of TAPs are required to install emissions controls, the amended rule allows permit applicants to generate an equivalent net reduction in emissions across multiple emissions units or sources, including existing sources. Emissions netting is constrained by the type of TAP emissions that must be reduced, and the source location. This option does not exist under the baseline rule.

Expanding Applicability

The baseline rule for new sources of TAPs applies to those types of sources specifically listed in the rule. The amended rule expands New Source Review to all new sources, except those that qualify for exemption—either categorically, or by de minimis emissions standards. Under the baseline, New Source Review only applies to new sources that are listed categorically in the rule.

Streamlining Language and Procedures

The baseline New Source Review permitting process involves multiple regulations, with TAPs listed across separate tables, in separate sections of the code. In addition, the baseline permitting process applies to select industries, and can apply differently across industries and attributes of proposed new TAP sources. The amended rule streamlines applicability, and clarifies the regulation and permitting process.

2. Compliance Costs for Washington Businesses

Ecology calculated – in the Cost-Benefit Analysis (Ecology Publication No. 09-02-010) for the amended rule – that the rule will result in quantifiable costs and benefits to Washington businesses, as well as qualitative impacts that could not be precisely estimated quantitatively. These impacts on Washington businesses are as follows.

- **\$624 thousand annually** in reduced costs to First Tier permittees
(Range \$0 – \$1.2 million)
- **\$123 thousand annually** in reduced costs to Second Tier permittees
(Range \$0 – \$148 thousand)
- Reduced permitting expenses and time, due to streamlined regulation.
- Reduced permitting costs due to option of netting emissions across multiple facilities.
- Standardized de minimis emissions levels that exempt some new sources from permitting requirements.
- Reduced costs of registration and reporting for PM-2.5.

- Minor avoided costs for First Tier permittees analyzing fewer TAPs in excess of Small Quantity Emissions Rate screening levels.
- **\$3.8 million annually** in increased costs to First Tier permittees
(Range \$1.5 million in cost savings, to \$9.7 million in additional cost)
- Increased cost of notifying the permitting authority of de minimis new sources that are not currently regulated.
- Minor increased costs for First Tier permittees analyzing additional TAPs in excess of Small Quantity Emissions Rate screening levels.

As many of these benefits to businesses were not quantifiable, Ecology focused on the most conservative quantified net costs, as based on quantified benefits and costs from the Cost-Benefit Analysis, at the most likely average estimates.

Using the average quantified expected costs and benefits, the amended rule generates a net quantified cost of \$3.1 million per year to Washington businesses that must comply with the rule. (See the associated Cost-Benefit Analysis, Ecology Publication #09-02-010 for the amended rule for more information on these calculations.)

3. Quantification of Costs and Ratios

Ecology based its aggregate calculations on estimates of the annual number of NOC permits impacted by the amended rule, in Washington State. The expected number of impacted NOC permits each year is 143, after accounting for permits that do not include any TAP emissions, and permits that are not expected to change in the number of TAP emissions exceeding the relevant SQER values.

Dividing the range of annual net compliance costs to Washington businesses, Ecology calculated that at the average expected cost to businesses, the quantifiable impact of the amended rule is **\$22 thousand per NOC permit**. This cost applies to the average Washington business, but is most likely for businesses that are more likely to undergo Second Tier review under the amended rule. In addition, this cost is likely to be lower, when accounting for the qualitative impacts of the amended rule discussed above.

This cost is expected to be constant for any typical new source of TAPs, as Ecology could not determine whether there is a significant correlation between business size, new source size, the TAPs emitted, and the impacts of the amended rule. Therefore, **Ecology concluded that on a per-employee basis, the amended rule has a disproportionate impact on small businesses.**

4. Action Taken to Reduce Small Business Impacts

As the amended rule either updates the rule's scientific content to current scientific standards, or serves to make compliance with the rule easier or less

expensive, Ecology determined that existing provisions in the rule (those in the previous rule that also remain in the amended rule) were otherwise sufficient to aid small businesses in compliance. The primary compliance costs to businesses are (1) analysis costs and (2) fees.

For analysis costs, these depend, to some extent, on the number of TAPs emitted by a new source, in excess of the relevant de minimis levels and SQERs. If there is a correlation between business size and the size of a new source's emissions of TAPs, then small businesses are more likely to emit below the amended rule's new de minimis emissions levels, or revised SQER values for all TAPs. This makes it more likely that small businesses will not require New Source Review, or will at most require First Tier review.

For fees (to local clean air agencies and/or Ecology), existing provisions in the rule, which remain in the amended rule, aid small businesses in compliance by attempting to reduce their disproportionate burden by offering fee reductions. The amended rule retains fees determined by reference to another section of the code.

Section 173-455-120 WAC (New Source Review Fees) allows for a fee reduction for small businesses. The definition of small business is, "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." This corresponds to the definition used for Small Business Economic Impact Statements.

The New Source Review fee for small businesses that apply for a fee reduction is then the greater of:

- Fifty percent of the New Source Review fee; or
- Two hundred fifty dollars

An extreme hardship fee reduction is also available for small businesses. This reduction will further reduce fees, to a level determined by Ecology, for small businesses with "special economic circumstances." See 173-455-120(4)(e) WAC for determinants of "special economic circumstances" and the extreme hardship fee.

5. Small Business Involvement

In the rule development process for the amended rule, Ecology held stakeholder meetings that included direct and indirect small business representation. Two small businesses were directly represented by employees participating in the stakeholder process. Other small businesses were represented in the stakeholder process by the Independent Business Association and the Association of Washington Business.

6. NAICS Codes of Impacted Industries

The amended rule expands applicability of the New Source Review rule to all new sources of TAPs. Many of these sources are not expected to experience an impact from the rule due to exemption or size of TAP emissions, although Ecology cannot be certain of all businesses that will be newly affected, as this data does not exist. Based on a review of past NOC permits requiring First Tier or Second Tier review, Ecology expects the amended rule to generate cost impacts for new sources in *at least* the industries listed in Table 1.

NAICS Code	Total Businesses in WA	Small Businesses
337110	689	670
811121	1,111	1100
811490	842	841
221320	14	14
212312	2	2
325211	14	13
327310	5	3
311920	29	27
517210	604	598
321113	44	31
511210	15	13
519130	0	0
562219	29	26
423920	189	183
221112	7	6
324110	22	18

Source: Washington State Employment Security Department industry and employer data. Note that this includes only businesses or parts of businesses operated in Washington. The actual number of small businesses may be smaller, as this dataset does not reflect Washington-based subsidiary operations of larger interstate or international corporations.

7. Impact on Jobs

By creating additional compliance costs to some businesses, in the form of payments to regulatory agencies, environmental consultants, and emissions control manufacturers and installers, the amended rule creates transfers of money between these industries. These financial impacts can then filter through the economy (additional or reduced resources to employ individuals, purchase inputs, etc.).

Ecology used the 2002 Washington State Office of Financial Management Input-Output model to estimate the impacts of financial transfers created by the amended rule. Ecology weighted each industry's share of total annual costs by that industry's share of total impacted businesses (see Table 1).

Based on payments made by impacted industries going entirely to the consulting and analysis industry (as in the most conservative estimate of costs), the amended rule generates a net gain in employment of over 10 full-time jobs each year. Table 2 summarizes the distribution of job impacts across industries.

Table 2: Aggregate Employment Impacts	
Industry Group	Change in Employment
Natural Resources	-0.018
Utilities	-0.025
Construction	-0.320
Manufacturing	-5.497
Retail Trade	+1.875
Wholesale Trade	-0.740
Producer and Transport Services	+0.224
Consumer Services	+15.186
Total Net Change	10.686