DEPARTMENT OF
ECOLOGY
State of Washington

Final Cost-Benefit and Least-Burdensome Alternative Analyses

Chapter 173-185 WAC, Oil Movement by Rail and Pipeline Notification

August 2016

Publication no. 16-08-019

Publication and Contact Information

This report is available on the Department of Ecology's website at
https://fortress.wa.gov/ecy/publications/SummaryPages/1608019.html

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Chapter 173-185 WAC, Oil Movement by Rail and Pipeline Notification

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Executive Summary

This report presents the economic analyses performed by the Washington State Department of Ecology ("Ecology") to estimate the costs and benefits of the adopted *Oil Movement by Rail and Pipeline Notification* rule (chapter 173-185 WAC; "the rule"). These analyses – the Cost-Benefit Analysis (CBA) and Least-Burdensome Alternative Analysis (LBA) – are based on the best available information at the time of publication.

The baseline for our analyses generally consists of existing rules and laws, and their requirements. For economic analyses, the baseline also includes the implementation of those regulations, including any guidelines and policies that result in behavior changes and real impacts. This is what allows us to make a consistent comparison between the state of the world with or without the adopted rule.

In the current analysis, discretionary requirements and costs are identifiable, however, the benefits attributable to these requirements cannot be separated from the overall benefits of the rule. Therefore, while discretionary costs are discussed, overall costs and benefits are compared.

The estimated total costs of the rule is the aggregate of the costs for all of the impacted businesses.

Table 1. Total 20-year Present Value Costs

Total Cost in 2016 20-Year Present Value	Low estimate	High estimate
Facilities	$69,953	$290,460
Transmission Pipelines	$344	$1,428
Total	$70,297	$291,888

The likely costs associated with the adopted rule are estimated to range from $70 thousand to $292 thousand in 20-year 2016 net present value.

The rule provides the following likely benefits, as compared to the baseline.

Through improved response time and targeted response, the information provided by notification of crude oil movement by rail and pipeline will likely diminish the potential damages of spills or incidents associated with oil transportation by railroad car or pipeline, potentially significantly.

Ecology concludes, based on reasonable understanding of the quantified and qualitative costs and benefits likely to arise from the adopted rule, that the benefits of the rule are greater than the costs.

After considering alternatives to the adopted rule's contents, as well as the goals and objectives of the authorizing statute, Ecology determined that the rule represents the least-burdensome alternative of possible rule contents meeting these goals and objectives.

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Chapter 1: Background and Introduction

1.1 Introduction

This report presents the economic analyses performed by the Washington State Department of Ecology ("Ecology") to estimate the costs and benefits of the adopted *Oil Movement by Rail and Pipeline Notification* rule (chapter 173-185 WAC; "the rule"). These analyses – the Cost-Benefit Analysis (CBA) and Least-Burdensome Alternative Analysis (LBA) – are based on the best available information at the time of publication.

The Washington Administrative Procedure Act (APA; RCW 34.05.328) requires Ecology to evaluate significant legislative rules to "determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the law being implemented." Chapters 1 through 5 of this document describe that determination.

The APA also requires Ecology to "determine, after considering alternative versions of the rule…that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives" of the governing and authorizing statutes. Chapter 6 of this document describes that determination.

1.2 Reasons for the adopted rule

Ecology is directed by RCW 90.56.565(6) to adopt rules for notification of crude oil movement by rail and pipeline.

1.3 Document organization

The remainder of this document is organized in the following chapters:

- Baseline and the adopted rule (Chapter 2): Description and comparison of the baseline (what would occur in the absence of the rule) and the rule requirements.
- Likely costs of the adopted rule (Chapter 3): Analysis of the types and sizes of costs we expect impacted entities to incur as a result of the rule.
- Likely benefits of the adopted rule (Chapter 4): Analysis of the types and size of benefits we expect to result from the rule.
- Cost-benefit comparison and conclusions (Chapter 5): Discussion of the complete implications of the CBA, and comments on the results.
- Least-Burdensome Alternative Analysis (Chapter 6): Analysis of considered alternatives to the contents of the adopted rule.

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Chapter 2: Baseline and the Adopted Rule

2.1 Introduction

We analyzed the impacts of the adopted rule relative to the baseline of no rule, within the context of all existing requirements (federal and state laws and rules). This context for comparison is called the baseline, and reflects the most likely regulatory circumstances that entities would face if the rule were not adopted. It is discussed in Section 2.2, below.

2.2 Baseline

The baseline for our analyses generally consists of existing rules and laws, and their requirements. For economic analyses, the baseline also includes the implementation of those regulations, including any guidelines and policies that result in behavior changes and real impacts. This is what allows us to make a consistent comparison between the state of the world with or without the adopted rule.

The authorizing statute (RCW 90.56.565) specifies requirements related to notification for the transportation of crude oil by rail or pipeline. Where the statute is not specific enough to implement directly, Ecology used our discretion to specify more details about how to comply with those requirements. We include an analysis of those requirements in this report.

The statute also required Ecology to share information related to notice and the reports. These requirements were specific in the law and therefore are not evaluated in this analysis.

It is often the case that there is a legal requirement prompting rule contents (in that the law requires rule language to implement it, due to broad authorization or leaving specifics up to Ecology's discretion) that is not entirely separable from the rule requirements. For example, the rule outlines specific requirements for notice, while the authorizing law more broadly describes some of these requirements.

Where possible, Ecology evaluated the costs and benefits of the adopted rule separate from the requirements set by law. In cases where the rule requirements were not separable from the law's requirements, Ecology conservatively chose to evaluate the overall cost of the requirement (as not to underestimate compliance costs), and attempted to evaluate benefits comparably. In the current analysis, discretionary requirements and costs are identifiable, however, the benefits attributable to these requirements cannot be separated from the overall benefits of the rule. Therefore, while discretionary costs are discussed, overall costs and benefits are compared.

2.2.1 Coverage

The rule will cover the actions of four facilities[1] that currently receive crude oil from railroad cars and two that transport crude oil by transmission pipeline in Washington, and any other facilities that receive crude oil from a railroad car or transport crude oil by transmission pipeline in the future.

2.3 Analyzed rule requirements

The rule requirements that differ from the baseline include:

Facility requirements

1. Facilities that receive crude oil from a railroad car must provide advance notice to Ecology of scheduled crude oil arrivals by rail car.
2. The advance notice must include the name, address, and contact information for the facility, the route taken to the facility within the state, if known, and the scheduled time, location, volume, region of origin per bill of lading, and gravity as measured by standards developed by the American petroleum institute, of crude oil received.
3. If the region of origin and/or gravity is missing from the bill of lading, expected values for this information is allowed.
4. A facility that receives crude oil from a railroad car must submit advance notice each week. The notice must provide the required information regarding the scheduled arrival of railroad cars carrying crude oil to be received by the facility in the succeeding seven-day period.
5. All deliveries scheduled after the advance notice has been reported must be reported to ecology as soon as possible and before the shipment enters the state. If the shipment is already in the state, arrival must be reported when the information is known to the facility.
6. Facilities receiving crude oil by railroad car will report to Ecology via an Ecology internet web site.

Pipeline requirements

1. Pipelines that transport crude oil must report to Ecology the following information about the crude oil transported by the pipeline through the state: The volume of crude oil and the state or province of origin of the crude oil.
2. This report must be submitted each year by July 31st for the period January 1st through June 30th and by January 31st for the period July 1st through December 31st.
3. Pipelines will report to Ecology via email.

[1] The facilities are owned by different companies.

Information sharing

1. Upon request by the state emergency management division and any county, city, tribal, port, or local government emergency response agency, Ecology will share the advance notice information provided by facilities.
2. Ecology will publish the information collected quarterly on Ecology's website. The information published to the website will include: mode of transport, place of origin, number and volume of reported spills during transport and delivery, estimated number of railroad cars delivering crude oil, and volume of crude oil received by facilities and transported by pipeline. Information reported by facilities will be aggregated by route, by week, and by type of crude oil.

2.3.1 Facilities

For facilities that receive crude oil from a railroad car, advanced notice must be given weekly for scheduled deliveries in the succeeding seven days. This notice will be done through an Ecology provided website and includes data that should be readily available to the receiving facilities. If information on region of origin or gravity of crude oil is not available at the time of reporting, estimates are allowed. For any newly scheduled arrivals of railroad cars carrying crude oil after the advance notice timeframe, the scheduled arrival must be reported to Ecology as soon as possible and before the shipment enters the state. If the shipment is already in the state, the arrival must be reported when the information is known to the facility.

In the list of requirements above, each is mandated by statute, other than providing name, address, and contact information by facility in requirement 2.

2.3.2 Transmission Pipelines

For businesses that transport crude oil by transmission pipeline, notice of all crude oil transported must be given twice per year via email.

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Chapter 3: Likely Costs of the Adopted Rule

3.1 Introduction

We estimated the likely costs associated with the adopted rule, as compared to the baseline. Costs associated with discretionary aspects of the rule, as well as comprehensive costs are identified. Requirements and the baseline are discussed in detail in Chapter 2 of this document. Likely costs of the rule arise from:

- Facilities receiving crude oil via railroad car providing advance notification for each scheduled arrival.
- Pipelines transporting crude oil via pipeline providing biannual notification via email.

3.2 Facilities

The adopted rule states that businesses receiving oil via rail provide advanced notification detailing the shipment via an Ecology provided website. This will occur weekly describing expected shipments during the next seven days. If deliveries are added after reporting, the facility is expected to report as soon as possible.

As the data to be provided should be readily available to notifying businesses, the cost incurred will be the time required to input the data.

It is estimated that the input for each delivery will take roughly 10 minutes[2]. The impacted facilities estimate that they will receive 805 deliveries in 2016. This would result in roughly 134 hours total spent providing advanced notification annually. The cost of this time depends on who is doing the notification. If the notification is done by administrative support staff, the average loaded wage of $29.08[3] yields a total cost of $3,901 per year. This includes benefits equaling 35.5 percent of salary, and overhead equaling 26.1 percent of salary and benefits. If notification is done by a petroleum engineer, the loaded average wage of $120.73[4] yields a total cost of $16,198 per year. This represents comprehensive (both discretionary and non-discretionary) costs for the facilities.

For the four covered facilities, this cost is equivalent to a 20-year cost between $70 thousand and $290 thousand in 2016 present value, using a 1.18-percent discount rate.[5] Actual comprehensive costs will likely fall within this range.

Discretionary costs include only the cost of providing the name, address, and contact information for the covered facility. As this will be done through an ecology-provided website, it will be

[2] It should be noted that this is a conservative estimate. In reality, it is likely to take less time.
[3] www.bsl.gov/oes/current job code 43-0000.
[4] www.bsl.gov/oes/current job code 17-2171.
[5] US Treasury Department (2016). Historic average real rate of return on US Treasury Department I-Bonds. Associated historic average inflation rate is approximately 2 percent.

done once and carried over to all future submissions. This is estimated to take roughly 10 minutes and represents a one-time cost. This would result in roughly 40 minutes total spent providing this information for the four covered facilities. The cost of this time depends on who is doing the notification. If the notification is done by administrative support staff, the average wage of $29.08[6] yields a total cost of $20. If notification is done by a petroleum engineer, the average wage of $120.73[7] yields a total cost of $80.

3.3 Transmission pipelines

The adopted rule states that businesses transporting oil via transmission pipeline provide biannual notice of the volume of crude oil by state or province of origin of the crude oil transported via email twice each year.

A conservative estimate of the time needed for notification is 10 minutes per notification. With 2 businesses providing notification twice per year, this yields 40 minutes of time spent per year. Using the wage rates detailed above, this yields total costs of $20 - $80 per year.

For the two covered transmission pipelines, this cost is equivalent to a 20-year cost between $344 and $1,428 in 2016 present value, using a 1.18-percent discount rate.[8] Actual comprehensive costs will likely fall within this range.

These are mandated costs. Discretionary costs for transmission pipelines are zero.

3.4 Summary of estimated likely costs

The estimated total costs of the adopted rule is the aggregate of the costs for all of the impacted businesses.

Table 2. Total 20-year Present Value Costs

Total Cost in 2016 20-Year Present Value	Low estimate	High estimate
Facilities	$69,953	$290,460
Transmission Pipelines	$344	$1,428
Total	$70,297	$291,888

The likely costs associated with the adopted rule are estimated to range from $70 thousand to $292 thousand in 20-year 2016 net present value.

[6] www.bsl.gov/oes/current job code 43-0000.
[7] www.bsl.gov/oes/current job code 17-2171.
[8] US Treasury Department (2016). Historic average real rate of return on US Treasury Department I-Bonds. Associated historic average inflation rate is approximately 2 percent.

Chapter 4: Likely Benefits of the Adopted Rule

4.1 Introduction

We estimated the likely benefits associated with the adopted rule, as compared to the baseline (both described in Chapter 2 of this document). Likely benefits arise from:

- Quicker responses to spills or other incidents.
- Provision of information so emergency responders are better prepared to deal with specific types of spills or other incidents.
- Providing information about the oil movement picture to the public.

4.2 Quicker response

Advance notification of arrivals of crude oil by railroad car to facilities provides Ecology's Spills Program, the state emergency management division, and county, city, tribal, port, and local government emergency response agencies timely notice of when and how much crude oil is going to be transported and delivered by rail to facilities in the state, which helps them to prepare for and respond more quickly to spills and other incidents. Biannual notice provided by pipelines transporting crude oil through the state will help these agencies understand the volume and origin of crude oil transported by this mode.

Because spills and other incidents have occurred in the past when oil is transported by rail or pipeline, the chances of an incident occurring is greater than zero. Further, the costs of such an incident in terms of property damage, environmental degradation, and human life, can be quite significant.

Quicker response to any potential incident will likely diminish the damages of the incident, potentially significantly.[9]

4.3 Provision of information

The information provided by facilities and pipelines will inform emergency responders about the type and volume of crude oil transported through the state by railroad car and pipeline. State, tribal, and local emergency response agencies can use the information to develop better informed response plans and strategies, equipment selection, and staffing levels. It also allows a targeted response to any potential spill or incident, which will likely diminish the damages of the incident, potentially significantly.

[9] For information on the costs of pipeline and rail spills, please see: http://www.ecy.wa.gov/programs/spills/OilMovement/2014MRStudy.html

4.4 Providing information about the oil movement picture to the public

On a quarterly basis, Ecology will publish aggregated reported information to our website on crude oil transported by rail and pipeline. The reported information will be aggregated by route through the state, week, and type of crude oil. Non-aggregate information that is proprietary, commercial or financial is exempt from public disclosure. This data sharing increases government transparency and supports public understanding of the oil movement picture in Washington State.

4.5 Summary of the likely benefits of the adopted rule

The adopted rule provides the following likely benefits, as compared to the baseline.

Through improved response time and targeted response, the information provided by notification of crude oil movement by rail and pipeline will likely diminish the potential damages of spills or incidents associated with oil transportation by railroad car or pipeline, potentially significantly.

Additionally, provision of information to the public increases government transparency and supports public understanding of the oil movement picture in Washington State.

Chapter 5: Cost-Benefit Comparison and Conclusions

5.1 Summary of the costs and benefits of the adopted rule

Ecology determined that, compared to the baseline discussed in Chapter 2 of this document, the adopted rule has the following costs and benefits:

The likely costs associated with the rule are estimated to range from $70 thousand to $292 thousand in 20-year 2016 present value. These include both discretionary and non-discretionary costs.

The likely benefits associated with the rule include quicker and more targeted response to spills or incidents associated with oil transportation through rail or pipeline, potentially significantly. Additionally, provision of information to the public increases government transparency and supports public understanding of the oil movement picture in Washington State.

5.2 Conclusion

Ecology concludes, based on reasonable understanding of the quantified and qualitative costs and benefits likely to arise from the adopted rule, that the benefits of the rule are greater than the costs.

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Chapter 6: Least-Burdensome Alternative Analysis

6.1 Introduction

RCW 34.05.328(1)(e) requires Ecology to "...[d]etermine, after considering alternative versions of the rule and the analysis required under (b), (c), and (d) of this subsection, that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives stated under (a) of this subsection." The referenced subsections are:

> (a) Clearly state in detail the general goals and specific objectives of the statute that the rule implements;
>
> (b) Determine that the rule is needed to achieve the general goals and specific objectives stated under (a) of this subsection, and analyze alternatives to rule making and the consequences of not adopting the rule;
>
> (c) Provide notification in the notice of proposed rule making under RCW 34.05.320 that a preliminary cost-benefit analysis is available. The preliminary cost-benefit analysis must fulfill the requirements of the cost-benefit analysis under (d) of this subsection. If the agency files a supplemental notice under RCW 34.05.340, the supplemental notice must include notification that a revised preliminary cost-benefit analysis is available. A final cost-benefit analysis must be available when the rule is adopted under RCW 34.05.360;
>
> (d) Determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented;

In other words, to be able to propose and adopt the rule, Ecology is required to determine that the contents of the rule are the least burdensome set of requirements that still achieve the goals and objectives of the authorizing statute(s).

Ecology assessed alternatives to elements of the adopted rule, and determined whether they met the goals and objectives of the authorizing statutes. Of those that would meet these goals and objectives, Ecology determined whether those chosen for the adopted rule were the least burdensome.

6.2 Goals and objectives of the authorizing statute: Chapter 90.56.565 RCW

The authorizing statute is direct in its objectives. It states, among other content:

> **RCW 90.56.565**
>
> (1)(a) A facility that receives crude oil from a railroad car must provide advance notice to the department that the facility will receive crude oil from a railroad car, as provided in this section. The advance notice must include the route taken to the facility within the state, if known, and the scheduled time, location, volume, region per bill of lading, and gravity as measured by standards developed by the American petroleum institute, of crude oil received. Each week, a facility that provides advance notice under this section must provide the required information regarding the scheduled arrival of railroad cars carrying crude oil to be received by the facility in the succeeding seven-day period.
>
> (b) Twice per year, pipelines that transport crude oil must report to the department the following information about the crude oil transported by the pipeline through the state: The volume of crude oil and the state or province of origin of the crude oil.

6.3 Alternatives considered and why they were not included

As part of this rulemaking, Ecology considered alternatives to the rule content being adopted. These include:

- Not adopting the rule (status quo).
  - This alternative is not allowed by the authorizing statute, which requires Ecology to adopt a rule.
  - Requiring reporting on a specific day of the week.
  - This alternative would have been more burdensome to reporting businesses.
- Facilities receiving oil via rail not reporting additional scheduled arrivals once the weekly reporting is done.
  - While this would reduce the burden on reporting facilities, it would not meet the intent of the statute because advance notice is required for all scheduled arrivals of crude oil to be received by facilities.
- Requiring facilities to provide notice of changes to deliveries after they have been received (to correct delivery information if it changes between scheduling and delivery).
  - This would increase the burden on reporting facilities unnecessarily. The additional information provided would no longer allow quicker, more targeted responses after delivery has occurred.

6.4 Conclusion

After considering alternatives to the adopted rule's contents, as well as the goals and objectives of the authorizing statute, Ecology determined that the adopted rule represents the least-burdensome alternative of possible rule contents meeting these goals and objectives.

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References

United States Treasury Department (2016). Historic average real rate of return on US Treasury Department I-Bonds.

Washington State Department of Ecology (2015). Washington State assumptions for overhead for legislative estimates of compensation costs for fiscal notes, 2015-16.