



DEPARTMENT OF  
**ECOLOGY**  
State of Washington



[pscleanair.org](http://pscleanair.org)  
Puget Sound Clean Air Agency

# **Achieving Attainment with Federal Air Quality Standards**

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*Report to the Legislature Required under RCW  
70.94.605*

Joint Report by  
Washington State Department of Ecology and  
Puget Sound Clean Air Agency

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# Table of Contents

	<u>Page</u>
Executive Summary .....	iii
Background .....	1
Progress Toward Achieving Attainment.....	2
Additional Implementation Tools .....	4
Next Steps .....	4

# Executive Summary

This report satisfies a requirement under RCW 70.94.605 for the Department of Ecology (Ecology) and local clean air authorities to report to the Legislature by December 31, 2014, and every two years thereafter, on:

- progress toward achieving attainment for areas of nonattainment that the revised burn ban and prohibition requirements contained in RCW 70.94.473 and 70.94.477 were enacted to address, and
- other implementation tools necessary to achieve attainment.

## Progress in achieving attainment

Currently the state has one nonattainment area in Tacoma-Pierce County that was not meeting the federal air quality standard for daily fine particle pollution. The area was designated nonattainment by the U.S. Environmental Protection Agency (EPA) in 2009 after EPA significantly strengthened the standard. The primary cause of poor air quality in the nonattainment area is residential wood burning during winter evenings with cold temperatures and low wind speeds.

Under the direction of a community Task Force, Puget Sound Clean Air Agency worked closely with the community to implement and raise awareness about the revised burn ban and prohibition requirements. Compliance with the burn bans improved as a result of increased awareness through the use of text alerts, e-mail, and media notifications—as well as increased enforcement.

Additionally, since 2012, over 1,200 residents have taken advantage of incentive programs to remove their old, uncertified wood stoves. Many participants in this program cite the Clean Air Agency's upcoming 2015 uncertified wood stove removal rule as a motivator for their participation.

Air quality has measurably improved and the area now has fewer days with elevated fine particle pollution. The area came back into compliance with the daily fine particle standard based on monitoring data from 2009-2011, and has continued to meet the standard.

In October 2014, Ecology submitted a redesignation request and maintenance plan to EPA. EPA proposed to approve Ecology's submittal and legally redesignate the area to attainment on Dec. 11, 2014. EPA is accepting comments on the proposal through January 12, 2015.<sup>i</sup>

## Other implementation tools needed

At this time, there are no other implementation tools beyond those authorized in RCW 70.94.473 and 70.94.477 necessary to achieve attainment. Although air quality has measurably improved, fine particle pollution remains a health concern and researchers continue to find serious health effects at lower levels of fine particle pollution. If more stringent standards are adopted in the future, new strategies may be needed.



# Background

In 2012, the Legislature revised burn ban and prohibition requirements contained in RCW 70.94.473 and 70.94.477, for areas of nonattainment with federal ambient air quality standards.<sup>ii</sup> Main revisions included lower air quality burn ban thresholds for Stage I burn bans for counties with nonattainment or “at risk” areas. In addition, a provision is included that allows agencies to ban old, uncertified wood stoves in fine particle nonattainment areas under certain circumstances.

These changes strengthened Washington State Department of Ecology (Ecology) and local air pollution control authorities’ ability to improve the air quality in nonattainment areas and bring the areas back into “attainment.”

In 2012, the only nonattainment area in the state—and since then—is the Tacoma-Pierce County area shown in Figure 1. It is classified nonattainment for daily fine particle pollution. The primary cause of poor air quality in the nonattainment area is residential wood burning during winter evenings with cold temperatures and low wind speeds.

Fine particle pollution is linked with many adverse health effects, including exacerbation of asthma and chronic bronchitis, increased heart attacks, stroke, and even premature death.<sup>iii</sup> The consequences of ‘nonattainment’ for Tacoma-Pierce County include extra requirements for large businesses (an economic detractor for attracting new businesses), the ‘stigma’ of being the only nonattainment area in the state, as well as the small likelihood for loss of highway funding if we collectively fail to solve the air quality problem in a timely manner.



**Figure 1: Fine Particulate Nonattainment Area in Tacoma and Pierce County**

The revisions required Ecology and local air pollution control authorities to report back to the appropriate standing committees of the legislature by December 31, 2014, and every two years thereafter, on 1) progress toward achieving attainment in the relevant areas, and 2) whether other implementation tools are necessary to achieve attainment.<sup>iv</sup>

# Progress Toward Achieving Attainment

Thanks to the residents of the Tacoma-Pierce County nonattainment area applying the tools in RCW 70.94.473 and 70.94.477, air quality in their communities has improved. Since 2012, over 1,200 residents have taken advantage of incentive programs to remove their old, uncertified wood stoves. Many participants in this program cite the Puget Sound Clean Air Agency's upcoming 2015 uncertified wood stove removal rule as a motivator for their participation. Those who qualify as low income participants enjoy a new, much more efficient heating system with costs completely covered by the program.

The Puget Sound Clean Air Agency continues to run outreach and education campaigns, including the [airsafepiercecounty.org](http://airsafepiercecounty.org) website, to build awareness of and support for the incentive programs and enhanced burn ban enforcement.

The Puget Sound Clean Air Agency's ability to call air quality burn bans at more protective levels than the federal standard, along with enhanced enforcement of air quality burn bans resulted in more awareness and compliance with the bans. Analysis shows that less than 10 percent of people ticketed re-violate during subsequent burn bans. Residents whose wood stove is their only adequate source of heat can obtain an exemption from burn bans and any requirement to ban older, uncertified stoves.

Combined, these programs have successfully reduced harmful wood smoke emissions and improved air quality, enabling Ecology to formally submit a 10-year maintenance plan and redesignation request (to attainment status) from the Environmental Protection Agency (EPA) in October 2014.<sup>v</sup>

Figure 2 shows how fine particle pollution levels at the Tacoma South L monitoring site have improved since 2009, when levels were clearly over EPA's health-based daily fine particle national ambient air quality standard (dotted black line). The blue diamonds on the figure show 98<sup>th</sup> percentile levels for individual years, while the red line shows fine particle pollution levels compared to the federal daily standard (three year average of the annual 98<sup>th</sup> percentiles). The 98<sup>th</sup> percentile level for calendar year 2013 remained very close to the federal standard: 34 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) compared to a federal standard of 35  $\mu\text{g}/\text{m}^3$ .

The meteorological information included in Figure 3 demonstrates the progress of the wood smoke emissions reduction programs. The second figure shows number of days conducive to more wood burning and elevated fine particle pollution levels – those with cold temperatures and low wind speeds. Despite many days of cold, stagnant weather, the residents of the Tacoma-Pierce County nonattainment area were able to keep fine particle pollution levels slightly below the health-based federal standard in 2013.



## Fine Particle Levels in Tacoma and Federal Daily Standard

(Daily PM<sub>2.5</sub> [1-year 98<sup>th</sup> percentile] and Design Value [3-year mean of Daily])

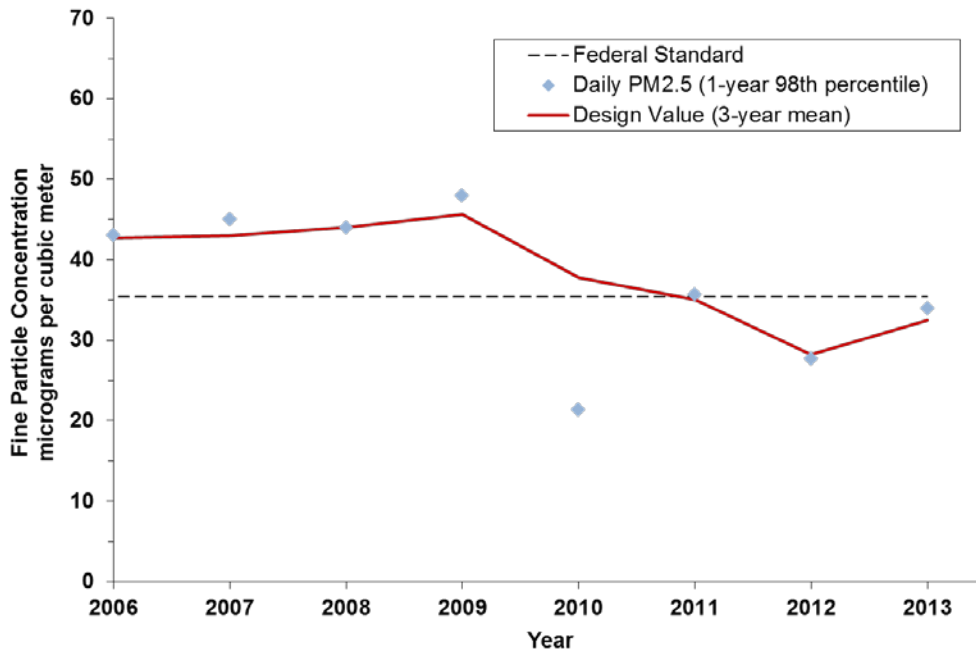


Figure 2: Fine Particle Levels in Tacoma and Federal Daily Standard

## Days with avg temps ≤ 35°F and ≤ 1mph

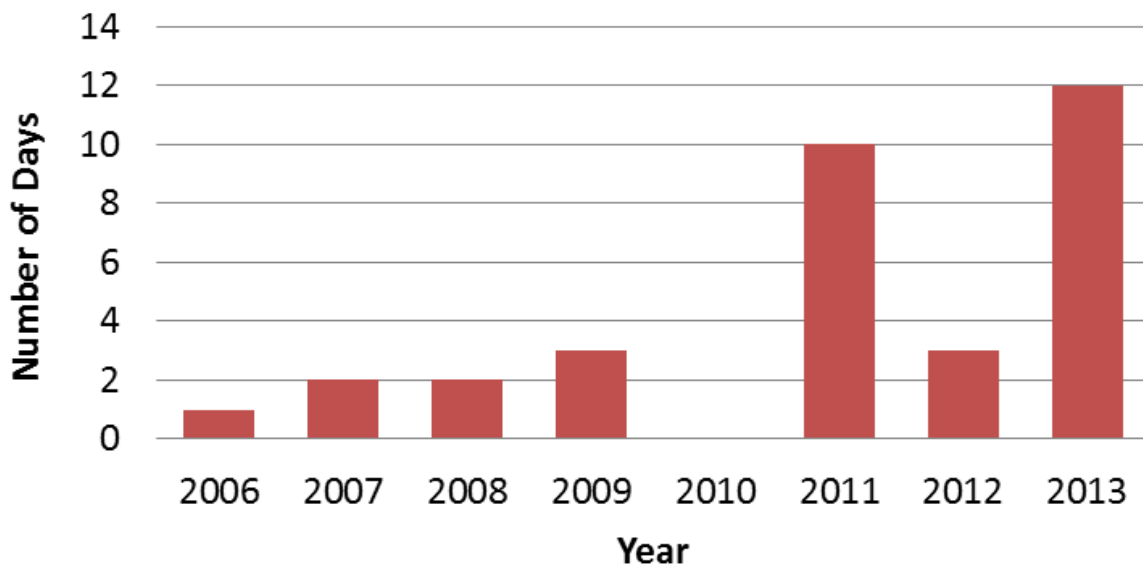


Figure 3: Days with average temperatures ≤ 35° Fahrenheit and ≤ 1 mile per hour

While we have made immense progress, the Puget Sound Clean Air Agency will need to continue to work with local jurisdictions and residents to ensure people are aware of and follow air quality burn bans and that old, uncertified wood stoves are removed through incentive

programs and the Agency's upcoming 2015 removal rule.<sup>vi</sup> As mentioned earlier, the removal incentive program has already served as a motivator for many to participate and the rule will help to offset future emissions from long term growth in the area.

These programs, based on RCW 70.94.473 and 70.84.477, will allow us to continue on a path of healthier air and continued maintenance of the health-based fine particle pollution standard.

## Additional Implementation Tools

At this time, there are no other implementation tools beyond those authorized in RCW 70.94.473 and 70.94.477 necessary to achieve attainment. Although air quality has measurably improved, fine particle pollution remains a health concern and researchers continue to find serious health effects at lower levels of air pollution. EPA reviews the standards every 5 years and if more stringent standards are adopted in the future, new strategies may be needed. Ecology and local clean air authorities are working to reduce pollution in several other communities at risk of nonattainment. Preventing nonattainment is critical to protecting public health, preventing economic consequences, and federal requirements for expensive regulatory action.

## Next Steps

In October 2014, Ecology submitted a redesignation request (to attainment) and maintenance plan to EPA. EPA proposed to approve Ecology's submittal and legally redesignate the area to attainment on Dec. 11, 2014. EPA is accepting comments on the proposal through January 12, 2015.<sup>vii</sup> When the area is redesignated, all of Washington communities will be in attainment with federal air quality standards.

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<sup>i</sup> Federal Register Vol. 79, No. 238, December 11, 2014, 73525,  
<http://www.gpo.gov/fdsys/pkg/FR-2014-12-11/pdf/2014-28150.pdf> (accessed 12/22/14)

<sup>ii</sup> Substitute House Bill 2326, Chapter 219, Laws of 2012

<sup>iii</sup> Environmental Protection Agency. Particle Pollution and Health.

<http://www.epa.gov/air/particlepollution/2012/fshealth.pdf>. (accessed 10/28/2014)

<sup>iv</sup> This requirement is contained in RCW 70.94.605, which expires January 1, 2019.

<sup>v</sup> Washington State Department of Ecology. Proposed State Implementation Plan Revision. Tacoma-Pierce County PM2.5 Redesignation Request and Maintenance Plan. October 2014.  
<https://fortress.wa.gov/ecy/publications/SummaryPages/1402021.html> (accessed 11/19/2014)

<sup>vi</sup> Puget Sound Clean Air Agency. Regulation 1, Article 13, Section 07: Prohibitions on Wood Stoves that are not Certified Wood Stoves.

<http://www.pscleanair.org/business/RegulationsandUpdates/Documents/1-13.pdf>. (accessed 10/28/2014)

<sup>vii</sup> Federal Register Vol. 79, No. 238, December 11, 2014, 73525,  
<http://www.gpo.gov/fdsys/pkg/FR-2014-12-11/pdf/2014-28150.pdf> (accessed 12/22/14)