ALPINE GEOPHYSICS

Air Quality Model Analysis of a Potential Cleaner Trucks Initiative Scenario

Part 1: EPA 2028 Base Case Air Quality Modeling

Part 2: Air Quality Modeling of a Cleaner Trucks Initiative Scenario in 2035

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Part 1:
Air Quality Modeling Technical Support Document for 12km Modeling of EPA 2028fh Base Case

Technical Support Document

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1.0 INTRODUCTION

1.1 OVERVIEW

This document serves to provide a technical support document for recently developed air quality modeling and ozone, $PM_{2.5}$, and regional haze results conducted by Alpine Geophysics, LLC (Alpine) for purposes of individual state review and preparation of modeling analyses in support of future revisions of State Implementation Plans (SIPs).

This document describes our initial modeling effort using EPA's national 36km/12km modeling domain (36US3/12US2B). It uses the 2016/2028fh (version 1) modeling platform which represents EPA's estimation of a projected "base case" that demonstrates compliance with most current on-the-books/on-the-way regulatory measures.

1.2 OVERVIEW OF MODELING APPROACH

The modeling documented here includes simulations using the 36 km/12 km grid based on EPA's 2016/2028fh modeling platform. All non-emissions CAMx model inputs were supplied by EPA as distributed in the EPA 2016fg/2028fg model simulations. The emissions were taken from the EPA "pre-merged" 2016fh/2028fh platform distribution.

1.2.1 Episode Selection

Episode selection is an important component of attainment demonstrations. The entire calendar year from January 1 through December 31, 2016 period was selected for the modeling primarily due to the following reasons:

- It is aligned with the 2016 federal, state, and local agency inventory development collaborative.
- It is not an unusually low ozone year.
- Ambient meteorological and air quality data are available.
- A 2016 CAMx modeling platform was available from the EPA that was leveraged for the SIP modeling.
- Recent observations have noted many observed high ozone days fall outside of the typical May through September ozone season.

More details of the 2016 episode selection and justification using criteria in EPA's modeling guidance are contained in Section 3.

1.2.2 Model Selection

Details on the rationale for model selection are provided in Section 2. The Weather Research Forecast (WRF) prognostic meteorological model was selected for the modeling using the EPA 36US3 and 12US2B grids. Additional emission modeling was not required for the 12km simulation as the 2028fh platform was provided to Alpine in pre-merged CAMx ready format.

Emissions processing was completed by EPA for the 36km and 12km domains using the SMOKE emissions model for most source categories. The exceptions are that BEIS model was used for

biogenic emissions and there are special processors for fires, windblown dust, lightning, and sea salt emissions. The MOVES2014 on-road mobile source emissions model was used with SMOKE-MOVES to generate on-road mobile source emissions with EPA generated vehicle activity data provided with the modeling platform. The same version of the CAMx photochemical grid model was also used. The setup is based on the same WRF/SMOKE/BEIS/CAMx modeling system used in EPA's 2016fh platform modeling distribution.

1.2.3 Base and Future Year Emissions Data

The 2028 future year was selected for the attainment demonstration modeling based on an initial need to support control strategy analyses in that and future timelines. The 2016 base case and 2028 future year emissions were based on EPA's "fh" inventories with no adjustment and include the update to the commercial marine vessel emissions released shortly after the initial "fh" emissions were released.

1.2.4 Input Preparation and QA/QC

Quality assurance (QA) and quality control (QC) of the emissions datasets are some of the most critical steps in performing air quality modeling studies. Because emissions processing is tedious, time consuming and involves complex manipulation of many different types of large databases, rigorous QA measures are a necessity to prevent errors in emissions processing from occurring. This modeling study utilized EPA's pre-QA/QC'd emissions platform that followed a multistep emissions QA/QC approach for the 12km domain.

1.2.5 Meteorology Input Preparation and QA/QC

The CAMx 2016 meteorological inputs are based on WRF meteorological modeling conducted by EPA. Details on the EPA 2016 WRF application and evaluation are provided by EPA (EPA, 2019a).

1.2.6 Initial and Boundary Conditions Development

Initial concentrations (IC) and Boundary Conditions (BC) are important inputs to the CAMx model. We ran the model in calendar quarters with 15 days of model spin-up before the first of each quarter so the ICs, derived from the "fg" CAMx simulation, are washed out of the modeling domain. The lateral boundary and initial species concentrations are provided by a three-dimensional global atmospheric chemistry model, Hemispheric Community Multiscale Air Quality (H-CMAQ) v.5.2.1 and were unchanged from the files EPA used in the "fg" modeling platform (Henderson, 2018).

1.2.7 Air Quality Modeling Input Preparation and QA/QC

Each step of the air quality modeling was subjected to QA/QC procedures. These procedures included verification of model configurations, confirmation that the correct data were used and processed correctly, and other graphical and tabular procedures.

1.2.8 Model Performance Evaluation

An independent ozone Model Performance Evaluation (MPE) was conducted by Alpine on the 2016 platform configuration (Alpine, 2020). This MPE followed recommendations from EPA's ozone modeling guidance (EPA, 2007; 2014e; 2018b).

1.2.9 Diagnostic Sensitivity Analyses

Since at the time of this document's publication, these model simulations were known to be the first to be developed using this 2016fh/2028 platform, additional diagnostic sensitivity analyses were not prepared.

2.0 MODEL SELECTION

This section documents the models used in this SIP modeling study. The selection methodology presented in this chapter mirrors EPA's and other's regulatory modeling in support of the 2008 Ozone NAAQS Preliminary Interstate Transport Assessment (Page, 2017; Alpine, 2017; EPA, 2016b) and technical memorandum providing additional information on the Interstate SIP submissions for the 2015 Ozone NAAQS (Tsirigotis, 2018).

Unlike previous modeling guidance that specified a particular model, the EPA now recommends that models be selected for SIP studies on a "case-by-case" basis. The latest EPA guidance (EPA, 2018b) explicitly mentions the CMAQ and CAMx photochemical grid models (PGMs) as the most commonly used PGMs that would satisfy EPA's selection criteria but notes that this is not an exhaustive list and does not imply that they are "preferred" over other PGMs that could also be considered and used with appropriate justification. EPA's current modeling guidelines lists the following criteria for model selection (EPA, 2018b):

- It should not be proprietary;
- It should have received a scientific peer review;
- It should be appropriate for the specific application on a theoretical basis;
- It should be used with data bases which are available and adequate to support its application;
- It should be shown to have performed well in past modeling applications;
- It should be applied consistently with an established protocol on methods and procedures;
- It should have a user's guide and technical description;
- The availability of advanced features (e.g., probing tools or science algorithms) is desirable; and
- When other criteria are satisfied, resource considerations may be important and are a legitimate concern.

For this modeling, we used the WRF/SMOKE/MOVES2014/BEIS/CAMx modeling system as the primary tool for calculating concentrations and light extinction at downwind monitors. The utilized modeling system satisfies all of EPA's selection criteria. A description of the key models to be used in the modeling follows.

WRF/ARW: The Weather Research and Forecasting (WRF)[1] Model is a mesoscale numerical weather prediction system designed to serve both operational forecasting and atmospheric research needs (Skamarock, 2004; 2006; Skamarock et al., 2005). The Advanced Research WRF (ARW) version of WRF was used in this modeling study. It features multiple dynamical cores, a 3-dimensional variational (3DVAR) data assimilation system, and a software architecture allowing for computational parallelism and system extensibility. WRF is suitable for a broad spectrum of applications across scales ranging from meters to thousands of kilometers. The effort to develop WRF has been a collaborative partnership, principally among the National

[1] http://www.wrf-model.org/index.php

Center for Atmospheric Research (NCAR), the National Oceanic and Atmospheric Administration (NOAA), the National Centers for Environmental Prediction (NCEP) and the Forecast Systems Laboratory (FSL), the Air Force Weather Agency (AFWA), the Naval Research Laboratory, the University of Oklahoma, and the Federal Aviation Administration (FAA). WRF allows researchers the ability to conduct simulations reflecting either real data or idealized configurations. WRF provides operational forecasting a model that is flexible and efficient computationally, while offering the advances in physics, numerics, and data assimilation contributed by the research community.

SMOKE: The Sparse Matrix Operator Kernel Emissions (SMOKE)[2] modeling system is an emissions modeling system that generates hourly gridded speciated emission inputs of mobile, non-road, area, point, fire and biogenic emission sources for photochemical grid models (Coats, 1995; Houyoux and Vukovich, 1999). As with most 'emissions models', SMOKE is principally an emission processing system and not a true emissions modeling system in which emissions estimates are simulated from 'first principles'. This means that, except for mobile and biogenic sources, its purpose is to provide an efficient, modern tool for converting an existing base emissions inventory data into the hourly gridded speciated formatted emission files required by a photochemical grid model. SMOKE was used by EPA to prepare emission inputs for non-road mobile, area and point sources. These files were adopted and used as-is for this analysis.

SMOKE-MOVES: SMOKE-MOVES uses an Emissions Factor (EF) Look-Up Table from MOVES, gridded vehicle miles travelled (VMT) and other activity data and hourly gridded meteorological data (typically from WRF) and generates hourly gridded speciated on-road mobile source emissions inputs.

MOVES2014: MOVES2014[3] is EPA's latest on-road mobile source emissions model that was first released in July 2014 (EPA, 2014a,b,c). MOVES2014 includes the latest on-road mobile source emissions factor information. Emission factors developed by EPA were used in this analysis.

BEIS: Biogenic emissions were modeled by EPA using version 3.61 of the Biogenic Emission Inventory System (BEIS). First developed in 1988, BEIS estimates volatile organic compound (VOC) emissions from vegetation and nitric oxide (NO) emissions from soils. Because of resource limitations, recent BEIS development has been restricted to versions that are built within the Sparse Matrix Operational Kernel Emissions (SMOKE) system.

CAMx: The Comprehensive Air quality Model with Extensions (CAMx[4]) is a state-of-science "One-Atmosphere" photochemical grid model capable of addressing ozone, particulate matter (PM), visibility and acid deposition at regional scale for periods up to one year (ENVIRON, 2015[5]). CAMx is a publicly available open-source computer modeling system for the integrated assessment of gaseous and particulate air pollution. Built on today's understanding that air

2 http://www.smoke-model.org/index.cfm
3 http://www.epa.gov/otaq/models/moves/
4 http://www.camx.com
5 http://www.camx.com/files/camxusersguide_v6-20.pdf

quality issues are complex, interrelated, and reach beyond the urban scale, CAMx is designed to (a) simulate air quality over many geographic scales, (b) treat a wide variety of inert and chemically active pollutants including ozone, inorganic and organic $PM_{2.5}$ and PM_{10} and mercury and toxics, (c) provide source-receptor, sensitivity, and process analyses and (d) be computationally efficient and easy to use. The U.S. EPA has approved the use of CAMx for numerous ozone and PM State Implementation Plans throughout the U.S., and has used this model to evaluate regional mitigation strategies including those for most recent regional rules (e.g., Transport Rule, CAIR, NO_X SIP Call, etc.). CAMx Version 7.00beta6 was used in this study.

SMAT-CE: The Software for the Modeled Attainment Test - Community Edition (SMAT-CE)[6] is a PC-based software tool that can perform the modeled attainment tests for particulate matter and ozone, and calculate changes in visibility at Class I areas as part of the reasonable progress analyses for regional haze. Version 1.6 was used in this analysis.

6 https://www.epa.gov/scram/photochemical-modeling-tools

3.0 EPISODE SELECTION

EPA's most recent modeling guidance (EPA, 2018b) contains recommended procedures for selecting modeling episodes. This modeling used the entire 2016 calendar year because it satisfies the most criteria in EPA's modeling guidance episode selection discussion.

The entire 2016 year has been selected for the modeling primarily due to 2016 not being an unusually low ozone year, availability of a 2016 36 km/12 km CAMx modeling platform from EPA, and recent observations which have noted many observed high ozone days fall outside of the typical May through September ozone season.

4.0 MODELING DOMAIN SELECTION

This section summarizes the modeling domain definitions for the modeling, including the domain coverage, resolution, and map projection. It also discusses emissions, aerometric, and other data available for use in model input preparation and performance testing.

4.1 HORIZONTAL DOMAINS

The modeling used a 12 km continental U.S. (12US2) domain nested within a 36km North American domain.

The 36/12 km nested grid modeling domain configuration is shown in Figure 4-1. The 12km domain shown in Figure 4-1 represents the CAMx 12km air quality and SMOKE/BEIS emissions modeling domain. The WRF meteorological modeling was run on larger 12 km modeling domains than used for CAMx as demonstrated in EPA's meteorological model performance evaluation document (EPA, 2019a). The WRF meteorological modeling domains are defined larger than the air quality modeling domains because meteorological models can sometimes produce artifacts in the meteorological variables near the boundaries as the prescribed boundary conditions come into dynamic balance with the coupled equations and numerical methods in the meteorological model.

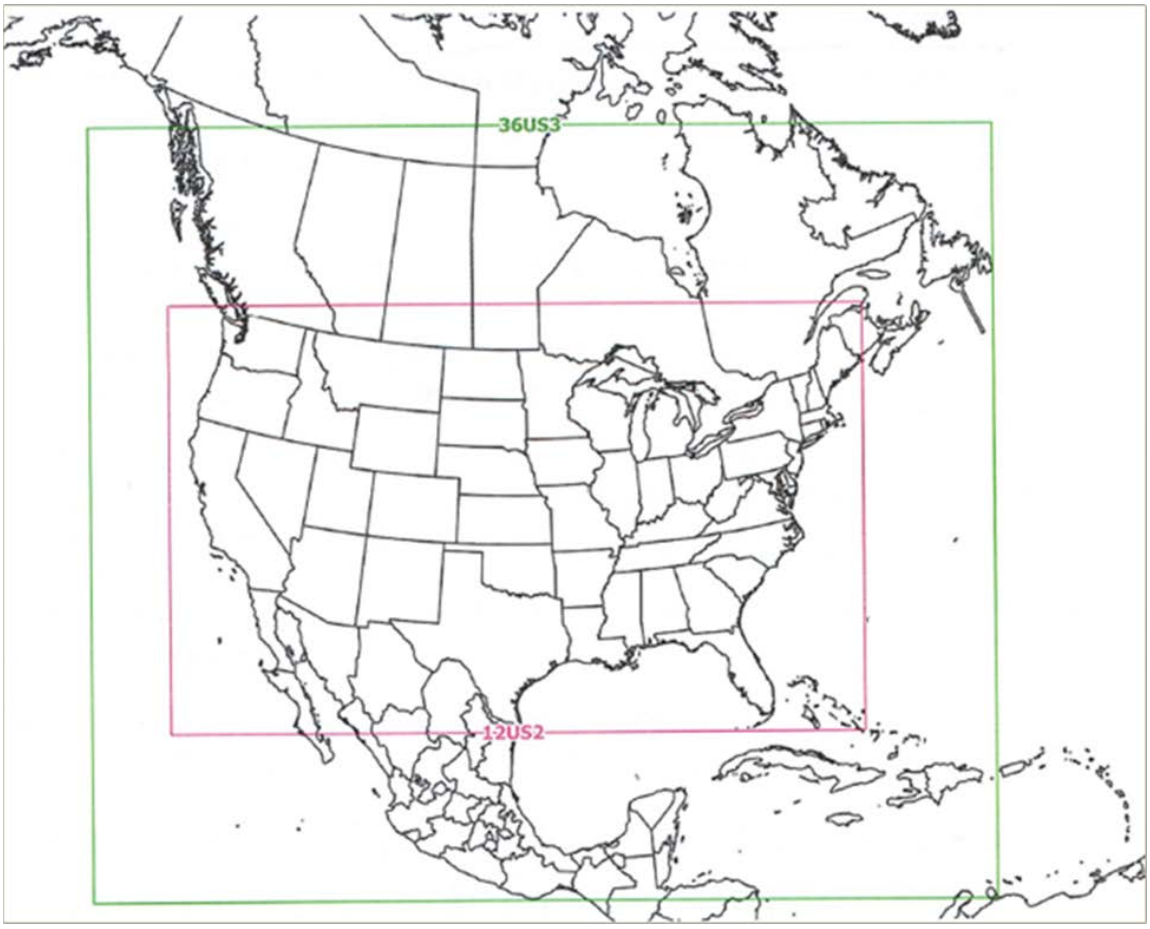

Figure 4-1. Map of 36km (green) and 12km CAMx (red) modeling domains.

4.2 VERTICAL MODELING DOMAIN

The CAMx vertical structure is primarily defined by the vertical layers used in the WRF meteorological modeling. The WRF model employs a terrain following coordinate system defined by pressure, using multiple layer interfaces that extend from the surface to 50 mb (approximately 19 km above sea level). EPA ran WRF using 35 vertical layers. This same layer structure was used for the CAMx simulations. Table 4-1 displays the WRF/CAMx 35 vertical layers for the 36/12km grid domain.

Table 4-1. WRF and CAMx layers and their approximate height above ground level.

WRF/CAMx Layers	Sigma P	Pressure (mb)	Approx. Height (m AGL)
35	0.00	50.00	17,556
34	0.05	97.50	14,780
33	0.10	145.00	12,822
32	0.15	192.50	11,282
31	0.20	240.00	10,002
30	0.25	287.50	8,901
29	0.30	335.00	7,932
28	0.35	382.50	7,064
27	0.40	430.00	6,275
26	0.45	477.50	5,553
25	0.50	525.00	4,885
24	0.55	572.50	4,264
23	0.60	620.00	3,683
22	0.65	667.50	3,136
21	0.70	715.00	2,619
20	0.74	753.00	2,226
19	0.77	781.50	1,941
18	0.80	810.00	1,665
17	0.82	829.00	1,485
16	0.84	848.00	1,308
15	0.86	867.00	1,134
14	0.88	886.00	964
13	0.90	905.00	797
12	0.91	914.50	714
11	0.92	924.00	632
10	0.93	933.50	551
9	0.94	943.00	470
8	0.95	952.50	390
7	0.96	962.00	311
6	0.97	971.50	232
5	0.98	981.00	154
4	0.99	985.75	115
3	0.99	990.50	77
2	1.00	995.25	38
1	1.00	997.63	19

4.3 DATA AVAILABILITY

The CAMx modeling systems requires emissions, meteorology, surface characteristics, initial and boundary conditions (IC/BC), and ozone column data for defining the inputs.

4.3.1 Emissions Data

Without exception, the 2016 base year and 2028 base case emissions inventories for modeling for this analysis were based on emissions obtained from the EPA's "fh" modeling platform. This platform was obtained from EPA in January 2020 and represents EPA's best estimate of all promulgated national, regional, and local control strategies.

4.3.2 Air Quality

Data from ambient monitoring networks for gas species were used in the model performance evaluation. Table 4-2 summarizes routine ambient gaseous and PM monitoring networks available in the U.S.

4.3.4 Meteorological Data

The 12km meteorological data were generated by EPA using the WRF prognostic meteorological model (EPA, 2019a). WRF was run on the North American 36km and continental U.S. 12km grid (12US2B) for the 2016fh platform as described in earlier sections.

4.3.5 Initial and Boundary Conditions Data

Initial concentrations (IC) and Boundary Conditions (BC) are important inputs to the CAMx model. We ran 15 days of model spin-up before the first of each quarter so the ICs are washed out of the modeling domain. The lateral boundary and initial species concentrations for the December 2015 spin-up period are provided by a three-dimensional global atmospheric chemistry model, Hemispheric Community Multiscale Air Quality (H-CMAQ) v.5.2.1 and were unchanged from the files EPA used in the "fg" modeling platform (Henderson, 2018). The 2016 boundary concentrations from H-CMAQ were used for the 2016 and 2028 model simulations. The initial conditions for the spin-up period on the 2nd, 3rd and 4th quarters were derived from CAMx model outputs from the "fg" simulation processed with the CAMx bndextr version 6 processor.

Table 4-2. Overview of routine ambient data monitoring networks.

Monitoring Network	Chemical Species Measured	Sampling Period	Data Availability/Source
The Interagency Monitoring of Protected Visual Environments (IMPROVE)	Speciated PM25 and PM10 (see species mappings)	1 in 3 days; 24 hr average	http://vista.cira.colostate.edu/Improve/improve-data/
Clean Air Status and Trends Network (CASTNET)	Speciated PM25, Ozone (see species mappings)	Approximately 1-week average	http://www.epa.gov/castnet/data.html
National Atmospheric Deposition Program (NADP)	Wet deposition (hydrogen (acidity as pH), sulfate, nitrate, ammonium, chloride, and base cations (such as calcium, magnesium, potassium and sodium)), Mercury	1-week average	http://nadp.sws.uiuc.edu/
Air Quality System (AQS) or Aerometric Information Retrieval System (AIRS)	CO, NO2, O3, SO2, PM25, PM10, Pb	Typically hourly average	http://www.epa.gov/air/data/
Chemical Speciation Network (CSN)	Speciated PM	24-hour average	http://www.epa.gov/tt-mtic/amticpm.html
Photochemical Assessment Monitoring Stations (PAMS)	Varies for each of 4 station types.		http://www.epa.gov/tt-mtic/pamsmain.html
National Park Service Gaseous Pollutant Monitoring Network	Acid deposition (Dry; SO4, NO3, HNO3, NH4, SO2), O3, meteorological data	Hourly	http://www2.nature.nps.gov/ard/gas/netdata1.htm

5.0 MODEL INPUT PREPARATION PROCEDURES

This section summarizes the procedures used in developing the meteorological, emissions, and air quality inputs to the CAMx model for the modeling on the 36/12km grid for the 2016 calendar year period. The 12km CAMx modeling databases are based on the EPA "fh" platform databases. While some of the data prepared by EPA for this platform are new, many of the files are largely based on earlier 2016 platform versions. More details on the 2016 CAMx database development are provided in EPA documentation as follows:

- Meteorological Model Performance for Annual 2016 WRF v3.8 Simulation (EPA, 2019a).
- National Emissions Inventory Collaborative (2019). 2016v1 Emissions Modeling Platform. Retrieved from http://views.cira.colostate.edu/wiki/wiki/10202.
- Technical Support Document (TSD) - Preparation of Emissions Inventories for the Version 7.2 2016 North American Emissions Modeling Platform (EPA, 2019c).

The modeling procedures used in the modeling are consistent with over 20 years of EPA ozone modeling guidance documents (e.g., EPA, 1991; 1999; 2005a; 2007; 2014; 2018b), other recent modeling studies conducted for various State and local agencies using these or other state-of-science modeling, as well as the methods used by EPA in support of the recent Transport analyses (EPA, 2010; 2015b, 2016b, 2018).

5.1 METEOROLOGICAL INPUTS

5.1.1 WRF Model Science Configuration

Version 3.8 of the WRF model, Advanced Research WRF (ARW) core (Skamarock, 2008) was used for generating the 2016 simulation. Selected physics options include Pleim-Xiu land surface model, Asymmetric Convective Model version 2 planetary boundary layer scheme, Kain-Fritsch cumulus parameterization utilizing the moisture-advection trigger, Morrison double moment microphysics, and RRTMG longwave and shortwave radiation schemes (Gilliam and Pleim, 2010). The WRF model configuration was prepared by EPA (EPA, 2019a).

5.1.2 WRF Input Data Preparation Procedures

A summary of the WRF input data preparation procedures that were used are listed in EPA's documentation (EPA, 2019a).

5.1.3 WRF Model Performance Evaluation

The WRF model evaluation approach was based on a combination of qualitative and quantitative analyses. The quantitative analysis was divided into monthly summaries of 2-m temperature, 2-m mixing ratio, and 10-m wind speed using the boreal seasons to help generalize the model bias and error relative to a set of standard model performance benchmarks. The qualitative approach was to compare spatial plots of model estimated monthly total precipitation with the monthly PRISM precipitation. The WRF model performance evaluation for the 12km domain is provided in EPA's documentation (EPA, 2019a).

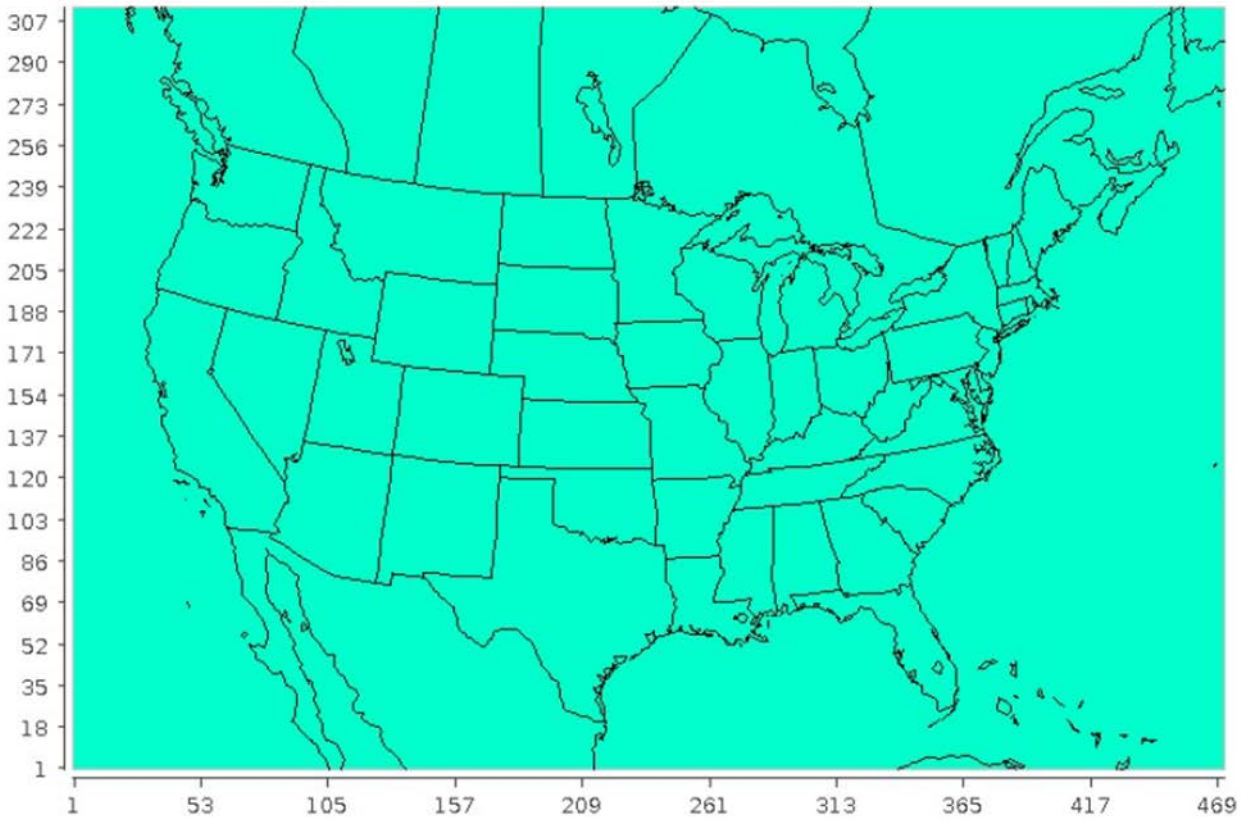

Figure 5-1. Map of 12km WRF domain. Source: EPA, 2019a.

5.1.4 WRFCAMx/MCIP Reformatting Methodology

The WRF meteorological model output data was processed to provide inputs for the CAMx photochemical grid model. The WRFCAMx processor maps WRF meteorological fields to the format required by CAMx. It also calculates turbulent vertical exchange coefficients (Kv) that define the rate and depth of vertical mixing in CAMx. The methodology used by EPA to reform the meteorological data into CAMx format is provided in documentation provided with the wrfcamx conversion utility.

The meteorological data generated by the WRF simulations were processed by EPA using WRFCAMx v4.6 meteorological data processing program to create model-ready meteorological inputs to CAMx. Vertical diffusivities were based on the "YSU" scheme with the EPA application of the "kvpatch" processor to adjust based on land use.

5.2 EMISSION INPUTS

5.2.1 Available Emissions Inventory Datasets

EPA's 2016 base year and 2028 future year emission inventories from the CMV updated "fh" modeling platform (EPA, 2019c) were used for all categories without exception.

5.2.2 Development of CAMx-Ready Emission Inventories

CAMx-ready emission inputs were generated by EPA mainly by the SMOKE and BEIS emissions models. CAMx requires two emission input files for each day: (1) low level gridded emissions that are emitted directly into the first layer of the model from sources at the surface with little or no plume rise; and (2) elevated point sources (stacks) with plume rise calculated from stack parameters and meteorological conditions. For this analysis, CAMx was operated using version 7.00beta6.

Additional emission modeling was not required for the simulation as the 2028fh platform was provided to Alpine in pre-merged near CAMx ready format.

5.2.2.1 Episodic Biogenic Source Emissions

Biogenic emissions were generated by EPA using the BEIS biogenic emissions model within SMOKE. BEIS uses high resolution GIS data on plant types and biomass loadings and the WRF surface temperature fields, and solar radiation (modeled or satellite-derived) to develop hourly emissions for biogenic species on the 36km and 12 km grids. BEIS generates gridded, speciated, temporally allocated emission files.

5.2.2.2 Point Source Emissions

2016 point source emissions were from the 2016 “fh” modeling platform. Point sources were developed in two categories: (1) major point sources with Continuous Emissions Monitoring (CEM) devices; and (2) point sources without CEMs. For point sources with continuous emissions monitoring (CEM) data, day-specific hourly NO_x and SO_2 emissions were used for the 2016 base case emissions scenario. The VOC, CO and PM emissions for point sources with CEM data were based on the annual emissions temporally allocated to each hour of the year using the CEM hourly heat input. The locations of the point sources were converted to the LCP coordinate system used in the modeling. They were processed by EPA using SMOKE to generate the temporally varying (i.e., day-of-week and hour-of-day) speciated emissions needed by CAMx, using profiles by source category from the EPA “fh” modeling platform.

5.2.2.3 Area and Non-Road Source Emissions

2016 area and non-road emissions were from the 2016 “fh” modeling platform. The area and non-road sources were spatially allocated to the grid using an appropriate surrogate distribution (e.g., population for home heating, etc.). The area sources were temporally allocated by month and by hour of day using the EPA source-specific temporal allocation factors. The SMOKE source-specific CB6 speciation allocation profiles were also used.

5.2.2.4 Wildfires, Prescribed Burns, Agricultural Burns

Fire emissions in 2016v1 were developed based on Version 2 of the Satellite Mapping Automated Reanalysis Tool for Fire Incident Reconciliation (SMARTFIRE) system (Sullivan, et al., 2008). SMARTFIRE2 was the first version of SMARTFIRE to assign all fires as either prescribed burning or wildfire categories. In past inventories, a significant number of fires were published as unclassified, which impacted the emissions values and diurnal emissions pattern. Recent updates to SMARTFIRE include improved emission factors for prescribed burning.

5.2.2.5 On-Road Motor Vehicle Emissions

On-road motor vehicle emissions were processed by EPA using the SMOKE-MOVES module.

5.2.2.6 QA/QC and Emissions Merging

EPA processed the emissions by major source category in several different "streams", including area sources, on-road mobile sources, non-road mobile sources, biogenic sources, non-CEM point sources, CEM point sources using day-specific hourly emissions, and emissions from fires. Separate Quality Assurance (QA) and Quality Control (QC) were performed for each stream of emissions processing and in each step following the procedures utilized by EPA. SMOKE includes advanced quality assurance features that include error logs when emissions are dropped or added. In addition, we generated visual displays that included spatial plots of the hourly emissions for each major species (e.g., NOX, VOC, some speciated VOC, SO2, NH3, PM and CO).

Scripts to perform the emissions merging of the appropriate biogenic, on-road, non-road, area, low-level, fire, and point emission files were written to generate the CAMx-ready two-dimensional day and domain-specific hourly speciated gridded emission inputs. The point source and, as available elevated fire, emissions were processed into the day-specific hourly speciated emissions in the CAMx-ready point source format.

The resultant CAMx model-ready emissions were subjected to a final QA using spatial maps to assure that: (1) the emissions were merged properly; (2) CAMx inputs contain the same total emissions; and (3) to provide additional QA/QC information.

5.2.3 Use of the Plume-in-Grid (PiG) Subgrid-Scale Plume Treatment

Consistent with the EPA "fg" simulation, no PiG subgrid-scale plume treatment was used.

5.2.4 Future-Year Emissions Modeling

Future-year emission inputs were generated by processing the 2028 emissions data provided with EPA's "fh" modeling platform without exception.

5.3 PHOTOCHEMICAL MODELING INPUTS

5.3.1 CAMx Science Configuration and Input Configuration

CAMx Version 7.00beta6 was used in the modeling. The CAMx model setup used is defined by EPA in its air quality modeling technical support documents (EPA, 2016b, 2017, 2018b).

6.0 MODEL PERFORMANCE EVALUATION

The CAMx 2016 base case model estimates are compared against the observed ambient ozone and other concentrations to establish that the model is capable of reproducing the current year observed concentrations so it is likely a reliable tool for estimating future year ozone levels.

6.1 MODEL PERFORMACE EVALUATION

6.1.1 Overview of EPA Model Performance Evaluation Recommendations

EPA current (EPA, 2018b) ozone modeling guidance recommendations for model performance evaluation (MPE) describes an MPE framework that has four components:

- Operation evaluation that includes statistical and graphical analysis aimed at determining how well the model simulates observed concentrations (i.e., does the model get the right answer).
- Diagnostic evaluation that focuses on process-oriented evaluation and whether the model simulates the important processes for the air quality problem being studied (i.e., does the model get the right answer for the right reason).
- Dynamic evaluation that assess the ability of the model air quality predictions to correctly respond to changes in emissions and meteorology.
- Probabilistic evaluation that assess the level of confidence in the model predictions through techniques such as ensemble model simulations.

EPA's guidance recommends that "At a minimum, a model used in an attainment demonstration should include a complete operational MPE using all available ambient monitoring data for the base case model simulations period" (EPA, 2018b). The guidance goes on to say "*Where practical, the MPE should also include some level of diagnostic evaluation*." EPA notes that there is no single definite test for evaluation model performance, but instead there are a series of statistical and graphical MPE elements to examine model performance in as many ways as possible while building a "weight of evidence" (WOE) that the model is performing sufficiently well for the air quality problem being studied.

6.1.2 MPE Results

Alpine conducted an operational model performance evaluation (Alpine, 2020) for ozone to examine the ability of the CAMx v7.00beta6 modeling system to simulate 2016 measured concentrations. This evaluation focused on graphical analyses and statistical metrics of model predictions versus observations. Details on the evaluation methodology, the calculation of performance statistics, and results are provided in that report.

Overall, the ozone model performance results for the 2016fh 12km CAMx simulations are within the range found in other recent peer-reviewed and regulatory applications. The model performance results, as described in this document, demonstrate that the predictions from the 12km domain using the 2016fh modeling platform correspond closely to observed concentrations in terms of the magnitude, temporal fluctuations, and geographic differences for 8-hour daily maximum ozone.

7.0 FUTURE YEAR MODELING

This chapter discusses the 2028 future year modeling resulting from the modeling effort.

7.1 FUTURE YEAR SIMULATED

The modeled 2028 concentrations were used to identify monitoring sites that are projected to be nonattainment or have maintenance problems for the ozone or $PM_{2.5}$NAAQS in 2028.

7.2 FUTURE YEAR GROWTH AND CONTROLS

In January 2020, EPA released the revised "fh" modeling platform that was the source for the 2028 future year emissions in this analysis. This platform has been identified by EPA as the base case for compliance with promulgated federal, state, and local rules at the time of inventory preparation. Additionally, there were several emission categories and model inputs/options that were held constant at 2016 levels as follows:

- Biogenic emissions.
- Wildfires, Prescribed Burns and Agricultural Burning (open land fires).
- Windblown dust emissions.
- Sea Salt.
- 36 km CONUS domain Boundary Conditions (BCs).
- 2016 36km and 12km meteorological conditions.
- All model options and inputs other than emissions.

The effects of climate change on the future year meteorological conditions were not accounted. It has been argued that global warming could increase ozone due to higher temperatures producing more biogenic VOC and faster photochemical reactions. The effects of inter-annual variability in meteorological conditions may be more important than climate change given the 12-year difference between the base (2016) and future (2028) years.

7.3 FUTURE YEAR BASELINE AIR QUALITY SIMULATIONS

A 2028 future year base case CAMx simulation was conducted and 2028 maximum daily 8-hour ozone, annual and 24-hour $PM_{2.5}$ design value projections, and regional haze visibility calculations were made based on EPA's latest modeling guidance (EPA, 2018b) for the 12US2 modeling domain in this analysis.

7.3.1 Calculation of Future Ozone Concentrations

The ozone predictions from the 2016 and 2028 CAMx model simulations were used to project 2014-2018 average ozone design values to 2028 using the SMAT-CE tool and following the approach described in the EPA's guidance for attainment demonstration modeling (EPA, 2018b).

Sites with 2028 average design values that exceed the NAAQS (i.e., 2028 average design values of 71 ppb or greater) are considered nonattainment receptors in 2028.

Modeled nonattainment monitors defined using Alpine's 12km simulation are provided in Table 7-1 along with their calculated 2028 average and most current 2016-2018 design values. A full list of monitor locations and modeled average ozone design values for the 12km domain modeling is provided in Appendix A of this report and is presented in Figure 7-1 below.

Table 7-1. Alpine 12km modeling-identified 8-hour ozone nonattainment monitors.

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
60170010	California	El Dorado	85.3	72.7	88
60190007	California	Fresno	87.0	76.5	86
60190011	California	Fresno	90.0	79.1	90
60190242	California	Fresno	84.3	75.8	83
60194001	California	Fresno	90.3	78.2	88
60195001	California	Fresno	91.0	79.7	89
60250005	California	Imperial	76.7	76.4	77
60251003	California	Imperial	76.0	75.7	76
60290007	California	Kern	87.7	78.8	89
60290008	California	Kern	83.0	75.0	85
60290011	California	Kern	83.3	76.9	85
60290014	California	Kern	86.0	77.5	88
60290232	California	Kern	79.3	71.5	82
60292012	California	Kern	89.3	80.3	88
60295002	California	Kern	87.3	78.4	89
60296001	California	Kern	80.7	73.5	81
60311004	California	Kings	83.3	72.8	82
60370002	California	Los Angeles	94.3	89.3	99
60370016	California	Los Angeles	100.0	94.7	103
60371201	California	Los Angeles	88.3	80.7	91
60371602	California	Los Angeles	75.7	74.3	75
60371701	California	Los Angeles	92.0	87.6	91
60372005	California	Los Angeles	84.7	81.5	86
60376012	California	Los Angeles	98.0	89.2	100
60379033	California	Los Angeles	87.3	78.8	85
60390004	California	Madera	80.3	72.2	78
60392010	California	Madera	82.7	73.3	81
60430003	California	Mariposa	76.0	72.9	79
60470003	California	Merced	80.7	71.5	79
60570005	California	Nevada	86.3	73.9	90
60595001	California	Orange	75.3	73.5	76
60610003	California	Placer	85.0	73.2	88
60650012	California	Riverside	95.3	85.7	98
60651016	California	Riverside	99.7	89.0	101

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
60652002	California	Riverside	82.7	75.2	85
60655001	California	Riverside	88.7	78.8	91
60656001	California	Riverside	92.3	82.2	93
60658001	California	Riverside	96.7	90.0	98
60658005	California	Riverside	95.0	88.4	98
60659001	California	Riverside	88.7	79.2	89
60670012	California	Sacramento	82.3	71.1	82
60710001	California	San Bernardino	79.0	73.7	80
60710005	California	San Bernardino	110.3	102.3	111
60710012	California	San Bernardino	95.0	87.4	98
60710306	California	San Bernardino	84.0	77.2	82
60711004	California	San Bernardino	105.7	99.8	109
60712002	California	San Bernardino	97.7	91.1	99
60714001	California	San Bernardino	90.3	83.0	90
60714003	California	San Bernardino	104.0	95.6	107
60719002	California	San Bernardino	87.3	78.2	89
60719004	California	San Bernardino	108.7	99.9	111
60731006	California	San Diego	83.0	76.4	84
60990005	California	Stanislaus	81.0	73.1	80
60990006	California	Stanislaus	83.7	75.1	84
61070006	California	Tulare	84.7	75.1	86
61070009	California	Tulare	89.0	77.1	89
61072002	California	Tulare	82.7	71.0	85
61072010	California	Tulare	84.0	72.5	83
61090005	California	Tuolumne	80.7	72.6	83
80590011	Colorado	Jefferson	79.3	71.7	79
90010017	Connecticut	Fairfield	79.3	71.6	79
90013007	Connecticut	Fairfield	82.0	72.3	82
90019003	Connecticut	Fairfield	82.7	72.8	82
482010024	Texas	Harris	79.3	71.9	78
490353006	Utah	Salt Lake	76.3	71.5	76
490353013	Utah	Salt Lake	76.5	72.4	77
490472002	Utah	Uintah	75.0	72.0	75
490472003	Utah	Uintah	88.0	84.2	88

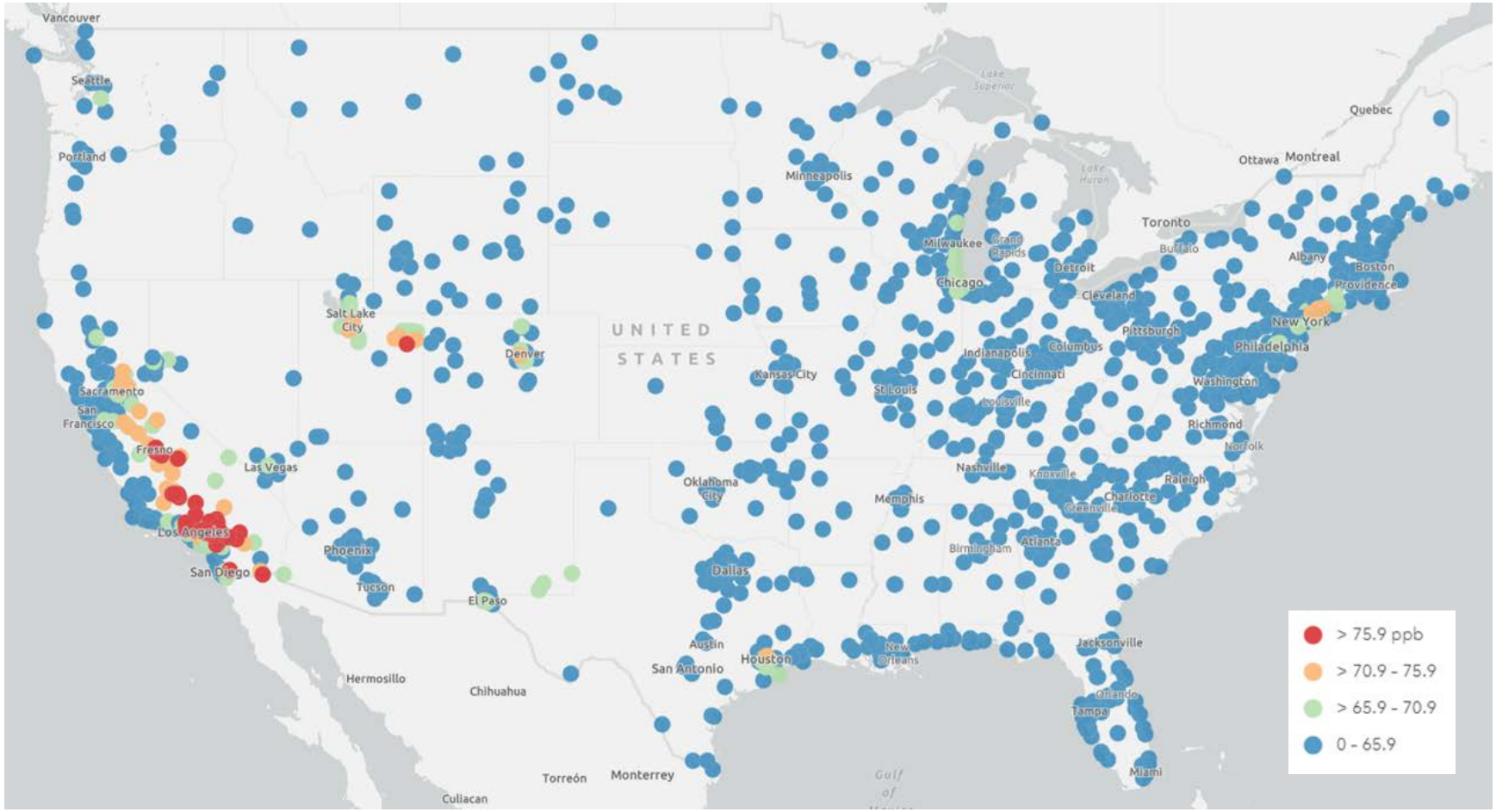

Figure 7-1. 2028fh Calculated 2028 MDA8 Ozone Design Values (ppb).

7.3.2 Calculation of Future Annual $PM_{2.5}$ Concentrations

The $PM_{2.5}$ predictions from the 2016 and 2028 CAMx model simulations were used to project $PM_{2.5}$ design values to 2028 using the SMAT-CE tool and following the approach described in the EPA's guidance for attainment demonstration modeling (EPA, 2018b).

Sites with 2028 average design values that exceed the NAAQS (i.e., 2028 average annual design values greater than 12.0 $\mu g/m^3$) are considered nonattainment receptors in 2028.

Modeled nonattainment monitors defined using Alpine's 12km simulation are provided in Table 7-2 along with their calculated 2028 average and most current 2016-2018 design values. A full list of monitor locations and modeled annual $PM_{2.5}$ design values for the 12km domain modeling is provided in Appendix B of this report and is presented in Figure 7-2 below.

Table 7-2. Alpine 12km modeling-identified annual $PM_{2.5}$ nonattainment monitors.

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
40213015	Arizona	Pinal	13.04	12.61	13.0
60190011	California	Fresno	14.21	12.91	14.6
60195001	California	Fresno	13.73	12.74	13.5
60195025	California	Fresno	14.24	13.05	15.0
60250005	California	Imperial	12.41	13.47	12.6
60290014	California	Kern	16.10	14.10	16.1
60290016	California	Kern	17.86	15.76	17.8
60310004	California	Kings	16.53	15.04	16.0
60311004	California	Kings	16.56	15.16	16.8
60392010	California	Madera	12.96	12.09	12.8
60631010	California	Plumas	14.95	14.33	14.7
60658005	California	Riverside	13.92	13.41	13.9
60771002	California	San Joaquin	12.76	12.06	13.8
60990005	California	Stanislaus	13.07	12.06	13.1
60990006	California	Stanislaus	13.46	12.58	14.2
61072002	California	Tulare	15.99	14.57	16.1

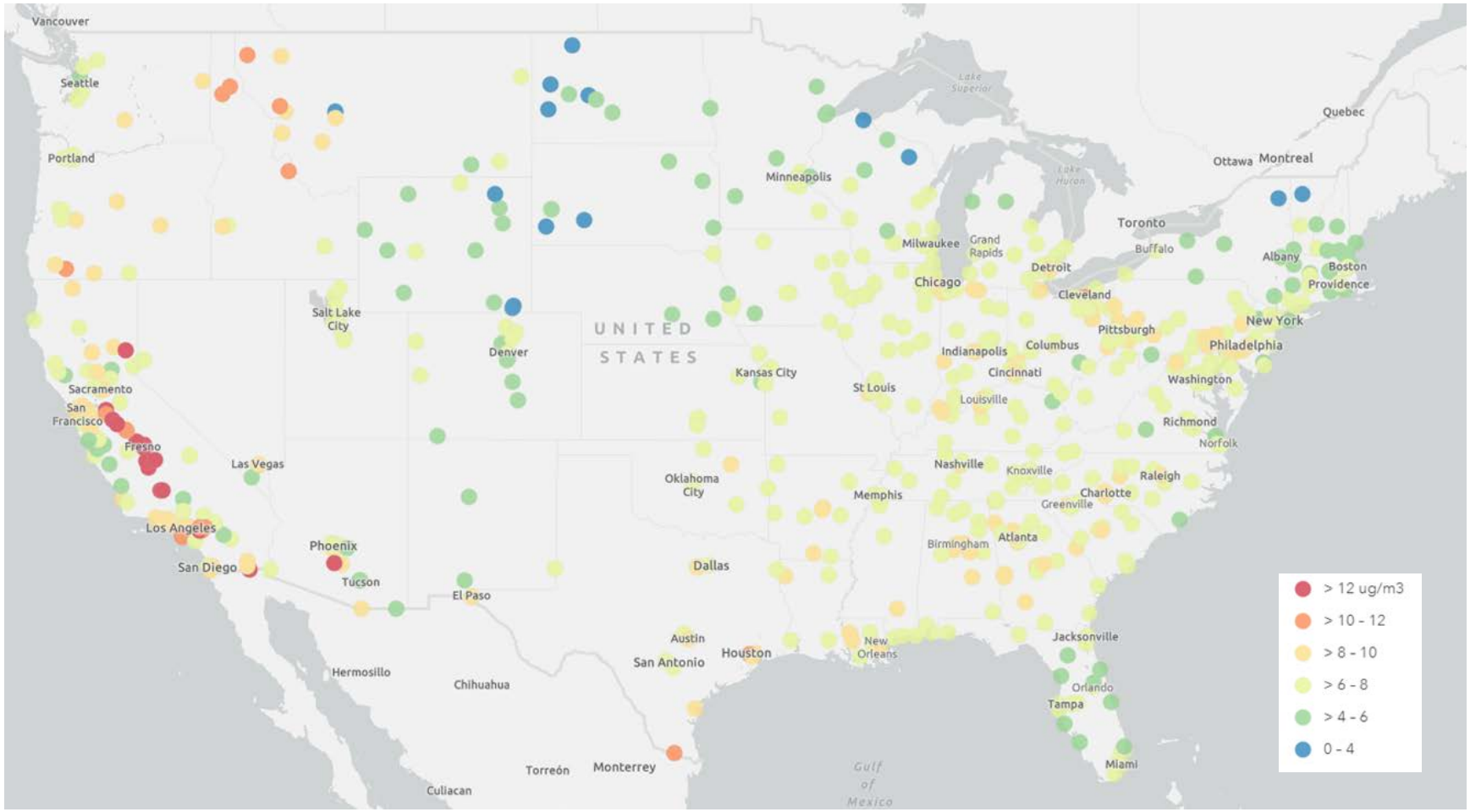

Figure 7-2. 2028fh Calculated 2028 Annual $PM_{2.5}$ Design Values (µg/m^3).

7.3.3 Calculation of Future 24-Hour $PM_{2.5}$ Concentrations

The $PM_{2.5}$ predictions from the 2016 and 2028 CAMx model simulations were used to project daily (24-hour) $PM_{2.5}$ design values to 2028 using the SMAT-CE tool and following the approach described in the EPA's guidance for attainment demonstration modeling (EPA, 2018b).

Sites with 2028 design values that exceed the NAAQS (i.e., 2028 average daily (24-hour) design values greater than 35 µg/m^3) are considered nonattainment receptors in 2028.

Modeled nonattainment monitors defined using Alpine's 12km simulation are provided in Table 7-3 along with their calculated 2028 average and most current 2016-2018 design values. A full list of monitor locations and modeled 24-hour $PM_{2.5}$ design values for the 12km domain modeling is provided in Appendix C of this report and is presented in Figure 7-3 below.

Table 7-3. Alpine 12km modeling-identified daily (24-hour) $PM_{2.5}$ nonattainment monitors.

			Daily $PM_{2.5}$ (µg/m^3)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
60010013	California	Alameda	41.2	39.8	41
60190011	California	Fresno	55.3	47.6	58
60195001	California	Fresno	48.3	41.2	50
60195025	California	Fresno	53.0	47.0	60
60290010	California	Kern	63.1	57.7	61
60290014	California	Kern	60.9	55.9	63
60290016	California	Kern	60.2	55.7	60
60311004	California	Kings	58.9	49.1	63
60392010	California	Madera	43.5	36.0	44
60470003	California	Merced	40.9	35.4	45
60631010	California	Plumas	48.8	46.8	46
60658005	California	Riverside	39.6	38.0	36
60771002	California	San Joaquin	44.5	39.4	56
60772010	California	San Joaquin	42.5	36.5	54
60932001	California	Siskiyou	44.3	43.1	59
60990005	California	Stanislaus	46.9	38.9	63
60990006	California	Stanislaus	49.5	41.4	58
61072002	California	Tulare	55.7	46.1	60
160090010	Idaho	Benewah	38.2	35.4	37
160590004	Idaho	Lemhi	43.5	42.3	43
160790017	Idaho	Shoshone	38.7	36.6	38
300290049	Montana	Flathead	42.7	41.4	37
300490026	Montana	Lewis and Clark	42.3	41.0	43
300530018	Montana	Lincoln	45.3	43.0	48

			Daily $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
300630024	Montana	Missoula	44.7	42.9	42
300630037	Montana	Missoula	39.7	38.4	38
300810007	Montana	Ravalli	57.5	56.2	46
410130100	Oregon	Crook	39.0	37.9	38
410330114	Oregon	Josephine	42.5	40.9	63
410350004	Oregon	Klamath	45.9	44.9	75
410370001	Oregon	Lake	41.6	40.6	47
410392013	Oregon	Lane	41.0	39.8	47
530370002	Washington	Kittitas	39.8	38.2	40
530470013	Washington	Okanogan	62.3	60.2	62
530770015	Washington	Yakima	43.6	40.4	47

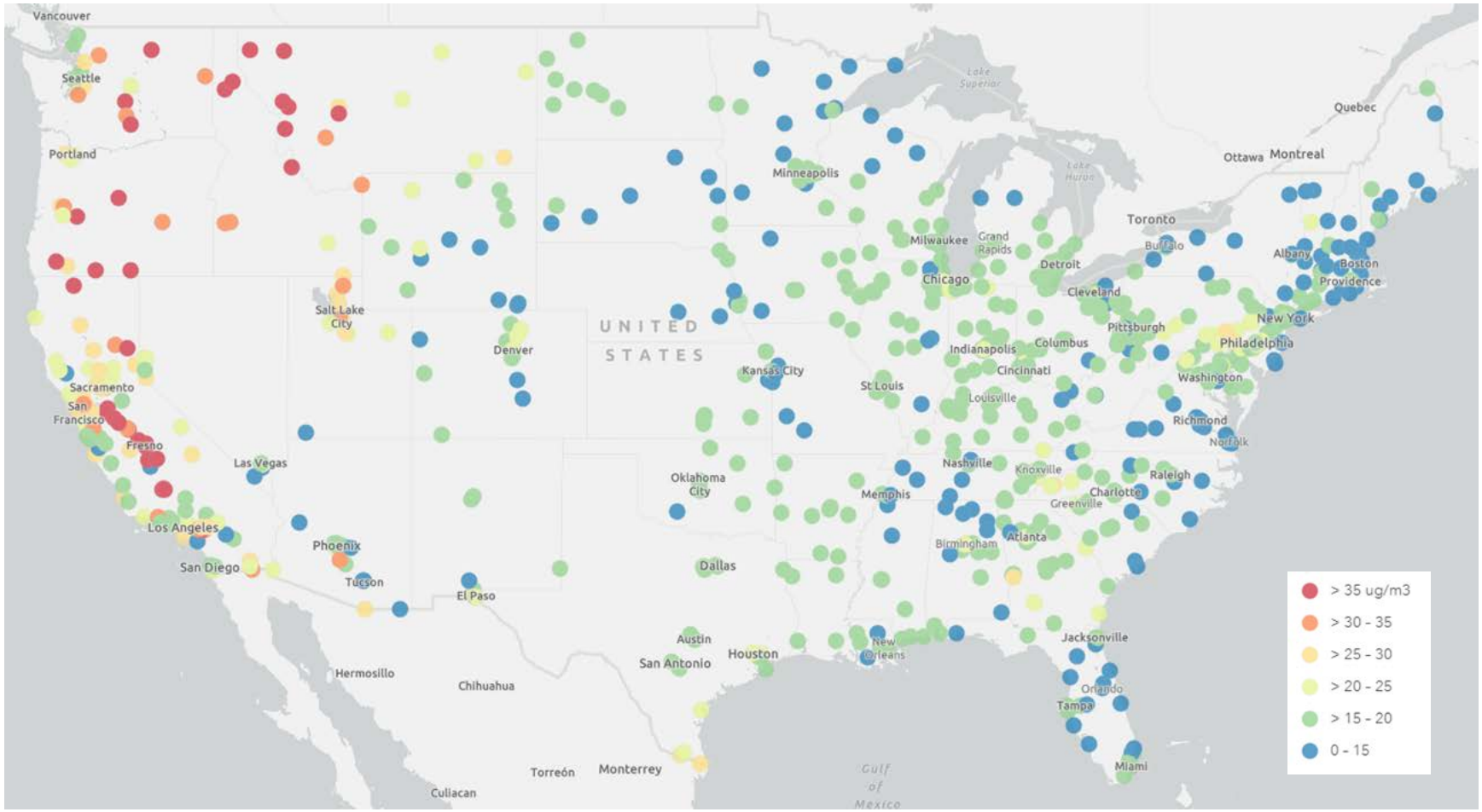

Figure 7-3. 2028fh Calculated 2028 Daily (24-hour) $PM_{2.5}$ Design Values (µg/m³).

7.3.4 Future Regional Haze Visibility and Light Extinction

The visibility projections follow the procedures in section 5 of EPA's SIP Modeling Guidance. Based on the recommendation in the modeling guidance, the observed base period visibility data is linked to the base modeling year. This is the 5-year ambient data base period centered about the base modeling year. In this case, for a base modeling year of 2016, the ambient IMPROVE data should be from the 2004-2018 period.

The visibility calculations use the "revised" IMPROVE equation, which has been used in most regional haze SIPs over the last 10 years. The 2028 future year visibility on the 20% most anthropogenically impaired (I20%) and 20% best visibility (B20%) days at each Class I area is estimated by using the observed IMPROVE data (2014-2018) and the relative percent modeled change in PM species between 2016 and 2028.

The SMAT-CE tool outputs individual year and 5-year average base year and future year deciview values on the I20% and B20% days. Modeled Class I area visibility calculations on the 20% most anthropogenically impaired days using Alpine's 12km simulation and EPA calculated 2028 unadjusted glidepath values[7] are provided in Table 7-4. A full list of monitor locations and base and future year deciview values and light extinction (Mm^{-1}) on the B20% and I20% days at each Class I area for the base model period (2009-2013) and future year (2028) is provided in Appendix D of this report. 2028 deciview deviation by Class I area as calculated from EPA's 2028 unadjusted glidepath on the 20% most impaired days[7] are presented in Figure 7-4 below. Negative values indicate that the 2028fh projection is below the glidepath value.

Table 7-4. Modeled I20% visibility (deciviews) from Alpine 12km modeling and 2028 EPA unadjusted glidepath values.

	Visibility (dv)		Glideslope
Site	**2016 I20%**	**2028 I20%**	**2028 I20%**
ACAD	14.54	13.65	17.36
AGTI	16.33	15.92	16.03
ALLA	12.74	12.17	12.12
ANAC	8.37	8.19	8.23
ANAD	10.98	10.59	10.18
ARCH	6.76	6.40	6.92
BADL	12.33	11.69	11.42
BALD	7.29	6.93	6.99
BAND	8.44	8.01	7.65
BIBE	14.06	13.73	11.47
BLCA	6.55	6.32	6.28

7 Table 3-3, https://www.epa.gov/sites/production/files/2019-10/documents/updated_2028_regional_haze_modeling-tsd-2019_0.pdf

	Visibility (dv)		Glideslope
Site	**2016 I20%**	**2028 I20%**	**2028 I20%**
BOAP	10.47	10.07	9.11
BOMA	10.06	9.74	8.68
BOWA	13.96	12.98	14.62
BRCA	6.60	6.34	6.68
BRET	19.04	17.96	18.67
BRID	6.77	6.54	6.34
BRIG	19.31	17.98	20.74
CABI	9.87	9.57	8.70
CACR	18.29	16.68	18.18
CANY	6.76	6.40	6.92
CAPI	7.18	6.94	6.85
CARI	10.23	9.95	9.36
CAVE	12.64	12.42	10.69
CHAS	17.41	15.90	18.30
CHIR	9.41	8.92	8.27
CHIW	9.41	8.92	8.27
COHU	17.37	15.77	21.36
CRLA	7.98	7.81	7.70
CRMO	8.50	8.07	9.13
CUCA	13.19	12.60	13.18
DESO	9.31	8.90	8.00
DIPE	7.98	7.81	7.70
DOME	15.14	14.58	12.79
DOSO	17.65	15.99	20.54
EACA	11.19	10.64	11.35
EANE	4.98	4.78	4.99
EMIG	11.57	11.33	10.63
EVER	14.90	13.91	15.06
FITZ	6.77	6.54	6.34
FLTO	4.98	4.78	4.99
GALI	9.41	8.92	8.27
GAMO	7.47	7.30	7.23
GEMO	7.98	7.81	7.70
GICL	7.58	7.22	7.05
GLAC	13.77	13.17	12.29
GLPE	9.98	9.75	10.29
GORO	7.98	7.76	8.75
GRCA	6.87	6.51	6.44
GRGU	13.07	12.05	17.07
GRSA	8.02	7.72	7.58

	Visibility (dv)		Glideslope
Site	**2016 I20%**	**2028 I20%**	**2028 I20%**
GRSM	17.21	15.66	21.51
GRTE	7.52	7.31	6.57
GUMO	12.64	12.42	10.69
HECA	12.33	11.81	12.53
HEGL	18.72	17.23	18.82
HOOV	7.83	7.64	7.35
ISLE	15.54	14.68	15.78
JARB	7.97	7.87	7.33
JARI	17.89	16.06	20.64
JOMU	10.98	10.59	10.18
JOSH	12.87	12.54	13.08
KAIS	10.98	10.59	10.18
KALM	11.97	11.73	11.13
KICA	18.43	17.27	16.41
LABE	9.67	9.42	9.24
LAGA	6.55	6.32	6.28
LAVO	10.23	9.95	9.36
LIGO	16.42	14.72	20.71
LOST	16.18	15.60	13.31
LYBR	14.73	13.82	18.23
MABE	4.98	4.78	4.99
MACA	21.02	19.27	21.81
MAZA	9.32	8.94	8.80
MELA	15.30	14.74	12.36
MEVE	6.51	6.18	7.22
MIMO	10.06	9.74	8.68
MING	20.13	18.75	19.48
MOHO	9.27	8.94	9.90
MOJE	11.28	11.01	10.60
MOKE	9.31	8.90	8.00
MOLA	7.98	7.81	7.70
MOOS	13.32	12.63	16.38
MORA	12.66	12.17	12.98
MOWA	11.28	11.01	10.60
MOZI	5.47	5.18	5.64
NOAB	7.17	6.96	7.08
NOCA	9.98	9.75	10.29
OKEF	17.39	16.23	18.99
OLYM	11.90	11.63	11.71
PASA	9.46	9.14	8.63

	Visibility (dv)		Glideslope
Site	**2016 I20%**	**2028 I20%**	**2028 I20%**
PECO	6.03	5.72	5.83
PEFO	8.16	7.71	7.57
PIMO	9.32	8.94	8.80
PINN	14.10	13.64	12.99
PRRA	13.07	12.05	17.07
RAFA	14.11	13.64	13.08
RAWA	5.47	5.18	5.64
REDR	7.52	7.31	6.57
REDW	12.65	12.44	11.60
ROCA	13.32	12.63	16.38
ROMA	17.67	16.48	19.07
ROMO	8.41	7.85	8.64
SACR	14.97	14.31	12.12
SAGA	13.19	12.60	13.18
SAGO	14.45	13.47	14.74
SAGU	10.75	10.16	9.65
SAJA	14.45	13.47	14.74
SAMA	17.39	16.05	18.42
SAPE	6.43	6.11	5.94
SAWT	8.61	8.41	7.64
SCAP	10.06	9.74	8.68
SELW	8.37	8.19	8.23
SENE	17.57	16.49	18.62
SEQU	18.43	17.27	16.41
SHEN	17.07	15.17	20.80
SHRO	15.49	13.76	20.87
SIPS	19.03	17.44	20.44
SOWA	9.67	9.42	9.24
STMO	11.19	10.64	11.35
SUPE	10.45	9.97	9.03
SWAN	16.30	14.99	18.08
SYCA	11.63	11.29	9.17
TETO	7.52	7.31	6.57
THIS	11.28	11.01	10.60
THLA	10.23	9.95	9.36
THRO	14.06	13.42	12.19
ULBE	10.93	10.77	10.00
UPBU	17.95	16.61	18.32
VENT	14.10	13.64	12.99
VOYA	14.18	13.11	14.38

	Visibility (dv)		Glideslope
Site	**2016 I20%**	**2028 I20%**	**2028 I20%**
WASH	7.17	6.96	7.08
WEEL	4.98	4.78	4.99
WEMI	6.55	6.32	6.28
WHIT	9.95	9.65	8.74
WHPA	7.98	7.76	8.75
WHPE	6.03	5.72	5.83
WICA	10.53	9.91	10.11
WIMO	18.12	16.81	16.06
YELL	7.52	7.31	6.57
YOSE	11.57	11.33	10.63
ZION	8.76	8.55	8.47

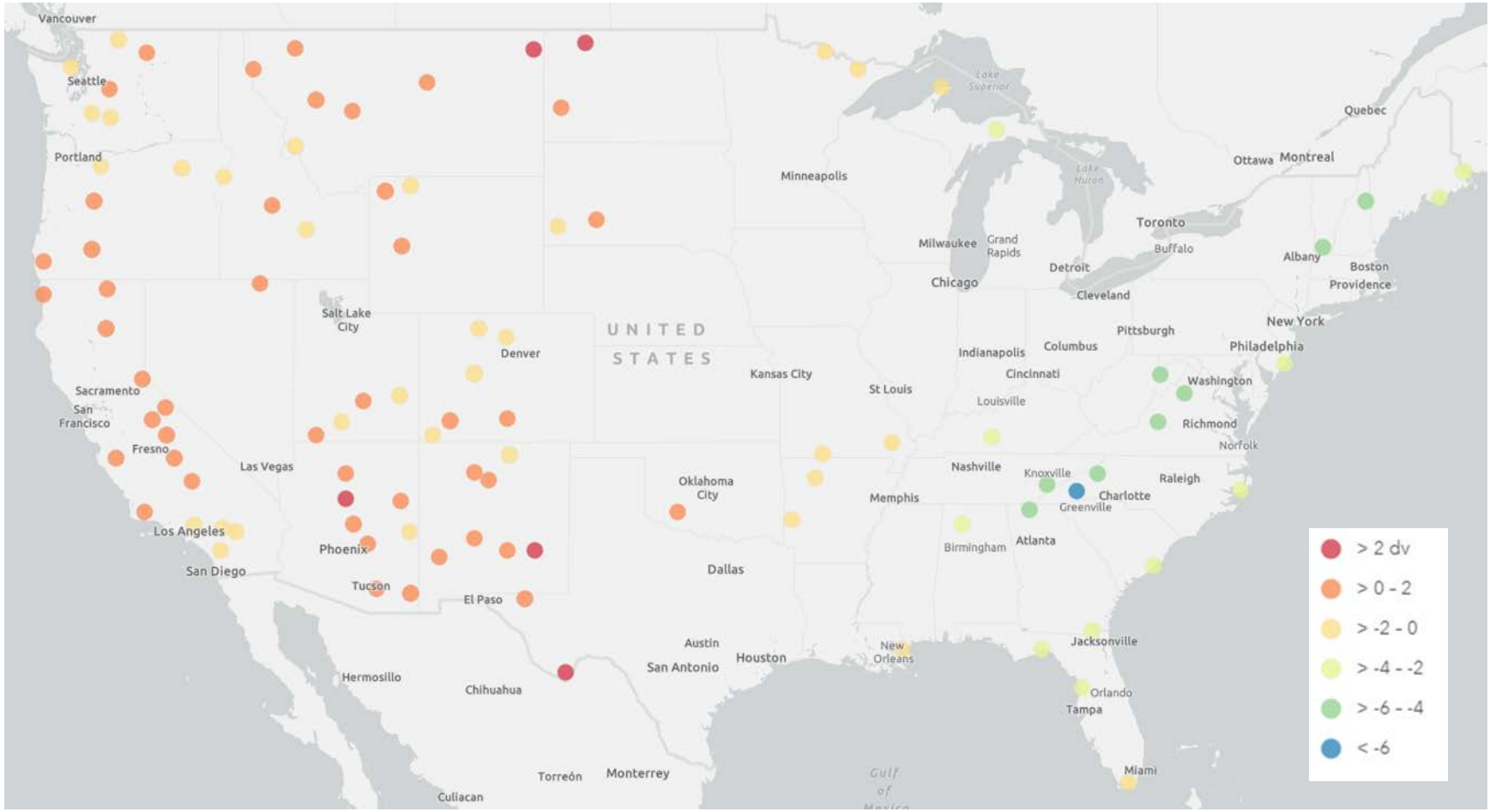

Figure 7-4. 2028fh Calculated 2028 Visibility Deviation from 2028 Unadjusted Glidepath on 20% Most Impaired Days (dv).

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Appendix A

12km MDA8 Ozone Design Value Modeling Results from 2028fh Projection with Current 2016-2018 Design Value

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
10030010	Alabama	Baldwin	63.7	51.5	63
10331002	Alabama	Colbert	58.7	47.6	59
10499991	Alabama	DeKalb	62.3	51.6	62
10550011	Alabama	Etowah	61.7	50.7	63
10730023	Alabama	Jefferson	66.3	51.4	65
10731003	Alabama	Jefferson	65.7	51.7	65
10731005	Alabama	Jefferson	65.0	50.8	65
10731010	Alabama	Jefferson	64.3	50.6	66
10732006	Alabama	Jefferson	66.0	51.0	-
10735003	Alabama	Jefferson	63.5	51.8	63
10736002	Alabama	Jefferson	67.7	52.5	67
10890014	Alabama	Madison	64.0	50.6	64
10890022	Alabama	Madison	62.0	49.2	62
10970003	Alabama	Mobile	63.0	50.7	64
10972005	Alabama	Mobile	63.7	51.6	63
11011002	Alabama	Montgomery	61.0	48.2	60
11030011	Alabama	Morgan	63.7	52.4	64
11130002	Alabama	Russell	62.0	49.2	-
11170004	Alabama	Shelby	66.7	51.3	67
11190003	Alabama	Sumter	57.0	49.3	57
11250010	Alabama	Tuscaloosa	60.0	48.1	60
40051008	Arizona	Coconino	66.7	61.6	65
40058001	Arizona	Coconino	66.0	63.8	65
40070010	Arizona	Gila	72.3	63.9	74
40130019	Arizona	Maricopa	73.7	64.8	74
40131003	Arizona	Maricopa	75.3	65.5	76
40131004	Arizona	Maricopa	75.3	65.3	76
40131010	Arizona	Maricopa	74.0	63.7	75
40132001	Arizona	Maricopa	67.7	58.5	68
40132005	Arizona	Maricopa	76.0	63.8	77
40133002	Arizona	Maricopa	70.0	61.7	70
40133003	Arizona	Maricopa	69.7	60.4	70
40134003	Arizona	Maricopa	69.7	61.3	70
40134004	Arizona	Maricopa	70.0	60.6	70
40134005	Arizona	Maricopa	67.0	58.2	67
40134008	Arizona	Maricopa	71.0	60.9	72
40134010	Arizona	Maricopa	68.7	59.1	72
40134011	Arizona	Maricopa	62.7	56.5	66
40137003	Arizona	Maricopa	66.3	58.3	66

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
40137020	Arizona	Maricopa	72.0	62.4	72
40137021	Arizona	Maricopa	75.7	65.0	76
40137022	Arizona	Maricopa	74.0	63.5	73
40137024	Arizona	Maricopa	72.0	62.4	73
40139508	Arizona	Maricopa	73.0	63.2	73
40139702	Arizona	Maricopa	72.7	62.4	74
40139704	Arizona	Maricopa	71.0	60.5	72
40139706	Arizona	Maricopa	69.0	58.3	-
40139997	Arizona	Maricopa	75.0	66.1	75
40190021	Arizona	Pima	69.3	63.9	71
40191011	Arizona	Pima	63.7	58.4	65
40191018	Arizona	Pima	65.7	60.5	67
40191020	Arizona	Pima	66.0	61.3	68
40191028	Arizona	Pima	65.0	59.7	67
40191030	Arizona	Pima	64.3	60.0	66
40191032	Arizona	Pima	65.0	59.5	66
40191034	Arizona	Pima	63.3	57.7	66
40213001	Arizona	Pinal	72.7	62.1	74
40213003	Arizona	Pinal	65.7	58.5	66
40213007	Arizona	Pinal	67.0	60.4	68
40217001	Arizona	Pinal	65.3	57.4	66
40218001	Arizona	Pinal	72.7	63.5	74
40278011	Arizona	Yuma	72.3	69.8	71
50199991	Arkansas	Clark	57.7	45.3	58
50350005	Arkansas	Crittenden	67.0	57.2	68
51190007	Arkansas	Pulaski	62.3	47.4	62
51191002	Arkansas	Pulaski	63.7	48.5	64
51430005	Arkansas	Washington	59.7	49.3	60
60010007	California	Alameda	74.0	69.2	73
60010009	California	Alameda	53.3	50.9	51
60010011	California	Alameda	47.7	45.5	46
60012001	California	Alameda	64.7	61.1	63
60050002	California	Amador	72.3	63.0	72
60070007	California	Butte	76.7	65.9	79
60070008	California	Butte	65.3	55.3	64
60090001	California	Calaveras	77.0	68.1	77
60111002	California	Colusa	62.7	55.4	62
60130002	California	Contra Costa	64.3	60.7	60
60131002	California	Contra Costa	67.7	62.6	67

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
60131004	California	Contra Costa	52.3	50.0	50
60132007	California	Contra Costa	67.3	63.3	65
60170010	California	El Dorado	85.3	72.7	88
60170020	California	El Dorado	82.0	70.6	84
60190007	California	Fresno	87.0	76.5	86
60190011	California	Fresno	90.0	79.1	90
60190242	California	Fresno	84.3	75.8	83
60192009	California	Fresno	75.7	68.4	75
60194001	California	Fresno	90.3	78.2	88
60195001	California	Fresno	91.0	79.7	89
60210003	California	Glenn	63.5	55.6	-
60250005	California	Imperial	76.7	76.4	77
60251003	California	Imperial	76.0	75.7	76
60254004	California	Imperial	62.0	60.0	56
60270002	California	Inyo	62.5	61.1	64
60270101	California	Inyo	71.5	69.1	73
60290007	California	Kern	87.7	78.8	89
60290008	California	Kern	83.0	75.0	85
60290011	California	Kern	83.3	76.9	85
60290014	California	Kern	86.0	77.5	88
60290232	California	Kern	79.3	71.5	82
60292012	California	Kern	89.3	80.3	88
60295002	California	Kern	87.3	78.4	89
60296001	California	Kern	80.7	73.5	81
60311004	California	Kings	83.3	72.8	82
60333002	California	Lake	57.0	49.9	56
60370002	California	Los Angeles	94.3	89.3	99
60370016	California	Los Angeles	100.0	94.7	103
60370113	California	Los Angeles	70.0	66.9	-
60371103	California	Los Angeles	73.0	69.6	74
60371201	California	Los Angeles	88.3	80.7	91
60371302	California	Los Angeles	65.5	63.9	64
60371602	California	Los Angeles	75.7	74.3	75
60371701	California	Los Angeles	92.0	87.6	91
60372005	California	Los Angeles	84.7	81.5	86
60374006	California	Los Angeles	56.5	54.9	56
60375005	California	Los Angeles	66.3	63.6	63
60376012	California	Los Angeles	98.0	89.2	100
60379033	California	Los Angeles	87.3	78.8	85

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
60390004	California	Madera	80.3	72.2	78
60392010	California	Madera	82.7	73.3	81
60430003	California	Mariposa	76.0	72.9	79
60430006	California	Mariposa	75.0	67.2	76
60470003	California	Merced	80.7	71.5	79
60531003	California	Monterey	53.3	49.0	52
60550003	California	Napa	62.5	56.3	-
60570005	California	Nevada	86.3	73.9	90
60590007	California	Orange	69.3	67.4	69
60591003	California	Orange	69.0	67.4	-
60592022	California	Orange	77.7	70.2	78
60595001	California	Orange	75.3	73.5	76
60610003	California	Placer	85.0	73.2	88
60610004	California	Placer	79.3	67.7	85
60610006	California	Placer	80.0	70.2	81
60611004	California	Placer	65.0	60.5	67
60612003	California	Placer	74.5	65.2	-
60650008	California	Riverside	76.5	69.9	-
60650009	California	Riverside	71.0	61.7	-
60650012	California	Riverside	95.3	85.7	98
60650016	California	Riverside	79.0	69.2	80
60651016	California	Riverside	99.7	89.0	101
60652002	California	Riverside	82.7	75.2	85
60655001	California	Riverside	88.7	78.8	91
60656001	California	Riverside	92.3	82.2	93
60658001	California	Riverside	96.7	90.0	98
60658005	California	Riverside	95.0	88.4	98
60659001	California	Riverside	88.7	79.2	89
60670002	California	Sacramento	77.7	69.6	78
60670006	California	Sacramento	76.3	68.9	75
60670010	California	Sacramento	68.3	63.1	67
60670011	California	Sacramento	67.7	61.3	67
60670012	California	Sacramento	82.3	71.1	82
60670014	California	Sacramento	71.0	65.1	-
60675003	California	Sacramento	77.3	67.6	75
60690002	California	San Benito	60.7	55.2	58
60690003	California	San Benito	68.3	62.7	68
60710001	California	San Bernardino	79.0	73.7	80
60710005	California	San Bernardino	110.3	102.3	111

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
60710012	California	San Bernardino	95.0	87.4	98
60710306	California	San Bernardino	84.0	77.2	82
60711004	California	San Bernardino	105.7	99.8	109
60711234	California	San Bernardino	72.3	69.4	76
60712002	California	San Bernardino	97.7	91.1	99
60714001	California	San Bernardino	90.3	83.0	90
60714003	California	San Bernardino	104.0	95.6	107
60719002	California	San Bernardino	87.3	78.2	89
60719004	California	San Bernardino	108.7	99.9	111
60730001	California	San Diego	61.0	59.9	60
60731001	California	San Diego	67.0	63.0	-
60731006	California	San Diego	83.0	76.4	84
60731008	California	San Diego	69.0	62.1	67
60731010	California	San Diego	62.0	60.9	-
60731014	California	San Diego	69.0	66.3	68
60731016	California	San Diego	70.0	64.1	72
60731022	California	San Diego	71.0	66.0	71
60771002	California	San Joaquin	66.7	61.0	66
60773005	California	San Joaquin	77.3	70.7	76
60798006	California	San Luis Obispo	68.7	62.5	69
60811001	California	San Mateo	56.0	54.3	53
60830011	California	Santa Barbara	61.7	55.3	60
60831014	California	Santa Barbara	62.7	57.6	61
60831021	California	Santa Barbara	58.3	52.3	56
60832011	California	Santa Barbara	60.7	54.5	58
60850002	California	Santa Clara	64.0	58.1	62
60850005	California	Santa Clara	64.3	62.4	63
60851001	California	Santa Clara	65.7	62.5	63
60852006	California	Santa Clara	68.7	62.1	67
60870007	California	Santa Cruz	56.0	51.8	55
60890004	California	Shasta	68.7	58.3	67
60890007	California	Shasta	66.5	56.7	68
60890009	California	Shasta	76.0	64.7	76
60893003	California	Shasta	65.7	60.1	68
60950004	California	Solano	60.0	57.4	56
60950005	California	Solano	62.0	56.3	59
60953003	California	Solano	66.3	59.3	65
60990005	California	Stanislaus	81.0	73.1	80
60990006	California	Stanislaus	83.7	75.1	84

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
61010003	California	Sutter	64.7	58.0	65
61010004	California	Sutter	73.0	65.9	73
61030004	California	Tehama	79.7	68.3	81
61030007	California	Tehama	69.0	59.1	72
61070006	California	Tulare	84.7	75.1	86
61070009	California	Tulare	89.0	77.1	89
61072002	California	Tulare	82.7	71.0	85
61072010	California	Tulare	84.0	72.5	83
61090005	California	Tuolumne	80.7	72.6	83
61110007	California	Ventura	68.3	60.0	68
61110009	California	Ventura	73.7	64.8	73
61111004	California	Ventura	72.0	66.7	70
61112002	California	Ventura	77.3	67.7	78
61113001	California	Ventura	62.0	55.9	61
61130004	California	Yolo	63.0	56.6	62
61131003	California	Yolo	68.7	62.1	68
80013001	Colorado	Adams	67.0	61.6	67
80050002	Colorado	Arapahoe	73.0	66.4	73
80050006	Colorado	Arapahoe	67.7	61.8	69
80310002	Colorado	Denver	67.7	62.2	69
80310026	Colorado	Denver	68.7	63.1	69
80350004	Colorado	Douglas	77.3	69.3	78
80410013	Colorado	El Paso	68.0	63.0	70
80410016	Colorado	El Paso	66.7	62.0	69
80450012	Colorado	Garfield	62.0	58.9	61
80590005	Colorado	Jefferson	73.0	65.9	72
80590006	Colorado	Jefferson	77.3	70.5	78
80590011	Colorado	Jefferson	79.3	71.7	79
80590013	Colorado	Jefferson	70.0	62.7	70
80671004	Colorado	La Plata	67.0	63.8	67
80677001	Colorado	La Plata	68.7	65.6	69
80677003	Colorado	La Plata	68.3	64.6	69
80690007	Colorado	Larimer	69.0	62.9	70
80690011	Colorado	Larimer	75.7	69.1	77
80691004	Colorado	Larimer	69.0	63.0	69
80830006	Colorado	Montezuma	61.5	56.9	-
80830101	Colorado	Montezuma	66.3	60.5	68
81030006	Colorado	Rio Blanco	63.3	61.0	64
81230009	Colorado	Weld	70.0	65.6	70

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
90010017	Connecticut	Fairfield	79.3	71.6	79
90011123	Connecticut	Fairfield	77.0	65.9	76
90013007	Connecticut	Fairfield	82.0	72.3	82
90019003	Connecticut	Fairfield	82.7	72.8	82
90031003	Connecticut	Hartford	71.7	59.5	69
90050005	Connecticut	Litchfield	71.3	59.3	70
90079007	Connecticut	Middlesex	78.7	66.1	78
90090027	Connecticut	New Haven	75.7	66.3	74
90099002	Connecticut	New Haven	79.7	67.9	81
90110124	Connecticut	New London	74.3	63.9	75
90131001	Connecticut	Tolland	71.7	59.1	71
90159991	Connecticut	Windham	69.7	57.7	71
100010002	Delaware	Kent	66.3	55.7	67
100031007	Delaware	New Castle	68.0	55.4	69
100031010	Delaware	New Castle	73.7	61.6	73
100031013	Delaware	New Castle	71.0	59.6	72
100032004	Delaware	New Castle	71.3	59.9	71
100051002	Delaware	Sussex	65.3	54.0	66
100051003	Delaware	Sussex	67.7	57.0	67
110010041	District Of Columbia	District of Columbia	57.0	46.5	57
110010043	District Of Columbia	District of Columbia	71.0	57.9	72
110010050	District Of Columbia	District of Columbia	70.0	57.5	70
120310077	Florida	Duval	58.0	44.7	58
120310100	Florida	Duval	60.0	47.1	60
120310106	Florida	Duval	61.0	49.0	61
120330004	Florida	Escambia	64.0	51.9	65
120330018	Florida	Escambia	63.0	50.5	63
120570081	Florida	Hillsborough	67.7	54.9	68
120571035	Florida	Hillsborough	65.7	53.2	64
120571065	Florida	Hillsborough	66.3	55.0	67
120573002	Florida	Hillsborough	66.3	53.0	66
120690002	Florida	Lake	63.7	53.5	65
120813002	Florida	Manatee	61.0	49.5	63
120814012	Florida	Manatee	63.0	50.8	64
120814013	Florida	Manatee	61.0	48.5	62
120910002	Florida	Okaloosa	61.0	49.2	61
120950008	Florida	Orange	63.0	52.1	63
120952002	Florida	Orange	63.0	51.8	64
120972002	Florida	Osceola	64.3	51.4	66

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
121012001	Florida	Pasco	62.0	50.4	63
121030004	Florida	Pinellas	62.7	51.2	65
121030018	Florida	Pinellas	60.7	50.9	61
121035002	Florida	Pinellas	59.7	48.9	61
121056005	Florida	Polk	65.3	49.8	67
121056006	Florida	Polk	64.3	49.8	66
121130015	Florida	Santa Rosa	62.0	49.7	61
121151005	Florida	Sarasota	62.7	49.6	63
121151006	Florida	Sarasota	63.0	49.9	64
121171002	Florida	Seminole	62.7	50.1	64
130210012	Georgia	Bibb	65.0	49.2	65
130510021	Georgia	Chatham	57.0	47.2	57
130550001	Georgia	Chattooga	61.0	50.6	60
130590002	Georgia	Clarke	64.3	50.5	65
130670003	Georgia	Cobb	66.5	51.3	66
130730001	Georgia	Columbia	60.0	48.4	60
130770002	Georgia	Coweta	64.5	51.2	-
130850001	Georgia	Dawson	65.0	49.7	65
130890002	Georgia	DeKalb	70.3	55.5	69
130970004	Georgia	Douglas	68.0	54.3	67
131210055	Georgia	Fulton	74.3	60.3	73
131350002	Georgia	Gwinnett	70.7	54.0	69
131510002	Georgia	Henry	72.0	57.9	71
132130003	Georgia	Murray	65.0	52.2	65
132150008	Georgia	Muscogee	61.0	48.0	60
132230003	Georgia	Paulding	63.0	52.1	-
132319991	Georgia	Pike	67.5	54.6	-
132450091	Georgia	Richmond	61.7	49.9	62
132470001	Georgia	Rockdale	71.0	56.8	70
170190007	Illinois	Champaign	65.3	56.6	68
170191001	Illinois	Champaign	65.7	57.0	65
170230001	Illinois	Clark	65.0	54.4	66
170310001	Illinois	Cook	73.0	66.5	77
170310032	Illinois	Cook	72.3	66.8	75
170310076	Illinois	Cook	72.0	65.8	75
170311003	Illinois	Cook	68.3	63.1	69
170311601	Illinois	Cook	69.3	60.6	70
170313103	Illinois	Cook	62.7	57.1	64
170314002	Illinois	Cook	68.7	63.7	72

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
170314007	Illinois	Cook	72.0	65.0	74
170314201	Illinois	Cook	73.3	66.2	77
170317002	Illinois	Cook	74.0	66.8	77
170436001	Illinois	DuPage	69.7	61.0	71
170491001	Illinois	Effingham	65.7	56.4	67
170650002	Illinois	Hamilton	65.7	56.1	67
170830117	Illinois	Jersey	69.0	59.0	-
170890005	Illinois	Kane	69.3	60.5	71
170971007	Illinois	Lake	73.7	66.5	75
171110001	Illinois	McHenry	69.7	60.4	72
171132003	Illinois	McLean	64.3	54.9	65
171150013	Illinois	Macon	66.3	56.9	67
171170002	Illinois	Macoupin	65.0	54.3	66
171190008	Illinois	Madison	70.0	59.9	70
171191009	Illinois	Madison	69.0	59.2	72
171193007	Illinois	Madison	70.7	60.5	71
171199991	Illinois	Madison	67.3	56.7	68
171430024	Illinois	Peoria	65.0	58.2	67
171431001	Illinois	Peoria	66.0	59.1	67
171570001	Illinois	Randolph	66.3	56.5	66
171630010	Illinois	Saint Clair	69.0	58.8	71
171670014	Illinois	Sangamon	66.0	56.3	68
171971011	Illinois	Will	65.3	57.9	67
180030002	Indiana	Allen	64.7	55.5	67
180030004	Indiana	Allen	64.0	54.7	66
180050007	Indiana	Bartholomew	67.7	57.1	68
180110001	Indiana	Boone	67.0	57.3	69
180150002	Indiana	Carroll	63.7	54.5	64
180190008	Indiana	Clark	70.3	57.5	70
180350010	Indiana	Delaware	62.3	51.8	66
180390007	Indiana	Elkhart	64.3	54.3	68
180431004	Indiana	Floyd	71.0	59.2	73
180550001	Indiana	Greene	66.7	51.8	67
180570006	Indiana	Hamilton	66.3	56.1	69
180630004	Indiana	Hendricks	63.3	55.3	67
180690002	Indiana	Huntington	60.7	51.7	64
180710001	Indiana	Jackson	65.7	54.1	66
180810002	Indiana	Johnson	61.0	51.9	-
180839991	Indiana	Knox	66.7	51.6	69

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
180890022	Indiana	Lake	68.3	61.9	70
180892008	Indiana	Lake	66.0	60.5	66
180910010	Indiana	LaPorte	65.0	57.9	-
180950010	Indiana	Madison	62.3	51.8	68
180970050	Indiana	Marion	70.3	60.7	72
180970057	Indiana	Marion	66.0	57.4	69
180970073	Indiana	Marion	65.5	56.4	-
180970078	Indiana	Marion	68.5	59.6	69
180970087	Indiana	Marion	65.3	56.8	67
181090005	Indiana	Morgan	63.0	53.8	63
181230009	Indiana	Perry	66.7	54.3	66
181270024	Indiana	Porter	69.7	62.6	71
181270026	Indiana	Porter	69.3	61.6	73
181290003	Indiana	Posey	66.7	55.0	67
181410010	Indiana	St. Joseph	65.0	56.2	68
181410015	Indiana	St. Joseph	70.0	60.2	72
181410016	Indiana	St. Joseph	67.3	57.9	69
181450001	Indiana	Shelby	64.7	55.0	68
181630013	Indiana	Vanderburgh	68.3	55.8	68
181630021	Indiana	Vanderburgh	69.0	56.8	68
181670018	Indiana	Vigo	66.7	54.4	68
181670024	Indiana	Vigo	64.3	53.3	67
181699991	Indiana	Wabash	68.7	58.6	70
181730008	Indiana	Warrick	68.7	55.4	69
181730009	Indiana	Warrick	66.0	53.8	-
181730011	Indiana	Warrick	67.7	55.1	68
200910010	Kansas	Johnson	60.0	52.7	61
201030003	Kansas	Leavenworth	61.3	52.2	61
201770013	Kansas	Shawnee	62.3	53.4	62
202090021	Kansas	Wyandotte	63.0	54.3	64
210130002	Kentucky	Bell	60.7	49.6	61
210150003	Kentucky	Boone	63.0	50.1	64
210190017	Kentucky	Boyd	65.0	58.3	64
210290006	Kentucky	Bullitt	65.7	52.4	66
210373002	Kentucky	Campbell	68.7	58.1	67
210430500	Kentucky	Carter	62.0	53.5	63
210470006	Kentucky	Christian	61.0	50.7	60
210590005	Kentucky	Daviess	65.0	50.2	65
210610501	Kentucky	Edmonson	63.7	51.5	63

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
210670012	Kentucky	Fayette	65.7	53.9	64
210890007	Kentucky	Greenup	61.7	54.1	60
210910012	Kentucky	Hancock	67.5	51.3	-
210930006	Kentucky	Hardin	64.7	52.3	65
211010014	Kentucky	Henderson	68.3	56.3	68
211110051	Kentucky	Jefferson	68.3	55.6	68
211110067	Kentucky	Jefferson	74.3	62.2	75
211130001	Kentucky	Jessamine	64.0	50.8	63
211390003	Kentucky	Livingston	65.0	54.6	66
211451024	Kentucky	McCracken	62.7	53.6	63
211759991	Kentucky	Morgan	64.0	55.1	64
211850004	Kentucky	Oldham	68.3	55.0	67
211930003	Kentucky	Perry	58.0	49.3	58
211950002	Kentucky	Pike	59.3	51.1	59
211990003	Kentucky	Pulaski	61.0	50.5	60
212130004	Kentucky	Simpson	63.7	52.7	63
212219991	Kentucky	Trigg	62.0	51.8	62
212270009	Kentucky	Warren	61.3	50.4	61
212299991	Kentucky	Washington	64.0	52.5	64
220050004	Louisiana	Ascension	70.0	60.9	69
220150008	Louisiana	Bossier	65.3	56.2	66
220170001	Louisiana	Caddo	63.3	54.9	63
220190002	Louisiana	Calcasieu	66.3	56.9	65
220190009	Louisiana	Calcasieu	64.0	54.8	64
220330003	Louisiana	East Baton Rouge	71.0	62.4	70
220330009	Louisiana	East Baton Rouge	67.3	57.9	69
220470009	Louisiana	Iberville	66.0	58.4	66
220511001	Louisiana	Jefferson	66.7	57.4	66
220550007	Louisiana	Lafayette	65.0	57.3	64
220570004	Louisiana	Lafourche	63.7	55.8	63
220630002	Louisiana	Livingston	68.0	59.1	66
220730004	Louisiana	Ouachita	59.0	53.3	59
220770001	Louisiana	Pointe Coupee	67.0	58.7	66
220870004	Louisiana	St. Bernard	65.3	55.7	66
220930002	Louisiana	St. James	63.3	55.4	62
220950002	Louisiana	St. John the Baptist	65.0	55.6	64
220990001	Louisiana	St. Martin	65.0	58.6	65
221030002	Louisiana	St. Tammany	66.0	55.1	65
221210001	Louisiana	West Baton Rouge	67.0	57.7	68

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
230010014	Maine	Androscoggin	59.3	49.0	59
230052003	Maine	Cumberland	64.7	54.0	65
230090102	Maine	Hancock	69.0	57.0	70
230090103	Maine	Hancock	63.0	52.0	63
230112005	Maine	Kennebec	61.3	50.0	62
230130004	Maine	Knox	63.3	52.5	63
230290019	Maine	Washington	59.3	49.1	61
230312002	Maine	York	66.0	55.0	66
240031003	Maryland	Anne Arundel	74.0	60.7	74
240051007	Maryland	Baltimore	72.0	58.6	-
240053001	Maryland	Baltimore	72.7	60.2	73
240090011	Maryland	Calvert	67.7	55.2	67
240130001	Maryland	Carroll	68.3	54.9	68
240150003	Maryland	Cecil	74.0	59.9	74
240170010	Maryland	Charles	69.3	56.0	69
240190004	Maryland	Dorchester	64.7	53.0	66
240199991	Maryland	Dorchester	65.7	54.5	66
240210037	Maryland	Frederick	68.0	55.2	68
240230002	Maryland	Garrett	65.3	57.3	65
240251001	Maryland	Harford	74.0	61.0	75
240259001	Maryland	Harford	73.0	59.1	73
240290002	Maryland	Kent	69.3	56.3	69
240313001	Maryland	Montgomery	67.7	55.3	67
240330030	Maryland	Prince George's	69.3	56.5	69
240338003	Maryland	Prince George's	70.7	57.5	71
240339991	Maryland	Prince George's	69.3	56.3	71
240430009	Maryland	Washington	66.7	55.1	67
245100054	Maryland	Baltimore (City)	68.3	56.6	70
250010002	Massachusetts	Barnstable	69.0	57.9	69
250051004	Massachusetts	Bristol	71.7	60.9	74
250051006	Massachusetts	Bristol	67.3	57.8	69
250070001	Massachusetts	Dukes	70.0	60.1	70
250092006	Massachusetts	Essex	66.3	57.1	68
250094005	Massachusetts	Essex	64.5	54.4	-
250095005	Massachusetts	Essex	62.7	52.5	64
250112005	Massachusetts	Franklin	64.7	53.3	66
250130008	Massachusetts	Hampden	70.0	57.8	71
250154002	Massachusetts	Hampshire	69.0	56.9	68
250170009	Massachusetts	Middlesex	64.0	52.8	65

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
250213003	Massachusetts	Norfolk	69.0	58.2	70
250230005	Massachusetts	Plymouth	67.0	55.7	69
250250042	Massachusetts	Suffolk	60.3	51.8	64
250270015	Massachusetts	Worcester	65.0	53.4	66
250270024	Massachusetts	Worcester	66.3	55.4	69
260050003	Michigan	Allegan	73.7	64.6	73
260190003	Michigan	Benzie	68.3	59.9	68
260210014	Michigan	Berrien	73.3	65.9	73
260270003	Michigan	Cass	72.0	61.5	74
260370002	Michigan	Clinton	67.0	56.4	-
260490021	Michigan	Genesee	67.7	57.1	68
260492001	Michigan	Genesee	68.0	57.9	68
260630007	Michigan	Huron	67.7	60.7	68
260650018	Michigan	Ingham	67.7	57.2	-
260770008	Michigan	Kalamazoo	69.7	59.1	71
260810020	Michigan	Kent	69.0	59.4	70
260810022	Michigan	Kent	67.3	57.3	68
260910007	Michigan	Lenawee	67.0	58.3	68
260990009	Michigan	Macomb	71.7	60.7	72
260991003	Michigan	Macomb	67.3	57.1	69
261010922	Michigan	Manistee	67.0	58.0	66
261050007	Michigan	Mason	68.7	59.1	68
261210039	Michigan	Muskegon	75.0	65.9	76
261250001	Michigan	Oakland	70.7	61.1	73
261390005	Michigan	Ottawa	69.3	60.4	70
261470005	Michigan	St. Clair	72.0	63.3	72
261610008	Michigan	Washtenaw	67.7	59.2	69
261619991	Michigan	Washtenaw	69.3	59.3	71
261630001	Michigan	Wayne	66.3	57.5	68
261630019	Michigan	Wayne	73.0	61.6	74
270031001	Minnesota	Anoka	60.0	52.5	61
270031002	Minnesota	Anoka	62.7	57.3	63
270530962	Minnesota	Hennepin	55.7	51.4	56
271390505	Minnesota	Scott	61.3	55.9	63
271636016	Minnesota	Washington	60.0	52.8	61
280330002	Mississippi	DeSoto	63.7	52.9	65
280450003	Mississippi	Hancock	61.7	49.5	62
280470008	Mississippi	Harrison	65.3	51.7	65
280490020	Mississippi	Hinds	60.3	46.4	60

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
280490021	Mississippi	Hinds	62.0	47.7	63
280590006	Mississippi	Jackson	64.7	51.9	64
290030001	Missouri	Andrew	62.7	54.1	63
290190011	Missouri	Boone	63.3	53.1	63
290270002	Missouri	Callaway	62.7	53.3	62
290370003	Missouri	Cass	63.0	55.5	63
290470003	Missouri	Clay	66.7	56.8	69
290470005	Missouri	Clay	66.0	56.7	69
290470006	Missouri	Clay	68.7	59.5	70
290490001	Missouri	Clinton	67.3	57.8	68
290970004	Missouri	Jasper	60.7	50.8	61
290990019	Missouri	Jefferson	69.0	57.9	69
291130003	Missouri	Lincoln	65.0	55.3	-
291570001	Missouri	Perry	67.0	56.4	67
291831002	Missouri	Saint Charles	72.7	62.4	74
291831004	Missouri	Saint Charles	71.0	60.1	72
291860005	Missouri	Sainte Genevieve	65.3	57.5	65
291890005	Missouri	Saint Louis	65.0	55.2	66
291890014	Missouri	Saint Louis	70.0	59.3	70
295100085	Missouri	St. Louis City	67.3	57.3	71
310550019	Nebraska	Douglas	62.7	57.4	64
310550028	Nebraska	Douglas	60.0	54.9	62
310550053	Nebraska	Douglas	63.5	57.6	64
320010002	Nevada	Churchill	68.3	65.5	70
320030022	Nevada	Clark	70.3	62.7	70
320030023	Nevada	Clark	61.3	57.0	61
320030043	Nevada	Clark	72.0	65.7	72
320030071	Nevada	Clark	72.3	64.9	74
320030073	Nevada	Clark	72.3	64.9	72
320030075	Nevada	Clark	75.0	67.1	76
320030298	Nevada	Clark	71.0	63.2	71
320030540	Nevada	Clark	68.7	61.8	69
320030601	Nevada	Clark	66.0	59.3	66
320031019	Nevada	Clark	68.3	62.6	68
320032002	Nevada	Clark	72.5	65.5	-
320037772	Nevada	Clark	68.5	63.0	69
320190006	Nevada	Lyon	69.3	66.0	70
320310016	Nevada	Washoe	70.0	66.2	71
320310020	Nevada	Washoe	68.3	64.6	69

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
320310025	Nevada	Washoe	67.3	63.9	68
320311005	Nevada	Washoe	69.7	65.7	71
320312002	Nevada	Washoe	63.3	58.2	65
320312009	Nevada	Washoe	70.0	65.6	71
320330101	Nevada	White Pine	64.7	62.6	66
325100020	Nevada	Carson City	66.7	64.5	67
330050007	New Hampshire	Cheshire	62.3	51.1	63
330111011	New Hampshire	Hillsborough	63.0	52.0	64
330115001	New Hampshire	Hillsborough	67.0	54.8	66
330131007	New Hampshire	Merrimack	62.0	50.7	62
330150014	New Hampshire	Rockingham	63.3	53.1	62
330150016	New Hampshire	Rockingham	66.7	55.9	67
330150018	New Hampshire	Rockingham	65.3	54.0	66
340010006	New Jersey	Atlantic	63.7	53.7	63
340030006	New Jersey	Bergen	74.3	65.6	75
340070002	New Jersey	Camden	75.3	64.1	75
340071001	New Jersey	Camden	67.3	55.9	66
340110007	New Jersey	Cumberland	65.7	55.1	64
340130003	New Jersey	Essex	68.3	58.9	67
340150002	New Jersey	Gloucester	73.7	62.5	74
340170006	New Jersey	Hudson	71.0	62.5	71
340190001	New Jersey	Hunterdon	71.3	59.8	72
340210005	New Jersey	Mercer	71.3	60.0	72
340219991	New Jersey	Mercer	73.3	62.5	74
340230011	New Jersey	Middlesex	74.7	62.8	75
340250005	New Jersey	Monmouth	67.3	57.0	65
340273001	New Jersey	Morris	69.0	58.3	70
340290006	New Jersey	Ocean	72.7	60.7	73
340315001	New Jersey	Passaic	67.7	56.9	67
340410007	New Jersey	Warren	64.3	54.1	65
350010023	New Mexico	Bernalillo	67.3	62.0	70
350010029	New Mexico	Bernalillo	65.3	60.1	66
350011012	New Mexico	Bernalillo	66.7	61.7	69
350130008	New Mexico	Dona Ana	67.3	63.1	68
350130020	New Mexico	Dona Ana	68.3	64.5	71
350130021	New Mexico	Dona Ana	72.7	68.2	74
350130022	New Mexico	Dona Ana	71.3	67.0	74
350130023	New Mexico	Dona Ana	66.0	61.8	67
350390026	New Mexico	Rio Arriba	65.3	60.7	67

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
350431001	New Mexico	Sandoval	65.7	60.7	68
350450009	New Mexico	San Juan	65.0	57.9	69
350450018	New Mexico	San Juan	68.0	62.2	70
350451005	New Mexico	San Juan	65.0	57.7	69
350490021	New Mexico	Santa Fe	64.0	60.0	66
350610008	New Mexico	Valencia	65.3	60.6	67
360010012	New York	Albany	64.0	53.6	64
360050110	New York	Bronx	67.7	61.9	69
360050133	New York	Bronx	70.7	65.1	72
360130006	New York	Chautauqua	68.0	59.1	68
360270007	New York	Dutchess	67.0	56.3	66
360290002	New York	Erie	69.3	59.9	69
360450002	New York	Jefferson	63.0	54.5	-
360551007	New York	Monroe	65.7	56.6	68
360610135	New York	New York	70.3	64.3	72
360631006	New York	Niagara	66.3	58.0	67
360715001	New York	Orange	64.3	53.7	62
360750003	New York	Oswego	61.0	52.6	63
360790005	New York	Putnam	69.0	59.5	69
360810124	New York	Queens	72.3	65.5	74
360850067	New York	Richmond	76.0	68.2	-
360870005	New York	Rockland	71.3	61.2	70
360910004	New York	Saratoga	63.0	52.1	64
361030002	New York	Suffolk	74.0	67.2	74
361030004	New York	Suffolk	74.3	64.1	75
361030009	New York	Suffolk	71.0	62.7	73
361173001	New York	Wayne	65.0	56.2	67
361192004	New York	Westchester	74.0	66.6	75
370030005	North Carolina	Alexander	64.3	54.2	64
370110002	North Carolina	Avery	61.7	51.0	62
370119991	North Carolina	Avery	64.0	53.4	-
370210030	North Carolina	Buncombe	62.0	50.8	61
370270003	North Carolina	Caldwell	64.0	52.9	64
370330001	North Carolina	Caswell	62.0	49.0	62
370510008	North Carolina	Cumberland	62.0	51.8	63
370510010	North Carolina	Cumberland	63.5	53.0	63
370630015	North Carolina	Durham	61.7	50.1	62
370650099	North Carolina	Edgecombe	62.0	50.5	62
370670022	North Carolina	Forsyth	66.7	53.4	66

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
370670030	North Carolina	Forsyth	67.3	54.9	67
370671008	North Carolina	Forsyth	66.3	54.0	66
370750001	North Carolina	Graham	63.5	52.0	-
370770001	North Carolina	Granville	64.3	53.5	65
370810013	North Carolina	Guilford	65.3	52.2	66
370870008	North Carolina	Haywood	61.3	50.9	61
370870035	North Carolina	Haywood	64.3	53.3	63
370870036	North Carolina	Haywood	64.3	54.1	64
371010002	North Carolina	Johnston	63.7	51.7	63
371050002	North Carolina	Lee	61.5	50.5	-
371090004	North Carolina	Lincoln	66.3	55.6	65
371139991	North Carolina	Macon	61.3	49.7	61
371190041	North Carolina	Mecklenburg	68.7	58.2	68
371190046	North Carolina	Mecklenburg	70.0	58.6	70
371239991	North Carolina	Montgomery	61.0	50.0	-
371450003	North Carolina	Person	62.0	53.9	62
371570099	North Carolina	Rockingham	65.3	48.0	65
371590021	North Carolina	Rowan	63.7	52.2	62
371730002	North Carolina	Swain	60.0	49.5	60
371730007	North Carolina	Swain	59.0	48.9	58
371790003	North Carolina	Union	67.7	57.8	68
371830014	North Carolina	Wake	65.7	53.2	66
371990004	North Carolina	Yancey	65.0	54.1	65
390030009	Ohio	Allen	67.7	58.1	70
390071001	Ohio	Ashtabula	70.0	60.8	70
390170018	Ohio	Butler	71.3	59.9	73
390170023	Ohio	Butler	72.3	61.0	-
390179991	Ohio	Butler	69.5	59.2	70
390230001	Ohio	Clark	69.3	57.8	69
390230003	Ohio	Clark	68.3	57.4	69
390250022	Ohio	Clermont	70.0	59.5	70
390271002	Ohio	Clinton	69.7	58.2	69
390350034	Ohio	Cuyahoga	69.0	59.5	70
390350060	Ohio	Cuyahoga	62.7	54.1	62
390350064	Ohio	Cuyahoga	65.3	56.4	66
390355002	Ohio	Cuyahoga	69.3	59.9	71
390410002	Ohio	Delaware	65.3	54.4	64
390479991	Ohio	Fayette	66.7	56.7	65
390490029	Ohio	Franklin	70.3	59.4	69

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
390490037	Ohio	Franklin	65.5	55.6	-
390490081	Ohio	Franklin	66.3	56.2	66
390550004	Ohio	Geauga	71.3	59.8	72
390570006	Ohio	Greene	67.3	56.0	66
390610006	Ohio	Hamilton	73.3	62.4	75
390610010	Ohio	Hamilton	71.3	61.1	72
390610040	Ohio	Hamilton	71.3	61.2	72
390810017	Ohio	Jefferson	63.0	52.4	62
390830002	Ohio	Knox	66.5	54.9	-
390850003	Ohio	Lake	73.7	63.8	74
390850007	Ohio	Lake	69.0	59.8	70
390870011	Ohio	Lawrence	63.7	55.8	63
390870012	Ohio	Lawrence	66.0	57.9	65
390890005	Ohio	Licking	65.7	54.0	64
390930018	Ohio	Lorain	65.7	56.9	67
390950024	Ohio	Lucas	67.5	59.3	69
390950027	Ohio	Lucas	64.7	56.6	66
390950035	Ohio	Lucas	67.5	59.2	-
390970007	Ohio	Madison	67.3	56.8	67
390990013	Ohio	Mahoning	59.7	50.0	57
391030004	Ohio	Medina	64.3	55.0	65
391090005	Ohio	Miami	67.7	55.9	68
391130037	Ohio	Montgomery	70.3	58.6	71
391219991	Ohio	Noble	64.7	55.5	63
391331001	Ohio	Portage	62.0	52.9	63
391351001	Ohio	Preble	67.0	56.6	67
391510016	Ohio	Stark	68.3	57.2	67
391510022	Ohio	Stark	65.0	54.1	65
391514005	Ohio	Stark	68.3	57.0	70
391530020	Ohio	Summit	63.3	53.3	65
391550011	Ohio	Trumbull	68.3	56.7	69
391550013	Ohio	Trumbull	66.0	54.6	66
391650007	Ohio	Warren	71.7	60.1	72
391670004	Ohio	Washington	64.3	52.7	64
391730003	Ohio	Wood	64.3	55.9	66
400019009	Oklahoma	Adair	59.7	50.2	59
400170101	Oklahoma	Canadian	66.3	55.9	69
400219002	Oklahoma	Cherokee	59.5	51.2	-
400270049	Oklahoma	Cleveland	66.7	57.6	68

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
400370144	Oklahoma	Creek	64.0	53.7	65
400871073	Oklahoma	McClain	66.3	56.4	67
400979014	Oklahoma	Mayes	62.0	53.8	62
401090033	Oklahoma	Oklahoma	67.3	57.4	68
401090096	Oklahoma	Oklahoma	66.3	56.4	67
401091037	Oklahoma	Oklahoma	69.0	58.6	70
401359021	Oklahoma	Sequoyah	59.3	48.0	59
401430174	Oklahoma	Tulsa	65.0	56.1	65
401430178	Oklahoma	Tulsa	64.0	55.5	65
401431127	Oklahoma	Tulsa	65.0	55.4	65
410050004	Oregon	Clackamas	69.7	61.2	72
410510080	Oregon	Multnomah	59.3	53.2	63
410670005	Oregon	Washington	55.0	49.5	57
410671004	Oregon	Washington	62.0	55.5	-
420010001	Pennsylvania	Adams	66.5	56.8	67
420019991	Pennsylvania	Adams	66.3	56.6	66
420030008	Pennsylvania	Allegheny	68.0	58.1	69
420030067	Pennsylvania	Allegheny	69.7	58.4	71
420031008	Pennsylvania	Allegheny	69.0	59.0	68
420050001	Pennsylvania	Armstrong	69.0	58.2	68
420070002	Pennsylvania	Beaver	68.7	55.2	67
420070005	Pennsylvania	Beaver	67.3	53.2	68
420070014	Pennsylvania	Beaver	65.7	52.6	67
420110006	Pennsylvania	Berks	65.5	55.0	65
420110011	Pennsylvania	Berks	70.0	59.3	70
420130801	Pennsylvania	Blair	63.5	52.5	-
420170012	Pennsylvania	Bucks	79.3	67.1	81
420210011	Pennsylvania	Cambria	62.3	51.6	61
420270100	Pennsylvania	Centre	62.3	52.4	62
420279991	Pennsylvania	Centre	64.7	54.1	64
420290100	Pennsylvania	Chester	72.7	60.7	72
420334000	Pennsylvania	Clearfield	64.7	55.1	64
420430401	Pennsylvania	Dauphin	65.3	55.2	65
420431100	Pennsylvania	Dauphin	66.0	55.5	65
420450002	Pennsylvania	Delaware	71.3	60.1	71
420479991	Pennsylvania	Elk	65.7	56.8	65
420490003	Pennsylvania	Erie	65.0	56.2	64
420550001	Pennsylvania	Franklin	59.3	49.7	59
420590002	Pennsylvania	Greene	67.0	59.1	66

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
420630004	Pennsylvania	Indiana	69.7	58.3	69
420690101	Pennsylvania	Lackawanna	66.0	54.8	64
420692006	Pennsylvania	Lackawanna	62.5	51.9	61
420710007	Pennsylvania	Lancaster	69.3	57.8	69
420710012	Pennsylvania	Lancaster	65.0	55.1	63
420730015	Pennsylvania	Lawrence	66.3	54.1	65
420750100	Pennsylvania	Lebanon	69.0	58.2	68
420770004	Pennsylvania	Lehigh	69.7	59.2	69
420791101	Pennsylvania	Luzerne	64.0	52.4	64
420810100	Pennsylvania	Lycoming	63.7	52.9	63
420850100	Pennsylvania	Mercer	68.7	56.7	69
420859991	Pennsylvania	Mercer	65.3	54.1	65
420890002	Pennsylvania	Monroe	66.7	55.1	68
420910013	Pennsylvania	Montgomery	71.3	60.7	72
420950025	Pennsylvania	Northampton	70.0	59.3	71
420958000	Pennsylvania	Northampton	69.0	58.0	-
421010004	Pennsylvania	Philadelphia	61.0	51.7	-
421010024	Pennsylvania	Philadelphia	77.7	66.1	78
421010048	Pennsylvania	Philadelphia	75.3	63.9	76
421119991	Pennsylvania	Somerset	65.0	56.4	65
421250005	Pennsylvania	Washington	67.0	58.4	65
421250200	Pennsylvania	Washington	65.0	55.6	-
421255001	Pennsylvania	Washington	68.0	55.3	-
421290008	Pennsylvania	Westmoreland	67.0	57.2	66
421330008	Pennsylvania	York	65.7	55.4	65
421330011	Pennsylvania	York	69.0	58.1	67
440030002	Rhode Island	Kent	71.3	60.3	73
440071010	Rhode Island	Providence	69.7	58.4	73
440090007	Rhode Island	Washington	69.3	60.0	69
450010001	South Carolina	Abbeville	58.0	46.9	-
450030003	South Carolina	Aiken	60.3	48.5	62
450070005	South Carolina	Anderson	58.5	47.1	57
450150002	South Carolina	Berkeley	57.3	47.4	58
450190046	South Carolina	Charleston	59.0	48.6	61
450250001	South Carolina	Chesterfield	60.0	50.6	-
450370001	South Carolina	Edgefield	59.7	48.4	60
450450016	South Carolina	Greenville	63.3	51.4	62
450730001	South Carolina	Oconee	63.0	51.0	63
450770002	South Carolina	Pickens	62.7	50.8	62

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
450770003	South Carolina	Pickens	61.0	48.8	62
450790007	South Carolina	Richland	60.0	48.2	61
450790021	South Carolina	Richland	55.0	45.5	55
450791001	South Carolina	Richland	64.3	51.6	64
450830009	South Carolina	Spartanburg	66.0	53.1	65
450910008	South Carolina	York	61.3	51.1	63
450918801	South Carolina	York	64.0	53.7	64
470010101	Tennessee	Anderson	63.7	51.1	64
470090101	Tennessee	Blount	67.0	53.9	67
470090102	Tennessee	Blount	61.0	48.8	62
470259991	Tennessee	Claiborne	62.7	50.4	63
470370011	Tennessee	Davidson	65.7	52.7	66
470370026	Tennessee	Davidson	66.0	52.6	67
470419991	Tennessee	DeKalb	61.3	49.4	61
470651011	Tennessee	Hamilton	64.7	52.0	64
470654003	Tennessee	Hamilton	67.0	53.2	66
470890002	Tennessee	Jefferson	67.0	53.7	66
470930021	Tennessee	Knox	64.3	51.3	65
470931020	Tennessee	Knox	66.7	53.4	67
471050109	Tennessee	Loudon	68.0	54.5	67
471550101	Tennessee	Sevier	67.3	54.9	67
471570021	Tennessee	Shelby	66.7	56.8	67
471570075	Tennessee	Shelby	67.3	57.1	69
471571004	Tennessee	Shelby	65.7	55.0	66
471632002	Tennessee	Sullivan	66.0	58.2	66
471632003	Tennessee	Sullivan	64.7	57.4	65
471650007	Tennessee	Sumner	66.3	52.8	66
471870106	Tennessee	Williamson	60.3	48.6	60
471890103	Tennessee	Wilson	63.5	50.0	-
480290032	Texas	Bexar	73.0	62.6	72
480290052	Texas	Bexar	72.3	62.7	71
480290059	Texas	Bexar	65.0	57.8	66
480391004	Texas	Brazoria	74.7	67.6	72
480391016	Texas	Brazoria	65.0	56.6	66
480850005	Texas	Collin	74.3	62.3	75
481130069	Texas	Dallas	73.0	61.0	74
481130075	Texas	Dallas	73.7	62.2	75
481130087	Texas	Dallas	64.7	54.1	66
481210034	Texas	Denton	78.0	65.5	75

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
481211032	Texas	Denton	74.0	62.7	72
481390016	Texas	Ellis	64.3	54.6	65
481391044	Texas	Ellis	63.7	52.9	65
481410029	Texas	El Paso	63.7	60.5	66
481410037	Texas	El Paso	71.3	67.7	73
481410044	Texas	El Paso	69.0	65.5	71
481410055	Texas	El Paso	66.0	62.6	69
481410057	Texas	El Paso	65.3	62.6	65
481410058	Texas	El Paso	70.0	65.8	72
481671034	Texas	Galveston	75.7	68.1	74
481830001	Texas	Gregg	65.3	59.4	65
482010024	Texas	Harris	79.3	71.9	78
482010026	Texas	Harris	68.3	62.7	68
482010029	Texas	Harris	71.3	61.5	72
482010046	Texas	Harris	67.0	60.7	65
482010047	Texas	Harris	73.7	66.3	71
482010051	Texas	Harris	70.0	62.1	68
482010055	Texas	Harris	76.0	67.4	76
482010062	Texas	Harris	63.0	58.0	61
482010066	Texas	Harris	75.0	65.1	73
482010416	Texas	Harris	72.3	65.4	71
482011015	Texas	Harris	65.0	59.6	-
482011017	Texas	Harris	71.0	64.0	73
482011034	Texas	Harris	73.7	66.8	73
482011035	Texas	Harris	71.3	64.6	70
482011039	Texas	Harris	68.7	62.9	71
482011050	Texas	Harris	70.7	62.2	71
482030002	Texas	Harrison	61.3	54.3	61
482311006	Texas	Hunt	62.3	51.9	65
482450009	Texas	Jefferson	64.7	55.9	65
482450011	Texas	Jefferson	66.7	58.4	66
482450022	Texas	Jefferson	67.0	58.0	67
482450101	Texas	Jefferson	65.7	58.1	67
482450102	Texas	Jefferson	63.0	54.8	65
482451035	Texas	Jefferson	66.7	58.0	65
482510003	Texas	Johnson	73.7	61.4	76
482570005	Texas	Kaufman	61.0	52.0	61
483091037	Texas	McLennan	63.0	53.3	-
483390078	Texas	Montgomery	73.7	65.2	75

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
483491051	Texas	Navarro	62.7	53.8	64
483550025	Texas	Nueces	62.3	56.8	61
483550026	Texas	Nueces	61.3	56.4	60
483611001	Texas	Orange	61.7	54.2	64
483970001	Texas	Rockwall	66.0	55.6	-
484230007	Texas	Smith	64.7	56.6	65
484390075	Texas	Tarrant	71.0	60.0	70
484391002	Texas	Tarrant	72.3	60.4	71
484392003	Texas	Tarrant	73.3	62.1	74
484393009	Texas	Tarrant	75.3	63.6	76
484393011	Texas	Tarrant	67.0	55.5	69
484530014	Texas	Travis	67.7	57.8	68
484530020	Texas	Travis	66.3	56.1	66
484790016	Texas	Webb	54.0	51.6	-
490030003	Utah	Box Elder	67.7	63.4	69
490037001	Utah	Box Elder	60.0	56.7	61
490050007	Utah	Cache	64.0	60.1	64
490071003	Utah	Carbon	67.0	61.3	68
490110004	Utah	Davis	75.7	70.5	78
490353006	Utah	Salt Lake	76.3	71.5	76
490353013	Utah	Salt Lake	76.5	72.4	77
490450004	Utah	Tooele	73.5	68.5	74
490471002	Utah	Uintah	70.7	67.8	72
490472002	Utah	Uintah	75.0	72.0	75
490472003	Utah	Uintah	88.0	84.2	88
490490002	Utah	Utah	71.5	66.3	-
490495010	Utah	Utah	72.0	67.7	72
490530007	Utah	Washington	65.7	61.3	66
490530130	Utah	Washington	65.5	61.3	66
490570002	Utah	Weber	73.0	68.6	75
490571003	Utah	Weber	73.0	68.4	74
500030004	Vermont	Bennington	64.3	53.3	65
510030001	Virginia	Albemarle	60.5	50.3	61
510130020	Virginia	Arlington	71.0	57.8	70
510330001	Virginia	Caroline	61.0	48.8	61
510360002	Virginia	Charles	62.3	48.8	63
510410004	Virginia	Chesterfield	61.3	48.2	60
510590030	Virginia	Fairfax	70.0	55.9	69
510610002	Virginia	Fauquier	58.7	48.1	59

			MDA8 Ozone DV (ppb)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current 2016-2018
510690010	Virginia	Frederick	61.3	50.9	61
510719991	Virginia	Giles	62.0	52.4	62
510850003	Virginia	Hanover	63.3	50.4	65
510870014	Virginia	Henrico	65.5	51.4	66
511071005	Virginia	Loudoun	67.0	55.3	66
511130003	Virginia	Madison	63.0	52.1	63
511479991	Virginia	Prince Edward	59.3	46.5	60
511530009	Virginia	Prince William	65.3	54.2	65
511611004	Virginia	Roanoke	61.3	50.6	61
511630003	Virginia	Rockbridge	58.0	48.5	59
511650003	Virginia	Rockingham	60.0	50.1	60
511790001	Virginia	Stafford	62.3	49.5	62
511970002	Virginia	Wythe	60.7	50.5	61
516500008	Virginia	Hampton City	64.3	53.0	64
518000004	Virginia	Suffolk City	61.0	50.7	62
518000005	Virginia	Suffolk City	59.7	49.9	59
530330010	Washington	King	61.0	54.0	65
530330017	Washington	King	62.0	55.1	66
530330023	Washington	King	73.3	66.0	77
530670005	Washington	Thurston	60.0	52.5	62
540030003	West Virginia	Berkeley	62.0	51.6	61
540219991	West Virginia	Gilmer	58.0	52.6	58
540250003	West Virginia	Greenbrier	59.7	53.4	60
540290009	West Virginia	Hancock	65.5	52.5	65
540390020	West Virginia	Kanawha	67.0	61.4	67
540610003	West Virginia	Monongalia	62.3	56.2	60
540690010	West Virginia	Ohio	67.0	58.4	66
540939991	West Virginia	Tucker	61.7	54.6	61
541071002	West Virginia	Wood	65.0	55.2	62
550290004	Wisconsin	Door	72.7	63.3	73
550590019	Wisconsin	Kenosha	78.0	69.8	79
550590025	Wisconsin	Kenosha	73.7	65.4	77
550610002	Wisconsin	Kewaunee	69.3	61.3	70
550710007	Wisconsin	Manitowoc	73.0	63.6	73
550790010	Wisconsin	Milwaukee	65.3	57.3	67
550790026	Wisconsin	Milwaukee	68.0	60.3	69
550790085	Wisconsin	Milwaukee	71.7	63.3	73
550890008	Wisconsin	Ozaukee	71.3	63.9	72
550890009	Wisconsin	Ozaukee	73.3	65.2	74

			MDA8 Ozone DV (ppb)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current 2016-2018**
551010020	Wisconsin	Racine	76.0	67.2	78
551170006	Wisconsin	Sheboygan	80.0	70.7	81
551170009	Wisconsin	Sheboygan	70.0	61.7	71
551270005	Wisconsin	Walworth	69.0	59.8	69
551330027	Wisconsin	Waukesha	65.7	57.5	66
560350099	Wyoming	Sublette	61.0	58.7	63
560350100	Wyoming	Sublette	62.0	59.9	62
560350101	Wyoming	Sublette	60.7	58.6	63
560359991	Wyoming	Sublette	63.3	61.2	64
560370200	Wyoming	Sweetwater	52.7	48.9	50
560370300	Wyoming	Sweetwater	66.3	62.6	66
560390008	Wyoming	Teton	59.3	57.5	60
560391011	Wyoming	Teton	61.0	59.5	62
560410101	Wyoming	Uinta	61.7	57.8	62

Appendix B

12km Annual $PM_{2.5}$ Design Value Modeling Results from 2028fh Projection with Current 2016-2018 Design Value

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
10030010	Alabama	Baldwin	7.74	7.07	7.3
10270001	Alabama	Clay	7.81	7.03	7.4
10331002	Alabama	Colbert	7.96	7.24	7.5
10491003	Alabama	DeKalb	8.22	7.37	7.6
10550010	Alabama	Etowah	8.63	7.72	8.3
10690003	Alabama	Houston	7.71	7.07	7.8
10730023	Alabama	Jefferson	10.46	9.54	10.0
10731005	Alabama	Jefferson	8.86	8.06	8.7
10731010	Alabama	Jefferson	9.43	8.55	9.1
10732003	Alabama	Jefferson	9.51	8.70	9.0
10890014	Alabama	Madison	7.79	7.04	7.5
10970003	Alabama	Mobile	8.23	7.51	8.1
11011002	Alabama	Montgomery	8.79	8.11	8.6
11030011	Alabama	Morgan	7.96	7.22	7.5
11210002	Alabama	Talladega	9.17	8.36	-
11250004	Alabama	Tuscaloosa	8.14	7.32	7.8
40031005	Arizona	Cochise	5.42	5.95	-
40130019	Arizona	Maricopa	9.26	9.01	9.4
40131003	Arizona	Maricopa	7.28	6.99	7.4
40131004	Arizona	Maricopa	7.02	6.77	7.1
40132001	Arizona	Maricopa	6.95	6.72	6.9
40134003	Arizona	Maricopa	8.99	8.70	8.9
40134005	Arizona	Maricopa	7.01	6.81	7.0
40137020	Arizona	Maricopa	7.05	6.71	7.9
40139812	Arizona	Maricopa	9.67	9.49	9.9
40139997	Arizona	Maricopa	7.37	7.06	7.4
40190011	Arizona	Pima	6.11	5.70	6.5
40191028	Arizona	Pima	5.29	4.92	5.3
40210001	Arizona	Pinal	8.47	8.12	8.9
40213002	Arizona	Pinal	5.25	5.09	5.3
40213015	Arizona	Pinal	13.04	12.61	13.0
40230004	Arizona	Santa Cruz	9.23	9.17	9.1
40278011	Arizona	Yuma	7.58	7.30	8.5
50010011	Arkansas	Arkansas	8.40	7.67	8.1
50030005	Arkansas	Ashley	8.27	7.68	8.2
50350005	Arkansas	Crittenden	8.50	7.61	8.4
50510003	Arkansas	Garland	8.55	7.81	8.4
50670001	Arkansas	Jackson	8.32	7.53	8.1

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
51130002	Arkansas	Polk	8.39	7.66	8.3
51190007	Arkansas	Pulaski	9.50	8.79	9.3
51191008	Arkansas	Pulaski	9.93	9.18	9.7
51390006	Arkansas	Union	8.87	8.22	8.9
51430005	Arkansas	Washington	8.08	7.56	8.1
60010007	California	Alameda	8.41	8.12	9.1
60010009	California	Alameda	8.22	8.04	9.1
60070008	California	Butte	9.08	8.59	10.1
60090001	California	Calaveras	8.22	7.76	-
60111002	California	Colusa	7.79	7.44	8.5
60130002	California	Contra Costa	8.83	8.54	10.5
60190011	California	Fresno	14.21	12.91	14.6
60192009	California	Fresno	8.73	7.90	9.1
60195001	California	Fresno	13.73	12.74	13.5
60195025	California	Fresno	14.24	13.05	15.0
60231004	California	Humboldt	6.64	6.57	7.4
60250005	California	Imperial	12.41	13.47	12.6
60250007	California	Imperial	9.27	9.18	10.4
60251003	California	Imperial	8.11	8.19	8.9
60271003	California	Inyo	7.18	7.05	7.2
60290011	California	Kern	6.23	5.94	6.7
60290014	California	Kern	16.10	14.10	16.1
60290016	California	Kern	17.86	15.76	17.8
60310004	California	Kings	16.53	15.04	16.0
60311004	California	Kings	16.56	15.16	16.8
60333002	California	Lake	4.90	4.74	6.1
60370002	California	Los Angeles	10.29	9.91	10.4
60371103	California	Los Angeles	12.16	11.56	12.2
60371201	California	Los Angeles	9.52	9.22	9.8
60371302	California	Los Angeles	12.29	11.85	12.6
60371602	California	Los Angeles	12.05	11.54	12.3
60372005	California	Los Angeles	9.76	9.27	9.8
60374002	California	Los Angeles	10.78	10.44	10.9
60374004	California	Los Angeles	10.51	10.17	10.7
60379033	California	Los Angeles	7.39	7.12	7.4
60392010	California	Madera	12.96	12.09	12.8
60410001	California	Marin	8.62	8.48	9.1
60450006	California	Mendocino	8.01	7.72	9.1

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
60452002	California	Mendocino	7.79	7.56	8.2
60470003	California	Merced	12.63	11.84	13.4
60472510	California	Merced	12.16	11.16	12.7
60530002	California	Monterey	6.22	6.17	6.1
60530008	California	Monterey	5.63	5.56	6.3
60531003	California	Monterey	5.21	5.19	5.7
60570005	California	Nevada	4.95	4.74	5.3
60571001	California	Nevada	6.53	6.23	6.5
60592022	California	Orange	7.74	7.52	8.0
60610003	California	Placer	6.60	6.39	6.7
60610006	California	Placer	7.87	7.47	8.7
60631006	California	Plumas	9.82	9.36	10.4
60631010	California	Plumas	14.95	14.33	14.7
60652002	California	Riverside	7.91	7.82	8.0
60655001	California	Riverside	5.80	5.76	5.8
60658001	California	Riverside	12.36	11.84	12.5
60658005	California	Riverside	13.92	13.41	13.9
60670006	California	Sacramento	9.78	9.37	10.4
60670010	California	Sacramento	8.98	8.57	9.4
60690002	California	San Benito	4.82	4.71	5.5
60710306	California	San Bernardino	8.06	7.83	8.1
60712002	California	San Bernardino	11.83	11.24	11.9
60718001	California	San Bernardino	6.60	6.49	6.5
60719004	California	San Bernardino	11.17	10.69	11.2
60730001	California	San Diego	8.98	9.02	9.3
60731016	California	San Diego	7.72	7.56	8.0
60731022	California	San Diego	9.09	9.02	9.3
60750005	California	San Francisco	8.50	8.28	9.6
60771002	California	San Joaquin	12.76	12.06	13.8
60772010	California	San Joaquin	11.12	10.32	11.5
60792004	California	San Luis Obispo	7.89	7.67	7.5
60792007	California	San Luis Obispo	9.73	9.51	8.9
60798002	California	San Luis Obispo	5.91	5.52	6.2
60811001	California	San Mateo	8.01	7.92	9.3
60831008	California	Santa Barbara	7.31	7.13	7.1
60850002	California	Santa Clara	6.30	6.19	6.3
60850005	California	Santa Clara	9.47	9.34	10.2
60870007	California	Santa Cruz	5.93	5.81	6.9

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
60890004	California	Shasta	7.48	7.26	9.6
60932001	California	Siskiyou	8.95	8.66	10.1
60950004	California	Solano	9.74	9.46	10.8
60990005	California	Stanislaus	13.07	12.06	13.1
60990006	California	Stanislaus	13.46	12.58	14.2
61010003	California	Sutter	9.09	8.76	9.2
61072002	California	Tulare	15.99	14.57	16.1
61110007	California	Ventura	9.16	8.95	9.2
61110009	California	Ventura	8.28	8.07	8.5
61111004	California	Ventura	9.33	9.14	11.0
61112002	California	Ventura	8.73	8.53	8.9
61113001	California	Ventura	8.84	8.66	8.5
61131003	California	Yolo	7.80	7.36	9.3
80050005	Colorado	Arapahoe	5.89	5.40	6.0
80130003	Colorado	Boulder	6.88	6.34	7.0
80130012	Colorado	Boulder	5.64	5.27	5.8
80310002	Colorado	Denver	7.13	6.58	7.1
80350004	Colorado	Douglas	5.58	5.14	6.2
80410017	Colorado	El Paso	5.77	5.38	6.0
80677003	Colorado	La Plata	5.79	5.76	8.4
80690009	Colorado	Larimer	7.04	6.73	7.3
80770017	Colorado	Mesa	6.18	6.02	5.9
81010015	Colorado	Pueblo	5.30	5.00	5.5
81030006	Colorado	Rio Blanco	7.84	7.61	7.9
81230006	Colorado	Weld	8.45	7.74	9.1
81230008	Colorado	Weld	7.68	7.04	7.6
90010010	Connecticut	Fairfield	8.75	7.72	8.1
90011123	Connecticut	Fairfield	8.05	7.14	7.7
90031003	Connecticut	Hartford	6.75	6.04	6.5
90050005	Connecticut	Litchfield	4.66	4.15	4.2
90090027	Connecticut	New Haven	7.12	6.27	6.8
100031012	Delaware	New Castle	9.04	7.89	-
100051002	Delaware	Sussex	7.33	6.36	6.7
110010043	District Of Columbia	District of Columbia	9.06	7.89	9.0
120010023	Florida	Alachua	6.21	5.62	6.3
120090007	Florida	Brevard	5.61	5.14	5.7
120112003	Florida	Broward	6.59	6.29	6.6
120115005	Florida	Broward	6.32	6.06	6.3

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
120170005	Florida	Citrus	5.86	5.23	-
120310032	Florida	Duval	7.89	7.41	-
120310098	Florida	Duval	6.84	6.33	-
120310099	Florida	Duval	7.17	6.70	-
120330004	Florida	Escambia	7.45	6.88	7.4
120573002	Florida	Hillsborough	8.08	7.54	7.9
120710005	Florida	Lee	6.17	5.62	6.6
120730012	Florida	Leon	7.51	6.87	7.3
120860033	Florida	Miami-Dade	6.57	6.30	6.9
120861016	Florida	Miami-Dade	7.53	7.23	8.0
120866001	Florida	Miami-Dade	6.65	6.28	7.0
120952002	Florida	Orange	6.96	6.50	7.2
120992005	Florida	Palm Beach	5.97	5.64	6.4
121030018	Florida	Pinellas	7.07	6.57	7.3
121031009	Florida	Pinellas	6.91	6.41	7.1
121056006	Florida	Polk	6.59	6.13	6.9
121150013	Florida	Sarasota	6.43	5.85	6.7
121171002	Florida	Seminole	6.04	5.62	6.2
121275002	Florida	Volusia	6.20	5.60	6.6
130210007	Georgia	Bibb	9.68	8.92	9.3
130210012	Georgia	Bibb	7.40	6.74	7.3
130510091	Georgia	Chatham	8.23	7.55	7.8
130590002	Georgia	Clarke	8.42	7.62	8.1
130630091	Georgia	Clayton	9.49	8.54	9.1
130670003	Georgia	Cobb	9.05	8.11	8.7
130890002	Georgia	DeKalb	8.97	8.00	8.6
130950007	Georgia	Dougherty	9.07	8.42	8.8
131150003	Georgia	Floyd	9.93	8.93	-
131210039	Georgia	Fulton	9.90	8.93	9.4
131270006	Georgia	Glynn	7.55	6.88	7.2
131350002	Georgia	Gwinnett	8.86	7.99	9.0
131390003	Georgia	Hall	8.10	7.32	7.9
131530001	Georgia	Houston	8.40	7.71	8.3
131850003	Georgia	Lowndes	7.74	7.16	7.4
132150001	Georgia	Muscogee	9.15	8.42	8.8
132150008	Georgia	Muscogee	8.88	8.13	8.6
132150011	Georgia	Muscogee	9.42	8.68	9.2
132230003	Georgia	Paulding	7.82	6.96	-

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
132450091	Georgia	Richmond	9.47	8.72	9.5
132950002	Georgia	Walker	9.14	8.19	8.8
133030001	Georgia	Washington	8.30	7.63	7.9
133190001	Georgia	Wilkinson	9.89	9.15	-
160010010	Idaho	Ada	7.63	7.31	7.7
160050020	Idaho	Bannock	7.43	7.17	-
160090010	Idaho	Benewah	10.53	10.14	-
160270002	Idaho	Canyon	9.38	8.98	9.4
160590004	Idaho	Lemhi	12.13	11.71	11.4
160790017	Idaho	Shoshone	11.62	11.15	11.2
170190006	Illinois	Champaign	7.69	6.83	7.5
170191001	Illinois	Champaign	7.72	6.85	7.6
170310022	Illinois	Cook	9.04	8.11	8.8
170310052	Illinois	Cook	9.10	8.01	9.1
170310057	Illinois	Cook	9.71	8.54	9.2
170310076	Illinois	Cook	9.17	8.11	8.8
170313103	Illinois	Cook	10.40	9.25	10.3
170313301	Illinois	Cook	9.51	8.40	9.4
170314007	Illinois	Cook	9.62	8.50	9.9
170314201	Illinois	Cook	8.37	7.38	8.3
170316005	Illinois	Cook	9.59	8.40	9.2
170434002	Illinois	DuPage	8.56	7.60	8.8
170650002	Illinois	Hamilton	8.32	7.29	8.4
170890003	Illinois	Kane	8.22	7.29	8.2
170890007	Illinois	Kane	8.35	7.44	8.4
171110001	Illinois	McHenry	7.58	6.76	7.6
171132003	Illinois	McLean	8.34	7.36	8.7
171150013	Illinois	Macon	8.66	7.71	9.0
171191007	Illinois	Madison	9.77	8.64	9.9
171192009	Illinois	Madison	8.85	7.83	8.9
171193007	Illinois	Madison	8.72	7.72	8.7
171430037	Illinois	Peoria	8.32	7.33	8.5
171570001	Illinois	Randolph	8.47	7.47	8.4
171613002	Illinois	Rock Island	8.06	7.07	-
171630010	Illinois	Saint Clair	9.77	8.56	9.7
171670012	Illinois	Sangamon	8.39	7.44	8.6
171971002	Illinois	Will	7.89	6.98	-
171971011	Illinois	Will	7.90	6.89	-

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
172010013	Illinois	Winnebago	8.31	7.37	-
180030004	Indiana	Allen	9.09	7.91	8.6
180190006	Indiana	Clark	9.74	8.55	9.0
180190008	Indiana	Clark	8.15	7.01	7.7
180350006	Indiana	Delaware	8.35	7.35	7.9
180372001	Indiana	Dubois	9.12	7.96	8.6
180390008	Indiana	Elkhart	9.21	8.08	8.3
180431004	Indiana	Floyd	9.24	8.03	-
180550001	Indiana	Greene	8.26	7.18	7.9
180650003	Indiana	Henry	7.80	6.82	7.5
180890006	Indiana	Lake	9.42	8.35	8.9
180890031	Indiana	Lake	9.57	8.62	9.4
180892004	Indiana	Lake	9.28	8.22	-
180910011	Indiana	LaPorte	8.49	7.45	-
180950011	Indiana	Madison	8.58	7.51	8.3
180970078	Indiana	Marion	9.24	8.00	8.9
180970081	Indiana	Marion	10.39	9.03	10.0
180970083	Indiana	Marion	10.34	8.99	9.8
181050003	Indiana	Monroe	8.15	7.08	7.8
181270024	Indiana	Porter	8.40	7.49	7.7
181410015	Indiana	St. Joseph	9.53	8.35	8.9
181470009	Indiana	Spencer	8.89	7.76	8.4
181570008	Indiana	Tippecanoe	8.52	7.44	8.1
181630016	Indiana	Vanderburgh	9.39	8.32	9.0
181630021	Indiana	Vanderburgh	9.09	8.03	8.5
181670018	Indiana	Vigo	9.53	8.42	9.0
181830003	Indiana	Whitley	8.23	7.18	7.7
190130009	Iowa	Black Hawk	8.03	7.08	7.8
190450019	Iowa	Clinton	8.78	7.79	8.3
190450021	Iowa	Clinton	8.11	7.15	7.7
190550001	Iowa	Delaware	8.14	7.17	-
191032001	Iowa	Johnson	7.85	6.95	7.6
191110008	Iowa	Lee	8.70	7.75	8.5
191130040	Iowa	Linn	8.29	7.36	8.0
191370002	Iowa	Montgomery	6.63	5.92	6.5
191390015	Iowa	Muscatine	8.59	7.64	8.3
191390016	Iowa	Muscatine	7.77	6.87	7.5
191390018	Iowa	Muscatine	8.80	7.81	-

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
191390020	Iowa	Muscatine	8.61	7.64	8.2
191471002	Iowa	Palo Alto	6.92	6.10	6.7
191530030	Iowa	Polk	7.45	6.50	7.3
191532510	Iowa	Polk	7.39	6.44	7.4
191550009	Iowa	Pottawattamie	7.93	7.00	7.9
191630015	Iowa	Scott	8.31	7.33	7.9
191630018	Iowa	Scott	8.89	7.84	-
191630020	Iowa	Scott	8.82	7.79	8.4
191770006	Iowa	Van Buren	7.13	6.37	6.9
200910007	Kansas	Johnson	7.37	6.47	7.4
200910010	Kansas	Johnson	6.03	5.28	-
201730009	Kansas	Sedgwick	8.03	7.22	7.8
201730010	Kansas	Sedgwick	8.11	7.27	-
201770013	Kansas	Shawnee	7.93	7.06	8.5
201910002	Kansas	Sumner	7.16	6.42	7.2
202090021	Kansas	Wyandotte	8.93	7.92	9.1
210130002	Kentucky	Bell	8.86	7.95	8.5
210190017	Kentucky	Boyd	8.03	7.06	7.6
210373002	Kentucky	Campbell	8.48	7.24	8.0
210430500	Kentucky	Carter	6.79	5.93	6.4
210470006	Kentucky	Christian	8.65	7.63	8.2
210590005	Kentucky	Daviess	8.98	7.86	8.4
210670012	Kentucky	Fayette	8.46	7.28	-
210930006	Kentucky	Hardin	8.63	7.41	8.2
211010014	Kentucky	Henderson	9.09	8.01	8.8
211110043	Kentucky	Jefferson	10.04	8.78	-
211110051	Kentucky	Jefferson	9.52	8.37	9.1
211110067	Kentucky	Jefferson	8.87	7.81	8.5
211510003	Kentucky	Madison	7.85	6.71	-
211950002	Kentucky	Pike	7.54	6.62	7.2
211990003	Kentucky	Pulaski	8.00	6.96	7.7
220170008	Louisiana	Caddo	10.20	9.51	10.4
220190009	Louisiana	Calcasieu	7.53	6.90	7.8
220330009	Louisiana	East Baton Rouge	9.09	8.64	9.1
220470005	Louisiana	Iberville	8.40	8.05	8.5
220511001	Louisiana	Jefferson	7.20	6.68	7.3
220512001	Louisiana	Jefferson	7.44	6.89	7.4
220550007	Louisiana	Lafayette	7.71	7.20	7.9

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
220730004	Louisiana	Ouachita	8.04	7.46	8.0
220870007	Louisiana	St. Bernard	8.63	8.02	8.3
221050001	Louisiana	Tangipahoa	7.43	6.78	7.4
221090001	Louisiana	Terrebonne	7.14	6.63	7.2
221210001	Louisiana	West Baton Rouge	9.06	8.64	9.2
240031003	Maryland	Anne Arundel	8.98	7.85	-
240051007	Maryland	Baltimore	7.92	6.83	-
240053001	Maryland	Baltimore	8.79	7.67	8.0
240150003	Maryland	Cecil	8.31	7.28	7.8
240230002	Maryland	Garrett	5.64	4.97	5.7
240251001	Maryland	Harford	8.17	7.13	7.6
240290002	Maryland	Kent	7.61	6.75	7.0
240313001	Maryland	Montgomery	7.57	6.67	7.0
240330030	Maryland	Prince George's	8.16	7.24	7.0
240338003	Maryland	Prince George's	7.31	6.29	-
240430009	Maryland	Washington	8.36	7.39	7.7
245100008	Maryland	Baltimore (City)	9.24	7.98	-
245100040	Maryland	Baltimore (City)	8.71	7.59	8.4
250035001	Massachusetts	Berkshire	6.16	5.61	5.9
250051004	Massachusetts	Bristol	6.19	5.55	6.1
250092006	Massachusetts	Essex	5.64	5.07	-
250095005	Massachusetts	Essex	5.35	4.91	5.1
250096001	Massachusetts	Essex	5.43	5.00	-
250130008	Massachusetts	Hampden	5.55	5.03	5.2
250130016	Massachusetts	Hampden	6.80	6.21	-
250250002	Massachusetts	Suffolk	6.27	5.67	-
250250042	Massachusetts	Suffolk	7.04	6.31	7.0
250250043	Massachusetts	Suffolk	7.18	6.52	-
250270016	Massachusetts	Worcester	5.81	5.32	-
250270023	Massachusetts	Worcester	6.03	5.54	5.8
260050003	Michigan	Allegan	7.55	6.68	7.4
260170014	Michigan	Bay	7.20	6.45	6.9
260210014	Michigan	Berrien	7.91	6.96	-
260490021	Michigan	Genesee	7.59	6.74	7.2
260650012	Michigan	Ingham	8.05	7.17	-
260770008	Michigan	Kalamazoo	8.50	7.50	8.2
260810007	Michigan	Kent	9.23	8.26	-
260810020	Michigan	Kent	8.56	7.65	8.2

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
260910007	Michigan	Lenawee	7.93	6.99	7.6
260990009	Michigan	Macomb	8.19	7.29	7.6
261010922	Michigan	Manistee	5.91	5.33	5.8
261130001	Michigan	Missaukee	5.15	4.69	5.0
261250001	Michigan	Oakland	8.46	7.41	8.1
261470005	Michigan	St. Clair	8.42	7.66	8.0
261610008	Michigan	Washtenaw	8.50	7.51	8.1
261630001	Michigan	Wayne	9.07	8.02	8.8
261630015	Michigan	Wayne	11.22	9.94	11.3
261630016	Michigan	Wayne	9.30	8.27	8.9
261630019	Michigan	Wayne	8.63	7.65	8.1
261630025	Michigan	Wayne	8.44	7.38	7.9
261630033	Michigan	Wayne	10.94	9.88	10.6
261630036	Michigan	Wayne	8.04	7.11	7.6
261630039	Michigan	Wayne	9.11	8.08	-
270031002	Minnesota	Anoka	6.81	6.11	7.3
270370470	Minnesota	Dakota	6.82	6.17	7.1
270530963	Minnesota	Hennepin	7.36	6.62	7.6
270532006	Minnesota	Hennepin	6.95	6.26	6.9
270834210	Minnesota	Lyon	5.15	4.62	5.2
271095008	Minnesota	Olmsted	6.85	6.04	7.1
271230868	Minnesota	Ramsey	7.92	7.20	7.9
271230871	Minnesota	Ramsey	7.20	6.52	7.4
271377001	Minnesota	Saint Louis	4.93	4.71	4.2
271377550	Minnesota	Saint Louis	4.52	4.24	4.3
271377554	Minnesota	Saint Louis	5.32	4.98	5.2
271390505	Minnesota	Scott	6.73	6.08	-
271453052	Minnesota	Stearns	5.84	5.31	6.0
271630448	Minnesota	Washington	6.58	5.99	6.1
280330002	Mississippi	DeSoto	7.62	6.83	7.6
280350004	Mississippi	Forrest	8.77	8.05	8.6
280430001	Mississippi	Grenada	7.26	6.52	7.4
280450003	Mississippi	Hancock	8.02	7.35	7.9
280470008	Mississippi	Harrison	7.88	7.20	7.9
280590006	Mississippi	Jackson	8.08	7.34	7.9
290210005	Missouri	Buchanan	8.92	8.00	8.5
290370003	Missouri	Cass	7.42	6.65	6.5
290390001	Missouri	Cedar	7.00	6.32	6.9

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
290470005	Missouri	Clay	7.07	6.26	6.4
290950034	Missouri	Jackson	8.85	7.86	8.8
290990019	Missouri	Jefferson	9.11	8.10	7.9
291893001	Missouri	Saint Louis	9.48	8.26	9.1
295100007	Missouri	St. Louis City	9.04	7.93	8.4
295100085	Missouri	St. Louis City	9.14	7.96	8.4
300290049	Montana	Flathead	8.71	8.41	8.8
300490004	Montana	Lewis and Clark	3.72	3.61	3.8
300490026	Montana	Lewis and Clark	9.19	8.85	9.5
300530018	Montana	Lincoln	12.43	11.97	12.9
300630024	Montana	Missoula	9.33	8.96	9.3
300630037	Montana	Missoula	10.63	10.26	10.4
300750001	Montana	Powder River	7.31	7.12	7.6
300810007	Montana	Ravalli	10.32	9.97	10.0
300830001	Montana	Richland	6.46	6.29	-
300870001	Montana	Rosebud	6.15	5.98	6.2
300930005	Montana	Silver Bow	9.33	8.80	8.7
310550019	Nebraska	Douglas	8.73	7.55	8.6
310550052	Nebraska	Douglas	7.02	6.20	7.1
310790004	Nebraska	Hall	5.92	5.35	5.9
311090022	Nebraska	Lancaster	6.62	5.89	6.7
311530007	Nebraska	Sarpy	8.76	7.76	8.9
311770002	Nebraska	Washington	6.80	5.99	6.9
320030540	Nevada	Clark	8.47	7.81	8.4
320030561	Nevada	Clark	9.85	9.08	9.5
320031019	Nevada	Clark	5.17	4.96	5.1
320032002	Nevada	Clark	9.54	8.84	-
320310016	Nevada	Washoe	7.25	6.90	7.3
320311005	Nevada	Washoe	7.68	7.44	7.6
330012004	New Hampshire	Belknap	4.61	4.22	4.5
330050007	New Hampshire	Cheshire	6.59	6.08	5.4
330090010	New Hampshire	Grafton	5.83	5.43	5.7
330115001	New Hampshire	Hillsborough	4.55	4.12	3.4
330150014	New Hampshire	Rockingham	5.71	5.24	5.2
330150018	New Hampshire	Rockingham	5.52	5.04	4.9
340010006	New Jersey	Atlantic	6.81	5.98	6.6
340011006	New Jersey	Atlantic	7.24	6.44	6.8
340030003	New Jersey	Bergen	8.32	7.14	7.6

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
340071007	New Jersey	Camden	8.24	7.24	7.6
340130003	New Jersey	Essex	8.63	7.56	8.4
340150004	New Jersey	Gloucester	8.33	7.16	-
340171003	New Jersey	Hudson	8.45	7.35	8.2
340210008	New Jersey	Mercer	7.66	6.82	7.3
340273001	New Jersey	Morris	6.37	5.62	5.9
340292002	New Jersey	Ocean	6.91	6.01	6.6
340310005	New Jersey	Passaic	8.01	6.94	7.6
340390004	New Jersey	Union	9.58	8.24	9.2
340392003	New Jersey	Union	8.15	7.00	7.7
340410007	New Jersey	Warren	8.42	7.44	8.1
350010023	New Mexico	Bernalillo	5.76	5.44	5.4
350130025	New Mexico	Dona Ana	5.13	4.84	5.2
350250008	New Mexico	Lea	7.38	7.29	7.6
360010005	New York	Albany	6.99	6.25	6.9
360010012	New York	Albany	6.09	5.42	5.8
360050110	New York	Bronx	7.09	6.12	6.9
360050133	New York	Bronx	8.59	7.42	8.1
360290005	New York	Erie	7.65	6.82	7.2
360310003	New York	Essex	3.77	3.42	3.6
360470122	New York	Kings	8.21	7.15	7.8
360551007	New York	Monroe	6.49	5.78	6.2
360610079	New York	New York	8.03	6.91	7.6
360610128	New York	New York	9.78	8.61	9.5
360610134	New York	New York	9.36	8.24	9.1
360671015	New York	Onondaga	5.52	4.89	5.1
360710002	New York	Orange	6.56	5.80	6.2
360810124	New York	Queens	7.26	6.34	7.0
360850055	New York	Richmond	7.51	6.44	7.4
361010003	New York	Steuben	4.98	4.38	4.7
361030002	New York	Suffolk	6.90	5.96	6.7
370210034	North Carolina	Buncombe	7.42	6.61	7.1
370350004	North Carolina	Catawba	8.73	8.00	8.6
370510009	North Carolina	Cumberland	8.29	7.54	8.1
370570002	North Carolina	Davidson	8.69	8.01	8.7
370630015	North Carolina	Durham	8.70	7.92	8.6
370670022	North Carolina	Forsyth	7.73	6.98	7.5
370810013	North Carolina	Guilford	8.10	7.31	7.8

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
370990006	North Carolina	Jackson	7.78	7.06	7.8
371010002	North Carolina	Johnston	7.51	6.78	7.8
371190041	North Carolina	Mecklenburg	8.49	7.98	8.2
371190042	North Carolina	Mecklenburg	8.75	8.26	8.5
371190045	North Carolina	Mecklenburg	8.63	8.06	8.8
371230001	North Carolina	Montgomery	6.67	6.05	6.3
371290002	North Carolina	New Hanover	5.48	4.89	4.9
371470006	North Carolina	Pitt	6.92	6.16	6.6
371730002	North Carolina	Swain	8.16	7.41	8.3
371830014	North Carolina	Wake	8.76	8.10	7.7
380070002	North Dakota	Billings	4.06	3.90	3.8
380130004	North Dakota	Burke	3.76	3.62	2.9
380150003	North Dakota	Burleigh	4.83	4.49	-
380171004	North Dakota	Cass	6.35	5.83	6.6
380250003	North Dakota	Dunn	5.44	5.21	-
380530002	North Dakota	McKenzie	3.57	3.49	4.2
380570004	North Dakota	Mercer	3.95	3.73	3.8
380650002	North Dakota	Oliver	4.81	4.51	5.3
390030009	Ohio	Allen	8.32	7.19	7.8
390090003	Ohio	Athens	6.76	5.83	6.4
390170016	Ohio	Butler	9.22	8.07	8.8
390170019	Ohio	Butler	9.53	8.41	8.9
390230005	Ohio	Clark	8.76	7.66	8.7
390350034	Ohio	Cuyahoga	8.28	7.15	7.8
390350038	Ohio	Cuyahoga	10.59	9.36	9.8
390350045	Ohio	Cuyahoga	10.05	8.78	9.5
390350060	Ohio	Cuyahoga	9.18	8.01	9.3
390350065	Ohio	Cuyahoga	11.59	10.18	11.0
390351002	Ohio	Cuyahoga	8.34	7.23	7.9
390490024	Ohio	Franklin	9.27	8.03	-
390490029	Ohio	Franklin	9.15	7.88	-
390490081	Ohio	Franklin	8.75	7.52	8.2
390570005	Ohio	Greene	8.08	7.04	7.8
390610006	Ohio	Hamilton	9.13	7.95	9.0
390610010	Ohio	Hamilton	9.06	7.86	-
390610014	Ohio	Hamilton	10.16	8.95	9.7
390610040	Ohio	Hamilton	9.15	7.98	9.1
390610042	Ohio	Hamilton	9.66	8.43	9.2

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
390810017	Ohio	Jefferson	10.64	9.13	9.5
390850007	Ohio	Lake	7.42	6.49	7.0
390870012	Ohio	Lawrence	6.85	6.02	6.6
390933002	Ohio	Lorain	7.71	6.82	7.5
390950024	Ohio	Lucas	9.09	8.03	8.5
390950026	Ohio	Lucas	8.67	7.66	8.1
390950028	Ohio	Lucas	9.59	8.50	-
390990005	Ohio	Mahoning	9.29	8.13	-
390990014	Ohio	Mahoning	8.64	7.57	7.9
391030004	Ohio	Medina	8.20	7.10	7.6
391330002	Ohio	Portage	7.52	6.46	7.3
391351001	Ohio	Preble	7.97	7.01	7.8
391450013	Ohio	Scioto	8.34	7.24	-
391510017	Ohio	Stark	10.05	8.87	9.3
391510020	Ohio	Stark	9.52	8.32	9.2
391530017	Ohio	Summit	10.04	8.71	9.0
391530023	Ohio	Summit	8.49	7.32	7.8
400710604	Oklahoma	Kay	7.74	7.08	7.7
401090035	Oklahoma	Oklahoma	7.72	7.10	7.7
401091037	Oklahoma	Oklahoma	8.25	7.55	8.6
401210415	Oklahoma	Pittsburg	7.96	7.22	8.1
401359021	Oklahoma	Sequoyah	8.27	7.71	8.2
401431127	Oklahoma	Tulsa	9.01	8.21	9.6
410130100	Oregon	Crook	8.94	8.71	9.1
410250003	Oregon	Harney	9.15	8.84	9.8
410290133	Oregon	Jackson	10.51	10.17	-
410330114	Oregon	Josephine	8.80	8.51	10.3
410350004	Oregon	Klamath	9.96	9.68	12.4
410370001	Oregon	Lake	8.13	7.89	-
410390059	Oregon	Lane	7.88	7.60	8.5
410390060	Oregon	Lane	7.10	6.82	7.3
410391009	Oregon	Lane	6.99	6.72	-
410392013	Oregon	Lane	9.22	8.82	9.6
410399004	Oregon	Lane	7.14	6.84	7.5
410510080	Oregon	Multnomah	6.77	6.47	7.0
410670004	Oregon	Washington	7.25	6.96	7.4
420010001	Pennsylvania	Adams	8.15	7.36	7.6
420030008	Pennsylvania	Allegheny	9.26	8.04	9.1

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
420030064	Pennsylvania	Allegheny	12.81	11.02	12.6
420031008	Pennsylvania	Allegheny	9.70	8.42	9.6
420031301	Pennsylvania	Allegheny	10.82	9.29	10.7
420050001	Pennsylvania	Armstrong	10.26	9.05	9.3
420070014	Pennsylvania	Beaver	9.59	8.44	9.1
420110011	Pennsylvania	Berks	9.05	7.93	8.5
420130801	Pennsylvania	Blair	9.14	7.86	8.1
420210011	Pennsylvania	Cambria	10.39	9.00	9.7
420270100	Pennsylvania	Centre	8.07	7.02	8.1
420290100	Pennsylvania	Chester	9.83	8.72	9.7
420410101	Pennsylvania	Cumberland	8.67	7.99	8.1
420430401	Pennsylvania	Dauphin	9.35	8.42	8.6
420450002	Pennsylvania	Delaware	10.82	9.67	10.7
420490003	Pennsylvania	Erie	8.55	7.77	8.1
420692006	Pennsylvania	Lackawanna	8.70	7.76	8.3
420710007	Pennsylvania	Lancaster	9.88	8.64	9.1
420750100	Pennsylvania	Lebanon	10.17	8.95	9.3
420850100	Pennsylvania	Mercer	9.42	8.23	9.3
420890002	Pennsylvania	Monroe	7.36	6.40	-
420950025	Pennsylvania	Northampton	8.92	8.06	8.4
421010004	Pennsylvania	Philadelphia	8.41	7.39	8.0
421010055	Pennsylvania	Philadelphia	10.70	9.35	10.1
421010057	Pennsylvania	Philadelphia	10.06	8.87	9.2
421250005	Pennsylvania	Washington	9.64	8.29	8.5
421250200	Pennsylvania	Washington	8.65	7.50	-
421255001	Pennsylvania	Washington	7.96	6.71	7.5
421290008	Pennsylvania	Westmoreland	8.94	7.89	8.7
421330008	Pennsylvania	York	9.60	8.45	9.3
440030002	Rhode Island	Kent	4.77	4.19	5.0
440070022	Rhode Island	Providence	6.44	5.73	6.3
440070026	Rhode Island	Providence	7.10	6.42	6.7
440071010	Rhode Island	Providence	6.76	6.06	6.7
450190048	South Carolina	Charleston	7.18	6.53	7.2
450190049	South Carolina	Charleston	7.17	6.49	7.2
450250001	South Carolina	Chesterfield	7.47	6.80	-
450370001	South Carolina	Edgefield	8.37	7.57	8.2
450410003	South Carolina	Florence	8.63	7.85	-
450450015	South Carolina	Greenville	8.92	8.30	8.3

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
450450016	South Carolina	Greenville	8.25	7.58	7.9
450630008	South Carolina	Lexington	8.63	7.95	8.5
450790007	South Carolina	Richland	8.10	7.38	7.8
450790019	South Carolina	Richland	8.86	8.15	-
450830011	South Carolina	Spartanburg	8.35	7.74	8.0
460130003	South Dakota	Brown	5.92	5.48	6.0
460290002	South Dakota	Codington	6.28	5.75	6.8
460330132	South Dakota	Custer	3.35	3.22	3.6
460710001	South Dakota	Jackson	3.62	3.46	3.7
460990008	South Dakota	Minnehaha	6.77	6.00	5.9
461030020	South Dakota	Pennington	7.27	6.94	6.8
461031001	South Dakota	Pennington	5.44	5.21	5.6
461270001	South Dakota	Union	6.81	6.12	6.2
470090011	Tennessee	Blount	8.11	7.42	7.8
470370023	Tennessee	Davidson	8.99	8.11	8.4
470450004	Tennessee	Dyer	7.11	6.40	6.9
470650031	Tennessee	Hamilton	8.37	7.52	8.1
470654002	Tennessee	Hamilton	8.48	7.55	8.3
470930028	Tennessee	Knox	8.83	8.02	8.3
470931013	Tennessee	Knox	9.90	9.01	9.3
470931017	Tennessee	Knox	9.53	8.64	9.2
470931020	Tennessee	Knox	8.64	7.75	8.2
470990002	Tennessee	Lawrence	6.84	6.16	6.6
471050109	Tennessee	Loudon	8.65	7.93	7.4
471071002	Tennessee	McMinn	8.36	7.59	8.1
471130006	Tennessee	Madison	7.03	6.32	6.7
471192007	Tennessee	Maury	6.94	6.18	6.9
471251009	Tennessee	Montgomery	8.15	7.27	7.9
471410005	Tennessee	Putnam	7.44	6.53	7.2
471450004	Tennessee	Roane	8.12	7.24	7.6
471570024	Tennessee	Shelby	8.50	7.53	8.4
471570075	Tennessee	Shelby	7.74	6.95	7.7
471631007	Tennessee	Sullivan	7.55	6.81	7.3
471650007	Tennessee	Sumner	7.92	7.07	7.4
480290032	Texas	Bexar	8.27	7.64	8.1
480290059	Texas	Bexar	8.27	7.65	-
481130069	Texas	Dallas	8.77	7.85	8.9
481410037	Texas	El Paso	7.41	7.46	7.7

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
481410044	Texas	El Paso	9.13	9.22	9.1
482010058	Texas	Harris	9.45	8.99	9.3
482011035	Texas	Harris	10.66	10.16	10.2
482011039	Texas	Harris	8.67	8.12	8.2
482030002	Texas	Harrison	8.64	7.87	8.5
482150043	Texas	Hidalgo	10.33	10.27	10.7
483550032	Texas	Nueces	9.44	8.81	9.1
484391002	Texas	Tarrant	8.48	7.74	8.2
484391006	Texas	Tarrant	8.75	8.01	8.4
484530020	Texas	Travis	7.78	7.04	-
484530021	Texas	Travis	9.66	8.91	9.8
490030003	Utah	Box Elder	7.09	6.45	7.7
490050007	Utah	Cache	7.60	6.99	7.6
490110004	Utah	Davis	7.80	7.07	8.3
490351001	Utah	Salt Lake	7.14	6.46	-
490353006	Utah	Salt Lake	7.81	6.95	8.0
490353010	Utah	Salt Lake	8.75	7.81	8.8
490490002	Utah	Utah	7.05	6.31	-
490494001	Utah	Utah	8.08	7.28	8.3
490495010	Utah	Utah	7.17	6.46	7.8
490570002	Utah	Weber	8.69	7.77	8.3
500030004	Vermont	Bennington	5.57	5.11	5.4
500070007	Vermont	Chittenden	3.36	3.13	3.6
500210002	Vermont	Rutland	7.51	7.12	6.9
510030001	Virginia	Albemarle	6.85	6.02	6.5
510130020	Virginia	Arlington	8.02	6.97	7.5
510360002	Virginia	Charles	6.97	6.11	6.6
510410003	Virginia	Chesterfield	8.02	7.08	-
510590030	Virginia	Fairfax	7.22	6.26	6.8
510690010	Virginia	Frederick	7.94	7.00	7.4
510870014	Virginia	Henrico	7.38	6.49	7.1
510870015	Virginia	Henrico	7.29	6.34	7.0
511071005	Virginia	Loudoun	7.69	6.77	7.1
511650003	Virginia	Rockingham	7.55	6.72	7.0
515200006	Virginia	Bristol City	7.62	6.83	7.3
516500008	Virginia	Hampton City	6.59	5.84	6.2
516800015	Virginia	Lynchburg City	6.83	5.99	6.5
517100024	Virginia	Norfolk City	7.07	6.34	6.7

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
517750011	Virginia	Salem City	7.70	6.75	7.2
518100008	Virginia	Virginia Beach City	7.10	6.38	6.7
530110024	Washington	Clark	7.51	7.21	7.5
530330057	Washington	King	8.52	8.26	8.4
530330080	Washington	King	6.21	6.07	6.4
530332004	Washington	King	6.52	6.31	6.8
530530029	Washington	Pierce	7.39	7.15	7.7
530610005	Washington	Snohomish	5.12	4.93	-
530610020	Washington	Snohomish	6.60	6.37	6.8
530611007	Washington	Snohomish	7.37	7.16	7.4
530630021	Washington	Spokane	9.57	9.30	9.6
530770009	Washington	Yakima	9.37	8.65	9.8
540030003	West Virginia	Berkeley	9.21	8.16	8.4
540090005	West Virginia	Brooke	9.75	8.36	8.9
540090011	West Virginia	Brooke	9.31	7.97	8.9
540330003	West Virginia	Harrison	7.92	7.02	7.4
540391005	West Virginia	Kanawha	8.28	7.22	7.7
540511002	West Virginia	Marshall	9.66	8.61	9.1
540610003	West Virginia	Monongalia	7.63	6.64	7.2
540690010	West Virginia	Ohio	8.75	7.54	7.9
541071002	West Virginia	Wood	8.44	7.51	7.9
550030010	Wisconsin	Ashland	4.34	3.99	4.2
550090005	Wisconsin	Brown	7.13	6.59	6.4
550250041	Wisconsin	Dane	8.11	7.37	8.0
550250047	Wisconsin	Dane	8.16	7.35	8.1
550270001	Wisconsin	Dodge	7.12	6.46	6.8
550350014	Wisconsin	Eau Claire	6.82	6.15	6.8
550410007	Wisconsin	Forest	4.37	3.92	4.2
550430009	Wisconsin	Grant	7.38	6.53	7.3
550590019	Wisconsin	Kenosha	7.49	6.65	7.1
550630012	Wisconsin	La Crosse	6.94	6.27	6.8
550790010	Wisconsin	Milwaukee	8.49	7.69	8.0
550790026	Wisconsin	Milwaukee	8.01	7.23	7.6
550790058	Wisconsin	Milwaukee	8.08	7.34	7.5
550870009	Wisconsin	Outagamie	6.83	6.25	6.3
550890009	Wisconsin	Ozaukee	6.85	6.19	6.3
551110007	Wisconsin	Sauk	6.69	5.96	6.5
551198001	Wisconsin	Taylor	5.68	5.14	5.5

			Annual $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
551250001	Wisconsin	Vilas	4.62	4.22	4.5
551330027	Wisconsin	Waukesha	8.56	7.77	8.3
560010006	Wyoming	Albany	4.33	4.12	4.6
560050891	Wyoming	Campbell	4.40	4.28	4.5
560050892	Wyoming	Campbell	4.50	4.40	4.0
560051899	Wyoming	Campbell	3.74	3.66	4.3
560131003	Wyoming	Fremont	6.84	6.62	7.2
560210001	Wyoming	Laramie	4.21	3.98	4.4
560210100	Wyoming	Laramie	3.99	3.76	3.7
560250001	Wyoming	Natrona	4.85	4.66	5.0
560290001	Wyoming	Park	4.13	4.02	4.3
560330002	Wyoming	Sheridan	7.17	6.94	7.2
560350101	Wyoming	Sublette	5.13	5.01	5.3
560370007	Wyoming	Sweetwater	5.05	4.78	5.3
560391006	Wyoming	Teton	4.61	4.50	4.8

Appendix C

12km Daily (24-Hour) $PM_{2.5}$ Design Value Modeling Results from 2028fh Projection with Current 2016-2018 Design Value

			Daily $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
10030010	Alabama	Baldwin	16.6	15.5	17
10270001	Alabama	Clay	17.2	15.9	15
10331002	Alabama	Colbert	16.4	14.9	16
10491003	Alabama	DeKalb	16.2	14.9	15
10550010	Alabama	Etowah	16.4	15.0	16
10690003	Alabama	Houston	15.7	14.6	16
10730023	Alabama	Jefferson	21.8	20.3	21
10731005	Alabama	Jefferson	17.3	16.1	17
10731010	Alabama	Jefferson	17.9	16.6	18
10732003	Alabama	Jefferson	18.2	17.1	18
10732059	Alabama	Jefferson	22.0	20.5	22
10890014	Alabama	Madison	15.8	14.8	15
10970003	Alabama	Mobile	17.1	15.9	17
11011002	Alabama	Montgomery	18.9	17.8	19
11030011	Alabama	Morgan	15.8	14.7	15
11210002	Alabama	Talladega	18.0	16.6	-
11250004	Alabama	Tuscaloosa	16.4	14.9	16
40031005	Arizona	Cochise	11.8	13.4	-
40128000	Arizona	La Paz	9.4	9.2	11
40130019	Arizona	Maricopa	27.2	25.3	28
40131003	Arizona	Maricopa	16.8	15.4	17
40131004	Arizona	Maricopa	17.9	16.3	18
40132001	Arizona	Maricopa	18.0	16.9	18
40134003	Arizona	Maricopa	25.3	23.5	25
40134005	Arizona	Maricopa	15.7	14.3	16
40134019	Arizona	Maricopa	19.1	17.1	20
40137020	Arizona	Maricopa	15.1	15.1	17
40139812	Arizona	Maricopa	25.9	23.6	26
40139997	Arizona	Maricopa	21.3	19.5	21
40190011	Arizona	Pima	15.6	14.9	16
40191028	Arizona	Pima	12.0	11.5	13
40210001	Arizona	Pinal	19.0	17.8	22
40213002	Arizona	Pinal	11.2	11.0	12
40213015	Arizona	Pinal	35.5	34.2	36
40230004	Arizona	Santa Cruz	27.0	26.4	26
40278011	Arizona	Yuma	20.6	20.2	23
50010011	Arkansas	Arkansas	18.4	17.2	18
50030005	Arkansas	Ashley	17.7	16.5	18

			Daily $PM_{2.5}$ (µg/m^3)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
50350005	Arkansas	Crittenden	17.8	15.8	17
50510003	Arkansas	Garland	17.7	16.1	17
50670001	Arkansas	Jackson	20.3	18.9	20
51130002	Arkansas	Polk	18.7	17.1	19
51190007	Arkansas	Pulaski	19.6	18.4	19
51191008	Arkansas	Pulaski	21.2	19.9	21
51390006	Arkansas	Union	18.4	17.4	18
51430005	Arkansas	Washington	18.4	17.2	19
60010007	California	Alameda	29.0	26.7	40
60010009	California	Alameda	29.1	28.0	43
60010011	California	Alameda	32.6	31.1	45
60010012	California	Alameda	31.4	29.9	45
60010013	California	Alameda	41.2	39.8	41
60070008	California	Butte	30.5	29.0	38
60090001	California	Calaveras	20.1	18.3	-
60111002	California	Colusa	26.1	25.0	36
60130002	California	Contra Costa	29.0	27.1	40
60131004	California	Contra Costa	32.2	31.1	44
60190011	California	Fresno	55.3	47.6	58
60192009	California	Fresno	33.7	28.7	38
60195001	California	Fresno	48.3	41.2	50
60195025	California	Fresno	53.0	47.0	60
60231004	California	Humboldt	20.8	20.8	25
60250005	California	Imperial	33.1	34.2	35
60250007	California	Imperial	24.9	25.1	30
60251003	California	Imperial	20.5	20.5	22
60270002	California	Inyo	23.8	23.5	24
60271003	California	Inyo	28.0	27.7	29
60290010	California	Kern	63.1	57.7	61
60290011	California	Kern	19.0	18.4	21
60290014	California	Kern	60.9	55.9	63
60290016	California	Kern	60.2	55.7	60
60310004	California	Kings	15.5	12.0	65
60311004	California	Kings	58.9	49.1	63
60333002	California	Lake	10.0	9.8	41
60370002	California	Los Angeles	26.7	24.5	27
60371103	California	Los Angeles	32.3	29.3	31
60371201	California	Los Angeles	23.7	22.1	23

			Daily $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
60371302	California	Los Angeles	36.7	33.7	38
60371602	California	Los Angeles	32.0	30.5	30
60372005	California	Los Angeles	25.0	22.8	25
60374002	California	Los Angeles	30.0	27.7	30
60374004	California	Los Angeles	28.5	26.4	29
60374008	California	Los Angeles	32.6	29.8	33
60379033	California	Los Angeles	17.5	17.1	18
60392010	California	Madera	43.5	36.0	44
60410001	California	Marin	30.2	29.5	42
60450006	California	Mendocino	25.8	25.0	36
60452002	California	Mendocino	25.3	24.5	31
60470003	California	Merced	40.9	35.4	45
60472510	California	Merced	40.1	34.5	43
60530002	California	Monterey	28.8	28.5	31
60530008	California	Monterey	16.0	15.8	19
60531003	California	Monterey	15.1	15.0	20
60550003	California	Napa	30.2	29.3	-
60570005	California	Nevada	25.4	24.3	30
60571001	California	Nevada	26.7	25.5	27
60590007	California	Orange	31.3	29.7	31
60592022	California	Orange	15.3	14.9	16
60610003	California	Placer	21.1	20.4	26
60610006	California	Placer	23.6	22.2	31
60631006	California	Plumas	36.3	34.7	41
60631010	California	Plumas	48.8	46.8	46
60652002	California	Riverside	16.0	15.7	16
60655001	California	Riverside	13.6	13.6	13
60658001	California	Riverside	33.4	31.7	30
60658005	California	Riverside	39.6	38.0	36
60670006	California	Sacramento	33.9	32.0	37
60670010	California	Sacramento	30.1	27.8	34
60670012	California	Sacramento	23.0	22.0	29
60690002	California	San Benito	16.6	16.2	24
60710027	California	San Bernardino	35.4	33.6	34
60710306	California	San Bernardino	18.3	18.1	18
60712002	California	San Bernardino	29.2	28.2	27
60718001	California	San Bernardino	23.7	23.2	21
60719004	California	San Bernardino	28.7	27.4	27

			Daily $PM_{2.5}$ (µg/m^3)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
60730001	California	San Diego	22.0	21.9	26
60731016	California	San Diego	16.0	15.5	17
60731022	California	San Diego	19.2	18.9	19
60750005	California	San Francisco	30.5	28.6	44
60771002	California	San Joaquin	44.5	39.4	56
60772010	California	San Joaquin	42.5	36.5	54
60792004	California	San Luis Obispo	20.1	19.9	21
60792007	California	San Luis Obispo	25.4	25.1	26
60798002	California	San Luis Obispo	19.9	18.4	20
60811001	California	San Mateo	26.4	24.8	36
60831008	California	Santa Barbara	16.1	15.9	17
60832011	California	Santa Barbara	21.1	20.9	24
60850002	California	Santa Clara	20.2	19.0	27
60850005	California	Santa Clara	31.0	28.7	42
60850006	California	Santa Clara	35.1	32.7	42
60870007	California	Santa Cruz	16.3	16.2	24
60871005	California	Santa Cruz	19.4	18.4	21
60890004	California	Shasta	28.6	27.8	49
60932001	California	Siskiyou	44.3	43.1	59
60950004	California	Solano	34.2	33.1	48
60970004	California	Sonoma	24.1	23.4	34
60990005	California	Stanislaus	46.9	38.9	63
60990006	California	Stanislaus	49.5	41.4	58
61010003	California	Sutter	28.3	27.6	30
61072002	California	Tulare	55.7	46.1	60
61110007	California	Ventura	20.5	19.5	21
61110009	California	Ventura	19.3	18.5	20
61111004	California	Ventura	33.9	33.0	45
61112002	California	Ventura	20.7	19.8	21
61113001	California	Ventura	19.5	18.6	20
61131003	California	Yolo	30.0	28.7	50
80050005	Colorado	Arapahoe	17.3	16.5	17
80130003	Colorado	Boulder	24.0	22.3	25
80130012	Colorado	Boulder	17.6	16.4	19
80310002	Colorado	Denver	20.2	19.2	20
80310026	Colorado	Denver	19.8	18.9	19
80310027	Colorado	Denver	23.5	21.7	22
80310028	Colorado	Denver	24.0	22.2	24

			Daily $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
80350004	Colorado	Douglas	19.6	18.6	25
80410017	Colorado	El Paso	15.5	14.9	15
80677003	Colorado	La Plata	18.8	18.8	40
80690009	Colorado	Larimer	20.4	19.9	19
80770017	Colorado	Mesa	18.5	18.0	17
81010015	Colorado	Pueblo	14.6	13.6	14
81030006	Colorado	Rio Blanco	14.5	14.2	16
81230006	Colorado	Weld	25.4	23.2	24
81230008	Colorado	Weld	24.8	23.5	23
90010010	Connecticut	Fairfield	21.7	19.2	20
90011123	Connecticut	Fairfield	21.9	19.9	21
90030025	Connecticut	Hartford	19.0	16.8	18
90031003	Connecticut	Hartford	18.1	16.0	18
90050005	Connecticut	Litchfield	13.3	11.7	13
90090027	Connecticut	New Haven	19.4	17.1	19
90110124	Connecticut	New London	16.5	14.9	-
100031012	Delaware	New Castle	23.0	20.4	-
100051002	Delaware	Sussex	16.8	15.2	15
110010043	District Of Columbia	District of Columbia	20.5	18.9	20
120010023	Florida	Alachua	14.8	13.4	15
120090007	Florida	Brevard	13.1	12.6	14
120110034	Florida	Broward	15.5	15.6	15
120112003	Florida	Broward	15.6	15.9	16
120115005	Florida	Broward	14.6	15.0	15
120170005	Florida	Citrus	12.8	11.8	-
120310032	Florida	Duval	17.1	16.9	-
120310098	Florida	Duval	15.5	14.6	-
120310099	Florida	Duval	16.3	15.8	-
120330004	Florida	Escambia	15.3	14.4	16
120573002	Florida	Hillsborough	17.6	16.8	17
120710005	Florida	Lee	13.0	12.0	14
120730012	Florida	Leon	17.5	16.6	17
120860033	Florida	Miami-Dade	15.1	15.4	16
120861016	Florida	Miami-Dade	15.7	15.9	17
120866001	Florida	Miami-Dade	15.3	15.2	16
120952002	Florida	Orange	15.1	14.7	16
120992005	Florida	Palm Beach	13.3	13.7	14
121030018	Florida	Pinellas	16.3	15.7	17

			Daily $PM_{2.5}$ (µg/m^3)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
121031009	Florida	Pinellas	17.2	16.2	18
121056006	Florida	Polk	13.9	13.2	14
121150013	Florida	Sarasota	14.5	13.2	14
121171002	Florida	Seminole	14.4	13.6	14
121275002	Florida	Volusia	13.1	12.2	13
130210007	Georgia	Bibb	20.0	18.6	19
130210012	Georgia	Bibb	16.5	15.1	16
130510091	Georgia	Chatham	20.1	19.0	19
130590002	Georgia	Clarke	17.3	15.8	17
130630091	Georgia	Clayton	18.4	17.4	18
130670003	Georgia	Cobb	17.8	16.5	17
130890002	Georgia	DeKalb	19.2	18.1	19
130950007	Georgia	Dougherty	22.3	21.3	23
131150003	Georgia	Floyd	19.9	18.3	-
131210039	Georgia	Fulton	18.9	17.6	19
131210056	Georgia	Fulton	21.8	20.6	21
131270006	Georgia	Glynn	22.5	21.1	22
131350002	Georgia	Gwinnett	19.3	18.5	21
131390003	Georgia	Hall	19.3	18.2	19
131530001	Georgia	Houston	18.3	17.1	18
131850003	Georgia	Lowndes	17.4	16.5	18
132150001	Georgia	Muscogee	18.7	17.7	19
132150008	Georgia	Muscogee	18.6	17.4	18
132150011	Georgia	Muscogee	28.3	26.7	32
132230003	Georgia	Paulding	16.1	14.7	-
132450091	Georgia	Richmond	23.3	22.1	24
132950002	Georgia	Walker	18.5	17.2	18
133030001	Georgia	Washington	21.5	20.0	21
133190001	Georgia	Wilkinson	21.1	19.8	-
160010010	Idaho	Ada	30.8	30.9	30
160050020	Idaho	Bannock	25.4	24.6	-
160090010	Idaho	Benewah	38.2	35.4	37
160270002	Idaho	Canyon	33.5	33.9	33
160410001	Idaho	Franklin	30.1	28.0	-
160590004	Idaho	Lemhi	43.5	42.3	43
160790017	Idaho	Shoshone	38.7	36.6	38
170190006	Illinois	Champaign	16.7	14.7	16
170191001	Illinois	Champaign	16.5	14.5	17

			Daily $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
170310001	Illinois	Cook	20.0	17.8	20
170310022	Illinois	Cook	20.6	18.8	21
170310052	Illinois	Cook	21.9	19.2	22
170310057	Illinois	Cook	23.1	20.1	21
170310076	Illinois	Cook	21.0	18.3	20
170313103	Illinois	Cook	22.2	19.7	22
170313301	Illinois	Cook	22.3	19.8	22
170314007	Illinois	Cook	22.5	19.6	23
170314201	Illinois	Cook	20.6	17.9	21
170316005	Illinois	Cook	22.9	20.4	22
170434002	Illinois	DuPage	19.9	17.3	20
170650002	Illinois	Hamilton	17.6	15.0	17
170890003	Illinois	Kane	18.5	16.4	19
170890007	Illinois	Kane	19.0	17.1	20
171110001	Illinois	McHenry	16.9	15.0	17
171132003	Illinois	McLean	17.8	15.5	18
171150013	Illinois	Macon	18.5	16.1	20
171190024	Illinois	Madison	21.4	19.1	21
171191007	Illinois	Madison	19.5	17.1	20
171192009	Illinois	Madison	19.8	17.5	20
171193007	Illinois	Madison	20.3	18.2	20
171430037	Illinois	Peoria	18.2	15.7	19
171570001	Illinois	Randolph	18.1	16.0	18
171613002	Illinois	Rock Island	20.2	17.7	-
171630010	Illinois	Saint Clair	19.6	17.0	20
171670012	Illinois	Sangamon	20.0	17.5	20
171971002	Illinois	Will	18.6	16.4	-
171971011	Illinois	Will	17.5	15.5	-
172010013	Illinois	Winnebago	18.0	16.0	-
180030004	Indiana	Allen	21.8	19.1	21
180050008	Indiana	Bartholomew	17.6	15.4	17
180190006	Indiana	Clark	22.3	19.6	22
180190008	Indiana	Clark	18.0	15.5	17
180350006	Indiana	Delaware	18.8	16.8	17
180372001	Indiana	Dubois	21.1	18.1	20
180390008	Indiana	Elkhart	25.1	22.6	22
180431004	Indiana	Floyd	19.9	17.7	-
180550001	Indiana	Greene	19.9	17.6	19

			Daily $PM_{2.5}$ (µg/m^3)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
180570007	Indiana	Hamilton	19.4	16.8	18
180650003	Indiana	Henry	17.0	15.3	16
180670004	Indiana	Howard	19.8	17.4	19
180890006	Indiana	Lake	21.6	19.9	20
180890022	Indiana	Lake	21.1	19.5	20
180890026	Indiana	Lake	23.4	21.2	22
180890031	Indiana	Lake	22.6	20.7	23
180892004	Indiana	Lake	23.2	20.9	-
180910011	Indiana	LaPorte	20.7	18.7	-
180950011	Indiana	Madison	19.5	17.5	18
180970043	Indiana	Marion	23.2	19.4	22
180970078	Indiana	Marion	21.0	17.8	20
180970081	Indiana	Marion	23.6	20.0	23
180970083	Indiana	Marion	22.4	19.4	22
180970087	Indiana	Marion	24.4	20.6	25
181050003	Indiana	Monroe	17.8	15.5	18
181270024	Indiana	Porter	20.5	18.8	19
181410015	Indiana	St. Joseph	22.0	19.6	20
181470009	Indiana	Spencer	19.8	16.8	18
181570008	Indiana	Tippecanoe	19.6	17.1	19
181630016	Indiana	Vanderburgh	20.2	16.8	19
181630021	Indiana	Vanderburgh	18.9	15.8	18
181630023	Indiana	Vanderburgh	20.0	16.8	19
181670018	Indiana	Vigo	22.0	19.2	22
181830003	Indiana	Whitley	20.4	18.2	19
190130009	Iowa	Black Hawk	20.3	17.0	20
190450019	Iowa	Clinton	21.3	18.8	20
190450021	Iowa	Clinton	20.0	17.2	19
190550001	Iowa	Delaware	20.5	17.6	-
191032001	Iowa	Johnson	19.1	16.4	18
191110008	Iowa	Lee	19.5	17.2	18
191130040	Iowa	Linn	20.4	17.8	19
191370002	Iowa	Montgomery	16.5	15.0	16
191390015	Iowa	Muscatine	22.2	19.8	21
191390016	Iowa	Muscatine	19.5	17.0	17
191390018	Iowa	Muscatine	23.1	20.5	-
191390020	Iowa	Muscatine	22.1	19.4	19
191471002	Iowa	Palo Alto	16.7	14.5	17

			Daily $PM_{2.5}$ (µg/m^3)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
191530030	Iowa	Polk	17.9	15.4	17
191532510	Iowa	Polk	17.9	15.3	18
191550009	Iowa	Pottawattamie	18.6	16.3	19
191630015	Iowa	Scott	20.4	17.9	19
191630018	Iowa	Scott	22.5	19.7	-
191630020	Iowa	Scott	22.7	19.7	21
191770006	Iowa	Van Buren	18.4	16.5	17
191930021	Iowa	Woodbury	18.0	15.5	18
200910007	Kansas	Johnson	17.2	14.9	17
200910010	Kansas	Johnson	14.0	12.0	-
201330003	Kansas	Neosho	18.7	16.5	-
201730009	Kansas	Sedgwick	21.3	18.4	19
201730010	Kansas	Sedgwick	21.9	18.7	-
201731012	Kansas	Sedgwick	19.1	16.4	-
201770013	Kansas	Shawnee	19.7	17.5	21
201910002	Kansas	Sumner	18.3	15.9	16
202090021	Kansas	Wyandotte	21.8	19.0	25
210130002	Kentucky	Bell	25.1	23.4	24
210190017	Kentucky	Boyd	17.5	15.4	16
210373002	Kentucky	Campbell	19.1	17.2	18
210430500	Kentucky	Carter	16.1	14.4	14
210470006	Kentucky	Christian	18.6	16.1	16
210590005	Kentucky	Daviess	19.4	16.4	18
210670012	Kentucky	Fayette	18.4	15.8	-
210930006	Kentucky	Hardin	18.0	16.0	17
211010014	Kentucky	Henderson	18.8	15.6	18
211110043	Kentucky	Jefferson	20.8	18.7	-
211110051	Kentucky	Jefferson	20.3	18.2	20
211110067	Kentucky	Jefferson	19.7	17.7	19
211110075	Kentucky	Jefferson	21.3	18.9	21
211451024	Kentucky	McCracken	18.2	16.3	17
211510003	Kentucky	Madison	17.7	15.3	-
211930003	Kentucky	Perry	19.1	17.4	19
211950002	Kentucky	Pike	20.1	18.1	19
211990003	Kentucky	Pulaski	17.5	15.1	16
212270009	Kentucky	Warren	17.8	15.7	17
220170008	Louisiana	Caddo	20.9	20.0	21
220190009	Louisiana	Calcasieu	18.4	17.1	21

			Daily $PM_{2.5}$ (µg/m^3)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
220330009	Louisiana	East Baton Rouge	21.0	20.8	22
220470005	Louisiana	Iberville	19.1	18.6	20
220511001	Louisiana	Jefferson	17.9	17.1	19
220512001	Louisiana	Jefferson	17.6	16.8	18
220550007	Louisiana	Lafayette	16.4	16.1	19
220710021	Louisiana	Orleans	17.9	17.0	18
220730004	Louisiana	Ouachita	19.9	18.4	20
220870007	Louisiana	St. Bernard	18.8	17.8	18
221050001	Louisiana	Tangipahoa	16.0	15.0	17
221090001	Louisiana	Terrebonne	15.7	14.8	16
221210001	Louisiana	West Baton Rouge	18.9	18.6	19
230010011	Maine	Androscoggin	16.7	14.9	16
230030014	Maine	Aroostook	18.8	17.0	17
230031011	Maine	Aroostook	14.2	13.2	14
230050015	Maine	Cumberland	14.5	13.0	15
230050029	Maine	Cumberland	16.6	15.1	16
230090103	Maine	Hancock	11.3	10.3	11
230110016	Maine	Kennebec	15.4	13.8	15
230172011	Maine	Oxford	19.8	17.9	20
230190002	Maine	Penobscot	15.1	13.6	14
240031003	Maryland	Anne Arundel	21.5	19.3	-
240051007	Maryland	Baltimore	20.2	18.2	-
240053001	Maryland	Baltimore	21.5	19.1	19
240150003	Maryland	Cecil	20.5	18.5	18
240190004	Maryland	Dorchester	17.1	15.2	16
240230002	Maryland	Garrett	13.9	12.2	14
240251001	Maryland	Harford	20.1	18.4	19
240270006	Maryland	Howard	19.7	17.9	19
240290002	Maryland	Kent	17.4	15.4	16
240313001	Maryland	Montgomery	17.7	15.9	17
240330030	Maryland	Prince George's	17.9	16.6	16
240338003	Maryland	Prince George's	16.4	14.2	-
240430009	Maryland	Washington	20.4	18.7	18
245100008	Maryland	Baltimore (City)	23.1	20.3	-
245100040	Maryland	Baltimore (City)	21.8	19.2	20
250035001	Massachusetts	Berkshire	15.5	14.0	15
250051004	Massachusetts	Bristol	15.0	13.5	15
250092006	Massachusetts	Essex	15.3	13.8	-

			Daily $PM_{2.5}$ (µg/m^3)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
250095005	Massachusetts	Essex	13.7	12.4	13
250096001	Massachusetts	Essex	12.6	11.1	-
250112005	Massachusetts	Franklin	14.9	13.5	15
250130008	Massachusetts	Hampden	14.2	13.0	13
250130016	Massachusetts	Hampden	17.7	16.0	-
250154002	Massachusetts	Hampshire	14.3	13.0	14
250230005	Massachusetts	Plymouth	15.8	14.2	16
250250002	Massachusetts	Suffolk	13.6	11.5	-
250250042	Massachusetts	Suffolk	16.7	14.5	17
250250043	Massachusetts	Suffolk	15.2	13.5	-
250250044	Massachusetts	Suffolk	16.3	14.3	17
250270016	Massachusetts	Worcester	14.0	12.7	-
250270023	Massachusetts	Worcester	15.7	14.5	15
260050003	Michigan	Allegan	20.8	18.5	21
260170014	Michigan	Bay	21.0	18.7	20
260210014	Michigan	Berrien	19.8	17.8	-
260490021	Michigan	Genesee	20.1	17.7	19
260650012	Michigan	Ingham	20.7	18.3	-
260770008	Michigan	Kalamazoo	21.8	19.7	21
260810007	Michigan	Kent	24.4	22.3	-
260810020	Michigan	Kent	21.8	19.3	20
260910007	Michigan	Lenawee	19.7	17.6	19
260990009	Michigan	Macomb	22.6	19.8	19
261010922	Michigan	Manistee	16.5	14.5	16
261130001	Michigan	Missaukee	15.0	13.3	15
261150006	Michigan	Monroe	22.0	19.7	-
261250001	Michigan	Oakland	22.4	19.6	20
261470005	Michigan	St. Clair	21.9	19.5	19
261610008	Michigan	Washtenaw	20.8	18.6	19
261630001	Michigan	Wayne	22.2	19.6	22
261630015	Michigan	Wayne	26.9	23.8	28
261630016	Michigan	Wayne	23.7	21.0	22
261630019	Michigan	Wayne	20.7	18.1	19
261630025	Michigan	Wayne	21.6	19.1	19
261630033	Michigan	Wayne	26.1	23.2	25
261630036	Michigan	Wayne	20.3	18.0	20
261630039	Michigan	Wayne	22.2	19.6	-
261630095	Michigan	Wayne	22.1	19.4	23

			Daily $PM_{2.5}$ (µg/m^3)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
270031002	Minnesota	Anoka	18.9	16.9	20
270052013	Minnesota	Becker	16.2	15.5	16
270072304	Minnesota	Beltrami	15.5	14.3	16
270177417	Minnesota	Carlton	14.8	13.6	15
270317810	Minnesota	Cook	11.6	10.8	12
270353204	Minnesota	Crow Wing	16.0	14.1	16
270370470	Minnesota	Dakota	17.1	15.4	17
270370480	Minnesota	Dakota	16.1	14.4	16
270530962	Minnesota	Hennepin	19.3	17.2	19
270530963	Minnesota	Hennepin	18.5	16.5	20
270532006	Minnesota	Hennepin	17.9	15.8	18
270750005	Minnesota	Lake	12.2	11.3	12
270834210	Minnesota	Lyon	16.0	13.6	14
271095008	Minnesota	Olmsted	17.7	15.2	18
271230868	Minnesota	Ramsey	20.9	18.3	21
271230871	Minnesota	Ramsey	19.6	17.3	20
271377001	Minnesota	Saint Louis	14.5	13.7	14
271377550	Minnesota	Saint Louis	15.0	13.5	15
271377554	Minnesota	Saint Louis	16.3	15.2	17
271390505	Minnesota	Scott	16.8	15.1	-
271453052	Minnesota	Stearns	16.5	14.8	16
271630448	Minnesota	Washington	19.5	17.5	19
271713201	Minnesota	Wright	17.5	15.7	17
280330002	Mississippi	DeSoto	16.0	14.3	16
280350004	Mississippi	Forrest	17.7	16.5	18
280430001	Mississippi	Grenada	14.9	13.3	16
280450003	Mississippi	Hancock	18.0	17.0	18
280470008	Mississippi	Harrison	17.2	16.1	17
280490020	Mississippi	Hinds	18.9	17.5	20
280490021	Mississippi	Hinds	19.1	17.6	19
280590006	Mississippi	Jackson	17.3	16.0	17
290210005	Missouri	Buchanan	19.0	16.7	18
290370003	Missouri	Cass	17.0	14.8	15
290390001	Missouri	Cedar	16.7	14.9	17
290470005	Missouri	Clay	16.1	14.2	15
290770036	Missouri	Greene	16.2	13.8	16
290950034	Missouri	Jackson	19.7	17.1	20
290950042	Missouri	Jackson	16.1	13.8	16

			Daily $PM_{2.5}$ (µg/m^3)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
290990019	Missouri	Jefferson	20.5	18.1	18
291893001	Missouri	Saint Louis	20.9	18.1	20
295100007	Missouri	St. Louis City	21.5	18.5	19
295100085	Missouri	St. Louis City	20.9	17.9	19
295100093	Missouri	St. Louis City	21.4	18.6	20
295100094	Missouri	St. Louis City	20.7	17.7	20
300270006	Montana	Fergus	25.1	24.6	24
300290049	Montana	Flathead	42.7	41.4	37
300310017	Montana	Gallatin	30.4	30.1	30
300490004	Montana	Lewis and Clark	26.4	26.1	23
300490026	Montana	Lewis and Clark	42.3	41.0	43
300530018	Montana	Lincoln	45.3	43.0	48
300630024	Montana	Missoula	44.7	42.9	42
300630037	Montana	Missoula	39.7	38.4	38
300710010	Montana	Phillips	24.6	24.0	24
300750001	Montana	Powder River	27.1	26.4	28
300810007	Montana	Ravalli	57.5	56.2	46
300830001	Montana	Richland	22.0	21.4	-
300870001	Montana	Rosebud	25.6	25.0	28
300930005	Montana	Silver Bow	35.1	33.6	32
310550019	Nebraska	Douglas	20.3	17.1	20
310550052	Nebraska	Douglas	17.0	14.7	18
310790004	Nebraska	Hall	14.2	12.8	15
311090022	Nebraska	Lancaster	17.2	15.0	18
311530007	Nebraska	Sarpy	18.9	16.4	19
311770002	Nebraska	Washington	15.9	13.9	17
320030298	Nevada	Clark	14.8	14.4	15
320030540	Nevada	Clark	22.9	21.7	24
320030561	Nevada	Clark	24.1	22.4	24
320031019	Nevada	Clark	11.7	11.6	13
320032002	Nevada	Clark	20.5	19.2	-
320050007	Nevada	Douglas	27.7	26.7	28
320310016	Nevada	Washoe	22.3	21.3	25
320311005	Nevada	Washoe	25.0	23.6	25
325100020	Nevada	Carson City	18.3	17.6	24
330012004	New Hampshire	Belknap	10.2	9.0	10
330050007	New Hampshire	Cheshire	20.2	18.5	18
330090010	New Hampshire	Grafton	14.5	13.6	14

			Daily $PM_{2.5}$ (µg/m^3)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
330115001	New Hampshire	Hillsborough	11.7	10.4	11
330150014	New Hampshire	Rockingham	13.8	12.4	13
330150018	New Hampshire	Rockingham	13.7	12.2	12
340010006	New Jersey	Atlantic	15.3	13.4	14
340011006	New Jersey	Atlantic	16.4	14.6	16
340030003	New Jersey	Bergen	21.1	18.4	18
340030010	New Jersey	Bergen	22.3	19.8	22
340070002	New Jersey	Camden	24.1	21.4	24
340071007	New Jersey	Camden	19.0	17.2	17
340130003	New Jersey	Essex	21.1	19.0	19
340150004	New Jersey	Gloucester	20.5	18.3	-
340170008	New Jersey	Hudson	18.6	16.0	19
340171003	New Jersey	Hudson	20.8	18.3	19
340210005	New Jersey	Mercer	17.2	15.4	17
340210008	New Jersey	Mercer	19.5	17.3	17
340230011	New Jersey	Middlesex	18.5	16.6	19
340273001	New Jersey	Morris	15.6	13.8	14
340292002	New Jersey	Ocean	17.3	15.0	16
340310005	New Jersey	Passaic	19.7	17.0	18
340390004	New Jersey	Union	22.6	19.8	21
340392003	New Jersey	Union	20.4	17.8	18
340410007	New Jersey	Warren	21.7	19.6	20
350010023	New Mexico	Bernalillo	17.6	16.9	16
350010029	New Mexico	Bernalillo	18.8	18.3	20
350130016	New Mexico	Dona Ana	20.5	19.9	22
350130021	New Mexico	Dona Ana	27.4	27.1	27
350130025	New Mexico	Dona Ana	11.6	11.2	12
350250008	New Mexico	Lea	15.9	15.6	16
360010005	New York	Albany	18.0	16.2	17
360010012	New York	Albany	15.9	14.2	15
360050110	New York	Bronx	18.5	16.6	17
360050133	New York	Bronx	21.7	19.5	20
360130006	New York	Chautauqua	15.0	13.5	15
360290002	New York	Erie	15.2	13.3	15
360290005	New York	Erie	18.1	16.1	17
360290023	New York	Erie	16.3	14.5	16
360310003	New York	Essex	11.0	9.4	11
360470122	New York	Kings	19.1	16.9	17

			Daily $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
360550015	New York	Monroe	16.4	14.5	16
360551007	New York	Monroe	15.9	14.0	16
360610079	New York	New York	20.1	17.6	18
360610128	New York	New York	23.2	20.6	23
360610134	New York	New York	20.4	18.0	19
360671015	New York	Onondaga	14.1	12.3	14
360710002	New York	Orange	15.8	14.1	14
360810124	New York	Queens	18.5	16.2	18
360850055	New York	Richmond	18.4	16.0	18
361010003	New York	Steuben	12.4	10.6	12
361030002	New York	Suffolk	17.0	14.7	15
370210034	North Carolina	Buncombe	22.4	21.0	22
370350004	North Carolina	Catawba	19.4	18.7	20
370510009	North Carolina	Cumberland	17.1	15.8	18
370570002	North Carolina	Davidson	19.4	19.0	19
370630015	North Carolina	Durham	18.3	17.0	18
370670022	North Carolina	Forsyth	16.4	15.0	16
370810013	North Carolina	Guilford	16.1	15.7	16
370990006	North Carolina	Jackson	27.7	25.8	28
371010002	North Carolina	Johnston	15.3	14.2	15
371190041	North Carolina	Mecklenburg	17.0	17.0	17
371190042	North Carolina	Mecklenburg	18.4	18.4	18
371190045	North Carolina	Mecklenburg	16.7	16.3	18
371210004	North Carolina	Mitchell	20.6	19.4	21
371230001	North Carolina	Montgomery	14.4	13.3	14
371290002	North Carolina	New Hanover	13.6	12.3	13
371470006	North Carolina	Pitt	14.1	12.5	13
371730002	North Carolina	Swain	25.6	24.3	25
371830014	North Carolina	Wake	17.6	16.9	15
380070002	North Dakota	Billings	16.2	15.6	15
380130004	North Dakota	Burke	21.2	19.9	16
380150003	North Dakota	Burleigh	18.8	17.5	-
380171004	North Dakota	Cass	17.5	16.3	19
380250003	North Dakota	Dunn	20.5	19.7	-
380530002	North Dakota	McKenzie	18.0	17.3	17
380570004	North Dakota	Mercer	16.2	15.2	15
380650002	North Dakota	Oliver	17.3	16.3	16
381050003	North Dakota	Williams	21.0	19.9	18

			Daily $PM_{2.5}$ (µg/m^3)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
390030009	Ohio	Allen	19.0	16.3	17
390090003	Ohio	Athens	14.1	12.3	12
390130006	Ohio	Belmont	16.1	14.0	16
390170016	Ohio	Butler	20.3	17.4	19
390170019	Ohio	Butler	20.4	18.3	19
390170020	Ohio	Butler	22.1	20.3	21
390170022	Ohio	Butler	22.6	20.6	23
390230005	Ohio	Clark	19.8	17.3	20
390350034	Ohio	Cuyahoga	18.9	16.2	18
390350038	Ohio	Cuyahoga	23.5	21.0	22
390350045	Ohio	Cuyahoga	21.5	19.0	20
390350060	Ohio	Cuyahoga	21.9	19.4	22
390350065	Ohio	Cuyahoga	24.3	21.8	23
390351002	Ohio	Cuyahoga	18.6	16.4	18
390490024	Ohio	Franklin	19.0	15.9	-
390490029	Ohio	Franklin	18.2	16.1	-
390490039	Ohio	Franklin	18.4	16.0	18
390490081	Ohio	Franklin	19.8	17.0	19
390570005	Ohio	Greene	18.1	16.4	17
390610006	Ohio	Hamilton	19.4	16.8	19
390610010	Ohio	Hamilton	20.3	17.9	-
390610014	Ohio	Hamilton	22.0	19.2	21
390610040	Ohio	Hamilton	20.0	17.9	20
390610042	Ohio	Hamilton	21.1	18.5	20
390810017	Ohio	Jefferson	24.6	21.8	22
390810021	Ohio	Jefferson	21.1	17.9	-
390850007	Ohio	Lake	16.7	14.6	16
390870012	Ohio	Lawrence	15.6	14.2	15
390933002	Ohio	Lorain	18.6	16.7	17
390950024	Ohio	Lucas	21.3	18.9	20
390950026	Ohio	Lucas	20.2	17.9	18
390950028	Ohio	Lucas	21.2	18.5	-
390990005	Ohio	Mahoning	20.8	18.4	-
390990014	Ohio	Mahoning	19.4	17.0	17
391030004	Ohio	Medina	18.6	16.6	18
391130038	Ohio	Montgomery	19.9	17.1	20
391330002	Ohio	Portage	17.0	14.8	16
391351001	Ohio	Preble	17.9	15.9	17

			Daily $PM_{2.5}$ (µg/m^3)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
391450013	Ohio	Scioto	18.5	16.5	-
391510017	Ohio	Stark	22.1	19.8	21
391510020	Ohio	Stark	21.0	18.0	20
391530017	Ohio	Summit	21.9	19.4	20
391530023	Ohio	Summit	18.9	16.9	18
391550014	Ohio	Trumbull	18.0	16.0	18
400270049	Oklahoma	Cleveland	18.4	16.5	19
400310651	Oklahoma	Comanche	16.1	14.8	16
400710604	Oklahoma	Kay	17.9	16.1	18
401090035	Oklahoma	Oklahoma	18.1	16.3	18
401091037	Oklahoma	Oklahoma	18.6	17.0	19
401210415	Oklahoma	Pittsburg	19.0	17.0	21
401359021	Oklahoma	Sequoyah	17.8	16.7	18
401431127	Oklahoma	Tulsa	21.5	19.3	24
410130100	Oregon	Crook	39.0	37.9	38
410250003	Oregon	Harney	32.7	31.5	37
410290133	Oregon	Jackson	27.6	26.7	53
410330114	Oregon	Josephine	42.5	40.9	63
410350004	Oregon	Klamath	45.9	44.9	75
410370001	Oregon	Lake	41.6	40.6	47
410390059	Oregon	Lane	28.0	27.2	32
410390060	Oregon	Lane	28.8	28.1	31
410391009	Oregon	Lane	32.2	31.2	-
410392013	Oregon	Lane	41.0	39.8	47
410399004	Oregon	Lane	23.9	23.1	27
410510080	Oregon	Multnomah	22.4	21.3	23
410670004	Oregon	Washington	27.0	26.4	28
410670005	Oregon	Washington	24.6	24.1	24
420010001	Pennsylvania	Adams	20.1	18.7	19
420030008	Pennsylvania	Allegheny	19.4	17.5	18
420030064	Pennsylvania	Allegheny	35.9	32.9	35
420031008	Pennsylvania	Allegheny	20.4	18.3	20
420031301	Pennsylvania	Allegheny	24.5	22.3	24
420031376	Pennsylvania	Allegheny	22.2	19.8	22
420050001	Pennsylvania	Armstrong	21.1	19.0	20
420070014	Pennsylvania	Beaver	20.6	18.1	20
420110011	Pennsylvania	Berks	25.3	23.1	23
420130801	Pennsylvania	Blair	22.5	20.4	21

			Daily $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
420150011	Pennsylvania	Bradford	16.8	15.9	17
420210011	Pennsylvania	Cambria	24.2	21.5	22
420270100	Pennsylvania	Centre	19.8	18.1	20
420290100	Pennsylvania	Chester	23.3	21.6	23
420410101	Pennsylvania	Cumberland	25.4	24.1	24
420430401	Pennsylvania	Dauphin	26.0	24.1	23
420450002	Pennsylvania	Delaware	24.7	22.6	24
420450109	Pennsylvania	Delaware	22.2	19.9	21
420490003	Pennsylvania	Erie	19.5	17.0	19
420590002	Pennsylvania	Greene	13.5	11.7	14
420692006	Pennsylvania	Lackawanna	19.4	17.6	19
420710007	Pennsylvania	Lancaster	27.5	24.9	25
420710012	Pennsylvania	Lancaster	28.1	26.2	25
420750100	Pennsylvania	Lebanon	29.0	26.0	26
420770004	Pennsylvania	Lehigh	22.4	20.4	22
420850100	Pennsylvania	Mercer	21.4	18.8	21
420890002	Pennsylvania	Monroe	18.2	16.3	-
420950025	Pennsylvania	Northampton	23.6	21.2	23
421010004	Pennsylvania	Philadelphia	22.8	20.1	22
421010048	Pennsylvania	Philadelphia	23.2	21.1	21
421010055	Pennsylvania	Philadelphia	24.1	22.2	21
421010057	Pennsylvania	Philadelphia	23.3	20.9	20
421010075	Pennsylvania	Philadelphia	23.0	21.0	22
421010076	Pennsylvania	Philadelphia	20.1	17.9	20
421174000	Pennsylvania	Tioga	16.9	15.3	17
421250005	Pennsylvania	Washington	20.2	17.9	18
421250200	Pennsylvania	Washington	18.7	16.5	-
421255001	Pennsylvania	Washington	17.2	15.0	17
421290008	Pennsylvania	Westmoreland	19.3	17.1	18
421330008	Pennsylvania	York	22.9	21.1	21
440030002	Rhode Island	Kent	13.5	12.0	14
440070022	Rhode Island	Providence	15.6	13.7	16
440070026	Rhode Island	Providence	17.3	15.5	16
440070030	Rhode Island	Providence	19.4	17.6	19
440071010	Rhode Island	Providence	17.1	15.1	17
440090007	Rhode Island	Washington	14.6	12.9	15
450190048	South Carolina	Charleston	15.7	14.7	16
450190049	South Carolina	Charleston	14.7	13.7	15

			Daily $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
450250001	South Carolina	Chesterfield	15.0	14.0	-
450370001	South Carolina	Edgefield	18.5	17.3	19
450410003	South Carolina	Florence	17.2	15.8	-
450450015	South Carolina	Greenville	23.1	22.7	23
450450016	South Carolina	Greenville	17.1	16.4	17
450630008	South Carolina	Lexington	18.8	17.8	19
450790007	South Carolina	Richland	16.8	15.7	16
450830011	South Carolina	Spartanburg	16.7	16.0	16
460110003	South Dakota	Brookings	13.6	11.9	13
460130003	South Dakota	Brown	15.1	13.6	17
460290002	South Dakota	Codington	15.7	14.0	16
460330132	South Dakota	Custer	14.4	13.8	14
460650003	South Dakota	Hughes	12.4	11.8	12
460710001	South Dakota	Jackson	14.1	13.4	13
460990008	South Dakota	Minnehaha	17.1	15.1	15
461030020	South Dakota	Pennington	21.8	20.5	22
461031001	South Dakota	Pennington	17.7	16.5	18
461270001	South Dakota	Union	17.6	15.4	16
470090011	Tennessee	Blount	23.7	22.5	23
470370023	Tennessee	Davidson	18.5	16.8	17
470450004	Tennessee	Dyer	14.1	12.7	14
470650031	Tennessee	Hamilton	17.8	16.4	18
470654002	Tennessee	Hamilton	17.9	16.7	19
470930028	Tennessee	Knox	18.9	17.6	18
470931013	Tennessee	Knox	32.8	30.7	32
470931017	Tennessee	Knox	21.6	20.1	22
470931020	Tennessee	Knox	18.8	17.5	18
470990002	Tennessee	Lawrence	14.2	12.8	14
471050109	Tennessee	Loudon	20.3	19.1	18
471071002	Tennessee	McMinn	20.1	18.8	20
471130006	Tennessee	Madison	14.6	13.1	14
471192007	Tennessee	Maury	14.6	13.0	15
471251009	Tennessee	Montgomery	16.8	15.3	16
471410005	Tennessee	Putnam	16.9	15.4	16
471450004	Tennessee	Roane	16.8	15.4	16
471570024	Tennessee	Shelby	17.8	16.2	17
471570075	Tennessee	Shelby	15.7	14.0	16
471631007	Tennessee	Sullivan	15.6	14.6	16

			Daily $PM_{2.5}$ (µg/m^3)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
471650007	Tennessee	Sumner	16.5	14.4	16
480290032	Texas	Bexar	19.1	18.2	19
480290059	Texas	Bexar	19.4	18.9	-
480610006	Texas	Cameron	25.1	26.6	25
481130050	Texas	Dallas	18.3	16.8	19
481130069	Texas	Dallas	18.7	16.9	20
481410037	Texas	El Paso	16.2	16.9	17
481410044	Texas	El Paso	23.7	24.7	24
481671034	Texas	Galveston	21.4	19.8	22
482010058	Texas	Harris	22.5	21.7	24
482011035	Texas	Harris	22.0	21.2	22
482011039	Texas	Harris	20.6	19.8	20
482011052	Texas	Harris	22.7	21.7	23
482030002	Texas	Harrison	17.3	15.8	18
482150043	Texas	Hidalgo	26.3	26.5	28
482151046	Texas	Hidalgo	24.7	24.9	25
483550032	Texas	Nueces	24.8	24.0	25
484391002	Texas	Tarrant	17.8	16.4	18
484391006	Texas	Tarrant	17.8	16.5	18
484391053	Texas	Tarrant	17.7	16.2	18
484530020	Texas	Travis	17.6	16.3	-
484530021	Texas	Travis	20.3	18.9	22
490030003	Utah	Box Elder	32.4	29.1	32
490050007	Utah	Cache	32.7	30.3	33
490110004	Utah	Davis	30.2	26.8	29
490130002	Utah	Duchesne	24.7	23.8	25
490351001	Utah	Salt Lake	29.9	26.0	-
490353006	Utah	Salt Lake	34.8	29.3	33
490353010	Utah	Salt Lake	37.5	31.9	35
490450004	Utah	Tooele	25.5	23.0	26
490490002	Utah	Utah	28.3	24.4	-
490494001	Utah	Utah	30.9	27.1	31
490530007	Utah	Washington	13.9	13.5	15
490570002	Utah	Weber	31.5	27.5	30
500030004	Vermont	Bennington	13.6	12.4	13
500070007	Vermont	Chittenden	10.2	9.3	11
500070014	Vermont	Chittenden	13.7	12.7	14
500210002	Vermont	Rutland	22.4	22.0	19

			Daily $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
510030001	Virginia	Albemarle	14.8	13.2	14
510130020	Virginia	Arlington	18.1	16.1	17
510360002	Virginia	Charles	14.6	13.0	14
510410003	Virginia	Chesterfield	15.9	14.5	-
510590030	Virginia	Fairfax	17.2	15.1	16
510690010	Virginia	Frederick	19.9	18.5	19
510870014	Virginia	Henrico	15.5	13.7	15
510870015	Virginia	Henrico	15.1	13.1	15
511071005	Virginia	Loudoun	17.2	15.8	15
511611004	Virginia	Roanoke	15.7	14.3	15
511650003	Virginia	Rockingham	18.6	16.7	17
515200006	Virginia	Bristol City	18.1	17.0	18
516500008	Virginia	Hampton City	14.5	13.1	14
516800015	Virginia	Lynchburg City	14.1	12.8	14
517100024	Virginia	Norfolk City	14.3	12.8	13
517750011	Virginia	Salem City	15.8	14.2	15
518100008	Virginia	Virginia Beach City	15.6	13.8	14
530070011	Washington	Chelan	21.3	20.4	-
530330030	Washington	King	26.5	26.7	29
530330057	Washington	King	28.3	28.3	32
530330080	Washington	King	20.8	20.9	27
530332004	Washington	King	25.9	25.8	29
530350007	Washington	Kitsap	17.5	17.4	19
530370002	Washington	Kittitas	39.8	38.2	40
530470013	Washington	Okanogan	62.3	60.2	62
530530024	Washington	Pierce	24.8	24.6	25
530530029	Washington	Pierce	30.7	30.2	33
530570011	Washington	Skagit	15.6	15.3	18
530610005	Washington	Snohomish	19.9	19.5	-
530610020	Washington	Snohomish	34.4	33.5	39
530611007	Washington	Snohomish	28.0	27.5	-
530630021	Washington	Spokane	32.2	30.5	38
530730015	Washington	Whatcom	17.9	17.5	-
530770009	Washington	Yakima	37.5	34.5	43
530770015	Washington	Yakima	43.6	40.4	47
540030003	West Virginia	Berkeley	24.0	22.3	22
540090005	West Virginia	Brooke	20.9	18.1	19
540090011	West Virginia	Brooke	21.7	19.3	21

			Daily $PM_{2.5}$ (µg/m^3)		
Monitor	State	County	Base 2016	Modeled Base 2028	Current (2016-2018)
540290009	West Virginia	Hancock	19.8	17.2	19
540330003	West Virginia	Harrison	16.7	15.1	16
540390020	West Virginia	Kanawha	15.8	14.2	16
540391005	West Virginia	Kanawha	16.9	15.1	16
540511002	West Virginia	Marshall	21.8	19.4	21
540610003	West Virginia	Monongalia	17.5	15.7	17
540690010	West Virginia	Ohio	18.0	15.8	16
541071002	West Virginia	Wood	17.9	16.0	16
550030010	Wisconsin	Ashland	13.5	11.9	14
550090005	Wisconsin	Brown	19.5	17.4	18
550250041	Wisconsin	Dane	19.9	17.2	21
550250047	Wisconsin	Dane	21.6	19.0	22
550270001	Wisconsin	Dodge	19.7	17.4	20
550350014	Wisconsin	Eau Claire	17.6	15.5	18
550410007	Wisconsin	Forest	12.7	11.0	12
550430009	Wisconsin	Grant	20.3	17.3	20
550590019	Wisconsin	Kenosha	19.2	17.1	18
550630012	Wisconsin	La Crosse	18.6	16.9	18
550790010	Wisconsin	Milwaukee	22.2	19.8	20
550790026	Wisconsin	Milwaukee	19.7	17.0	20
550790058	Wisconsin	Milwaukee	20.8	18.3	19
550870009	Wisconsin	Outagamie	20.0	17.3	19
550890009	Wisconsin	Ozaukee	18.3	16.1	18
551110007	Wisconsin	Sauk	17.6	15.5	17
551198001	Wisconsin	Taylor	15.3	13.2	16
551250001	Wisconsin	Vilas	15.0	12.8	15
551330027	Wisconsin	Waukesha	21.1	18.6	21
560010006	Wyoming	Albany	13.0	12.4	13
560050891	Wyoming	Campbell	17.3	16.9	18
560050892	Wyoming	Campbell	16.7	16.3	17
560051899	Wyoming	Campbell	17.2	16.9	19
560130099	Wyoming	Fremont	11.9	11.7	13
560130232	Wyoming	Fremont	12.0	11.9	14
560131003	Wyoming	Fremont	23.0	22.3	24
560210001	Wyoming	Laramie	13.3	12.8	11
560210100	Wyoming	Laramie	13.1	12.6	11
560250001	Wyoming	Natrona	15.3	14.7	17
560290001	Wyoming	Park	20.6	20.3	22

			Daily $PM_{2.5}$ ($\mu g/m^3$)		
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Current (2016-2018)**
560330002	Wyoming	Sheridan	23.1	22.5	23
560331003	Wyoming	Sheridan	19.5	19.0	18
560350101	Wyoming	Sublette	16.2	16.0	20
560370007	Wyoming	Sweetwater	17.9	16.7	20
560391006	Wyoming	Teton	15.4	15.2	18

Appendix D

12km Regional Haze Visibility and Light Extinction Modeling Results from 2028fh Projection

	Visibility (dv)				Light Extinction (Mm^{-1})			
Site	**2016 B20%**	**2028 B20%**	**2016 I20%**	**2028 I20%**	**2016 B20%**	**2028 B20%**	**2016 I20%**	**2028 I20%**
ACAD	6.58	6.28	14.54	13.65	19.45	18.86	44.53	40.69
AGTI	7.02	6.86	16.33	15.92	20.36	20.03	51.97	49.81
ALLA	3.31	3.15	12.74	12.17	14.00	13.77	36.45	34.32
ANAC	1.60	1.52	8.37	8.19	11.76	11.66	23.59	23.15
ANAD	1.55	1.45	10.98	10.59	11.72	11.61	30.72	29.52
ARCH	2.19	2.03	6.76	6.40	12.48	12.29	19.97	19.24
BADL	5.39	5.18	12.33	11.69	17.23	16.87	35.08	32.87
BALD	1.78	1.67	7.29	6.93	11.98	11.85	21.08	20.31
BAND	3.02	2.80	8.44	8.01	13.56	13.27	23.79	22.75
BIBE	5.17	4.98	14.06	13.73	16.91	16.59	41.60	40.22
BLCA	1.61	1.47	6.55	6.32	11.77	11.61	19.47	19.01
BOAP	4.59	4.40	10.47	10.07	15.89	15.59	28.98	27.79
BOMA	2.56	2.41	10.06	9.74	12.95	12.76	28.09	27.18
BOWA	4.48	4.46	13.96	12.98	15.75	15.72	44.36	39.74
BRCA	1.46	1.36	6.60	6.34	11.61	11.48	19.66	19.14
BRET	11.81	11.13	19.04	17.96	32.92	30.73	69.32	62.14
BRID	0.88	0.79	6.77	6.54	10.94	10.83	19.97	19.50
BRIG	11.26	10.66	19.31	17.98	31.09	29.28	74.92	65.20
CABI	2.46	2.26	9.87	9.57	12.85	12.58	27.24	26.44
CACR	8.02	7.50	18.29	16.68	22.95	21.71	64.16	54.43
CANY	2.19	2.03	6.76	6.40	12.48	12.29	19.97	19.24
CAPI	2.38	2.26	7.18	6.94	12.73	12.57	20.75	20.27
CARI	2.20	2.12	10.23	9.95	12.49	12.39	28.28	27.49
CAVE	4.73	4.48	12.64	12.42	16.23	15.83	36.15	35.32
CHAS	12.41	11.74	17.41	15.90	34.82	32.53	58.22	49.95
CHIR	3.95	3.82	9.41	8.92	14.90	14.70	25.85	24.61
CHIW	3.95	3.82	9.41	8.92	14.90	14.70	25.85	24.61
COHU	8.10	7.50	17.37	15.77	23.09	21.67	58.40	49.65
CRLA	1.05	0.97	7.98	7.81	11.13	11.04	22.84	22.45
CRMO	2.68	2.54	8.50	8.07	13.11	12.93	24.06	22.97
CUCA	2.77	2.65	13.19	12.60	13.33	13.15	38.10	35.87
DESO	1.82	1.72	9.31	8.90	12.06	11.93	25.70	24.65
DIPE	1.05	0.97	7.98	7.81	11.13	11.04	22.84	22.45
DOME	4.44	4.30	15.14	14.58	15.67	15.46	46.54	43.88
DOSO	6.68	6.14	17.65	15.99	19.97	18.85	60.80	51.25
EACA	2.79	2.68	11.19	10.64	13.28	13.12	32.03	30.05
EANE	-	-	4.98	4.78	9.86	9.75	16.72	16.38
EMIG	2.87	2.79	11.57	11.33	13.39	13.28	32.39	31.61
EVER	10.35	9.95	14.90	13.91	28.30	27.18	45.62	41.21
FITZ	0.88	0.79	6.77	6.54	10.94	10.83	19.97	19.50
FLTO	-	-	4.98	4.78	9.86	9.75	16.72	16.38
GALI	3.95	3.82	9.41	8.92	14.90	14.70	25.85	24.61
GAMO	0.66	0.53	7.47	7.30	10.70	10.56	21.47	21.09
GEMO	1.05	0.97	7.98	7.81	11.13	11.04	22.84	22.45
GICL	2.07	1.92	7.58	7.22	12.34	12.16	21.55	20.78
GLAC	5.38	5.03	13.77	13.17	17.25	16.63	41.20	38.65

	Visibility (dv)				Light Extinction (Mm^{-1})			
Site	**2016 B20%**	**2028 B20%**	**2016 I20%**	**2028 I20%**	**2016 B20%**	**2028 B20%**	**2016 I20%**	**2028 I20%**
GLPE	2.46	2.37	9.98	9.75	12.83	12.71	27.71	27.04
GORO	0.99	0.91	7.98	7.76	11.06	10.96	22.83	22.32
GRCA	1.52	1.38	6.87	6.51	11.68	11.51	20.07	19.35
GRGU	4.99	4.67	13.07	12.05	16.62	16.08	39.23	35.17
GRSA	2.74	2.58	8.02	7.72	13.20	12.99	22.60	21.92
GRSM	8.35	7.83	17.21	15.66	23.64	22.36	57.83	49.41
GRTE	1.43	1.27	7.52	7.31	11.56	11.37	21.54	21.09
GUMO	4.73	4.48	12.64	12.42	16.23	15.83	36.15	35.32
HECA	4.00	3.88	12.33	11.81	14.97	14.78	37.81	35.37
HEGL	9.71	8.95	18.72	17.23	26.71	24.72	67.55	58.00
HOOV	0.98	0.94	7.83	7.64	11.05	11.02	22.36	21.94
ISLE	5.30	5.20	15.54	14.68	17.12	16.92	52.58	47.87
JARB	1.84	1.75	7.97	7.87	12.03	11.93	22.60	22.38
JARI	9.47	8.67	17.89	16.06	26.20	24.13	61.41	51.07
JOMU	1.55	1.45	10.98	10.59	11.72	11.61	30.72	29.52
JOSH	4.69	4.57	12.87	12.54	16.09	15.90	36.81	35.59
KAIS	1.55	1.45	10.98	10.59	11.72	11.61	30.72	29.52
KALM	5.90	5.80	11.97	11.73	18.10	17.93	33.58	32.81
KICA	7.02	6.69	18.43	17.27	20.62	19.90	67.49	58.66
LABE	2.50	2.42	9.67	9.42	12.90	12.79	26.84	26.16
LAGA	1.61	1.47	6.55	6.32	11.77	11.61	19.47	19.01
LAVO	2.20	2.12	10.23	9.95	12.49	12.39	28.28	27.49
LIGO	7.61	7.07	16.42	14.72	21.83	20.62	52.84	44.45
LOST	7.45	7.12	16.18	15.60	21.24	20.54	52.36	49.39
LYBR	5.03	4.69	14.73	13.82	16.78	16.19	45.58	41.45
MABE	-	-	4.98	4.78	9.86	9.75	16.72	16.38
MACA	11.31	10.47	21.02	19.27	31.56	28.96	85.32	71.33
MAZA	4.18	3.96	9.32	8.94	15.24	14.90	25.75	24.79
MELA	6.19	5.94	15.30	14.74	18.73	18.26	48.53	45.73
MEVE	2.28	2.13	6.51	6.18	12.59	12.40	19.41	18.78
MIMO	2.56	2.41	10.06	9.74	12.95	12.76	28.09	27.18
MING	11.08	10.45	20.13	18.75	30.69	28.77	78.73	68.33
MOHO	1.39	1.32	9.27	8.94	11.53	11.44	25.85	24.99
MOJE	2.61	2.55	11.28	11.01	13.02	12.94	31.47	30.62
MOKE	1.82	1.72	9.31	8.90	12.06	11.93	25.70	24.65
MOLA	1.05	0.97	7.98	7.81	11.13	11.04	22.84	22.45
MOOS	6.59	6.36	13.32	12.63	19.44	18.99	39.19	36.51
MORA	3.88	3.74	12.66	12.17	14.78	14.59	35.93	34.23
MOWA	2.61	2.55	11.28	11.01	13.02	12.94	31.47	30.62
MOZI	0.23	0.09	5.47	5.18	10.26	10.11	17.55	17.04
NOAB	0.75	0.68	7.17	6.96	10.79	10.72	20.88	20.44
NOCA	2.46	2.37	9.98	9.75	12.83	12.71	27.71	27.04
OKEF	11.57	10.93	17.39	16.23	32.14	30.15	58.31	51.76
OLYM	3.55	3.42	11.90	11.63	14.35	14.15	33.43	32.54
PASA	1.65	1.50	9.46	9.14	11.82	11.64	26.42	25.55
PECO	0.31	0.20	6.03	5.72	10.34	10.23	18.64	18.06

	Visibility (dv)				Light Extinction (Mm^{-1})			
Site	**2016 B20%**	**2028 B20%**	**2016 I20%**	**2028 I20%**	**2016 B20%**	**2028 B20%**	**2016 I20%**	**2028 I20%**
PEFO	3.25	2.92	8.16	7.71	13.89	13.43	22.85	21.83
PIMO	4.18	3.96	9.32	8.94	15.24	14.90	25.75	24.79
PINN	7.73	7.54	14.10	13.64	21.80	21.38	41.77	39.80
PRRA	4.99	4.67	13.07	12.05	16.62	16.08	39.23	35.17
RAFA	4.93	4.74	14.11	13.64	16.57	16.25	41.73	39.80
RAWA	0.23	0.09	5.47	5.18	10.26	10.11	17.55	17.04
REDR	1.43	1.27	7.52	7.31	11.56	11.37	21.54	21.09
REDW	5.33	5.24	12.65	12.44	17.19	17.04	36.82	36.07
ROCA	6.59	6.36	13.32	12.63	19.44	18.99	39.19	36.51
ROMA	11.80	11.18	17.67	16.48	32.86	30.84	59.65	52.84
ROMO	1.37	1.26	8.41	7.85	11.49	11.37	23.98	22.59
SACR	6.62	6.42	14.97	14.31	19.58	19.19	46.28	43.21
SAGA	2.77	2.65	13.19	12.60	13.33	13.15	38.10	35.87
SAGO	3.33	3.22	14.45	13.47	14.01	13.86	43.36	39.23
SAGU	6.09	5.73	10.75	10.16	18.45	17.80	29.72	27.98
SAJA	3.33	3.22	14.45	13.47	14.01	13.86	43.36	39.23
SAMA	11.14	10.58	17.39	16.05	30.81	29.11	58.84	51.26
SAPE	0.37	0.26	6.43	6.11	10.40	10.28	19.57	18.93
SAWT	2.58	2.49	8.61	8.41	12.96	12.85	23.96	23.49
SCAP	2.56	2.41	10.06	9.74	12.95	12.76	28.09	27.18
SELW	1.60	1.52	8.37	8.19	11.76	11.66	23.59	23.15
SENE	5.27	5.15	17.57	16.49	17.03	16.83	63.17	56.36
SEQU	7.02	6.69	18.43	17.27	20.62	19.90	67.49	58.66
SHEN	6.85	6.15	17.07	15.17	20.44	18.95	57.51	47.30
SHRO	4.40	3.92	15.49	13.76	15.83	15.04	48.48	40.60
SIPS	10.76	9.98	19.03	17.44	29.59	27.35	69.60	59.12
SOWA	2.50	2.42	9.67	9.42	12.90	12.79	26.84	26.16
STMO	2.79	2.68	11.19	10.64	13.28	13.12	32.03	30.05
SUPE	5.03	4.69	10.45	9.97	16.63	16.06	28.74	27.40
SWAN	10.61	10.18	16.30	14.99	29.23	27.97	52.21	45.68
SYCA	4.18	3.84	11.63	11.29	15.30	14.77	32.38	31.34
TETO	1.43	1.27	7.52	7.31	11.56	11.37	21.54	21.09
THIS	2.61	2.55	11.28	11.01	13.02	12.94	31.47	30.62
THLA	2.20	2.12	10.23	9.95	12.49	12.39	28.28	27.49
THRO	5.85	5.65	14.06	13.42	18.08	17.72	42.79	40.02
ULBE	3.71	3.60	10.93	10.77	14.54	14.38	31.44	30.96
UPBU	8.20	7.67	17.95	16.61	23.23	21.98	62.06	54.14
VENT	7.73	7.54	14.10	13.64	21.80	21.38	41.77	39.80
VOYA	5.31	5.28	14.18	13.11	17.11	17.05	44.92	39.93
WASH	0.75	0.68	7.17	6.96	10.79	10.72	20.88	20.44
WEEL	-	-	4.98	4.78	9.86	9.75	16.72	16.38
WEMI	1.61	1.47	6.55	6.32	11.77	11.61	19.47	19.01
WHIT	2.54	2.39	9.95	9.65	12.94	12.74	27.81	26.97
WHPA	0.99	0.91	7.98	7.76	11.06	10.96	22.83	22.32
WHPE	0.31	0.20	6.03	5.72	10.34	10.23	18.64	18.06
WICA	3.52	3.34	10.53	9.91	14.27	14.00	29.45	27.65

	Visibility (dv)				Light Extinction (Mm^{-1})			
Site	**2016 B20%**	**2028 B20%**	**2016 I20%**	**2028 I20%**	**2016 B20%**	**2028 B20%**	**2016 I20%**	**2028 I20%**
WIMO	8.47	8.06	18.12	16.81	23.63	22.67	63.38	55.49
YELL	1.43	1.27	7.52	7.31	11.56	11.37	21.54	21.09
YOSE	2.87	2.79	11.57	11.33	13.39	13.28	32.39	31.61
ZION	3.86	3.66	8.76	8.55	14.77	14.47	24.19	23.68

ALPINE GEOPHYSICS

Part 2:
Cleaner Trucks Initiative Scenario Modeling Using EPA 2028fh Modeling Platform Technical Support Document

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Project Number: TS-554

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1.0 INTRODUCTION

1.1 Overview

The U.S. Environmental Protection Agency (EPA) announced in November 2018 that the agency would pursue the Cleaner Trucks Initiative (CTI) to update NOx emissions standards for heavy-duty on-road trucks, and on January 6, 2020, the Administrator signed an Advance Notice of Proposed Rule (ANPR; 85 FR 3306) soliciting pre-proposal comments on the CTI. EPA's actions are occurring in concert with comparable California regulatory development activities and include the input of affected stakeholders and trade associations.

Additional public statements made by the EPA have suggested that the agency is looking to develop a nationally uniform regulatory framework for the heavy-duty on-road vehicles; however, the agency was unable to provide any details of the federal version of the program under development.

Given a lack of specifics from EPA, the basis for the "draft" CTI scenario that was modeled in this project was the most recent information – available at project commencement – from the California Air Resources Board (CARB) given EPA's explicit intent of a nationally uniform framework. This scenario assumes a 90 percent level of NOx emission reduction consistent with the upper limit of EPA's ANPR solicitation.

> *"Based on available information, it is clear that application of the diesel technologies discussed in Sections III.A.1 should enable emission reductions of at least 50 percent compared to current standards over the FTP and RMC cycles. Some estimates suggest that emission reductions of 90 percent may be achievable across the heavy-duty engine market by model year 2027. We request information that would help us determine the appropriate levels of any new emission standards for the FTP and RMC cycles."*

Under separate contract and through the sponsorship of Manufacturers of Emission Controls Association (MECA), Oak Leaf Environmental Inc. (Oak Leaf) completed a 48-state emissions impact analysis (Oak Leaf, 2020) of a possible CTI scenario should the U.S. EPA align their final CTI rule at the same levels as proposed by CARB and implemented and phased-in through fleet turnover assumed in MOVES through 2035[1]. The basis for the CTI scenario was the most recent information – available at project commencement – from CARB (September 26, 2019 workshop proposal) with the understanding that EPA and CARB are working on a nationally uniform regulatory framework.

The model year of 2035 was chosen to allow as much phase-in of low NOx trucks meeting the future modeled CTI emission limits while still providing adequate confidence from an air quality perspective. Given that the new truck regulations begin implementation in 2024 and heavy-duty trucks last 20-30 years on the road, the 2035 timeframe represents an intermediate level of CTI truck penetration. It is expected that further NOx reductions will be realized beyond the 2035 modelled year as the heavy-duty truck fleet fully turns over to the cleanest technology

1 http://www.meca.org/resources/OakLeaf_Final_Report_0620.pdf

vehicles. It was felt that full-implementation air quality projection was beyond the scope of this analysis.

Working with this 2035 scenario, Alpine Geophysics, LLC (Alpine) through the sponsorship of the Midwest Ozone Group (MOG), merged the onroad emissions data with a 2028 "base case" modeling simulation already completed (Part 1, above). Alpine then ran photochemical grid modeling (PGM) to generate future CTI scenario concentrations of ozone and $PM_{2.5}$.

Together, this work is able to assess how the change in mobile source emissions between the 2028 base case and the 2035 CTI control case would change the ozone and $PM_{2.5}$ ambient air quality projections at receptors in the United States.

1.2 Purpose

This document primarily serves to provide the air quality modeling results for a 12km grid domain supporting a CTI scenario of emission reduction. It establishes that all receptors east of the Rockies demonstrate modeled attainment for 8-hour ozone, annual, and daily (24-hour) $PM_{2.5}$ with the combined platform inclusive of CTI scenario emissions. In addition, this document demonstrates the significance of emission reductions associated with the modeled CTI strategy and the regional impact of the strategy on a per monitor basis.

1.3 Summary of Results

The CTI strategy applied to the 2028 base case eliminates ozone nonattainment everywhere east of the Rockies and in Denver. Multiple monitors in California and in Salt Lake County, Utah also show modeled attainment with the CTI strategy. The greatest ozone impact of the strategy is seen in urban areas and along highway corridors with reductions of up to 6.5 ppb seen in the west (San Bernardino) and 4.9 ppb seen in the east (Atlanta).

The CTI strategy demonstrates noted impact on the annual $PM_{2.5}$ design value nationwide, showing modeled attainment changes at monitors in Madera, San Joaquin, and Stanislaus counties in California. The greatest annual $PM_{2.5}$ impacts are reductions of 0.64 $\mu g/m^3$ (4.1%) seen in the west (Kern County, CA) and 0.21 $\mu g/m^3$ (2.3%) reduction in the east (Chicago).

From a daily (24-hour) $PM_{2.5}$ perspective, impact is seen on daily $PM_{2.5}$ design values nationwide. As with the annual $PM_{2.5}$ modeling, areas shown to move to modeled attainment as a result of the CTI strategy include Madera, Merced, and San Joaquin counties in California. The greatest daily $PM_{2.5}$ impacts are reductions of 4.5 $\mu g/m^3$ (9.8%) seen in the west (Tulare County, CA) and 0.9 $\mu g/m^3$ (4.5%) reduction in the east (Chicago).

2.0 OVERVIEW OF MODELING APPROACH

The CTI modeling in this technical support document includes ozone and $PM_{2.5}$ simulations using the 12 km grid based on EPA's 2016v1 (referenced as version "fh" by EPA) modeling platform and associated projections. All non-emissions CAMx model inputs were supplied by EPA as distributed in the EPA 2016fg/2028fg model simulations. The emissions were taken from the EPA "pre-merged" 2016fh/2028fh platform distribution. While this section provides an overview of the modeling approach and configuration, more details can be obtained in Alpine's 2028 modeling (Part 1, above) and Oak Leaf's CTI inventory development (Oak Leaf, 2020) documents.

2.1 Episode Selection

Episode selection is an important component of photochemical grid modeling. The entire calendar year from January 1 through December 31, 2016 period was selected for the modeling primarily due to the following reasons:

- It is aligned with the 2016 federal, state, and local agency inventory development collaborative.
- It is not an unusually low ozone year.
- Ambient meteorological and air quality data are available.
- A 2016 CAMx modeling platform was available from the EPA that was leveraged for the SIP modeling.

2.2 Model Selection

The Weather Research Forecast (WRF) prognostic meteorological model was selected for the modeling using the EPA 36US3 and 12US2B grids. Additional emission modeling was not required for the 12km simulation as the 2028fh platform was provided to Alpine in pre-merged CAMx ready format.

Emissions processing was completed by EPA for the 36km and 12km domains using the SMOKE emissions model for most source categories. The exceptions are that BEIS model was used for biogenic emissions and there are special processors for fires, windblown dust, lightning, and sea salt emissions. The MOVES2014 on-road mobile source emissions model was used with SMOKE-MOVES to generate on-road mobile source emissions with EPA generated vehicle activity data provided with the modeling platform. The same version of the CAMx photochemical grid model was also used. The setup is based on the same WRF/SMOKE/BEIS/CAMx modeling system used in EPA's 2016fh platform modeling distribution.

2.3 Base and Future Year Emissions Data

The 2028 future year base case was selected for the modeling based on an initial need to support control strategy analyses in that and future timelines. The 2016 base case and 2028 future year emissions were based on EPA's version "fh" inventories with no adjustment and include the update to the commercial marine vessel emissions released shortly after the initial

version "fh" emissions were released. The 2035 CTI strategy run was incorporated as a complete, direct replacement for the 2028 base case onroad emissions sector.

2.4 Input Preparation and QA/QC

Quality assurance (QA) and quality control (QC) of the emissions datasets are some of the most critical steps in performing air quality modeling studies. Because emissions processing is tedious, time consuming and involves complex manipulation of many different types of large databases, rigorous QA measures are a necessity to prevent errors in emissions processing from occurring. This modeling study utilized EPA's pre-QA/QC'd emissions platform that followed a multistep emissions QA/QC approach for the 12km domain. Additional QA/QC of the 2035 CTI strategy files was conducted and comparisons generated alongside the 2028 base case, both as input and output to the model runs.

2.5 Meteorology Input Preparation and QA/QC

The CAMx 2016 meteorological inputs are based on WRF meteorological modeling conducted by EPA. Details on the EPA 2016 WRF application and evaluation are provided by EPA (EPA, 2019a).

2.6 Initial and Boundary Conditions Development

Initial concentrations (IC) and Boundary Conditions (BC) are important inputs to the CAMx model. We ran the model in calendar quarters with 15 days of model spin-up before the first of each quarter so the ICs, derived from the "fg" CAMx simulation, are washed out of the modeling domain. The lateral boundary and initial species concentrations are provided by a three-dimensional global atmospheric chemistry model, Hemispheric Community Multiscale Air Quality (H-CMAQ) v.5.2.1 and were unchanged from the files EPA used in the "fg" modeling platform (Henderson, 2018).

2.7 Air Quality Modeling Input Preparation and QA/QC

Each step of the air quality modeling was subjected to QA/QC procedures. These procedures included verification of model configurations, confirmation that the correct data were used and processed correctly, and other graphical and tabular procedures.

3.0 FUTURE YEAR MODELING

This chapter discusses the future year modeling and integration of the potential 2035 CTI strategy modeling resulting from the documented project.

3.1 Future Year Simulated

Modeled 2028 concentrations (Part 1, above) were used to identify monitoring sites that are projected to be nonattainment for the ozone or $PM_{2.5}$ NAAQS in 2028. In addition to this base case simulation, a 2035 onroad mobile source scenario was developed (Oak Leaf, 2020) and integrated with the 2028 base case for all other source sectors. This combined emissions platform was then run with CAMx to generate resulting design values for ozone and $PM_{2.5}$.

3.2 2028 Base Case Future Year Growth and Controls

In January 2020, EPA released the revised version "fh" modeling platform that was the source for the 2028 future year emissions in this analysis. This platform has been identified by EPA as the base case for compliance with promulgated federal, state, and local rules at the time of inventory preparation. Additionally, there were several emission categories and model inputs/options that were held constant at 2016 levels as follows:

- Biogenic emissions.
- Wildfires, Prescribed Burns and Agricultural Burning (open land fires).
- Windblown dust emissions.
- Sea Salt.
- 36 km CONUS domain Boundary Conditions (BCs).
- 2016 36km and 12km meteorological conditions.
- All model options and inputs other than emissions.

3.3 Future Year (2028) Baseline Air Quality Simulations

This 2028 future year base case CAMx simulation was conducted and 2028 maximum daily 8-hour ozone, annual, and 24-hour $PM_{2.5}$ design value projections (Part 1, above) were made based on EPA's latest modeling guidance (EPA, 2018) for the 12US2 modeling domain as used in this analysis.

3.4 Future Year (2035) Potential CTI Strategy Air Quality Simulations

A future year CTI strategy case CAMx simulation was conducted and maximum daily 8-hour ozone, annual, and 24-hour $PM_{2.5}$ design value projections were made based on EPA's latest modeling guidance (EPA, 2018) for the 12US2 modeling domain. Strategy design values were calculated consistent with the 2028 base case.

3.5 Future Year Base Case and Strategy Simulation Air Quality Results

3.5.1 Future Ozone Concentrations

The ozone predictions from the 2016, the 2028 base case, and the CTI scenario CAMx model simulations were used to project 2014-2018 average ozone design values to future years using the SMAT-CE tool and following the approach described in the EPA's guidance for attainment demonstration modeling (EPA, 2018).

A list of sites with modeled 2028 maximum daily 8-hour average (MDA8) design values that exceed the NAAQS (i.e., 2028 average design values of 71 ppb or greater) and are considered nonattainment receptors in 2028 is provided in Table 3-1 below along with the associated CTI scenario design values and change in design value between the base case and the CTI strategy case.

The 2028 base case modeling demonstrates that most monitors in the eastern U.S. attain the 2015 8-hour ozone NAAQS (70 ppb). The noted exceptions are in Houston and Connecticut. Multiple monitors in California, Denver, and Utah show nonattainment in the west.

The CTI strategy applied to the 2028 base case eliminates ozone nonattainment everywhere east of the Rockies and in Denver. It is noted that multiple monitors in California and in Salt Lake County, Utah also show modeled attainment with the CTI strategy, however, much of central and southern California and the Uintah Basin (Utah) continue to show modeled nonattainment with the CTI strategy. The greatest ozone impact of the strategy is seen in urban areas and along highway corridors with reductions of up to 6.5 ppb seen in the west (San Bernardino) and 4.9 ppb seen in the east (Atlanta).

A full list of monitor locations and modeled ozone design values for the 12km domain modeling is provided in Appendix A of this report. Figure 3-1 below presents the resulting CTI strategy predicted ozone design values and Figure 3-2 presents the ozone design value change between the 2028 base case and the CTI strategy run. Table 3-2 presents monitors that have state-level maximum modeled ozone benefit from the CTI scenario when compared to the 2028 base case.

Table 3-1. Alpine 12km modeling-identified 8-hour ozone nonattainment monitors and CTI strategy design values.

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
60170010	California	El Dorado	85.3	72.7	67.5	5.2
60190007	California	Fresno	87.0	76.5	70.6	5.9
60190011	California	Fresno	90.0	79.1	73.1	6.0
60190242	California	Fresno	84.3	75.8	71.0	4.8
60194001	California	Fresno	90.3	78.2	72.4	5.8
60195001	California	Fresno	91.0	79.7	73.7	6.0
60250005	California	Imperial	76.7	76.4	75.8	0.6
60251003	California	Imperial	76.0	75.7	74.9	0.8
60290007	California	Kern	87.7	78.8	74.0	4.8
60290008	California	Kern	83.0	75.0	71.6	3.4
60290011	California	Kern	83.3	76.9	74.1	2.8
60290014	California	Kern	86.0	77.5	72.9	4.6
60290232	California	Kern	79.3	71.5	67.2	4.3
60292012	California	Kern	89.3	80.3	75.3	5.0
60295002	California	Kern	87.3	78.4	73.6	4.8
60296001	California	Kern	80.7	73.5	70.0	3.5
60311004	California	Kings	83.3	72.8	68.1	4.7
60370002	California	Los Angeles	94.3	89.3	85.6	3.7
60370016	California	Los Angeles	100.0	94.7	90.8	3.9
60371201	California	Los Angeles	88.3	80.7	76.8	3.9
60371602	California	Los Angeles	75.7	74.3	72.6	1.7
60371701	California	Los Angeles	92.0	87.6	83.8	3.8
60372005	California	Los Angeles	84.7	81.5	78.9	2.6
60376012	California	Los Angeles	98.0	89.2	84.4	4.8
60379033	California	Los Angeles	87.3	78.8	75.0	3.8
60390004	California	Madera	80.3	72.2	67.7	4.5
60392010	California	Madera	82.7	73.3	68.7	4.6
60430003	California	Mariposa	76.0	72.9	71.9	1.0
60470003	California	Merced	80.7	71.5	67.5	4.0
60570005	California	Nevada	86.3	73.9	69.4	4.5
60595001	California	Orange	75.3	73.5	71.4	2.1
60610003	California	Placer	85.0	73.2	67.9	5.3
60650012	California	Riverside	95.3	85.7	79.4	6.3
60651016	California	Riverside	99.7	89.0	82.7	6.3
60652002	California	Riverside	82.7	75.2	71.2	4.0
60655001	California	Riverside	88.7	78.8	73.4	5.4
60656001	California	Riverside	92.3	82.2	76.4	5.8
60658001	California	Riverside	96.7	90.0	85.1	4.9

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
60658005	California	Riverside	95.0	88.4	83.6	4.8
60659001	California	Riverside	88.7	79.2	74.0	5.2
60670012	California	Sacramento	82.3	71.1	65.9	5.2
60710001	California	San Bernardino	79.0	73.7	70.8	2.9
60710005	California	San Bernardino	110.3	102.3	96.1	6.2
60710012	California	San Bernardino	95.0	87.4	82.6	4.8
60710306	California	San Bernardino	84.0	77.2	72.8	4.4
60711004	California	San Bernardino	105.7	99.8	95.2	4.6
60712002	California	San Bernardino	97.7	91.1	86.3	4.8
60714001	California	San Bernardino	90.3	83.0	78.2	4.8
60714003	California	San Bernardino	104.0	95.6	89.4	6.2
60719002	California	San Bernardino	87.3	78.2	73.2	5.0
60719004	California	San Bernardino	108.7	99.9	93.4	6.5
60731006	California	San Diego	83.0	76.4	73.1	3.3
60990005	California	Stanislaus	81.0	73.1	69.3	3.8
60990006	California	Stanislaus	83.7	75.1	71.2	3.9
61070006	California	Tulare	84.7	75.1	71.3	3.8
61070009	California	Tulare	89.0	77.1	72.4	4.7
61072002	California	Tulare	82.7	71.0	66.1	4.9
61072010	California	Tulare	84.0	72.5	68.1	4.4
61090005	California	Tuolumne	80.7	72.6	69.9	2.7
80590011	Colorado	Jefferson	79.3	71.7	69.4	2.3
90010017	Connecticut	Fairfield	79.3	71.6	67.9	3.7
90013007	Connecticut	Fairfield	82.0	72.3	69.3	3.0
90019003	Connecticut	Fairfield	82.7	72.8	69.6	3.2
482010024	Texas	Harris	79.3	71.9	69.5	2.4
490353006	Utah	Salt Lake	76.3	71.5	68.9	2.6
490353013	Utah	Salt Lake	76.5	72.4	70.1	2.3
490472002	Utah	Uintah	75.0	72.0	71.2	0.8
490472003	Utah	Uintah	88.0	84.2	83.5	0.7

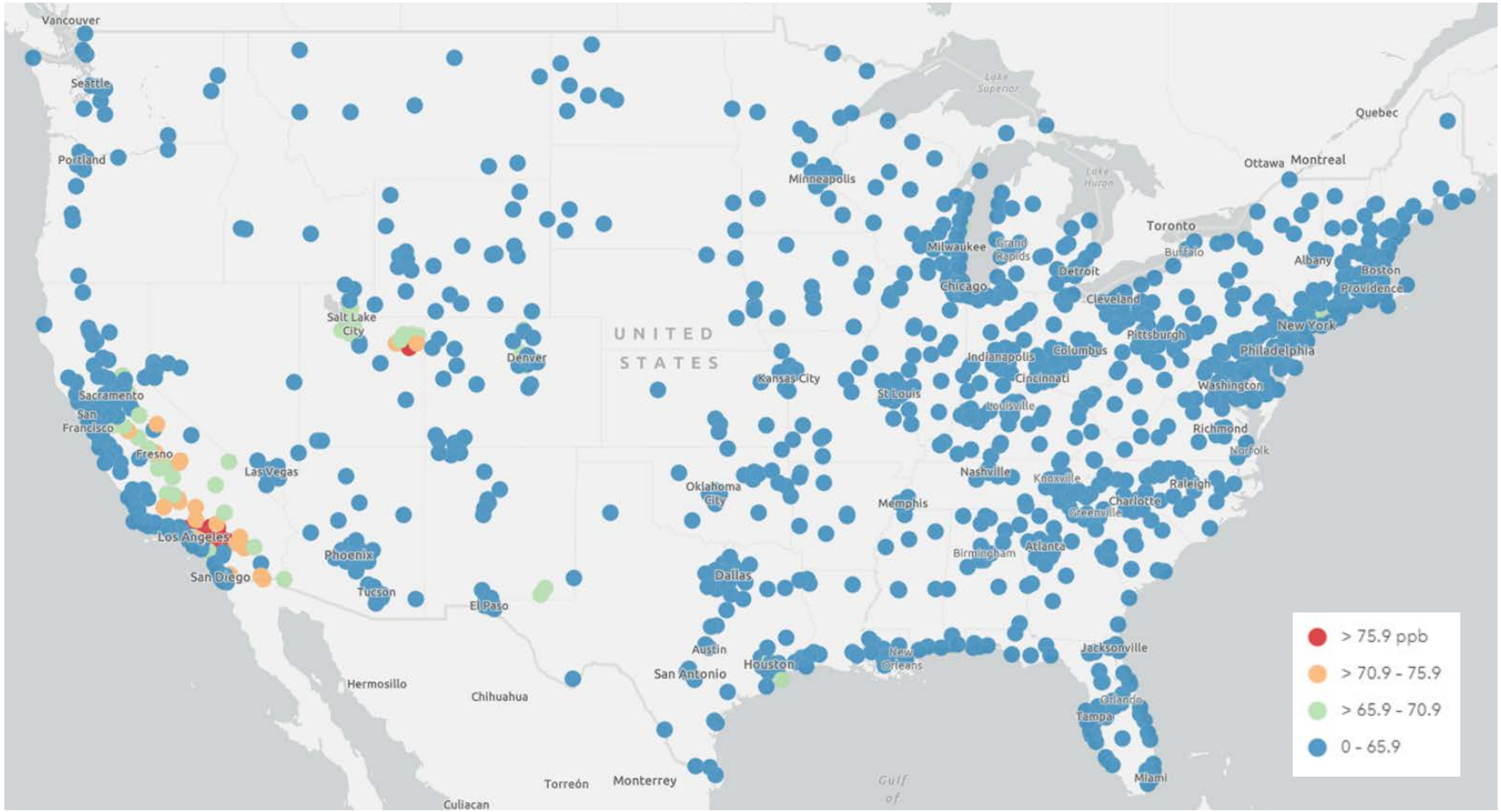

Figure 3-1. Calculated MDA8 Ozone Design Values (ppb) resulting from CTI strategy run.

Table 3-2. Maximum modeled ozone benefit from CTI strategy within selected states.

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
10730023	Alabama	Jefferson	66.3	51.4	47.2	4.2
40132005	Arizona	Maricopa	76.0	63.8	60.1	3.7
51191002	Arkansas	Pulaski	63.7	48.5	44.7	3.8
60719004	California	San Bernardino	108.7	99.9	93.4	6.5
80350004	Colorado	Douglas	77.3	69.3	66.9	2.4
90010017	Connecticut	Fairfield	79.3	71.6	67.9	3.7
100031007	Delaware	New Castle	68.0	55.4	52.4	3.0
110010043	Wash DC	Wash DC	71.0	57.9	54.2	3.7
120571035	Florida	Hillsborough	65.7	53.2	49.7	3.5
131210055	Georgia	Fulton	74.3	60.3	55.4	4.9
171630010	Illinois	Saint Clair	69.0	58.8	55.2	3.6
180970050	Indiana	Marion	70.3	60.7	57.0	3.7
202090021	Kansas	Wyandotte	63.0	54.3	51.4	2.9
211110067	Kentucky	Jefferson	74.3	62.2	59.0	3.2
220730004	Louisiana	Ouachita	59.0	53.3	50.3	3.0
230052003	Maine	Cumberland	64.7	54.0	51.2	2.8
240031003	Maryland	Anne Arundel	74.0	60.7	57.1	3.6
250130008	Massachusetts	Hampden	70.0	57.8	55.1	2.7
261250001	Michigan	Oakland	70.7	61.1	58.2	2.9
271390505	Minnesota	Scott	61.3	55.9	53.6	2.3
280490021	Mississippi	Hinds	62.0	47.7	44.0	3.7
291831004	Missouri	Saint Charles	71.0	60.1	56.4	3.7
310550053	Nebraska	Douglas	63.5	57.6	55.9	1.7
320030071	Nevada	Clark	72.3	64.9	62.3	2.6
330150016	New Hampshire	Rockingham	66.7	55.9	53.2	2.7
340190001	New Jersey	Hunterdon	71.3	59.8	56.7	3.1
350610008	New Mexico	Valencia	65.3	60.6	58.9	1.7
361192004	New York	Westchester	74.0	66.6	63.1	3.5
371190046	North Carolina	Mecklenburg	70.0	58.6	54.4	4.2
390610006	Ohio	Hamilton	73.3	62.4	59.3	3.1
400170101	Oklahoma	Canadian	66.3	55.9	52.5	3.4
410050004	Oregon	Clackamas	69.7	61.2	58.2	3.0
420170012	Pennsylvania	Bucks	79.3	67.1	63.8	3.3
440071010	Rhode Island	Providence	69.7	58.4	55.9	2.5
450830009	South Carolina	Spartanburg	66.0	53.1	49.1	4.0
470654003	Tennessee	Hamilton	67.0	53.2	49.1	4.1

			MDA8 Ozone DV (ppb)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
481130075	Texas	Dallas	73.7	62.2	58.4	3.8
490353006	Utah	Salt Lake	76.3	71.5	68.9	2.6
500030004	Vermont	Bennington	64.3	53.3	51.3	2.0
510130020	Virginia	Arlington	71.0	57.8	54.2	3.6
530330023	Washington	King	73.3	66.0	63.4	2.6
540030003	West Virginia	Berkeley	62.0	51.6	48.9	2.7
550590019	Wisconsin	Kenosha	78.0	69.8	67.2	2.6
560350100	Wyoming	Sublette	62.0	59.9	58.8	1.1

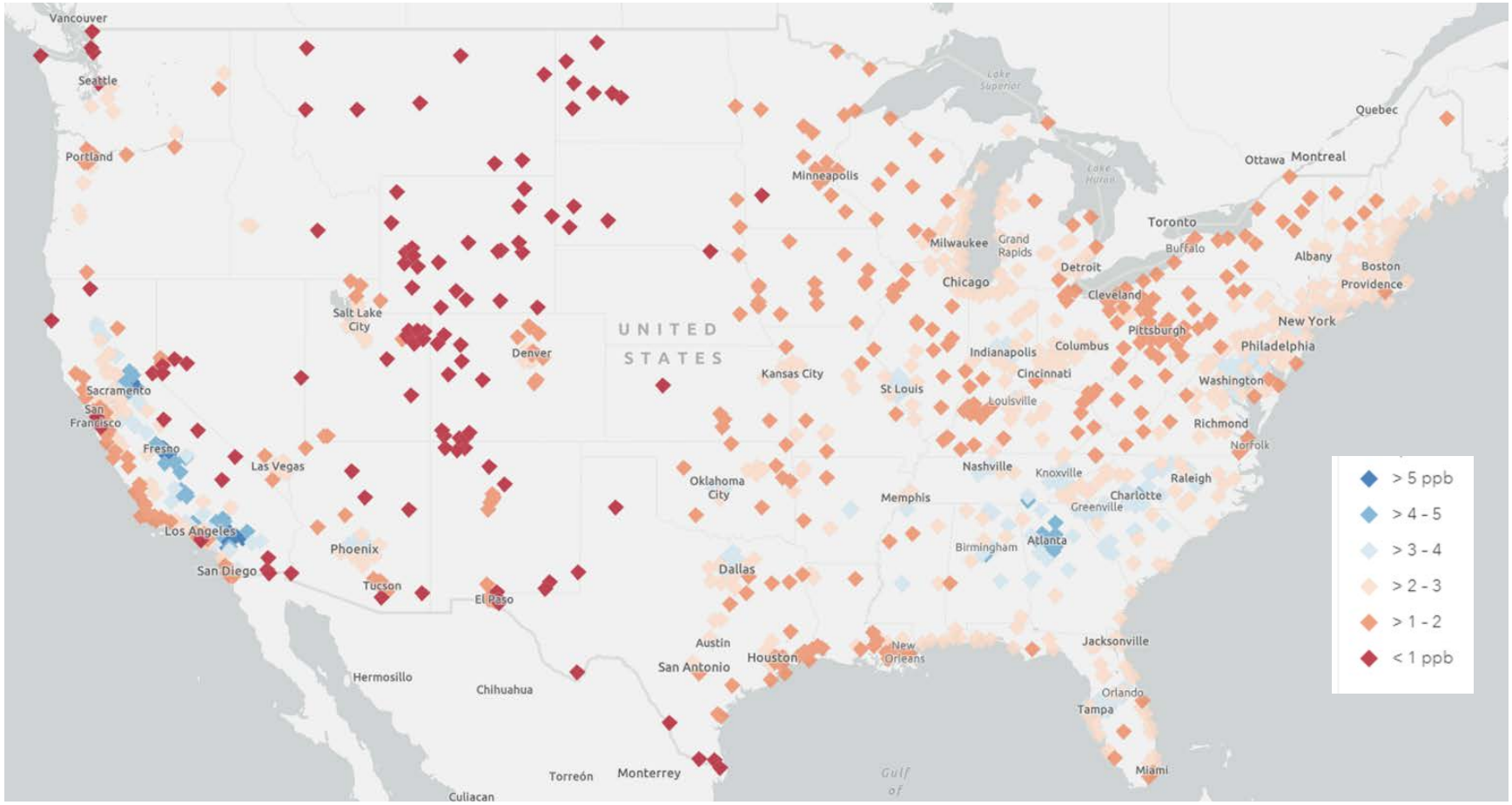

Figure 3-2. Calculated change in MDA8 Ozone Design Values (ppb) resulting from CTI strategy run.

3.5.2 Future Annual $PM_{2.5}$ Concentrations

The $PM_{2.5}$ predictions from the 2016 and 2028 base case, and the CTI scenario CAMx model simulations were used to project $PM_{2.5}$ annual design values to future years using the SMAT-CE tool and following the approach described in the EPA's guidance for attainment demonstration modeling (EPA, 2018).

A list of sites with modeled 2028 design values that exceed the NAAQS (i.e., 2028 average annual design values greater than 12.0 $\mu g/m^3$) and are considered nonattainment receptors in 2028 is provided in Table 3-3 below along with the associated CTI scenario design values and change in design value between the base case and the CTI strategy case.

The 2028 base case modeling demonstrates that all monitors in the eastern U.S. attain the annual $PM_{2.5}$ NAAQS (12.0 $\mu g/m^3$). Widespread areas in California and Pinal County, Arizona show modeled nonattainment in the west.

The CTI strategy applied to the 2028 base case has noted impact on the annual $PM_{2.5}$ design value nationwide. The strategy shows modeled attainment at monitors in Madera, San Joaquin, and Stanislaus counties in California. No other areas are shown to move to modeled attainment as a result of the CTI strategy alone. The greatest annual $PM_{2.5}$ impacts are reductions of 0.64 $\mu g/m^3$ (4.1%) seen in the west (Kern County, CA) and 0.21 $\mu g/m^3$ (2.3%) reduction in the east (Chicago).

A full list of monitor locations and modeled annual $PM_{2.5}$ design values for the 12km domain modeling is provided in Appendix B of this report. Figure 3-3 below presents the resulting CTI strategy predicted annual $PM_{2.5}$ design values and Figure 3-4 presents the design value change between the 2028 base case and the CTI strategy run. Table 3-4 presents monitors that have state-level maximum modeled annual $PM_{2.5}$ benefit from the CTI scenario when compared to the 2028 base case.

Table 3-3. Alpine 12km modeling-identified annual $PM_{2.5}$ nonattainment monitors.

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
40213015	Arizona	Pinal	13.04	12.61	12.48	0.13
60190011	California	Fresno	14.21	12.91	12.36	0.55
60195001	California	Fresno	13.73	12.74	12.29	0.45
60195025	California	Fresno	14.24	13.05	12.53	0.52
60250005	California	Imperial	12.41	13.47	13.41	0.06
60290014	California	Kern	16.10	14.10	13.51	0.59
60290016	California	Kern	17.86	15.76	15.12	0.64
60310004	California	Kings	16.53	15.04	14.49	0.55
60311004	California	Kings	16.56	15.16	14.61	0.55
60392010	California	Madera	12.96	12.09	11.73	0.36
60631010	California	Plumas	14.95	14.33	14.19	0.14
60658005	California	Riverside	13.92	13.41	13.06	0.35
60771002	California	San Joaquin	12.76	12.06	11.75	0.31
60990005	California	Stanislaus	13.07	12.06	11.66	0.40
60990006	California	Stanislaus	13.46	12.58	12.21	0.37
61072002	California	Tulare	15.99	14.57	14.04	0.53

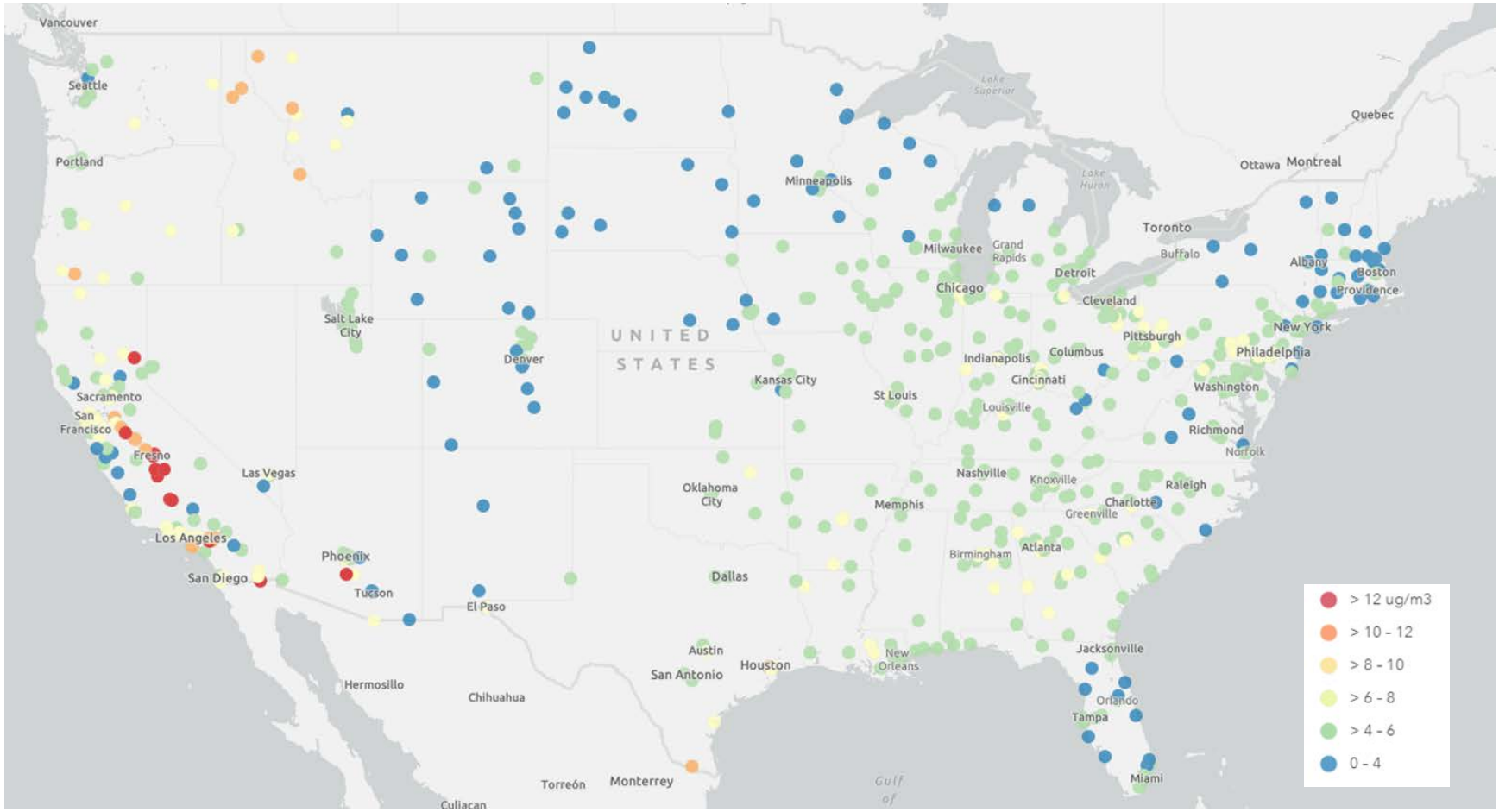

Figure 3-3. Calculated Annual $PM_{2.5}$ Design Values (µg/m³) resulting from CTI strategy run.

Table 3-4. Maximum modeled annual $PM_{2.5}$ benefit from CTI strategy within selected states.

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
10730023	Alabama	Jefferson	10.46	9.54	9.43	0.11
40213015	Arizona	Pinal	13.04	12.61	12.48	0.13
51190007	Arkansas	Pulaski	9.50	8.79	8.69	0.10
60290016	California	Kern	17.86	15.76	15.12	0.64
80310002	Colorado	Denver	7.13	6.58	6.45	0.13
90010010	Connecticut	Fairfield	8.75	7.72	7.63	0.09
100031012	Delaware	New Castle	9.04	7.89	7.75	0.14
110010043	Wash DC	Wash DC	9.06	7.89	7.74	0.15
120573002	Florida	Hillsborough	8.08	7.54	7.45	0.09
131210039	Georgia	Fulton	9.90	8.93	8.77	0.16
160270002	Idaho	Canyon	9.38	8.98	8.85	0.13
170313103	Illinois	Cook	10.40	9.25	9.04	0.21
180970083	Indiana	Marion	10.34	8.99	8.78	0.21
191530030	Iowa	Polk	7.45	6.50	6.36	0.14
202090021	Kansas	Wyandotte	8.93	7.92	7.79	0.13
210373002	Kentucky	Campbell	8.48	7.24	7.10	0.14
220170008	Louisiana	Caddo	10.20	9.51	9.43	0.08
245100008	Maryland	Baltimore (City)	9.24	7.98	7.82	0.16
250250042	Massachusetts	Suffolk	7.04	6.31	6.24	0.07
261630015	Michigan	Wayne	11.22	9.94	9.79	0.15
270530963	Minnesota	Hennepin	7.36	6.62	6.50	0.12
280330002	Mississippi	DeSoto	7.62	6.83	6.76	0.07
291893001	Missouri	Saint Louis	9.48	8.26	8.09	0.17
300930005	Montana	Silver Bow	9.33	8.80	8.70	0.10
310550019	Nebraska	Douglas	8.73	7.55	7.40	0.15
320030561	Nevada	Clark	9.85	9.08	8.97	0.11
330050007	New Hampshire	Cheshire	6.59	6.08	6.04	0.04
340390004	New Jersey	Union	9.58	8.24	8.09	0.15
350010023	New Mexico	Bernalillo	5.76	5.44	5.38	0.06
360610134	New York	New York	9.36	8.24	8.09	0.15
371190042	North Carolina	Mecklenburg	8.75	8.26	8.12	0.14
380171004	North Dakota	Cass	6.35	5.83	5.76	0.07
390170019	Ohio	Butler	9.53	8.41	8.25	0.16
401091037	Oklahoma	Oklahoma	8.25	7.55	7.44	0.11
410250003	Oregon	Harney	9.15	8.84	8.77	0.07
420710007	Pennsylvania	Lancaster	9.88	8.64	8.49	0.15
440070026	Rhode Island	Providence	7.10	6.42	6.35	0.07
450790019	South Carolina	Richland	8.86	8.15	8.04	0.11
460990008	South Dakota	Minnehaha	6.77	6.00	5.91	0.09
470931013	Tennessee	Knox	9.90	9.01	8.88	0.13
481130069	Texas	Dallas	8.77	7.85	7.75	0.10
490353010	Utah	Salt Lake	8.75	7.81	7.52	0.29

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
500210002	Vermont	Rutland	7.51	7.12	7.08	0.04
510130020	Virginia	Arlington	8.02	6.97	6.85	0.12
530770009	Washington	Yakima	9.37	8.65	8.50	0.15
540030003	West Virginia	Berkeley	9.21	8.16	8.05	0.11
550590019	Wisconsin	Kenosha	7.49	6.65	6.52	0.13
560370007	Wyoming	Sweetwater	5.05	4.78	4.73	0.05

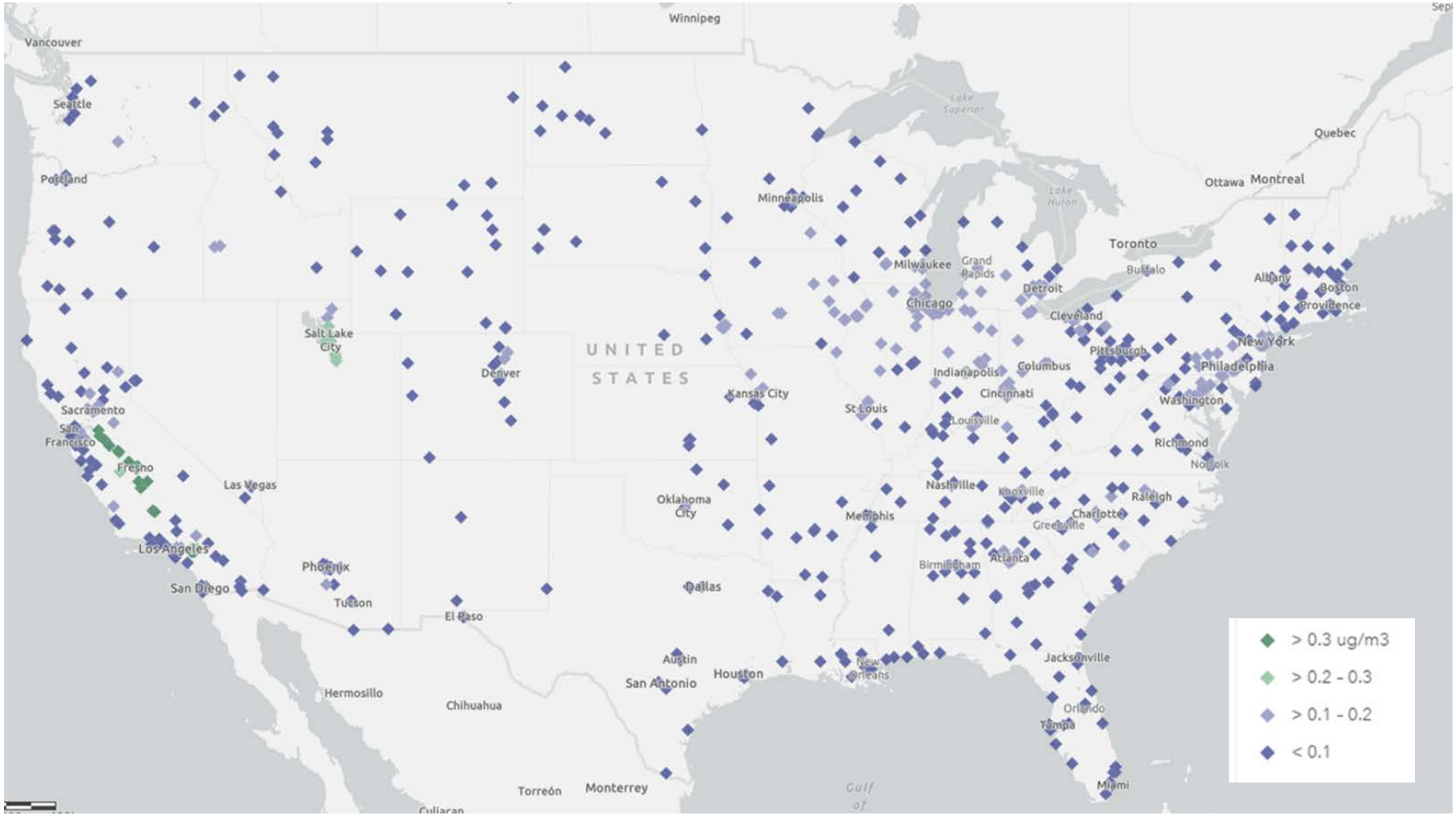

Figure 3-4. Calculated change in Annual $PM_{2.5}$ Design Values ($\mu g/m^3$) resulting from CTI strategy run.

3.5.3 Future Daily (24-Hour) $PM_{2.5}$ Concentrations

The $PM_{2.5}$ predictions from the 2016 and 2028 base case, and the CTI scenario CAMx model simulations were used to project $PM_{2.5}$ daily (24-hour) design values to future years using the SMAT-CE tool and following the approach described in the EPA's guidance for attainment demonstration modeling (EPA, 2018).

A list of sites with modeled 2028 design values that exceed the NAAQS (i.e., 2028 average daily (24-hour) design values greater than 35 µg/m^3) and are considered nonattainment receptors in 2028 is provided in Table 3-5 below along with the associated CTI scenario design values and change in design value between the base case and the CTI strategy case.

The 2028 base case modeling demonstrates that all monitors in the eastern U.S. attain the daily $PM_{2.5}$ NAAQS (35 µg/m^3). Widespread areas in the west show modeled nonattainment with the base case.

The CTI strategy applied to the 2028 base case also has impact on the daily $PM_{2.5}$ design value nationwide. As with the annual $PM_{2.5}$ modeling, a few areas are shown to move to modeled attainment as a result of the CTI strategy alone, including Madera, Merced, and San Joaquin counties in California. The greatest daily $PM_{2.5}$ impacts are reductions of 4.5 µg/m^3 (9.8%) seen in the west (Tulare County, CA) and 0.9 µg/m^3 (4.5%) reduction in the east (Chicago).

A full list of monitor locations and modeled daily $PM_{2.5}$ design values for the 12km domain modeling is provided in Appendix C of this report. Figure 3-5 below presents the resulting CTI strategy predicted daily $PM_{2.5}$ design values and Figure 3-6 presents the design value change between the 2028 base case and the CTI strategy run. Table 3-6 presents monitors that have state-level maximum modeled daily $PM_{2.5}$ benefit from the CTI scenario when compared to the 2028 base case.

Table 3-5. Alpine 12km modeling-identified daily (24-hour) $PM_{2.5}$ nonattainment monitors.

			Daily $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
60010013	California	Alameda	41.2	39.8	39.3	0.5
60190011	California	Fresno	55.3	47.6	44.1	3.5
60195001	California	Fresno	48.3	41.2	38.2	3.0
60195025	California	Fresno	53.0	47.0	43.2	3.8
60290010	California	Kern	63.1	57.7	55.7	2.0
60290014	California	Kern	60.9	55.9	53.9	2.0
60290016	California	Kern	60.2	55.7	53.9	1.8
60311004	California	Kings	58.9	49.1	45.3	3.8
60392010	California	Madera	43.5	36.0	33.1	2.9
60470003	California	Merced	40.9	35.4	33.9	1.5
60631010	California	Plumas	48.8	46.8	46.3	0.5
60658005	California	Riverside	39.6	38.0	36.6	1.4
60771002	California	San Joaquin	44.5	39.4	37.1	2.3
60772010	California	San Joaquin	42.5	36.5	33.6	2.9
60932001	California	Siskiyou	44.3	43.1	42.8	0.3
60990005	California	Stanislaus	46.9	38.9	35.9	3.0
60990006	California	Stanislaus	49.5	41.4	38.6	2.8
61072002	California	Tulare	55.7	46.1	41.6	4.5
160090010	Idaho	Benewah	38.2	35.4	35.0	0.4
160590004	Idaho	Lemhi	43.5	42.3	42.1	0.2
160790017	Idaho	Shoshone	38.7	36.6	36.3	0.3
300290049	Montana	Flathead	42.7	41.4	41.2	0.2
300490026	Montana	Lewis and Clark	42.3	41.0	40.8	0.2
300530018	Montana	Lincoln	45.3	43.0	42.7	0.3
300630024	Montana	Missoula	44.7	42.9	42.6	0.3
300630037	Montana	Missoula	39.7	38.4	38.1	0.3
300810007	Montana	Ravalli	57.5	56.2	55.9	0.3
410130100	Oregon	Crook	39.0	37.9	37.6	0.3
410330114	Oregon	Josephine	42.5	40.9	40.5	0.4
410350004	Oregon	Klamath	45.9	44.9	44.7	0.2
410370001	Oregon	Lake	41.6	40.6	40.3	0.3
410392013	Oregon	Lane	41.0	39.8	39.5	0.3
530370002	Washington	Kittitas	39.8	38.2	37.7	0.5
530470013	Washington	Okanogan	62.3	60.2	59.8	0.4
530770015	Washington	Yakima	43.6	40.4	40.1	0.3

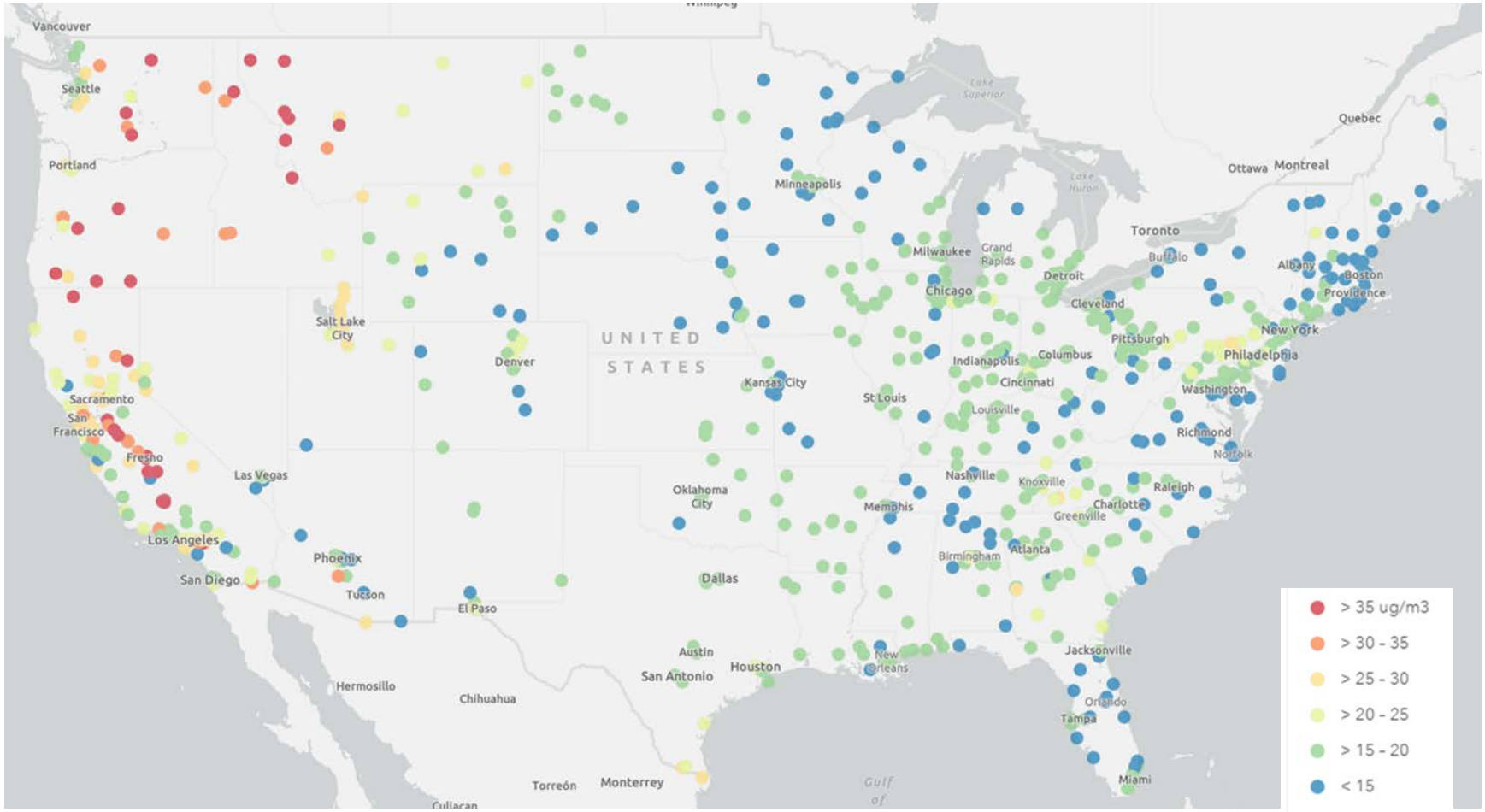

Figure 3-5. Calculated daily $PM_{2.5}$ Design Values (µg/m^3) resulting from CTI strategy run.

Table 3-6. Maximum modeled daily $PM_{2.5}$ benefit from CTI strategy within selected states.

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
10730023	Alabama	Jefferson	21.8	20.3	20.0	0.3
40139812	Arizona	Maricopa	25.9	23.6	22.9	0.7
50350005	Arkansas	Crittenden	17.8	15.8	15.4	0.4
61072002	California	Tulare	55.7	46.1	41.6	4.5
80310028	Colorado	Denver	24.0	22.2	21.0	1.2
90090027	Connecticut	New Haven	19.4	17.1	16.7	0.4
100031012	Delaware	New Castle	23.0	20.4	19.9	0.5
110010043	Wash DC	Wash DC	20.5	18.9	18.4	0.5
120730012	Florida	Leon	17.5	16.6	16.4	0.2
130590002	Georgia	Clarke	17.3	15.8	15.5	0.3
160410001	Idaho	Franklin	30.1	28.0	27.3	0.7
170313301	Illinois	Cook	22.3	19.8	18.9	0.9
180970081	Indiana	Marion	23.6	20.0	19.1	0.9
190550001	Iowa	Delaware	20.5	17.6	16.9	0.7
201730010	Kansas	Sedgwick	21.9	18.7	17.9	0.8
210670012	Kentucky	Fayette	18.4	15.8	15.4	0.4
220710021	Louisiana	Orleans	17.9	17.0	16.8	0.2
230050015	Maine	Cumberland	14.5	13.0	12.8	0.2
240051007	Maryland	Baltimore	20.2	18.2	17.6	0.6
250092006	Massachusetts	Essex	15.3	13.8	13.5	0.3
261250001	Michigan	Oakland	22.4	19.6	18.9	0.7
270530962	Minnesota	Hennepin	19.3	17.2	16.7	0.5
280490020	Mississippi	Hinds	18.9	17.5	17.2	0.3
295100093	Missouri	St. Louis City	21.4	18.6	18.0	0.6
300810007	Montana	Ravalli	57.5	56.2	55.9	0.3
310550019	Nebraska	Douglas	20.3	17.1	16.7	0.4
320311005	Nevada	Washoe	25.0	23.6	23.1	0.5
330150014	New Hampshire	Rockingham	13.8	12.4	12.2	0.2
340310005	New Jersey	Passaic	19.7	17.0	16.4	0.6
350010023	New Mexico	Bernalillo	17.6	16.9	16.6	0.3
360610079	New York	New York	20.1	17.6	17.0	0.6
370990006	North Carolina	Jackson	27.7	25.8	25.4	0.4
380171004	North Dakota	Cass	17.5	16.3	16.0	0.3
390490081	Ohio	Franklin	19.8	17.0	16.3	0.7
401090035	Oklahoma	Oklahoma	18.1	16.3	15.9	0.4
410330114	Oregon	Josephine	42.5	40.9	40.5	0.4
420430401	Pennsylvania	Dauphin	26.0	24.1	23.5	0.6
440070030	Rhode Island	Providence	19.4	17.6	17.4	0.2
450450015	South Carolina	Greenville	23.1	22.7	22.4	0.3
461270001	South Dakota	Union	17.6	15.4	15.0	0.4
470931013	Tennessee	Knox	32.8	30.7	30.2	0.5
481130050	Texas	Dallas	18.3	16.8	16.5	0.3

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
490353010	Utah	Salt Lake	37.5	31.9	29.6	2.3
500210002	Vermont	Rutland	22.4	22.0	21.9	0.1
510130020	Virginia	Arlington	18.1	16.1	15.7	0.4
530370002	Washington	Kittitas	39.8	38.2	37.7	0.5
540030003	West Virginia	Berkeley	24.0	22.3	21.9	0.4
550790058	Wisconsin	Milwaukee	20.8	18.3	17.5	0.8
560210001	Wyoming	Laramie	13.3	12.8	12.6	0.2

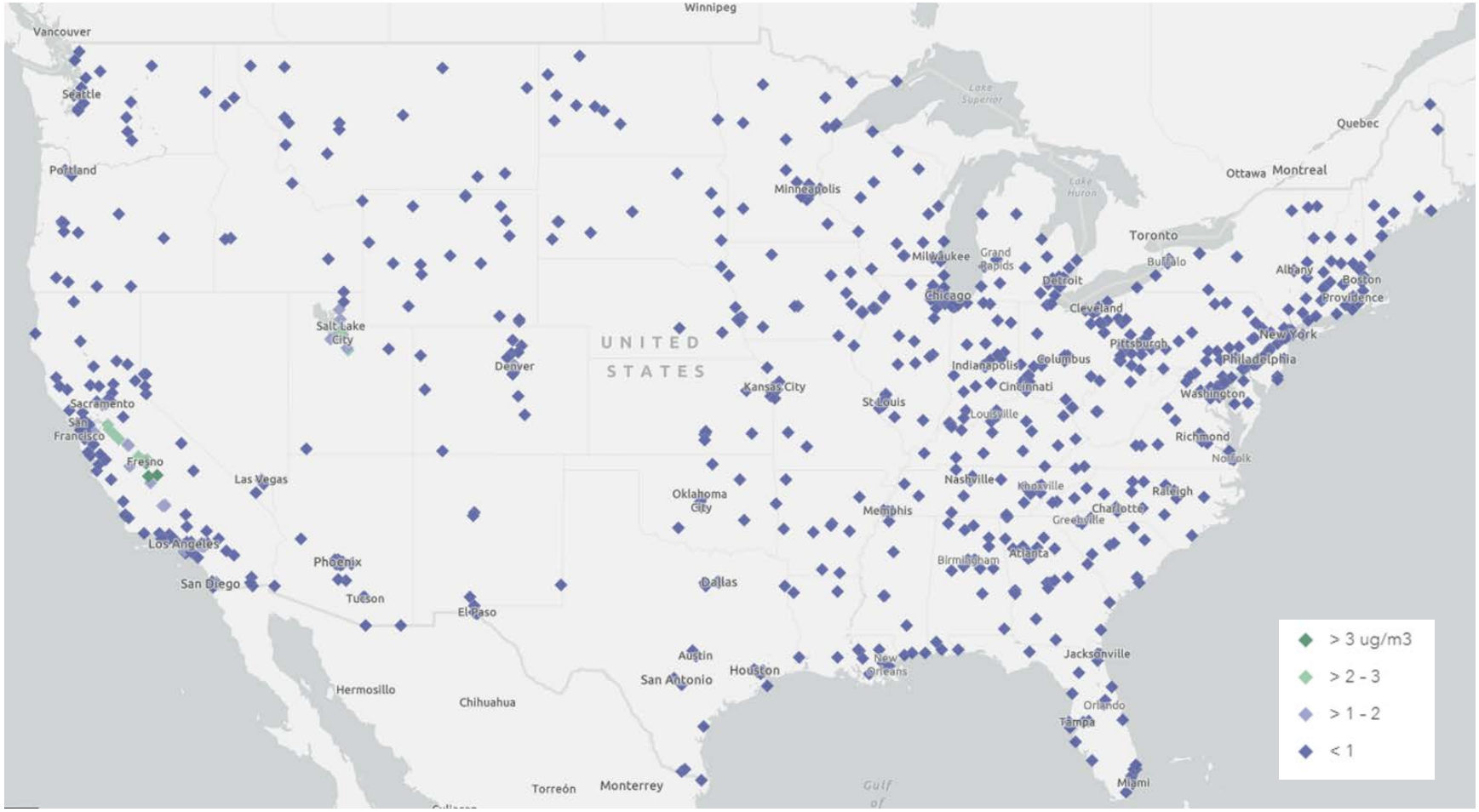

Figure 3-6. Calculated change in daily $PM_{2.5}$ Design Values ($\mu g/m^3$) resulting from CTI strategy run.

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Appendix A

12km MDA8 Ozone Design Value Modeling Results from 2028fh Projection, Potential CTI Strategy, and Design Value Change

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
10030010	Alabama	Baldwin	63.7	51.5	49.3	2.2
10331002	Alabama	Colbert	58.7	47.6	45.6	2.0
10499991	Alabama	DeKalb	62.3	51.6	48.5	3.1
10550011	Alabama	Etowah	61.7	50.7	47.8	2.9
10730023	Alabama	Jefferson	66.3	51.4	47.2	4.2
10731003	Alabama	Jefferson	65.7	51.7	47.8	3.9
10731005	Alabama	Jefferson	65.0	50.8	46.9	3.9
10731010	Alabama	Jefferson	64.3	50.6	47.4	3.2
10732006	Alabama	Jefferson	66.0	51.0	46.9	4.1
10735003	Alabama	Jefferson	63.5	51.8	49.0	2.8
10736002	Alabama	Jefferson	67.7	52.5	48.7	3.8
10890014	Alabama	Madison	64.0	50.6	47.0	3.6
10890022	Alabama	Madison	62.0	49.2	45.8	3.4
10970003	Alabama	Mobile	63.0	50.7	48.3	2.4
10972005	Alabama	Mobile	63.7	51.6	49.1	2.5
11011002	Alabama	Montgomery	61.0	48.2	44.4	3.8
11030011	Alabama	Morgan	63.7	52.4	49.4	3.0
11130002	Alabama	Russell	62.0	49.2	45.6	3.6
11170004	Alabama	Shelby	66.7	51.3	47.1	4.2
11190003	Alabama	Sumter	57.0	49.3	47.8	1.5
11250010	Alabama	Tuscaloosa	60.0	48.1	45.1	3.0
40051008	Arizona	Coconino	66.7	61.6	61.6	0.0
40058001	Arizona	Coconino	66.0	63.8	62.6	1.2
40070010	Arizona	Gila	72.3	63.9	61.3	2.6
40130019	Arizona	Maricopa	73.7	64.8	61.6	3.2
40131003	Arizona	Maricopa	75.3	65.5	62.1	3.4
40131004	Arizona	Maricopa	75.3	65.3	61.8	3.5
40131010	Arizona	Maricopa	74.0	63.7	60.3	3.4
40132001	Arizona	Maricopa	67.7	58.5	55.3	3.2
40132005	Arizona	Maricopa	76.0	63.8	60.1	3.7
40133002	Arizona	Maricopa	70.0	61.7	58.6	3.1
40133003	Arizona	Maricopa	69.7	60.4	57.3	3.1
40134003	Arizona	Maricopa	69.7	61.3	58.2	3.1
40134004	Arizona	Maricopa	70.0	60.6	57.5	3.1
40134005	Arizona	Maricopa	67.0	58.2	55.2	3.0
40134008	Arizona	Maricopa	71.0	60.9	57.7	3.2
40134010	Arizona	Maricopa	68.7	59.1	55.9	3.2
40134011	Arizona	Maricopa	62.7	56.5	54.1	2.4

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
40137003	Arizona	Maricopa	66.3	58.3	55.3	3.0
40137020	Arizona	Maricopa	72.0	62.4	59.2	3.2
40137021	Arizona	Maricopa	75.7	65.0	61.5	3.5
40137022	Arizona	Maricopa	74.0	63.5	60.1	3.4
40137024	Arizona	Maricopa	72.0	62.4	59.2	3.2
40139508	Arizona	Maricopa	73.0	63.2	60.3	2.9
40139702	Arizona	Maricopa	72.7	62.4	59.1	3.3
40139704	Arizona	Maricopa	71.0	60.5	57.1	3.4
40139706	Arizona	Maricopa	69.0	58.3	55.1	3.2
40139997	Arizona	Maricopa	75.0	66.1	62.8	3.3
40190021	Arizona	Pima	69.3	63.9	62.6	1.3
40191011	Arizona	Pima	63.7	58.4	57.1	1.3
40191018	Arizona	Pima	65.7	60.5	59.3	1.2
40191020	Arizona	Pima	66.0	61.3	59.7	1.6
40191028	Arizona	Pima	65.0	59.7	58.4	1.3
40191030	Arizona	Pima	64.3	60.0	59.5	0.5
40191032	Arizona	Pima	65.0	59.5	58.2	1.3
40191034	Arizona	Pima	63.3	57.7	56.3	1.4
40213001	Arizona	Pinal	72.7	62.1	58.9	3.2
40213003	Arizona	Pinal	65.7	58.5	56.3	2.2
40213007	Arizona	Pinal	67.0	60.4	59.1	1.3
40217001	Arizona	Pinal	65.3	57.4	54.9	2.5
40218001	Arizona	Pinal	72.7	63.5	60.7	2.8
40278011	Arizona	Yuma	72.3	69.8	68.8	1.0
50199991	Arkansas	Clark	57.7	45.3	44.0	1.3
50350005	Arkansas	Crittenden	67.0	57.2	54.4	2.8
51190007	Arkansas	Pulaski	62.3	47.4	43.7	3.7
51191002	Arkansas	Pulaski	63.7	48.5	44.7	3.8
51430005	Arkansas	Washington	59.7	49.3	46.8	2.5
60010007	California	Alameda	74.0	69.2	66.6	2.6
60010009	California	Alameda	53.3	50.9	49.4	1.5
60010011	California	Alameda	47.7	45.5	44.2	1.3
60012001	California	Alameda	64.7	61.1	59.2	1.9
60050002	California	Amador	72.3	63.0	59.6	3.4
60070007	California	Butte	76.7	65.9	62.6	3.3
60070008	California	Butte	65.3	55.3	52.3	3.0
60090001	California	Calaveras	77.0	68.1	65.0	3.1
60111002	California	Colusa	62.7	55.4	53.2	2.2

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
60130002	California	Contra Costa	64.3	60.7	58.8	1.9
60131002	California	Contra Costa	67.7	62.6	60.2	2.4
60131004	California	Contra Costa	52.3	50.0	48.7	1.3
60132007	California	Contra Costa	67.3	63.3	61.2	2.1
60170010	California	El Dorado	85.3	72.7	67.5	5.2
60170020	California	El Dorado	82.0	70.6	65.5	5.1
60190007	California	Fresno	87.0	76.5	70.6	5.9
60190011	California	Fresno	90.0	79.1	73.1	6.0
60190242	California	Fresno	84.3	75.8	71.0	4.8
60192009	California	Fresno	75.7	68.4	65.8	2.6
60194001	California	Fresno	90.3	78.2	72.4	5.8
60195001	California	Fresno	91.0	79.7	73.7	6.0
60210003	California	Glenn	63.5	55.6	53.4	2.2
60250005	California	Imperial	76.7	76.4	75.8	0.6
60251003	California	Imperial	76.0	75.7	74.9	0.8
60254004	California	Imperial	62.0	60.0	59.0	1.0
60270002	California	Inyo	62.5	61.1	60.5	0.6
60270101	California	Inyo	71.5	69.1	68.2	0.9
60290007	California	Kern	87.7	78.8	74.0	4.8
60290008	California	Kern	83.0	75.0	71.6	3.4
60290011	California	Kern	83.3	76.9	74.1	2.8
60290014	California	Kern	86.0	77.5	72.9	4.6
60290232	California	Kern	79.3	71.5	67.2	4.3
60292012	California	Kern	89.3	80.3	75.3	5.0
60295002	California	Kern	87.3	78.4	73.6	4.8
60296001	California	Kern	80.7	73.5	70.0	3.5
60311004	California	Kings	83.3	72.8	68.1	4.7
60333002	California	Lake	57.0	49.9	48.4	1.5
60370002	California	Los Angeles	94.3	89.3	85.6	3.7
60370016	California	Los Angeles	100.0	94.7	90.8	3.9
60370113	California	Los Angeles	70.0	66.9	64.9	2.0
60371103	California	Los Angeles	73.0	69.6	67.3	2.3
60371201	California	Los Angeles	88.3	80.7	76.8	3.9
60371302	California	Los Angeles	65.5	63.9	62.9	1.0
60371602	California	Los Angeles	75.7	74.3	72.6	1.7
60371701	California	Los Angeles	92.0	87.6	83.8	3.8
60372005	California	Los Angeles	84.7	81.5	78.9	2.6
60374006	California	Los Angeles	56.5	54.9	53.9	1.0

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
60375005	California	Los Angeles	66.3	63.6	62.4	1.2
60376012	California	Los Angeles	98.0	89.2	84.4	4.8
60379033	California	Los Angeles	87.3	78.8	75.0	3.8
60390004	California	Madera	80.3	72.2	67.7	4.5
60392010	California	Madera	82.7	73.3	68.7	4.6
60430003	California	Mariposa	76.0	72.9	71.9	1.0
60430006	California	Mariposa	75.0	67.2	64.4	2.8
60470003	California	Merced	80.7	71.5	67.5	4.0
60531003	California	Monterey	53.3	49.0	47.1	1.9
60550003	California	Napa	62.5	56.3	54.2	2.1
60570005	California	Nevada	86.3	73.9	69.4	4.5
60590007	California	Orange	69.3	67.4	65.4	2.0
60591003	California	Orange	69.0	67.4	65.3	2.1
60592022	California	Orange	77.7	70.2	66.3	3.9
60595001	California	Orange	75.3	73.5	71.4	2.1
60610003	California	Placer	85.0	73.2	67.9	5.3
60610004	California	Placer	79.3	67.7	63.3	4.4
60610006	California	Placer	80.0	70.2	65.2	5.0
60611004	California	Placer	65.0	60.5	59.5	1.0
60612003	California	Placer	74.5	65.2	60.8	4.4
60650008	California	Riverside	76.5	69.9	66.6	3.3
60650009	California	Riverside	71.0	61.7	57.7	4.0
60650012	California	Riverside	95.3	85.7	79.4	6.3
60650016	California	Riverside	79.0	69.2	64.8	4.4
60651016	California	Riverside	99.7	89.0	82.7	6.3
60652002	California	Riverside	82.7	75.2	71.2	4.0
60655001	California	Riverside	88.7	78.8	73.4	5.4
60656001	California	Riverside	92.3	82.2	76.4	5.8
60658001	California	Riverside	96.7	90.0	85.1	4.9
60658005	California	Riverside	95.0	88.4	83.6	4.8
60659001	California	Riverside	88.7	79.2	74.0	5.2
60670002	California	Sacramento	77.7	69.6	64.7	4.9
60670006	California	Sacramento	76.3	68.9	64.1	4.8
60670010	California	Sacramento	68.3	63.1	59.5	3.6
60670011	California	Sacramento	67.7	61.3	58.3	3.0
60670012	California	Sacramento	82.3	71.1	65.9	5.2
60670014	California	Sacramento	71.0	65.1	61.4	3.7
60675003	California	Sacramento	77.3	67.6	62.7	4.9

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
60690002	California	San Benito	60.7	55.2	53.1	2.1
60690003	California	San Benito	68.3	62.7	61.2	1.5
60710001	California	San Bernardino	79.0	73.7	70.8	2.9
60710005	California	San Bernardino	110.3	102.3	96.1	6.2
60710012	California	San Bernardino	95.0	87.4	82.6	4.8
60710306	California	San Bernardino	84.0	77.2	72.8	4.4
60711004	California	San Bernardino	105.7	99.8	95.2	4.6
60711234	California	San Bernardino	72.3	69.4	68.4	1.0
60712002	California	San Bernardino	97.7	91.1	86.3	4.8
60714001	California	San Bernardino	90.3	83.0	78.2	4.8
60714003	California	San Bernardino	104.0	95.6	89.4	6.2
60719002	California	San Bernardino	87.3	78.2	73.2	5.0
60719004	California	San Bernardino	108.7	99.9	93.4	6.5
60730001	California	San Diego	61.0	59.9	58.4	1.5
60731001	California	San Diego	67.0	63.0	61.2	1.8
60731006	California	San Diego	83.0	76.4	73.1	3.3
60731008	California	San Diego	69.0	62.1	59.3	2.8
60731010	California	San Diego	62.0	60.9	59.4	1.5
60731014	California	San Diego	69.0	66.3	64.5	1.8
60731016	California	San Diego	70.0	64.1	61.2	2.9
60731022	California	San Diego	71.0	66.0	63.1	2.9
60771002	California	San Joaquin	66.7	61.0	58.1	2.9
60773005	California	San Joaquin	77.3	70.7	67.3	3.4
60798006	California	San Luis Obispo	68.7	62.5	60.3	2.2
60811001	California	San Mateo	56.0	54.3	53.5	0.8
60830011	California	Santa Barbara	61.7	55.3	53.0	2.3
60831014	California	Santa Barbara	62.7	57.6	55.8	1.8
60831021	California	Santa Barbara	58.3	52.3	50.3	2.0
60832011	California	Santa Barbara	60.7	54.5	52.5	2.0
60850002	California	Santa Clara	64.0	58.1	55.5	2.6
60850005	California	Santa Clara	64.3	62.4	60.7	1.7
60851001	California	Santa Clara	65.7	62.5	60.8	1.7
60852006	California	Santa Clara	68.7	62.1	59.2	2.9
60870007	California	Santa Cruz	56.0	51.8	50.0	1.8
60890004	California	Shasta	68.7	58.3	55.1	3.2
60890007	California	Shasta	66.5	56.7	53.6	3.1
60890009	California	Shasta	76.0	64.7	61.1	3.6
60893003	California	Shasta	65.7	60.1	58.4	1.7

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
60950004	California	Solano	60.0	57.4	55.1	2.3
60950005	California	Solano	62.0	56.3	53.8	2.5
60953003	California	Solano	66.3	59.3	55.7	3.6
60990005	California	Stanislaus	81.0	73.1	69.3	3.8
60990006	California	Stanislaus	83.7	75.1	71.2	3.9
61010003	California	Sutter	64.7	58.0	55.2	2.8
61010004	California	Sutter	73.0	65.9	63.4	2.5
61030004	California	Tehama	79.7	68.3	64.9	3.4
61030007	California	Tehama	69.0	59.1	56.1	3.0
61070006	California	Tulare	84.7	75.1	71.3	3.8
61070009	California	Tulare	89.0	77.1	72.4	4.7
61072002	California	Tulare	82.7	71.0	66.1	4.9
61072010	California	Tulare	84.0	72.5	68.1	4.4
61090005	California	Tuolumne	80.7	72.6	69.9	2.7
61110007	California	Ventura	68.3	60.0	57.0	3.0
61110009	California	Ventura	73.7	64.8	61.4	3.4
61111004	California	Ventura	72.0	66.7	64.6	2.1
61112002	California	Ventura	77.3	67.7	64.1	3.6
61113001	California	Ventura	62.0	55.9	53.7	2.2
61130004	California	Yolo	63.0	56.6	53.7	2.9
61131003	California	Yolo	68.7	62.1	59.1	3.0
80013001	Colorado	Adams	67.0	61.6	59.7	1.9
80050002	Colorado	Arapahoe	73.0	66.4	64.1	2.3
80050006	Colorado	Arapahoe	67.7	61.8	60.2	1.6
80310002	Colorado	Denver	67.7	62.2	60.3	1.9
80310026	Colorado	Denver	68.7	63.1	61.2	1.9
80350004	Colorado	Douglas	77.3	69.3	66.9	2.4
80410013	Colorado	El Paso	68.0	63.0	61.8	1.2
80410016	Colorado	El Paso	66.7	62.0	60.8	1.2
80450012	Colorado	Garfield	62.0	58.9	58.4	0.5
80590005	Colorado	Jefferson	73.0	65.9	63.7	2.2
80590006	Colorado	Jefferson	77.3	70.5	68.4	2.1
80590011	Colorado	Jefferson	79.3	71.7	69.4	2.3
80590013	Colorado	Jefferson	70.0	62.7	60.6	2.1
80671004	Colorado	La Plata	67.0	63.8	63.3	0.5
80677001	Colorado	La Plata	68.7	65.6	65.1	0.5
80677003	Colorado	La Plata	68.3	64.6	64.0	0.6
80690007	Colorado	Larimer	69.0	62.9	61.5	1.4

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
80690011	Colorado	Larimer	75.7	69.1	67.6	1.5
80691004	Colorado	Larimer	69.0	63.0	61.7	1.3
80830006	Colorado	Montezuma	61.5	56.9	56.1	0.8
80830101	Colorado	Montezuma	66.3	60.5	59.8	0.7
81030006	Colorado	Rio Blanco	63.3	61.0	60.3	0.7
81230009	Colorado	Weld	70.0	65.6	64.5	1.1
90010017	Connecticut	Fairfield	79.3	71.6	67.9	3.7
90011123	Connecticut	Fairfield	77.0	65.9	63.0	2.9
90013007	Connecticut	Fairfield	82.0	72.3	69.3	3.0
90019003	Connecticut	Fairfield	82.7	72.8	69.6	3.2
90031003	Connecticut	Hartford	71.7	59.5	56.7	2.8
90050005	Connecticut	Litchfield	71.3	59.3	56.5	2.8
90079007	Connecticut	Middlesex	78.7	66.1	63.2	2.9
90090027	Connecticut	New Haven	75.7	66.3	63.7	2.6
90099002	Connecticut	New Haven	79.7	67.9	65.2	2.7
90110124	Connecticut	New London	74.3	63.9	61.8	2.1
90131001	Connecticut	Tolland	71.7	59.1	56.4	2.7
90159991	Connecticut	Windham	69.7	57.7	55.3	2.4
100010002	Delaware	Kent	66.3	55.7	53.8	1.9
100031007	Delaware	New Castle	68.0	55.4	52.4	3.0
100031010	Delaware	New Castle	73.7	61.6	58.7	2.9
100031013	Delaware	New Castle	71.0	59.6	56.7	2.9
100032004	Delaware	New Castle	71.3	59.9	57.0	2.9
100051002	Delaware	Sussex	65.3	54.0	51.6	2.4
100051003	Delaware	Sussex	67.7	57.0	55.2	1.8
110010041	District Of Columbia	District of Columbia	57.0	46.5	43.5	3.0
110010043	District Of Columbia	District of Columbia	71.0	57.9	54.2	3.7
110010050	District Of Columbia	District of Columbia	70.0	57.5	53.9	3.6
120310077	Florida	Duval	58.0	44.7	42.7	2.0
120310100	Florida	Duval	60.0	47.1	44.4	2.7
120310106	Florida	Duval	61.0	49.0	46.7	2.3
120330004	Florida	Escambia	64.0	51.9	49.4	2.5
120330018	Florida	Escambia	63.0	50.5	47.8	2.7
120570081	Florida	Hillsborough	67.7	54.9	51.7	3.2
120571035	Florida	Hillsborough	65.7	53.2	49.7	3.5
120571065	Florida	Hillsborough	66.3	55.0	51.7	3.3
120573002	Florida	Hillsborough	66.3	53.0	49.5	3.5
120690002	Florida	Lake	63.7	53.5	51.2	2.3

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
120813002	Florida	Manatee	61.0	49.5	46.6	2.9
120814012	Florida	Manatee	63.0	50.8	47.6	3.2
120814013	Florida	Manatee	61.0	48.5	46.1	2.4
120910002	Florida	Okaloosa	61.0	49.2	46.8	2.4
120950008	Florida	Orange	63.0	52.1	49.0	3.1
120952002	Florida	Orange	63.0	51.8	49.0	2.8
120972002	Florida	Osceola	64.3	51.4	48.7	2.7
121012001	Florida	Pasco	62.0	50.4	47.3	3.1
121030004	Florida	Pinellas	62.7	51.2	48.1	3.1
121030018	Florida	Pinellas	60.7	50.9	48.2	2.7
121035002	Florida	Pinellas	59.7	48.9	46.2	2.7
121056005	Florida	Polk	65.3	49.8	47.1	2.7
121056006	Florida	Polk	64.3	49.8	46.4	3.4
121130015	Florida	Santa Rosa	62.0	49.7	47.1	2.6
121151005	Florida	Sarasota	62.7	49.6	46.9	2.7
121151006	Florida	Sarasota	63.0	49.9	47.4	2.5
121171002	Florida	Seminole	62.7	50.1	46.8	3.3
130210012	Georgia	Bibb	65.0	49.2	45.5	3.7
130510021	Georgia	Chatham	57.0	47.2	45.2	2.0
130550001	Georgia	Chattooga	61.0	50.6	47.6	3.0
130590002	Georgia	Clarke	64.3	50.5	47.1	3.4
130670003	Georgia	Cobb	66.5	51.3	46.5	4.8
130730001	Georgia	Columbia	60.0	48.4	45.1	3.3
130770002	Georgia	Coweta	64.5	51.2	47.2	4.0
130850001	Georgia	Dawson	65.0	49.7	45.5	4.2
130890002	Georgia	DeKalb	70.3	55.5	50.8	4.7
130970004	Georgia	Douglas	68.0	54.3	49.7	4.6
131210055	Georgia	Fulton	74.3	60.3	55.4	4.9
131350002	Georgia	Gwinnett	70.7	54.0	49.2	4.8
131510002	Georgia	Henry	72.0	57.9	53.7	4.2
132130003	Georgia	Murray	65.0	52.2	48.7	3.5
132150008	Georgia	Muscogee	61.0	48.0	44.3	3.7
132230003	Georgia	Paulding	63.0	52.1	48.4	3.7
132319991	Georgia	Pike	67.5	54.6	51.0	3.6
132450091	Georgia	Richmond	61.7	49.9	46.6	3.3
132470001	Georgia	Rockdale	71.0	56.8	52.5	4.3
170190007	Illinois	Champaign	65.3	56.6	54.8	1.8
170191001	Illinois	Champaign	65.7	57.0	54.7	2.3

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
170230001	Illinois	Clark	65.0	54.4	52.8	1.6
170310001	Illinois	Cook	73.0	66.5	63.6	2.9
170310032	Illinois	Cook	72.3	66.8	64.6	2.2
170310076	Illinois	Cook	72.0	65.8	63.0	2.8
170311003	Illinois	Cook	68.3	63.1	60.9	2.2
170311601	Illinois	Cook	69.3	60.6	57.6	3.0
170313103	Illinois	Cook	62.7	57.1	54.9	2.2
170314002	Illinois	Cook	68.7	63.7	61.2	2.5
170314007	Illinois	Cook	72.0	65.0	62.4	2.6
170314201	Illinois	Cook	73.3	66.2	63.5	2.7
170317002	Illinois	Cook	74.0	66.8	64.1	2.7
170436001	Illinois	DuPage	69.7	61.0	57.8	3.2
170491001	Illinois	Effingham	65.7	56.4	54.7	1.7
170650002	Illinois	Hamilton	65.7	56.1	54.1	2.0
170830117	Illinois	Jersey	69.0	59.0	55.9	3.1
170890005	Illinois	Kane	69.3	60.5	57.7	2.8
170971007	Illinois	Lake	73.7	66.5	64.2	2.3
171110001	Illinois	McHenry	69.7	60.4	57.6	2.8
171132003	Illinois	McLean	64.3	54.9	54.0	0.9
171150013	Illinois	Macon	66.3	56.9	55.5	1.4
171170002	Illinois	Macoupin	65.0	54.3	51.5	2.8
171190008	Illinois	Madison	70.0	59.9	56.6	3.3
171191009	Illinois	Madison	69.0	59.2	56.0	3.2
171193007	Illinois	Madison	70.7	60.5	57.2	3.3
171199991	Illinois	Madison	67.3	56.7	53.7	3.0
171430024	Illinois	Peoria	65.0	58.2	56.6	1.6
171431001	Illinois	Peoria	66.0	59.1	57.5	1.6
171570001	Illinois	Randolph	66.3	56.5	54.0	2.5
171630010	Illinois	Saint Clair	69.0	58.8	55.2	3.6
171670014	Illinois	Sangamon	66.0	56.3	54.5	1.8
171971011	Illinois	Will	65.3	57.9	56.0	1.9
180030002	Indiana	Allen	64.7	55.5	53.0	2.5
180030004	Indiana	Allen	64.0	54.7	52.2	2.5
180050007	Indiana	Bartholomew	67.7	57.1	54.7	2.4
180110001	Indiana	Boone	67.0	57.3	54.2	3.1
180150002	Indiana	Carroll	63.7	54.5	52.2	2.3
180190008	Indiana	Clark	70.3	57.5	54.3	3.2
180350010	Indiana	Delaware	62.3	51.8	49.4	2.4

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
180390007	Indiana	Elkhart	64.3	54.3	51.8	2.5
180431004	Indiana	Floyd	71.0	59.2	56.2	3.0
180550001	Indiana	Greene	66.7	51.8	50.1	1.7
180570006	Indiana	Hamilton	66.3	56.1	52.7	3.4
180630004	Indiana	Hendricks	63.3	55.3	52.4	2.9
180690002	Indiana	Huntington	60.7	51.7	49.7	2.0
180710001	Indiana	Jackson	65.7	54.1	52.0	2.1
180810002	Indiana	Johnson	61.0	51.9	49.4	2.5
180839991	Indiana	Knox	66.7	51.6	50.0	1.6
180890022	Indiana	Lake	68.3	61.9	59.8	2.1
180892008	Indiana	Lake	66.0	60.5	58.4	2.1
180910010	Indiana	LaPorte	65.0	57.9	55.8	2.1
180950010	Indiana	Madison	62.3	51.8	49.1	2.7
180970050	Indiana	Marion	70.3	60.7	57.0	3.7
180970057	Indiana	Marion	66.0	57.4	54.1	3.3
180970073	Indiana	Marion	65.5	56.4	53.0	3.4
180970078	Indiana	Marion	68.5	59.6	56.1	3.5
180970087	Indiana	Marion	65.3	56.8	53.5	3.3
181090005	Indiana	Morgan	63.0	53.8	51.4	2.4
181230009	Indiana	Perry	66.7	54.3	52.4	1.9
181270024	Indiana	Porter	69.7	62.6	60.5	2.1
181270026	Indiana	Porter	69.3	61.6	59.5	2.1
181290003	Indiana	Posey	66.7	55.0	53.1	1.9
181410010	Indiana	St. Joseph	65.0	56.2	53.9	2.3
181410015	Indiana	St. Joseph	70.0	60.2	57.7	2.5
181410016	Indiana	St. Joseph	67.3	57.9	55.4	2.5
181450001	Indiana	Shelby	64.7	55.0	51.9	3.1
181630013	Indiana	Vanderburgh	68.3	55.8	53.9	1.9
181630021	Indiana	Vanderburgh	69.0	56.8	55.0	1.8
181670018	Indiana	Vigo	66.7	54.4	52.2	2.2
181670024	Indiana	Vigo	64.3	53.3	51.0	2.3
181699991	Indiana	Wabash	68.7	58.6	56.6	2.0
181730008	Indiana	Warrick	68.7	55.4	53.8	1.6
181730009	Indiana	Warrick	66.0	53.8	52.2	1.6
181730011	Indiana	Warrick	67.7	55.1	53.6	1.5
200910010	Kansas	Johnson	60.0	52.7	50.1	2.6
201030003	Kansas	Leavenworth	61.3	52.2	49.6	2.6
201770013	Kansas	Shawnee	62.3	53.4	51.3	2.1

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
202090021	Kansas	Wyandotte	63.0	54.3	51.4	2.9
210130002	Kentucky	Bell	60.7	49.6	47.7	1.9
210150003	Kentucky	Boone	63.0	50.1	48.1	2.0
210190017	Kentucky	Boyd	65.0	58.3	56.6	1.7
210290006	Kentucky	Bullitt	65.7	52.4	50.1	2.3
210373002	Kentucky	Campbell	68.7	58.1	55.2	2.9
210430500	Kentucky	Carter	62.0	53.5	51.6	1.9
210470006	Kentucky	Christian	61.0	50.7	49.0	1.7
210590005	Kentucky	Daviess	65.0	50.2	48.6	1.6
210610501	Kentucky	Edmonson	63.7	51.5	49.5	2.0
210670012	Kentucky	Fayette	65.7	53.9	51.3	2.6
210890007	Kentucky	Greenup	61.7	54.1	52.4	1.7
210910012	Kentucky	Hancock	67.5	51.3	49.7	1.6
210930006	Kentucky	Hardin	64.7	52.3	50.0	2.3
211010014	Kentucky	Henderson	68.3	56.3	54.7	1.6
211110051	Kentucky	Jefferson	68.3	55.6	53.1	2.5
211110067	Kentucky	Jefferson	74.3	62.2	59.0	3.2
211130001	Kentucky	Jessamine	64.0	50.8	48.6	2.2
211390003	Kentucky	Livingston	65.0	54.6	52.7	1.9
211451024	Kentucky	McCracken	62.7	53.6	52.2	1.4
211759991	Kentucky	Morgan	64.0	55.1	53.3	1.8
211850004	Kentucky	Oldham	68.3	55.0	52.1	2.9
211930003	Kentucky	Perry	58.0	49.3	47.6	1.7
211950002	Kentucky	Pike	59.3	51.1	49.4	1.7
211990003	Kentucky	Pulaski	61.0	50.5	48.3	2.2
212130004	Kentucky	Simpson	63.7	52.7	50.5	2.2
212219991	Kentucky	Trigg	62.0	51.8	50.1	1.7
212270009	Kentucky	Warren	61.3	50.4	48.3	2.1
212299991	Kentucky	Washington	64.0	52.5	50.4	2.1
220050004	Louisiana	Ascension	70.0	60.9	58.7	2.2
220150008	Louisiana	Bossier	65.3	56.2	53.7	2.5
220170001	Louisiana	Caddo	63.3	54.9	52.6	2.3
220190002	Louisiana	Calcasieu	66.3	56.9	55.5	1.4
220190009	Louisiana	Calcasieu	64.0	54.8	53.2	1.6
220330003	Louisiana	East Baton Rouge	71.0	62.4	60.4	2.0
220330009	Louisiana	East Baton Rouge	67.3	57.9	55.6	2.3
220470009	Louisiana	Iberville	66.0	58.4	56.8	1.6
220511001	Louisiana	Jefferson	66.7	57.4	55.4	2.0

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
220550007	Louisiana	Lafayette	65.0	57.3	55.2	2.1
220570004	Louisiana	Lafourche	63.7	55.8	54.2	1.6
220630002	Louisiana	Livingston	68.0	59.1	57.0	2.1
220730004	Louisiana	Ouachita	59.0	53.3	50.3	3.0
220770001	Louisiana	Pointe Coupee	67.0	58.7	56.8	1.9
220870004	Louisiana	St. Bernard	65.3	55.7	53.7	2.0
220930002	Louisiana	St. James	63.3	55.4	53.7	1.7
220950002	Louisiana	St. John the Baptist	65.0	55.6	54.0	1.6
220990001	Louisiana	St. Martin	65.0	58.6	57.0	1.6
221030002	Louisiana	St. Tammany	66.0	55.1	52.9	2.2
221210001	Louisiana	West Baton Rouge	67.0	57.7	55.3	2.4
230010014	Maine	Androscoggin	59.3	49.0	46.4	2.6
230052003	Maine	Cumberland	64.7	54.0	51.2	2.8
230090102	Maine	Hancock	69.0	57.0	54.8	2.2
230090103	Maine	Hancock	63.0	52.0	50.0	2.0
230112005	Maine	Kennebec	61.3	50.0	47.7	2.3
230130004	Maine	Knox	63.3	52.5	49.9	2.6
230290019	Maine	Washington	59.3	49.1	46.9	2.2
230312002	Maine	York	66.0	55.0	52.2	2.8
240031003	Maryland	Anne Arundel	74.0	60.7	57.1	3.6
240051007	Maryland	Baltimore	72.0	58.6	55.0	3.6
240053001	Maryland	Baltimore	72.7	60.2	57.2	3.0
240090011	Maryland	Calvert	67.7	55.2	52.6	2.6
240130001	Maryland	Carroll	68.3	54.9	51.8	3.1
240150003	Maryland	Cecil	74.0	59.9	56.3	3.6
240170010	Maryland	Charles	69.3	56.0	52.9	3.1
240190004	Maryland	Dorchester	64.7	53.0	50.5	2.5
240199991	Maryland	Dorchester	65.7	54.5	52.5	2.0
240210037	Maryland	Frederick	68.0	55.2	52.1	3.1
240230002	Maryland	Garrett	65.3	57.3	55.7	1.6
240251001	Maryland	Harford	74.0	61.0	57.9	3.1
240259001	Maryland	Harford	73.0	59.1	55.6	3.5
240290002	Maryland	Kent	69.3	56.3	53.2	3.1
240313001	Maryland	Montgomery	67.7	55.3	52.0	3.3
240330030	Maryland	Prince George's	69.3	56.5	52.9	3.6
240338003	Maryland	Prince George's	70.7	57.5	53.9	3.6
240339991	Maryland	Prince George's	69.3	56.3	52.8	3.5
240430009	Maryland	Washington	66.7	55.1	52.1	3.0

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
245100054	Maryland	Baltimore (City)	68.3	56.6	53.4	3.2
250010002	Massachusetts	Barnstable	69.0	57.9	55.8	2.1
250051004	Massachusetts	Bristol	71.7	60.9	58.4	2.5
250051006	Massachusetts	Bristol	67.3	57.8	55.8	2.0
250070001	Massachusetts	Dukes	70.0	60.1	58.0	2.1
250092006	Massachusetts	Essex	66.3	57.1	54.8	2.3
250094005	Massachusetts	Essex	64.5	54.4	52.0	2.4
250095005	Massachusetts	Essex	62.7	52.5	50.0	2.5
250112005	Massachusetts	Franklin	64.7	53.3	51.0	2.3
250130008	Massachusetts	Hampden	70.0	57.8	55.1	2.7
250154002	Massachusetts	Hampshire	69.0	56.9	54.2	2.7
250170009	Massachusetts	Middlesex	64.0	52.8	50.1	2.7
250213003	Massachusetts	Norfolk	69.0	58.2	55.6	2.6
250230005	Massachusetts	Plymouth	67.0	55.7	53.1	2.6
250250042	Massachusetts	Suffolk	60.3	51.8	49.7	2.1
250270015	Massachusetts	Worcester	65.0	53.4	50.8	2.6
250270024	Massachusetts	Worcester	66.3	55.4	53.1	2.3
260050003	Michigan	Allegan	73.7	64.6	61.9	2.7
260190003	Michigan	Benzie	68.3	59.9	57.8	2.1
260210014	Michigan	Berrien	73.3	65.9	63.3	2.6
260270003	Michigan	Cass	72.0	61.5	58.9	2.6
260370002	Michigan	Clinton	67.0	56.4	54.8	1.6
260490021	Michigan	Genesee	67.7	57.1	55.5	1.6
260492001	Michigan	Genesee	68.0	57.9	55.1	2.8
260630007	Michigan	Huron	67.7	60.7	59.2	1.5
260650018	Michigan	Ingham	67.7	57.2	55.5	1.7
260770008	Michigan	Kalamazoo	69.7	59.1	56.6	2.5
260810020	Michigan	Kent	69.0	59.4	57.1	2.3
260810022	Michigan	Kent	67.3	57.3	55.1	2.2
260910007	Michigan	Lenawee	67.0	58.3	56.5	1.8
260990009	Michigan	Macomb	71.7	60.7	58.2	2.5
260991003	Michigan	Macomb	67.3	57.1	54.5	2.6
261010922	Michigan	Manistee	67.0	58.0	55.7	2.3
261050007	Michigan	Mason	68.7	59.1	56.7	2.4
261210039	Michigan	Muskegon	75.0	65.9	63.4	2.5
261250001	Michigan	Oakland	70.7	61.1	58.2	2.9
261390005	Michigan	Ottawa	69.3	60.4	58.1	2.3
261470005	Michigan	St. Clair	72.0	63.3	61.4	1.9

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
261610008	Michigan	Washtenaw	67.7	59.2	57.0	2.2
261619991	Michigan	Washtenaw	69.3	59.3	56.7	2.6
261630001	Michigan	Wayne	66.3	57.5	55.2	2.3
261630019	Michigan	Wayne	73.0	61.6	58.7	2.9
270031001	Minnesota	Anoka	60.0	52.5	50.5	2.0
270031002	Minnesota	Anoka	62.7	57.3	55.3	2.0
270530962	Minnesota	Hennepin	55.7	51.4	49.8	1.6
271390505	Minnesota	Scott	61.3	55.9	53.6	2.3
271636016	Minnesota	Washington	60.0	52.8	51.3	1.5
280330002	Mississippi	DeSoto	63.7	52.9	49.8	3.1
280450003	Mississippi	Hancock	61.7	49.5	47.1	2.4
280470008	Mississippi	Harrison	65.3	51.7	49.2	2.5
280490020	Mississippi	Hinds	60.3	46.4	42.8	3.6
280490021	Mississippi	Hinds	62.0	47.7	44.0	3.7
280590006	Mississippi	Jackson	64.7	51.9	49.6	2.3
290030001	Missouri	Andrew	62.7	54.1	52.1	2.0
290190011	Missouri	Boone	63.3	53.1	50.4	2.7
290270002	Missouri	Callaway	62.7	53.3	50.8	2.5
290370003	Missouri	Cass	63.0	55.5	53.1	2.4
290470003	Missouri	Clay	66.7	56.8	53.8	3.0
290470005	Missouri	Clay	66.0	56.7	53.7	3.0
290470006	Missouri	Clay	68.7	59.5	56.5	3.0
290490001	Missouri	Clinton	67.3	57.8	54.8	3.0
290970004	Missouri	Jasper	60.7	50.8	48.5	2.3
290990019	Missouri	Jefferson	69.0	57.9	54.2	3.7
291130003	Missouri	Lincoln	65.0	55.3	52.5	2.8
291570001	Missouri	Perry	67.0	56.4	54.3	2.1
291831002	Missouri	Saint Charles	72.7	62.4	58.9	3.5
291831004	Missouri	Saint Charles	71.0	60.1	56.4	3.7
291860005	Missouri	Sainte Genevieve	65.3	57.5	55.7	1.8
291890005	Missouri	Saint Louis	65.0	55.2	52.2	3.0
291890014	Missouri	Saint Louis	70.0	59.3	55.8	3.5
295100085	Missouri	St. Louis City	67.3	57.3	53.7	3.6
310550019	Nebraska	Douglas	62.7	57.4	55.7	1.7
310550028	Nebraska	Douglas	60.0	54.9	53.3	1.6
310550053	Nebraska	Douglas	63.5	57.6	55.9	1.7
320010002	Nevada	Churchill	68.3	65.5	64.8	0.7
320030022	Nevada	Clark	70.3	62.7	60.4	2.3

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
320030023	Nevada	Clark	61.3	57.0	55.5	1.5
320030043	Nevada	Clark	72.0	65.7	63.4	2.3
320030071	Nevada	Clark	72.3	64.9	62.3	2.6
320030073	Nevada	Clark	72.3	64.9	62.3	2.6
320030075	Nevada	Clark	75.0	67.1	64.5	2.6
320030298	Nevada	Clark	71.0	63.2	60.6	2.6
320030540	Nevada	Clark	68.7	61.8	59.4	2.4
320030601	Nevada	Clark	66.0	59.3	57.2	2.1
320031019	Nevada	Clark	68.3	62.6	60.9	1.7
320032002	Nevada	Clark	72.5	65.5	63.0	2.5
320037772	Nevada	Clark	68.5	63.0	61.3	1.7
320190006	Nevada	Lyon	69.3	66.0	65.1	0.9
320310016	Nevada	Washoe	70.0	66.2	65.1	1.1
320310020	Nevada	Washoe	68.3	64.6	63.5	1.1
320310025	Nevada	Washoe	67.3	63.9	62.9	1.0
320311005	Nevada	Washoe	69.7	65.7	64.6	1.1
320312002	Nevada	Washoe	63.3	58.2	57.1	1.1
320312009	Nevada	Washoe	70.0	65.6	64.3	1.3
320330101	Nevada	White Pine	64.7	62.6	61.9	0.7
325100020	Nevada	Carson City	66.7	64.5	63.8	0.7
330050007	New Hampshire	Cheshire	62.3	51.1	48.8	2.3
330111011	New Hampshire	Hillsborough	63.0	52.0	49.5	2.5
330115001	New Hampshire	Hillsborough	67.0	54.8	52.7	2.1
330131007	New Hampshire	Merrimack	62.0	50.7	49.1	1.6
330150014	New Hampshire	Rockingham	63.3	53.1	50.5	2.6
330150016	New Hampshire	Rockingham	66.7	55.9	53.2	2.7
330150018	New Hampshire	Rockingham	65.3	54.0	51.4	2.6
340010006	New Jersey	Atlantic	63.7	53.7	51.7	2.0
340030006	New Jersey	Bergen	74.3	65.6	62.9	2.7
340070002	New Jersey	Camden	75.3	64.1	61.1	3.0
340071001	New Jersey	Camden	67.3	55.9	53.1	2.8
340110007	New Jersey	Cumberland	65.7	55.1	52.6	2.5
340130003	New Jersey	Essex	68.3	58.9	56.3	2.6
340150002	New Jersey	Gloucester	73.7	62.5	59.8	2.7
340170006	New Jersey	Hudson	71.0	62.5	60.0	2.5
340190001	New Jersey	Hunterdon	71.3	59.8	56.7	3.1
340210005	New Jersey	Mercer	71.3	60.0	57.0	3.0
340219991	New Jersey	Mercer	73.3	62.5	59.5	3.0

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
340230011	New Jersey	Middlesex	74.7	62.8	59.7	3.1
340250005	New Jersey	Monmouth	67.3	57.0	54.4	2.6
340273001	New Jersey	Morris	69.0	58.3	55.6	2.7
340290006	New Jersey	Ocean	72.7	60.7	57.7	3.0
340315001	New Jersey	Passaic	67.7	56.9	54.4	2.5
340410007	New Jersey	Warren	64.3	54.1	51.6	2.5
350010023	New Mexico	Bernalillo	67.3	62.0	60.6	1.4
350010029	New Mexico	Bernalillo	65.3	60.1	58.8	1.3
350011012	New Mexico	Bernalillo	66.7	61.7	60.4	1.3
350130008	New Mexico	Dona Ana	67.3	63.1	61.9	1.2
350130020	New Mexico	Dona Ana	68.3	64.5	63.5	1.0
350130021	New Mexico	Dona Ana	72.7	68.2	67.0	1.2
350130022	New Mexico	Dona Ana	71.3	67.0	65.8	1.2
350130023	New Mexico	Dona Ana	66.0	61.8	60.9	0.9
350390026	New Mexico	Rio Arriba	65.3	60.7	60.4	0.3
350431001	New Mexico	Sandoval	65.7	60.7	59.4	1.3
350450009	New Mexico	San Juan	65.0	57.9	57.1	0.8
350450018	New Mexico	San Juan	68.0	62.2	61.4	0.8
350451005	New Mexico	San Juan	65.0	57.7	57.0	0.7
350490021	New Mexico	Santa Fe	64.0	60.0	59.5	0.5
350610008	New Mexico	Valencia	65.3	60.6	58.9	1.7
360010012	New York	Albany	64.0	53.6	51.2	2.4
360050110	New York	Bronx	67.7	61.9	59.2	2.7
360050133	New York	Bronx	70.7	65.1	62.1	3.0
360130006	New York	Chautauqua	68.0	59.1	57.2	1.9
360270007	New York	Dutchess	67.0	56.3	53.7	2.6
360290002	New York	Erie	69.3	59.9	58.1	1.8
360450002	New York	Jefferson	63.0	54.5	53.0	1.5
360551007	New York	Monroe	65.7	56.6	54.7	1.9
360610135	New York	New York	70.3	64.3	61.5	2.8
360631006	New York	Niagara	66.3	58.0	56.7	1.3
360715001	New York	Orange	64.3	53.7	51.1	2.6
360750003	New York	Oswego	61.0	52.6	51.4	1.2
360790005	New York	Putnam	69.0	59.5	56.9	2.6
360810124	New York	Queens	72.3	65.5	62.7	2.8
360850067	New York	Richmond	76.0	68.2	65.6	2.6
360870005	New York	Rockland	71.3	61.2	58.6	2.6
360910004	New York	Saratoga	63.0	52.1	49.9	2.2

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
361030002	New York	Suffolk	74.0	67.2	64.3	2.9
361030004	New York	Suffolk	74.3	64.1	61.4	2.7
361030009	New York	Suffolk	71.0	62.7	60.2	2.5
361173001	New York	Wayne	65.0	56.2	54.7	1.5
361192004	New York	Westchester	74.0	66.6	63.1	3.5
370030005	North Carolina	Alexander	64.3	54.2	51.3	2.9
370110002	North Carolina	Avery	61.7	51.0	48.3	2.7
370119991	North Carolina	Avery	64.0	53.4	50.8	2.6
370210030	North Carolina	Buncombe	62.0	50.8	48.0	2.8
370270003	North Carolina	Caldwell	64.0	52.9	49.9	3.0
370330001	North Carolina	Caswell	62.0	49.0	45.9	3.1
370510008	North Carolina	Cumberland	62.0	51.8	49.4	2.4
370510010	North Carolina	Cumberland	63.5	53.0	50.3	2.7
370630015	North Carolina	Durham	61.7	50.1	47.1	3.0
370650099	North Carolina	Edgecombe	62.0	50.5	47.6	2.9
370670022	North Carolina	Forsyth	66.7	53.4	50.3	3.1
370670030	North Carolina	Forsyth	67.3	54.9	51.8	3.1
370671008	North Carolina	Forsyth	66.3	54.0	50.8	3.2
370750001	North Carolina	Graham	63.5	52.0	49.2	2.8
370770001	North Carolina	Granville	64.3	53.5	50.4	3.1
370810013	North Carolina	Guilford	65.3	52.2	49.0	3.2
370870008	North Carolina	Haywood	61.3	50.9	48.4	2.5
370870035	North Carolina	Haywood	64.3	53.3	50.6	2.7
370870036	North Carolina	Haywood	64.3	54.1	51.7	2.4
371010002	North Carolina	Johnston	63.7	51.7	48.5	3.2
371050002	North Carolina	Lee	61.5	50.5	47.7	2.8
371090004	North Carolina	Lincoln	66.3	55.6	52.3	3.3
371139991	North Carolina	Macon	61.3	49.7	47.2	2.5
371190041	North Carolina	Mecklenburg	68.7	58.2	54.4	3.8
371190046	North Carolina	Mecklenburg	70.0	58.6	54.4	4.2
371239991	North Carolina	Montgomery	61.0	50.0	46.8	3.2
371450003	North Carolina	Person	62.0	53.9	51.7	2.2
371570099	North Carolina	Rockingham	65.3	48.0	45.3	2.7
371590021	North Carolina	Rowan	63.7	52.2	48.7	3.5
371730002	North Carolina	Swain	60.0	49.5	47.0	2.5
371730007	North Carolina	Swain	59.0	48.9	46.5	2.4
371790003	North Carolina	Union	67.7	57.8	54.3	3.5
371830014	North Carolina	Wake	65.7	53.2	49.5	3.7

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
371990004	North Carolina	Yancey	65.0	54.1	51.3	2.8
390030009	Ohio	Allen	67.7	58.1	56.0	2.1
390071001	Ohio	Ashtabula	70.0	60.8	59.0	1.8
390170018	Ohio	Butler	71.3	59.9	57.1	2.8
390170023	Ohio	Butler	72.3	61.0	58.1	2.9
390179991	Ohio	Butler	69.5	59.2	56.8	2.4
390230001	Ohio	Clark	69.3	57.8	55.1	2.7
390230003	Ohio	Clark	68.3	57.4	54.6	2.8
390250022	Ohio	Clermont	70.0	59.5	56.8	2.7
390271002	Ohio	Clinton	69.7	58.2	55.6	2.6
390350034	Ohio	Cuyahoga	69.0	59.5	57.5	2.0
390350060	Ohio	Cuyahoga	62.7	54.1	52.2	1.9
390350064	Ohio	Cuyahoga	65.3	56.4	54.4	2.0
390355002	Ohio	Cuyahoga	69.3	59.9	57.9	2.0
390410002	Ohio	Delaware	65.3	54.4	51.9	2.5
390479991	Ohio	Fayette	66.7	56.7	54.6	2.1
390490029	Ohio	Franklin	70.3	59.4	56.4	3.0
390490037	Ohio	Franklin	65.5	55.6	52.8	2.8
390490081	Ohio	Franklin	66.3	56.2	53.4	2.8
390550004	Ohio	Geauga	71.3	59.8	57.6	2.2
390570006	Ohio	Greene	67.3	56.0	53.4	2.6
390610006	Ohio	Hamilton	73.3	62.4	59.3	3.1
390610010	Ohio	Hamilton	71.3	61.1	58.2	2.9
390610040	Ohio	Hamilton	71.3	61.2	58.3	2.9
390810017	Ohio	Jefferson	63.0	52.4	50.9	1.5
390830002	Ohio	Knox	66.5	54.9	52.4	2.5
390850003	Ohio	Lake	73.7	63.8	61.7	2.1
390850007	Ohio	Lake	69.0	59.8	57.9	1.9
390870011	Ohio	Lawrence	63.7	55.8	54.0	1.8
390870012	Ohio	Lawrence	66.0	57.9	56.0	1.9
390890005	Ohio	Licking	65.7	54.0	51.6	2.4
390930018	Ohio	Lorain	65.7	56.9	55.0	1.9
390950024	Ohio	Lucas	67.5	59.3	57.6	1.7
390950027	Ohio	Lucas	64.7	56.6	54.7	1.9
390950035	Ohio	Lucas	67.5	59.2	57.7	1.5
390970007	Ohio	Madison	67.3	56.8	54.4	2.4
390990013	Ohio	Mahoning	59.7	50.0	48.2	1.8
391030004	Ohio	Medina	64.3	55.0	53.0	2.0

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
391090005	Ohio	Miami	67.7	55.9	53.2	2.7
391130037	Ohio	Montgomery	70.3	58.6	55.6	3.0
391219991	Ohio	Noble	64.7	55.5	53.9	1.6
391331001	Ohio	Portage	62.0	52.9	50.9	2.0
391351001	Ohio	Preble	67.0	56.6	54.2	2.4
391510016	Ohio	Stark	68.3	57.2	55.1	2.1
391510022	Ohio	Stark	65.0	54.1	52.2	1.9
391514005	Ohio	Stark	68.3	57.0	54.9	2.1
391530020	Ohio	Summit	63.3	53.3	51.1	2.2
391550011	Ohio	Trumbull	68.3	56.7	54.6	2.1
391550013	Ohio	Trumbull	66.0	54.6	52.6	2.0
391650007	Ohio	Warren	71.7	60.1	57.3	2.8
391670004	Ohio	Washington	64.3	52.7	51.2	1.5
391730003	Ohio	Wood	64.3	55.9	54.1	1.8
400019009	Oklahoma	Adair	59.7	50.2	47.9	2.3
400170101	Oklahoma	Canadian	66.3	55.9	52.5	3.4
400219002	Oklahoma	Cherokee	59.5	51.2	49.3	1.9
400270049	Oklahoma	Cleveland	66.7	57.6	54.6	3.0
400370144	Oklahoma	Creek	64.0	53.7	51.0	2.7
400871073	Oklahoma	McClain	66.3	56.4	54.6	1.8
400979014	Oklahoma	Mayes	62.0	53.8	52.2	1.6
401090033	Oklahoma	Oklahoma	67.3	57.4	54.0	3.4
401090096	Oklahoma	Oklahoma	66.3	56.4	53.3	3.1
401091037	Oklahoma	Oklahoma	69.0	58.6	55.2	3.4
401359021	Oklahoma	Sequoyah	59.3	48.0	45.4	2.6
401430174	Oklahoma	Tulsa	65.0	56.1	53.6	2.5
401430178	Oklahoma	Tulsa	64.0	55.5	53.0	2.5
401431127	Oklahoma	Tulsa	65.0	55.4	52.8	2.6
410050004	Oregon	Clackamas	69.7	61.2	58.2	3.0
410510080	Oregon	Multnomah	59.3	53.2	52.3	0.9
410670005	Oregon	Washington	55.0	49.5	48.9	0.6
410671004	Oregon	Washington	62.0	55.5	54.9	0.6
420010001	Pennsylvania	Adams	66.5	56.8	54.4	2.4
420019991	Pennsylvania	Adams	66.3	56.6	54.2	2.4
420030008	Pennsylvania	Allegheny	68.0	58.1	56.0	2.1
420030067	Pennsylvania	Allegheny	69.7	58.4	56.2	2.2
420031008	Pennsylvania	Allegheny	69.0	59.0	57.1	1.9
420050001	Pennsylvania	Armstrong	69.0	58.2	56.4	1.8

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
420070002	Pennsylvania	Beaver	68.7	55.2	53.6	1.6
420070005	Pennsylvania	Beaver	67.3	53.2	51.5	1.7
420070014	Pennsylvania	Beaver	65.7	52.6	51.0	1.6
420110006	Pennsylvania	Berks	65.5	55.0	52.4	2.6
420110011	Pennsylvania	Berks	70.0	59.3	56.6	2.7
420130801	Pennsylvania	Blair	63.5	52.5	50.8	1.7
420170012	Pennsylvania	Bucks	79.3	67.1	63.8	3.3
420210011	Pennsylvania	Cambria	62.3	51.6	50.1	1.5
420270100	Pennsylvania	Centre	62.3	52.4	50.6	1.8
420279991	Pennsylvania	Centre	64.7	54.1	52.3	1.8
420290100	Pennsylvania	Chester	72.7	60.7	57.5	3.2
420334000	Pennsylvania	Clearfield	64.7	55.1	53.6	1.5
420430401	Pennsylvania	Dauphin	65.3	55.2	52.8	2.4
420431100	Pennsylvania	Dauphin	66.0	55.5	53.0	2.5
420450002	Pennsylvania	Delaware	71.3	60.1	57.2	2.9
420479991	Pennsylvania	Elk	65.7	56.8	54.6	2.2
420490003	Pennsylvania	Erie	65.0	56.2	54.4	1.8
420550001	Pennsylvania	Franklin	59.3	49.7	47.7	2.0
420590002	Pennsylvania	Greene	67.0	59.1	57.5	1.6
420630004	Pennsylvania	Indiana	69.7	58.3	56.6	1.7
420690101	Pennsylvania	Lackawanna	66.0	54.8	52.4	2.4
420692006	Pennsylvania	Lackawanna	62.5	51.9	49.7	2.2
420710007	Pennsylvania	Lancaster	69.3	57.8	55.2	2.6
420710012	Pennsylvania	Lancaster	65.0	55.1	52.6	2.5
420730015	Pennsylvania	Lawrence	66.3	54.1	52.4	1.7
420750100	Pennsylvania	Lebanon	69.0	58.2	55.8	2.4
420770004	Pennsylvania	Lehigh	69.7	59.2	56.3	2.9
420791101	Pennsylvania	Luzerne	64.0	52.4	50.0	2.4
420810100	Pennsylvania	Lycoming	63.7	52.9	50.7	2.2
420850100	Pennsylvania	Mercer	68.7	56.7	54.7	2.0
420859991	Pennsylvania	Mercer	65.3	54.1	52.2	1.9
420890002	Pennsylvania	Monroe	66.7	55.1	52.5	2.6
420910013	Pennsylvania	Montgomery	71.3	60.7	57.9	2.8
420950025	Pennsylvania	Northampton	70.0	59.3	56.5	2.8
420958000	Pennsylvania	Northampton	69.0	58.0	55.2	2.8
421010004	Pennsylvania	Philadelphia	61.0	51.7	49.3	2.4
421010024	Pennsylvania	Philadelphia	77.7	66.1	62.9	3.2
421010048	Pennsylvania	Philadelphia	75.3	63.9	60.8	3.1

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
421119991	Pennsylvania	Somerset	65.0	56.4	54.5	1.9
421250005	Pennsylvania	Washington	67.0	58.4	56.5	1.9
421250200	Pennsylvania	Washington	65.0	55.6	53.7	1.9
421255001	Pennsylvania	Washington	68.0	55.3	53.6	1.7
421290008	Pennsylvania	Westmoreland	67.0	57.2	55.2	2.0
421330008	Pennsylvania	York	65.7	55.4	53.3	2.1
421330011	Pennsylvania	York	69.0	58.1	55.5	2.6
440030002	Rhode Island	Kent	71.3	60.3	57.9	2.4
440071010	Rhode Island	Providence	69.7	58.4	55.9	2.5
440090007	Rhode Island	Washington	69.3	60.0	57.8	2.2
450010001	South Carolina	Abbeville	58.0	46.9	44.0	2.9
450030003	South Carolina	Aiken	60.3	48.5	45.8	2.7
450070005	South Carolina	Anderson	58.5	47.1	43.8	3.3
450150002	South Carolina	Berkeley	57.3	47.4	44.9	2.5
450190046	South Carolina	Charleston	59.0	48.6	47.0	1.6
450250001	South Carolina	Chesterfield	60.0	50.6	47.1	3.5
450370001	South Carolina	Edgefield	59.7	48.4	45.3	3.1
450450016	South Carolina	Greenville	63.3	51.4	47.9	3.5
450730001	South Carolina	Oconee	63.0	51.0	47.9	3.1
450770002	South Carolina	Pickens	62.7	50.8	47.6	3.2
450770003	South Carolina	Pickens	61.0	48.8	45.6	3.2
450790007	South Carolina	Richland	60.0	48.2	44.5	3.7
450790021	South Carolina	Richland	55.0	45.5	42.8	2.7
450791001	South Carolina	Richland	64.3	51.6	47.7	3.9
450830009	South Carolina	Spartanburg	66.0	53.1	49.1	4.0
450910008	South Carolina	York	61.3	51.1	47.9	3.2
450918801	South Carolina	York	64.0	53.7	50.1	3.6
470010101	Tennessee	Anderson	63.7	51.1	47.7	3.4
470090101	Tennessee	Blount	67.0	53.9	50.5	3.4
470090102	Tennessee	Blount	61.0	48.8	45.7	3.1
470259991	Tennessee	Claiborne	62.7	50.4	47.5	2.9
470370011	Tennessee	Davidson	65.7	52.7	49.0	3.7
470370026	Tennessee	Davidson	66.0	52.6	49.0	3.6
470419991	Tennessee	DeKalb	61.3	49.4	46.6	2.8
470651011	Tennessee	Hamilton	64.7	52.0	48.5	3.5
470654003	Tennessee	Hamilton	67.0	53.2	49.1	4.1
470890002	Tennessee	Jefferson	67.0	53.7	50.2	3.5
470930021	Tennessee	Knox	64.3	51.3	47.8	3.5

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
470931020	Tennessee	Knox	66.7	53.4	49.8	3.6
471050109	Tennessee	Loudon	68.0	54.5	50.8	3.7
471550101	Tennessee	Sevier	67.3	54.9	51.7	3.2
471570021	Tennessee	Shelby	66.7	56.8	53.9	2.9
471570075	Tennessee	Shelby	67.3	57.1	54.0	3.1
471571004	Tennessee	Shelby	65.7	55.0	52.3	2.7
471632002	Tennessee	Sullivan	66.0	58.2	56.4	1.8
471632003	Tennessee	Sullivan	64.7	57.4	55.7	1.7
471650007	Tennessee	Sumner	66.3	52.8	49.3	3.5
471870106	Tennessee	Williamson	60.3	48.6	45.3	3.3
471890103	Tennessee	Wilson	63.5	50.0	47.0	3.0
480290032	Texas	Bexar	73.0	62.6	59.6	3.0
480290052	Texas	Bexar	72.3	62.7	59.9	2.8
480290059	Texas	Bexar	65.0	57.8	55.9	1.9
480391004	Texas	Brazoria	74.7	67.6	65.3	2.3
480391016	Texas	Brazoria	65.0	56.6	54.6	2.0
480850005	Texas	Collin	74.3	62.3	58.7	3.6
481130069	Texas	Dallas	73.0	61.0	57.5	3.5
481130075	Texas	Dallas	73.7	62.2	58.4	3.8
481130087	Texas	Dallas	64.7	54.1	51.2	2.9
481210034	Texas	Denton	78.0	65.5	62.0	3.5
481211032	Texas	Denton	74.0	62.7	59.4	3.3
481390016	Texas	Ellis	64.3	54.6	51.9	2.7
481391044	Texas	Ellis	63.7	52.9	51.6	1.3
481410029	Texas	El Paso	63.7	60.5	59.5	1.0
481410037	Texas	El Paso	71.3	67.7	66.5	1.2
481410044	Texas	El Paso	69.0	65.5	64.4	1.1
481410055	Texas	El Paso	66.0	62.6	61.6	1.0
481410057	Texas	El Paso	65.3	62.6	61.7	0.9
481410058	Texas	El Paso	70.0	65.8	64.6	1.2
481671034	Texas	Galveston	75.7	68.1	66.7	1.4
481830001	Texas	Gregg	65.3	59.4	57.9	1.5
482010024	Texas	Harris	79.3	71.9	69.5	2.4
482010026	Texas	Harris	68.3	62.7	61.1	1.6
482010029	Texas	Harris	71.3	61.5	58.6	2.9
482010046	Texas	Harris	67.0	60.7	58.7	2.0
482010047	Texas	Harris	73.7	66.3	63.5	2.8
482010051	Texas	Harris	70.0	62.1	59.2	2.9

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
482010055	Texas	Harris	76.0	67.4	64.3	3.1
482010062	Texas	Harris	63.0	58.0	56.5	1.5
482010066	Texas	Harris	75.0	65.1	61.7	3.4
482010416	Texas	Harris	72.3	65.4	63.0	2.4
482011015	Texas	Harris	65.0	59.6	58.2	1.4
482011017	Texas	Harris	71.0	64.0	62.3	1.7
482011034	Texas	Harris	73.7	66.8	64.8	2.0
482011035	Texas	Harris	71.3	64.6	62.7	1.9
482011039	Texas	Harris	68.7	62.9	61.3	1.6
482011050	Texas	Harris	70.7	62.2	60.6	1.6
482030002	Texas	Harrison	61.3	54.3	52.5	1.8
482311006	Texas	Hunt	62.3	51.9	49.6	2.3
482450009	Texas	Jefferson	64.7	55.9	54.2	1.7
482450011	Texas	Jefferson	66.7	58.4	56.9	1.5
482450022	Texas	Jefferson	67.0	58.0	56.5	1.5
482450101	Texas	Jefferson	65.7	58.1	56.8	1.3
482450102	Texas	Jefferson	63.0	54.8	53.3	1.5
482451035	Texas	Jefferson	66.7	58.0	56.5	1.5
482510003	Texas	Johnson	73.7	61.4	60.1	1.3
482570005	Texas	Kaufman	61.0	52.0	49.8	2.2
483091037	Texas	McLennan	63.0	53.3	52.3	1.0
483390078	Texas	Montgomery	73.7	65.2	62.8	2.4
483491051	Texas	Navarro	62.7	53.8	53.3	0.5
483550025	Texas	Nueces	62.3	56.8	55.5	1.3
483550026	Texas	Nueces	61.3	56.4	54.8	1.6
483611001	Texas	Orange	61.7	54.2	52.8	1.4
483970001	Texas	Rockwall	66.0	55.6	52.8	2.8
484230007	Texas	Smith	64.7	56.6	54.7	1.9
484390075	Texas	Tarrant	71.0	60.0	57.0	3.0
484391002	Texas	Tarrant	72.3	60.4	57.2	3.2
484392003	Texas	Tarrant	73.3	62.1	59.0	3.1
484393009	Texas	Tarrant	75.3	63.6	60.2	3.4
484393011	Texas	Tarrant	67.0	55.5	52.4	3.1
484530014	Texas	Travis	67.7	57.8	55.4	2.4
484530020	Texas	Travis	66.3	56.1	53.7	2.4
484790016	Texas	Webb	54.0	51.6	51.4	0.2
490030003	Utah	Box Elder	67.7	63.4	61.5	1.9
490037001	Utah	Box Elder	60.0	56.7	55.3	1.4

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
490050007	Utah	Cache	64.0	60.1	58.6	1.5
490071003	Utah	Carbon	67.0	61.3	60.5	0.8
490110004	Utah	Davis	75.7	70.5	68.0	2.5
490353006	Utah	Salt Lake	76.3	71.5	68.9	2.6
490353013	Utah	Salt Lake	76.5	72.4	70.1	2.3
490450004	Utah	Tooele	73.5	68.5	66.1	2.4
490471002	Utah	Uintah	70.7	67.8	66.8	1.0
490472002	Utah	Uintah	75.0	72.0	71.2	0.8
490472003	Utah	Uintah	88.0	84.2	83.5	0.7
490490002	Utah	Utah	71.5	66.3	63.8	2.5
490495010	Utah	Utah	72.0	67.7	65.4	2.3
490530007	Utah	Washington	65.7	61.3	59.7	1.6
490530130	Utah	Washington	65.5	61.3	60.1	1.2
490570002	Utah	Weber	73.0	68.6	66.5	2.1
490571003	Utah	Weber	73.0	68.4	66.2	2.2
500030004	Vermont	Bennington	64.3	53.3	51.3	2.0
510030001	Virginia	Albemarle	60.5	50.3	48.0	2.3
510130020	Virginia	Arlington	71.0	57.8	54.2	3.6
510330001	Virginia	Caroline	61.0	48.8	46.2	2.6
510360002	Virginia	Charles	62.3	48.8	46.7	2.1
510410004	Virginia	Chesterfield	61.3	48.2	45.8	2.4
510590030	Virginia	Fairfax	70.0	55.9	52.4	3.5
510610002	Virginia	Fauquier	58.7	48.1	45.7	2.4
510690010	Virginia	Frederick	61.3	50.9	48.5	2.4
510719991	Virginia	Giles	62.0	52.4	51.0	1.4
510850003	Virginia	Hanover	63.3	50.4	47.8	2.6
510870014	Virginia	Henrico	65.5	51.4	48.5	2.9
511071005	Virginia	Loudoun	67.0	55.3	52.5	2.8
511130003	Virginia	Madison	63.0	52.1	49.9	2.2
511479991	Virginia	Prince Edward	59.3	46.5	44.7	1.8
511530009	Virginia	Prince William	65.3	54.2	51.6	2.6
511611004	Virginia	Roanoke	61.3	50.6	48.2	2.4
511630003	Virginia	Rockbridge	58.0	48.5	46.3	2.2
511650003	Virginia	Rockingham	60.0	50.1	48.1	2.0
511790001	Virginia	Stafford	62.3	49.5	46.7	2.8
511970002	Virginia	Wythe	60.7	50.5	48.9	1.6
516500008	Virginia	Hampton City	64.3	53.0	51.1	1.9
518000004	Virginia	Suffolk City	61.0	50.7	48.7	2.0

			MDA8 Ozone DV (ppb)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
518000005	Virginia	Suffolk City	59.7	49.9	48.0	1.9
530330010	Washington	King	61.0	54.0	52.4	1.6
530330017	Washington	King	62.0	55.1	53.0	2.1
530330023	Washington	King	73.3	66.0	63.4	2.6
530670005	Washington	Thurston	60.0	52.5	50.6	1.9
540030003	West Virginia	Berkeley	62.0	51.6	48.9	2.7
540219991	West Virginia	Gilmer	58.0	52.6	51.4	1.2
540250003	West Virginia	Greenbrier	59.7	53.4	52.0	1.4
540290009	West Virginia	Hancock	65.5	52.5	50.9	1.6
540390020	West Virginia	Kanawha	67.0	61.4	59.9	1.5
540610003	West Virginia	Monongalia	62.3	56.2	54.8	1.4
540690010	West Virginia	Ohio	67.0	58.4	56.7	1.7
540939991	West Virginia	Tucker	61.7	54.6	53.2	1.4
541071002	West Virginia	Wood	65.0	55.2	53.6	1.6
550290004	Wisconsin	Door	72.7	63.3	60.9	2.4
550590019	Wisconsin	Kenosha	78.0	69.8	67.2	2.6
550590025	Wisconsin	Kenosha	73.7	65.4	62.9	2.5
550610002	Wisconsin	Kewaunee	69.3	61.3	59.1	2.2
550710007	Wisconsin	Manitowoc	73.0	63.6	61.1	2.5
550790010	Wisconsin	Milwaukee	65.3	57.3	55.1	2.2
550790026	Wisconsin	Milwaukee	68.0	60.3	58.2	2.1
550790085	Wisconsin	Milwaukee	71.7	63.3	61.0	2.3
550890008	Wisconsin	Ozaukee	71.3	63.9	61.8	2.1
550890009	Wisconsin	Ozaukee	73.3	65.2	62.8	2.4
551010020	Wisconsin	Racine	76.0	67.2	64.7	2.5
551170006	Wisconsin	Sheboygan	80.0	70.7	68.2	2.5
551170009	Wisconsin	Sheboygan	70.0	61.7	59.5	2.2
551270005	Wisconsin	Walworth	69.0	59.8	57.2	2.6
551330027	Wisconsin	Waukesha	65.7	57.5	55.4	2.1
560350099	Wyoming	Sublette	61.0	58.7	57.7	1.0
560350100	Wyoming	Sublette	62.0	59.9	58.8	1.1
560350101	Wyoming	Sublette	60.7	58.6	57.6	1.0
560359991	Wyoming	Sublette	63.3	61.2	60.2	1.0
560370200	Wyoming	Sweetwater	52.7	48.9	48.1	0.8
560370300	Wyoming	Sweetwater	66.3	62.6	61.8	0.8
560390008	Wyoming	Teton	59.3	57.5	56.7	0.8
560391011	Wyoming	Teton	61.0	59.5	58.7	0.8
560410101	Wyoming	Uinta	61.7	57.8	56.7	1.1

Appendix B

12km Annual $PM_{2.5}$ Design Value Modeling Results from 2028fh Projection, Potential CTI Strategy, and Design Value Change

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
10030010	Alabama	Baldwin	7.74	7.07	7.01	0.06
10270001	Alabama	Clay	7.81	7.03	6.96	0.07
10331002	Alabama	Colbert	7.96	7.24	7.18	0.06
10491003	Alabama	DeKalb	8.22	7.37	7.30	0.07
10550010	Alabama	Etowah	8.63	7.72	7.63	0.09
10690003	Alabama	Houston	7.71	7.07	7.01	0.06
10730023	Alabama	Jefferson	10.46	9.54	9.43	0.11
10731005	Alabama	Jefferson	8.86	8.06	7.98	0.08
10731010	Alabama	Jefferson	9.43	8.55	8.46	0.09
10732003	Alabama	Jefferson	9.51	8.70	8.61	0.09
10890014	Alabama	Madison	7.79	7.04	6.96	0.08
10970003	Alabama	Mobile	8.23	7.51	7.43	0.08
11011002	Alabama	Montgomery	8.79	8.11	8.03	0.08
11030011	Alabama	Morgan	7.96	7.22	7.14	0.08
11210002	Alabama	Talladega	9.17	8.36	8.28	0.08
11250004	Alabama	Tuscaloosa	8.14	7.32	7.25	0.07
40031005	Arizona	Cochise	5.42	5.95	5.94	0.01
40130019	Arizona	Maricopa	9.26	9.01	8.89	0.12
40131003	Arizona	Maricopa	7.28	6.99	6.90	0.09
40131004	Arizona	Maricopa	7.02	6.77	6.68	0.09
40132001	Arizona	Maricopa	6.95	6.72	6.63	0.09
40134003	Arizona	Maricopa	8.99	8.70	8.59	0.11
40134005	Arizona	Maricopa	7.01	6.81	6.72	0.09
40137020	Arizona	Maricopa	7.05	6.71	6.62	0.09
40139812	Arizona	Maricopa	9.67	9.49	9.37	0.12
40139997	Arizona	Maricopa	7.37	7.06	6.97	0.09
40190011	Arizona	Pima	6.11	5.70	5.67	0.03
40191028	Arizona	Pima	5.29	4.92	4.89	0.03
40210001	Arizona	Pinal	8.47	8.12	8.03	0.09
40213002	Arizona	Pinal	5.25	5.09	5.04	0.05
40213015	Arizona	Pinal	13.04	12.61	12.48	0.13
40230004	Arizona	Santa Cruz	9.23	9.17	9.13	0.04
40278011	Arizona	Yuma	7.58	7.30	7.25	0.05
50010011	Arkansas	Arkansas	8.40	7.67	7.61	0.06
50030005	Arkansas	Ashley	8.27	7.68	7.63	0.05
50350005	Arkansas	Crittenden	8.50	7.61	7.52	0.09
50510003	Arkansas	Garland	8.55	7.81	7.73	0.08
50670001	Arkansas	Jackson	8.32	7.53	7.47	0.06

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
51130002	Arkansas	Polk	8.39	7.66	7.60	0.06
51190007	Arkansas	Pulaski	9.50	8.79	8.69	0.10
51191008	Arkansas	Pulaski	9.93	9.18	9.08	0.10
51390006	Arkansas	Union	8.87	8.22	8.17	0.05
51430005	Arkansas	Washington	8.08	7.56	7.49	0.07
60010007	California	Alameda	8.41	8.12	8.01	0.11
60010009	California	Alameda	8.22	8.04	7.97	0.07
60070008	California	Butte	9.08	8.59	8.50	0.09
60090001	California	Calaveras	8.22	7.76	7.62	0.14
60111002	California	Colusa	7.79	7.44	7.35	0.09
60130002	California	Contra Costa	8.83	8.54	8.42	0.12
60190011	California	Fresno	14.21	12.91	12.36	0.55
60192009	California	Fresno	8.73	7.90	7.62	0.28
60195001	California	Fresno	13.73	12.74	12.29	0.45
60195025	California	Fresno	14.24	13.05	12.53	0.52
60231004	California	Humboldt	6.64	6.57	6.54	0.03
60250005	California	Imperial	12.41	13.47	13.41	0.06
60250007	California	Imperial	9.27	9.18	9.13	0.05
60251003	California	Imperial	8.11	8.19	8.15	0.04
60271003	California	Inyo	7.18	7.05	7.02	0.03
60290011	California	Kern	6.23	5.94	5.84	0.10
60290014	California	Kern	16.10	14.10	13.51	0.59
60290016	California	Kern	17.86	15.76	15.12	0.64
60310004	California	Kings	16.53	15.04	14.49	0.55
60311004	California	Kings	16.56	15.16	14.61	0.55
60333002	California	Lake	4.90	4.74	4.71	0.03
60370002	California	Los Angeles	10.29	9.91	9.80	0.11
60371103	California	Los Angeles	12.16	11.56	11.44	0.12
60371201	California	Los Angeles	9.52	9.22	9.17	0.05
60371302	California	Los Angeles	12.29	11.85	11.77	0.08
60371602	California	Los Angeles	12.05	11.54	11.44	0.10
60372005	California	Los Angeles	9.76	9.27	9.16	0.11
60374002	California	Los Angeles	10.78	10.44	10.37	0.07
60374004	California	Los Angeles	10.51	10.17	10.11	0.06
60379033	California	Los Angeles	7.39	7.12	7.04	0.08
60392010	California	Madera	12.96	12.09	11.73	0.36
60410001	California	Marin	8.62	8.48	8.43	0.05
60450006	California	Mendocino	8.01	7.72	7.65	0.07

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
60452002	California	Mendocino	7.79	7.56	7.51	0.05
60470003	California	Merced	12.63	11.84	11.52	0.32
60472510	California	Merced	12.16	11.16	10.77	0.39
60530002	California	Monterey	6.22	6.17	6.14	0.03
60530008	California	Monterey	5.63	5.56	5.51	0.05
60531003	California	Monterey	5.21	5.19	5.14	0.05
60570005	California	Nevada	4.95	4.74	4.69	0.05
60571001	California	Nevada	6.53	6.23	6.17	0.06
60592022	California	Orange	7.74	7.52	7.43	0.09
60610003	California	Placer	6.60	6.39	6.32	0.07
60610006	California	Placer	7.87	7.47	7.32	0.15
60631006	California	Plumas	9.82	9.36	9.27	0.09
60631010	California	Plumas	14.95	14.33	14.19	0.14
60652002	California	Riverside	7.91	7.82	7.74	0.08
60655001	California	Riverside	5.80	5.76	5.69	0.07
60658001	California	Riverside	12.36	11.84	11.50	0.34
60658005	California	Riverside	13.92	13.41	13.06	0.35
60670006	California	Sacramento	9.78	9.37	9.19	0.18
60670010	California	Sacramento	8.98	8.57	8.39	0.18
60690002	California	San Benito	4.82	4.71	4.65	0.06
60710306	California	San Bernardino	8.06	7.83	7.71	0.12
60712002	California	San Bernardino	11.83	11.24	10.96	0.28
60718001	California	San Bernardino	6.60	6.49	6.41	0.08
60719004	California	San Bernardino	11.17	10.69	10.41	0.28
60730001	California	San Diego	8.98	9.02	8.96	0.06
60731016	California	San Diego	7.72	7.56	7.49	0.07
60731022	California	San Diego	9.09	9.02	8.93	0.09
60750005	California	San Francisco	8.50	8.28	8.22	0.06
60771002	California	San Joaquin	12.76	12.06	11.75	0.31
60772010	California	San Joaquin	11.12	10.32	9.99	0.33
60792004	California	San Luis Obispo	7.89	7.67	7.60	0.07
60792007	California	San Luis Obispo	9.73	9.51	9.42	0.09
60798002	California	San Luis Obispo	5.91	5.52	5.41	0.11
60811001	California	San Mateo	8.01	7.92	7.85	0.07
60831008	California	Santa Barbara	7.31	7.13	7.07	0.06
60850002	California	Santa Clara	6.30	6.19	6.12	0.07
60850005	California	Santa Clara	9.47	9.34	9.26	0.08
60870007	California	Santa Cruz	5.93	5.81	5.77	0.04

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
60890004	California	Shasta	7.48	7.26	7.20	0.06
60932001	California	Siskiyou	8.95	8.66	8.59	0.07
60950004	California	Solano	9.74	9.46	9.37	0.09
60990005	California	Stanislaus	13.07	12.06	11.66	0.40
60990006	California	Stanislaus	13.46	12.58	12.21	0.37
61010003	California	Sutter	9.09	8.76	8.64	0.12
61072002	California	Tulare	15.99	14.57	14.04	0.53
61110007	California	Ventura	9.16	8.95	8.89	0.06
61110009	California	Ventura	8.28	8.07	8.00	0.07
61111004	California	Ventura	9.33	9.14	9.05	0.09
61112002	California	Ventura	8.73	8.53	8.48	0.05
61113001	California	Ventura	8.84	8.66	8.60	0.06
61131003	California	Yolo	7.80	7.36	7.21	0.15
80050005	Colorado	Arapahoe	5.89	5.40	5.28	0.12
80130003	Colorado	Boulder	6.88	6.34	6.24	0.10
80130012	Colorado	Boulder	5.64	5.27	5.19	0.08
80310002	Colorado	Denver	7.13	6.58	6.45	0.13
80350004	Colorado	Douglas	5.58	5.14	5.04	0.10
80410017	Colorado	El Paso	5.77	5.38	5.31	0.07
80677003	Colorado	La Plata	5.79	5.76	5.73	0.03
80690009	Colorado	Larimer	7.04	6.73	6.65	0.08
80770017	Colorado	Mesa	6.18	6.02	5.98	0.04
81010015	Colorado	Pueblo	5.30	5.00	4.95	0.05
81030006	Colorado	Rio Blanco	7.84	7.61	7.56	0.05
81230006	Colorado	Weld	8.45	7.74	7.63	0.11
81230008	Colorado	Weld	7.68	7.04	6.93	0.11
90010010	Connecticut	Fairfield	8.75	7.72	7.63	0.09
90011123	Connecticut	Fairfield	8.05	7.14	7.07	0.07
90031003	Connecticut	Hartford	6.75	6.04	5.99	0.05
90050005	Connecticut	Litchfield	4.66	4.15	4.12	0.03
90090027	Connecticut	New Haven	7.12	6.27	6.20	0.07
100031012	Delaware	New Castle	9.04	7.89	7.75	0.14
100051002	Delaware	Sussex	7.33	6.36	6.28	0.08
110010043	District Of Columbia	District of Columbia	9.06	7.89	7.74	0.15
120010023	Florida	Alachua	6.21	5.62	5.56	0.06
120090007	Florida	Brevard	5.61	5.14	5.10	0.04
120112003	Florida	Broward	6.59	6.29	6.24	0.05
120115005	Florida	Broward	6.32	6.06	6.00	0.06

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
120170005	Florida	Citrus	5.86	5.23	5.19	0.04
120310032	Florida	Duval	7.89	7.41	7.33	0.08
120310098	Florida	Duval	6.84	6.33	6.26	0.07
120310099	Florida	Duval	7.17	6.70	6.64	0.06
120330004	Florida	Escambia	7.45	6.88	6.82	0.06
120573002	Florida	Hillsborough	8.08	7.54	7.45	0.09
120710005	Florida	Lee	6.17	5.62	5.56	0.06
120730012	Florida	Leon	7.51	6.87	6.80	0.07
120860033	Florida	Miami-Dade	6.57	6.30	6.22	0.08
120861016	Florida	Miami-Dade	7.53	7.23	7.15	0.08
120866001	Florida	Miami-Dade	6.65	6.28	6.24	0.04
120952002	Florida	Orange	6.96	6.50	6.42	0.08
120992005	Florida	Palm Beach	5.97	5.64	5.59	0.05
121030018	Florida	Pinellas	7.07	6.57	6.51	0.06
121031009	Florida	Pinellas	6.91	6.41	6.34	0.07
121056006	Florida	Polk	6.59	6.13	6.07	0.06
121150013	Florida	Sarasota	6.43	5.85	5.79	0.06
121171002	Florida	Seminole	6.04	5.62	5.56	0.06
121275002	Florida	Volusia	6.20	5.60	5.54	0.06
130210007	Georgia	Bibb	9.68	8.92	8.82	0.10
130210012	Georgia	Bibb	7.40	6.74	6.67	0.07
130510091	Georgia	Chatham	8.23	7.55	7.46	0.09
130590002	Georgia	Clarke	8.42	7.62	7.52	0.10
130630091	Georgia	Clayton	9.49	8.54	8.42	0.12
130670003	Georgia	Cobb	9.05	8.11	7.99	0.12
130890002	Georgia	DeKalb	8.97	8.00	7.87	0.13
130950007	Georgia	Dougherty	9.07	8.42	8.35	0.07
131150003	Georgia	Floyd	9.93	8.93	8.83	0.10
131210039	Georgia	Fulton	9.90	8.93	8.77	0.16
131270006	Georgia	Glynn	7.55	6.88	6.82	0.06
131350002	Georgia	Gwinnett	8.86	7.99	7.86	0.13
131390003	Georgia	Hall	8.10	7.32	7.22	0.10
131530001	Georgia	Houston	8.40	7.71	7.64	0.07
131850003	Georgia	Lowndes	7.74	7.16	7.10	0.06
132150001	Georgia	Muscogee	9.15	8.42	8.34	0.08
132150008	Georgia	Muscogee	8.88	8.13	8.05	0.08
132150011	Georgia	Muscogee	9.42	8.68	8.59	0.09
132230003	Georgia	Paulding	7.82	6.96	6.88	0.08

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
132450091	Georgia	Richmond	9.47	8.72	8.62	0.10
132950002	Georgia	Walker	9.14	8.19	8.08	0.11
133030001	Georgia	Washington	8.30	7.63	7.56	0.07
133190001	Georgia	Wilkinson	9.89	9.15	9.06	0.09
160010010	Idaho	Ada	7.63	7.31	7.20	0.11
160050020	Idaho	Bannock	7.43	7.17	7.10	0.07
160090010	Idaho	Benewah	10.53	10.14	10.06	0.08
160270002	Idaho	Canyon	9.38	8.98	8.85	0.13
160590004	Idaho	Lemhi	12.13	11.71	11.63	0.08
160790017	Idaho	Shoshone	11.62	11.15	11.07	0.08
170190006	Illinois	Champaign	7.69	6.83	6.74	0.09
170191001	Illinois	Champaign	7.72	6.85	6.75	0.10
170310022	Illinois	Cook	9.04	8.11	7.96	0.15
170310052	Illinois	Cook	9.10	8.01	7.82	0.19
170310057	Illinois	Cook	9.71	8.54	8.33	0.21
170310076	Illinois	Cook	9.17	8.11	7.94	0.17
170313103	Illinois	Cook	10.40	9.25	9.04	0.21
170313301	Illinois	Cook	9.51	8.40	8.22	0.18
170314007	Illinois	Cook	9.62	8.50	8.31	0.19
170314201	Illinois	Cook	8.37	7.38	7.22	0.16
170316005	Illinois	Cook	9.59	8.40	8.20	0.20
170434002	Illinois	DuPage	8.56	7.60	7.44	0.16
170650002	Illinois	Hamilton	8.32	7.29	7.21	0.08
170890003	Illinois	Kane	8.22	7.29	7.14	0.15
170890007	Illinois	Kane	8.35	7.44	7.29	0.15
171110001	Illinois	McHenry	7.58	6.76	6.63	0.13
171132003	Illinois	McLean	8.34	7.36	7.25	0.11
171150013	Illinois	Macon	8.66	7.71	7.61	0.10
171191007	Illinois	Madison	9.77	8.64	8.50	0.14
171192009	Illinois	Madison	8.85	7.83	7.72	0.11
171193007	Illinois	Madison	8.72	7.72	7.60	0.12
171430037	Illinois	Peoria	8.32	7.33	7.21	0.12
171570001	Illinois	Randolph	8.47	7.47	7.38	0.09
171613002	Illinois	Rock Island	8.06	7.07	6.94	0.13
171630010	Illinois	Saint Clair	9.77	8.56	8.41	0.15
171670012	Illinois	Sangamon	8.39	7.44	7.33	0.11
171971002	Illinois	Will	7.89	6.98	6.83	0.15
171971011	Illinois	Will	7.90	6.89	6.76	0.13

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
172010013	Illinois	Winnebago	8.31	7.37	7.24	0.13
180030004	Indiana	Allen	9.09	7.91	7.76	0.15
180190006	Indiana	Clark	9.74	8.55	8.44	0.11
180190008	Indiana	Clark	8.15	7.01	6.91	0.10
180350006	Indiana	Delaware	8.35	7.35	7.22	0.13
180372001	Indiana	Dubois	9.12	7.96	7.87	0.09
180390008	Indiana	Elkhart	9.21	8.08	7.93	0.15
180431004	Indiana	Floyd	9.24	8.03	7.93	0.10
180550001	Indiana	Greene	8.26	7.18	7.10	0.08
180650003	Indiana	Henry	7.80	6.82	6.70	0.12
180890006	Indiana	Lake	9.42	8.35	8.19	0.16
180890031	Indiana	Lake	9.57	8.62	8.48	0.14
180892004	Indiana	Lake	9.28	8.22	8.05	0.17
180910011	Indiana	LaPorte	8.49	7.45	7.32	0.13
180950011	Indiana	Madison	8.58	7.51	7.37	0.14
180970078	Indiana	Marion	9.24	8.00	7.81	0.19
180970081	Indiana	Marion	10.39	9.03	8.83	0.20
180970083	Indiana	Marion	10.34	8.99	8.78	0.21
181050003	Indiana	Monroe	8.15	7.08	6.99	0.09
181270024	Indiana	Porter	8.40	7.49	7.37	0.12
181410015	Indiana	St. Joseph	9.53	8.35	8.19	0.16
181470009	Indiana	Spencer	8.89	7.76	7.67	0.09
181570008	Indiana	Tippecanoe	8.52	7.44	7.31	0.13
181630016	Indiana	Vanderburgh	9.39	8.32	8.23	0.09
181630021	Indiana	Vanderburgh	9.09	8.03	7.94	0.09
181670018	Indiana	Vigo	9.53	8.42	8.30	0.12
181830003	Indiana	Whitley	8.23	7.18	7.05	0.13
190130009	Iowa	Black Hawk	8.03	7.08	6.97	0.11
190450019	Iowa	Clinton	8.78	7.79	7.67	0.12
190450021	Iowa	Clinton	8.11	7.15	7.04	0.11
190550001	Iowa	Delaware	8.14	7.17	7.05	0.12
191032001	Iowa	Johnson	7.85	6.95	6.84	0.11
191110008	Iowa	Lee	8.70	7.75	7.63	0.12
191130040	Iowa	Linn	8.29	7.36	7.25	0.11
191370002	Iowa	Montgomery	6.63	5.92	5.83	0.09
191390015	Iowa	Muscatine	8.59	7.64	7.53	0.11
191390016	Iowa	Muscatine	7.77	6.87	6.76	0.11
191390018	Iowa	Muscatine	8.80	7.81	7.69	0.12

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
191390020	Iowa	Muscatine	8.61	7.64	7.52	0.12
191471002	Iowa	Palo Alto	6.92	6.10	6.01	0.09
191530030	Iowa	Polk	7.45	6.50	6.36	0.14
191532510	Iowa	Polk	7.39	6.44	6.31	0.13
191550009	Iowa	Pottawattamie	7.93	7.00	6.87	0.13
191630015	Iowa	Scott	8.31	7.33	7.20	0.13
191630018	Iowa	Scott	8.89	7.84	7.71	0.13
191630020	Iowa	Scott	8.82	7.79	7.66	0.13
191770006	Iowa	Van Buren	7.13	6.37	6.28	0.09
200910007	Kansas	Johnson	7.37	6.47	6.36	0.11
200910010	Kansas	Johnson	6.03	5.28	5.19	0.09
201730009	Kansas	Sedgwick	8.03	7.22	7.12	0.10
201730010	Kansas	Sedgwick	8.11	7.27	7.18	0.09
201770013	Kansas	Shawnee	7.93	7.06	6.97	0.09
201910002	Kansas	Sumner	7.16	6.42	6.35	0.07
202090021	Kansas	Wyandotte	8.93	7.92	7.79	0.13
210130002	Kentucky	Bell	8.86	7.95	7.86	0.09
210190017	Kentucky	Boyd	8.03	7.06	6.99	0.07
210373002	Kentucky	Campbell	8.48	7.24	7.10	0.14
210430500	Kentucky	Carter	6.79	5.93	5.88	0.05
210470006	Kentucky	Christian	8.65	7.63	7.54	0.09
210590005	Kentucky	Daviess	8.98	7.86	7.77	0.09
210670012	Kentucky	Fayette	8.46	7.28	7.17	0.11
210930006	Kentucky	Hardin	8.63	7.41	7.31	0.10
211010014	Kentucky	Henderson	9.09	8.01	7.92	0.09
211110043	Kentucky	Jefferson	10.04	8.78	8.67	0.11
211110051	Kentucky	Jefferson	9.52	8.37	8.26	0.11
211110067	Kentucky	Jefferson	8.87	7.81	7.70	0.11
211510003	Kentucky	Madison	7.85	6.71	6.62	0.09
211950002	Kentucky	Pike	7.54	6.62	6.56	0.06
211990003	Kentucky	Pulaski	8.00	6.96	6.88	0.08
220170008	Louisiana	Caddo	10.20	9.51	9.43	0.08
220190009	Louisiana	Calcasieu	7.53	6.90	6.86	0.04
220330009	Louisiana	East Baton Rouge	9.09	8.64	8.60	0.04
220470005	Louisiana	Iberville	8.40	8.05	8.02	0.03
220511001	Louisiana	Jefferson	7.20	6.68	6.62	0.06
220512001	Louisiana	Jefferson	7.44	6.89	6.82	0.07
220550007	Louisiana	Lafayette	7.71	7.20	7.17	0.03

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
220730004	Louisiana	Ouachita	8.04	7.46	7.40	0.06
220870007	Louisiana	St. Bernard	8.63	8.02	7.94	0.08
221050001	Louisiana	Tangipahoa	7.43	6.78	6.73	0.05
221090001	Louisiana	Terrebonne	7.14	6.63	6.61	0.02
221210001	Louisiana	West Baton Rouge	9.06	8.64	8.60	0.04
240031003	Maryland	Anne Arundel	8.98	7.85	7.71	0.14
240051007	Maryland	Baltimore	7.92	6.83	6.70	0.13
240053001	Maryland	Baltimore	8.79	7.67	7.54	0.13
240150003	Maryland	Cecil	8.31	7.28	7.16	0.12
240230002	Maryland	Garrett	5.64	4.97	4.93	0.04
240251001	Maryland	Harford	8.17	7.13	7.01	0.12
240290002	Maryland	Kent	7.61	6.75	6.65	0.10
240313001	Maryland	Montgomery	7.57	6.67	6.56	0.11
240330030	Maryland	Prince George's	8.16	7.24	7.11	0.13
240338003	Maryland	Prince George's	7.31	6.29	6.18	0.11
240430009	Maryland	Washington	8.36	7.39	7.29	0.10
245100008	Maryland	Baltimore (City)	9.24	7.98	7.82	0.16
245100040	Maryland	Baltimore (City)	8.71	7.59	7.44	0.15
250035001	Massachusetts	Berkshire	6.16	5.61	5.56	0.05
250051004	Massachusetts	Bristol	6.19	5.55	5.50	0.05
250092006	Massachusetts	Essex	5.64	5.07	5.02	0.05
250095005	Massachusetts	Essex	5.35	4.91	4.87	0.04
250096001	Massachusetts	Essex	5.43	5.00	4.96	0.04
250130008	Massachusetts	Hampden	5.55	5.03	4.98	0.05
250130016	Massachusetts	Hampden	6.80	6.21	6.16	0.05
250250002	Massachusetts	Suffolk	6.27	5.67	5.61	0.06
250250042	Massachusetts	Suffolk	7.04	6.31	6.24	0.07
250250043	Massachusetts	Suffolk	7.18	6.52	6.45	0.07
250270016	Massachusetts	Worcester	5.81	5.32	5.27	0.05
250270023	Massachusetts	Worcester	6.03	5.54	5.49	0.05
260050003	Michigan	Allegan	7.55	6.68	6.56	0.12
260170014	Michigan	Bay	7.20	6.45	6.36	0.09
260210014	Michigan	Berrien	7.91	6.96	6.84	0.12
260490021	Michigan	Genesee	7.59	6.74	6.64	0.10
260650012	Michigan	Ingham	8.05	7.17	7.06	0.11
260770008	Michigan	Kalamazoo	8.50	7.50	7.37	0.13
260810007	Michigan	Kent	9.23	8.26	8.13	0.13
260810020	Michigan	Kent	8.56	7.65	7.53	0.12

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
260910007	Michigan	Lenawee	7.93	6.99	6.88	0.11
260990009	Michigan	Macomb	8.19	7.29	7.19	0.10
261010922	Michigan	Manistee	5.91	5.33	5.26	0.07
261130001	Michigan	Missaukee	5.15	4.69	4.64	0.05
261250001	Michigan	Oakland	8.46	7.41	7.27	0.14
261470005	Michigan	St. Clair	8.42	7.66	7.58	0.08
261610008	Michigan	Washtenaw	8.50	7.51	7.38	0.13
261630001	Michigan	Wayne	9.07	8.02	7.88	0.14
261630015	Michigan	Wayne	11.22	9.94	9.79	0.15
261630016	Michigan	Wayne	9.30	8.27	8.13	0.14
261630019	Michigan	Wayne	8.63	7.65	7.52	0.13
261630025	Michigan	Wayne	8.44	7.38	7.24	0.14
261630033	Michigan	Wayne	10.94	9.88	9.73	0.15
261630036	Michigan	Wayne	8.04	7.11	6.99	0.12
261630039	Michigan	Wayne	9.11	8.08	7.95	0.13
270031002	Minnesota	Anoka	6.81	6.11	6.01	0.10
270370470	Minnesota	Dakota	6.82	6.17	6.07	0.10
270530963	Minnesota	Hennepin	7.36	6.62	6.50	0.12
270532006	Minnesota	Hennepin	6.95	6.26	6.15	0.11
270834210	Minnesota	Lyon	5.15	4.62	4.56	0.06
271095008	Minnesota	Olmsted	6.85	6.04	5.93	0.11
271230868	Minnesota	Ramsey	7.92	7.20	7.09	0.11
271230871	Minnesota	Ramsey	7.20	6.52	6.41	0.11
271377001	Minnesota	Saint Louis	4.93	4.71	4.68	0.03
271377550	Minnesota	Saint Louis	4.52	4.24	4.20	0.04
271377554	Minnesota	Saint Louis	5.32	4.98	4.93	0.05
271390505	Minnesota	Scott	6.73	6.08	5.99	0.09
271453052	Minnesota	Stearns	5.84	5.31	5.24	0.07
271630448	Minnesota	Washington	6.58	5.99	5.90	0.09
280330002	Mississippi	DeSoto	7.62	6.83	6.76	0.07
280350004	Mississippi	Forrest	8.77	8.05	7.99	0.06
280430001	Mississippi	Grenada	7.26	6.52	6.47	0.05
280450003	Mississippi	Hancock	8.02	7.35	7.30	0.05
280470008	Mississippi	Harrison	7.88	7.20	7.14	0.06
280590006	Mississippi	Jackson	8.08	7.34	7.28	0.06
290210005	Missouri	Buchanan	8.92	8.00	7.88	0.12
290370003	Missouri	Cass	7.42	6.65	6.56	0.09
290390001	Missouri	Cedar	7.00	6.32	6.25	0.07

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
290470005	Missouri	Clay	7.07	6.26	6.15	0.11
290950034	Missouri	Jackson	8.85	7.86	7.73	0.13
290990019	Missouri	Jefferson	9.11	8.10	7.97	0.13
291893001	Missouri	Saint Louis	9.48	8.26	8.09	0.17
295100007	Missouri	St. Louis City	9.04	7.93	7.79	0.14
295100085	Missouri	St. Louis City	9.14	7.96	7.81	0.15
300290049	Montana	Flathead	8.71	8.41	8.36	0.05
300490004	Montana	Lewis and Clark	3.72	3.61	3.59	0.02
300490026	Montana	Lewis and Clark	9.19	8.85	8.79	0.06
300530018	Montana	Lincoln	12.43	11.97	11.90	0.07
300630024	Montana	Missoula	9.33	8.96	8.90	0.06
300630037	Montana	Missoula	10.63	10.26	10.19	0.07
300750001	Montana	Powder River	7.31	7.12	7.09	0.03
300810007	Montana	Ravalli	10.32	9.97	9.91	0.06
300830001	Montana	Richland	6.46	6.29	6.27	0.02
300870001	Montana	Rosebud	6.15	5.98	5.95	0.03
300930005	Montana	Silver Bow	9.33	8.80	8.70	0.10
310550019	Nebraska	Douglas	8.73	7.55	7.40	0.15
310550052	Nebraska	Douglas	7.02	6.20	6.08	0.12
310790004	Nebraska	Hall	5.92	5.35	5.28	0.07
311090022	Nebraska	Lancaster	6.62	5.89	5.80	0.09
311530007	Nebraska	Sarpy	8.76	7.76	7.63	0.13
311770002	Nebraska	Washington	6.80	5.99	5.90	0.09
320030540	Nevada	Clark	8.47	7.81	7.71	0.10
320030561	Nevada	Clark	9.85	9.08	8.97	0.11
320031019	Nevada	Clark	5.17	4.96	4.92	0.04
320032002	Nevada	Clark	9.54	8.84	8.74	0.10
320310016	Nevada	Washoe	7.25	6.90	6.82	0.08
320311005	Nevada	Washoe	7.68	7.44	7.35	0.09
330012004	New Hampshire	Belknap	4.61	4.22	4.19	0.03
330050007	New Hampshire	Cheshire	6.59	6.08	6.04	0.04
330090010	New Hampshire	Grafton	5.83	5.43	5.40	0.03
330115001	New Hampshire	Hillsborough	4.55	4.12	4.09	0.03
330150014	New Hampshire	Rockingham	5.71	5.24	5.20	0.04
330150018	New Hampshire	Rockingham	5.52	5.04	5.00	0.04
340010006	New Jersey	Atlantic	6.81	5.98	5.92	0.06
340011006	New Jersey	Atlantic	7.24	6.44	6.37	0.07
340030003	New Jersey	Bergen	8.32	7.14	7.00	0.14

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
340071007	New Jersey	Camden	8.24	7.24	7.13	0.11
340130003	New Jersey	Essex	8.63	7.56	7.42	0.14
340150004	New Jersey	Gloucester	8.33	7.16	7.03	0.13
340171003	New Jersey	Hudson	8.45	7.35	7.21	0.14
340210008	New Jersey	Mercer	7.66	6.82	6.73	0.09
340273001	New Jersey	Morris	6.37	5.62	5.55	0.07
340292002	New Jersey	Ocean	6.91	6.01	5.93	0.08
340310005	New Jersey	Passaic	8.01	6.94	6.83	0.11
340390004	New Jersey	Union	9.58	8.24	8.09	0.15
340392003	New Jersey	Union	8.15	7.00	6.87	0.13
340410007	New Jersey	Warren	8.42	7.44	7.35	0.09
350010023	New Mexico	Bernalillo	5.76	5.44	5.38	0.06
350130025	New Mexico	Dona Ana	5.13	4.84	4.81	0.03
350250008	New Mexico	Lea	7.38	7.29	7.26	0.03
360010005	New York	Albany	6.99	6.25	6.18	0.07
360010012	New York	Albany	6.09	5.42	5.35	0.07
360050110	New York	Bronx	7.09	6.12	6.00	0.12
360050133	New York	Bronx	8.59	7.42	7.28	0.14
360290005	New York	Erie	7.65	6.82	6.74	0.08
360310003	New York	Essex	3.77	3.42	3.40	0.02
360470122	New York	Kings	8.21	7.15	7.02	0.13
360551007	New York	Monroe	6.49	5.78	5.71	0.07
360610079	New York	New York	8.03	6.91	6.77	0.14
360610128	New York	New York	9.78	8.61	8.46	0.15
360610134	New York	New York	9.36	8.24	8.09	0.15
360671015	New York	Onondaga	5.52	4.89	4.84	0.05
360710002	New York	Orange	6.56	5.80	5.74	0.06
360810124	New York	Queens	7.26	6.34	6.22	0.12
360850055	New York	Richmond	7.51	6.44	6.32	0.12
361010003	New York	Steuben	4.98	4.38	4.34	0.04
361030002	New York	Suffolk	6.90	5.96	5.86	0.10
370210034	North Carolina	Buncombe	7.42	6.61	6.53	0.08
370350004	North Carolina	Catawba	8.73	8.00	7.90	0.10
370510009	North Carolina	Cumberland	8.29	7.54	7.45	0.09
370570002	North Carolina	Davidson	8.69	8.01	7.90	0.11
370630015	North Carolina	Durham	8.70	7.92	7.81	0.11
370670022	North Carolina	Forsyth	7.73	6.98	6.88	0.10
370810013	North Carolina	Guilford	8.10	7.31	7.21	0.10

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
370990006	North Carolina	Jackson	7.78	7.06	6.98	0.08
371010002	North Carolina	Johnston	7.51	6.78	6.70	0.08
371190041	North Carolina	Mecklenburg	8.49	7.98	7.85	0.13
371190042	North Carolina	Mecklenburg	8.75	8.26	8.12	0.14
371190045	North Carolina	Mecklenburg	8.63	8.06	7.93	0.13
371230001	North Carolina	Montgomery	6.67	6.05	5.98	0.07
371290002	North Carolina	New Hanover	5.48	4.89	4.84	0.05
371470006	North Carolina	Pitt	6.92	6.16	6.09	0.07
371730002	North Carolina	Swain	8.16	7.41	7.33	0.08
371830014	North Carolina	Wake	8.76	8.10	7.98	0.12
380070002	North Dakota	Billings	4.06	3.90	3.88	0.02
380130004	North Dakota	Burke	3.76	3.62	3.60	0.02
380150003	North Dakota	Burleigh	4.83	4.49	4.46	0.03
380171004	North Dakota	Cass	6.35	5.83	5.76	0.07
380250003	North Dakota	Dunn	5.44	5.21	5.19	0.02
380530002	North Dakota	McKenzie	3.57	3.49	3.48	0.01
380570004	North Dakota	Mercer	3.95	3.73	3.72	0.01
380650002	North Dakota	Oliver	4.81	4.51	4.49	0.02
390030009	Ohio	Allen	8.32	7.19	7.07	0.12
390090003	Ohio	Athens	6.76	5.83	5.77	0.06
390170016	Ohio	Butler	9.22	8.07	7.92	0.15
390170019	Ohio	Butler	9.53	8.41	8.25	0.16
390230005	Ohio	Clark	8.76	7.66	7.54	0.12
390350034	Ohio	Cuyahoga	8.28	7.15	7.05	0.10
390350038	Ohio	Cuyahoga	10.59	9.36	9.23	0.13
390350045	Ohio	Cuyahoga	10.05	8.78	8.66	0.12
390350060	Ohio	Cuyahoga	9.18	8.01	7.91	0.10
390350065	Ohio	Cuyahoga	11.59	10.18	10.04	0.14
390351002	Ohio	Cuyahoga	8.34	7.23	7.12	0.11
390490024	Ohio	Franklin	9.27	8.03	7.87	0.16
390490029	Ohio	Franklin	9.15	7.88	7.72	0.16
390490081	Ohio	Franklin	8.75	7.52	7.36	0.16
390570005	Ohio	Greene	8.08	7.04	6.91	0.13
390610006	Ohio	Hamilton	9.13	7.95	7.80	0.15
390610010	Ohio	Hamilton	9.06	7.86	7.71	0.15
390610014	Ohio	Hamilton	10.16	8.95	8.79	0.16
390610040	Ohio	Hamilton	9.15	7.98	7.83	0.15
390610042	Ohio	Hamilton	9.66	8.43	8.27	0.16

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
390810017	Ohio	Jefferson	10.64	9.13	9.03	0.10
390850007	Ohio	Lake	7.42	6.49	6.41	0.08
390870012	Ohio	Lawrence	6.85	6.02	5.96	0.06
390933002	Ohio	Lorain	7.71	6.82	6.71	0.11
390950024	Ohio	Lucas	9.09	8.03	7.89	0.14
390950026	Ohio	Lucas	8.67	7.66	7.52	0.14
390950028	Ohio	Lucas	9.59	8.50	8.35	0.15
390990005	Ohio	Mahoning	9.29	8.13	8.02	0.11
390990014	Ohio	Mahoning	8.64	7.57	7.47	0.10
391030004	Ohio	Medina	8.20	7.10	7.00	0.10
391330002	Ohio	Portage	7.52	6.46	6.37	0.09
391351001	Ohio	Preble	7.97	7.01	6.90	0.11
391450013	Ohio	Scioto	8.34	7.24	7.17	0.07
391510017	Ohio	Stark	10.05	8.87	8.77	0.10
391510020	Ohio	Stark	9.52	8.32	8.23	0.09
391530017	Ohio	Summit	10.04	8.71	8.57	0.14
391530023	Ohio	Summit	8.49	7.32	7.20	0.12
400710604	Oklahoma	Kay	7.74	7.08	7.01	0.07
401090035	Oklahoma	Oklahoma	7.72	7.10	7.00	0.10
401091037	Oklahoma	Oklahoma	8.25	7.55	7.44	0.11
401210415	Oklahoma	Pittsburg	7.96	7.22	7.16	0.06
401359021	Oklahoma	Sequoyah	8.27	7.71	7.64	0.07
401431127	Oklahoma	Tulsa	9.01	8.21	8.11	0.10
410130100	Oregon	Crook	8.94	8.71	8.66	0.05
410250003	Oregon	Harney	9.15	8.84	8.77	0.07
410290133	Oregon	Jackson	10.51	10.17	10.11	0.06
410330114	Oregon	Josephine	8.80	8.51	8.45	0.06
410350004	Oregon	Klamath	9.96	9.68	9.63	0.05
410370001	Oregon	Lake	8.13	7.89	7.84	0.05
410390059	Oregon	Lane	7.88	7.60	7.55	0.05
410390060	Oregon	Lane	7.10	6.82	6.77	0.05
410391009	Oregon	Lane	6.99	6.72	6.67	0.05
410392013	Oregon	Lane	9.22	8.82	8.75	0.07
410399004	Oregon	Lane	7.14	6.84	6.79	0.05
410510080	Oregon	Multnomah	6.77	6.47	6.41	0.06
410670004	Oregon	Washington	7.25	6.96	6.91	0.05
420010001	Pennsylvania	Adams	8.15	7.36	7.27	0.09
420030008	Pennsylvania	Allegheny	9.26	8.04	7.95	0.09

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
420030064	Pennsylvania	Allegheny	12.81	11.02	10.91	0.11
420031008	Pennsylvania	Allegheny	9.70	8.42	8.33	0.09
420031301	Pennsylvania	Allegheny	10.82	9.29	9.19	0.10
420050001	Pennsylvania	Armstrong	10.26	9.05	8.96	0.09
420070014	Pennsylvania	Beaver	9.59	8.44	8.35	0.09
420110011	Pennsylvania	Berks	9.05	7.93	7.79	0.14
420130801	Pennsylvania	Blair	9.14	7.86	7.79	0.07
420210011	Pennsylvania	Cambria	10.39	9.00	8.91	0.09
420270100	Pennsylvania	Centre	8.07	7.02	6.94	0.08
420290100	Pennsylvania	Chester	9.83	8.72	8.58	0.14
420410101	Pennsylvania	Cumberland	8.67	7.99	7.89	0.10
420430401	Pennsylvania	Dauphin	9.35	8.42	8.30	0.12
420450002	Pennsylvania	Delaware	10.82	9.67	9.53	0.14
420490003	Pennsylvania	Erie	8.55	7.77	7.69	0.08
420692006	Pennsylvania	Lackawanna	8.70	7.76	7.67	0.09
420710007	Pennsylvania	Lancaster	9.88	8.64	8.49	0.15
420750100	Pennsylvania	Lebanon	10.17	8.95	8.81	0.14
420850100	Pennsylvania	Mercer	9.42	8.23	8.12	0.11
420890002	Pennsylvania	Monroe	7.36	6.40	6.32	0.08
420950025	Pennsylvania	Northampton	8.92	8.06	7.95	0.11
421010004	Pennsylvania	Philadelphia	8.41	7.39	7.27	0.12
421010055	Pennsylvania	Philadelphia	10.70	9.35	9.20	0.15
421010057	Pennsylvania	Philadelphia	10.06	8.87	8.73	0.14
421250005	Pennsylvania	Washington	9.64	8.29	8.21	0.08
421250200	Pennsylvania	Washington	8.65	7.50	7.43	0.07
421255001	Pennsylvania	Washington	7.96	6.71	6.64	0.07
421290008	Pennsylvania	Westmoreland	8.94	7.89	7.80	0.09
421330008	Pennsylvania	York	9.60	8.45	8.33	0.12
440030002	Rhode Island	Kent	4.77	4.19	4.15	0.04
440070022	Rhode Island	Providence	6.44	5.73	5.67	0.06
440070026	Rhode Island	Providence	7.10	6.42	6.35	0.07
440071010	Rhode Island	Providence	6.76	6.06	5.99	0.07
450190048	South Carolina	Charleston	7.18	6.53	6.45	0.08
450190049	South Carolina	Charleston	7.17	6.49	6.42	0.07
450250001	South Carolina	Chesterfield	7.47	6.80	6.72	0.08
450370001	South Carolina	Edgefield	8.37	7.57	7.48	0.09
450410003	South Carolina	Florence	8.63	7.85	7.74	0.11
450450015	South Carolina	Greenville	8.92	8.30	8.20	0.10

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
450450016	South Carolina	Greenville	8.25	7.58	7.48	0.10
450630008	South Carolina	Lexington	8.63	7.95	7.85	0.10
450790007	South Carolina	Richland	8.10	7.38	7.28	0.10
450790019	South Carolina	Richland	8.86	8.15	8.04	0.11
450830011	South Carolina	Spartanburg	8.35	7.74	7.64	0.10
460130003	South Dakota	Brown	5.92	5.48	5.43	0.05
460290002	South Dakota	Codington	6.28	5.75	5.69	0.06
460330132	South Dakota	Custer	3.35	3.22	3.20	0.02
460710001	South Dakota	Jackson	3.62	3.46	3.45	0.01
460990008	South Dakota	Minnehaha	6.77	6.00	5.91	0.09
461030020	South Dakota	Pennington	7.27	6.94	6.89	0.05
461031001	South Dakota	Pennington	5.44	5.21	5.17	0.04
461270001	South Dakota	Union	6.81	6.12	6.04	0.08
470090011	Tennessee	Blount	8.11	7.42	7.33	0.09
470370023	Tennessee	Davidson	8.99	8.11	7.99	0.12
470450004	Tennessee	Dyer	7.11	6.40	6.34	0.06
470650031	Tennessee	Hamilton	8.37	7.52	7.42	0.10
470654002	Tennessee	Hamilton	8.48	7.55	7.46	0.09
470930028	Tennessee	Knox	8.83	8.02	7.90	0.12
470931013	Tennessee	Knox	9.90	9.01	8.88	0.13
470931017	Tennessee	Knox	9.53	8.64	8.52	0.12
470931020	Tennessee	Knox	8.64	7.75	7.63	0.12
470990002	Tennessee	Lawrence	6.84	6.16	6.11	0.05
471050109	Tennessee	Loudon	8.65	7.93	7.84	0.09
471071002	Tennessee	McMinn	8.36	7.59	7.50	0.09
471130006	Tennessee	Madison	7.03	6.32	6.25	0.07
471192007	Tennessee	Maury	6.94	6.18	6.11	0.07
471251009	Tennessee	Montgomery	8.15	7.27	7.18	0.09
471410005	Tennessee	Putnam	7.44	6.53	6.46	0.07
471450004	Tennessee	Roane	8.12	7.24	7.16	0.08
471570024	Tennessee	Shelby	8.50	7.53	7.43	0.10
471570075	Tennessee	Shelby	7.74	6.95	6.87	0.08
471631007	Tennessee	Sullivan	7.55	6.81	6.74	0.07
471650007	Tennessee	Sumner	7.92	7.07	6.98	0.09
480290032	Texas	Bexar	8.27	7.64	7.57	0.07
480290059	Texas	Bexar	8.27	7.65	7.60	0.05
481130069	Texas	Dallas	8.77	7.85	7.75	0.10
481410037	Texas	El Paso	7.41	7.46	7.42	0.04

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
481410044	Texas	El Paso	9.13	9.22	9.17	0.05
482010058	Texas	Harris	9.45	8.99	8.94	0.05
482011035	Texas	Harris	10.66	10.16	10.08	0.08
482011039	Texas	Harris	8.67	8.12	8.07	0.05
482030002	Texas	Harrison	8.64	7.87	7.81	0.06
482150043	Texas	Hidalgo	10.33	10.27	10.22	0.05
483550032	Texas	Nueces	9.44	8.81	8.77	0.04
484391002	Texas	Tarrant	8.48	7.74	7.65	0.09
484391006	Texas	Tarrant	8.75	8.01	7.93	0.08
484530020	Texas	Travis	7.78	7.04	6.99	0.05
484530021	Texas	Travis	9.66	8.91	8.83	0.08
490030003	Utah	Box Elder	7.09	6.45	6.29	0.16
490050007	Utah	Cache	7.60	6.99	6.84	0.15
490110004	Utah	Davis	7.80	7.07	6.85	0.22
490351001	Utah	Salt Lake	7.14	6.46	6.22	0.24
490353006	Utah	Salt Lake	7.81	6.95	6.68	0.27
490353010	Utah	Salt Lake	8.75	7.81	7.52	0.29
490490002	Utah	Utah	7.05	6.31	6.07	0.24
490494001	Utah	Utah	8.08	7.28	7.03	0.25
490495010	Utah	Utah	7.17	6.46	6.24	0.22
490570002	Utah	Weber	8.69	7.77	7.51	0.26
500030004	Vermont	Bennington	5.57	5.11	5.08	0.03
500070007	Vermont	Chittenden	3.36	3.13	3.12	0.01
500210002	Vermont	Rutland	7.51	7.12	7.08	0.04
510030001	Virginia	Albemarle	6.85	6.02	5.95	0.07
510130020	Virginia	Arlington	8.02	6.97	6.85	0.12
510360002	Virginia	Charles	6.97	6.11	6.04	0.07
510410003	Virginia	Chesterfield	8.02	7.08	6.99	0.09
510590030	Virginia	Fairfax	7.22	6.26	6.16	0.10
510690010	Virginia	Frederick	7.94	7.00	6.92	0.08
510870014	Virginia	Henrico	7.38	6.49	6.41	0.08
510870015	Virginia	Henrico	7.29	6.34	6.26	0.08
511071005	Virginia	Loudoun	7.69	6.77	6.69	0.08
511650003	Virginia	Rockingham	7.55	6.72	6.64	0.08
515200006	Virginia	Bristol City	7.62	6.83	6.76	0.07
516500008	Virginia	Hampton City	6.59	5.84	5.79	0.05
516800015	Virginia	Lynchburg City	6.83	5.99	5.93	0.06
517100024	Virginia	Norfolk City	7.07	6.34	6.27	0.07

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
517750011	Virginia	Salem City	7.70	6.75	6.67	0.08
518100008	Virginia	Virginia Beach City	7.10	6.38	6.32	0.06
530110024	Washington	Clark	7.51	7.21	7.15	0.06
530330057	Washington	King	8.52	8.26	8.18	0.08
530330080	Washington	King	6.21	6.07	6.01	0.06
530332004	Washington	King	6.52	6.31	6.25	0.06
530530029	Washington	Pierce	7.39	7.15	7.08	0.07
530610005	Washington	Snohomish	5.12	4.93	4.88	0.05
530610020	Washington	Snohomish	6.60	6.37	6.33	0.04
530611007	Washington	Snohomish	7.37	7.16	7.10	0.06
530630021	Washington	Spokane	9.57	9.30	9.23	0.07
530770009	Washington	Yakima	9.37	8.65	8.50	0.15
540030003	West Virginia	Berkeley	9.21	8.16	8.05	0.11
540090005	West Virginia	Brooke	9.75	8.36	8.28	0.08
540090011	West Virginia	Brooke	9.31	7.97	7.89	0.08
540330003	West Virginia	Harrison	7.92	7.02	6.95	0.07
540391005	West Virginia	Kanawha	8.28	7.22	7.14	0.08
540511002	West Virginia	Marshall	9.66	8.61	8.53	0.08
540610003	West Virginia	Monongalia	7.63	6.64	6.58	0.06
540690010	West Virginia	Ohio	8.75	7.54	7.46	0.08
541071002	West Virginia	Wood	8.44	7.51	7.44	0.07
550030010	Wisconsin	Ashland	4.34	3.99	3.94	0.05
550090005	Wisconsin	Brown	7.13	6.59	6.50	0.09
550250041	Wisconsin	Dane	8.11	7.37	7.24	0.13
550250047	Wisconsin	Dane	8.16	7.35	7.23	0.12
550270001	Wisconsin	Dodge	7.12	6.46	6.36	0.10
550350014	Wisconsin	Eau Claire	6.82	6.15	6.05	0.10
550410007	Wisconsin	Forest	4.37	3.92	3.87	0.05
550430009	Wisconsin	Grant	7.38	6.53	6.43	0.10
550590019	Wisconsin	Kenosha	7.49	6.65	6.52	0.13
550630012	Wisconsin	La Crosse	6.94	6.27	6.18	0.09
550790010	Wisconsin	Milwaukee	8.49	7.69	7.57	0.12
550790026	Wisconsin	Milwaukee	8.01	7.23	7.11	0.12
550790058	Wisconsin	Milwaukee	8.08	7.34	7.22	0.12
550870009	Wisconsin	Outagamie	6.83	6.25	6.17	0.08
550890009	Wisconsin	Ozaukee	6.85	6.19	6.10	0.09
551110007	Wisconsin	Sauk	6.69	5.96	5.86	0.10
551198001	Wisconsin	Taylor	5.68	5.14	5.07	0.07

			Annual $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
551250001	Wisconsin	Vilas	4.62	4.22	4.17	0.05
551330027	Wisconsin	Waukesha	8.56	7.77	7.65	0.12
560010006	Wyoming	Albany	4.33	4.12	4.08	0.04
560050891	Wyoming	Campbell	4.40	4.28	4.27	0.01
560050892	Wyoming	Campbell	4.50	4.40	4.38	0.02
560051899	Wyoming	Campbell	3.74	3.66	3.65	0.01
560131003	Wyoming	Fremont	6.84	6.62	6.58	0.04
560210001	Wyoming	Laramie	4.21	3.98	3.94	0.04
560210100	Wyoming	Laramie	3.99	3.76	3.73	0.03
560250001	Wyoming	Natrona	4.85	4.66	4.63	0.03
560290001	Wyoming	Park	4.13	4.02	4.00	0.02
560330002	Wyoming	Sheridan	7.17	6.94	6.90	0.04
560350101	Wyoming	Sublette	5.13	5.01	4.99	0.02
560370007	Wyoming	Sweetwater	5.05	4.78	4.73	0.05
560391006	Wyoming	Teton	4.61	4.50	4.46	0.04

Appendix C

12km Daily (24-hour) $PM_{2.5}$ Design Value Modeling Results from 2028fh Projection, Potential CTI Strategy, and Design Value Change

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
10030010	Alabama	Baldwin	16.6	15.5	15.4	0.1
10270001	Alabama	Clay	17.2	15.9	15.7	0.2
10331002	Alabama	Colbert	16.4	14.9	14.7	0.2
10491003	Alabama	DeKalb	16.2	14.9	14.7	0.2
10550010	Alabama	Etowah	16.4	15.0	14.8	0.2
10690003	Alabama	Houston	15.7	14.6	14.5	0.1
10730023	Alabama	Jefferson	21.8	20.3	20.0	0.3
10731005	Alabama	Jefferson	17.3	16.1	15.9	0.2
10731010	Alabama	Jefferson	17.9	16.6	16.4	0.2
10732003	Alabama	Jefferson	18.2	17.1	16.9	0.2
10732059	Alabama	Jefferson	22.0	20.5	20.2	0.3
10890014	Alabama	Madison	15.8	14.8	14.7	0.1
10970003	Alabama	Mobile	17.1	15.9	15.8	0.1
11011002	Alabama	Montgomery	18.9	17.8	17.6	0.2
11030011	Alabama	Morgan	15.8	14.7	14.5	0.2
11210002	Alabama	Talladega	18.0	16.6	16.4	0.2
11250004	Alabama	Tuscaloosa	16.4	14.9	14.8	0.1
40031005	Arizona	Cochise	11.8	13.4	13.4	0.0
40128000	Arizona	La Paz	9.4	9.2	9.2	0.0
40130019	Arizona	Maricopa	27.2	25.3	24.7	0.6
40131003	Arizona	Maricopa	16.8	15.4	15.1	0.3
40131004	Arizona	Maricopa	17.9	16.3	15.9	0.4
40132001	Arizona	Maricopa	18.0	16.9	16.6	0.3
40134003	Arizona	Maricopa	25.3	23.5	23.0	0.5
40134005	Arizona	Maricopa	15.7	14.3	13.9	0.4
40134019	Arizona	Maricopa	19.1	17.1	16.5	0.6
40137020	Arizona	Maricopa	15.1	15.1	14.9	0.2
40139812	Arizona	Maricopa	25.9	23.6	22.9	0.7
40139997	Arizona	Maricopa	21.3	19.5	19.0	0.5
40190011	Arizona	Pima	15.6	14.9	14.7	0.2
40191028	Arizona	Pima	12.0	11.5	11.5	0.0
40210001	Arizona	Pinal	19.0	17.8	17.6	0.2
40213002	Arizona	Pinal	11.2	11.0	10.9	0.1
40213015	Arizona	Pinal	35.5	34.2	33.7	0.5
40230004	Arizona	Santa Cruz	27.0	26.4	26.3	0.1
40278011	Arizona	Yuma	20.6	20.2	19.9	0.3
50010011	Arkansas	Arkansas	18.4	17.2	17.1	0.1
50030005	Arkansas	Ashley	17.7	16.5	16.4	0.1

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
50350005	Arkansas	Crittenden	17.8	15.8	15.4	0.4
50510003	Arkansas	Garland	17.7	16.1	15.9	0.2
50670001	Arkansas	Jackson	20.3	18.9	18.7	0.2
51130002	Arkansas	Polk	18.7	17.1	17.0	0.1
51190007	Arkansas	Pulaski	19.6	18.4	18.2	0.2
51191008	Arkansas	Pulaski	21.2	19.9	19.7	0.2
51390006	Arkansas	Union	18.4	17.4	17.3	0.1
51430005	Arkansas	Washington	18.4	17.2	17.0	0.2
60010007	California	Alameda	29.0	26.7	25.5	1.2
60010009	California	Alameda	29.1	28.0	27.4	0.6
60010011	California	Alameda	32.6	31.1	30.5	0.6
60010012	California	Alameda	31.4	29.9	29.4	0.5
60010013	California	Alameda	41.2	39.8	39.3	0.5
60070008	California	Butte	30.5	29.0	28.7	0.3
60090001	California	Calaveras	20.1	18.3	17.6	0.7
60111002	California	Colusa	26.1	25.0	24.6	0.4
60130002	California	Contra Costa	29.0	27.1	26.4	0.7
60131004	California	Contra Costa	32.2	31.1	30.6	0.5
60190011	California	Fresno	55.3	47.6	44.1	3.5
60192009	California	Fresno	33.7	28.7	27.2	1.5
60195001	California	Fresno	48.3	41.2	38.2	3.0
60195025	California	Fresno	53.0	47.0	43.2	3.8
60231004	California	Humboldt	20.8	20.8	20.7	0.1
60250005	California	Imperial	33.1	34.2	33.9	0.3
60250007	California	Imperial	24.9	25.1	24.9	0.2
60251003	California	Imperial	20.5	20.5	20.3	0.2
60270002	California	Inyo	23.8	23.5	23.5	0.0
60271003	California	Inyo	28.0	27.7	27.6	0.1
60290010	California	Kern	63.1	57.7	55.7	2.0
60290011	California	Kern	19.0	18.4	18.2	0.2
60290014	California	Kern	60.9	55.9	53.9	2.0
60290016	California	Kern	60.2	55.7	53.9	1.8
60310004	California	Kings	15.5	12.0	10.7	1.3
60311004	California	Kings	58.9	49.1	45.3	3.8
60333002	California	Lake	10.0	9.8	9.7	0.1
60370002	California	Los Angeles	26.7	24.5	23.6	0.9
60371103	California	Los Angeles	32.3	29.3	28.2	1.1
60371201	California	Los Angeles	23.7	22.1	21.8	0.3

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
60371302	California	Los Angeles	36.7	33.7	32.4	1.3
60371602	California	Los Angeles	32.0	30.5	30.0	0.5
60372005	California	Los Angeles	25.0	22.8	21.9	0.9
60374002	California	Los Angeles	30.0	27.7	26.8	0.9
60374004	California	Los Angeles	28.5	26.4	25.6	0.8
60374008	California	Los Angeles	32.6	29.8	28.7	1.1
60379033	California	Los Angeles	17.5	17.1	16.9	0.2
60392010	California	Madera	43.5	36.0	33.1	2.9
60410001	California	Marin	30.2	29.5	29.1	0.4
60450006	California	Mendocino	25.8	25.0	24.7	0.3
60452002	California	Mendocino	25.3	24.5	24.2	0.3
60470003	California	Merced	40.9	35.4	33.9	1.5
60472510	California	Merced	40.1	34.5	32.5	2.0
60530002	California	Monterey	28.8	28.5	28.3	0.2
60530008	California	Monterey	16.0	15.8	15.7	0.1
60531003	California	Monterey	15.1	15.0	14.8	0.2
60550003	California	Napa	30.2	29.3	29.2	0.1
60570005	California	Nevada	25.4	24.3	23.9	0.4
60571001	California	Nevada	26.7	25.5	25.2	0.3
60590007	California	Orange	31.3	29.7	28.8	0.9
60592022	California	Orange	15.3	14.9	14.7	0.2
60610003	California	Placer	21.1	20.4	20.1	0.3
60610006	California	Placer	23.6	22.2	21.6	0.6
60631006	California	Plumas	36.3	34.7	34.2	0.5
60631010	California	Plumas	48.8	46.8	46.3	0.5
60652002	California	Riverside	16.0	15.7	15.5	0.2
60655001	California	Riverside	13.6	13.6	13.4	0.2
60658001	California	Riverside	33.4	31.7	30.2	1.5
60658005	California	Riverside	39.6	38.0	36.6	1.4
60670006	California	Sacramento	33.9	32.0	31.0	1.0
60670010	California	Sacramento	30.1	27.8	26.7	1.1
60670012	California	Sacramento	23.0	22.0	21.5	0.5
60690002	California	San Benito	16.6	16.2	15.9	0.3
60710027	California	San Bernardino	35.4	33.6	32.4	1.2
60710306	California	San Bernardino	18.3	18.1	17.7	0.4
60712002	California	San Bernardino	29.2	28.2	27.2	1.0
60718001	California	San Bernardino	23.7	23.2	22.9	0.3
60719004	California	San Bernardino	28.7	27.4	26.4	1.0

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
60730001	California	San Diego	22.0	21.9	21.6	0.3
60731016	California	San Diego	16.0	15.5	15.3	0.2
60731022	California	San Diego	19.2	18.9	18.6	0.3
60750005	California	San Francisco	30.5	28.6	28.2	0.4
60771002	California	San Joaquin	44.5	39.4	37.1	2.3
60772010	California	San Joaquin	42.5	36.5	33.6	2.9
60792004	California	San Luis Obispo	20.1	19.9	19.8	0.1
60792007	California	San Luis Obispo	25.4	25.1	25.0	0.1
60798002	California	San Luis Obispo	19.9	18.4	17.9	0.5
60811001	California	San Mateo	26.4	24.8	24.1	0.7
60831008	California	Santa Barbara	16.1	15.9	15.8	0.1
60832011	California	Santa Barbara	21.1	20.9	20.7	0.2
60850002	California	Santa Clara	20.2	19.0	18.6	0.4
60850005	California	Santa Clara	31.0	28.7	27.4	1.3
60850006	California	Santa Clara	35.1	32.7	31.8	0.9
60870007	California	Santa Cruz	16.3	16.2	15.9	0.3
60871005	California	Santa Cruz	19.4	18.4	18.0	0.4
60890004	California	Shasta	28.6	27.8	27.5	0.3
60932001	California	Siskiyou	44.3	43.1	42.8	0.3
60950004	California	Solano	34.2	33.1	32.5	0.6
60970004	California	Sonoma	24.1	23.4	23.2	0.2
60990005	California	Stanislaus	46.9	38.9	35.9	3.0
60990006	California	Stanislaus	49.5	41.4	38.6	2.8
61010003	California	Sutter	28.3	27.6	27.2	0.4
61072002	California	Tulare	55.7	46.1	41.6	4.5
61110007	California	Ventura	20.5	19.5	19.2	0.3
61110009	California	Ventura	19.3	18.5	18.2	0.3
61111004	California	Ventura	33.9	33.0	32.5	0.5
61112002	California	Ventura	20.7	19.8	19.5	0.3
61113001	California	Ventura	19.5	18.6	18.3	0.3
61131003	California	Yolo	30.0	28.7	28.0	0.7
80050005	Colorado	Arapahoe	17.3	16.5	15.8	0.7
80130003	Colorado	Boulder	24.0	22.3	21.6	0.7
80130012	Colorado	Boulder	17.6	16.4	16.0	0.4
80310002	Colorado	Denver	20.2	19.2	18.6	0.6
80310026	Colorado	Denver	19.8	18.9	18.5	0.4
80310027	Colorado	Denver	23.5	21.7	20.9	0.8
80310028	Colorado	Denver	24.0	22.2	21.0	1.2

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
80350004	Colorado	Douglas	19.6	18.6	18.1	0.5
80410017	Colorado	El Paso	15.5	14.9	14.7	0.2
80677003	Colorado	La Plata	18.8	18.8	18.7	0.1
80690009	Colorado	Larimer	20.4	19.9	19.5	0.4
80770017	Colorado	Mesa	18.5	18.0	17.9	0.1
81010015	Colorado	Pueblo	14.6	13.6	13.5	0.1
81030006	Colorado	Rio Blanco	14.5	14.2	14.1	0.1
81230006	Colorado	Weld	25.4	23.2	22.8	0.4
81230008	Colorado	Weld	24.8	23.5	22.7	0.8
90010010	Connecticut	Fairfield	21.7	19.2	18.9	0.3
90011123	Connecticut	Fairfield	21.9	19.9	19.6	0.3
90030025	Connecticut	Hartford	19.0	16.8	16.6	0.2
90031003	Connecticut	Hartford	18.1	16.0	15.8	0.2
90050005	Connecticut	Litchfield	13.3	11.7	11.6	0.1
90090027	Connecticut	New Haven	19.4	17.1	16.7	0.4
90110124	Connecticut	New London	16.5	14.9	14.6	0.3
100031012	Delaware	New Castle	23.0	20.4	19.9	0.5
100051002	Delaware	Sussex	16.8	15.2	14.9	0.3
110010043	District Of Columbia	District of Columbia	20.5	18.9	18.4	0.5
120010023	Florida	Alachua	14.8	13.4	13.3	0.1
120090007	Florida	Brevard	13.1	12.6	12.5	0.1
120110034	Florida	Broward	15.5	15.6	15.4	0.2
120112003	Florida	Broward	15.6	15.9	15.8	0.1
120115005	Florida	Broward	14.6	15.0	14.8	0.2
120170005	Florida	Citrus	12.8	11.8	11.7	0.1
120310032	Florida	Duval	17.1	16.9	16.7	0.2
120310098	Florida	Duval	15.5	14.6	14.5	0.1
120310099	Florida	Duval	16.3	15.8	15.7	0.1
120330004	Florida	Escambia	15.3	14.4	14.3	0.1
120573002	Florida	Hillsborough	17.6	16.8	16.6	0.2
120710005	Florida	Lee	13.0	12.0	11.8	0.2
120730012	Florida	Leon	17.5	16.6	16.4	0.2
120860033	Florida	Miami-Dade	15.1	15.4	15.2	0.2
120861016	Florida	Miami-Dade	15.7	15.9	15.7	0.2
120866001	Florida	Miami-Dade	15.3	15.2	15.1	0.1
120952002	Florida	Orange	15.1	14.7	14.6	0.1
120992005	Florida	Palm Beach	13.3	13.7	13.6	0.1
121030018	Florida	Pinellas	16.3	15.7	15.6	0.1

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
121031009	Florida	Pinellas	17.2	16.2	16.1	0.1
121056006	Florida	Polk	13.9	13.2	13.1	0.1
121150013	Florida	Sarasota	14.5	13.2	13.1	0.1
121171002	Florida	Seminole	14.4	13.6	13.4	0.2
121275002	Florida	Volusia	13.1	12.2	12.1	0.1
130210007	Georgia	Bibb	20.0	18.6	18.4	0.2
130210012	Georgia	Bibb	16.5	15.1	14.9	0.2
130510091	Georgia	Chatham	20.1	19.0	18.8	0.2
130590002	Georgia	Clarke	17.3	15.8	15.5	0.3
130630091	Georgia	Clayton	18.4	17.4	17.1	0.3
130670003	Georgia	Cobb	17.8	16.5	16.3	0.2
130890002	Georgia	DeKalb	19.2	18.1	17.8	0.3
130950007	Georgia	Dougherty	22.3	21.3	21.2	0.1
131150003	Georgia	Floyd	19.9	18.3	18.1	0.2
131210039	Georgia	Fulton	18.9	17.6	17.3	0.3
131210056	Georgia	Fulton	21.8	20.6	20.3	0.3
131270006	Georgia	Glynn	22.5	21.1	20.9	0.2
131350002	Georgia	Gwinnett	19.3	18.5	18.2	0.3
131390003	Georgia	Hall	19.3	18.2	17.9	0.3
131530001	Georgia	Houston	18.3	17.1	17.0	0.1
131850003	Georgia	Lowndes	17.4	16.5	16.4	0.1
132150001	Georgia	Muscogee	18.7	17.7	17.6	0.1
132150008	Georgia	Muscogee	18.6	17.4	17.2	0.2
132150011	Georgia	Muscogee	28.3	26.7	26.4	0.3
132230003	Georgia	Paulding	16.1	14.7	14.5	0.2
132450091	Georgia	Richmond	23.3	22.1	21.8	0.3
132950002	Georgia	Walker	18.5	17.2	17.0	0.2
133030001	Georgia	Washington	21.5	20.0	19.8	0.2
133190001	Georgia	Wilkinson	21.1	19.8	19.6	0.2
160010010	Idaho	Ada	30.8	30.9	30.6	0.3
160050020	Idaho	Bannock	25.4	24.6	24.3	0.3
160090010	Idaho	Benewah	38.2	35.4	35.0	0.4
160270002	Idaho	Canyon	33.5	33.9	33.7	0.2
160410001	Idaho	Franklin	30.1	28.0	27.3	0.7
160590004	Idaho	Lemhi	43.5	42.3	42.1	0.2
160790017	Idaho	Shoshone	38.7	36.6	36.3	0.3
170190006	Illinois	Champaign	16.7	14.7	14.5	0.2
170191001	Illinois	Champaign	16.5	14.5	14.0	0.5

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
170310001	Illinois	Cook	20.0	17.8	17.3	0.5
170310022	Illinois	Cook	20.6	18.8	18.2	0.6
170310052	Illinois	Cook	21.9	19.2	18.7	0.5
170310057	Illinois	Cook	23.1	20.1	19.3	0.8
170310076	Illinois	Cook	21.0	18.3	17.7	0.6
170313103	Illinois	Cook	22.2	19.7	19.0	0.7
170313301	Illinois	Cook	22.3	19.8	18.9	0.9
170314007	Illinois	Cook	22.5	19.6	19.0	0.6
170314201	Illinois	Cook	20.6	17.9	17.2	0.7
170316005	Illinois	Cook	22.9	20.4	19.9	0.5
170434002	Illinois	DuPage	19.9	17.3	16.5	0.8
170650002	Illinois	Hamilton	17.6	15.0	14.7	0.3
170890003	Illinois	Kane	18.5	16.4	15.9	0.5
170890007	Illinois	Kane	19.0	17.1	16.8	0.3
171110001	Illinois	McHenry	16.9	15.0	14.6	0.4
171132003	Illinois	McLean	17.8	15.5	15.1	0.4
171150013	Illinois	Macon	18.5	16.1	15.7	0.4
171190024	Illinois	Madison	21.4	19.1	18.8	0.3
171191007	Illinois	Madison	19.5	17.1	16.8	0.3
171192009	Illinois	Madison	19.8	17.5	17.2	0.3
171193007	Illinois	Madison	20.3	18.2	18.0	0.2
171430037	Illinois	Peoria	18.2	15.7	15.4	0.3
171570001	Illinois	Randolph	18.1	16.0	15.5	0.5
171613002	Illinois	Rock Island	20.2	17.7	17.2	0.5
171630010	Illinois	Saint Clair	19.6	17.0	16.6	0.4
171670012	Illinois	Sangamon	20.0	17.5	17.1	0.4
171971002	Illinois	Will	18.6	16.4	15.7	0.7
171971011	Illinois	Will	17.5	15.5	15.0	0.5
172010013	Illinois	Winnebago	18.0	16.0	15.8	0.2
180030004	Indiana	Allen	21.8	19.1	18.3	0.8
180050008	Indiana	Bartholomew	17.6	15.4	15.2	0.2
180190006	Indiana	Clark	22.3	19.6	19.1	0.5
180190008	Indiana	Clark	18.0	15.5	15.3	0.2
180350006	Indiana	Delaware	18.8	16.8	16.1	0.7
180372001	Indiana	Dubois	21.1	18.1	17.7	0.4
180390008	Indiana	Elkhart	25.1	22.6	21.9	0.7
180431004	Indiana	Floyd	19.9	17.7	17.5	0.2
180550001	Indiana	Greene	19.9	17.6	17.1	0.5

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
180570007	Indiana	Hamilton	19.4	16.8	16.2	0.6
180650003	Indiana	Henry	17.0	15.3	14.8	0.5
180670004	Indiana	Howard	19.8	17.4	16.8	0.6
180890006	Indiana	Lake	21.6	19.9	19.4	0.5
180890022	Indiana	Lake	21.1	19.5	19.2	0.3
180890026	Indiana	Lake	23.4	21.2	20.6	0.6
180890031	Indiana	Lake	22.6	20.7	20.4	0.3
180892004	Indiana	Lake	23.2	20.9	20.4	0.5
180910011	Indiana	LaPorte	20.7	18.7	18.2	0.5
180950011	Indiana	Madison	19.5	17.5	17.0	0.5
180970043	Indiana	Marion	23.2	19.4	18.6	0.8
180970078	Indiana	Marion	21.0	17.8	17.2	0.6
180970081	Indiana	Marion	23.6	20.0	19.1	0.9
180970083	Indiana	Marion	22.4	19.4	18.9	0.5
180970087	Indiana	Marion	24.4	20.6	19.9	0.7
181050003	Indiana	Monroe	17.8	15.5	15.1	0.4
181270024	Indiana	Porter	20.5	18.8	18.3	0.5
181410015	Indiana	St. Joseph	22.0	19.6	19.2	0.4
181470009	Indiana	Spencer	19.8	16.8	16.4	0.4
181570008	Indiana	Tippecanoe	19.6	17.1	16.5	0.6
181630016	Indiana	Vanderburgh	20.2	16.8	16.6	0.2
181630021	Indiana	Vanderburgh	18.9	15.8	15.6	0.2
181630023	Indiana	Vanderburgh	20.0	16.8	16.7	0.1
181670018	Indiana	Vigo	22.0	19.2	18.9	0.3
181830003	Indiana	Whitley	20.4	18.2	17.7	0.5
190130009	Iowa	Black Hawk	20.3	17.0	16.5	0.5
190450019	Iowa	Clinton	21.3	18.8	18.3	0.5
190450021	Iowa	Clinton	20.0	17.2	16.7	0.5
190550001	Iowa	Delaware	20.5	17.6	16.9	0.7
191032001	Iowa	Johnson	19.1	16.4	15.9	0.5
191110008	Iowa	Lee	19.5	17.2	16.9	0.3
191130040	Iowa	Linn	20.4	17.8	17.3	0.5
191370002	Iowa	Montgomery	16.5	15.0	14.7	0.3
191390015	Iowa	Muscatine	22.2	19.8	19.5	0.3
191390016	Iowa	Muscatine	19.5	17.0	16.6	0.4
191390018	Iowa	Muscatine	23.1	20.5	20.1	0.4
191390020	Iowa	Muscatine	22.1	19.4	19.1	0.3
191471002	Iowa	Palo Alto	16.7	14.5	14.2	0.3

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
191530030	Iowa	Polk	17.9	15.4	15.0	0.4
191532510	Iowa	Polk	17.9	15.3	14.9	0.4
191550009	Iowa	Pottawattamie	18.6	16.3	16.0	0.3
191630015	Iowa	Scott	20.4	17.9	17.6	0.3
191630018	Iowa	Scott	22.5	19.7	19.2	0.5
191630020	Iowa	Scott	22.7	19.7	19.3	0.4
191770006	Iowa	Van Buren	18.4	16.5	16.0	0.5
191930021	Iowa	Woodbury	18.0	15.5	15.3	0.2
200910007	Kansas	Johnson	17.2	14.9	14.5	0.4
200910010	Kansas	Johnson	14.0	12.0	11.8	0.2
201330003	Kansas	Neosho	18.7	16.5	16.3	0.2
201730009	Kansas	Sedgwick	21.3	18.4	18.0	0.4
201730010	Kansas	Sedgwick	21.9	18.7	17.9	0.8
201731012	Kansas	Sedgwick	19.1	16.4	15.9	0.5
201770013	Kansas	Shawnee	19.7	17.5	17.2	0.3
201910002	Kansas	Sumner	18.3	15.9	15.5	0.4
202090021	Kansas	Wyandotte	21.8	19.0	18.6	0.4
210130002	Kentucky	Bell	25.1	23.4	23.1	0.3
210190017	Kentucky	Boyd	17.5	15.4	15.3	0.1
210373002	Kentucky	Campbell	19.1	17.2	16.9	0.3
210430500	Kentucky	Carter	16.1	14.4	14.2	0.2
210470006	Kentucky	Christian	18.6	16.1	15.9	0.2
210590005	Kentucky	Daviess	19.4	16.4	16.1	0.3
210670012	Kentucky	Fayette	18.4	15.8	15.4	0.4
210930006	Kentucky	Hardin	18.0	16.0	15.6	0.4
211010014	Kentucky	Henderson	18.8	15.6	15.3	0.3
211110043	Kentucky	Jefferson	20.8	18.7	18.4	0.3
211110051	Kentucky	Jefferson	20.3	18.2	18.0	0.2
211110067	Kentucky	Jefferson	19.7	17.7	17.3	0.4
211110075	Kentucky	Jefferson	21.3	18.9	18.5	0.4
211451024	Kentucky	McCracken	18.2	16.3	16.0	0.3
211510003	Kentucky	Madison	17.7	15.3	15.0	0.3
211930003	Kentucky	Perry	19.1	17.4	17.2	0.2
211950002	Kentucky	Pike	20.1	18.1	17.9	0.2
211990003	Kentucky	Pulaski	17.5	15.1	14.9	0.2
212270009	Kentucky	Warren	17.8	15.7	15.5	0.2
220170008	Louisiana	Caddo	20.9	20.0	19.9	0.1
220190009	Louisiana	Calcasieu	18.4	17.1	17.0	0.1

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
220330009	Louisiana	East Baton Rouge	21.0	20.8	20.7	0.1
220470005	Louisiana	Iberville	19.1	18.6	18.6	0.0
220511001	Louisiana	Jefferson	17.9	17.1	17.0	0.1
220512001	Louisiana	Jefferson	17.6	16.8	16.7	0.1
220550007	Louisiana	Lafayette	16.4	16.1	16.0	0.1
220710021	Louisiana	Orleans	17.9	17.0	16.8	0.2
220730004	Louisiana	Ouachita	19.9	18.4	18.2	0.2
220870007	Louisiana	St. Bernard	18.8	17.8	17.6	0.2
221050001	Louisiana	Tangipahoa	16.0	15.0	14.9	0.1
221090001	Louisiana	Terrebonne	15.7	14.8	14.8	0.0
221210001	Louisiana	West Baton Rouge	18.9	18.6	18.5	0.1
230010011	Maine	Androscoggin	16.7	14.9	14.8	0.1
230030014	Maine	Aroostook	18.8	17.0	17.0	0.0
230031011	Maine	Aroostook	14.2	13.2	13.2	0.0
230050015	Maine	Cumberland	14.5	13.0	12.8	0.2
230050029	Maine	Cumberland	16.6	15.1	15.0	0.1
230090103	Maine	Hancock	11.3	10.3	10.2	0.1
230110016	Maine	Kennebec	15.4	13.8	13.7	0.1
230172011	Maine	Oxford	19.8	17.9	17.7	0.2
230190002	Maine	Penobscot	15.1	13.6	13.5	0.1
240031003	Maryland	Anne Arundel	21.5	19.3	18.9	0.4
240051007	Maryland	Baltimore	20.2	18.2	17.6	0.6
240053001	Maryland	Baltimore	21.5	19.1	18.7	0.4
240150003	Maryland	Cecil	20.5	18.5	18.2	0.3
240190004	Maryland	Dorchester	17.1	15.2	15.0	0.2
240230002	Maryland	Garrett	13.9	12.2	12.0	0.2
240251001	Maryland	Harford	20.1	18.4	18.1	0.3
240270006	Maryland	Howard	19.7	17.9	17.5	0.4
240290002	Maryland	Kent	17.4	15.4	15.2	0.2
240313001	Maryland	Montgomery	17.7	15.9	15.5	0.4
240330030	Maryland	Prince George's	17.9	16.6	16.3	0.3
240338003	Maryland	Prince George's	16.4	14.2	13.9	0.3
240430009	Maryland	Washington	20.4	18.7	18.4	0.3
245100008	Maryland	Baltimore (City)	23.1	20.3	19.8	0.5
245100040	Maryland	Baltimore (City)	21.8	19.2	18.7	0.5
250035001	Massachusetts	Berkshire	15.5	14.0	13.9	0.1
250051004	Massachusetts	Bristol	15.0	13.5	13.3	0.2
250092006	Massachusetts	Essex	15.3	13.8	13.5	0.3

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
250095005	Massachusetts	Essex	13.7	12.4	12.3	0.1
250096001	Massachusetts	Essex	12.6	11.1	11.0	0.1
250112005	Massachusetts	Franklin	14.9	13.5	13.3	0.2
250130008	Massachusetts	Hampden	14.2	13.0	12.8	0.2
250130016	Massachusetts	Hampden	17.7	16.0	15.8	0.2
250154002	Massachusetts	Hampshire	14.3	13.0	12.9	0.1
250230005	Massachusetts	Plymouth	15.8	14.2	14.0	0.2
250250002	Massachusetts	Suffolk	13.6	11.5	11.4	0.1
250250042	Massachusetts	Suffolk	16.7	14.5	14.2	0.3
250250043	Massachusetts	Suffolk	15.2	13.5	13.3	0.2
250250044	Massachusetts	Suffolk	16.3	14.3	14.1	0.2
250270016	Massachusetts	Worcester	14.0	12.7	12.6	0.1
250270023	Massachusetts	Worcester	15.7	14.5	14.3	0.2
260050003	Michigan	Allegan	20.8	18.5	17.9	0.6
260170014	Michigan	Bay	21.0	18.7	18.1	0.6
260210014	Michigan	Berrien	19.8	17.8	17.3	0.5
260490021	Michigan	Genesee	20.1	17.7	17.1	0.6
260650012	Michigan	Ingham	20.7	18.3	17.7	0.6
260770008	Michigan	Kalamazoo	21.8	19.7	19.1	0.6
260810007	Michigan	Kent	24.4	22.3	21.8	0.5
260810020	Michigan	Kent	21.8	19.3	18.7	0.6
260910007	Michigan	Lenawee	19.7	17.6	17.2	0.4
260990009	Michigan	Macomb	22.6	19.8	19.1	0.7
261010922	Michigan	Manistee	16.5	14.5	14.2	0.3
261130001	Michigan	Missaukee	15.0	13.3	12.9	0.4
261150006	Michigan	Monroe	22.0	19.7	19.2	0.5
261250001	Michigan	Oakland	22.4	19.6	18.9	0.7
261470005	Michigan	St. Clair	21.9	19.5	19.0	0.5
261610008	Michigan	Washtenaw	20.8	18.6	18.0	0.6
261630001	Michigan	Wayne	22.2	19.6	19.1	0.5
261630015	Michigan	Wayne	26.9	23.8	23.4	0.4
261630016	Michigan	Wayne	23.7	21.0	20.6	0.4
261630019	Michigan	Wayne	20.7	18.1	17.4	0.7
261630025	Michigan	Wayne	21.6	19.1	18.5	0.6
261630033	Michigan	Wayne	26.1	23.2	22.8	0.4
261630036	Michigan	Wayne	20.3	18.0	17.4	0.6
261630039	Michigan	Wayne	22.2	19.6	19.0	0.6
261630095	Michigan	Wayne	22.1	19.4	18.8	0.6

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
270031002	Minnesota	Anoka	18.9	16.9	16.6	0.3
270052013	Minnesota	Becker	16.2	15.5	15.4	0.1
270072304	Minnesota	Beltrami	15.5	14.3	14.1	0.2
270177417	Minnesota	Carlton	14.8	13.6	13.4	0.2
270317810	Minnesota	Cook	11.6	10.8	10.6	0.2
270353204	Minnesota	Crow Wing	16.0	14.1	13.7	0.4
270370470	Minnesota	Dakota	17.1	15.4	15.0	0.4
270370480	Minnesota	Dakota	16.1	14.4	14.0	0.4
270530962	Minnesota	Hennepin	19.3	17.2	16.7	0.5
270530963	Minnesota	Hennepin	18.5	16.5	16.0	0.5
270532006	Minnesota	Hennepin	17.9	15.8	15.4	0.4
270750005	Minnesota	Lake	12.2	11.3	11.2	0.1
270834210	Minnesota	Lyon	16.0	13.6	13.1	0.5
271095008	Minnesota	Olmsted	17.7	15.2	14.8	0.4
271230868	Minnesota	Ramsey	20.9	18.3	17.9	0.4
271230871	Minnesota	Ramsey	19.6	17.3	16.8	0.5
271377001	Minnesota	Saint Louis	14.5	13.7	13.6	0.1
271377550	Minnesota	Saint Louis	15.0	13.5	13.2	0.3
271377554	Minnesota	Saint Louis	16.3	15.2	15.0	0.2
271390505	Minnesota	Scott	16.8	15.1	14.8	0.3
271453052	Minnesota	Stearns	16.5	14.8	14.5	0.3
271630448	Minnesota	Washington	19.5	17.5	17.1	0.4
271713201	Minnesota	Wright	17.5	15.7	15.5	0.2
280330002	Mississippi	DeSoto	16.0	14.3	14.1	0.2
280350004	Mississippi	Forrest	17.7	16.5	16.4	0.1
280430001	Mississippi	Grenada	14.9	13.3	13.1	0.2
280450003	Mississippi	Hancock	18.0	17.0	16.9	0.1
280470008	Mississippi	Harrison	17.2	16.1	15.9	0.2
280490020	Mississippi	Hinds	18.9	17.5	17.2	0.3
280490021	Mississippi	Hinds	19.1	17.6	17.3	0.3
280590006	Mississippi	Jackson	17.3	16.0	15.8	0.2
290210005	Missouri	Buchanan	19.0	16.7	16.3	0.4
290370003	Missouri	Cass	17.0	14.8	14.5	0.3
290390001	Missouri	Cedar	16.7	14.9	14.7	0.2
290470005	Missouri	Clay	16.1	14.2	13.8	0.4
290770036	Missouri	Greene	16.2	13.8	13.6	0.2
290950034	Missouri	Jackson	19.7	17.1	16.6	0.5
290950042	Missouri	Jackson	16.1	13.8	13.6	0.2

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
290990019	Missouri	Jefferson	20.5	18.1	17.7	0.4
291893001	Missouri	Saint Louis	20.9	18.1	17.7	0.4
295100007	Missouri	St. Louis City	21.5	18.5	18.0	0.5
295100085	Missouri	St. Louis City	20.9	17.9	17.3	0.6
295100093	Missouri	St. Louis City	21.4	18.6	18.0	0.6
295100094	Missouri	St. Louis City	20.7	17.7	17.1	0.6
300270006	Montana	Fergus	25.1	24.6	24.6	0.0
300290049	Montana	Flathead	42.7	41.4	41.2	0.2
300310017	Montana	Gallatin	30.4	30.1	30.0	0.1
300490004	Montana	Lewis and Clark	26.4	26.1	26.0	0.1
300490026	Montana	Lewis and Clark	42.3	41.0	40.8	0.2
300530018	Montana	Lincoln	45.3	43.0	42.7	0.3
300630024	Montana	Missoula	44.7	42.9	42.6	0.3
300630037	Montana	Missoula	39.7	38.4	38.1	0.3
300710010	Montana	Phillips	24.6	24.0	24.0	0.0
300750001	Montana	Powder River	27.1	26.4	26.3	0.1
300810007	Montana	Ravalli	57.5	56.2	55.9	0.3
300830001	Montana	Richland	22.0	21.4	21.4	0.0
300870001	Montana	Rosebud	25.6	25.0	25.0	0.0
300930005	Montana	Silver Bow	35.1	33.6	33.3	0.3
310550019	Nebraska	Douglas	20.3	17.1	16.7	0.4
310550052	Nebraska	Douglas	17.0	14.7	14.4	0.3
310790004	Nebraska	Hall	14.2	12.8	12.6	0.2
311090022	Nebraska	Lancaster	17.2	15.0	14.6	0.4
311530007	Nebraska	Sarpy	18.9	16.4	16.2	0.2
311770002	Nebraska	Washington	15.9	13.9	13.8	0.1
320030298	Nevada	Clark	14.8	14.4	14.3	0.1
320030540	Nevada	Clark	22.9	21.7	21.4	0.3
320030561	Nevada	Clark	24.1	22.4	22.0	0.4
320031019	Nevada	Clark	11.7	11.6	11.5	0.1
320032002	Nevada	Clark	20.5	19.2	18.9	0.3
320050007	Nevada	Douglas	27.7	26.7	26.5	0.2
320310016	Nevada	Washoe	22.3	21.3	20.9	0.4
320311005	Nevada	Washoe	25.0	23.6	23.1	0.5
325100020	Nevada	Carson City	18.3	17.6	17.3	0.3
330012004	New Hampshire	Belknap	10.2	9.0	8.9	0.1
330050007	New Hampshire	Cheshire	20.2	18.5	18.4	0.1
330090010	New Hampshire	Grafton	14.5	13.6	13.5	0.1

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
330115001	New Hampshire	Hillsborough	11.7	10.4	10.3	0.1
330150014	New Hampshire	Rockingham	13.8	12.4	12.2	0.2
330150018	New Hampshire	Rockingham	13.7	12.2	12.1	0.1
340010006	New Jersey	Atlantic	15.3	13.4	13.2	0.2
340011006	New Jersey	Atlantic	16.4	14.6	14.4	0.2
340030003	New Jersey	Bergen	21.1	18.4	17.8	0.6
340030010	New Jersey	Bergen	22.3	19.8	19.3	0.5
340070002	New Jersey	Camden	24.1	21.4	21.1	0.3
340071007	New Jersey	Camden	19.0	17.2	16.8	0.4
340130003	New Jersey	Essex	21.1	19.0	18.6	0.4
340150004	New Jersey	Gloucester	20.5	18.3	18.0	0.3
340170008	New Jersey	Hudson	18.6	16.0	15.4	0.6
340171003	New Jersey	Hudson	20.8	18.3	17.8	0.5
340210005	New Jersey	Mercer	17.2	15.4	15.1	0.3
340210008	New Jersey	Mercer	19.5	17.3	16.9	0.4
340230011	New Jersey	Middlesex	18.5	16.6	16.2	0.4
340273001	New Jersey	Morris	15.6	13.8	13.4	0.4
340292002	New Jersey	Ocean	17.3	15.0	14.7	0.3
340310005	New Jersey	Passaic	19.7	17.0	16.4	0.6
340390004	New Jersey	Union	22.6	19.8	19.3	0.5
340392003	New Jersey	Union	20.4	17.8	17.3	0.5
340410007	New Jersey	Warren	21.7	19.6	19.2	0.4
350010023	New Mexico	Bernalillo	17.6	16.9	16.6	0.3
350010029	New Mexico	Bernalillo	18.8	18.3	18.1	0.2
350130016	New Mexico	Dona Ana	20.5	19.9	19.7	0.2
350130021	New Mexico	Dona Ana	27.4	27.1	26.9	0.2
350130025	New Mexico	Dona Ana	11.6	11.2	11.1	0.1
350250008	New Mexico	Lea	15.9	15.6	15.6	0.0
360010005	New York	Albany	18.0	16.2	15.9	0.3
360010012	New York	Albany	15.9	14.2	14.0	0.2
360050110	New York	Bronx	18.5	16.6	16.1	0.5
360050133	New York	Bronx	21.7	19.5	19.0	0.5
360130006	New York	Chautauqua	15.0	13.5	13.2	0.3
360290002	New York	Erie	15.2	13.3	13.1	0.2
360290005	New York	Erie	18.1	16.1	15.8	0.3
360290023	New York	Erie	16.3	14.5	14.2	0.3
360310003	New York	Essex	11.0	9.4	9.4	0.0
360470122	New York	Kings	19.1	16.9	16.7	0.2

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
360550015	New York	Monroe	16.4	14.5	14.1	0.4
360551007	New York	Monroe	15.9	14.0	13.6	0.4
360610079	New York	New York	20.1	17.6	17.0	0.6
360610128	New York	New York	23.2	20.6	20.0	0.6
360610134	New York	New York	20.4	18.0	17.6	0.4
360671015	New York	Onondaga	14.1	12.3	12.1	0.2
360710002	New York	Orange	15.8	14.1	13.9	0.2
360810124	New York	Queens	18.5	16.2	15.7	0.5
360850055	New York	Richmond	18.4	16.0	15.5	0.5
361010003	New York	Steuben	12.4	10.6	10.5	0.1
361030002	New York	Suffolk	17.0	14.7	14.4	0.3
370210034	North Carolina	Buncombe	22.4	21.0	20.7	0.3
370350004	North Carolina	Catawba	19.4	18.7	18.5	0.2
370510009	North Carolina	Cumberland	17.1	15.8	15.6	0.2
370570002	North Carolina	Davidson	19.4	19.0	18.8	0.2
370630015	North Carolina	Durham	18.3	17.0	16.7	0.3
370670022	North Carolina	Forsyth	16.4	15.0	14.8	0.2
370810013	North Carolina	Guilford	16.1	15.7	15.5	0.2
370990006	North Carolina	Jackson	27.7	25.8	25.4	0.4
371010002	North Carolina	Johnston	15.3	14.2	14.0	0.2
371190041	North Carolina	Mecklenburg	17.0	17.0	16.7	0.3
371190042	North Carolina	Mecklenburg	18.4	18.4	18.1	0.3
371190045	North Carolina	Mecklenburg	16.7	16.3	16.1	0.2
371210004	North Carolina	Mitchell	20.6	19.4	19.1	0.3
371230001	North Carolina	Montgomery	14.4	13.3	13.1	0.2
371290002	North Carolina	New Hanover	13.6	12.3	12.2	0.1
371470006	North Carolina	Pitt	14.1	12.5	12.3	0.2
371730002	North Carolina	Swain	25.6	24.3	24.0	0.3
371830014	North Carolina	Wake	17.6	16.9	16.5	0.4
380070002	North Dakota	Billings	16.2	15.6	15.5	0.1
380130004	North Dakota	Burke	21.2	19.9	19.8	0.1
380150003	North Dakota	Burleigh	18.8	17.5	17.3	0.2
380171004	North Dakota	Cass	17.5	16.3	16.0	0.3
380250003	North Dakota	Dunn	20.5	19.7	19.7	0.0
380530002	North Dakota	McKenzie	18.0	17.3	17.3	0.0
380570004	North Dakota	Mercer	16.2	15.2	15.2	0.0
380650002	North Dakota	Oliver	17.3	16.3	16.3	0.0
381050003	North Dakota	Williams	21.0	19.9	19.8	0.1

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
390030009	Ohio	Allen	19.0	16.3	15.8	0.5
390090003	Ohio	Athens	14.1	12.3	12.2	0.1
390130006	Ohio	Belmont	16.1	14.0	13.8	0.2
390170016	Ohio	Butler	20.3	17.4	16.8	0.6
390170019	Ohio	Butler	20.4	18.3	17.8	0.5
390170020	Ohio	Butler	22.1	20.3	19.9	0.4
390170022	Ohio	Butler	22.6	20.6	20.3	0.3
390230005	Ohio	Clark	19.8	17.3	16.8	0.5
390350034	Ohio	Cuyahoga	18.9	16.2	15.9	0.3
390350038	Ohio	Cuyahoga	23.5	21.0	20.6	0.4
390350045	Ohio	Cuyahoga	21.5	19.0	18.7	0.3
390350060	Ohio	Cuyahoga	21.9	19.4	19.0	0.4
390350065	Ohio	Cuyahoga	24.3	21.8	21.6	0.2
390351002	Ohio	Cuyahoga	18.6	16.4	16.0	0.4
390490024	Ohio	Franklin	19.0	15.9	15.5	0.4
390490029	Ohio	Franklin	18.2	16.1	15.8	0.3
390490039	Ohio	Franklin	18.4	16.0	15.5	0.5
390490081	Ohio	Franklin	19.8	17.0	16.3	0.7
390570005	Ohio	Greene	18.1	16.4	16.0	0.4
390610006	Ohio	Hamilton	19.4	16.8	16.4	0.4
390610010	Ohio	Hamilton	20.3	17.9	17.3	0.6
390610014	Ohio	Hamilton	22.0	19.2	18.8	0.4
390610040	Ohio	Hamilton	20.0	17.9	17.4	0.5
390610042	Ohio	Hamilton	21.1	18.5	17.9	0.6
390810017	Ohio	Jefferson	24.6	21.8	21.5	0.3
390810021	Ohio	Jefferson	21.1	17.9	17.7	0.2
390850007	Ohio	Lake	16.7	14.6	14.4	0.2
390870012	Ohio	Lawrence	15.6	14.2	14.1	0.1
390933002	Ohio	Lorain	18.6	16.7	16.2	0.5
390950024	Ohio	Lucas	21.3	18.9	18.3	0.6
390950026	Ohio	Lucas	20.2	17.9	17.5	0.4
390950028	Ohio	Lucas	21.2	18.5	18.0	0.5
390990005	Ohio	Mahoning	20.8	18.4	17.9	0.5
390990014	Ohio	Mahoning	19.4	17.0	16.5	0.5
391030004	Ohio	Medina	18.6	16.6	16.4	0.2
391130038	Ohio	Montgomery	19.9	17.1	16.6	0.5
391330002	Ohio	Portage	17.0	14.8	14.4	0.4
391351001	Ohio	Preble	17.9	15.9	15.6	0.3

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
391450013	Ohio	Scioto	18.5	16.5	16.3	0.2
391510017	Ohio	Stark	22.1	19.8	19.3	0.5
391510020	Ohio	Stark	21.0	18.0	17.6	0.4
391530017	Ohio	Summit	21.9	19.4	19.0	0.4
391530023	Ohio	Summit	18.9	16.9	16.5	0.4
391550014	Ohio	Trumbull	18.0	16.0	15.7	0.3
400270049	Oklahoma	Cleveland	18.4	16.5	16.2	0.3
400310651	Oklahoma	Comanche	16.1	14.8	14.6	0.2
400710604	Oklahoma	Kay	17.9	16.1	15.8	0.3
401090035	Oklahoma	Oklahoma	18.1	16.3	15.9	0.4
401091037	Oklahoma	Oklahoma	18.6	17.0	16.7	0.3
401210415	Oklahoma	Pittsburg	19.0	17.0	16.9	0.1
401359021	Oklahoma	Sequoyah	17.8	16.7	16.6	0.1
401431127	Oklahoma	Tulsa	21.5	19.3	19.0	0.3
410130100	Oregon	Crook	39.0	37.9	37.6	0.3
410250003	Oregon	Harney	32.7	31.5	31.2	0.3
410290133	Oregon	Jackson	27.6	26.7	26.5	0.2
410330114	Oregon	Josephine	42.5	40.9	40.5	0.4
410350004	Oregon	Klamath	45.9	44.9	44.7	0.2
410370001	Oregon	Lake	41.6	40.6	40.3	0.3
410390059	Oregon	Lane	28.0	27.2	27.0	0.2
410390060	Oregon	Lane	28.8	28.1	28.0	0.1
410391009	Oregon	Lane	32.2	31.2	31.0	0.2
410392013	Oregon	Lane	41.0	39.8	39.5	0.3
410399004	Oregon	Lane	23.9	23.1	22.9	0.2
410510080	Oregon	Multnomah	22.4	21.3	21.1	0.2
410670004	Oregon	Washington	27.0	26.4	26.3	0.1
410670005	Oregon	Washington	24.6	24.1	23.9	0.2
420010001	Pennsylvania	Adams	20.1	18.7	18.4	0.3
420030008	Pennsylvania	Allegheny	19.4	17.5	17.2	0.3
420030064	Pennsylvania	Allegheny	35.9	32.9	32.7	0.2
420031008	Pennsylvania	Allegheny	20.4	18.3	18.1	0.2
420031301	Pennsylvania	Allegheny	24.5	22.3	22.1	0.2
420031376	Pennsylvania	Allegheny	22.2	19.8	19.6	0.2
420050001	Pennsylvania	Armstrong	21.1	19.0	18.7	0.3
420070014	Pennsylvania	Beaver	20.6	18.1	17.7	0.4
420110011	Pennsylvania	Berks	25.3	23.1	22.6	0.5
420130801	Pennsylvania	Blair	22.5	20.4	20.1	0.3

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	State	County	Base 2016	Modeled Base 2028	Modeled CTI Strategy	Change in Design Value
420150011	Pennsylvania	Bradford	16.8	15.9	15.5	0.4
420210011	Pennsylvania	Cambria	24.2	21.5	21.3	0.2
420270100	Pennsylvania	Centre	19.8	18.1	17.8	0.3
420290100	Pennsylvania	Chester	23.3	21.6	21.2	0.4
420410101	Pennsylvania	Cumberland	25.4	24.1	23.6	0.5
420430401	Pennsylvania	Dauphin	26.0	24.1	23.5	0.6
420450002	Pennsylvania	Delaware	24.7	22.6	22.4	0.2
420450109	Pennsylvania	Delaware	22.2	19.9	19.5	0.4
420490003	Pennsylvania	Erie	19.5	17.0	16.7	0.3
420590002	Pennsylvania	Greene	13.5	11.7	11.6	0.1
420692006	Pennsylvania	Lackawanna	19.4	17.6	17.3	0.3
420710007	Pennsylvania	Lancaster	27.5	24.9	24.4	0.5
420710012	Pennsylvania	Lancaster	28.1	26.2	25.9	0.3
420750100	Pennsylvania	Lebanon	29.0	26.0	25.5	0.5
420770004	Pennsylvania	Lehigh	22.4	20.4	20.2	0.2
420850100	Pennsylvania	Mercer	21.4	18.8	18.3	0.5
420890002	Pennsylvania	Monroe	18.2	16.3	16.1	0.2
420950025	Pennsylvania	Northampton	23.6	21.2	20.7	0.5
421010004	Pennsylvania	Philadelphia	22.8	20.1	19.6	0.5
421010048	Pennsylvania	Philadelphia	23.2	21.1	20.6	0.5
421010055	Pennsylvania	Philadelphia	24.1	22.2	21.9	0.3
421010057	Pennsylvania	Philadelphia	23.3	20.9	20.5	0.4
421010075	Pennsylvania	Philadelphia	23.0	21.0	20.6	0.4
421010076	Pennsylvania	Philadelphia	20.1	17.9	17.7	0.2
421174000	Pennsylvania	Tioga	16.9	15.3	15.0	0.3
421250005	Pennsylvania	Washington	20.2	17.9	17.8	0.1
421250200	Pennsylvania	Washington	18.7	16.5	16.4	0.1
421255001	Pennsylvania	Washington	17.2	15.0	14.8	0.2
421290008	Pennsylvania	Westmoreland	19.3	17.1	16.9	0.2
421330008	Pennsylvania	York	22.9	21.1	20.8	0.3
440030002	Rhode Island	Kent	13.5	12.0	11.9	0.1
440070022	Rhode Island	Providence	15.6	13.7	13.5	0.2
440070026	Rhode Island	Providence	17.3	15.5	15.3	0.2
440070030	Rhode Island	Providence	19.4	17.6	17.4	0.2
440071010	Rhode Island	Providence	17.1	15.1	14.9	0.2
440090007	Rhode Island	Washington	14.6	12.9	12.8	0.1
450190048	South Carolina	Charleston	15.7	14.7	14.5	0.2
450190049	South Carolina	Charleston	14.7	13.7	13.6	0.1

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
450250001	South Carolina	Chesterfield	15.0	14.0	13.8	0.2
450370001	South Carolina	Edgefield	18.5	17.3	17.1	0.2
450410003	South Carolina	Florence	17.2	15.8	15.6	0.2
450450015	South Carolina	Greenville	23.1	22.7	22.4	0.3
450450016	South Carolina	Greenville	17.1	16.4	16.2	0.2
450630008	South Carolina	Lexington	18.8	17.8	17.5	0.3
450790007	South Carolina	Richland	16.8	15.7	15.5	0.2
450830011	South Carolina	Spartanburg	16.7	16.0	15.8	0.2
460110003	South Dakota	Brookings	13.6	11.9	11.7	0.2
460130003	South Dakota	Brown	15.1	13.6	13.4	0.2
460290002	South Dakota	Codington	15.7	14.0	13.8	0.2
460330132	South Dakota	Custer	14.4	13.8	13.7	0.1
460650003	South Dakota	Hughes	12.4	11.8	11.7	0.1
460710001	South Dakota	Jackson	14.1	13.4	13.3	0.1
460990008	South Dakota	Minnehaha	17.1	15.1	14.8	0.3
461030020	South Dakota	Pennington	21.8	20.5	20.3	0.2
461031001	South Dakota	Pennington	17.7	16.5	16.3	0.2
461270001	South Dakota	Union	17.6	15.4	15.0	0.4
470090011	Tennessee	Blount	23.7	22.5	22.2	0.3
470370023	Tennessee	Davidson	18.5	16.8	16.6	0.2
470450004	Tennessee	Dyer	14.1	12.7	12.4	0.3
470650031	Tennessee	Hamilton	17.8	16.4	16.1	0.3
470654002	Tennessee	Hamilton	17.9	16.7	16.5	0.2
470930028	Tennessee	Knox	18.9	17.6	17.4	0.2
470931013	Tennessee	Knox	32.8	30.7	30.2	0.5
470931017	Tennessee	Knox	21.6	20.1	19.7	0.4
470931020	Tennessee	Knox	18.8	17.5	17.3	0.2
470990002	Tennessee	Lawrence	14.2	12.8	12.7	0.1
471050109	Tennessee	Loudon	20.3	19.1	18.9	0.2
471071002	Tennessee	McMinn	20.1	18.8	18.6	0.2
471130006	Tennessee	Madison	14.6	13.1	12.9	0.2
471192007	Tennessee	Maury	14.6	13.0	12.9	0.1
471251009	Tennessee	Montgomery	16.8	15.3	15.1	0.2
471410005	Tennessee	Putnam	16.9	15.4	15.2	0.2
471450004	Tennessee	Roane	16.8	15.4	15.2	0.2
471570024	Tennessee	Shelby	17.8	16.2	16.0	0.2
471570075	Tennessee	Shelby	15.7	14.0	13.8	0.2
471631007	Tennessee	Sullivan	15.6	14.6	14.5	0.1

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
471650007	Tennessee	Sumner	16.5	14.4	14.2	0.2
480290032	Texas	Bexar	19.1	18.2	18.1	0.1
480290059	Texas	Bexar	19.4	18.9	18.8	0.1
480610006	Texas	Cameron	25.1	26.6	26.6	0.0
481130050	Texas	Dallas	18.3	16.8	16.5	0.3
481130069	Texas	Dallas	18.7	16.9	16.7	0.2
481410037	Texas	El Paso	16.2	16.9	16.8	0.1
481410044	Texas	El Paso	23.7	24.7	24.5	0.2
481671034	Texas	Galveston	21.4	19.8	19.8	0.0
482010058	Texas	Harris	22.5	21.7	21.6	0.1
482011035	Texas	Harris	22.0	21.2	21.1	0.1
482011039	Texas	Harris	20.6	19.8	19.7	0.1
482011052	Texas	Harris	22.7	21.7	21.5	0.2
482030002	Texas	Harrison	17.3	15.8	15.7	0.1
482150043	Texas	Hidalgo	26.3	26.5	26.4	0.1
482151046	Texas	Hidalgo	24.7	24.9	24.8	0.1
483550032	Texas	Nueces	24.8	24.0	23.9	0.1
484391002	Texas	Tarrant	17.8	16.4	16.3	0.1
484391006	Texas	Tarrant	17.8	16.5	16.4	0.1
484391053	Texas	Tarrant	17.7	16.2	15.9	0.3
484530020	Texas	Travis	17.6	16.3	16.3	0.0
484530021	Texas	Travis	20.3	18.9	18.8	0.1
490030003	Utah	Box Elder	32.4	29.1	27.8	1.3
490050007	Utah	Cache	32.7	30.3	29.5	0.8
490110004	Utah	Davis	30.2	26.8	25.3	1.5
490130002	Utah	Duchesne	24.7	23.8	23.7	0.1
490351001	Utah	Salt Lake	29.9	26.0	24.3	1.7
490353006	Utah	Salt Lake	34.8	29.3	27.3	2.0
490353010	Utah	Salt Lake	37.5	31.9	29.6	2.3
490450004	Utah	Tooele	25.5	23.0	21.8	1.2
490490002	Utah	Utah	28.3	24.4	22.3	2.1
490494001	Utah	Utah	30.9	27.1	25.3	1.8
490530007	Utah	Washington	13.9	13.5	13.4	0.1
490570002	Utah	Weber	31.5	27.5	26.0	1.5
500030004	Vermont	Bennington	13.6	12.4	12.3	0.1
500070007	Vermont	Chittenden	10.2	9.3	9.3	0.0
500070014	Vermont	Chittenden	13.7	12.7	12.6	0.1
500210002	Vermont	Rutland	22.4	22.0	21.9	0.1

			Daily (24-hour) $PM_{2.5}$ ($\mu g/m^3$)			
Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
510030001	Virginia	Albemarle	14.8	13.2	13.0	0.2
510130020	Virginia	Arlington	18.1	16.1	15.7	0.4
510360002	Virginia	Charles	14.6	13.0	12.8	0.2
510410003	Virginia	Chesterfield	15.9	14.5	14.3	0.2
510590030	Virginia	Fairfax	17.2	15.1	14.8	0.3
510690010	Virginia	Frederick	19.9	18.5	18.3	0.2
510870014	Virginia	Henrico	15.5	13.7	13.5	0.2
510870015	Virginia	Henrico	15.1	13.1	12.9	0.2
511071005	Virginia	Loudoun	17.2	15.8	15.5	0.3
511611004	Virginia	Roanoke	15.7	14.3	14.1	0.2
511650003	Virginia	Rockingham	18.6	16.7	16.5	0.2
515200006	Virginia	Bristol City	18.1	17.0	16.8	0.2
516500008	Virginia	Hampton City	14.5	13.1	13.0	0.1
516800015	Virginia	Lynchburg City	14.1	12.8	12.7	0.1
517100024	Virginia	Norfolk City	14.3	12.8	12.6	0.2
517750011	Virginia	Salem City	15.8	14.2	14.0	0.2
518100008	Virginia	Virginia Beach City	15.6	13.8	13.7	0.1
530070011	Washington	Chelan	21.3	20.4	20.2	0.2
530330030	Washington	King	26.5	26.7	26.4	0.3
530330057	Washington	King	28.3	28.3	28.0	0.3
530330080	Washington	King	20.8	20.9	20.6	0.3
530332004	Washington	King	25.9	25.8	25.6	0.2
530350007	Washington	Kitsap	17.5	17.4	17.3	0.1
530370002	Washington	Kittitas	39.8	38.2	37.7	0.5
530470013	Washington	Okanogan	62.3	60.2	59.8	0.4
530530024	Washington	Pierce	24.8	24.6	24.4	0.2
530530029	Washington	Pierce	30.7	30.2	29.9	0.3
530570011	Washington	Skagit	15.6	15.3	15.2	0.1
530610005	Washington	Snohomish	19.9	19.5	19.2	0.3
530610020	Washington	Snohomish	34.4	33.5	33.3	0.2
530611007	Washington	Snohomish	28.0	27.5	27.2	0.3
530630021	Washington	Spokane	32.2	30.5	30.2	0.3
530730015	Washington	Whatcom	17.9	17.5	17.4	0.1
530770009	Washington	Yakima	37.5	34.5	34.1	0.4
530770015	Washington	Yakima	43.6	40.4	40.1	0.3
540030003	West Virginia	Berkeley	24.0	22.3	21.9	0.4
540090005	West Virginia	Brooke	20.9	18.1	17.9	0.2
540090011	West Virginia	Brooke	21.7	19.3	19.1	0.2

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Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
540290009	West Virginia	Hancock	19.8	17.2	17.0	0.2
540330003	West Virginia	Harrison	16.7	15.1	14.9	0.2
540390020	West Virginia	Kanawha	15.8	14.2	14.0	0.2
540391005	West Virginia	Kanawha	16.9	15.1	15.0	0.1
540511002	West Virginia	Marshall	21.8	19.4	19.1	0.3
540610003	West Virginia	Monongalia	17.5	15.7	15.5	0.2
540690010	West Virginia	Ohio	18.0	15.8	15.6	0.2
541071002	West Virginia	Wood	17.9	16.0	15.8	0.2
550030010	Wisconsin	Ashland	13.5	11.9	11.6	0.3
550090005	Wisconsin	Brown	19.5	17.4	16.8	0.6
550250041	Wisconsin	Dane	19.9	17.2	16.5	0.7
550250047	Wisconsin	Dane	21.6	19.0	18.3	0.7
550270001	Wisconsin	Dodge	19.7	17.4	16.8	0.6
550350014	Wisconsin	Eau Claire	17.6	15.5	15.0	0.5
550410007	Wisconsin	Forest	12.7	11.0	10.8	0.2
550430009	Wisconsin	Grant	20.3	17.3	16.8	0.5
550590019	Wisconsin	Kenosha	19.2	17.1	16.7	0.4
550630012	Wisconsin	La Crosse	18.6	16.9	16.5	0.4
550790010	Wisconsin	Milwaukee	22.2	19.8	19.2	0.6
550790026	Wisconsin	Milwaukee	19.7	17.0	16.3	0.7
550790058	Wisconsin	Milwaukee	20.8	18.3	17.5	0.8
550870009	Wisconsin	Outagamie	20.0	17.3	16.9	0.4
550890009	Wisconsin	Ozaukee	18.3	16.1	15.6	0.5
551110007	Wisconsin	Sauk	17.6	15.5	15.0	0.5
551198001	Wisconsin	Taylor	15.3	13.2	12.9	0.3
551250001	Wisconsin	Vilas	15.0	12.8	12.3	0.5
551330027	Wisconsin	Waukesha	21.1	18.6	17.8	0.8
560010006	Wyoming	Albany	13.0	12.4	12.3	0.1
560050891	Wyoming	Campbell	17.3	16.9	16.8	0.1
560050892	Wyoming	Campbell	16.7	16.3	16.2	0.1
560051899	Wyoming	Campbell	17.2	16.9	16.9	0.0
560130099	Wyoming	Fremont	11.9	11.7	11.7	0.0
560130232	Wyoming	Fremont	12.0	11.9	11.8	0.1
560131003	Wyoming	Fremont	23.0	22.3	22.2	0.1
560210001	Wyoming	Laramie	13.3	12.8	12.6	0.2
560210100	Wyoming	Laramie	13.1	12.6	12.5	0.1
560250001	Wyoming	Natrona	15.3	14.7	14.6	0.1
560290001	Wyoming	Park	20.6	20.3	20.2	0.1

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Monitor	**State**	**County**	**Base 2016**	**Modeled Base 2028**	**Modeled CTI Strategy**	**Change in Design Value**
560330002	Wyoming	Sheridan	23.1	22.5	22.4	0.1
560331003	Wyoming	Sheridan	19.5	19.0	18.9	0.1
560350101	Wyoming	Sublette	16.2	16.0	15.9	0.1
560370007	Wyoming	Sweetwater	17.9	16.7	16.5	0.2
560391006	Wyoming	Teton	15.4	15.2	15.2	0.0