

Fairbanks PM_{2.5} Planning
3rd in a Series:
Regulatory Framework

November 3, 2011

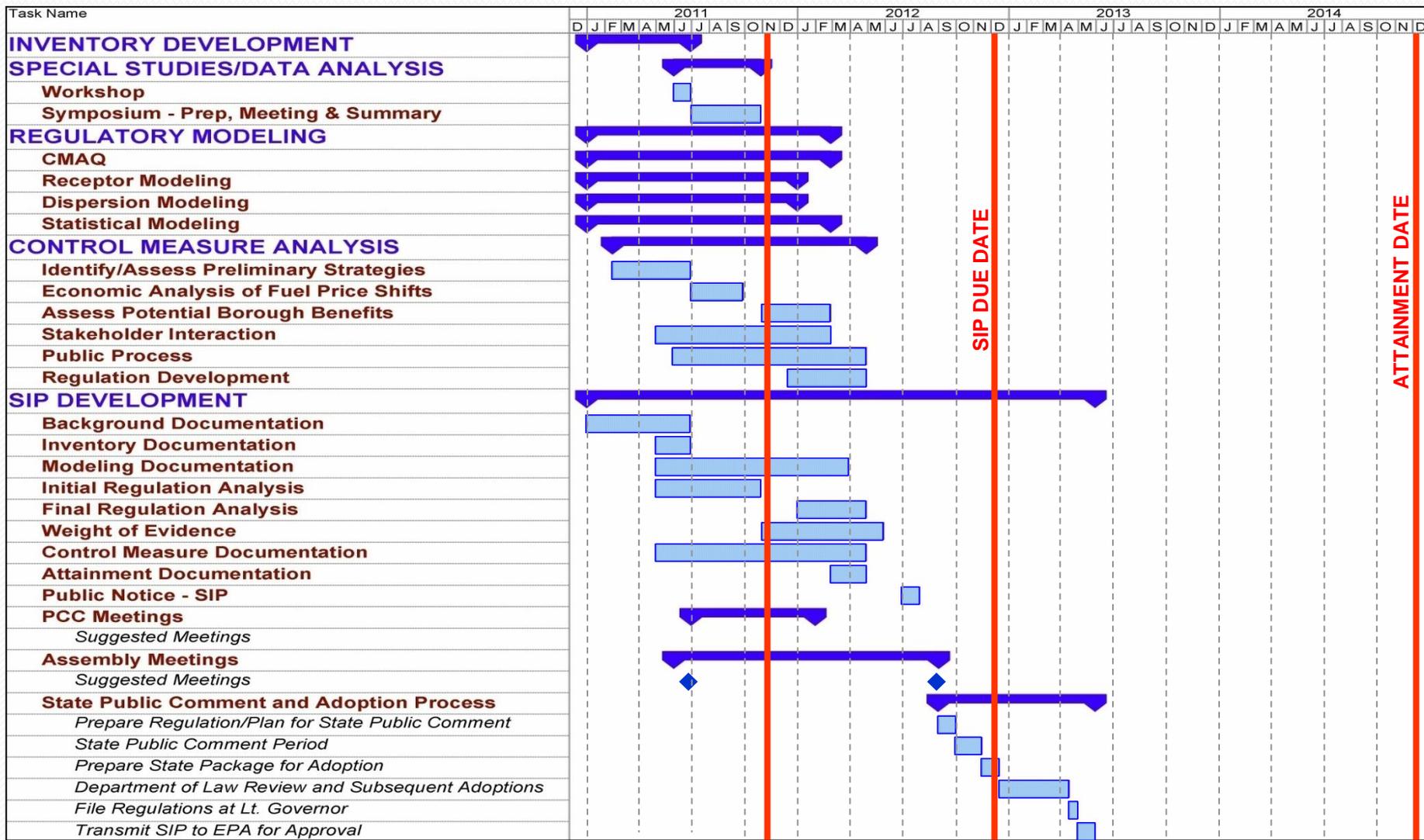
Overview

- Schedule
- Administrative Requirements for Plan
- Technical Requirements for Plan
- Agency Responsibilities (Borough, State, EPA)
- Non-attainment Requirements
- Control Measure Requirements
- Trends and Control Options

Overview (cont.)

- Series of Assembly Briefings Planned:
 - ❖ Overview and emission inventory development (July)
 - ❖ Modeling/Source apportionment (August)
 - ❖ **Regulatory framework (Today)**
 - ❖ Control Measures
 - ❖ Progress towards attainment

Fairbanks PM_{2.5} Air Quality Plan (SIP) Schedule



CURRENT DATE

Air Quality Plan Attainment Demonstration Administrative Requirements

- Clean Air Act requires following to implement a plan
 - ❖ Adequate funding
 - ❖ Adequate personnel
 - ❖ Legal authority

- A mix of federal, state, and local programs
 - ❖ Some programs require ordinances or regulations
 - ❖ All committed programs must be funded and implemented

Air Quality Plan Attainment Demonstration Technical Requirements

- Identification of pollutant(s) to be regulated
 - ❖ $PM_{2.5}$ and pre-cursor pollutants (SO_2 , NO_x , NH_3)
- Prepare estimates of current & projected emissions
- Use modeling to demonstrate attainment with projected emission reductions
- Attainment date must comply with Clean Air Act schedule
- Selected controls must be enforceable
- Demonstrate science supports findings

Non-attainment Area Requirements

Failure to Plan or Implement the Plan

- Under the Clean Air Act, State failure to develop, submit or implement a plan, allows EPA to
 - ❖ Develop a Federal Implementation Plan
 - ❖ Impose sanctions:
 - federal highway funds (local or statewide) and/or
 - require additional emission reductions from new or modified industrial facilities (offsets)
- Clean Air Act allows citizen lawsuits for failure to implement plan.

State Responsibility

- State has lead for air quality under the Clean Air Act
 - ❖ Borough agreed to take air quality lead under MOU
 - ❖ State responsible for insuring Plan developed by Borough is approvable and implemented
- State is working closely with Borough to develop a Plan
 - ❖ Providing technical, regulatory and contractual assistance
 - ❖ Assisting inventory development, modeling and control measure analysis
 - ❖ Allocating considerable staff time and financial support

State Responsibility (cont.)

- State Implementation Plan must be updated to
 - ❖ Address PM_{2.5} standard
 - ❖ Integrate PM_{2.5} into air permitting program
 - ❖ Integrate Fairbanks PM_{2.5} Plan
 - ❖ Implement selected State PM_{2.5} control measures
- Once State Plan is approved by EPA, Fairbanks Plan becomes enforceable at the state and federal levels

Borough Responsibility

- Preparing approvable PM_{2.5} Plan
- Working with DEC & EPA to develop Plan
- Selecting controls needed to attain PM_{2.5} standard
- Demonstrating selected controls attain PM_{2.5} standard
- Allocating resources to fulfill Borough responsibilities
 - ❖ Funding
 - ❖ Personnel
 - ❖ Ordinances
 - ❖ Enforcement

EPA Responsibility

- Oversight
- Coordinates with Borough & DEC on Plan development
 - ❖ Technical assistance
 - ❖ Guidance interpreting federal requirements
- Evaluates and takes actions on Plan
 - ❖ Approved plan is federally enforceable
- If state fails to develop or implement approvable Plan, takes remedy actions
 - ❖ Federal Implementation Plan
 - ❖ Sanctions

Non-attainment Area Requirements Conformity

- All federally funded/approved projects in CO & PM_{2.5} nonattainment areas subject to Clean Air Act Section 176
- Federal actions must conform to Plan(s)
 - ❖ Projects cannot cause or contribute to non-attainment
 - ❖ Air quality analysis required before projects can proceed
- Transportation conformity rules apply to
 - ❖ FHWA/FTA funded projects
- General conformity rules apply to
 - ❖ All projects not funded by FHWA/FTA

Non-attainment Area Requirements

Control Measures

- Clean Air Act requires emission reductions that are
 - ❖ Surplus
 - ❖ Enforceable
 - ❖ Quantifiable
 - ❖ Permanent
 - ❖ Anti-backsliding
- Limited emission reductions allowed for voluntary controls
- Borough has long experience implementing CO controls
 - ❖ I/M
 - ❖ Plug-in electrification
 - ❖ Wood-burning ban

Options to Reduce Air Pollution

Existing Programs

- Local
 - ❖ Wood stove change out
 - ❖ Limit locations where new OWBs can be installed
 - ❖ Burn dry wood
 - ❖ Public education
 - ❖ Open burn requirements
- State
 - ❖ Current wood-fired heating device regulations
 - ❖ Open burn requirements
 - ❖ Air permit requirements
- Federal
 - ❖ motor vehicle and stationary engine fuel and emission standards

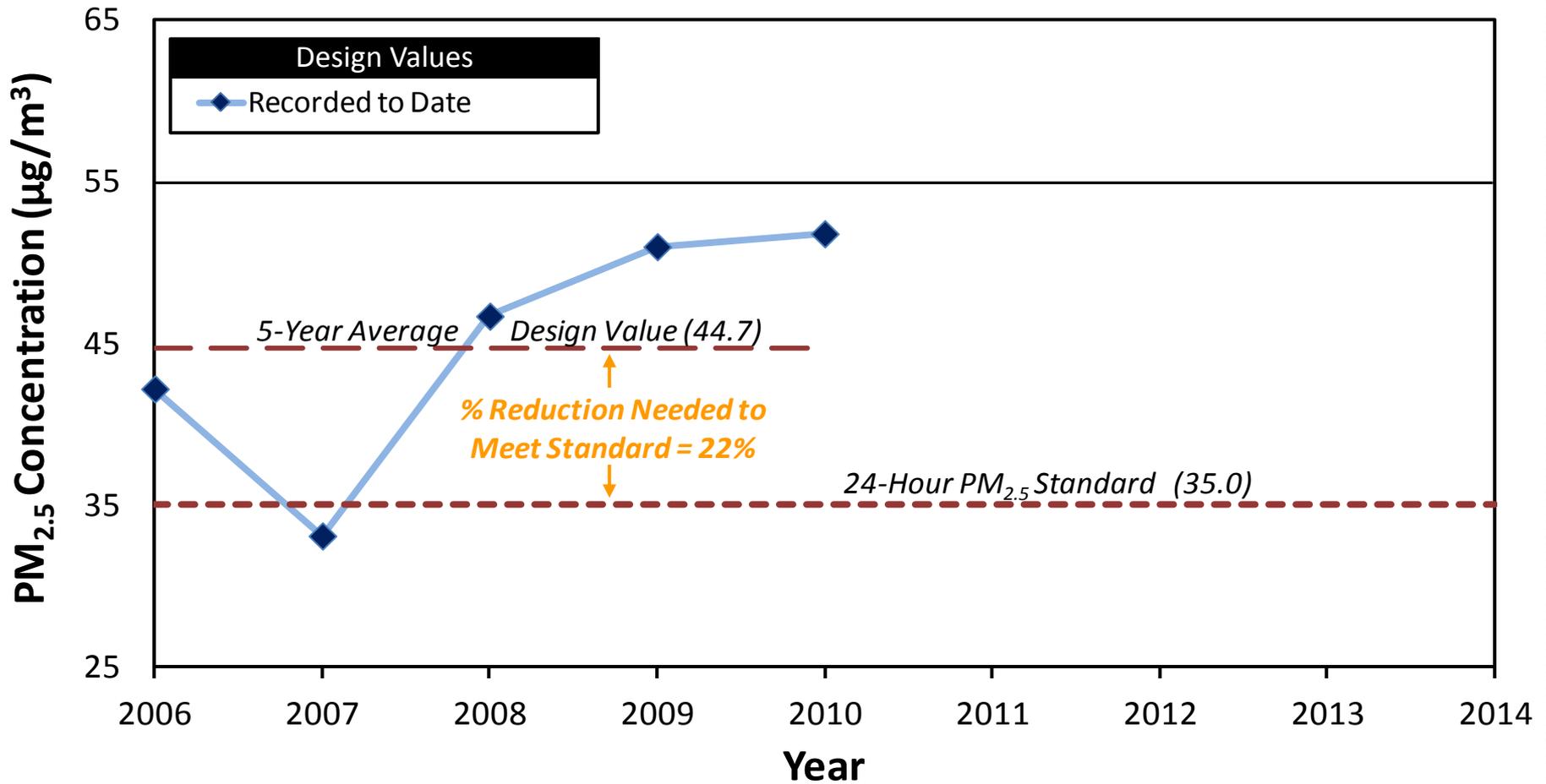
Additional Options to Reduce Air Pollution

- Local options
 - ❖ Wood burning limits (sale of dry wood, etc.)
 - ❖ Shift to #1 heating oil as Borough has
 - ❖ Diesel retrofits
- State options
 - ❖ Wood burning limits (curtailment during episodes)
 - ❖ OWB standards
 - ❖ Limit wood cutting on public lands to only taking split wood
 - ❖ Permitted industrial facility emission controls
 - ❖ Large scale natural gas availability (e.g., pipeline)

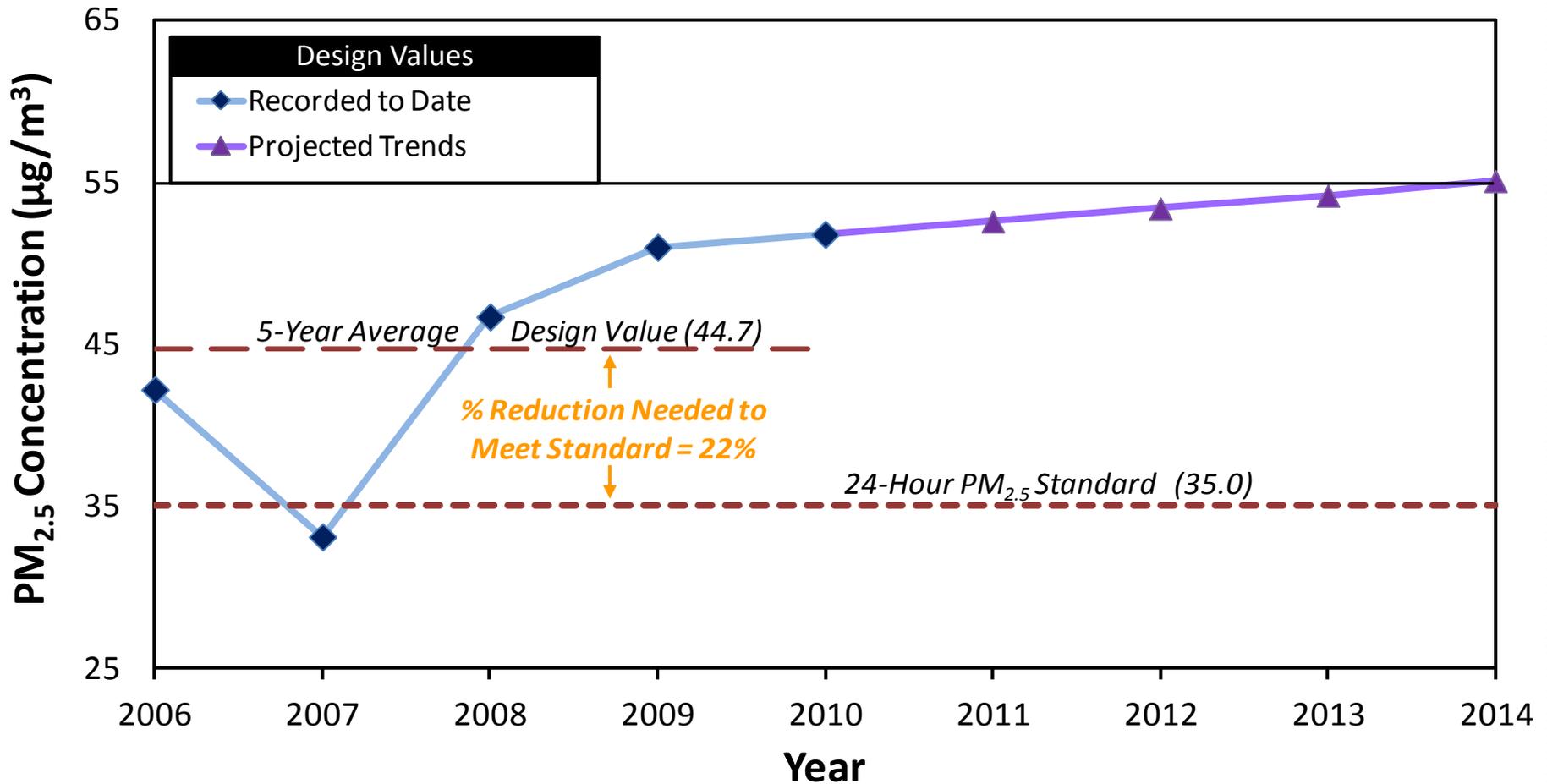
Additional Options to Reduce Air Pollution (cont.)

- Federal options
 - ❖ Tighter wood stove standards (technology forcing)
 - ❖ National standards on fuels & equipment
 - ❖ Additional funds for local programs
- Have to work together to assemble a mix of acceptable measures

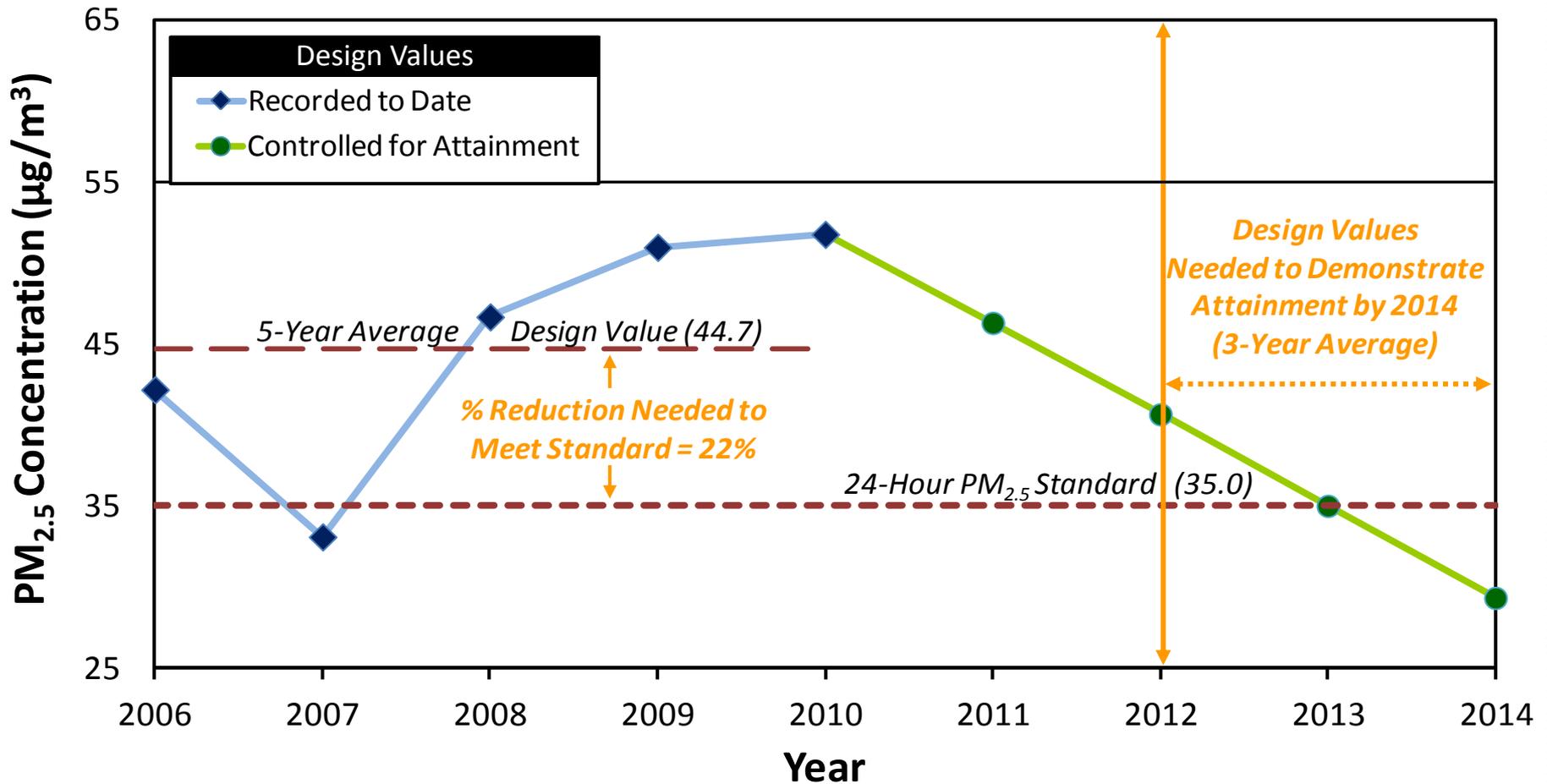
Example of Fairbanks Design Values Needed to Demonstrate Attainment with PM_{2.5} 24-hour NAAQS by 2014



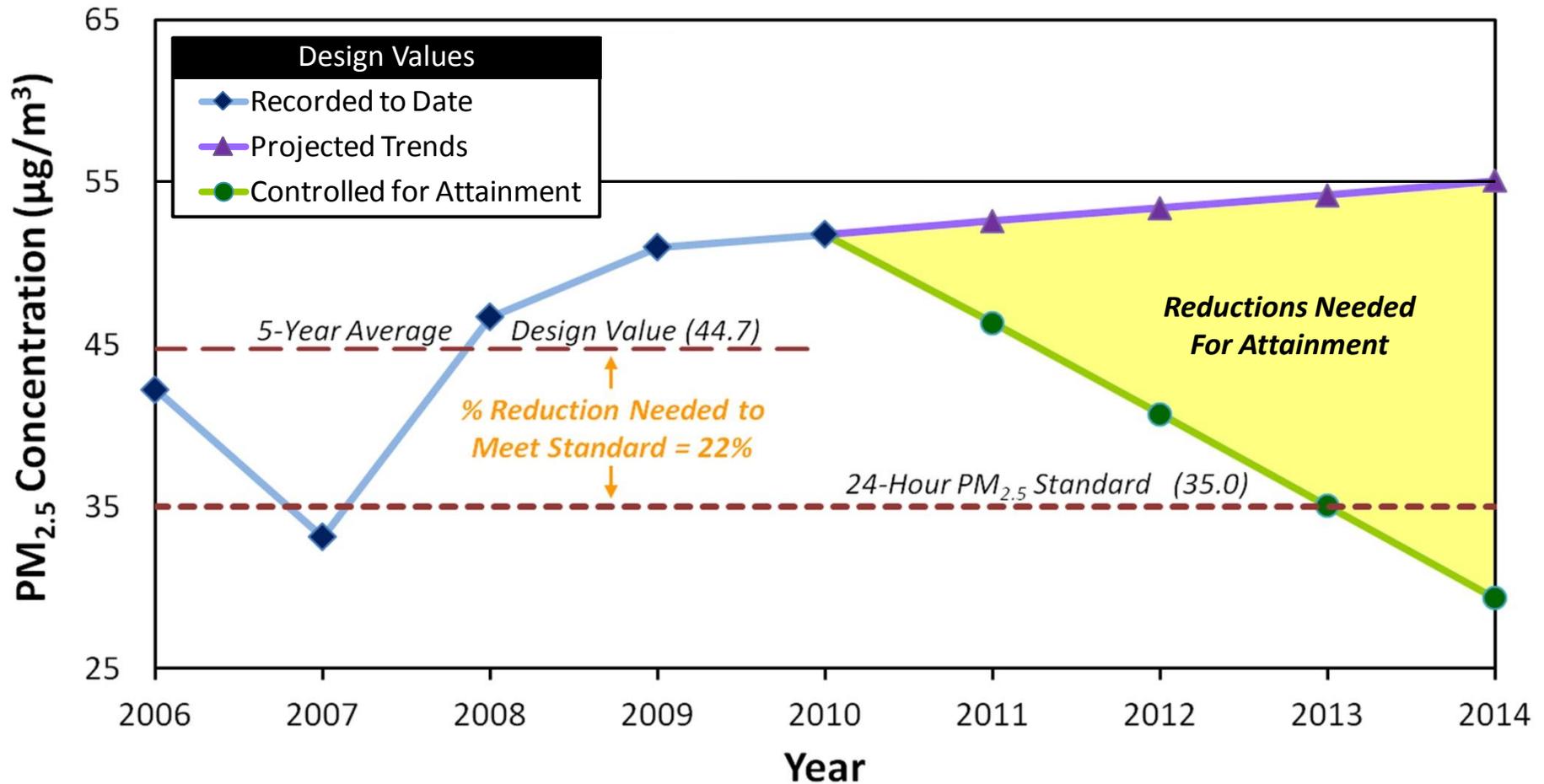
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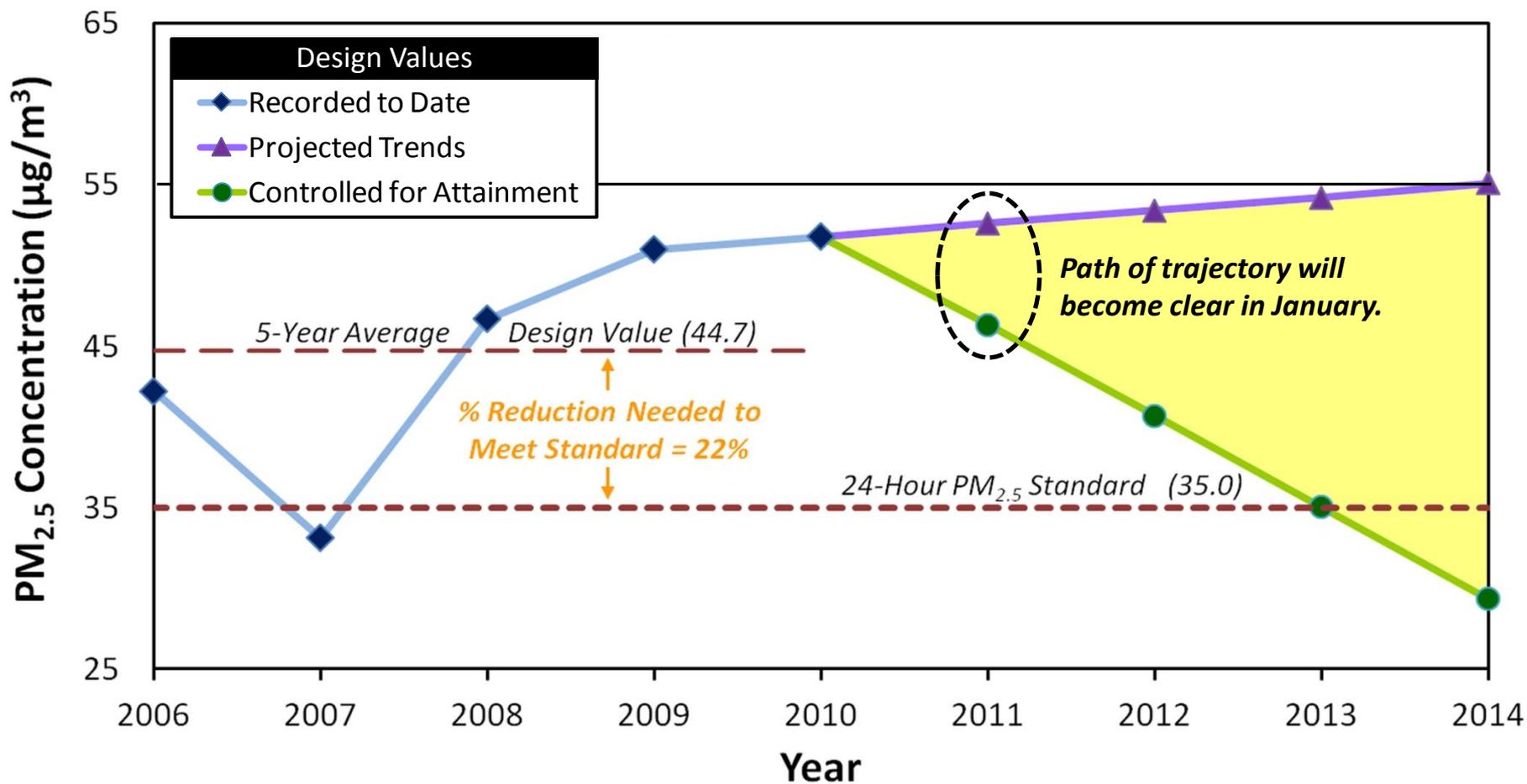
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Design Value Summary

- Annual values reflect the net of three independent activities
 - ❖ Meteorology
 - ❖ Owner response to shifting space heating fuel prices
 - ❖ Borough/State efforts to reduce emissions
- While shifting weather patterns can influence year-to-year trends, they are not the cause of a long-term trajectory
- Owners have responded to increasing fuel prices by shifting to lower cost, dirtier fuels
- Efforts to reduce emissions and design values need to more than offset the combined effects of weather and owner responses to changing fuel prices

Borough: Where Are We in Preparing a Plan?

- Implementing programs not restricted by Prop A (wood/coal change out, plug-ins, public education)
- Exploring performance/benefits of ClearStack retrofits
- Digesting conflicting public viewpoints on acceptable solid fuel controls
- Working with State/EPA on
 - ❖ Monitoring/data analysis
 - ❖ Investigating science issues
 - ❖ Defining analytical framework
 - ❖ Operation of alternate air quality models
 - ❖ Development of control measure options
- Waiting on results to assess baseline model performance
- Briefing Assembly on issues needed to work with State in selecting acceptable controls and developing an approvable Plan

State: Where Are We in Preparing a Plan?

- Implementing existing programs (public education, nuisance enforcement, industrial source permitting, open burning, wood burning visible emissions)
- Developing and adopting statewide regulations for the PM_{2.5} air quality standard, identification of non-attainment areas, permit program PM_{2.5} requirements, etc.
- Working with Borough/EPA on all items listed above
- Waiting on results to assess baseline model performance
- Participating in Assembly briefings
- Tracking Borough planning efforts and public debate on controls

EPA: Where Are We in Preparing a Plan?

- Providing technical support to Borough/State on SIP development
- Providing regulatory interpretation guidance
- Participating in Assembly briefings
- Tracking design value trends
- Tracking Borough regulatory decisions

Review of Key Dates

- Tentative Schedule for Plan Development/Approval
 - ❖ January 19th Briefing – Control Measures
 - ❖ February 16th Briefing – Progress Towards Attainment
 - ❖ February/March – Public Outreach/PCC
 - ❖ April Briefing – Preliminary Control Proposal
 - ❖ June Briefing – Revised Control Proposal
 - ❖ July Hearing – Resolution on Final Plan