

# Status of FNSB PM<sub>2.5</sub> Air Quality Plan

Sierra Research

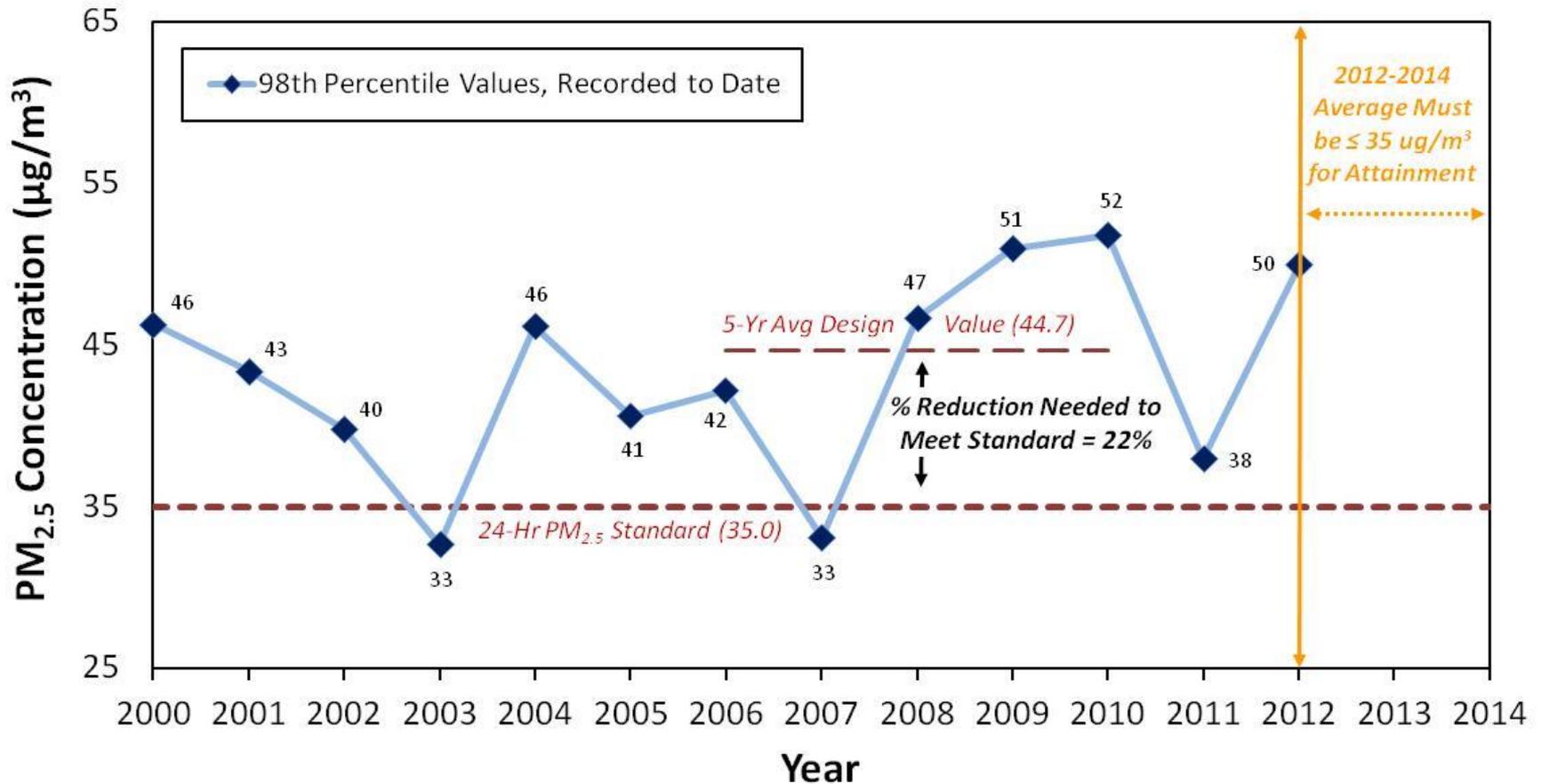
March 21, 2013

# Plan Benefits in 2014 from 2012 Assembly Presentations

(calculated for downtown Fairbanks)

Control Program	Relative Reductions ( $\mu\text{g}/\text{m}^3$ )	
	March Estimate	August Update
Expanded Wood Stove Change Out	0.2	0.8
Existing State Measures	1.1	0.1
Dry Wood	1.6	2.0
Reduce Wood Use on High PM Days	8.8	4.7
Voluntary Measures	-	0.6
<b>Cumulative Total</b>	<b>11.7</b>	<b>8.1</b>

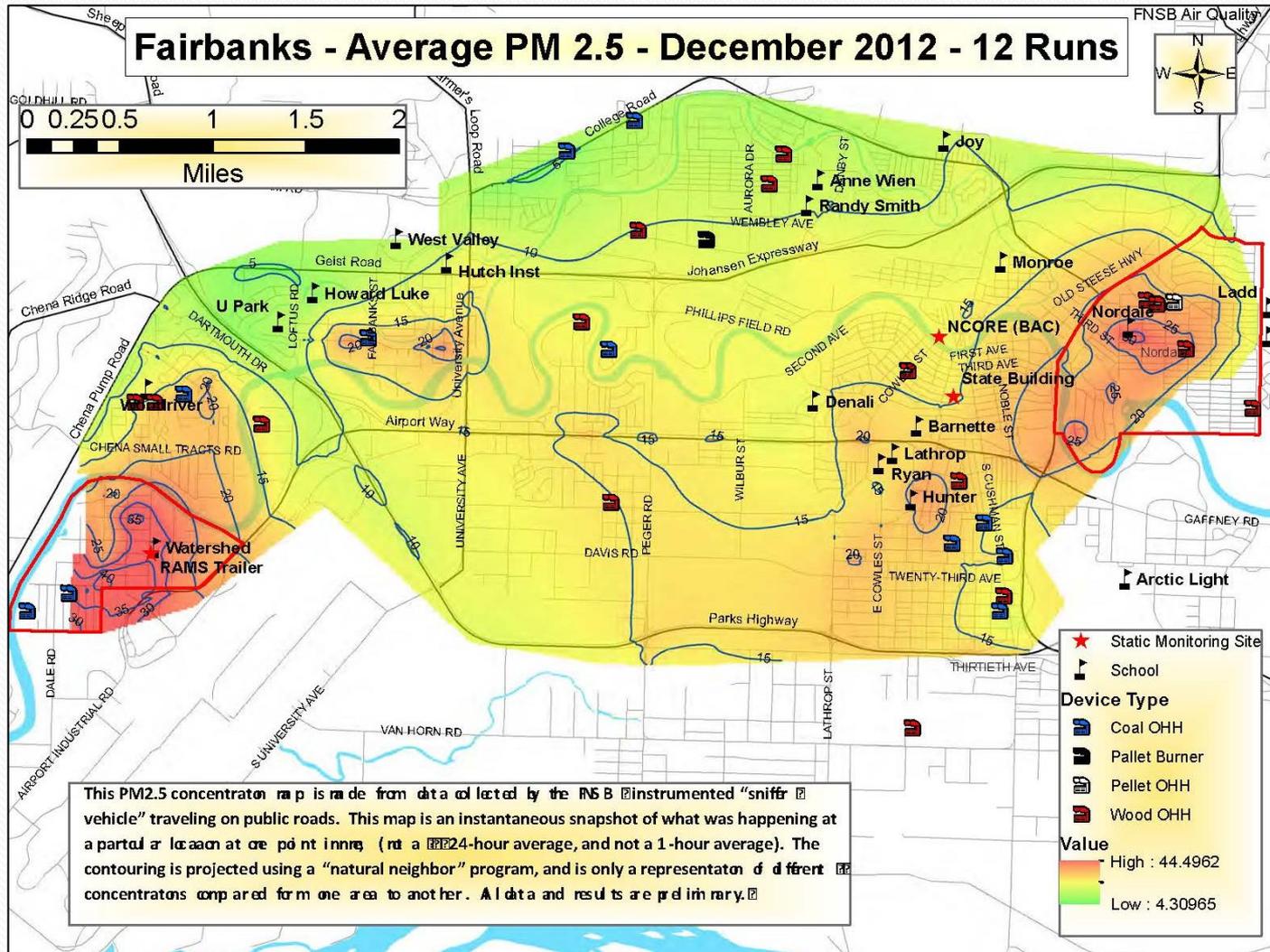
# Long Term Trend in 98th Percentile PM<sub>2.5</sub> Concentrations in Fairbanks



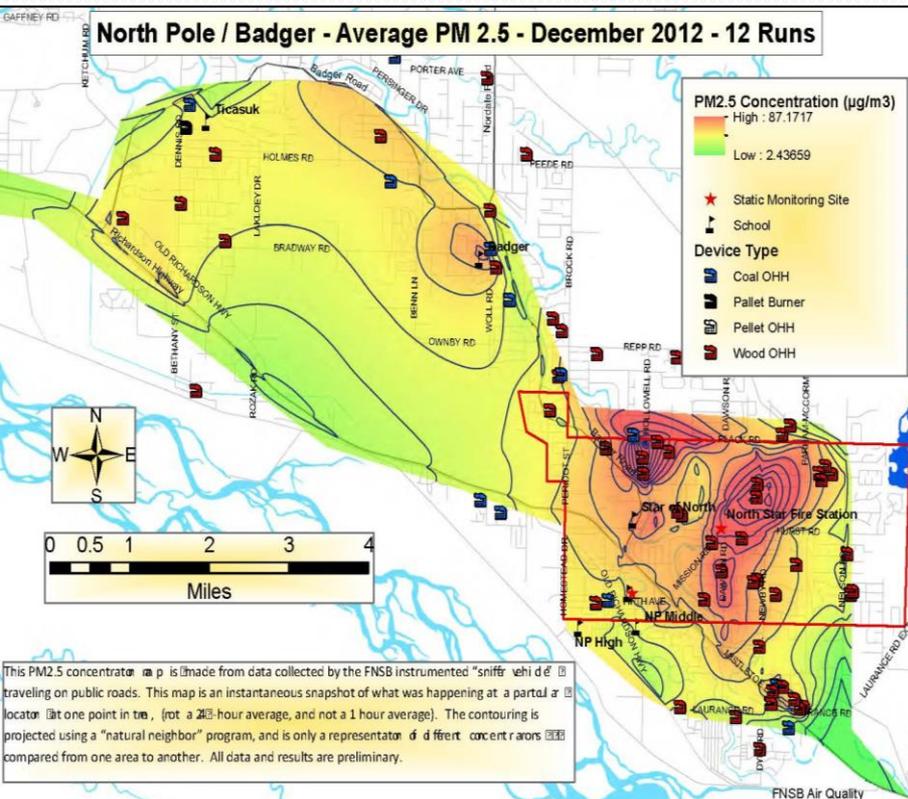
# Strategy Development since August

- Passage of Prop 3 limits Borough options
- Long-term programs under consideration
  - ❖ Expanded natural gas availability
  - ❖ Enhanced woodstove change out program
    - Hot-spot
    - Expanded program coverage
  - ❖ State wood heating device emission standards
- Growing need to address hot spots
- Collected survey data to better characterize wood burning devices operated in nonattainment area

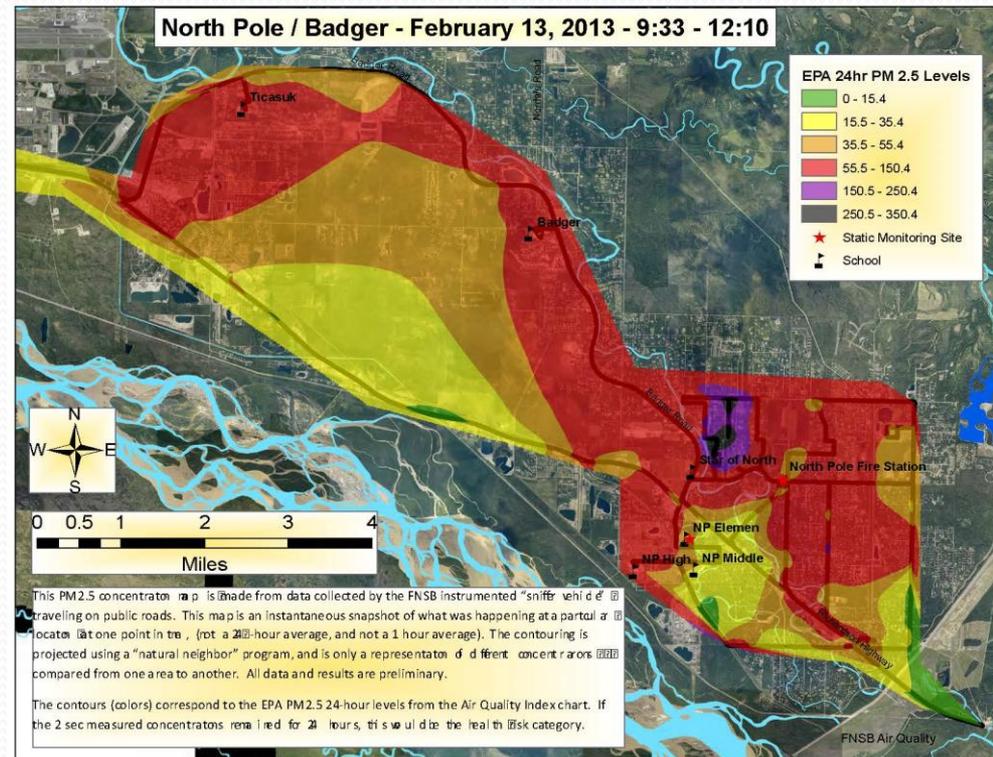
# Multiple PM<sub>2.5</sub> Hotspots Identified within Nonattainment Area



# North Pole / Badger Rd PM<sub>2.5</sub> Hotspots



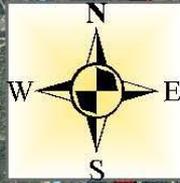
This PM<sub>2.5</sub> concentration map is made from data collected by the FNSB instrumented "sniffer vehicle" traveling on public roads. This map is an instantaneous snapshot of what was happening at a particular location at one point in time (not a 24-hour average, and not a 1 hour average). The contouring is projected using a "natural neighbor" program, and is only a representation of different concentrations compared from one area to another. All data and results are preliminary.



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The contours (colors) correspond to the EPA PM<sub>2.5</sub> 24-hour levels from the Air Quality Index chart. If the 2 sec measured concentrations remained for 24 hours, this would be the real risk category.

# North Pole Intensive Route 1-4-13



## Confirmed OHH / IHH

- Coal OHH
- Indoor Coal
- Pallet Burner
- Pellet OHH
- Wood OHH

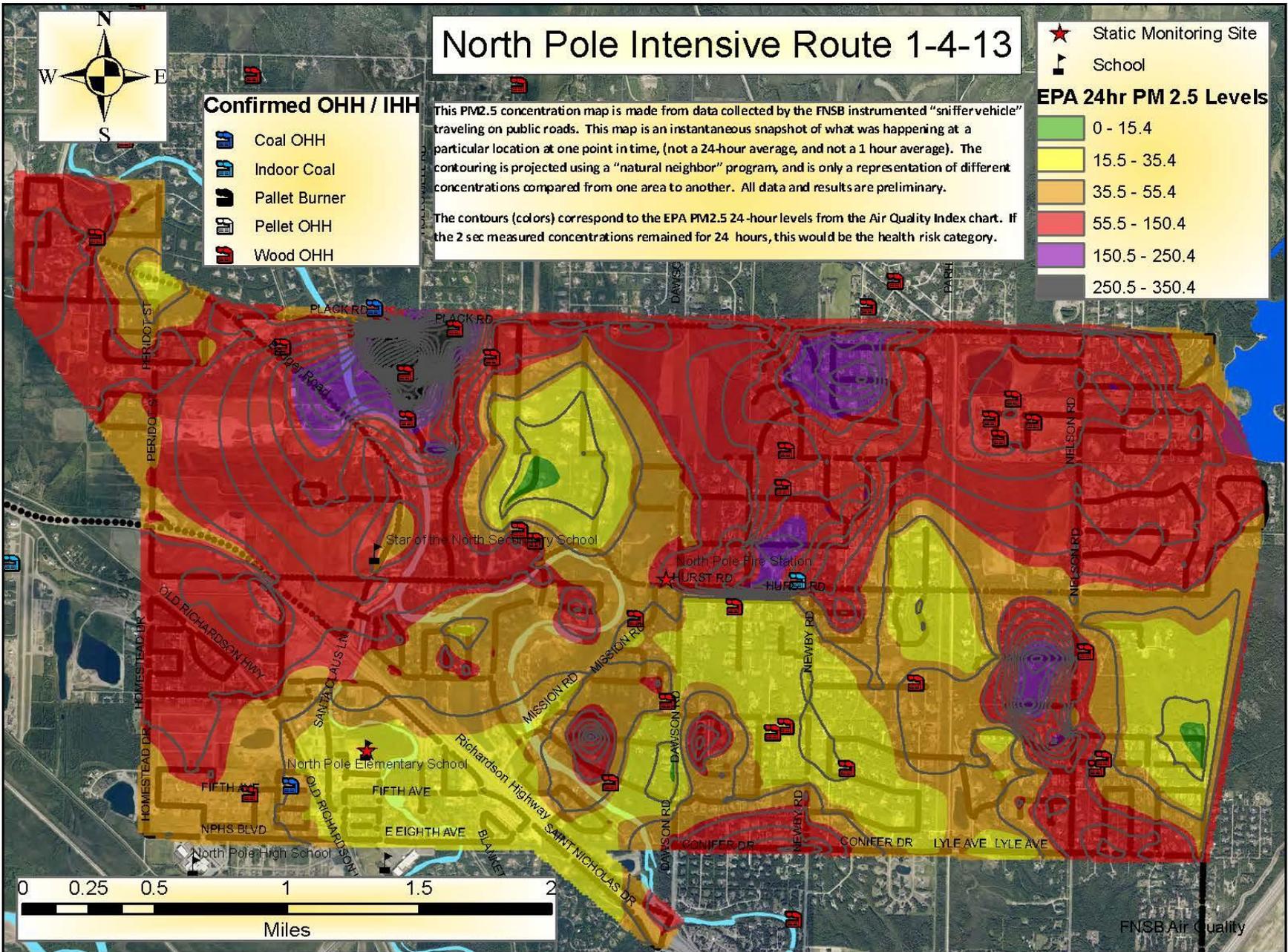
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- Static Monitoring Site
- School

## EPA 24hr PM 2.5 Levels

- 0 - 15.4
- 15.5 - 35.4
- 35.5 - 55.4
- 55.5 - 150.4
- 150.5 - 250.4
- 250.5 - 350.4



# Insights Gained from Recent Telephone Survey

- Revised estimate of uncertified/certified stoves (32% uncertified/68% certified)
- ~58% cut own wood, 20% buy their wood, 22% do both
- Moisture levels not a priority consideration when purchasing firewood
  - ❖ Dry wood highly valued in long term vendor relationships
- Average price paid ~ \$230/cord

# Analysis Framework Changes

- Inventory revised to address new survey data
- New package of strategies assembled
  - ❖ Borough – revised wood stove change out program
  - ❖ State - wood heating strategies
- Modeling to assess attainment progress in 2019
- Determine if additional programs will be needed

# Long-Term Measure Benefits in 2019

(calculated for downtown Fairbanks)

	Concentration Evaluation
Scenario	$\mu\text{g}/\text{m}^3$
Projected Baseline	43.3
Borough Wood Stove Change Out	2.8
State Wood Strategies	3.0
<b>Projected Design Value</b>	<b>37.5</b>

# Review of Additional Strategies Available Currently Under Development

- Natural gas (proposal at legislature)
- Borough Hot Spot Programs
  - ❖ Change out high emitting devices
  - ❖ Incentives to stop burning on high concentration days
- Expanded Borough wood stove change out program
- State fleet diesel retrofit programs

# Summary/Next Steps

- Additional programs needed
- Benefits of programs need to be assessed and reported to Assembly
- Include additional short-term and long-term strategies as they are approved into attainment demonstration
- Finalize SIP with all the selected programs

# SIP Completion Schedule

## FNSB SIP Development—Regulations—Critical Timeline

