

Anchorage CO Maintenance Plan

Proposed Revision to the State of Alaska Air Quality Control Plan

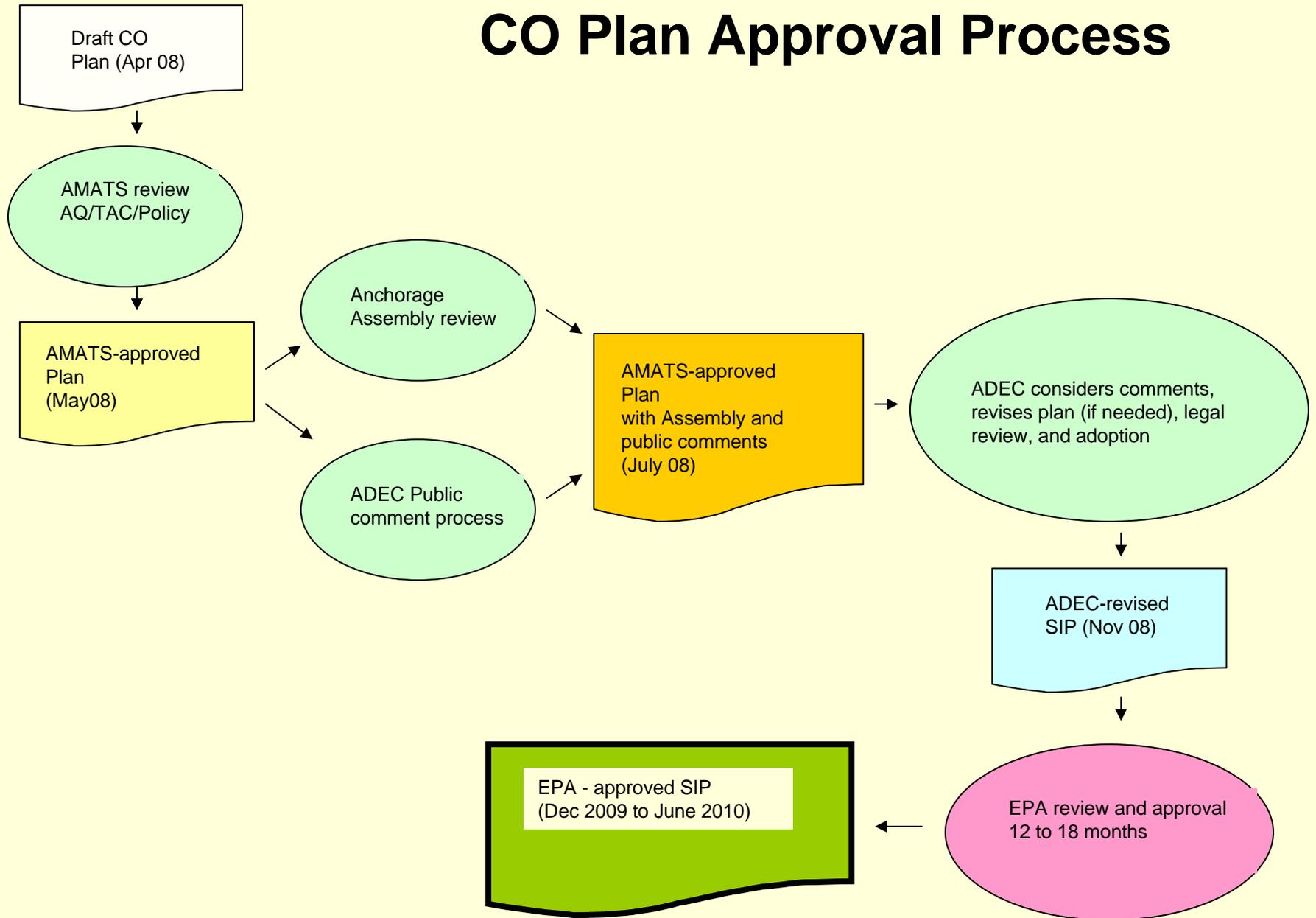
April 2008

Municipality of Anchorage
Department of Health and Human Services

History

- EPA declared Anchorage a CO nonattainment area in 1978.
- Air quality attainment plans were completed in 1982, 1992, and 2002.
- Last violation of the NAAQS occurred in 1996.
- EPA approved maintenance plan and designated Anchorage as an attainment area in 2004.
- In November 2007, Anchorage Assembly voted to discontinue I/M no later than December 2009.

CO Plan Approval Process

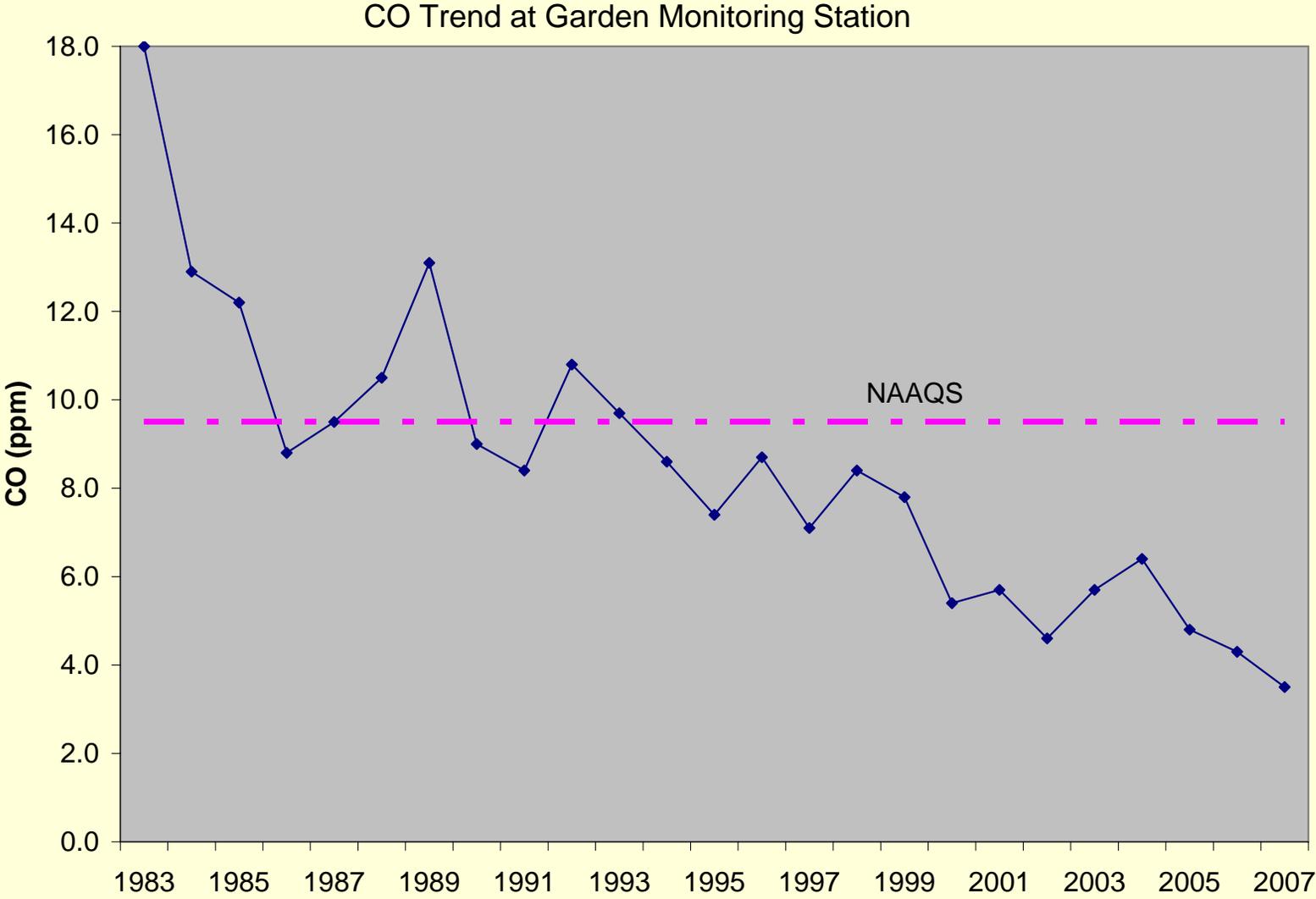


**What does the
monitoring data tell
us?**

CO monitoring has been conducted at 8 “permanent” locations and more than 25 temporary locations in the Anchorage bowl.



CO concentrations have fallen dramatically over the past 25 years.



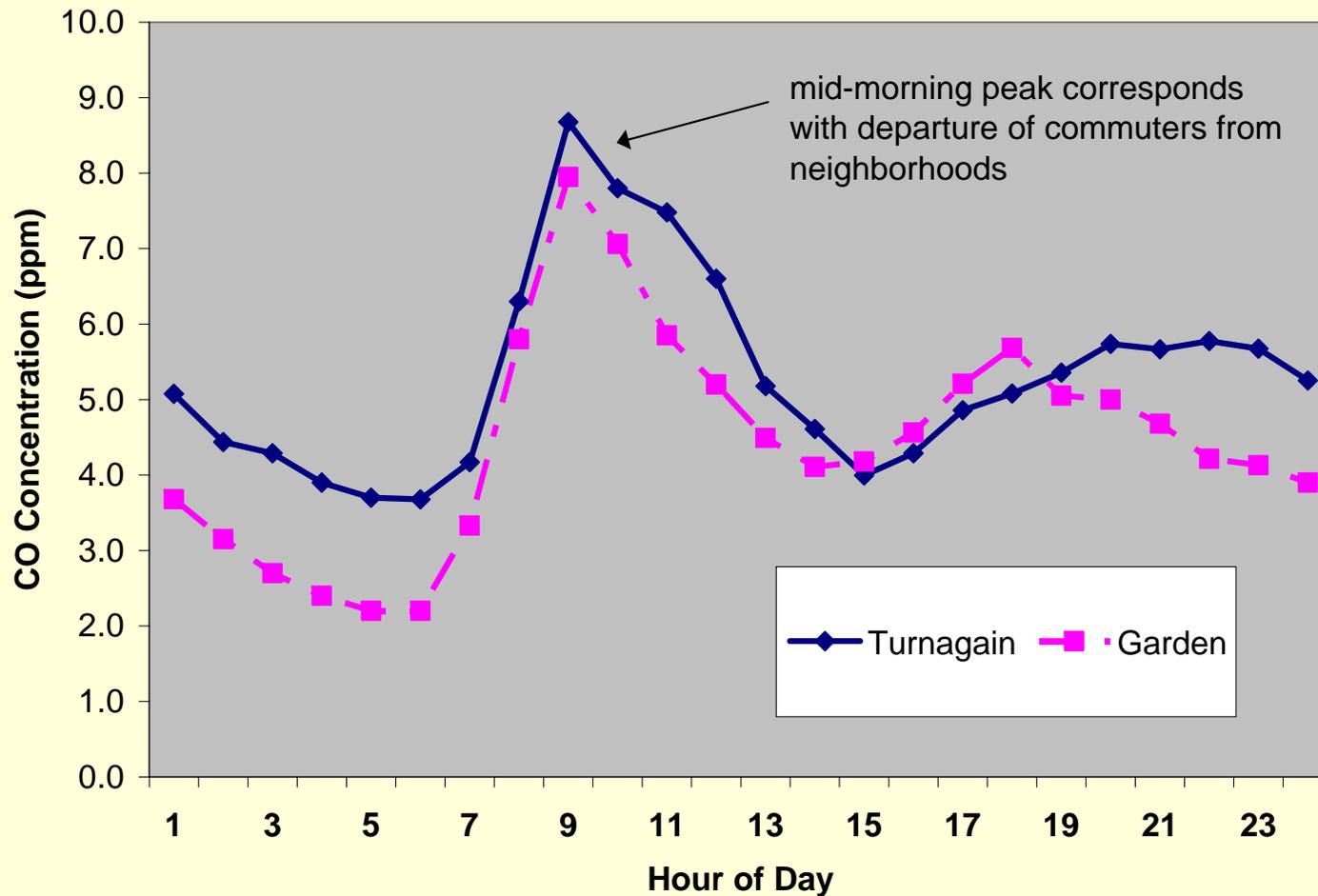
The highest CO concentrations are measured in residential areas.



Looking north from Turnagain Station (32nd and Turnagain Boulevard)

Cold starts and warm-up idling are significant sources of CO in these neighborhoods.

CO Concentration by Time-of-Day at Turnagain and Garden Stations

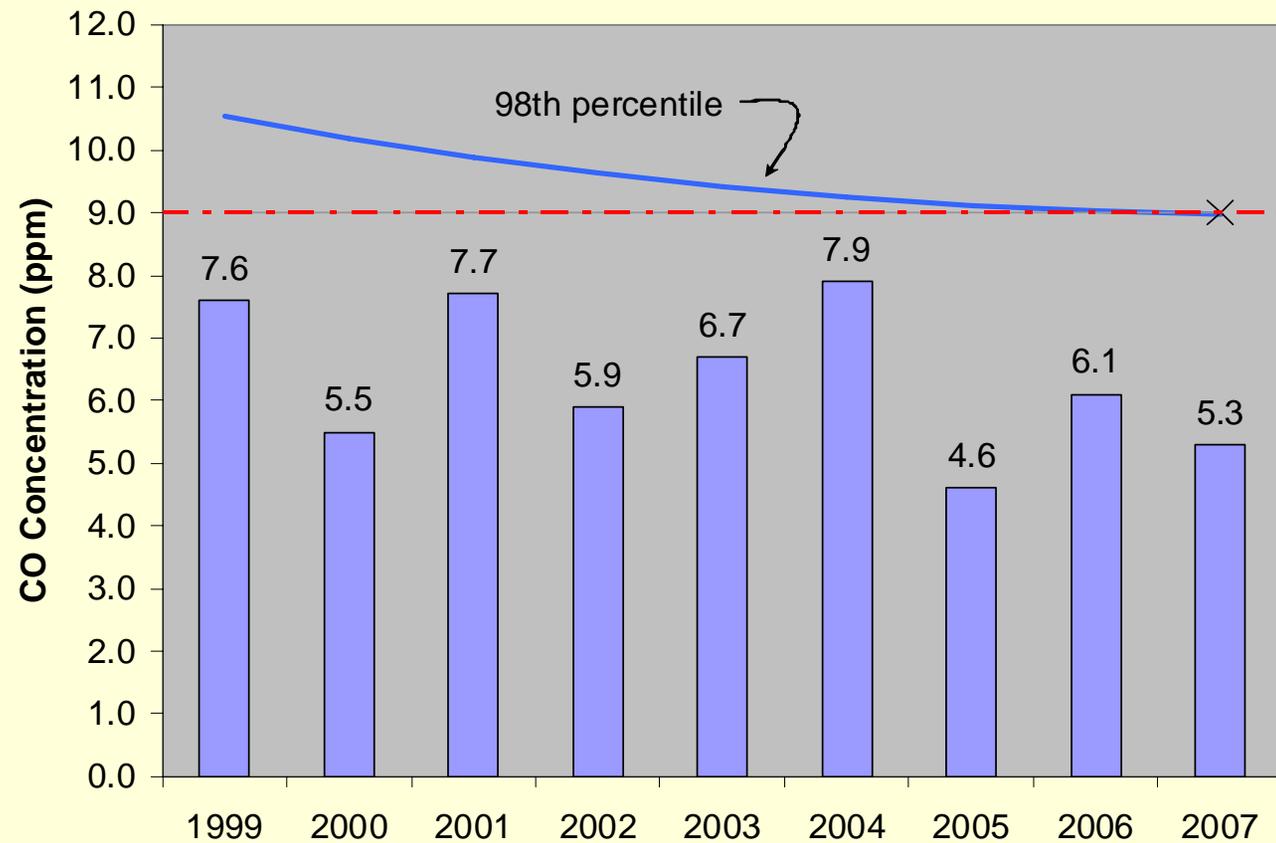


**What impact does
discontinuing I/M have
on prospects for
continued compliance
with the federal CO
standard?**

Because the Turnagain station exhibits the greatest potential for exceeding the NAAQS, its data were analyzed to determine the probability of complying with the federal air quality standard without I/M.

Statistical analysis suggests that if CO emissions in the Turnagain area remain at 2007 levels, there is a 98% chance of meeting the federal CO standard.

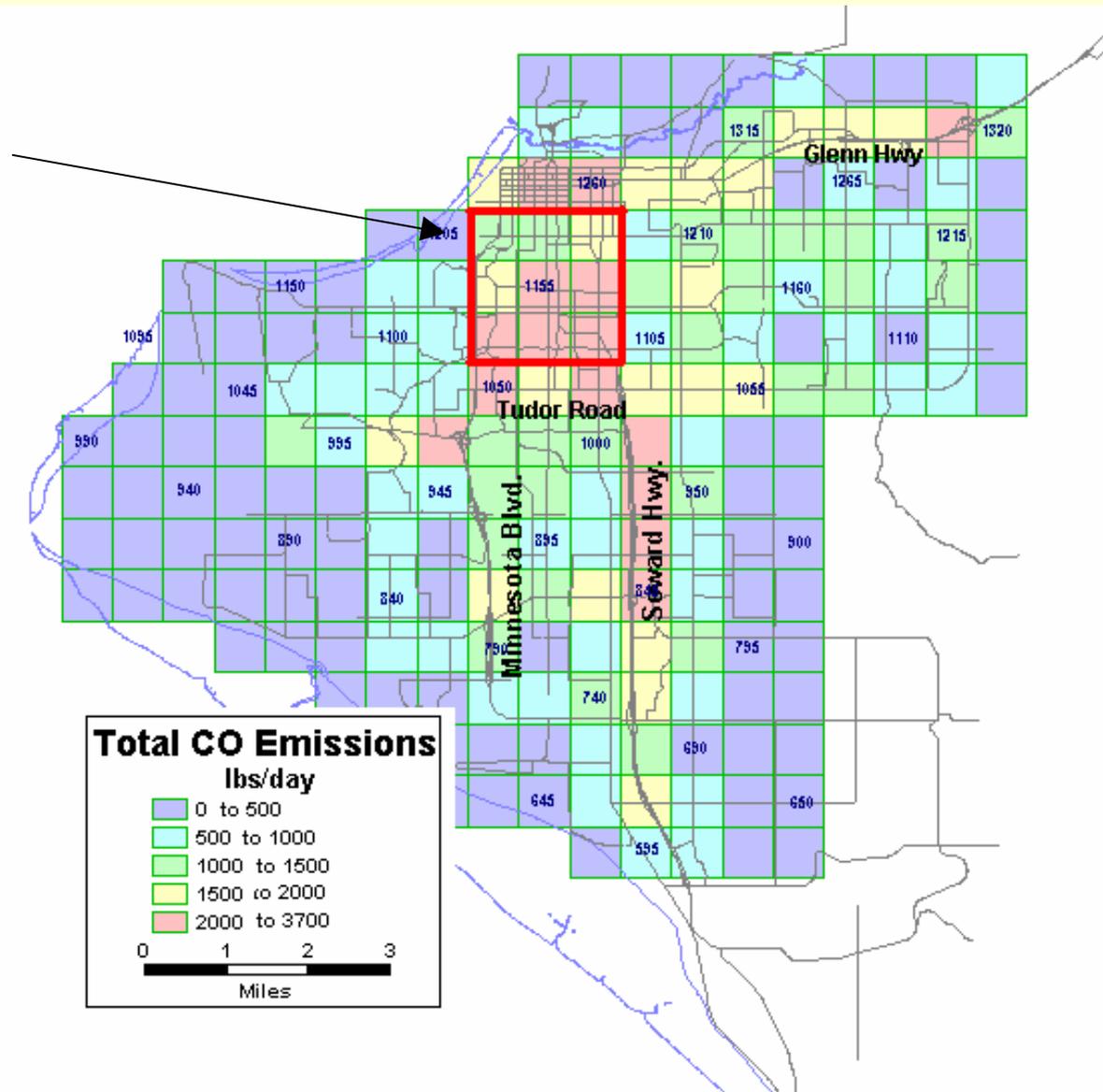
98th Percentile Prediction Interval at Turnagain Station



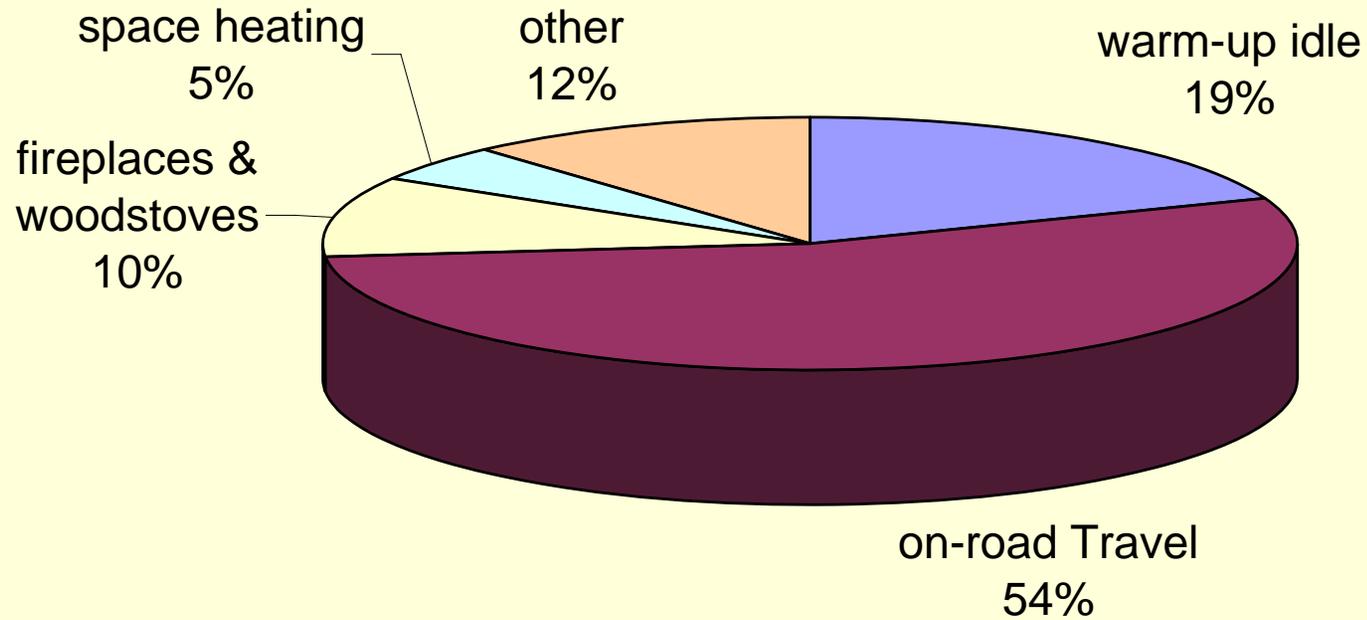
The future probability of compliance can be estimated by forecasting CO emissions in the Turnagain area.

The effect of terminating I/M on future CO emissions can be estimated using the EPA MOBILE6 model.

CO emissions in the 9 km² area surrounding the Turnagain station were projected through 2023.



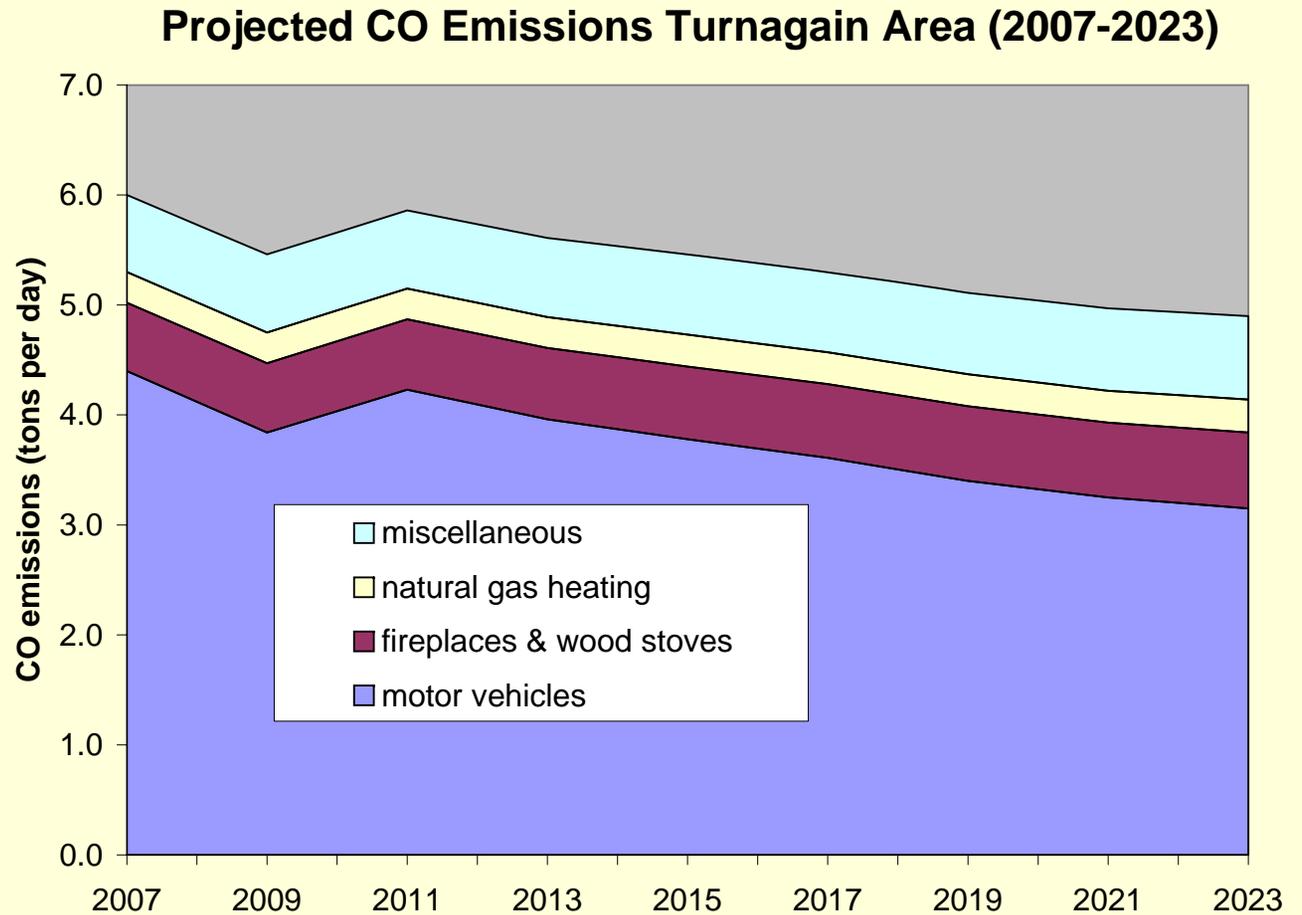
CO emissions in Turnagain Area (Base Year 2007)



Total CO emissions = 5.99 tons per day

CO emissions are projected to decline between 2007 and 2023.

Because emissions decline the probability of complying with the CO standard improves slightly over time.



Year	TOTAL CO EMISSIONS (tpd)	Probability of Compliance
2007	5.99	98.1%
2008	5.72	98.8%
2009	5.45	99.2%
2010	5.66	99.0%
2011	5.86	98.4%
2012	5.74	98.8%
2013	5.62	99.1%
2014	5.54	99.1%
2015	5.45	99.2%
2016	5.38	99.2%
2017	5.30	99.3%
2018	5.21	99.4%
2019	5.11	99.4%
2020	5.05	99.5%
2021	4.98	99.5%
2022	4.93	99.6%
2023	4.89	99.6%

Conclusion

Even if I/M is discontinued, the probability of complying with the CO standard is 98% or higher each year between 2007 and 2023.

This is well above the 90% probability targeted by the EPA for maintenance demonstrations.

**What should Anchorage
do to help minimize CO
emissions?**

Primary measures

- **Air Quality Public Awareness**
 - Promote block heater use
 - Promote alternatives to SOV (walk, bike, bus, telecommute)
 - Encourage trip chaining
 - Inform public on benefits of vehicle maintenance (voluntary I/M?)
- **Rideshare / Vanpool**
- **Transit Promotion**

Contingency measures

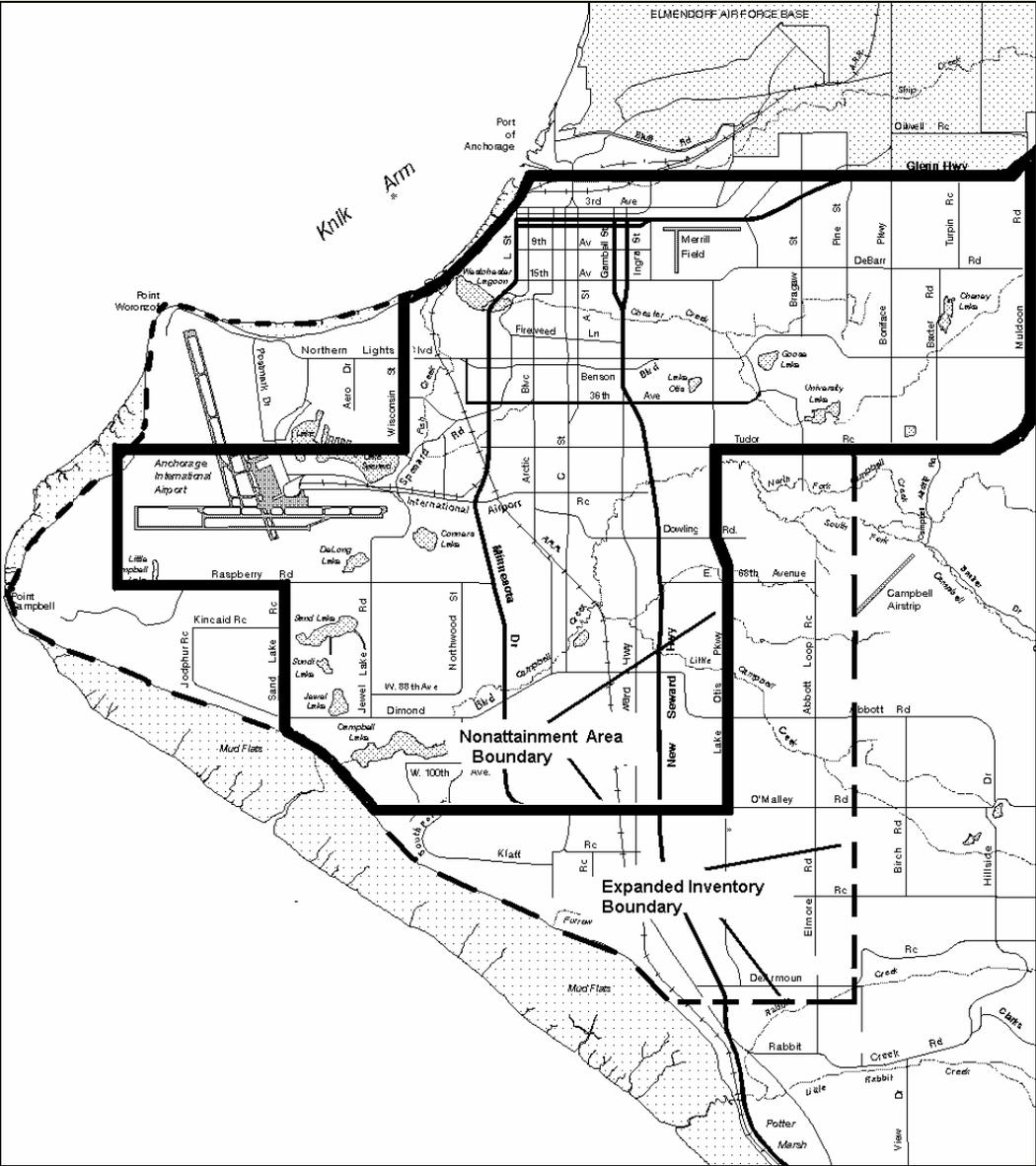
Measure or measures adopted will depend on nature of CO violation

- Curtail or limit fireplace and wood stove use when high CO is predicted
- Increase public awareness and education, transit, rideshare and van pool promotion
- Offer reduced transit fares for employees of companies that contribute to subsidy
- Reinstate block heater installation subsidy
- Reinstate ethanol-blended gasoline
- Reinstate I/M

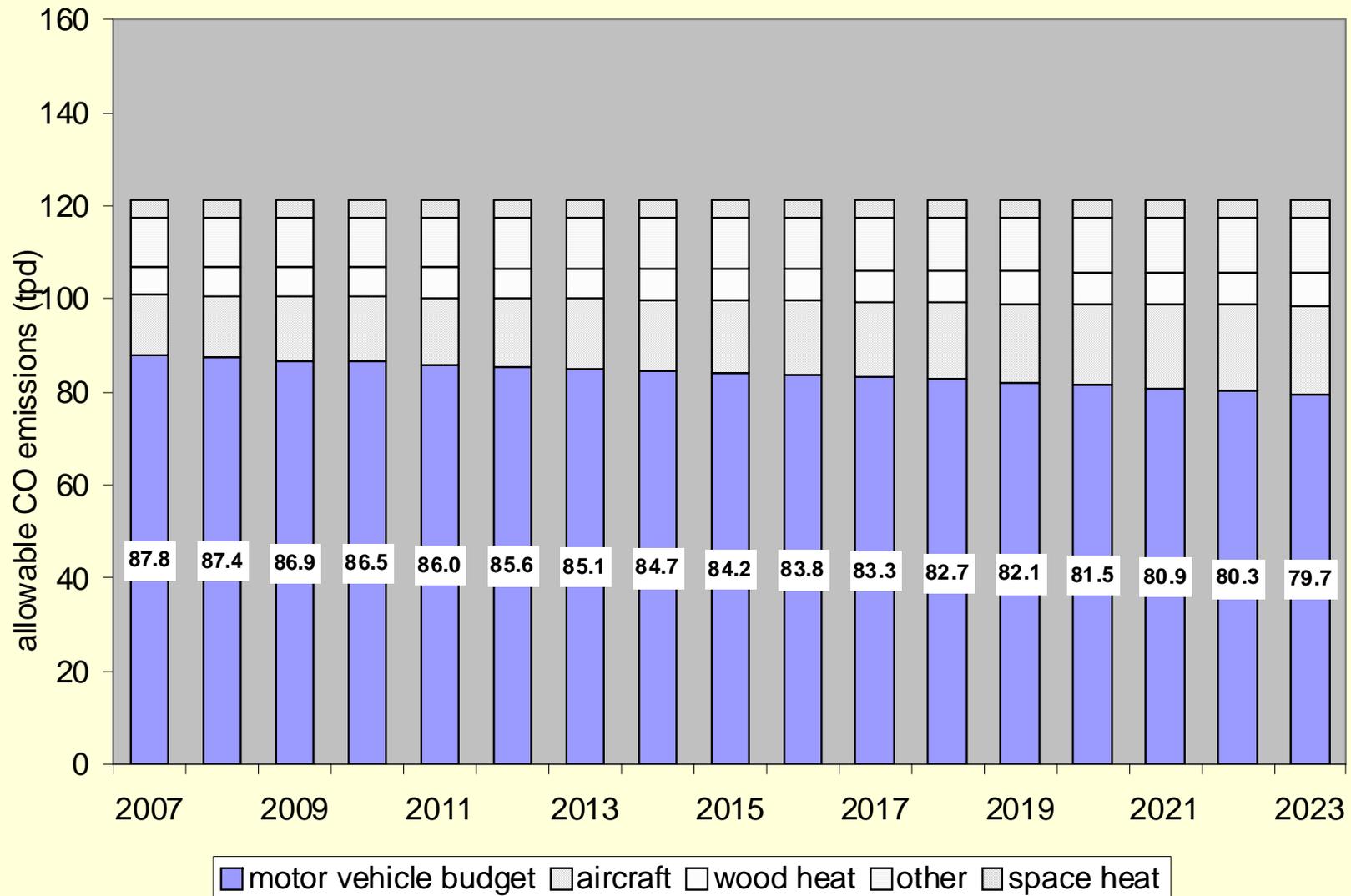
**Motor vehicle emissions
budget for use in
conformity analyses**

Motor vehicle emissions budget is the allowable amount of CO that can be emitted by motor vehicles in the budget area.

Conformity regulations require that CO emissions from future transportation plans and programs stay below the motor vehicle emission budget.



Because total CO emissions must remain below 121.5 tpd, the motor vehicle budget shrinks from 87.8 tpd in 2007 to 79.7 tpd in 2023 as other sources grow.



Preliminary projections suggest that future transportation plans and programs can meet the shrinking motor vehicle budget and thus meet conformity requirements.

