



# Fairbanks North Star Borough Fine Particulate Matter (PM<sub>2.5</sub>) Update

Nick Czarnecki, FNSB Air Quality  
Krishna Viswanathan, EPA Region 10  
Alice Edwards, DEC Air Quality

September 19, 2019

# Health Effects

## WHAT ARE THE HEALTH RISKS OF PARTICULATE MATTER?

Particulate matter poses a serious health risk because it can travel into the respiratory tract. PM2.5 is especially dangerous because it can penetrate deep into the lungs and sometimes even into the bloodstream.

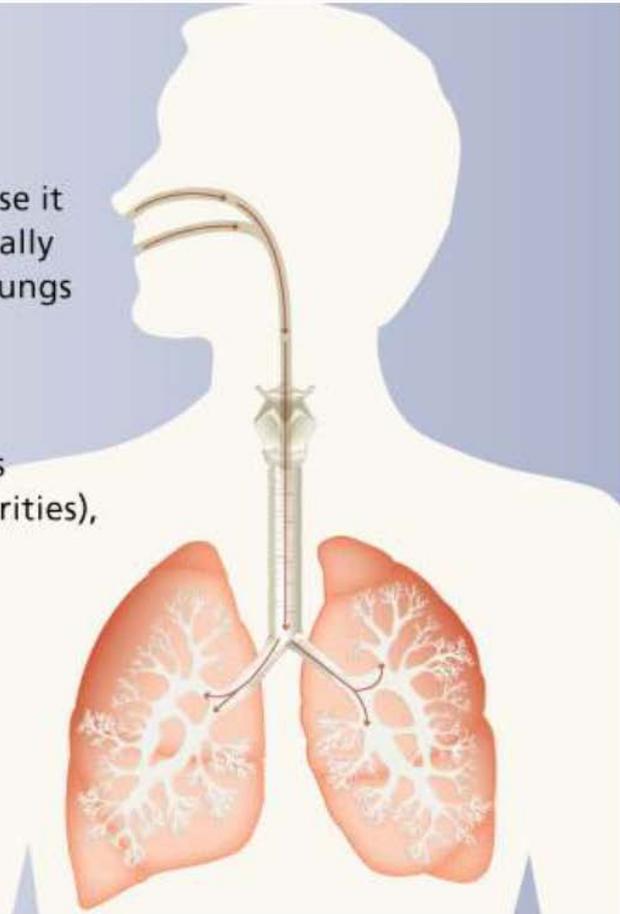
## HEALTH EFFECTS

- » Decreased lung function
- » Chronic bronchitis
- » Increased respiratory symptoms
- » Cardiac arrhythmias (heartbeat irregularities),
- » Heart attacks
- » Premature death

## GROUPS SENSITIVE TO PM2.5

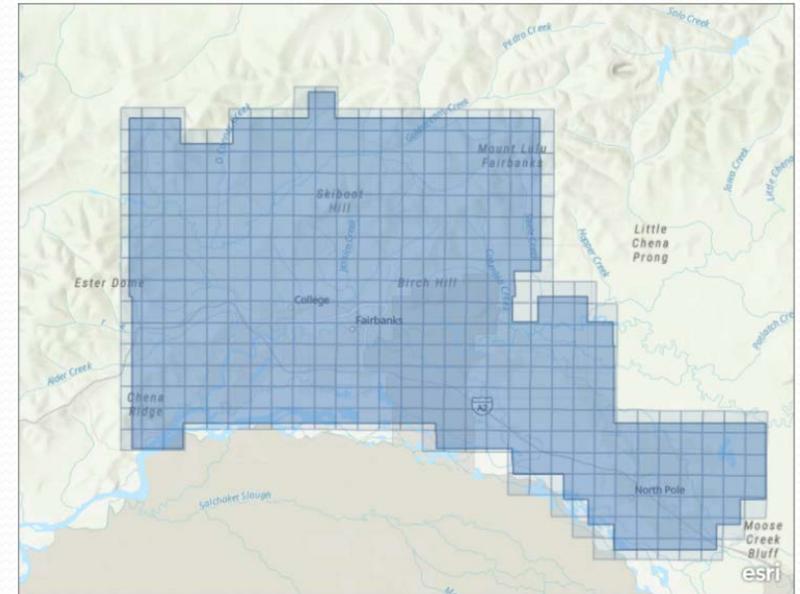
- » People with heart or lung disease
- » Older adults
- » Children
- » Pregnant women

Source: [www.epa.gov](http://www.epa.gov)



# Health Impacts in Fairbanks and North Pole

- EPA is working with ADEC and FNSB to use the BenMAP model to better understand the beneficial health impacts of improving air quality in the FNSB.
- Preliminary modeling results demonstrate that air quality improvements in recent years have saved lives, and will continue to do so in the future as  $PM_{2.5}$  concentrations continue to decrease.
- We are working to improve this preliminary modeling, as well as exploring use of the BenMAP model to estimate other types of health impacts, such as nonfatal heart attacks and hospital admissions for asthma and other respiratory conditions, and to estimate the economic impacts associated with these health impacts.

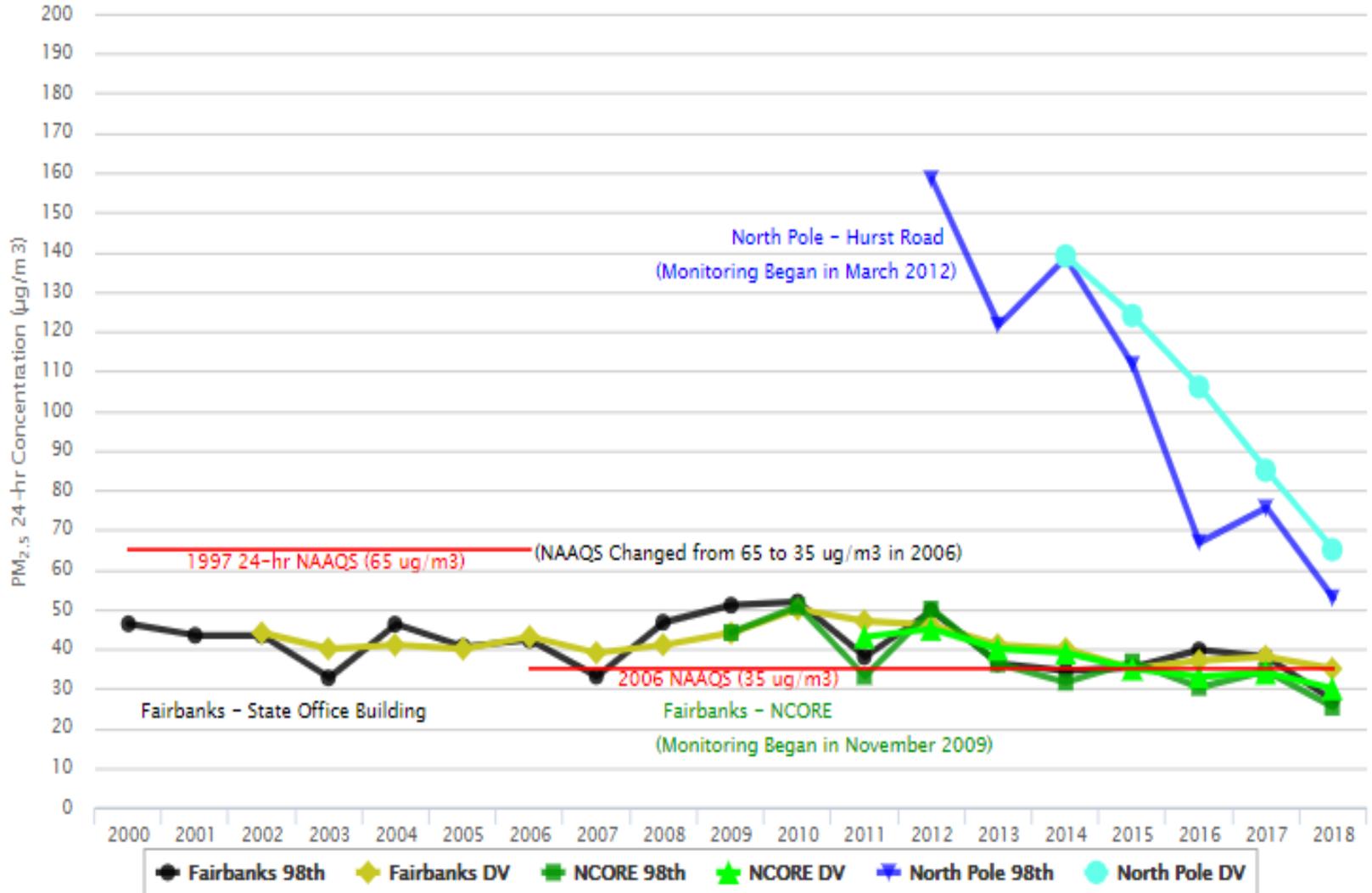


# Clean Air Act, Roles, and Paths to Success

- In passing the Clean Air Act, Congress made clear that air pollution prevention and air pollution control at its source is the primary responsibility of States and local governments. CAA Section 101(a)(3).
- Experience has demonstrated that when states and local governments embrace this responsibility, pollution is reduced and standards are met. We have seen this repeatedly throughout our nonattainment planning since the inception of the NAAQS.
- The Clean Air Act requires a plan that shows how this community will attain the PM<sub>2.5</sub> standard. The plan must address how to reduce emissions from all sources.
- What works: local stakeholders working with the local government and engaging the entire community. This approach has been successful throughout the US including in Fairbanks when it had a carbon monoxide (CO) issue.

# PM<sub>2.5</sub> 24-hr Design Values

Fairbanks State Office Building, Fairbanks NCORE & North Pole Hurst Road



# Purpose of the Serious SIP

- Bring area into compliance with the health based standards.
- Meet Clean Air Act and federal requirements for a Serious nonattainment area
  - Provide for realistic and common sense approaches
  - Wood burning is an integral part of home heating
- Incorporate as many Stakeholder recommendations as possible for a community based approach.

# Process: Development of the Serious SIP

- Effort began in 2015, within weeks of submitting the Moderate SIP
- March 2018 – release of the Preliminary Draft SIP Documents, incentivized the local Stakeholder process that provided critical information.
- December 2018– formal recommendation received from the Stakeholder Group
- May 2019 – DEC released draft regulations and Serious SIP
- July 2019 – Public comment period closed

# Where we are at:

- The Public Comment Period ended on July 26, 2019
  - During the comment period, DEC attended over 25 separate meetings to discuss the plan and answer questions.
  - 82 questions were received and answers posted a week prior to the end of the comment period.
  - Many comments received on a wide range of topics.
  - Public comments are posted on DEC web site at: <http://dec.alaska.gov/air/anpms/communities/fbks-pm2-5-2019-comments/>
- DEC is committed to submitting the Serious SIP to EPA before the end of 2019.

# Next Steps - Regulatory

- EPA Actions on Serious Area Plan
  - Anticipate making a completeness determination to ensure that it meets all of Part 51 Appendix V submittal requirements.
  - Have 12 months to take action on the plan
- 5% Plan
  - Anticipate that the area will not attain in 2019 and that a 5% plan will be required under CAA 189(d). This is a revised attainment plan that demonstrates 5% reduction in emissions annually from direct PM<sub>2.5</sub> or PM<sub>2.5</sub> precursors.
  - Plan is due within 12 months of failure to attain the standard by the attainment date of December 2019, and the plan must show attainment as expeditiously as possible but no greater than 5 years from the effective date of the EPA's finding of failure to attain. The Administrator may extend the attainment date to no greater than 10 years from the effective date of the EPA's finding of failure to attain.

# Advantages of 5% Plan

- Benefits of the regulations in Serious Plan will get credited in the 5% Plan
- Most Stringent Measures (MSM) are not required across the board
- New modeling Design Value and base year
- Will likely show attainment earlier than 2029
- If new measures are needed, ability to pick and choose measures that make the most sense and directly target the issue.

# Next Steps and Timeline for 5<sup>0</sup> Plan

- Efforts have already begun on the development of 5<sup>0</sup> Plan.
- Targeting release of 5<sup>0</sup> Plan for public comment in May 2020.
- 5<sup>0</sup> Plan submittal to EPA around December 2020 (due date).
- Anticipate an update to the 5<sup>0</sup> Plan to incorporate updates to the modeling platform around 2023/2024.

# DEC Air Quality Programs This Winter

- Air Quality Advisories and Curtailment Program
  - DEC will forecast and post air quality alerts and curtailments
    - Individuals can sign up for email or text notification
  - Waivers Available to Allow Burning on Curtailment Days
    - Will have Stage 1 and “No Other Adequate Source of Heat” (NOASH) waivers
    - Must apply to obtain a waiver for this winter
    - DEC's new online application should be available the week of October 7
  - DEC wants to build community partnerships to help spread the word about requirements and encourage individuals to comply
  - For more information:  
<http://dec.alaska.gov/air/anpms/communities/fbks-pm2-5-nonattainment-control-measure-requirements>

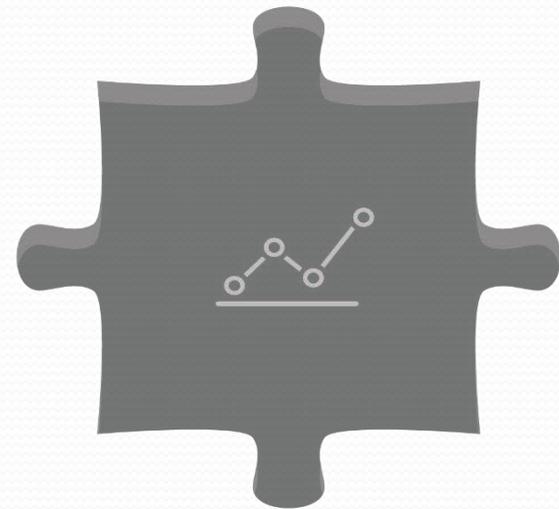
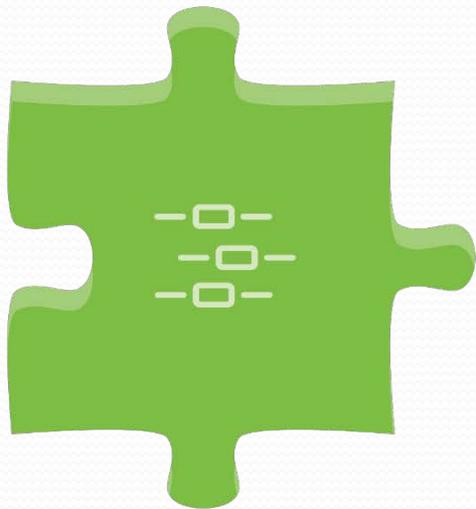
# Roll Out of Serious SIP Programs

- Once the Serious SIP and regulations are final and effective, DEC will roll out changes to programs.
  - Anticipating regulations will be filed in early December and with new regulations effective in early January.
- Planning outreach to the community to let everyone know what has changed.
  - Outreach will begin once Lt. Governor has filed the regulations, which is 30 days before the effective date.

# Retrofit Control Device (RCD) Testing

- **Testing Program**

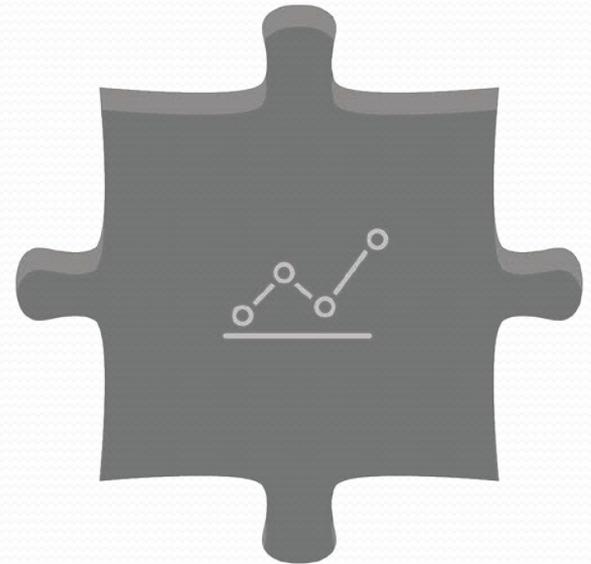
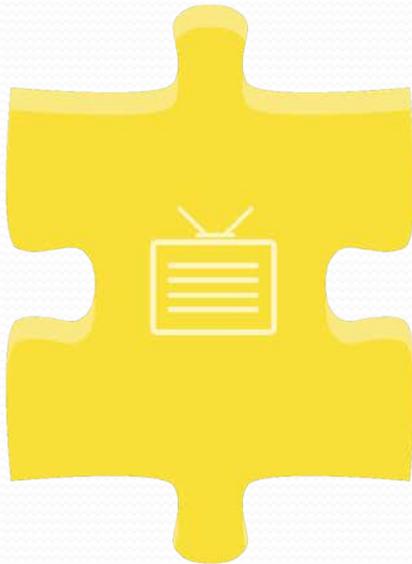
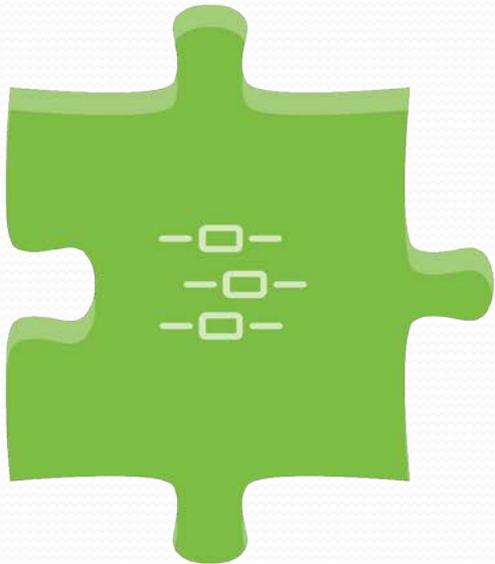
- Quantify emission reductions
  - Regulatory approval
  - Future funding opportunities
- FNSB is testing ESP & Catalyst
- Testing November/December, results January/February



# Retrofit Control Device (RCD) Testing

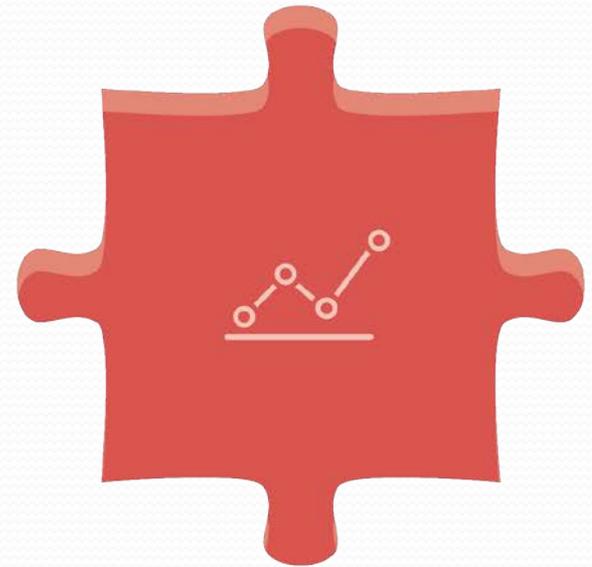
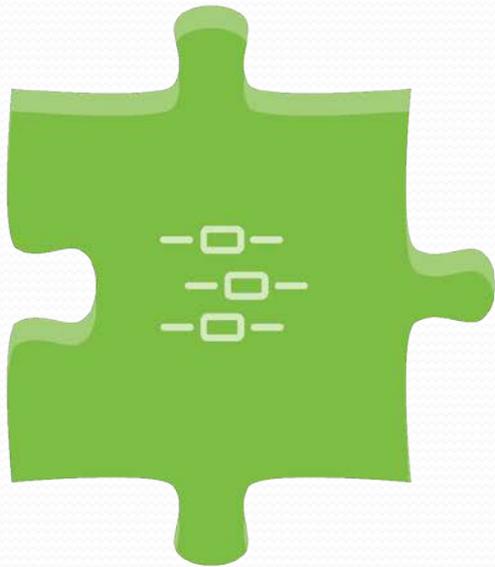
- **GVEA Pilot Project**

- Provide baseline data
- Insight for large scale implementation
  - Professional installation
  - Chimney sweep frequency



# Retrofit Control Device (RCD) Testing

- **Long Term Performance?**
- **Implementation Strategy?**
- **How Does This Fit into the SIP?**



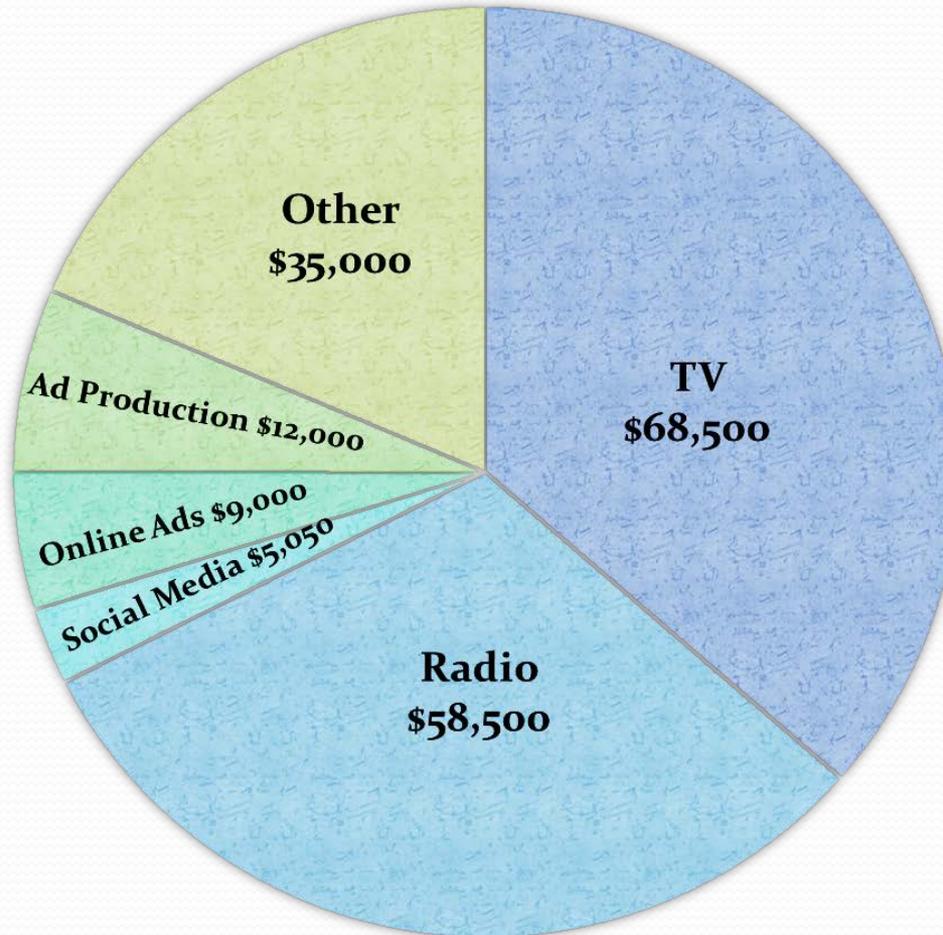
# Retrofit Control Device (RCD) Testing

- **Large Scale Implementation**
  - Target largest emission reductions
  - At lowest economic cost



# Outreach Funding/Budget

**Total Budget: \$188k**



# What will funding get us?

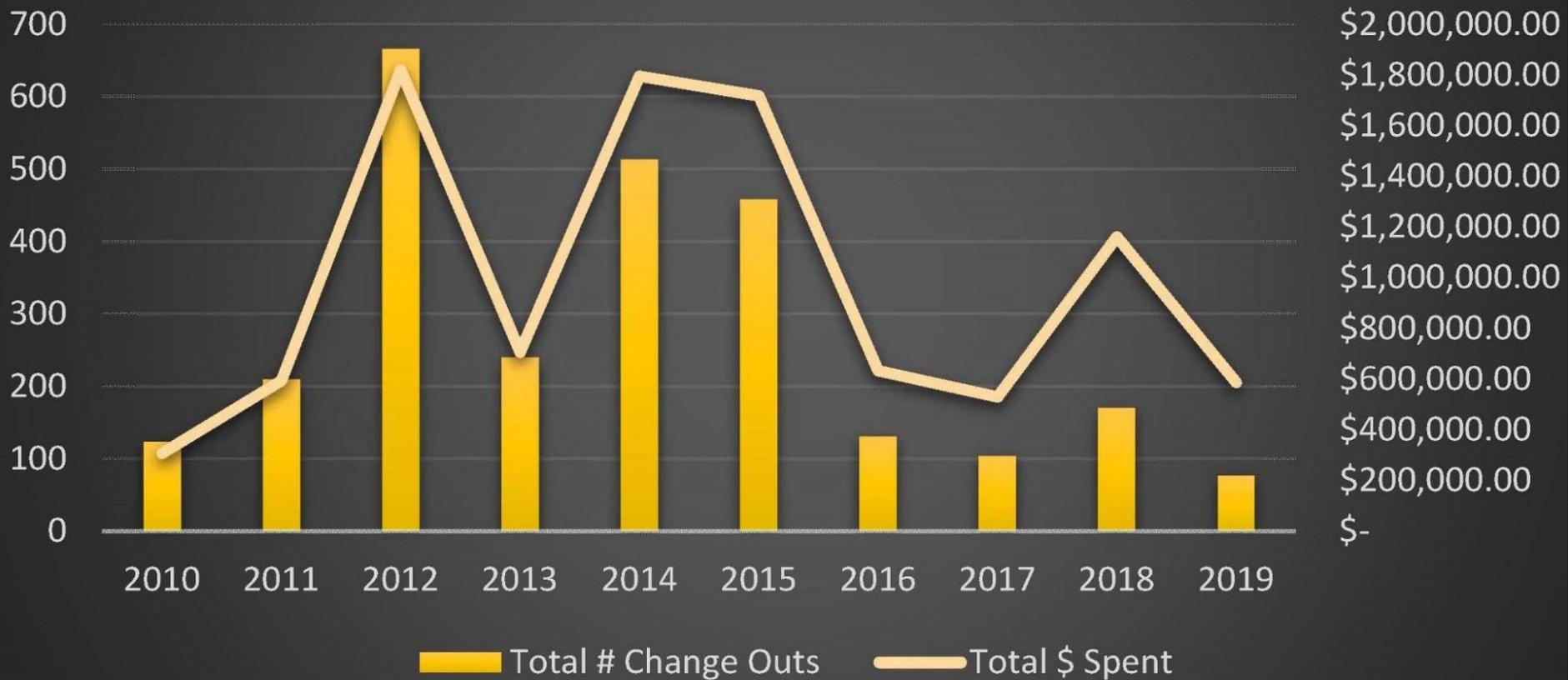
- Airtime for ads on TV and radio on variety of stations
  - TV (~300 ads/month)
  - Radio (~700 ads/month)
- New ad development – approx. 1 ad per month
- Some Flexibility with new ads to be developed
- Online / social media advertising
  - Ex: \$350 over 3 weeks = ~60k Impressions & 4k+ views of 2 ads
- Targeted outreach efforts in the AQCZ

# Other Projects...

- Continuing Education Class (CEC) at FMH
- Infographic for Draft Serious SIP
- AQ Timeline: Creation / Printing / Web hosting
- AQ Resource Booklet: Update / Print
- Printing Educational Materials
- Advertise Change Out Program: Post Cards / Posters

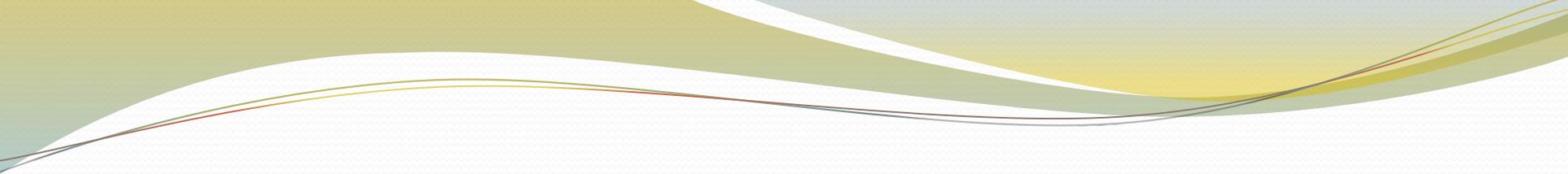
# Change Out Program Funding Spent

## FNSB Change Outs To-Date



# Targeted Airshed Grant

- Congress determined that Federal financial assistance and leadership is essential for the development of cooperative Federal, State, regional, and local programs to reduce air pollution. We will continue to provide all our available resources to assist this area in achieving the air quality standards. CAA 101(a)(4).
- Targeted Air Shed grant.
  - FY2016 – Awarded ~\$2.5million for woodstove changeouts and conversions. FY2017 – Awarded ~\$4 million for conversions to liquid fuel
  - FY2018 –In 2018 Fairbanks has been selected for its third Targeted Airshed Grant and EPA anticipates awarding \$5 million for continued work on reducing PM emissions from wood smoke in the nonattainment area.
- **EPA's total contribution over the last three years will be over \$12 million to reducing emissions in the Fairbanks North Star Borough.**



Thank You