



WOOD-BURNING STOVES & AIR POLLUTION IN FAIRBANKS

**PRESENTATION TO:
TANANA VALLEY STATE FOREST CITIZENS' ADVISORY COMMITTEE
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OVERVIEW



- **Background: Air Quality in the Fairbanks North Star Borough Nonattainment Area**
- **DEC's New Woodstove/ Pellet Stove Requirements**
- **EPA's Woodstove/Pellet Stove Certification Program**
- **Results of DEC's review of EPA's certification program**
- **FNSB Change Out Program**



BACKGROUND



- Portions of the Fairbanks North Star Borough (FNSB) do not meet federal air quality standards for small particulate matter called PM2.5.
- PM2.5 comes from incomplete combustion of fuel; coal, wood, diesel
- The primary cause of the air quality problems in FNSB is wood smoke.
 - Still unsure if it is too many wood fired devices in the area or a combination of old devices and poor burning practices.
- Resources and measures to control wood smoke are focused on:
 - Clean burning devices
 - Dry Wood
 - Proper installation
 - Proper Operation
 - Curtailment/Burn Bans on poor air quality days/when air is stagnant and wood smoke builds up near the ground.
 - WSCOP, date certain removal of uncertified appliances & older devices, real estate requirements



DEC'S REQUIREMENTS FOR NEW WOOD AND PELLET STOVES



- New devices must be EPA certified, AND
- New devices must have an EPA certified average emission rate that is 2.0 g/hr or lower, AND
- New devices must meet the DEC requirements:
 - Device's certification test must not exceed a 1-hour filter pull of 6.0 g/hr
 - DEC has approved the underlying test method results
- New devices must be professionally installed
- No new construction may have a wood-fired device as the only source of heat
- New devices must be registered with the DEC



EPA'S WOOD & PELLET STOVE CERTIFICATION PROGRAM



2015 Residential Wood Heating New Source Performance Standards (NSPS)

- Implemented new system to review results of certification testing
- ISO-accredited third-party certifiers review the reports and certify results.
- Application package submitted to EPA for review.
- EPA review process unknown.
- ISO implements audit and quality assurance program
- Company audit programs are Confidential Business Information (CBI)
 - Details of plans are CBI
 - Results of inspections not publicly available



RESULTS OF DEC REVIEW OF EPA CERTIFICATION PROGRAM



- Reviewed over 230 reports and compared them to the federal requirements as well as DEC requirements.
- No report met the federal requirements. Over 50% of the reports missing significant portions of the required reporting elements.
- Large % have contradictory information regarding what they tell the public.

| Source of data | Manufacturer Marketing Materials | EPA Cert. Report |
|-----------------------------------|----------------------------------|------------------|
| PM emissions (g/h) | 1.26 | 1.26 |
| HHV efficiency (%) | 78 | 70 |
| Firebox volume (ft ³) | 1.9 | 1.44 |
| Max heat output (Btu/hr) | 65,000 | 23,330 |
| Log length (in) | 18 | 16 |

| Source of data | Manufacturer Marketing Materials | EPA Cert. Report |
|-----------------------------------|----------------------------------|------------------|
| PM emissions (g/h) | 1.3 | 1.3 |
| HHV efficiency (%) | 60.3 | 60.3 |
| Firebox volume (ft ³) | 4.4 | 4.04 |
| Max heat output (Btu/hr) | 95,000 | 34,057 |
| Log length (in) | 24 | 16 |



DRY WOOD REQUIREMENTS



- Dry wood only is required to be burned – requirement has been in place for years.
 - Dry wood is defined as wood moisture content of 20% or less
 - If using dry wood, little to no visible emissions from the stack
- Currently all commercial wood seller are required to be registered with DEC
 - Commercial wood sellers must supply to wood buyers with a form that has either the measured wood moisture of the wood being sold or an indication that the wood is wet.
 - DEC does have registered dry wood sellers. This is where DEC has confirmed that the wood is dry - either dried like in the kiln, or inspected fire burn
- October 1, 2021 all commercial wood sellers may only sell dry wood.
 - Exception – 8-foot rounds may be sold if proof supplied that the wood will not be burned in the season it is delivered.

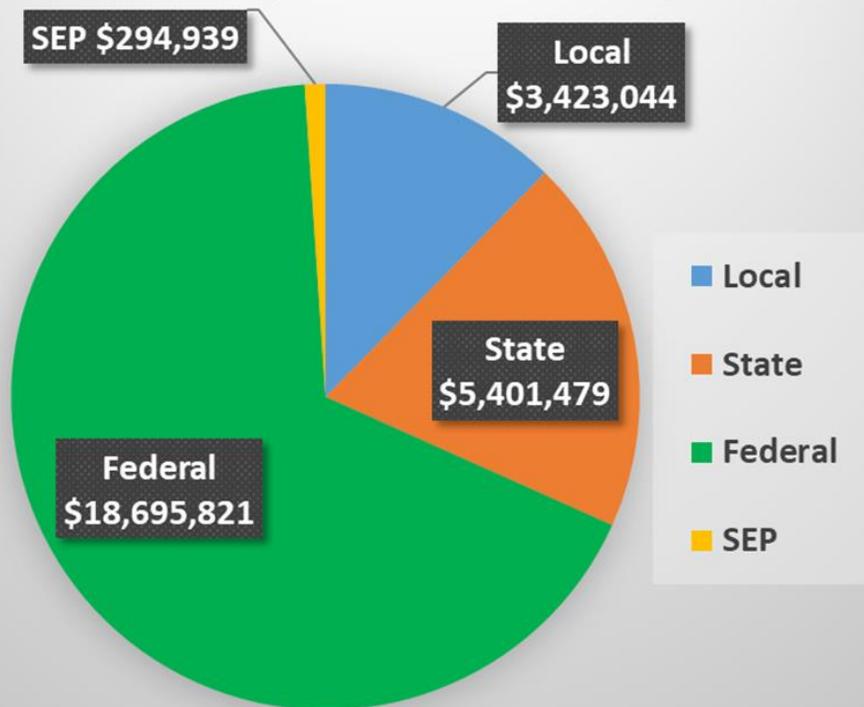


CHANGE OUT PROGRAM

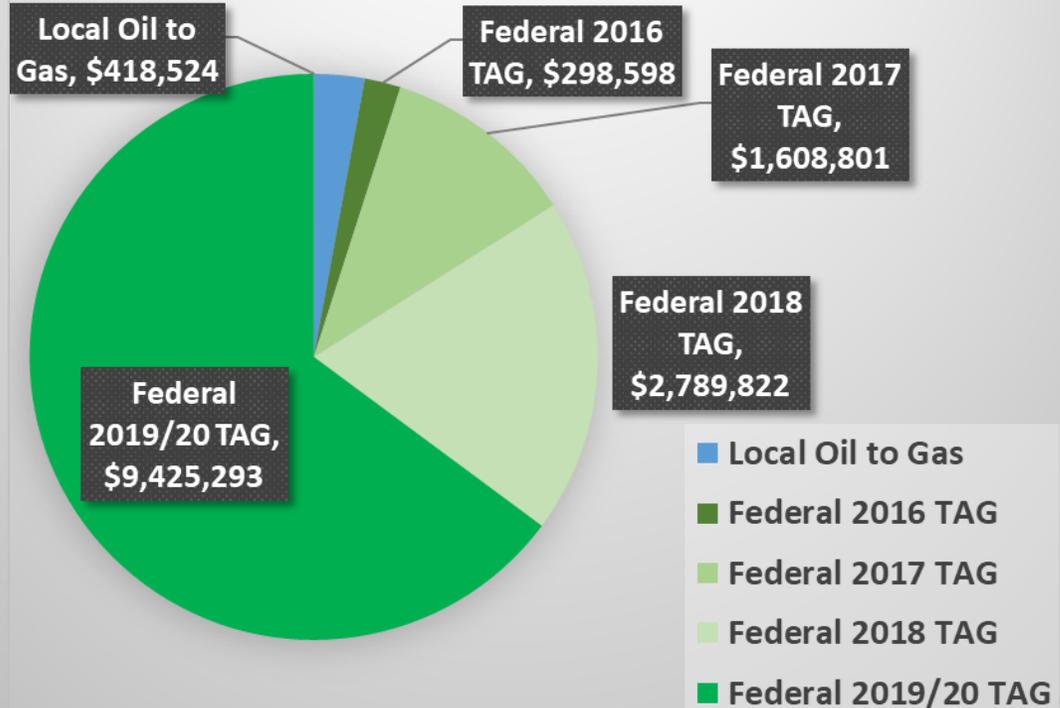


FNSB Wood Stove Change Out Program has been continuously operating since 2010

Total Program Funding by Source
Total Funding Since 2010 = \$27,815,282

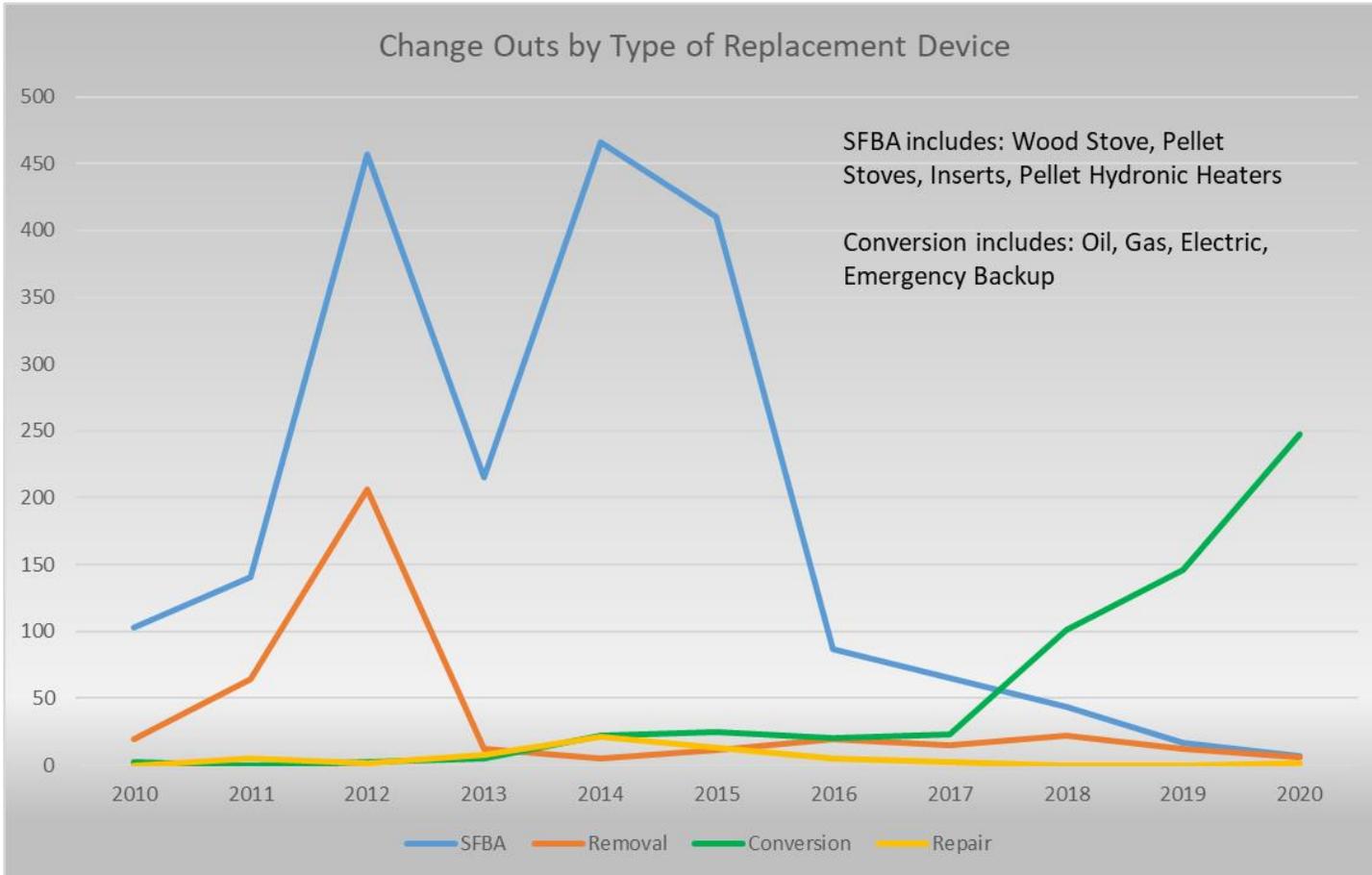


Funding Balance Q1 2021 by Source
Funding Balance = \$14,541,038





CHANGE OUT PROGRAM



- Starting in 2017 a shift away from using public funding to install wood stoves
 - Program managed to maximize emission reductions
 - Emission reduction dependent on
 - Device
 - Professional Installation
 - Expertise and willingness of homeowner to burn clean dry fuel and operate correctly
- DEC's certification review shows new devices may not be as clean as originally thought



QUESTIONS?



- If you have questions later, please feel free to contact:
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