

MEETING I

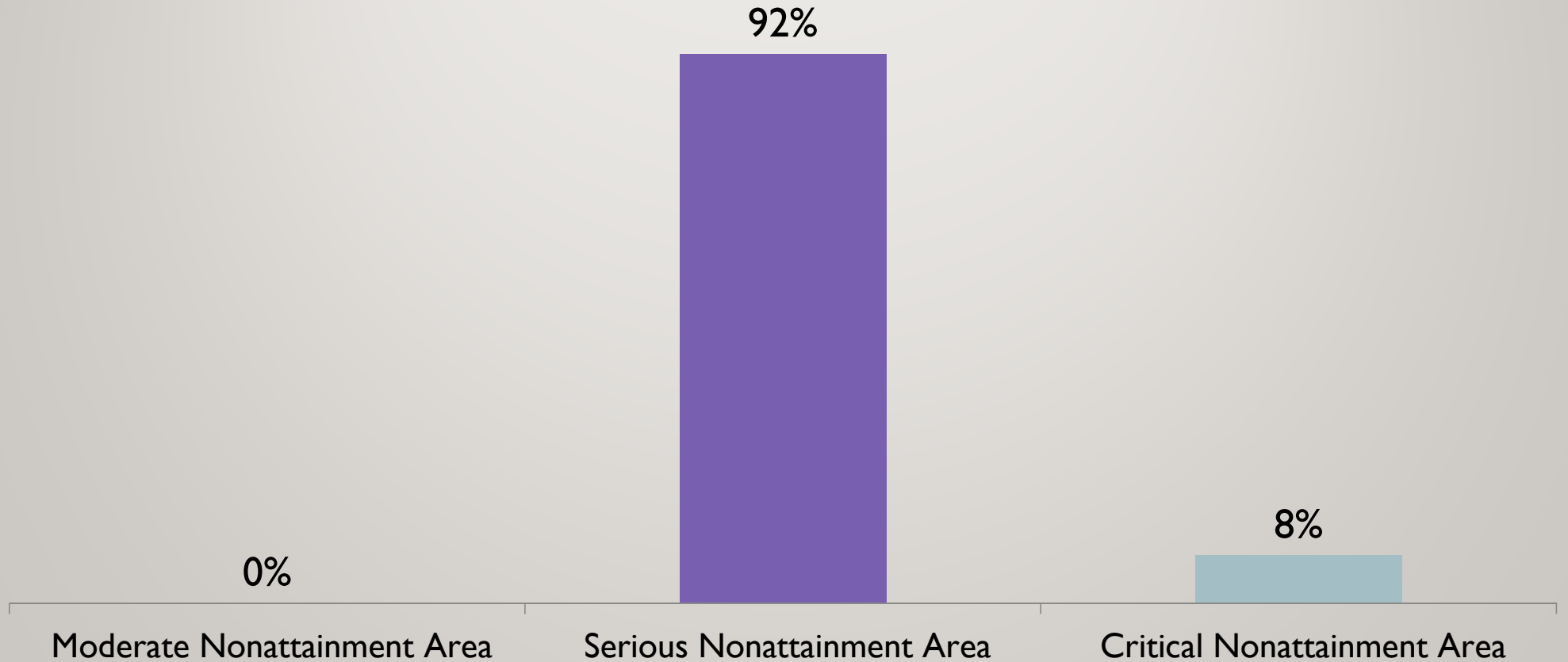
STAKEHOLDERS GROUP KNOWLEDGE ASSESSMENT

COMMUNITY AIR QUALITY STAKEHOLDERS GROUP

Because the Fairbanks North Star Borough (FNSB) continues to exceed the national air quality standard for fine particulates ($PM_{2.5}$), the Environmental Protection Agency (EPA) has designated the borough as a...

1. Moderate Nonattainment Area
2. Serious Nonattainment Area
3. Critical Nonattainment Area

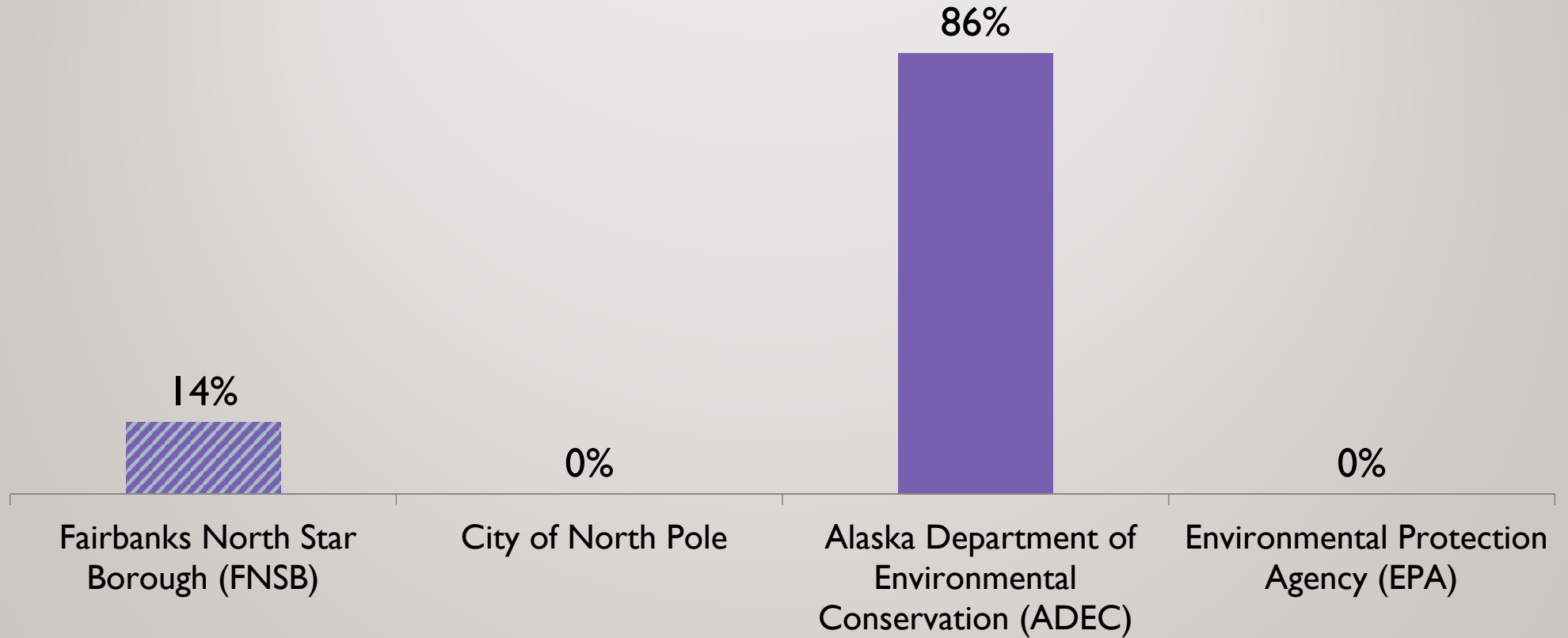
THE EPA HAS DESIGNATED FNSB AS A PM_{2.5}...



Due to the reclassification of FNSB as a Serious PM_{2.5} non-attainment area, a Serious SIP (State Implementation Plan) must be drafted by...

1. Fairbanks North Star Borough (FNSB)
2. City of North Pole
3. Alaska Department of Environmental Conservation (ADEC)
4. Environmental Protection Agency (EPA)

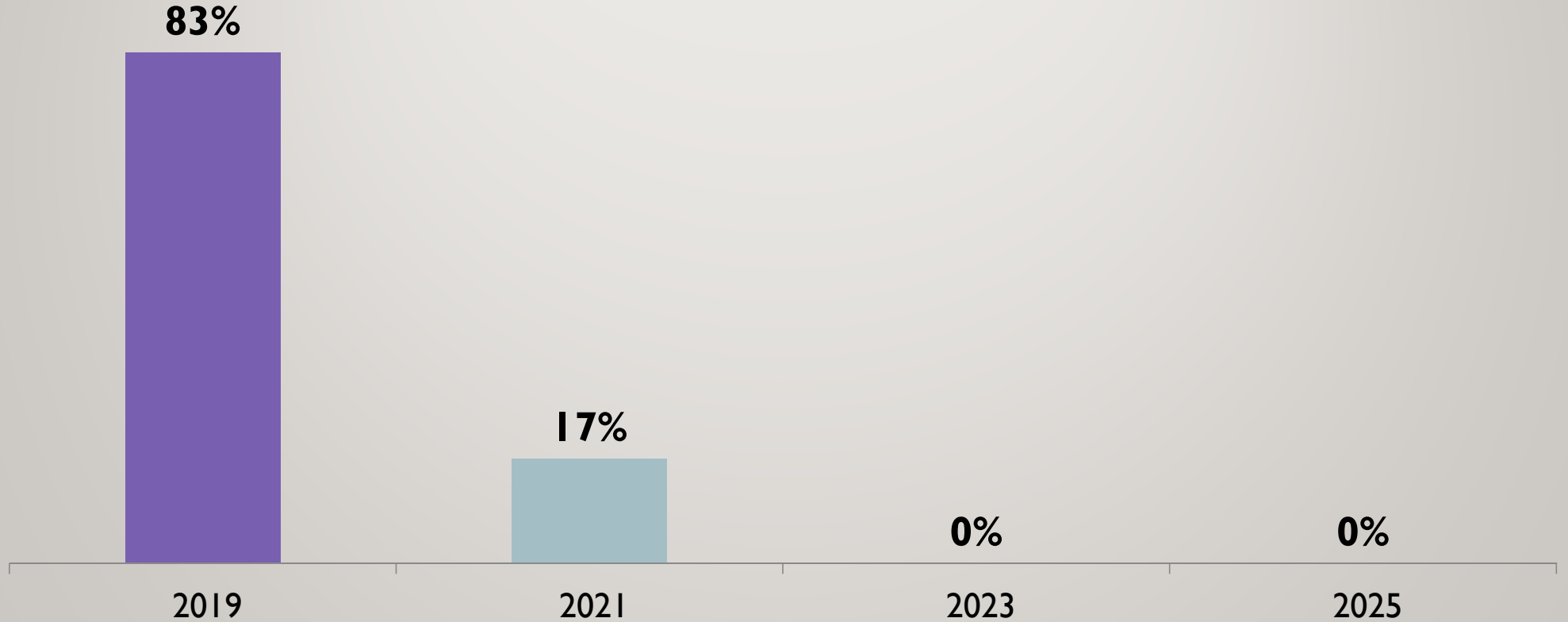
A SERIOUS SIP MUST BE DRAFTED BY...



What is the current statutory date for Fairbanks to attain the $PM_{2.5}$ standard:

1. 2019
2. 2021
3. 2023
4. 2025

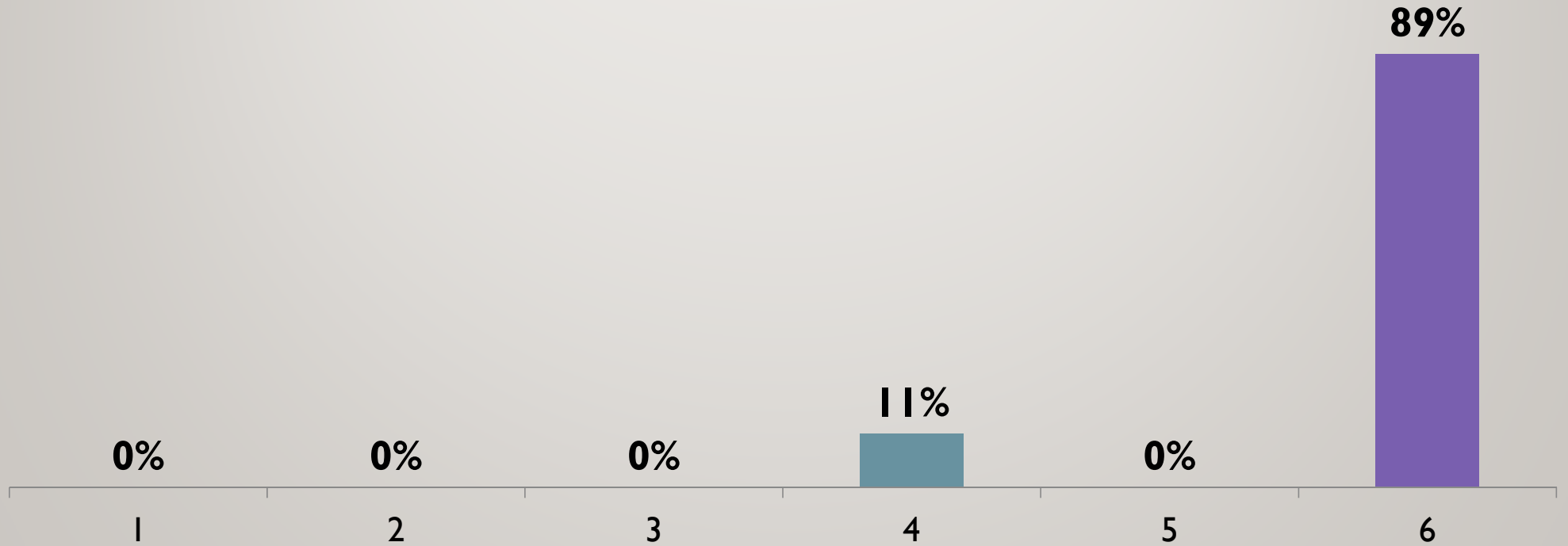
THE CURRENT STATUTORY DATE FOR FAIRBANKS TO ATTAIN THE PM_{2.5} STANDARD IS...



Which of these is a requirement of the State Implementation Plan (SIP) for a Serious nonattainment area:

1. Updated Emission Inventory for the community's base year (2013)
2. Updated Emission Inventory model for the mandated attainment date (2019)
3. Evaluation of control measures implemented in other PM_{2.5} nonattainment areas for technological and economic feasibility in FNSB
4. Implementation of Best Available Control Measures (BACM) and Best Available Control Technologies (BACT) determined to be technologically and economically feasible
5. Photochemical modeling of PM_{2.5} emissions that demonstrates attainment
6. All of the above

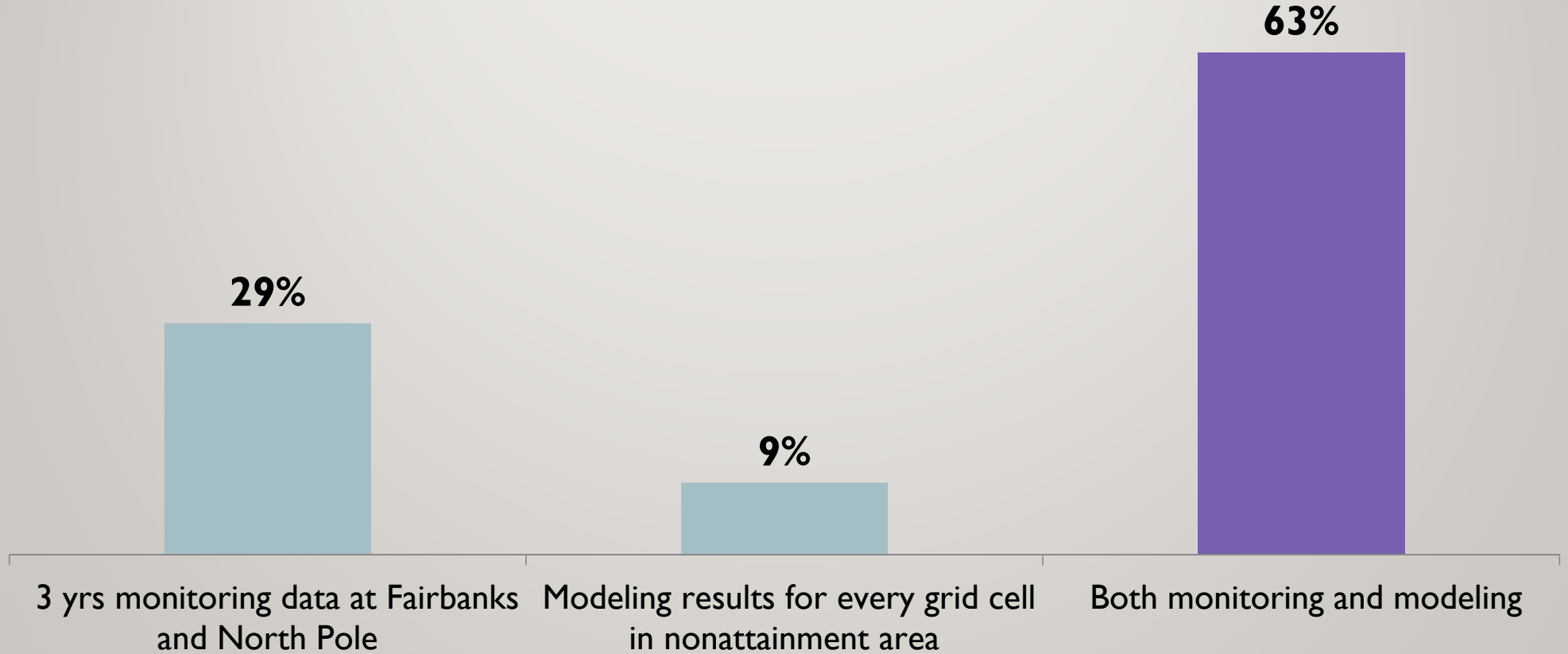
A SERIOUS SIP MUST INCLUDE...



Which of the following must be used to show attainment?

1. Three years of **monitoring data** below $35\text{mg}/\text{m}^3$ collected at the Fairbanks and North Pole monitors
2. **Modeling results** below $35\text{ mg}/\text{m}^3$ for every grid cell in the nonattainment area
3. Both monitoring and modeling to show attainment everywhere

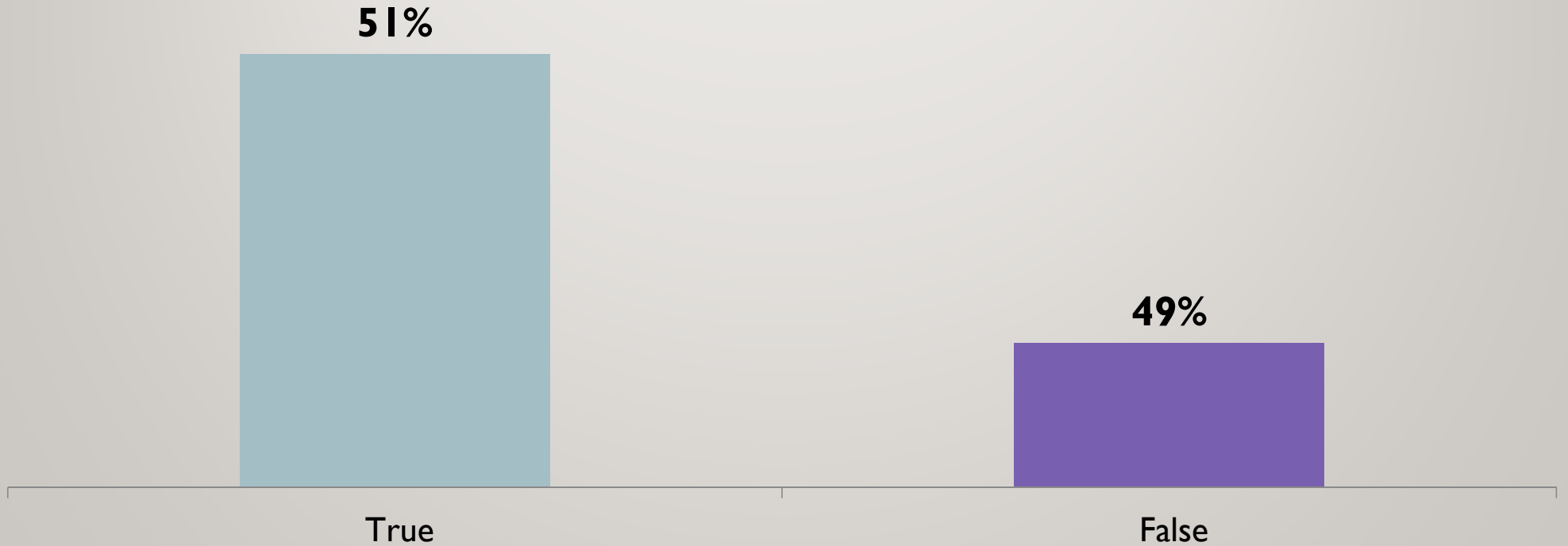
WHAT IS NEEDED TO SHOW ATTAINMENT...



Expanded availability of natural gas is an example of a Control Measure likely to help us demonstrate attainment by 2019.

1. True
2. False

NATURAL GAS IS A POTENTIAL CONTROL MEASURE LIKELY TO HELP US SHOW ATTAINMENT BY 2019

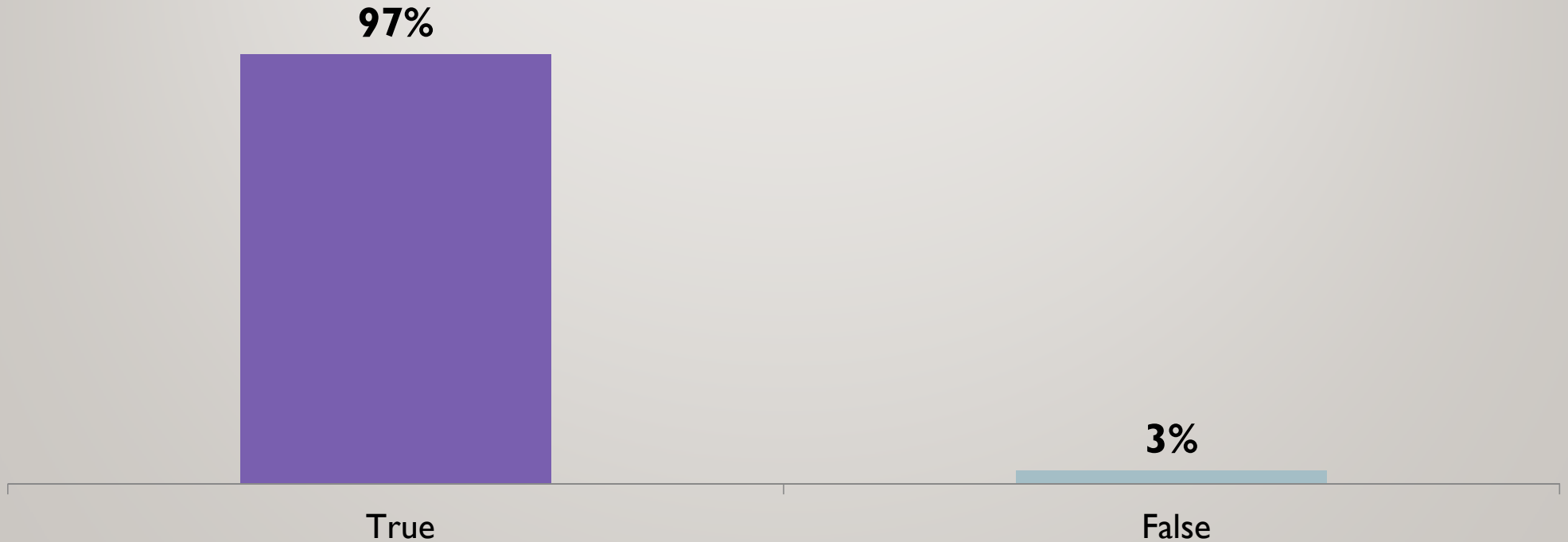


If attainment by 2019 cannot be shown, required controls would rise from Best Available Control Measures (BACM) to Most Stringent Measures (MSM).

1. True

2. False

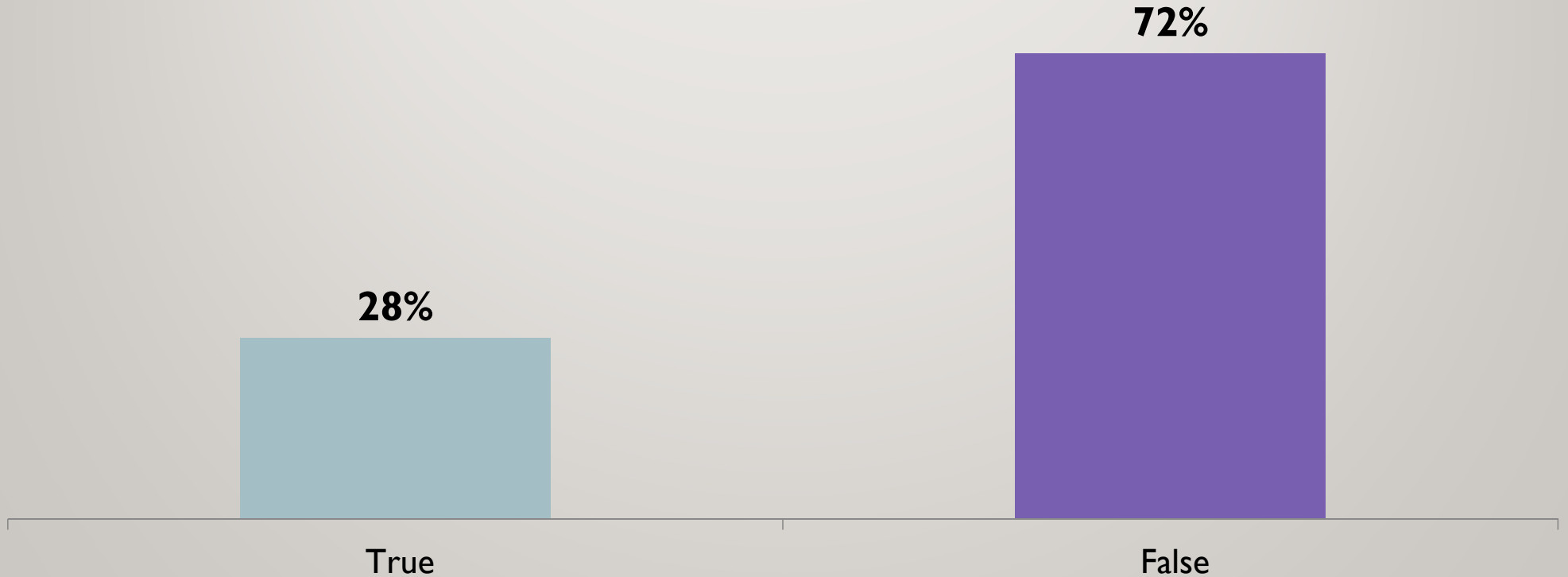
IF ATTAINMENT BY 2019 CANNOT BE SHOWN, REQUIRED CONTROLS WOULD RISE FROM BEST AVAILABLE CONTROL MEASURES (BACM) TO MOST STRINGENT MEASURES (MSM).



Most Stringent Measure (MSM) requirements will apply only to large industrial facilities (point sources).

1. True
2. False

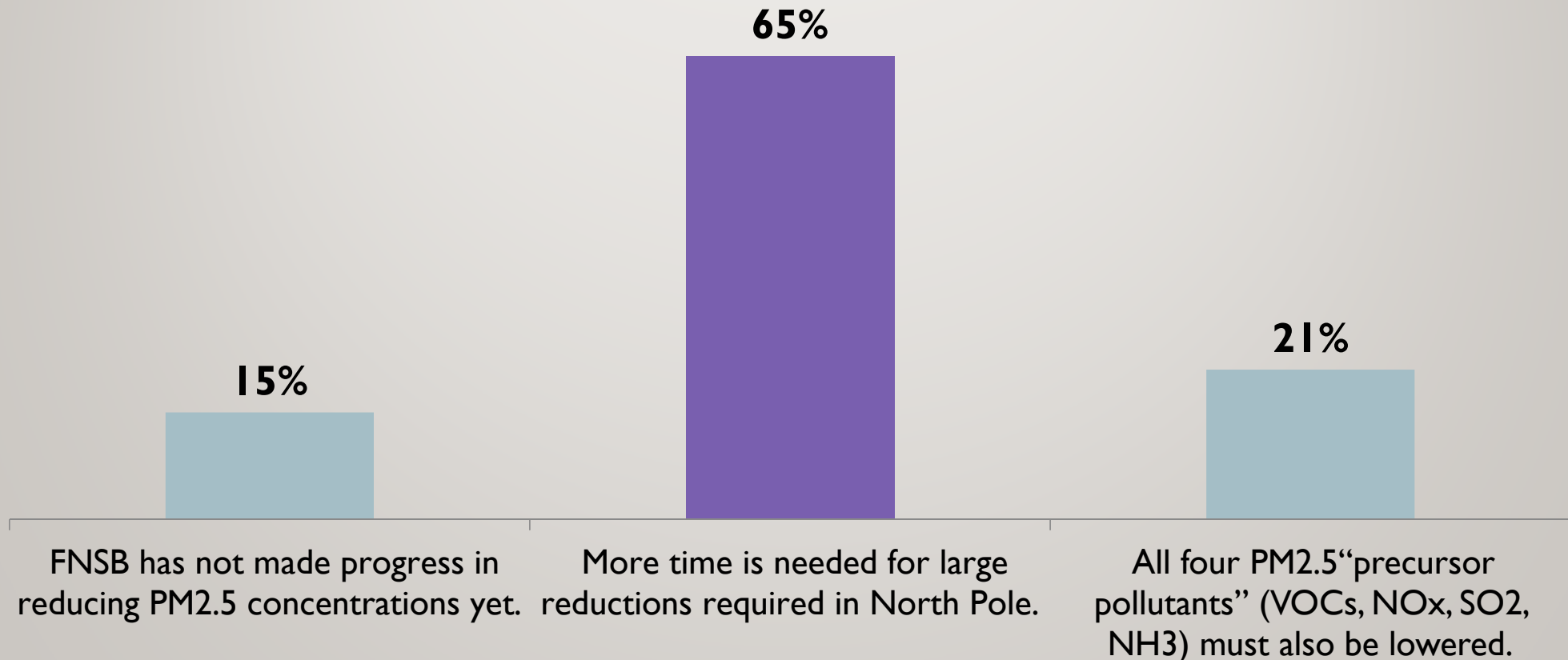
MOST STRINGENT MEASURE (MSM) REQUIREMENTS WILL APPLY ONLY TO LARGE INDUSTRIAL FACILITIES (POINT SOURCES).



The primary reason FNSB is unlikely to show attainment by 2019 is...

1. FNSB has not made progress in reducing $PM_{2.5}$ concentrations yet.
2. More time is needed for large reductions required in North Pole.
3. All four $PM_{2.5}$ “precursor pollutants” (VOCs, NO_x , SO_2 , NH_3) must also be lowered.

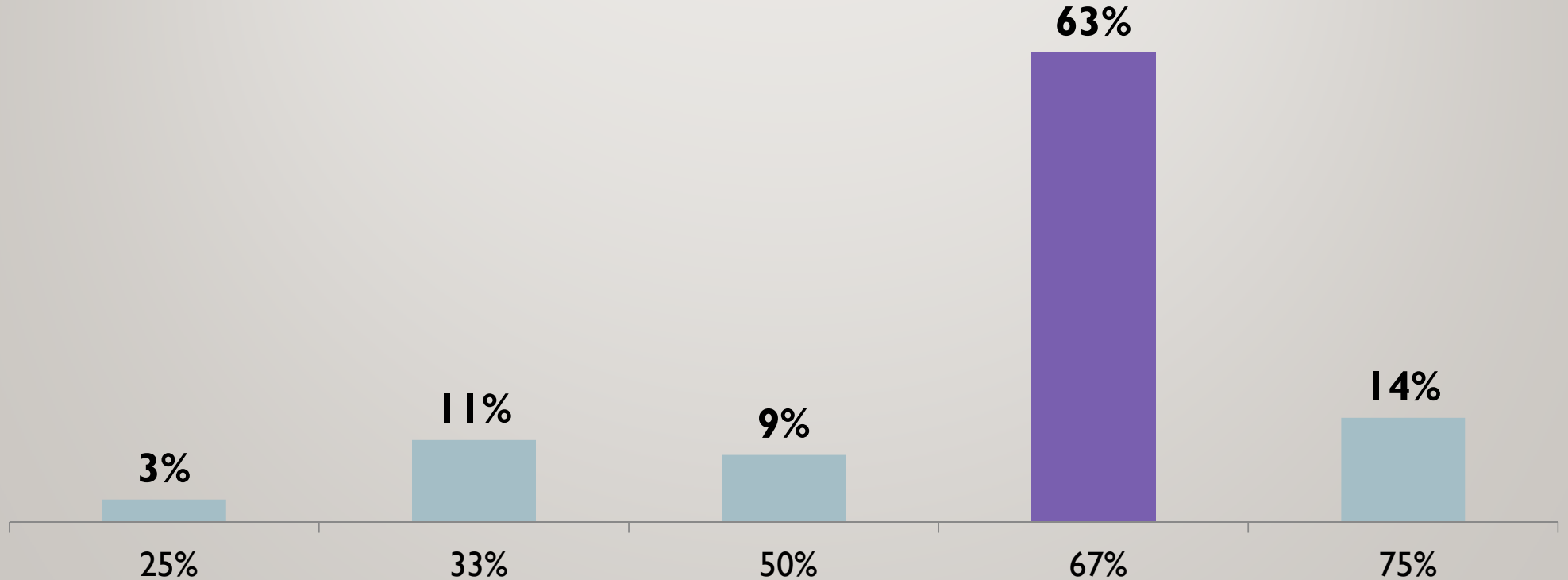
THE PRIMARY REASON FNSB IS UNLIKELY TO SHOW ATTAINMENT BY 2019 IS...



Based on monitoring at North Pole, our PM_{2.5} concentrations (as measured in our design value) must be reduced by how much to demonstrate attainment?

1. 25%
2. 33%
3. 50%
4. 67%
5. 75%

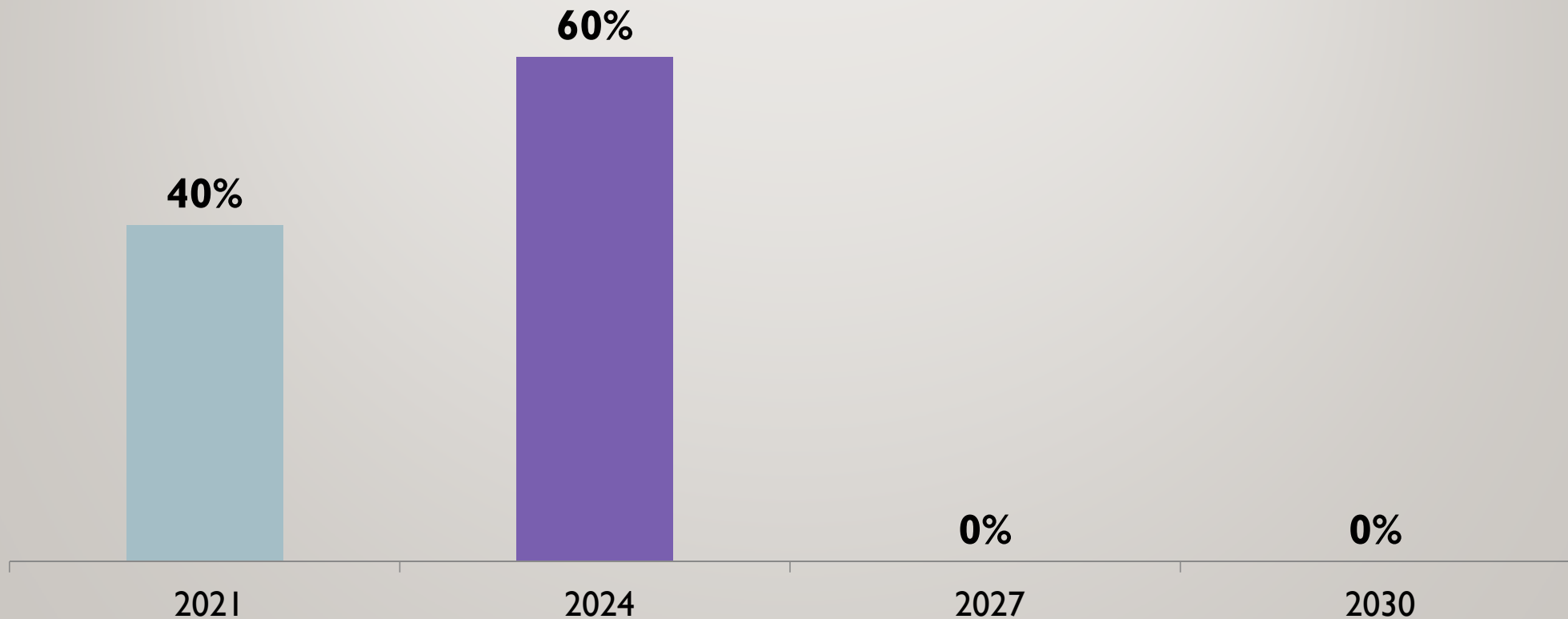
TO SHOW ATTAINMENT, PM_{2.5} CONCENTRATIONS AT THE MONITOR IN NORTH POLE MUST BE REDUCED BY...



If attainment cannot be demonstrated by 2019, ADEC can request an extension. The latest extension possible is for:

1. 2021
2. 2024
3. 2027
4. 2030

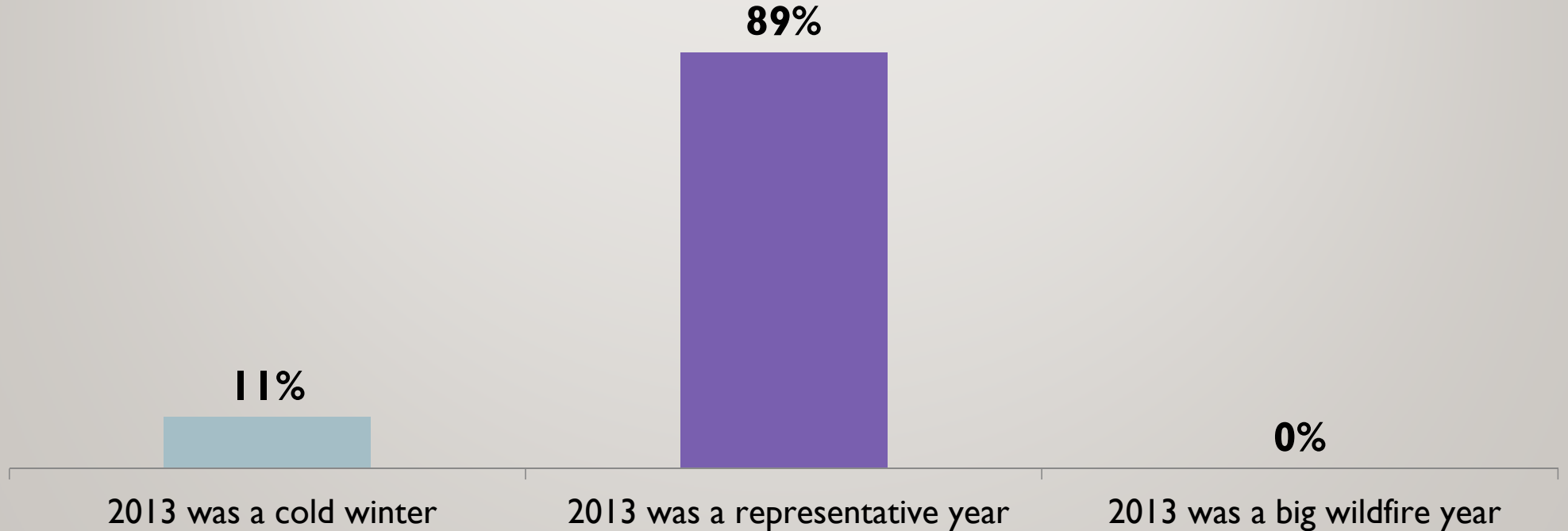
THE LATEST EXTENSION POSSIBLE IS UNTIL...



Which is one of the reasons 2013 was chosen as a baseline year by ADEC and EPA?

1. 2013 was a cold winter
2. 2013 was a representative year, meteorologically speaking
3. 2013 was a big wildfire year in Interior Alaska

ONE REASON 2013 WAS CHOSEN AS A BASELINE YEAR BY ADEC AND EPA WAS...



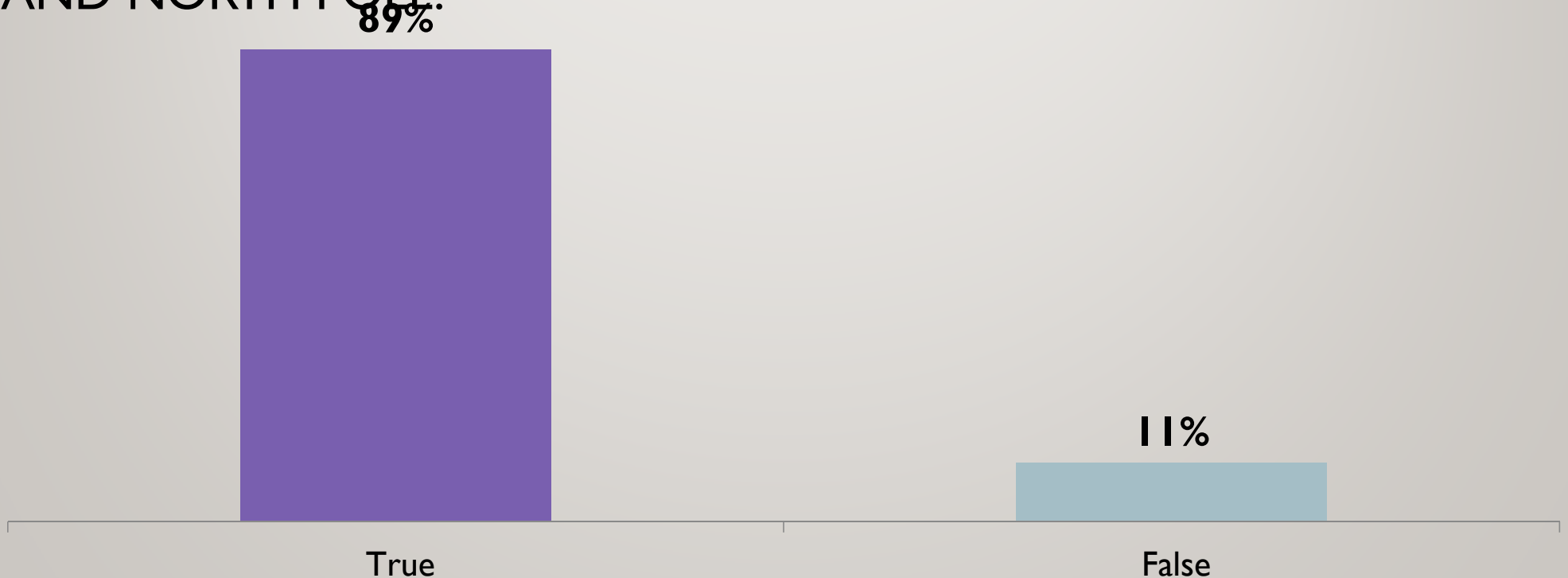
One reason FNSB had a large increase in its Design Value* between 2006-2008 and 2014-2016 is that the initial designation was based on monitoring in downtown Fairbanks only, and the later value was based on monitoring in Fairbanks and North Pole.

1. True

2. False

**A community's design value is the 3-year average of 98th percentile 24-hour $PM_{2.5}$ concentrations.*

ONE REASON FNSB HAD A LARGE INCREASE IN ITS DESIGN VALUE IS THAT THE INITIAL DESIGNATION WAS BASED ON MONITORING IN DOWNTOWN FAIRBANKS ALONE, AND THE LATER VALUE WAS BASED ON MONITORING IN FAIRBANKS AND NORTH POLE.



The community has made no progress in reducing fine particulate emissions since 2013.

1. True

2. False

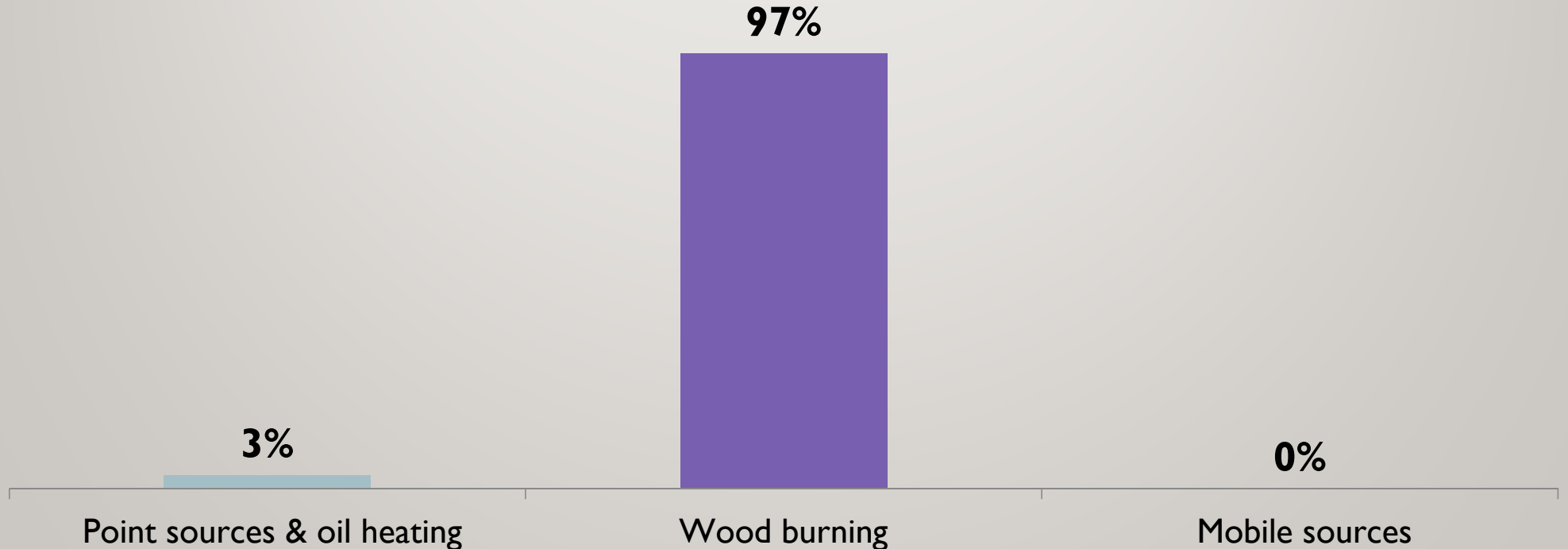
THE COMMUNITY HAS MADE NO PROGRESS IN REDUCING FINE PARTICULATE EMISSIONS SINCE 2013.



According to the 2013 baseline emissions inventory, the largest concentrations of $PM_{2.5}$ during winter inversions in FNSB come from...

1. Point sources (large industrial facilities) and heating with oil
2. Space heating with wood
3. On-road and non-road mobile sources combined

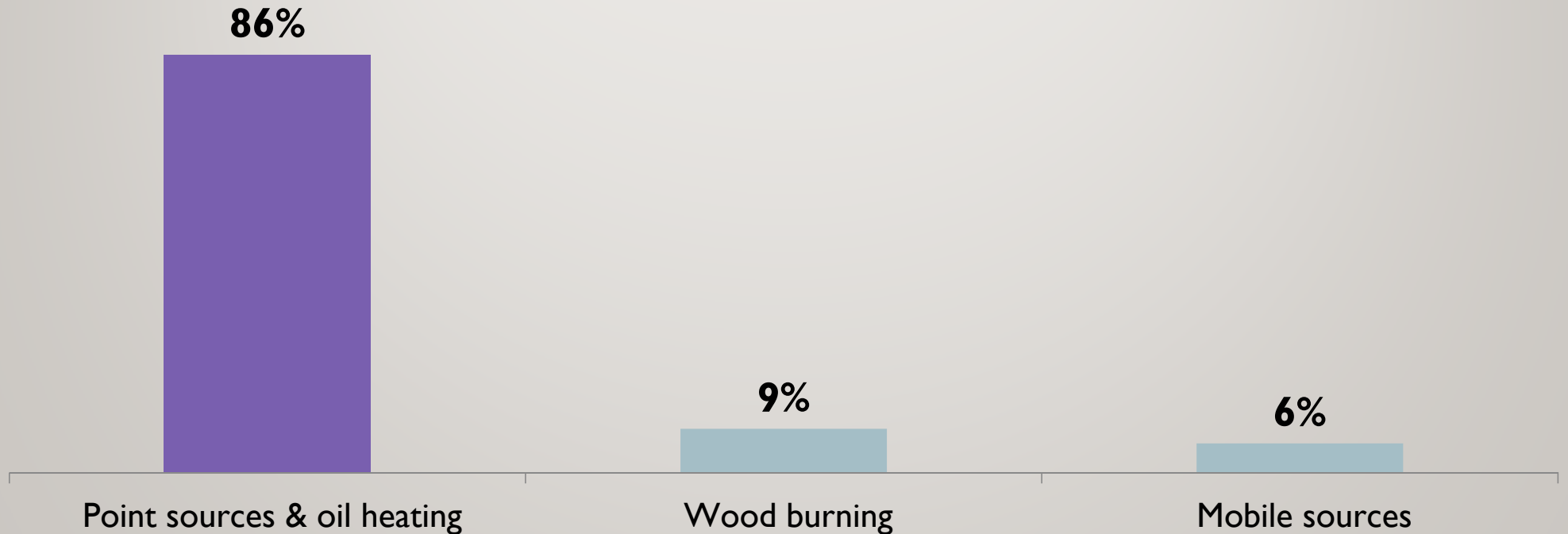
ACCORDING TO THE 2013 BASELINE EMISSIONS INVENTORY,
THE LARGEST WINTER SEASON CONCENTRATIONS OF PM_{2.5}
HAVE COME FROM...



According to the 2013 baseline emissions inventory, the largest winter season concentrations of SO₂ (Sulfur Dioxide) in FNSB have come from which of these...

1. Point sources and heating with oil
2. Space heating with wood
3. On-road and non-road mobile sources combined

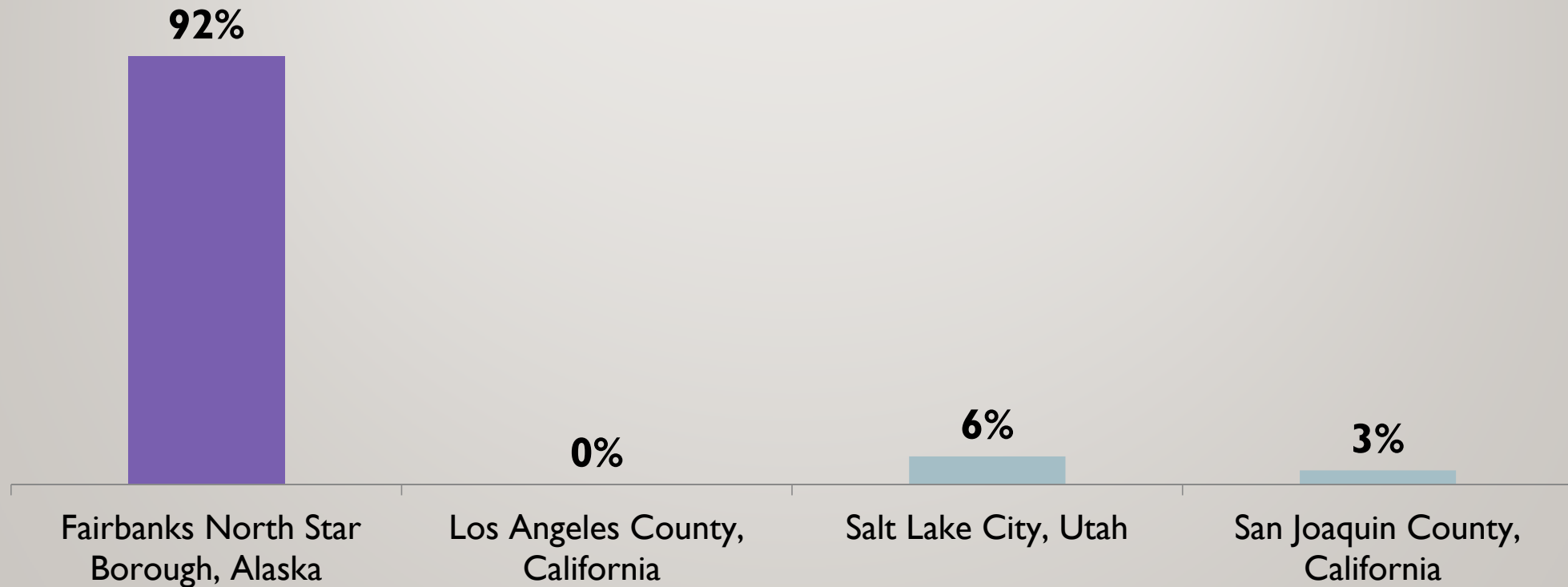
ACCORDING TO THE 2013 BASELINE EMISSIONS INVENTORY, THE LARGEST WINTER SEASON CONCENTRATIONS OF SO₂ (SULFUR DIOXIDE) IN FNSB HAVE COME FROM...



Which of these nonattainment communities had the largest increase in measured PM_{2.5} concentrations between its initial designation (2006-2008) and its reclassification as a Serious nonattainment area (2014-2016):

1. Fairbanks North Star Borough, Alaska
2. Los Angeles County, California
3. Salt Lake City, Utah
4. San Joaquin County, California

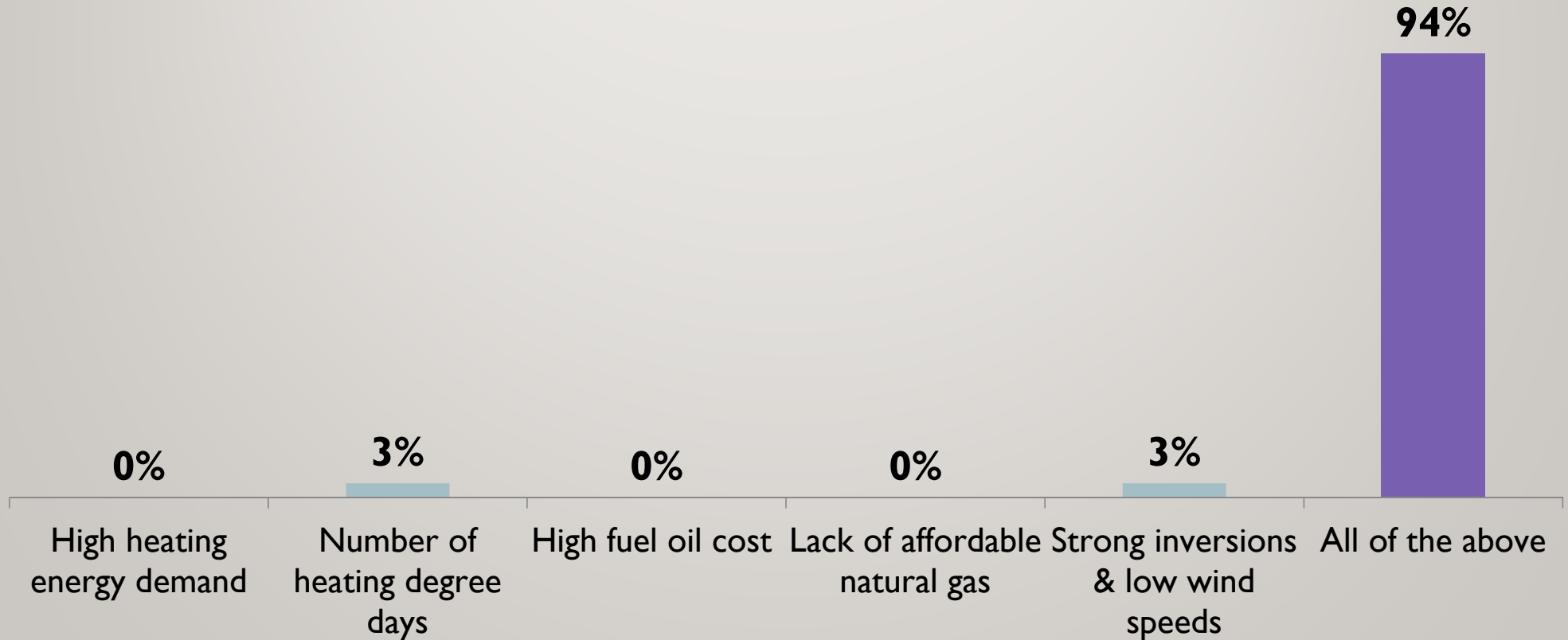
THE COMMUNITY WITH THE LARGEST INCREASE IN MEASURED PM_{2.5} CONCENTRATIONS BETWEEN INITIAL DESIGNATION AND RECLASSIFICATION WAS...



The fact that space heating is the dominant PM_{2.5} contributor is not surprising because of our community's...

1. High heating energy demand (per square foot) due to extreme winter climate
2. Large number of heating degree days due to length of winter heating season
3. High cost of heating oil due to Fairbanks' remote location
4. Lack of widespread availability of affordable natural gas
5. Strong inversions and low wind speeds during coldest time of year.
6. All of the above

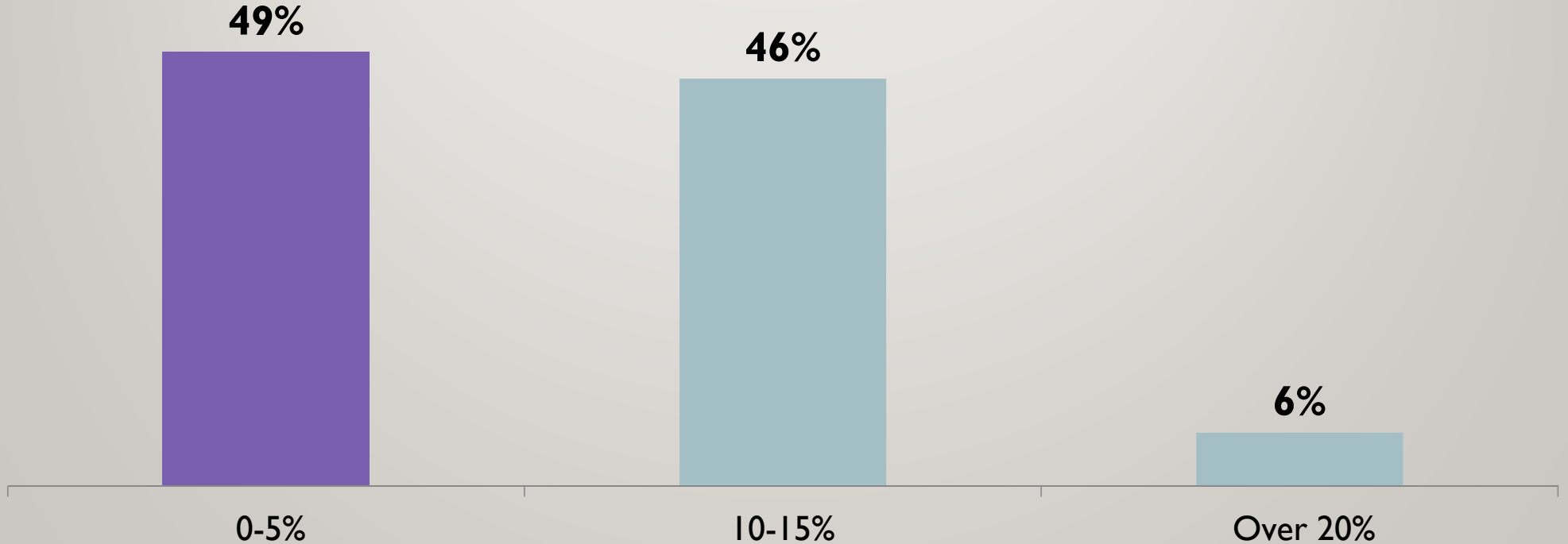
THE FACT THAT SPACE HEATING IS THE DOMINANT PM_{2.5} CONTRIBUTOR IS NOT SURPRISING BECAUSE OF WHICH OF THE FOLLOWING:



What percent of households in the nonattainment area have a wood burning device as their sole heating source?

1. 0-5%
2. 10-15%
3. Over 20%

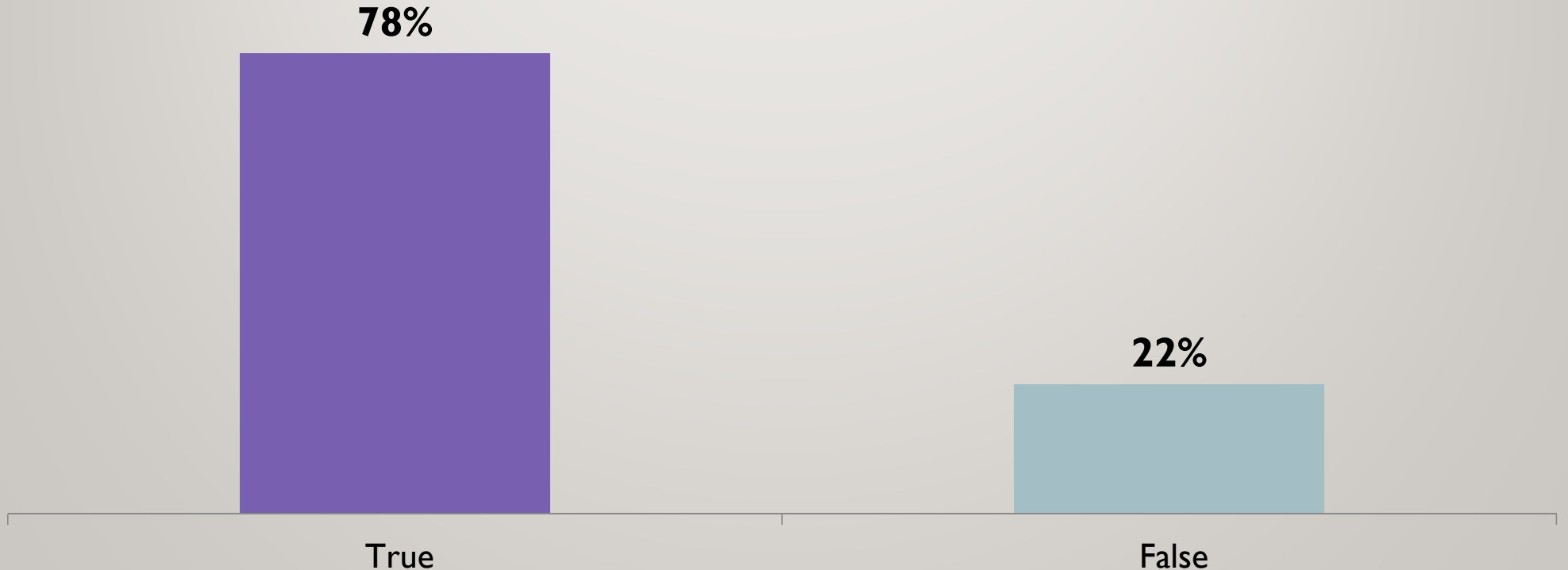
HOUSEHOLDS IN THE NONATTAINMENT AREA WITH A WOOD DEVICE AS THE SOLE HEATING SOURCE?



Among existing control measures, the largest potential reduction is expected from an increase in compliance with burn bans.

1. True
2. False

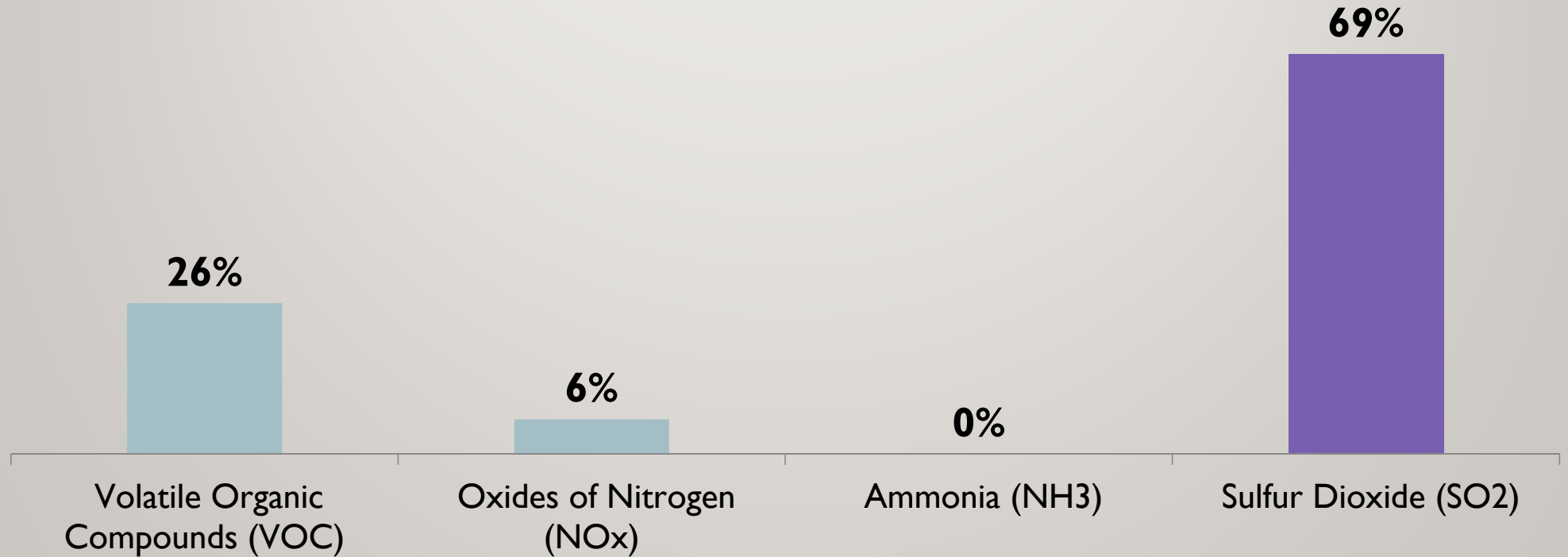
AMONG EXISTING CONTROL MEASURES, THE LARGEST POTENTIAL EMISSIONS REDUCTION IS EXPECTED FROM INCREASED COMPLIANCE WITH BURN BANS.



Which of these precursor pollutants is a significant contributor to $PM_{2.5}$ concentrations in FNSB?

1. Volatile Organic Compounds (VOC)
2. Oxides of Nitrogen (NO_x)
3. Ammonia (NH_3)
4. Sulfur Dioxide (SO_2)

WHICH OF THESE PRECURSOR POLLUTANTS IS A SIGNIFICANT CONTRIBUTOR TO PM_{2.5} CONCENTRATIONS IN FNSB?



At this time, ADEC is considering requiring multiple control measures per major stationary source to reduce SO₂ emissions at the five power plants in Fairbanks.

1. True
2. False

ADEC IS CONSIDERING MULTIPLE CONTROL MEASURES PER MAJOR STATIONARY SOURCE TO REDUCE SO₂ EMISSIONS AT LOCAL POWER PLANTS.

