



Village Dust – Potential Solutions  
ITEP Air Quality Training  
Dillingham Alaska 2010

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Alaska Department of Environmental Conservation

# Sources of Dust in Rural Villages

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- **Dirt roads – automobile/4-wheeler traffic**
- **Exposed riverbeds/shoreline – 4-wheelers/wind**
- **Un-vegetated lots – human activity/winds**
- **Gravel pits – quarry operations**
- **Gravel Stockpiles**
- **Airport unpaved runways – airplane traffic/winds**



# Dust Reduction Techniques

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- **Local watering plans**
- **Road paving/chemical dust suppressing agents**
- **More environmental monitoring**
- **Village speed limits... 10 mph**
- **Vegetation plans**
- **Local ordinances/resolutions**
- **Creative local solutions**
- **“Best solutions may work for all villages”**



# Water Down the Roads & Slow Down the Traffic



# Options for Implementing Solutions

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- **Work with the local government and/or Tribal organization(s)**

**Or**

- **Pursue regulatory options through the federal Clean Air Act (CAA) and the National Ambient Air Quality Standards (NAAQS)**



# Regulatory Option through CAA Designation as Non-Attainment Area (NAA) under the NAAQS

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- **Determine compliance with NAAQS**
  - **PM<sub>10</sub>**                      **150 µg/m<sup>3</sup> 24-hour Average**  
**50 µg/m<sup>3</sup> Annual Average**
  - **PM<sub>2.5</sub>**                      **35 µg/m<sup>3</sup> 24-hour Average**  
**15 µg/m<sup>3</sup> Annual Average**
- **The challenge: monitor using EPA reference methods to obtain 3-year data per EPA quality control requirements**



# PM<sub>10</sub> Monitoring

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- **Assessment of air quality and PM<sub>10</sub> in villages**
  - **Some sampling under EPA Indian General Assistance Program (IGAP)**
  - **Capacity-building projects**
  - **Seasonal projects**
  - **Challenges include data quality and capture rate**
  - **DEC provides technical support and equipment**  
**Limited by funds, staff, time**
- **12 villages have/are conducting dust monitoring**
  - **8 have recorded values over health standard**



# **Advantages of NAA Designation**

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- **Congestion Mitigation and Air Quality (CMAQ) funds for transportation problems through AK DOT and Federal Highway Administration**
- **Provides some assurance problem will be controlled**
- **Enforceable deadlines for control plan**



# **Disadvantages to Non-Attainment Area (NAA) Designation**

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- **Puts community into rigid, bureaucratic planning process to develop control plan**
  - **Up to 3 years to create initial plan**
- **Planning process requires**
  - **Inventory and monitoring expertise**
  - **Demonstrations of modeling and monitoring results**
- **Enforceable controls to address emission**

# More Disadvantages to NAA Designation

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- **Strains resources**
  - **Clean Air Act requires local government lead**
  - **Resources go to analyzing problem with a known source versus solving it**
  - **Requirements for enforceable control measures can decrease flexibility to address problem**

# More Disadvantages to NAA Designation (cont.)

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- **Extra regulatory requirements**
  - **Stationary sources require stringent permitting**
  - **Insure projects will not interfere with community health standards while underway**
  - **Community and state must complete control plan on time or face sanctions on statewide highway funds**
  - **Must monitor until community in attainment**
    - ✓ **And then a 20-year maintenance period**

# Alternatives to a Formal Non-Attainment Designation

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- **Memorandum of Understanding**
  - **Agencies agree to not proceed with nonattainment designation for a community**
  - **State, EPA, and locals agree to a process to address dust**
  - **Formally addresses roles and responsibilities, control programs, and other issues**



# **What is currently happening on the dust issue?**

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- **No action from state, EPA to designate NAAs**
- **Agencies prefer to address road dust impacts without additional bureaucracy**
- **If no progress on dust problem, consider non-attainment designations**



# Inter-Departmental Cooperation

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- **DOT, DEC staff have met periodically to**
  - **Look at options**
  - **Discuss progress**
- **Denali Commission funds dust-control projects**
- **Some communities work with BIA-IRR funding (Kawerak)**
- **Some communities work with local Borough (Port Graham)**
- **DOT addressing dust on airport runways and airstrips**



# Education and Outreach

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- **What local dust controls are feasible and easy to implement (e.g. controls on 4-wheeler use/speed, rerouting traffic, watering roads)?**
- **Most effective outreach, educational materials? (TV and radio ads, brochures, school curriculum, internet)**
- **EPA has funded cooperative agreement with AK Inter-Tribal Council for website, outreach materials**
- **DOT is implementing a dust-control research project in Emmonak**



# Contact Information

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