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TO: Fort Collins City Council

FROM: Air Quality Advisory Board

ATTCH: White Paper: Air Quality Challenges  
Related to Oil and Gas Development in Northern Colorado

Oil and gas development presents real air quality threats to Fort Collins. Some of these are well defined while others are not. There are actions that should be taken by the city to address these threats. The attached white paper presents the issues and offers recommendations.

The air quality threats include:

1. Hydrocarbons from oil and gas development and production, many of which are undefined and untracked and released in unknown quantities, that have unknown effects on human and ecosystem health.
2. Hydrocarbons that are known to contribute to the formation of ozone could make it more difficult for the the city to comply with the national air quality standard.
3. Nitrogen oxide emissions that when combined with ammonia from agricultural sources could result in more haze.

Proposed actions by the City to address these threats include:

- A. Prepare a vision statement that specifically describes the desired quality-of-life for this community in 5, 10 and 50 years,
- B. Work with nearby towns, counties, and the state to build a comprehensive strategic plan that achieves this desired outcome,
- C. Establish a dialogue with industry that leads to common air quality and quality of life objectives,
  - Request that the State APCD:
    - o Prepare a comprehensive inventory of emissions from all sources in Northern Colorado,
    - o Establish a more comprehensive source inspection program,
    - o Evaluate the effects growth in primary and secondary emissions will have on human and ecosystem health and welfare in Northern Colorado by employing comprehensive monitoring and modeling programs over the next 5 to 50 years,
    - o Amend the State Implementation Plan to give the city an ability to participate in the oil and gas permitting process.

Our Board offers this perspective with some professional experience in regulating and monitoring oil and gas sources. We would be happy to work with Council on these issues in the interest of protecting the citizens of our city.

## **Air Quality Challenges Related to Oil and Gas Development in Northern Colorado**

### **Air Quality Advisory Board**

**10 MAY 2012**

The anticipated development of the oil and gas energy resource and the associated growth of ancillary support activities will present important challenges for attaining and maintaining air quality standards throughout the west including Fort Collins and Northern Colorado. The city needs to be positioned to participate in decisions that ensure this growth occurs responsibly. We encourage the Council and staff to take action now to fully understand the potential air quality problem and to effectively participate in the permitting and management of this growth.

To understand the seriousness of the looming problem, the city only need look at the growth and its affect on air quality of the energy development that has occurred in western North Dakota, the Uintah Basin in Utah and the Upper Green River Basin in Wyoming.

Similar to these western locations, the air quality challenges Fort Collins faces from energy growth are these:

4. Several thousand more new oil & gas wells will be added in the next few years to the several thousand already present together with pumps, compressors and pipelines to be built over several hundred square miles near Fort Collins. These facilities will emit a variety of untracked hydrocarbons.
5. Many of these gases have known and unknown direct human and ecosystem health effects.
6. Many of the hydrocarbon emissions are precursors to the formation of ground-level ozone and other harmful oxidants such as peroxyacetyl nitrate (PAN).
7. Snow cover, which reflects and intensifies sunlight, can further amplify the light-dependent formation of ozone.
8. The nitrogen oxide emissions from pumps, compressors, generators, and increasing vehicle miles traveled, combined with the ammonia from an already large agricultural community, may produce more atmospheric haze.
9. Although the prevailing wind will move these pollutants away from Fort Collins much of the time, certain meteorological conditions, such as diurnal upvalley downvalley flows, upslope conditions, and local inversions, will keep the pollutants in North Colorado, increasing ozone, reducing visibility and contributing to an already unhealthy airshed.

Ways to address these problems include:

- D. Prepare a vision statement that specifically describes the desired quality-of-life (including the desired air quality, e.g., air quality better than the national and state standards, excellent visibility, and healthy sustainable ecosystems) for this community in 5, 10 and 50 years time.
- E. In working with the state and other nearby towns, build a comprehensive strategic plan to achieve this desired outcome. It should include a plan for growth, a quantitative

characterization of the carrying-capacity of the Cache la Poudre airshed and watershed and conservatively considers the effects of projected local climate and weather changes. The plan should also establish city priorities when balancing the needs of a sustainable economy with those of a sustainable environment with those of a sustainable population.

- F. In the strategic plan, characterize the value of achieving and maintaining a desired quality of life. In this way, we could begin to assess our willingness to pay to manage emissions along with other needs.
- Request that the State APCD evaluate the long term effects of primary and secondary emissions growth in and around Northern Colorado, specifically to the health of the citizens of Fort Collins and to the health of the nearby sensitive mountain ecosystems.
  - Request that a comprehensive inventory of emissions from all sources (including major and minor emissions from oil & gas, transportation, aircraft, commerce, other industry, agricultural, natural, background) in Northern Colorado be established and maintained,
  - Since the number of sources far exceeds the number of state inspectors, request that the state establish a more comprehensive inspection program that includes more inspectors, and prioritizing inspections based on age, size and compliance history. Industry funding could also increase the number and frequency of inspections,
  - Establish a dialogue with industry. Strive for a partnership that maintains a high community quality-of-life and achieves community air quality outcomes (see above) while, to the extent possible, meeting the objectives of energy producers,
  - Request that the State prepare an analysis of the impacts to human health, ecosystem health and visibility as a result of projected changes to the emission inventory over the next 5 to 50 years. The results of this analysis would dictate several probable actions
    - o Encourage the State to take definitive action to model projected growth and air quality impacts to better manage the location and time that sources are permitted,
    - o Establish a network of continuous air quality and ecosystem monitoring of criteria and toxic pollutants at specific locations,
    - o Integrate the air modeling and monitoring costs into the drilling and operating permits granted to industry
    - o Employ third party analysts to prepare annual reports from measured data describing the status and trends in regional air and water quality.
  - Request that the State Implementation Plan be amended to give the city and county responsibility and funding to participate in the oil and gas permitting process.
  - And in a related environmental concern, encourage more responsible water use in oil and gas by imposing a cost/gallon use tax.

Many western towns (e.g., Brighton, Longmont, Erie, Windsor, Pinedale, Fort Worth) have taken deliberate steps to slow, stop or question the drilling or operations of oil and gas wells in their communities. Most have stated that they are not against responsible oil and gas production but rather are concerned that their community quality of life and personal health is in jeopardy. The uncertainty of not knowing the substances being emitted, or in what quantities and with largely unknown environmental effects creates understandable concern. We believe that the same concerns face Fort Collins and environs and that deliberate action is needed to protect the citizens and our environment.