Glenda Wiles

From:	Terry Marasco <tmarasconrm@natural-resource-mgt.com>
Sent:	Tuesday, July 22, 2014 11:43 AM
To:	dan@rpa-hln.com; Glenda Wiles
Subject:	Ravalli County Air Port Expansion Comment Submission-attached and herein
Attachments:	APortExpansionCommentsTMarasco7-22-14.docx

July 22, 2014

Daniel M. Norderud,

AICP, Environmental Studies Division Manager, Robert Peccia & Associates Inc., P.O. Box 5653, Helena, MT 59604; emailed to dan@rpa-hln.com (attention Ravalli County Airport).

CC: Ravalli County Commissioners, Attention: County Airport, 215 S. Fourth St., Suite A, Hamilton MT 59840; emailed to gwiles@rc.mt.gov (attention Ravalli County Airport).

RE: AIR POLLUTION CONRIBUTIONS OF AN AIRPORT EXPANSION by Terry Marasco, Corvallis MT resident. 775-293-0189, 1172 Summerdale Road, Corvallis MT 59828

While Montana is lauded as a paradise by locals, nationally, and internationally, it already suffers from air pollution. Fourteen areas are stated NON-ATTAINMENT AREAS; these areas are determined by the negative health effects of air pollution. Ravalli County is in an inversion valley subject to concentrations of pollutants particularly during the winter. Note that many of the non attainment areas are located in what is described as the "Glacier" region

There is little justification for expanding the airport. Hamilton is not yet a tourist destination. Expanding for the benefit of large aircraft owners at the expense of the health residents located near and the rest of the valley is not acceptable. Additionally, the economic depreciation of residential property along take off and approach patterns (pollution and esthetics) is more reason the expansion should not be approved.

Recommendations:

1. Complete an air pollution inventory around the airport, and in each city in the valley;
2. Determine wind patterns that move pollution within the valley, from Missoula, and transported interstate;

3. Complete the downtown development plan to determine if any expansion can be justified with a cost benefit analysis vis-a-vis health issues, and economics;
4. Inform the public on the health and economic issues clearly and ransparently;
5. If the expansion can be justified the county provides compensation to area residents for lost property values, and provides near- and long-term liability insurance or direct payments to those affected by pollution;
6. Review Ravalli County Commissioner decisions on the issue and invalidate those with conflicts of interest such as having a business or familial association with a real estate business.
7. Require now and in the future that all aircraft using this airport burn the cleanest fuel possible or retrofit their engines to the highest pollution reduction technology available.

NOTES

1. RE-EVALUATION OF MONTANA'S AIR QUALITY PROGRAM Final Report, prepared for THE STATE OF MONTANA DEPARTMENT OF TRANSPORTATION in cooperation with THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION
August 2013, prepared by: James H. Wilson, Maureen Mullen, Patrick Matos, Jackson Schreiber.

P. 36: STATUS OF CO AND PM NONATTAINMENT AREAS Montana

Montana has 13 official nonattainment areas, and 2 additional maintenance areas. The Missoula area is both a nonattainment area (PM10) and a maintenance area (CO). The East Helena area is in nonattainment for both lead and SO2 ; however, the boundaries of the nonattainment area differ for the two pollutants. Three areas are on Native American reservations with tribal/EPA jurisdiction; the remaining areas are under state jurisdiction. Table II-7 shows nonattainment and maintenance areas with the pollutants and jurisdiction for each.

Table II-7. Montana Nonattainment Area Status Summary

Area Pollutant Status Jurisdiction
Billings Area CO Maintenance State
Great Falls Area CO Maintenance State
Missoula Area CO, PM10 Maintenance (CO),
Nonattainment (PM10)
State
Lewis & Clark County (part); City of East Helena and vicinity Pb Nonattainment State
East Helena Area SO2 Nonattainment State
Flathead County; Columbia Falls and vicinity PM10 Nonattainment State
Flathead County; Kalispell and vicinity PM10 Nonattainment State

Flathead County; Whitefish and vicinity PM10 Nonattainment State
Lake County; Polson PM10 Nonattainment Tribal/EPA
Lake County; Ronan PM10 Nonattainment Tribal/EPA
Lincoln County; Libby and vicinity PM10, PM2.5 Nonattainment State
Rosebud County; Lame Deer PM10 Nonattainment Tribal/EPA
Sanders County (part); Thompson Falls and vicinity PM10 Nonattainment State
Silver Bow County; Butte PM10 Nonattainment State
Laurel SO2 Nonattainment State
Source: EPA 2012h.

Pb and SO2 nonattainment issues in Montana are mostly due to industrial sources in the East Helena and Billings/Laurel areas. The most important sources contributing to the CO nonattainment are vehicle emissions, wood burning sources, and industrial emissions. The most important sources contributing to PM nonattainment are road dust, wood burning sources, and industrial emissions. Each of the CO and PM nonattainment areas are discussed below.

P. 47 The major sources of Pb (lead) emissions to the air today are ore and metals processing and **piston-engine aircraft operating on leaded aviation gasoline (EPA 2012j).**

2. **Global Mortality Attributable to Aircraft Cruise Emissions**

Steven R. H. Barrett *†, Rex E. Britter ‡, and Ian A. Waitz ‡
Department of Engineering, University of Cambridge, Trumping Street CB2 1PZ, U.K., and Department of Aeronautics and Astronautics, Massachusetts Institute of Technology, Cambridge Massachusetts 02139
Environ. Sci. Technol., **2010**, *44* (19), pp 7736–7742
DOI: 10.1021/es101325r
Publication Date (Web): September 1, 2010

Abstract

Aircraft emissions impact human health though degradation of air quality. The majority of previous analyses of air quality impacts from aviation have considered only landing and takeoff emissions. We show that aircraft cruise emissions impact human health over a hemispheric scale and provide the first estimate of premature mortalities attributable to aircraft emissions globally. We estimate ~8000 premature mortalities per year are attributable to aircraft cruise emissions. This represents ~80% of the total impact of aviation

(where the total includes the effects of landing and takeoff emissions), and □1% of air quality-related premature mortalities from all sources. However, we note that the impact of landing and takeoff emissions is likely to be under-resolved. Secondary H_2SO_4–HNO_3–NH_3 aerosols are found to dominate mortality impacts. Due to the altitude and region of the atmosphere at which aircraft emissions are deposited, the extent of transboundary air pollution is particularly strong. For example, we describe how strong zonal westerly winds aloft, the mean meridional circulation around 30–60°N, interaction of aircraft-attributable aerosol precursors with background ammonia, and high population densities in combination give rise to an estimated □3500 premature mortalities per year in China and India combined, despite their relatively small current share of aircraft emissions. Subsidence of aviation-attributable aerosol and aerosol precursors occurs predominantly around the dry subtropical ridge, which results in reduced wet removal of aviation-attributable aerosol. It is also found that aircraft NO_x emissions serve to increase oxidation of nonaviation SO_2, thereby further increasing the air quality impacts of aviation. We recommend that cruise emissions be explicitly considered in the development of policies, technologies and operational procedures designed to mitigate the air quality impacts of air transportation.

3. **Neighborhood-scale air quality impacts of emissions from motor vehicles and aircraft**

- Wonsik Choi, Shishan Hu[1], Meilu He[2], Kathleen Kozawa, Steve Mara, Arthur M. Winer, Suzanne E. Paulson

A mobile monitoring platform (MMP) was used to measure real-time air pollutant concentrations in different built environments of Boyle Heights (BH, a lower-income community enclosed by several freeways); Downtown Los Angeles (DTLA, adjacent to BH with taller buildings and surrounded by several freeways); and West Los Angeles (WLA, an affluent community traversed by two freeways) in summer afternoons of 2008 and 2011 (only for WLA). Significant inter-community and less significant but observable intra-community differences in traffic-related pollutant concentrations were observed both in the residential neighborhoods studied and on their arterial roadways between BH, DTLA, and WLA, particularly for ultrafine particles (UFP). HEV, defined as vehicles creating plumes with concentrations more than three standard deviations from the adjusted local baseline, were encountered during 6–13% of sampling time, during which they accounted for 17–55% of total UFP concentrations both on arterial roadways and in residential neighborhoods. If instead a single threshold value is used to define HEVs in all areas, HEV's were calculated to make larger contributions to UFP concentrations in BH than other communities by factors of 2–10 or more. **Santa Monica Airport located in WLA appears to be a significant source for elevated UFP concentrations in nearby residential neighborhoods 80–400 m downwind.** In the WLA area, we also showed, on a neighborhood scale, striking and immediate reductions in particulate pollution (~70% reductions in both UFP and, somewhat surprisingly, $PM_{2.5}$), corresponding to dramatic decreases in traffic densities during an I-405 closure event ("Carmageddon") compared to non-closure Saturday levels. Although pollution reduction due to decreased traffic is not unexpected, this dramatic improvement in particulate pollution provides clear evidence air quality can be improved through strategies such as heavy-duty-diesel vehicle retrofits, earlier retirement of HEV, and transition to electric vehicles and alternative fuels, with corresponding benefits for public health.

4. **Aircraft Emission Impacts in a Neighborhood Adjacent to a General Aviation Airport in Southern California**

Shishan Hu [†‡], **Scott Fruin** [§], **Kathleen Kozawa** [‡□], **Steve Mara** [□], **Arthur M. Winer** [‡] **and Suzanne E. Paulson** [*‡]
Department of Atmospheric and Oceanic Sciences, University of California, 405 Hilgard Ave., Los Angeles, California 90095-1565, Environmental Health Sciences Department, School of Public Health, University of California, 650 Charles E. Young Drive South, Los Angeles, California 90095-1772, Preventive Medicine, Environmental Health Division, Keck School of Medicine, University of Southern California,1540 Alcazar Street CHP-236 Los Angeles, California 90032, and California Air Resources Board, Research Division, 1001 I Street, Sacramento, California 95814
Environ. Sci. Technol., **2009**, *43* (21), pp 8039–8045
DOI: 10.1021/es900975f
Publication Date (Web): October 1, 2009

* Corresponding author phone: (310)206-4442; fax: (310)206-5219; e-mail: paulson@atmos.ucla.edu., †

Abstract

Real time air pollutant concentrations were measured downwind of Santa Monica Airport (SMA), using an electric vehicle mobile platform equipped with fast response instruments in spring and summer of 2008. SMA is a general aviation airport operated for private aircraft and corporate jets in Los Angeles County, California. An impact area of elevated ultrafine particle (UFP) concentrations was observed extending beyond 660 m downwind and 250 m perpendicular to the wind on the downwind side of SMA. Aircraft operations resulted in average UFP concentrations elevated by factors of 10 and 2.5 at 100 and 660 m downwind, respectively, over background levels. The long downwind impact distance (i.e., compared to nearby freeways at the same time of day) is likely primarily due to the large volumes of aircraft emissions containing higher initial

concentrations of UFP than on-road vehicles. Aircraft did not appreciably elevate average levels of black carbon (BC), particle-bound polycyclic aromatic hydrocarbons (PB-PAH), although spikes in concentration of these pollutants were observed associated with jet takeoffs. Jet departures resulted in peak 60-s average concentrations of up to 2.2 $\times 10^6$ cm^{-3}, 440 ng m^{-3}, and 30 μg m^{-3} for UFP, PB-PAH, and BC, respectively, 100 m downwind of the takeoff area. These peak levels were elevated by factors of 440, 90, and 100 compared to background concentrations. Peak UFP concentrations were reasonably correlated ($r^2 = 0.62$) with fuel consumption rates associated with aircraft departures, estimated from aircraft weights and acceleration rates. UFP concentrations remained elevated for extended periods associated particularly with jet departures, but also with jet taxi and idle, and operations of propeller aircraft. UFP measured downwind of SMA had a median mode of about 11 nm (electric mobility diameter), which was about half of the 22 nm median mode associated with UFP from heavy duty diesel trucks. The observation of highly elevated ultrafine particle concentrations in a large residential area downwind of this local airport has potential health implications for persons living near general aviation airports.

5. **Effects of Airport Noise on Housing Value**

In 1994 the consulting firm of Booz-Allen & Hamilton, Inc. prepared a report titled *The Effect of Airport Noise on Housing Values: A Summary Report* for the Federal Aviation Administration. The report describes a methodology for evaluating the impact of noise on housing values. The methodology essentially compares market prices in similar neighborhoods that differ only in the level of airport-related noise. In pilot studies using this method, Booz-Allen found that the effect of noise on prices was highest in moderately priced and expensive neighborhoods. In two paired moderately priced neighborhoods north of Los Angeles International Airport, the study found "an average **18.6 percent** higher property value in the quiet neighborhood, or 1.33 percent per dB of additional quiet." (See Bibliography: Impacts of Noise on Property Value.)

A 1996 study funded by the Legislature of the State of Washington used a somewhat similar methodology and found that the proposed expansion of Seattle-Tacoma Airport would cost five nearby cities $500 million in property values and $22 million in real-estate tax revenue. The study of single-family homes -- all in "very good" condition, with three or more bedrooms and two or more baths, and excluding the most expensive and inexpensive units to provide more representative comparisons -- found that "a housing unit in the immediate vicinity of the airport would sell for **10.1 percent** more -- if it were located elsewhere."

The Washington study also concluded: "all other things remaining equal, the value of a house and lot increases by about 3.4% for every quarter of a mile the house is farther away from being directly underneath the flight track of departing/approaching jet aircraft." (Details can be found in Sections 9.01 - 9.07 of the study.)

In 1997 Randall Bell, MAI, Certified General Real Estate Appraiser, licensed real estate broker, and instructor for the Appraisal Institute, provided the results of his own professional analysis to the Orange County Board of Supervisors. Comparing sales of 190 comparable properties over six months in communities near Los Angeles International Airport, John Wayne Airport, and Ontario Airport, Bell found a diminution in value due to airport proximity averaging **27.4 percent**. (See the Diminution in Value Study-R, Bell.) Bell has also developed a list of over 200 conditions that impact real estate values -- airport proximity is categorized as a "detrimental condition."

Diminution in Value Study-R, Bell

Airport Diminution in Value

View on eltoroairport.org

Preview by Yahoo

Terry Marasco
www.natural-resource-mgt.com
775.293.0189 Cell