THE PUBLIC HEALTH IMPACTS OF NOISE
Washington State Department of Health
The Public Health Impacts of Noise

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Background

- The Department has received multiple requests for information on the potential public health impacts of noise
  - Local community groups on Whidbey Island
  - Island County Public Health
  - The State Board of Health
Noise is an Environmental Public Health Problem

- Aircraft noise is a major environmental concern, with about 300,000 people in US exposed each year.

- There are documented adverse health impacts to chronic aircraft noise exposure, with children having greater susceptibility in comparison to adults. Includes impacts to:
  - Cognitive performance, annoyance, motivation, well-being/perceived stress, stress hormone changes, hearing loss, hypertension, psychiatric disorders, and sleep disturbance (WHO, 2004)
Methods

1. Reviewed noise published measurements from Whidbey Island

2. Summarized literature on health effects from noise originating from military and commercial aircraft and other sources

3. Emphasized articles published since 2012
Results: Noise Levels on Whidbey Island

- The National Park Service measurements at two sites in Ebey’s Landing National Historical Reserve
  - Day-night average sound levels
    - 73.6 dBA and 54.7 dBA
  - A-weighted maximum sound levels
    - ~114 dBA and ~85 dBA
  - Number of military aircraft events exceeding A-weighted maximum sound levels of 70 dBA over a period of 31 days:
    - 281 and 125 military aircraft events
Results: Health Impacts of Noise

- Hearing loss and Tinnitus
- Annoyance
- Sleep disturbance
- Cognitive impairment
- Cardiovascular disease
Potentially Susceptible Populations

- People exposed to tobacco smoke
- Children
- Shift-workers
- Elderly
- People with sleep disorders
- People with mental or physical illness
Conclusions

- Noise levels similar to those reported from NAS Whidbey Island pose a threat to public health.

- Whether people on Whidbey Island are actually experiencing these health outcomes as a result of their exposure to aircraft noise is a question beyond the scope of a literature review.
Recommendations to Navy

1. Conduct a Health Impact Assessment

2. Provide evidence to assure NOISEMAP model estimates are applicable for use at Naval Air Station Whidbey

3. Improve description of current state of science around noise and public health; specifically non-auditory health effects
Questions

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