CATEGORICAL EXCLUSION FOR WIND-PROFILING RADAR INSTALLATIONS IN OREGON AND WASHINGTON, PACIFIC NORTHWEST NATIONAL LABORATORY, RICHLAND, WASHINGTON

Proposed Action

Pacific Northwest National Laboratory (PNNL) proposes to install wind-profiling radar and atmospheric characterization equipment and associated infrastructure at a minimum of three locations near the Pacific coast in Oregon and Washington. These installations will add to a network of four installations in California to complete a "picket fence" of seven installations spaced at approximate 250 km intervals from Santa Barbara, California to Forks, Washington.

The 449 MHz radar system is capable of measuring the wind speed and direction up to 6 to 8 km above the ground surface; the radar combined with the Radio Acoustic Sounding System (RASS) can create virtual temperature profiles up to 2 km above ground surface. These data will serve as boundary conditions for numerical weather prediction models. The data will be made available online in near-real time to weather forecasters to predict weather patterns and short-term (i.e., up to several days) wind-energy resources for power-production planning, power marketing, and grid management. Wind energy producers as far east as the central United States are expected to benefit from these forecasts.

This is part of a joint project with the National Oceanic and Atmospheric Administration that is funded by the U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE).

Location of Action

The proposed locations for the installations include the Southwest Oregon Regional Airport, near North Bend, Oregon; the Astoria Regional Airport near Astoria, Oregon; and the Forks Industrial Park near Forks, Washington (see Figures 1 through 4).

The possibility exists that additional sites may be selected or that one or more of the three proposed locations could be changed to alternative sites. If a proposed location changes, or additional sites are selected, they would likely be previously disturbed coastal airports, industrial or municipal sites, or areas collocated with other existing meteorological or radar equipment. Appropriate cultural, biological, and other environmental impact evaluations would be conducted to assure that no extraordinary circumstances exist at the proposed or alternative sites prior to project initiation.

Description of the Proposed Action

Each site will include a radar unit, a RASS, a 10 m (33 ft) meteorological tower, and an equipment trailer (see Figure 5). All four components will be installed aboveground and require no surface grading or leveling. Each radar unit is 7.3 m x 7.3 m (24 ft x 24 ft) and will be installed on 16 pavers (61 cm [24 in.]) with stands. These stands have vertical adjustments that can be used to level the radar without leveling the ground surface. Further, the proposed sites have relatively flat surfaces due to prior leveling associated with original construction of the airports and industrial site, and will not require any surface grading. Four 1.5 m (5 ft) diameter cylindrical components (RASS enclosures) will be located around each radar unit. Each radar unit will be anchored at the four corners and each RASS will be anchored at four points with 0.6 m (2 ft) augers screwed into the ground. Each meteorological tower has a small footprint (less than 1 m x 1 m [3 ft x 3 ft]) and occupies a 10 m (30 ft) diameter when guy wires are included. Each tower will be secured to the ground with a 45 cm (18 in.) spike driven into the ground and three guy wires anchored with 0.6 m (2 ft) augers. Each equipment trailer is 2.4 m (8 ft) wide by 4.8 m (16 ft) long and will be anchored at each corner with the 0.6 m (2 ft) screw augers. Electrical connections

may require additional excavation up to 1.1 m (3.5 ft) deep from the nearest available electrical source. All proposed sites have electrical sources within 30 m (100 ft) of proposed equipment trailer locations.

Actions include installation of the wind-profiling radar, RASS, meteorological tower, trailers, and associated equipment; testing of the equipment; and operation and maintenance of the equipment for 3 to 5 years.

Biological and Cultural Resources

Installation and operation of the wind-profiling systems at the proposed locations in Oregon and Washington is not likely to result in adverse impacts to sensitive biological or cultural resources. Biological and cultural resource reviews will be conducted prior to installation and operation to assure that impacts to sensitive resources are avoided and minimized.

The biological resource review will identify the occurrence of federal and state protected species in the project area such as avian species protected under the Migratory Bird Treaty Act (MBTA); plant and animal species protected under the Endangered Species Act (ESA), including candidates for such protection; and species listed as threatened or endangered by the States of Oregon or Washington (as applicable). Resource review recommendations will be followed during installation and operation to assure there are no adverse impacts to sensitive species and resources.

The cultural resource review will assure that impacts to sensitive cultural resources are avoided. Consultation with the State Historic Preservation Office and/or affected tribes, if deemed necessary, would be initiated before project implementation.

If the biological and/or cultural resource review determines that significant resources may be adversely affected, the conclusions of this categorical exclusion (CX) would need to be re-evaluated, and either the site would not be used, mitigation measures would be developed to render the impacts not significant, or additional National Environmental Policy Act (NEPA) analysis and review would be performed.

Categorical Exclusion to Be Applied

As the proposed action is to install and operate wind-profiling equipment, the following CXs, as listed in the DOE NEPA implementing procedures, Title 10 of the Code of Federal Regulations (CFR) Part 1021, Subpart D, Appendix B, would apply:

B1.19 *Microwave, meteorological, and radio towers.* Siting, construction, modification, operation, and removal of microwave, radio communications, and meteorological towers and associated facilities, provided that the towers and associated facilities would not be in a governmentally designated scenic area (defined at 10 CFR 1021 Subpart D, Appendix B, B(4)(iv)) unless otherwise authorized by the appropriate governmental entity.

B3.1 *Site characterization and environmental monitoring.* Site characterization and environmental monitoring (including, but not limited to, siting, construction, modification, operation, and dismantlement and removal or otherwise proper closure (such as of a well) of characterization and monitoring devices, and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis). Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance. Covered actions include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. .... Specific actions include, but are not limited to: .... (h) Installation

and operation of meteorological towers and associated activities (such as assessment of potential wind-energy resources).

B5.15 *Small-scale renewable energy research and development and pilot projects*. Small-scale renewable energy research and development projects and small-scale pilot projects, provided that the projects are located within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

Eligibility Criteria

The proposed activity meets the eligibility criteria of 10 CFR 1021.410(b) because the proposed action does not have any extraordinary circumstances that might affect the significance of the environmental effects, is not connected to other actions with potentially significant impacts [40 CFR 1508.25(a)(l)], is not related to other actions with individually insignificant but cumulatively significant impacts [40 CFR 1508.27(b)(7)], and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during environmental impact statement preparation.

As discussed below for the three proposed sites, the "Integral Elements" of 10 CFR 1021 Subpart D, Appendix B are satisfied regarding this project. If additional or alternative sites are proposed to be utilized, they would be evaluated against the criteria listed below; if the evaluations are different than those provided in the following table, this NEPA CX would be revisited. If it was determined to be not applicable, either the site would not be used or additional NEPA review would be performed.

INTEGRAL ELEMENTS, 10 CFR 1021, SUBPART D, Appendix B (1)-(5)	
Would The Proposed Action:	**Evaluation**:
Threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health?	The proposed action would not threaten a violation of regulations or DOE or Executive Orders.
Require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities?	No waste management facilities would be constructed under this CX. Any generated waste would be managed in accordance with applicable regulations in existing facilities. Waste disposal pathways would be identified prior to generating waste and waste generation would be minimized.
Disturb hazardous substances, pollutants, or contaminants that preexist in the environment such that there would be uncontrolled or unpermitted releases?	No preexisting hazardous substances, pollutants, or contaminants are known to occur at the proposed project locations. If there are hazardous substances, pollutants, or contaminants in the soil, there will be very little excavation or soil disturbance that would cause uncontrolled or unpermitted releases.
Have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited, to: • protected historic/archaeological resources • protected biological resources and habitat • jurisdictional wetlands, 100-year floodplains • Federal- or state-designated parks and wildlife refuges, wilderness areas, wild and scenic rivers, national monuments, marine sanctuaries, national	No environmentally sensitive resources would be adversely affected. Resource reviews would be conducted for special circumstances. Refer to the Biological and Cultural Resources section for details regarding the application of cultural and biological resource reviews. The proposed project sites at the Southwest Oregon Regional Airport and the Astoria Regional Airport are both located within floodplain areas. However,

INTEGRAL ELEMENTS, 10 CFR 1021, SUBPART D, Appendix B (1)-(5)	
Would The Proposed Action:	**Evaluation**:
natural landmarks, and scenic areas • prime or unique farmland • special sources of water, such as sole-source aquifers • tundra, coral reefs, or rainforest.	both project locations are located on previously developed, built-up fill areas adjacent to active airport facilities, thus the equipment installation will have minimal effect on floodplain function or affect other properties within or adjacent to the floodplains. The Forks, Washington site is not located within a floodplain. The proposed action would not adversely affect wetlands regulated under the Clean Water Act, national monuments, or other specially designated areas, prime agricultural lands, special sources of water, or other special habitats.
Involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species?	The proposed action would not involve the use of genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species.

Checklist Summarizing Environmental Impacts: The following checklist summarizes environmental impacts considered when preparing this CX determination. Answers to relevant questions are explained in detail following the checklist.

	Would the Proposed Action:	YES	NO
1	Result in more than minimal air impacts?		X
2	Increase offsite radiation dose measurably?		X
3	Require a radiological work permit?		X
4	Cause more than a minor or temporary increase in noise level?	X	
5	Discharge any liquids to the environment?		X
6	Require a Spill Prevention Control and Countermeasures plan?		X
7	Require an excavation permit (e.g., for test pits, wells, utility installation)?	X	
8	Disturb an undeveloped area?		X
9	Use carcinogens, hazardous, or toxic chemicals/materials?		X
10	Involve hazardous, radioactive, polychlorinated biphenyl, or asbestos waste?		X
11	Require environmental permits?		X

Explanations

4. A noise analysis has been conducted for an identical radar/RASS currently operating in California. The analysis was conducted under what would be considered optimal sound propagation conditions, and the results indicated that the sound levels produced by the RASS rapidly decreased to near ambient levels within 150 m (500 ft) of the sound source. RASS sounds were detectable to the human ear at distances up to 750 m (2,500 ft), but beyond 450 m (1,500 ft) the sounds were barely audible. The nearest residence to the proposed wind profiler sites is approximately 625 m (2,100 ft) at the Forks Industrial Park location and the nearest residences at the Southwestern Oregon Regional Airport and Astoria Regional Airport are approximately 1250 m (4,100 ft) and 1000 m (3,300 ft), respectively. The proposed locations are at existing airports and an industrial park where wood products are prepared; activities at these sites are expected to, at least periodically, produce noise at levels

comparable to or greater than the RASS units. Therefore, noise impacts are not expected to be significant. If additional or alternative sites are selected for project activities, effects to nearby noise receptors will be considered, and if potential impacts are different than described here either additional NEPA evaluation will be required or the alternative or additional site will not be used.

7. Minor excavation may be needed to install electrical connections at the three sites. These may include trenches up to 1.1 m (3.5 ft) deep and up to 30 m (100 ft) long. The Forks, Washington Site also may require installation of a small pad for a new transformer, which would entail a 1 m x 1 m (3 ft x 3 ft) x 30 cm (1 ft) deep excavation. Staff would coordinate with the land-owners to assure that no existing utilities would be affected, and biological and cultural reviews (and monitoring if needed) will be conducted to help assure no impacts to these resources.

Compliance Action

I have determined that the proposed action satisfies the DOE NEPA eligibility criteria and integral elements, does not pose extraordinary circumstances, and meets the requirements for the CX referenced above. Therefore, using the authority delegated to me by DOE Order 451.1 B, Change 2, I have determined that the proposed action may be categorically excluded from further NEPA review and documentation.

Signature: _____ Date: 3-17-15

Thomas M. McDermott
PNSO NEPA Compliance Officer

cc: MR Sackschewsky, PNNL

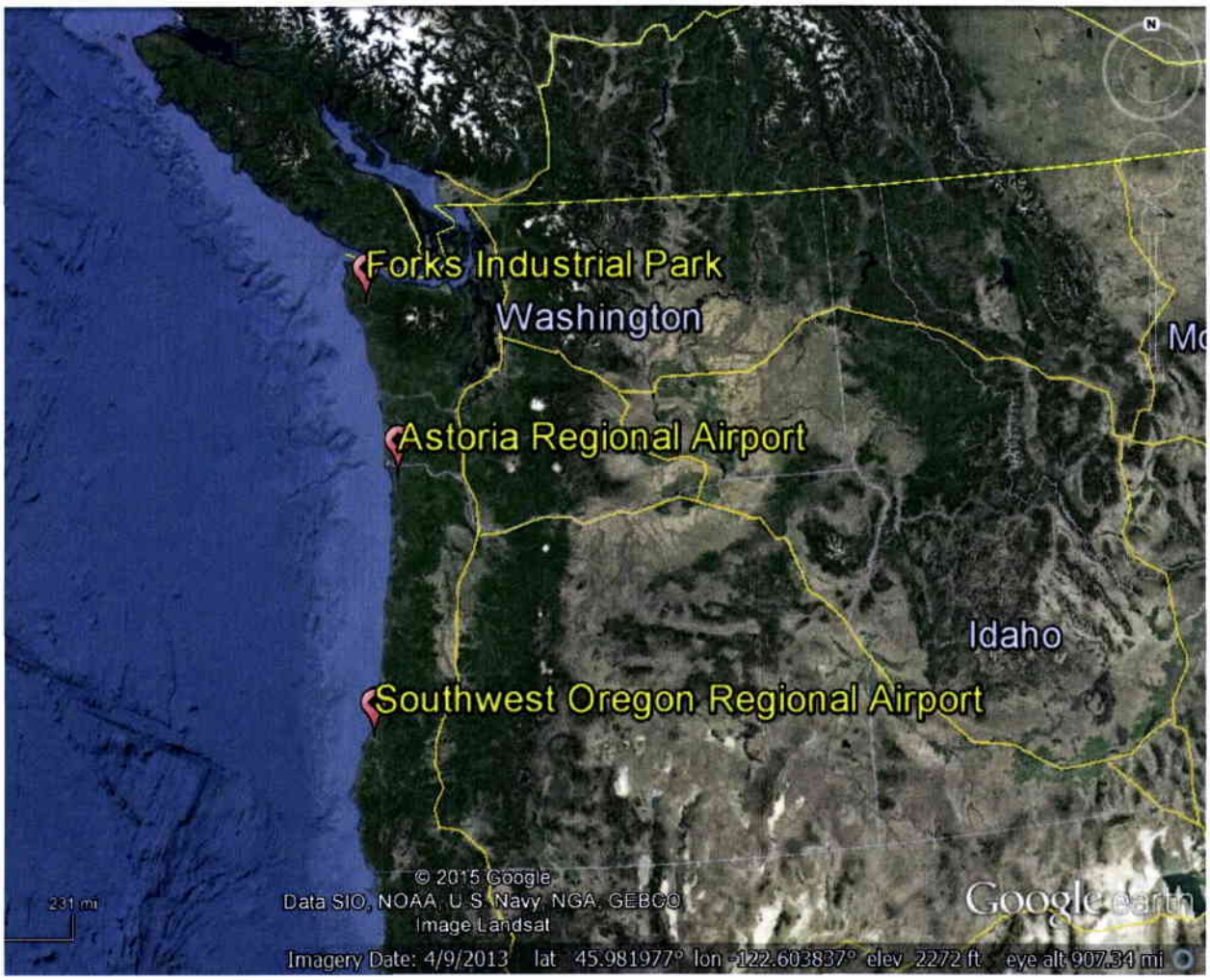

Figure 1. Locations of the three proposed wind profiler sites

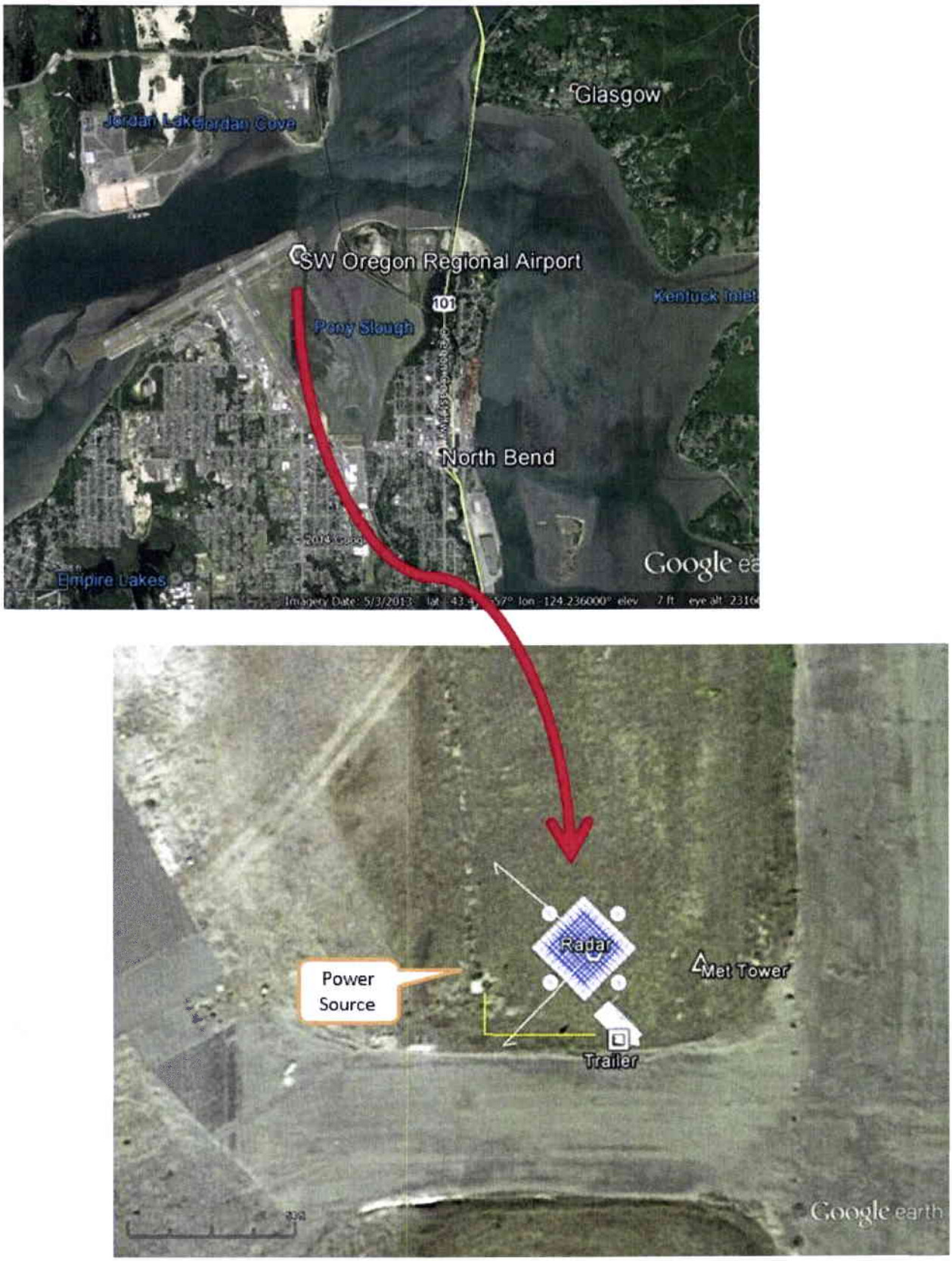

Figure 2. Detail of the proposed project location at the Southwest Oregon Regional Airport.

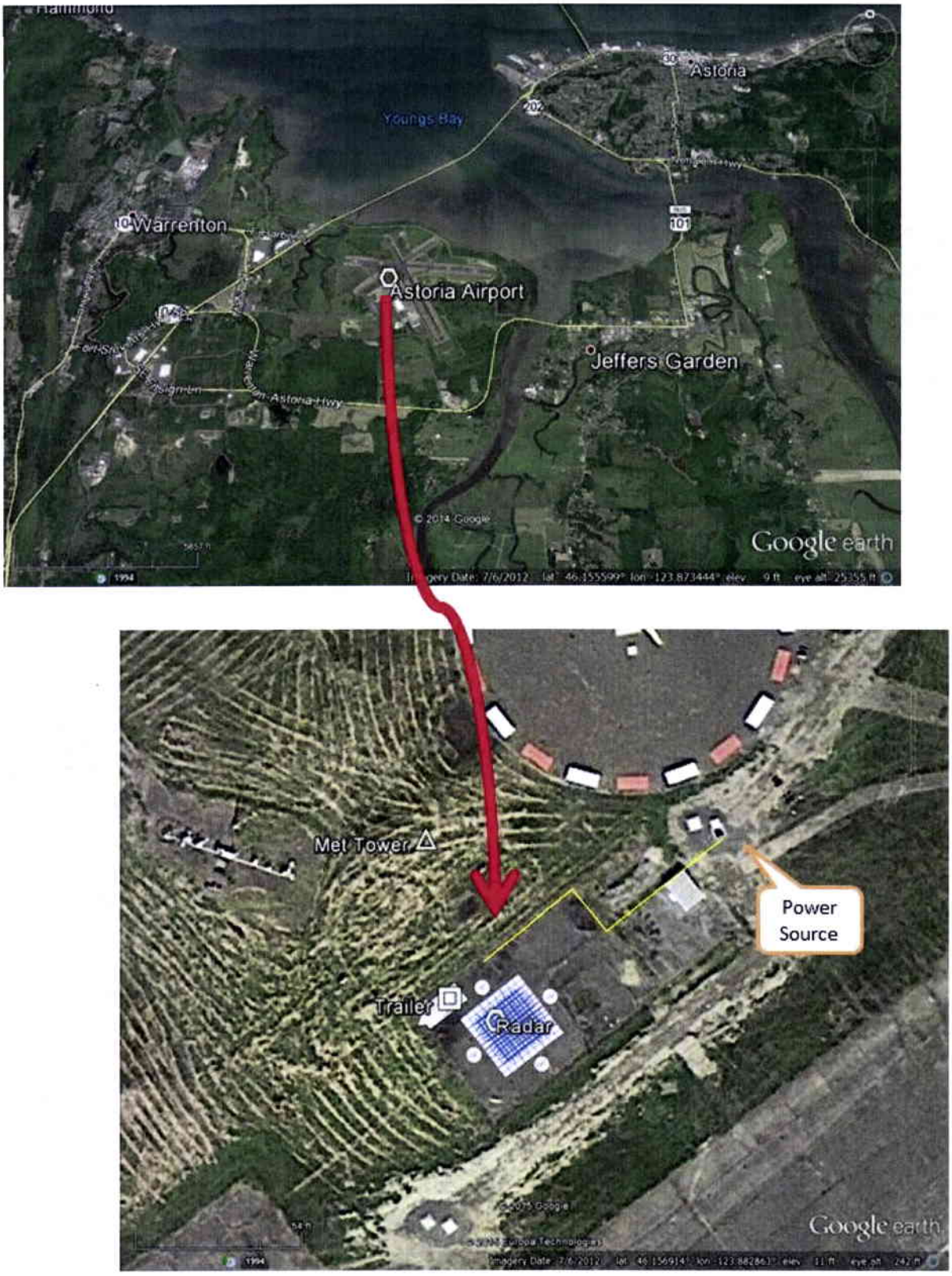

Figure 3. Detail of the proposed project location at the Astoria Regional Airport.

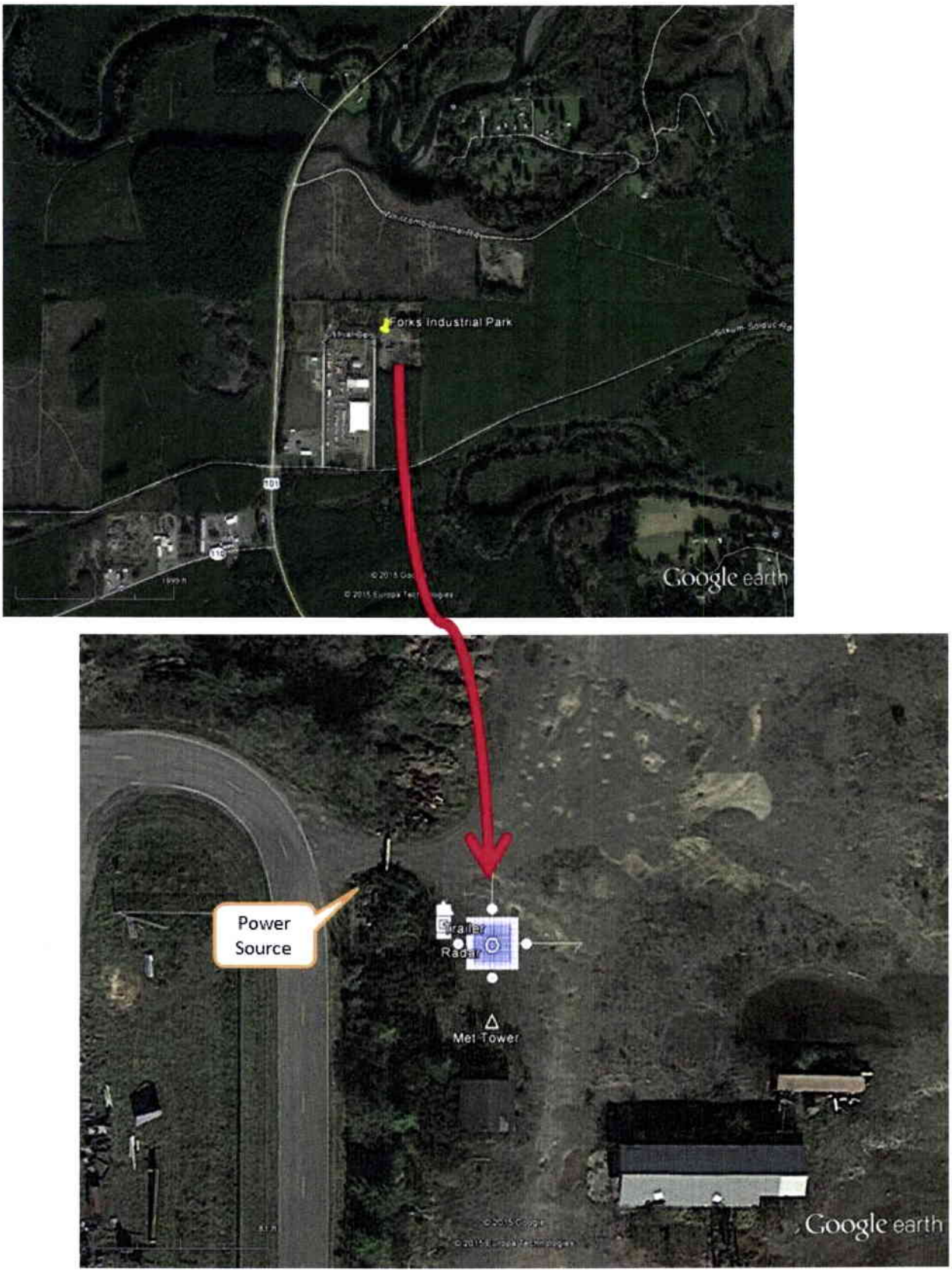

Figure 4. Detail of the proposed project location at the Forks Industrial Park.

Figure 5. A wind-profiling equipment site currently operating at the Bodega Marine Laboratory in Bodega Bay, California. The 10 m meteorological tower is on the left, the 449 MHz wind profiler is surrounded by the RASS acoustic sources in the center, and the equipment shelter is on the right.