

Exhibit for Form 442 Question 4: Government Project Description

NOAA has awarded Contract 4600011485 as part of its AQPI Advanced Rainfall / Flood Monitoring System initiative (<https://psl.noaa.gov/aqpi/>) to provide localized warnings aimed at saving lives and property.

NOAA/ESRL Physical Sciences Division together with CSU/CIRA (NOAA Cooperative Institute for Research in the Atmosphere at Colorado State University) are working in understanding the changing rain patterns in California and assisting local entities in understanding, preparing for, and managing rapidly changing water derived effects ranging from draught to flooding and compounded by wildfires and the potential for debris flows.

With the onset of the yearly monsoon phenomenon in California there is potential for very large rainfall amounts from weather systems coming from the Pacific Ocean, capable of devastating effects on infrastructure and people. This problem can be exacerbated in regions with challenging topography suffering from poor conventional weather radar coverage.

As part of this effort, low-power short-range X-band weather radar is being investigated as a tool to experimentally monitor precipitation in localized areas with challenging terrain, providing targeted high-resolution, high-update data over the region of interest. These data will be used as part of a larger regional framework development aimed at quantifying and forecasting rainfall to support both real-time, on-the-ground decisions by partner entities (water management, weather forecast office, emergency management) and different aspects of research on forecasting and monitoring rainfall.

The proposed experiment aims to gather a long-term data set. This data set should be suitable for all weather and hydrological models needed to develop a localized advanced quantitative precipitation information system for the region. NOAA has committed the appropriate long-term resources and personnel to this project, and we respectfully request a license experiment length of 48 months to match the effort.

This is a critical project considering the continued events on the ground, with a cycle of fires and heavy rainfall with the continued potential for debris flows and flooding.

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