Question #1:

A quick question about the recent NOAA Hydrologic Research announcement (NWS-NWSPO-2009-2001614):

I have done some preliminary work on flash flooding in the southern Appalachian region, including some consultation with the NWS Forecast Office in Jackson, KY, on forecasting needs, and was planning to expand this work. Specifically (but briefly), I want to test the extent to which topographic wetness indices derived from 10-m resolution digital elevation models can improve assessments of flash flood risk, and ultimately, improve flash flood forecasting (particularly with respect to improving the geographic specificity of warnings).

This appears in some respects to be consistent with the recent announcement, as it relates directly to cost-effective enhancement of forecasts. However, the primary data is topographic rather than meteorological, and (since I would focus the work in eastern Kentucky), does not address irrigated areas.

If this kind of work is not consistent with NOAA goals, or would be a low priority, please let me know, so I don't waste your time or mine.

Response #1

You are correct: we are looking at a very specific topic, in which the primary drivers are meteorological and remote sensed data. Therefore, unless you include those aspects, your proposal would be considered to be non-responsive.

Thank you for your interest, and, please, stay alert for future announcements of a broader nature.

Question #2

I would like to have a clarification regarding the specific objective of the Funding Opportunity Number: NWS-NWSPO-2009-2001614. In particular we would like to expand the issue of estimating soil moisture in areas subject to artificial irrigation.

Response #2

As part of our plans to expand our forecast services into high-resolution water resources, we want to be able to produce soil moisture and temperature forecasts. To do that, we need to have a grasp on how much water is being applied in areas subject to artificial irrigation. This has implications also on the definition of the boundary conditions for numerical weather prediction models.

Question #3

Although there is a specific interest in improving soil moisture predictions/forecasts under irrigated conditions, is the scope of relevant/fundable projects broader than this? (than irrigated systems?)

Response #3

The scope is specifically directed to irrigated areas. Proposals that do not address that topic will not be considered. NWS is interested in being able to support a broader community by publishing water resources variables, such as soil moisture. While our models can simulate with a good degree of accuracy soil moisture conditions in non-irrigated areas, they can't do so in areas subject to artificial irrigation, since the application of water to crops has a very large impact on soil moisture.

Question #4

For example, following up on a posted question, would improved flash-flood forecasting that incorporated weather forecasts and ground-based soil moisture monitoring in conjunction with a topographically-based land surface model be appropriate for this program? Should all projects include a remote-sensing component?

Response #4

A remote sense component is also required. One of the priorities for the Hydrology program at NOAA is to make wider use of remote sense information to improve our forecasts.

Question #5

If "irrigation" should be a central theme in a project, would similar activities like spreading of liquid animal manures fit this priority.

Response #5

Unfortunately, the application of liquid manure to crops is primarily for fertilizing purposes, not so much for eliminating soil moisture deficits. Therefore, proposals addressing the application of liquid manure to crops would not be considered.

Question #6

The RFP states that one criterion is to evaluate if researchers can maintain effective and consistent interactions with operational forecasters. Do you require any pre-existing

interactions here? At which levels should the interactions occur? For example, with a WFO office, a RFC, or the NWS Hydrology Laboratory? Do I need to include any forecasters as a PI or collaborator in this proposal to satisfy this requirement? I have plans to travel to NERFC to talk with the hydrologists there. Should I contact any one in the hydrology laboratory to have them involved in the proposal?

Response #6

Operational forecasters are those at the NWS field offices, such as River Forecast Centers and Weather Forecast Offices. Personnel at the Hydrology Laboratory **may not** be contacted during the proposal preparation stage, and, therefore, **may not** be included in the proposal. Once a proposal is awarded, we at the Office of Hydrologic Development and the Hydrology Laboratory expect to have substantial participation in the research, ranging from commenting on the direction of research, to providing information to assist its performance, and, even to contribute on complementary research. No pre-existing interactions with our field offices are required for the proposal, but letters of endorsement from the RFCs or WFOs will help document the level of interaction.

Question #7

I understand matching funds are not required for this program. However, would the inclusion help an applicant if they were able to supply them? If so, would cash or in-kind be preferable?

Response #7

You are correct in that matching funds are not required for this program. However, leveraging the project with matching funds will help: if you look at the Evaluation Criteria under Section V, Application Review Information, you'll find that criterion No. 4 (Project Costs) has a component for project leverage that amounts up to 5% of the total score.

Question #8

How much is available through this program? For how many awards?

Response #8

The budget situation is still uncertain since we are still working under a Continuing Resolution, so we are not sure yet of the number of awards and the amount of each. We originally intended for two awards and for up to $125,000 each, for each year of a two-year project. However, we think it is unlikely we'll be able to grant more than 1 award, and the amount of funding may likely be reduced to $100,000.

Question #9

Can you give me some past award information? How many applicants typically apply? How many are awarded? What types of organizations receive more funding on average?

Response #9

For the past announcements, we have had between 4 applicants (for some very focused research opportunities), and 44 for the most open opportunities. For the focused research opportunities we have awarded between 1 and 2 research grants, and for the 44 applicant case, we funded 3 research grants. We have funded primarily universities and research institutions, but also have given two research awards to private companies.

Question #10

In the RFP you say:

OHD is specifically interested in the use of cost-effective observation techniques that are applicable at high spatial resolution to large areas and that, in combination with land surface models, allow the estimation of soil moisture profiles in areas subject to artificial irrigation.

Could you please be more specific regarding the scope? i.e. what is the size of the large area? and what is the range of the high resolution?

Response #10

We would like to see the areas of the order of irrigation districts (10 - 100 km2), not individual farms, but at resolutions of the order of, at least, 1 km2 or better.

Question # 11

We propose to develop two set of tools that will increase the skill of multi-site streamflow forecasts at seasonal and short time (days to two weeks) scales - one that optimally combines all the available forecasts (physical and statistical) and the other aims to enable a rich variety of streamflow ensemble within the context of a physical watershed model (much more than the current ESP framework provides). Both of these ideas build on our extensive prior research work and based on them we are quite confident of significant outcome. We plan to work with one of the RFCs and also closely with the water managers, who use these forecasts regularly in their operational and planning efforts.

I am wondering if these ideas fall within the scope of the announcement and if they would be of higher priority.

Response # 11

Your proposed research approach could fall within the scope of the announcement, provided that you include remote sensing observations of soil moisture, and demonstrate that the model can simulate soil moisture profiles in irrigated areas. Use of remote sensing tools is a high priority area for the NOAA Hydrology program, given the investment the agency has made and will make in remote sensors.