

NASA HEADQUARTERS NEPA CHECKLIST AND RECORD OF ENVIRONMENTAL CONSIDERATION (REC)

1. **Project Name:** ARRA Funded Preliminary Design Activities associated with the Soil Moisture Active and Passive (SMAP) Project HQ ID – 1116
2. **NEPA Contact:** Kathleen Callister, NASA HQ, 202-358-1953
3. **Description of the Proposed Action:** CLARREO is a Tier I Earth Science Decadal Survey Climate Mission, specifically referenced in the ARRA legislation. This funding is critical to CLARREO's ability to provide a feasible technical solution that will satisfy the Climate Science requirements assigned to CLARREO in the Decadal Survey; without this funding increase, completion of the CLARREO mission concept will be delayed by several months. Planned Activities:
 - a. Complete science analyses in support of Level 1 requirements development, supporting CLARREO Mission Concept development, leading to a Mission Concept Review (MCR) planned for February 2010.
4. **Purpose and Need for the Proposed Action:** CLARREO is a Tier I Earth Science Decadal Survey Climate Mission, currently in Pre-Phase A Mission Concept Development. The development of a Climate Measurement System is a primary objective of the Earth Science Division (ESD) of the NASA Science Mission Directorate (SMD). This imperative was articulated in the Decadal Survey Report, and accepted by the ESD. CLARREO is a Tier I mission as expressed in the Decadal Survey.
5. **Does this action fall into one of the following Categorical Exclusions (CATEX) ? YES / NO**
If yes, please indicate which one below:
 - a. Research and development activities in—
 - (1) Space science, other than specific spacecraft development and flight projects,
 - (2) Space and terrestrial applications, other than specific spacecraft development and flight projects,
 - (3) Aeronautics and space technology and energy technology applications, other than experimental projects that have the potential for substantial environmental impacts, and
 - (4) Space transportation systems engineering and scientific and technical support operations, routine transportation operations, advanced studies.
 - b. Enhanced space tracking and data systems,
 - c. Facility planning and design (funding),
 - d. Minor construction of new facilities, including rehabilitation, modification, and repair, and
 - e. Continuing operations of a NASA facility at a level of effort, or altered operations, provided the alterations induce only social and/or economic effects but no or minimal natural or physical environmental effects.
6. **Does the proposed action individually or cumulatively result in any of the following: 1) have significant environmental impacts, 2) result in a high degree of public controversy; or 3) cause NASA to be at risk of violating any Federal, State or local laws ? YES / NO**
 - a. Activities are research and design (administrative) in nature.
7. **Is this action covered under an existing Environmental Assessment (EA)? YES / NO**
If yes, what is the title and date of the EA:

8. Is this action covered under an existing Environmental Impact Statement (EIS)? YES / **NO**

If yes, what is the title and date of the EIS:

9. Comments: Additional NEPA documentation will be necessary for non-ARRA preliminary mission concept activities.

Review and Approval:

Kathleen Callister
NASA NEPA Program Manager

Date

Environmental Checklist:

A. Geology:	Yes	No	Unk/ Maybe
1. Will the project result in more than 10% change in topography or ground surface relief features?		X	
2. Will there be any increase in wind or water erosion of soils, either on or off site?		X	
3. Will there be changes in deposition, siltation, or erosion that may modify the streams or waterways?		X	
Explain any "Yes" or "Unk/Maybe" answers:			
B. Air:	Yes	No	Unk/ Maybe
1. Will there be any air emissions or possible releases (e.g., CO, NOx, O3, Pb, PM, SO2, VOC)?		X	
2. Will there be creation of objectionable odors or smoke?		X	
3. Will there be alternation of air movement, moisture, temperature, or any changes in climate, either locally or regionally?		X	
4. Will there be combustion sources usch as generators, backup generators, paint booths, parts cleaning, solvent cleaning, or any other items that may require a permit?		X	
Explain any "Yes" or "Unk/Maybe" answers:			
C. Water:	Yes	No	Unk/ Maybe
1. Will the project result in surface water runoff (e.9, roofs, parking lots, covers) or change drainage patterns?		X	
2. Will project result in storm water discharges?		X	
3. Will the project require storm water detention ponds?		X	
4. Will the project result in wastewater discharges (e.g., sanitary sewer or industrial operations and maintenance chemical waste)?		X	
5. Will the project have any discharges to the ground?		X	
Explain any "Yes" or "Unk/Maybe" answers:			
D. Cultural Resources:	Yes	No	Unk/ Maybe
1. Will the project affect any historical landmarks?		X	
2. Will the project affect any historical properties (properties eligible or potentially eligible for listing on the National register of Historic Places)?		X	
3. Will the project alter a building that is 50 years old?		X	
4. Is the project located in an area with potential for archeological resources?		X	
5. Will the project have any discharges to the ground?		X	
Explain any "Yes" or "Unk/Maybe" answers:			
E. Biological Resources:	Yes	No	Unk/

			Maybe
1. Will wetlands be affected by the proposed action?		X	
2. Will the project impact any threatened or endangered species?		X	
3. Will the project impact migratory birds?		X	
4. Will the project impact eagles?		X	
5. Does the project have the potential to introduce new species or plants into an area?		X	
6. Does the project involve landscaping or modifications to the existing landscaping?		X	
Explain any "Yes" or "Unk/Maybe" answers:			
F. Noise	Yes	No	Unk/ Maybe
1. Will noise increase greater than 10% from an existing operation?		X	
2. Will people or animals be exposed to noise levels above 80 dBA?		X	
Explain any "Yes" or "Unk/Maybe" answers:			
G. Land Use:	Yes	No	Unk/ Maybe
1. Will there be substantial alteration of the present or planned land use?		X	
2. Will the project interfere with the use or operations of existing facilities?		X	
3. Will there be impacts to any parks or recreational areas?		X	
4. Will the project involve activities that result in a change in the total employment levels greater than 10%?		X	
Explain any "Yes" or "Unk/Maybe" answers:			
H. Hazardous, Toxic, and Radioactive Materials and Wastes:	Yes	No	Unk/ Maybe
1. Will the project involve acquisition, use or storage of any chemicals, toxic materials, or radioactive materials?		X	
2. Will the project generate medical (biohazard), toxic, or radiological wastes?		X	
3. Will the project generate radiation?		X	
4. Will the project acquire, use or store Class I ozone-depleting substances (CFCs, TCA, halons)?		X	
5. Will the project disturb or dispose of PCBs?		X	
6. Will the project use solvent cleaning stations?		X	
7. Will the project use pesticides, insecticides, herbicides, fungicides, or rodenticides?		X	
8. Will the project install or use any toxic chemical?		X	
9. Will the project install or use any above or underground storage tanks?		X	
10. Will the project use solvent cleaning stations?		X	
Explain any "Yes" or "Unk/Maybe" answers:			
I. Health and Safety:	Yes	No	Unk/ Maybe

1. Is there a risk of exposure to asbestos or lead containing materials?		X	
2. Is there a risk of exposure to medical (biohazard), hazardous, toxic, or radiological materials?		X	
3. Will the project involve confined space entry?		X	
Explain any "Yes" or "Unk/Maybe" answers:			
J. Transportation:	Yes	No	Unk/ Maybe
1. Will the project have substantial traffic impacts?		X	
2. Will the project affect existing parking facilities or demand for new parking?		X	
3. Will the project have a substantial impact upon existing transportation systems?		X	
Explain any "Yes" or "Unk/Maybe" answers:			
K. Services and Utilities:	Yes	No	Unk/ Maybe
1. Will the project require substantial amounts of energy?		X	
2. Will the project require substantial amounts of water?		X	
3. Will the project affect or result in the need for new or altered security services?		X	
Explain any "Yes" or "Unk/Maybe" answers:			
L. Environmental Justice:	Yes	No	Unk/ Maybe
1. Does the project have the potential to disproportionately affect low-income populations or minority populations in the surrounding areas?		X	
Explain any "Yes" or "Unk/Maybe" answers:			