



Strategic Planning Committee

January 4, 2012

Specialty Crop Grant Application

Issue: SACOG has submitted a grant application conceptual proposal to the California Department of Food and Agriculture (CDFA) for the study of specialty crops and the local food system. If the conceptual proposal is accepted, SACOG will be invited to submit a full application.

Recommendation: That the Strategic Planning Committee recommend that the SACOG Board of Directors authorize staff to submit an application for the CDFA Specialty Crop Grant program.

Discussion: The CDFA expects that up to \$17 million in block grants from the U.S. Department of Agriculture (USDA) will be made available this year to increase the competitiveness of specialty crops by creating or expanding markets and forming partnerships. Specialty crops are defined as fruits, vegetables, tree nuts, dried fruits, horticulture, and nursery crops. These crops account for 52 percent of U.S. farm gate value according to the USDA and make up much of California's agricultural production.

SACOG's proposal will concentrate on further developing the technical and analytical capacity SACOG has built to support and enhance agricultural production in the region. This project will focus on improving SACOG's crop inventory by using cutting-edge remote sensing data gathering technics (satellite photograph and spectral imagery) to update the crop mapping that underpins much of the economic and production modeling capacity for the RUCS project. SACOG would partner with NewFields Agricultural & Environmental Resources, a consulting firm with expertise in soil scientists, agronomics, ecology, and remote sensing and GIS. Other project partners would include the Almond Board of California and the Department of Water Resources.

Data collection methods and products from this project would be an improvement over SACOG's initial method for crop data collection. Remote sensing can improve data collection efficiency and accuracy. Since data are derived from satellite photograph and spectral images, crop maps can be updated often in order to track changes in cropping patterns over time. The methodology can be applied in any region and therefore has statewide and national implications for agricultural analysis and planning.

The conceptual proposal is attached. CDFA will announce invitations for full grant proposals in February and applications will be due on March 26th. Staff is seeking approval to submit a full application if the conceptual proposal is accepted. SACOG will be seeking \$225,000 for the project.

Approved by:

Mike McKeever
Chief Executive Officer

MM:DS:sb
Attachment

Key Staff: Rebecca Sloan, Director of External Affairs & Member Services, (916) 340-6224
Joe Concannon, Data Services Manager, (916) 340-6234
David Shabazian, Senior Planner, (916) 340-6231

Pin No: 23784 - Annual Crop Mapping Using Remote Sensing - SUBMITTED

Application Overview

RFP/Survey Title: 2012 Specialty Crop Block Grant Program

Submitting Organization: Sacramento Area Council of Governments

Project Title: Annual Crop Mapping Using Remote Sensing

Accurate information on the convergence of specialty crops with water resources, habitats and regulatory districts is integral to support growers, track and influence regulatory policy, and advance existing and potential markets. This project will lay the foundation for a trial comprehensive spatial database of specialty crops in California using remote sensing (RS) and temporal analysis. Mapping crops in extensive areas with RS is more accurate and efficient than current land use survey methods, and can be used to quantify and locate crops and determine attributes such as crop age, density, spacing, and yield. This project will produce and evaluate a regional specialty crop map and will demonstrate and compare initial baseline mapping effort with change analysis techniques used to produce yearly updated datasets. This project will develop an initial map legend, optimize mapping accuracy and cost; leverage other geospatial crop data; and determine annual level of effort.

Project

Description:

APPLICANT DETAILS

Applicant Organization: Sacramento Area Council of Governments

Applicant Address: 1415 L Street, Suite 300 , Sacramento , CA - 95811

PROJECT LOCATIONLatitude : 39 **Longitude:** -121

Watershed: Sacramento River

County: Multiple Counties

Responsible

Regional Water Board: State Wide

Board:

PROJECT BUDGET

Funds Requested(\$): 225,016.00

Local Cost Match(\$): 50,000.00

Total Budget(\$): 275,016.00

Funding Program		Applied	Amount Recommended by State Water Board		
2012 Specialty Crop Block Grant Program		Yes	\$0.00		
Project Management Role	First Name	Last Name	Phone	Fax	Email
Project Director: Authorized Representative from Applicant	Mike	McKeever	916-321-9000	916-321-9551	mmckeever@sacog.org

Organization to execute funding agreement

Project Manager: Day to day contact on this project from Applicant Organization

David Shabazian 916-340-6231 916-321-9551 dshabazian@sacog.org

Applicant Information

Name: Sacramento Area Council of Governments
Address: 1415 L Street, Suite 300
 Sacramento, CA , 95811

Person Submitting Information

Name: Joel Kimmelshue
Phone: 916-265-6350, **Fax:**
Email: jkimmelshue@newfields.com

Legislative Information	Primary	Additional District(s)
Senate District	99	99,
Assembly District	99	99,
US Congressional District	99	99,

Contacts	Name	Phone	Email
Sacramento Area Council of Governments	David Shabazian	916-340-6231	dshabazian@sacog.org
NewFields Agricultural & Environmental Resources	Joel Kimmelshue	916-265-6350	jkimmelshue@newfields.com
Almond Board of California	Gabriele Ludwig	209-765-0578	gludwig@almondboard.com
CA Dept of Water Resources	Curtis Anderson	530-529-7300	curtisa@water.ca.gov

Cooperating Entities	Role	Name	Phone	Email
California Department of Water Resources	Stakeholder/Technical Collaboration	Curtis Anderson	530-529-2075	curtisa@water.ca.gov
Almond Board of California	Stakeholder/Technical Collaboration	Gabriele Ludwig	209-765-0578	gludwig@almondboard.com
NewFields Agricultural & Environmental Resources	Subcontractor	Joel Kimmelshue	916-265-6350	jkimmelshue@newfields.com
Sacramento Council of Governments	Project Director/Applicant	David Shabazian	916-340-6231	dshabazian@sacog.org

Pre Award Attachment Title	Phase	Date & Time Attached
Budget	PHASE1	12/12/2011 3:17:11 PM
Application Questionnaire		

1 ORGANIZATION TYPE

Please select your organization type from the box below.

Answer: Non-Profit

2 FUNDING AREA

Select one of the following which most accurately aligns with the nature of the proposal:

1. Research - Plant Health and Pest Challenges
2. Research - Environmental Concerns and Conservation
3. Marketing - Agriculture Education and Outreach
4. Marketing - International Trade
5. Marketing - Market Enhancement and Promotion
6. Nutrition - Food Security
7. Nutrition - Healthy Eating

Answer: 5

3 PROJECT DURATION

Estimate the "Start Date" and "End Date" for the proposal in mm/yyyy format.

Answer: Start=11/2012 End=10/2014. This project will be conducted over a 2-year period. During year one, historic spatial data (image and other spatial resources) will be collected and remote sensing algorithms and statistical approaches will be used to identify crop types and categories and to develop a baseline crop map. Year two will build upon this baseline using change analysis techniques to demonstrate efficient annual updating of crop information and local conditions for up to 1.2 million acres.

4 PROJECT PURPOSE

Identify the specific issue, problem or need that the proposal will address, and explain why the proposal is important and timely. Identify the objectives of the proposal.

Answer: Currently, there is not a method to identify specialty crop acreages and locations on an annual basis. DWR mapping products are updated every 6-8 years. The purpose of this project is to produce and explore a comprehensive mapping product for specialty crops on an annual and in-season basis through remote sensing applications. The benefit of exploring this technology is to provide for an annual assessment of the extent of specialty crops within a given region and ultimately state-wide.

5 PRIOR-YEAR SCBGP PROJECTS

Indicate if the proposal builds on a proposal that was approved in a prior year. If 'YES', provide the Grant Agreement number and clearly explain how the new proposal compliments previous work.

Answer: NO

Answer:

6 POTENTIAL IMPACT

Identify the beneficiaries. Provide the number of beneficiaries, and explain how the beneficiaries will be impacted.

Answer: A method has been initially developed that creates a signature (crop fingerprint) from interpretation of remotely sensed and temporal information. This proposal intends to explore a large trial expansion of this methodology for a diverse cropping area. Knowledge about specific crop location and acreage will significantly improve the decision-making of growers, marketers, planners, suppliers, water managers, agencies, and policy makers to more accurately manage and market CA specialty crops.

7 EXPECTED MEASUREABLE OUTCOME

Describe at least one distinct, quantifiable and measurable outcome that directly and meaningfully supports the proposals purpose and is of direct importance to the intended beneficiaries.

Answer: Technology developed in the medical industry (for medical scan imaging) is being used to interpret imagery characteristics for specialty crop identification. The "signature" of rice, cotton, alfalfa, pasture and other non-specialty crops has already been developed and the proposed work will focus on application of this technology to identify specialty crops only. The main measureable outcome from this work will be a two-year (baseline and change analysis) mapping product. The development and implementation of this technology adds yet another tool for the enhancement of CA agricultural production and efficient resource management. It is expected that the product of this work will be used by multiple private and public entities within the 1.2 M acre area of analysis.

8 WORK PLAN

Briefly describe the activities that will be performed to accomplish the objectives of the proposal.

Only grant funded activities occurring during the timeframe of the proposed project should be included. Do not include activities funded with match and/or in kind contributions.

Answer: Year 1 will include: a selection of pilot area(s) (e.g. a 1.2 million acre region around Sacramento or where appropriate imagery resources exist), investigation of archived spatial resources, and application of algorithms, statistical approaches, and temporal analyses. These efforts will be performed for the purposes of adapting existing approaches for crop identification and spatial location. Year 2 will use the developments from year 1 for the purpose of producing a more timely product during or immediately following the cropping season. NewFields will be working with SACOG to utilize their existing ground-truthed information. Collaboration will also occur with the Almond Board and the Remote Sensing technology group at DWR. The ultimate product is targeted to be a timely and accurate (~90%) spatial map of specialty crops throughout a selected region of central CA. Extrapolation of this information to the remainder of the state is expected, however not a part of this effort.

BUDGET

Click [HERE](#) to download and complete the Budget Template.

NOTE: The budget should only include grant funds not match and/or in kind contributions.

**IMPORTANT REMINDER: Confirm the Budget is complete and uploaded to the application.
The Budget must be saved as Excel 97-2003 Workbook (*.xls).**

Certification And Submission Statement

Please read before signing and submitting application.

I - certify under penalty of perjury:

- The information entered on behalf of Applicant Organization is true and complete to the best of my knowledge;
- I am an employee of or a consultant for the Applicant Organization authorized to submit the application on behalf of the Applicant Organization; and
- I understand that any false, incomplete or incorrect statements may result in the disqualification of this application.

By signing this application, I waive any and all rights to privacy and confidentiality of the proposal on behalf of the applicant, to the extent provided in this RFP.

Submission By: SACOG Submitter Initials: jek Submission Date: 12/12/2011 4:40:57 PM