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Submitted by:

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Department of Land, Air, Water Resources

One Shields Avenue

University of California

Davis, CA 95616

Amount Requested \$ 35,052.27

Grant:

Development of Management Training Curriculum for use in Grower Training for Self-Certification of Regional Water Board Nitrogen Management Plans

Background:

A previously underserved audience for the Nitrogen Management Training and Certification developed by the California Department of Food and Agriculture (CDFA) and the University of California Division of Agriculture and Natural Resources (UCANR) has been identified in the population of farmers who want to self-certify their Nitrogen Management Plans as required by the Central Valley Regional Water Quality Control Board (CVRWQCB). In order to serve this audience, UC Davis will create a condensed version of the Certified Crop Advisor (CCA) training modules, which will be exclusively suitable for grower self-certification. This training material will be made available to qualified groups or individuals, such as agricultural water quality coalitions and UC Cooperative Extension Farm Advisors, to conduct training programs for growers. This project is consistent with CDFA authority as described in California Food and Agriculture Code Section 14611(b)(1) that allows the department to use apportion of the fertilizer mill assessment to fund “Technical education for users of fertilizer materials in the development and implementation of nutrient management projects that result in more agronomically sound uses of fertilizer materials and minimize the environmental impacts of fertilizer use...”

Personnel:

Primary Author

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Secondary Author

Lawrence J. Schwankl, Ph.D., Specialist Emeritus, Kearney Agricultural Research & Extension Center 9240 S. Riverbend Avenue, Parlier, CA 93648, 559-646-6569, ljschwankl@ucanr.edu.

Terry Prichard, the project's PI has more than thirty five years of experience supporting California growers as a Water Management Specialist at UC Davis through applied research and education programs with areas of emphasis including irrigation management and off-site movement of agricultural chemicals. Terry recently worked on three “Controlling Offsite Movement of Agricultural Chemical Residues” projects, one each on winegrapes, tomatoes, and alfalfa. Terry has authored dozens of publication for scientific journals as well as guides and manuals for growers and consultants in the field. Many of the publications were co-authored with Lawrence Schwankl. Terry also operates his family farm in Farmington and Oakdale, CA, growing walnuts and raising beef cattle. He served as a Diamond Walnut Advisory Board member from 1996 to 2003. Terry is also certified by the American Society of Agronomy as a Certified Crop Advisor, Soil Scientist, and Professional Agronomist.

Lawrence Schwankl, will review all the materials and assist Terry in getting the curriculum into final form. Larry is an Irrigation Specialist Emeritus at UC Davis and the UC Kearney Agricultural Research and Extension Center. Larry participated in the UCANR/CDFA advisory group that developed the CCA training program. For this reason and because he has recently attained emeritus status, Larry is uniquely qualified to

assist and provide guidance on this project. For 27 years as a statewide UC Cooperative Extension Irrigation Specialist, Larry has provided research and extension in drip, sprinkler, and flood irrigation systems with emphasis on irrigation of trees and vines, including irrigation system maintenance and chemigation; and irrigation scheduling using soil moisture monitoring and evapotranspiration techniques. Larry is a Registered Professional Engineer, with a PhD in civil engineering from UC Davis.

Scope of Work and Deliverables:

1. Develop a nitrogen management training presentation which would be used by trainers as a standardized program. The presentation will be adapted from the nitrogen management training developed for Certified Crop Advisor training, but will be distilled to a half-day session that will consist of both PowerPoint slides and detailed annotations that can serve as a script for trainers. The training materials will be written at a technical level suitable for typical California growers. The materials will be presented to any growers who wish to prepare for the Nitrogen Management Plan (NMP) grower self-certification and will include:
 - a. Basic nitrogen management module including
 - i. CVRWQCB Nutrient Regulations
 - ii. The role of nitrogen in plants and soils
 - iii. Nitrogen fertilizer management
 - iv. Irrigation and nutrient management
 - v. Nitrogen budgeting
 - b. At least two crop-specific case study modules suitable for Central Valley growers
 - i. One tree or vine crop (Almonds, walnuts, stone fruit, or winegrapes)
 - ii. One annual crop (corn, tomatoes, cotton, melons or small grains)
2. Develop an array of two hundred questions and answers to be used to assess the ability of growers to apply their skill, knowledge, and experience to develop the required NMP. Testing questions will represent all areas of instruction. Multiple questions will be developed for each area so as to provide a variety of different questions for each testing.
3. Provide grower self-study materials suitable for distribution electronically on the CDFA/FREP website.

For each of the above deliverables, the authors will submit review drafts to CDFA/FREP. FREP staff will provide review of each deliverable within two weeks of submission. The complete final package will be reviewed jointly by CDFA the UCANR advisory committee that developed the original CCA training materials.

The authors will consult with FREP staff and UCANR committee members as the grower training modules and test questions are being developed. The authors will meet with FREP staff by conference call and in person to provide monthly progress updates.

Timeline:

Start: April 15, 2015

Milestones

First draft presentation materials to CDFA	June 15
Final draft presentation materials	July 30
First draft test questions	August 5
Final draft test questions	August 28
First draft web-ready study materials	Sept. 4
Final draft web-ready study materials	Sept. 30

Completion: November 1, 2015

Budget:

Personnel				
	Time (hours)			Rate: \$63.48/hr
Task	Primary Author	Secondary Author	Total	Cost
1a	176	44	220	13,965.60
1b	123.2	44	167.2	10,613.86
2	35.2	17.6	52.8	3,351.74
3	17.6	17.6	35.2	2,234.50
Total	352	123.2	475.2	\$ 30,165.70
Expenses				
Travel to meet with CDFA and Coalition Representatives- 6 trips @ \$250 each				1,500
Phone: Conference Calls to consult with CDFA and UCANR subject area experts – approximately 2,000 minutes, 4-5 participants each call				200
Total Direct Costs				\$ 31,865.70
Indirect Costs (10%)				3,186.57
Total Cost				\$ 35,052.27