A. Cover Page

1. Project Title
Developing a Review Process for Continuing Education Courses for Growers who Complete the Nitrogen Management Plan Training Course

2. Project Leaders
Parry Klassen: Project Director/Principle Investigator (PI), Coalition for Urban Rural Environmental Stewardship (CURES), 1480 Drew Ave. #130, Davis, CA 95618, 559-288-8125 Klassenparry@gmail.com

Terry Prichard: Co-PI, University of California at Davis Department Land, Air, and Water Resources (LAWR), Specialist Emeritus, 1110 PES, Davis, CA 95616, 209-481-6839, tlprichard@ucdavis.edu

3. Cooperators: None

4. Supporters
Alan Reynolds: Board Chairman, East San Joaquin Water Quality Coalition, 1201 L Street,Modesto, CA, 209-394-6200, alan.reynolds@ejgallo.com

Joseph McGahan: Executive Director, Westside San Joaquin River Watershed Coalition, 559-582-9237, jmccahan@summerseng.com

Bruce Houdesheldt: Executive Director, Sacramento Valley Water Quality Coalition, 916-442-8333, bruceh@norcalwater.org

Michael Wackman: Executive Director, San Joaquin County & Delta Water Quality Coalition, 916-684-9359, michaelkw@msn.com

Parry Klassen: Chair, Management Practices Evaluation Program Group Coordinating Committee (MPEP GCC), 1201 L Street, Modesto, CA, 559-288-8125, klassenparry@gmail.com

Adam Laputz: Assistant Executive Officer, Central Valley Regional Water Quality Control Board, 11020 Sun Center Drive, #200, Rancho Cordova, CA 95670, 916-464-4726, Adam.Laputz@waterboards.ca.gov

Renee Pinel: President and CEO, Western Plant Health Association, 4460 Duckhorn Drive, Suite A, Sacramento, CA, 95834, 916-574-9744, reneep@healthyplants.org

Doug Parker: Director, California Institute for Water Resources, University of California Agricultural and Natural Resources, 1111 Franklin St., 10th Floor, Oakland, CA 94607, 510-987-9124, doug.parker@ucop.edu

5. CDFA Funding Request Amount/Other Funding
Funding requested from California Department of Food and Agriculture, Fertilizer Research and Education Program total $69,028.50. $24,633.00 (2017) $22,775.00 (2018) and $21,620.50 (2019) The budget begins January 1, 2017 and ends December 31, 2019.
B. Executive Summary

1. Problem

Nitrate is the most common contaminant in Central Valley groundwater and elevated levels are attributed primarily to leaching of nitrogen fertilizers past the root zone into aquifers. Growers who belong to Central Valley Water Quality Coalitions are under new requirements per the Irrigated Lands Regulatory Program (ILRP) to keep “on farm” a Nitrogen Management Plan (NMP) to track nitrogen fertilizer applications. As required by the waste discharge requirement (WDR) the NMP for lands determined to be highly vulnerable to nitrate leaching must be certified by 1) Certified Crop Advisor (CCA) with a Nitrogen Plan Certification, 2) Certified Professional Agronomist or Soil Scientist, or 3) Technical Service Provider certified in nutrient management by NRCS. A program to ensure adequate numbers of NMP certifiers is underway by University of California (UC) and California Department of Food and Agriculture (CDFA). The current total of CCAs in California is near 500 with fewer in the Central Valley. There are approximately 25,000 landowners/operators, with nearly 7 million acres of irrigated land in the Central Valley are affected by the new ILRP requirements to improve nitrogen application practices to protect groundwater. NMPs require certification for lands in high vulnerability areas which began in 2016. The lack of adequate numbers of NMP certifiers is already a concern to both growers and the technical community. The WDR provides for another method of certification: growers wishing to complete their own plans and have obtained certification by participation in a training program approved by the Central Valley Regional Water Quality Control Board Executive Officer. To date, this program has qualified 2,800 growers in a joint effort with CDFA, CURES and UC. Upon successful completion of the course a grower is able to certify the NMP for lands that they farm. After the initial grower self-certification, additional hours of Continuing Education is a condition of the program approved by the Regional Water Board. This phase (Phase 2) will include development and management of a process to review the agendas and contents of a proposed meeting or segment of a meeting that fulfills the Continuing Education requirement of the NMP certification process.

2. Objectives, Approach, and Evaluation

Objective: Implement a three-year pilot program to develop and manage the process for reviewing and approving Continuing Education sessions in collaboration with agriculture organizations in the Central Valley for growers who have been certified to complete their own Nitrogen Management Plans.

Objective 1) Develop a system to review the content of Continuing Education sessions in order for qualified growers to fulfill this condition of the NMP certification program; also develop criteria for evaluating a session proposal (CURES, PI and CDFA staff)

Objective 2) Review and approve requests from meeting organizers for Continuing Education sessions using criteria developed in conjunction with CURES, CDFA and UC; also provide support to meeting organizers to reach all certified growers needing to complete this condition of the NMP certification process

Approach:
1) After the initial grower self-certification, additional hours of Continuing Education is required. This project would review meeting agendas and content descriptions to conduct this activity. This
will include development of a process to review the agenda and content of a proposed Continuing Education meeting or segment of a meeting that fulfills the requirement of the NMP certification process. The process to review the meeting agenda will be similar to the approach used by the California Department of Pesticide Regulation where meeting organizers are asked to submit a request for Continuing Education credits. The request must contain a copy of the agenda, the title of the presentation where CE credits are being requested, the speakers name and affiliation and a 4-5 sentence description of the presentation content. The content review will be performed by Terry Prichard and CURES staff using criteria developed in conjunction with CDFA and UC. Criteria for evaluating a session will be inclusion of one or more of the following agronomic subjects: achieving nitrogen use efficiency for specific crops; practices to minimize leaching of nitrates to groundwater for specific crops; matching nitrogen applications to crop uptake and potential crop production; efficient irrigation practices that minimize over-irrigation when excess nitrogen could be in the soil profile; and other agronomic-focused nitrogen fertilizer and irrigation efficiency subjects deemed appropriate by the curriculum reviewers. Once the CE meeting content is approved, the organizing entity will be allowed to issue Continuing Education credits to the grower in the form of an attendance confirmation certificate. The grower will be responsible for filing and maintaining records of attending CE events or courses.

**Evaluation Criteria:**
The primary metric of success is to meet the need of the Continuing Education sessions for growers to satisfy this condition of the NMP self-certification program from Phase I. A primary objective is that content addresses diverse crop-specific nitrogen management content. Criteria for evaluating a session will be inclusion of one or more of the following agronomic subjects: achieving nitrogen use efficiency for specific crops; practices to minimize leaching of nitrates to groundwater for specific crops, matching nitrogen applications to crop uptake and potential crop production, efficient irrigation practices that minimize over-irrigation when excess nitrogen could be in the soil profile, and other agronomic-focused nitrogen fertilizer and irrigation efficiency subjects deemed appropriate by the curriculum reviewers. An equally important concern is that all growers that received the certification complete the 3 additional hours of CE. This will be evaluated in conjunction with the meeting organizers who will keep attendance records.

3. **Audience**
The audience will be commodity groups, University Cooperation Extension personnel who hold crop specific meetings, and water quality coalitions that have held the NMP grower self-certification sessions throughout Phase 1. These farm groups and other educational institutions have in the past and will in the future provide the Continuing Education sessions to growers in the Central Valley. The secondary or beneficiary audience are qualified growers (growers who have attended the NMP course and have passed the exam) who must complete 3 additional Continuing Education hours as a condition of their certification.

C. **Justification**

1. **Problem**
   Elevated levels of nitrate present in groundwater in Central Valley locations are being attributed, in part, to inputs from farming practices. The Central Valley Water Board estimates approximately three million acres of irrigated lands overlay groundwater aquifers that have high levels of nitrogen or are vulnerable to nitrate contamination. In the Central Valley, the Regional Water Board has designated areas that require action by growers and water quality coalitions to reduce inputs of nitrate to groundwater. The Irrigated Lands Regulatory Program (ILRP) now requires Coalition
Members to keep “on farm” a Nitrogen Management Plan (NMP) to track nitrogen fertilizer applications. Approximately 25,000 landowners/operators, with a total of nearly 7 million acres of land in the Central Valley are affected by the new ILRP requirements to improve nutrient and irrigation application practices to protect groundwater. Similar groundwater issues are problematic in other farming regions of California as well. A key component of the NMP is reporting how much nitrogen a crop “consumes” during the growing season. Determining crop consumption is one of several charges of the Management Practices Evaluation Program (MPEP) that the Northern Central Valley coalitions are cooperatively implementing. The objective of the NMP and the MPEP is to better manage and understand the amount of nitrate that is leached to groundwater by implementing Best Management Practices while also assuring that these processes are indeed effective. Phase I of this program administered a grower self-certification program ultimately increasing the understanding of nitrogen behavior, movement and distribution from nitrogen fertilizers as it moves through the soil down to groundwater. Phase 2 of this program will address the Continuing Education requirements on topics achieving nitrogen use efficiency for specific crops; practices to minimize leaching of nitrates to groundwater for specific crops; matching nitrogen applications to crop uptake and potential crop production; efficient irrigation practices that minimize over-irrigation when excess nitrogen could be in the soil profile; and other agronomic-focused nitrogen fertilizer and irrigation efficiency subjects deemed appropriate by the curriculum reviewers. This knowledge should increase agricultural nitrogen use efficiency and reduce nitrate leaching potential.

2. FREP Mission and Research Priorities
This project will promote environmentally safe and agronomically sound use of nitrate fertilizers. The 2015 Research Priority addressed is “Nitrogen Management Training Program for Growers.” The Waste Discharge Requirements General Orders for the Central Valley allows growers to self-certify their own nutrient management plans if they attend a California Department of Food and Agriculture or other Executive Officer approved training program. CDFA has taken the lead on developing a grower training program based on the Certified Crop Advisor training funded by FREP. Additional funds are required to further develop the grower education component.

3. Impact
The research-based information delivered to growers by this project will support FREP’s goals to advance the environmentally safe and agronomically sound use of nutrients and the reduction of agricultural contributions of nitrate to groundwater in the Central Valley and agricultural regions throughout California. The BMP-related content of the Continuing Education Courses will be vital to a significant portion of the approximately 33,000 landowners/operators, with a total of nearly 7 million acres of land in the Central Valley that are affected by the new ILRP requirements to improve nutrient and irrigation application practices for reducing salt and nitrate discharges to ground and surface water. This program will also ensure the timely education of a diverse set of crop-specific topics via Continuing Education outreach sessions. The organizations and the growers they teach will advance the knowledge of proper nitrogen stewardship as attention by the public and policymakers continue to focus on the issue of nitrates in groundwater.

4. Long-Term Solutions
In the long-term, implementation of the grower NMP self-certification program and Continuing Education component will contribute to measurable reductions in the likelihood of nitrates from fertilizer entering groundwater from farming practices in the Central Valley. This will reduce the regulatory compliance costs of all users of water, not just agricultural. Additionally, the reduction of impacts to groundwater reduces treatment costs and may allow expanded use of lower cost
groundwater in some areas for both agricultural and domestic uses.

5. Related Research
The requirement to have a certified agronomist sign off on nitrogen management plans for growers of irrigated cropland is a new concept and approach in California. While growers who apply pesticides must have an applicator permit issued by the County Agricultural Commissioner, there is no requirement for a licensed Pest Control Advisor to perform the training. This program would be a collaboration between CURES, which has extensive experience in developing and managing outreach programs to growers, and Terry Pritchard, a UC extension specialist, who has implemented the Train the Trainer component of the program. CURES, in collaboration with academic, commodity, professional, regulatory and non-profit organizations, has been instrumental in testing the efficacy of BMPs for improving water quality and facilitating widespread implementation and adoption of BMPs and IPM. CURES has produced a variety of publications on BMPs for reducing off-site movement of sediments, nutrients and pesticides to surface water, irrigation management practices and practices for supporting healthy populations of pollinators, and assembled region-specific collections of these technical bulletins in binders entitled “BMP Handbook,” with distribution to approximately 7,500 growers, PCAs, and agriculture organizations in the Central Valley. The Handbooks contain publications on surface water quality protection practices such sediment ponds, vegetated ditches, PAM, irrigation scheduling, crop specific guidelines for BMP selection, single and multiple field implementations, and reduced risk treatment options. The BMP publications and the results of water quality related BMP studies are posted on CURES website: www.curesworks.org.

CURES project leader, Parry Klassen personally has extensive experience in production agriculture. Klassen also serves as Executive Director of the East San Joaquin Water Quality Coalition. This organization represents more than 3,500 landowners in Madera, Merced and Stanislaus counties under the Irrigated Lands Regulatory Program. Among other responsibilities, Klassen manages the grower outreach and education programs and also actively participates in CV-Salts and the Management Practice Evaluation Program Coordination Committee on behalf of the coalition.

Terry Prichard, the project’s co-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. Recent projects include Controlling Offsite Movement of Agricultural Chemical Residues: Winegrapes UCANR 8556, Tomato UCANR 8457 and Alfalfa UCANR 8495. Groundwater Protection Areas Web Site.

6. Contribution to Knowledge Base
This project will not develop new knowledge or information but instead will serve as a conduit and vehicle to transfer the latest information on efficient nitrogen fertilizer applications and the practices that can minimize or prevent movement of nitrates to groundwater. The recipients of the information will be the organizations who perform the Continuing Education sessions as well as the growers who are the recipients of the training.

7. Grower Use
The nitrogen practices promoted in this project will be considered characteristic of what the “early adopters” are currently using. Individually most of the practices are already being used widely but not often simultaneously in a field. For instance, drip/micro irrigation is widely used in the Central Valley. But drip irrigation, tissue/leaf sampling, split applications of nitrogen, pre and post crop
soil testing, soil moisture sensors, and other newer practices, may not all be used at once in a field. Growers who receive the NMP training will be told about the “best” practices for the various cropping conditions, steps that can be taken to minimize/eliminate nitrate movement to groundwater and, presumably, increased production will cover the cost. The Continuing Education courses will advance crop specific aspects of these practices in addition to expanding on the curriculum used in the NMP training which will facilitate the transfer of new information to growers in coming years.

D. Objectives
Objective 1) Develop a system to facilitate Continuing Education sessions in order for qualified growers to fulfill this condition of the NMP certification program; also develop criteria for evaluating a session proposal (PI and CDFA staff)
Objective 2) Review and approve requests from meeting organizers for Continuing Education sessions using criteria developed in conjunction with CDFA and UC; also provide support to meeting organizers to reach all certified growers needing to complete this condition of the NMP certification process

E. Work Plans and Methods (for multi-year projects, include a work plan for each year)
1. Work Plan
   1. Develop the process and criteria to review Continuing Education content submitted by participating organizations, 2017
      a. PI Terry Prichard and CURES staff work with CDFA and UC to develop criteria for content
      b. CURES staff design the system, including accompanying documents needed to request CE credit for approval
      c. CURES staff promote and provide support of the program amongst agriculture organizations
      Task Work Product: Curriculum for CE training, program advertisements, Request Forms; March, April 2017
   2. Manage and coordinate the certification requirement of continuing education, 2017-2019
      a. Agriculture organizations develop and submit the request for Continuing Education credit to satisfy this condition of the NMP self-certification program (of Phase 1)
      b. PI and CURES staff review content by using developed criteria
      c. The continuing education session is approved and implemented. The organizer will issue Continuing Education credits to the grower in the form of an attendance confirmation certificate.
      d. The grower will be responsible for filing and maintaining records of attending CE events or courses.
      e. Notify growers who have attended previous certification courses about the availability of continuing education courses.
      Task Work Product: Curriculum for CE training, event schedules, attendance list of certified participants, CE request submittals; webpostings and emailing of course availability; beginning April 2017

2. Methods
   *Not applicable*

3. Experimental Site
   *Not applicable*
F. Project Management, Evaluation, and Outreach

1. Management

The project director and principal investigator, Parry Klassen, is executive director of the Coalition for Urban Rural Environmental Stewardship (CURES), a non-profit, 501c3. Mr. Klassen has a B.S. in agricultural communication from California State University, Fresno, and is a farmer in Fresno County. Mr. Klassen has been closely involved with the formation of Central Valley watershed coalitions since 2002 with CURES and as coalition board chairman (East San Joaquin Water Quality Coalition). CURES, in collaboration with academic, commodity, professional, regulatory and non-profit organizations, has been instrumental in testing the efficacy of BMPs for improving water quality and facilitating widespread implementation and adoption of BMPs and IPM. Parry Klassen and CURES staff will manage the project, facilitate communication and collaboration among the cooperating entities through conference calls and team meetings, ensure that the project goals and objectives are being addressed throughout the project, oversee the field research, deliver outreach presentations, work with the grower cooperator to assist with management practice implementation and study logistics coordination, and gather and compile all supporting materials from collaborators and subcontractors to submit reports, invoices and deliverables to the FREP Grant Manager on time and on budget.

Terry Prichard, the project’s co-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 Prichard will assist Mr. Klassen in managing the Work Plan tasks to achieve the project objectives. Work Plan Progress reports will be supplied to Mr. Klassen for incorporation into interim and final reports.

2. Evaluation

The primary metric of success is to meet the need of the Continuing Education sessions for growers to satisfy this condition of the NMP self-certification program from Phase I. The first concern is that content addresses diverse crop-specific content. Criteria for evaluating a session will be inclusion of one or more of the following agronomic subjects: achieving nitrogen use efficiency for specific crops; practices to minimize leaching of nitrates to groundwater for specific crops, matching nitrogen applications to crop uptake and potential crop production, efficient irrigation practices that minimize over-irrigation when excess nitrogen could be in the soil profile, and other agronomic-focused nitrogen fertilizer and irrigation efficiency subjects deemed appropriate by the curriculum reviewers. An important component is that all growers that received the certification in Phase 1 complete the 3 additional hours of CE. CURES staff will provide water quality coalitions with lists of grower members who need to complete these hours.

3. Outreach

This entire project is one of outreach and education of growers in collaboration with agriculture organizations. Activities beyond Continuing Education activities described above include:

- Articles in coalition newsletters, trade publications and popular agricultural media about availability of CE meetings.
- Presentation to growers soliciting their involvement in seeking self-certification of the NMP on the growers lands and attendance in the CE meetings.
G. Budget Narrative

The budget attached in the budget template is based on funds being available as of January 1, 2017. The funds included in the attached budget template include 2017, 2018 and 2019 funds estimate.

**Personnel Expense** CURES staff are listed below including the number of hours estimated to work on the study project per year. CURES staff will manage contracts, invoicing and progress reports and ensure that subcontractors remain on schedule and within budget. CURES includes a 20% benefit calculation to the budget. Staff time is expected to range from 1% to 5% of full or part time salaries.

**Table 1. Year (2017)**

<table>
<thead>
<tr>
<th>Classification Level</th>
<th>Project Salary, 2017</th>
<th>% of Time - Salary</th>
<th>Project Hours, per year</th>
<th>% of Time - Hours</th>
<th>Benefits</th>
<th>Employment Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Director</td>
<td>$7,150</td>
<td>2.6%</td>
<td>55</td>
<td>2.6%</td>
<td>$1,430</td>
<td>Full Time</td>
</tr>
<tr>
<td>Project Manager</td>
<td>$2,750</td>
<td>2.6%</td>
<td>55</td>
<td>2.6%</td>
<td>$550</td>
<td>Full Time</td>
</tr>
<tr>
<td>Project Assistant</td>
<td>$1,125</td>
<td>2.1%</td>
<td>45</td>
<td>2.1%</td>
<td>$225</td>
<td>Full Time</td>
</tr>
<tr>
<td>Bookkeeper</td>
<td>$1,500</td>
<td>4.8%</td>
<td>50</td>
<td>4.8%</td>
<td>$300</td>
<td>Part Time</td>
</tr>
</tbody>
</table>

**Table 2. Year (2018)**

<table>
<thead>
<tr>
<th>Classification Level</th>
<th>Project Salary, 2018</th>
<th>% of Time - Salary</th>
<th>Project Hours, per year</th>
<th>% of Time - Hours</th>
<th>Benefits</th>
<th>Employment Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Director</td>
<td>$6,500</td>
<td>2.4%</td>
<td>50</td>
<td>2.4%</td>
<td>$1,300</td>
<td>Full Time</td>
</tr>
<tr>
<td>Project Manager</td>
<td>$2,750</td>
<td>2.6%</td>
<td>55</td>
<td>2.6%</td>
<td>$550</td>
<td>Full Time</td>
</tr>
<tr>
<td>Project Assistant</td>
<td>$1,125</td>
<td>2.1%</td>
<td>45</td>
<td>2.1%</td>
<td>$225</td>
<td>Full Time</td>
</tr>
<tr>
<td>Bookkeeper</td>
<td>$1,500</td>
<td>4.8%</td>
<td>50</td>
<td>4.8%</td>
<td>$300</td>
<td>Part Time</td>
</tr>
</tbody>
</table>

**Table 3. Year (2019)**

<table>
<thead>
<tr>
<th>Classification Level</th>
<th>Project Salary, 2019</th>
<th>% of Time - Salary</th>
<th>Project Hours, per year</th>
<th>% of Time - Hours</th>
<th>Benefits</th>
<th>Employment Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Director</td>
<td>$5,850</td>
<td>2.1%</td>
<td>45</td>
<td>2.1%</td>
<td>$1,170</td>
<td>Full Time</td>
</tr>
<tr>
<td>Project Manager</td>
<td>$2,750</td>
<td>2.6%</td>
<td>55</td>
<td>2.6%</td>
<td>$550</td>
<td>Full Time</td>
</tr>
<tr>
<td>Project Assistant</td>
<td>$1,125</td>
<td>2.1%</td>
<td>45</td>
<td>2.1%</td>
<td>$225</td>
<td>Full Time</td>
</tr>
<tr>
<td>Bookkeeper</td>
<td>$1,500</td>
<td>4.8%</td>
<td>50</td>
<td>4.8%</td>
<td>$300</td>
<td>Part Time</td>
</tr>
</tbody>
</table>

**a. Operating Expenses**

Supplies: Supplies includes cost for printing and distributing CE meeting approval and CE
certificates (when email is not available or a preferred method). Per month cost is estimated at $50.00. Supplies cost total (Supplies) $1,350.00.

**Equipment:** None

**Travel:** Minimal travel involved in this project other than periodic meetings with CDFA. Travel cost total (Travel) $2,220.00.

**Professional/Consultant Services:**
CURES will be subcontracting with Terry Pritchard to review and approve the applications received for Continuing Education Units (CEUs) Credit. The webmaster will also maintain the CURES website with notifications, forms and schedule of the courses. Consultant Services cost total (Professional/Consultant Services) $18,003.50.

### b. Other Funding Sources

No match funding available

### H. Appendices

**Appendix 1: Project Leaders**

**Parry Klassen**

**Executive Director**

- East San Joaquin Water Quality Coalition
- Coalition for Urban Rural Environmental Stewardship
- Central Coast Groundwater Coalition

Parlier, CA
559-288-125
klassenparry@gmail.com

**Education**

Bachelor of Science Degree in Agricultural Communications; emphasis in agronomy and journalism. California State University, Fresno, 1981.

**Employment History**

*September 2004 to Present – Executive Director, East San Joaquin Water Quality Coalition.* Manage the activities of this non-profit entity formed to assist members to be in compliance with the Irrigated Lands Regulatory Program. Responsibilities include managing relations with the Regional Water Board and coalition subcontractors and implementing outreach programs on improving water quality in the coalition region. [www.esjcoalition.org](http://www.esjcoalition.org)

*August 1999 to Present – Executive Director, Coalition for Urban/Rural Environmental Stewardship.* Responsibilities include managing the non-profit organization and working with clients on a variety of research and communications projects. Research projects focus on evaluating management practices to protect surface and groundwater; outreach programs consist of developing publications, organizing meetings, presentation development and performance, media outreach and other communications functions. All projects are performed by forming alliances with various agricultural organizations to achieve the project goals. [www.curesworks.org](http://www.curesworks.org)

*January 2012 to Present – Executive Director, Central Coast Groundwater Coalition* Manage the activities of this non-profit entity created to fulfill the groundwater monitoring requirements of landowners and growers located in the Central Coast region of California.
Responsibilities include managing subcontractors who perform well sampling and implementing the outreach program directed at 573 members who farm 204,000 acres in the region. 

www.centralcoastgc.org

1997 to 2004 -- Communications Consultant, Freelance Writer. Worked on a variety of communications projects including media relations, issues management, and writing. Projects included copy writing and editing, organizing meetings, presentation development and performance, media outreach and other communications functions. Clients included Crop Life America, Almond Board of California, California Tree Fruit Agreement and other agricultural entities.

1995 – 1997 – Communications Manager, Western Plant Health Association – Manage communications activities for this trade association based in Sacramento.

1981 to 1995 -- Reporter and Editor Reporter and editor for a number of agricultural publications, including Farm Chemicals, California Farmer, Western Fruit Grower, and American Vegetable Grower magazines. Also written extensively about greenhouse and ornamental crops, cotton, and related agricultural subjects.

Farming Background
1991 to present -- Own and operate fruit farm near Parlier.
1988 to 1990 -- Rented peach orchard in Ohio for direct market sales.
1979 to 1980 -- Worked during college on cotton and vegetable farm.
1970 to 1975 – Actively involved in family tree fruit farm in Reedley, CA. Growing, packing, and shipping operation included 150 acres of peaches, plums, nectarines, and vegetables. (Farm sold in 1975).
TERRY L. PRICHARD

Water Management Specialist, Emeritus
Department of Land, Air and Water Resources/Hydrology
University of California, Davis, California 95616
Telephone (209) 886-5301; Fax (209) 886-5301; e-mail: tlprichard@ucdavis.edu

DEGREES - B.S. Polytechnic State University, San Luis Obispo, 1973
Soil Science
M.S. University of California, Davis, 1976
Soil and Water Science

ACADEMIC EXPERIENCE:

System-wide
UC CE Farm Advisor, 1975-1977

University of California at Davis
Water Management Specialist, 1977
Asst. Spec., 1977
Asso. Sepc., 1982
Full CE Specialist, 1990

UC Davis, Department of Land, Air and Water Resources
Lecturer, 1989 – present

Specialist Emeritus, LAWR UC Davis-- July 2010

RESEARCH INTERESTS
Understanding changes in soil-water-plant relationships under environmental stress and developing management strategies to maximize crop quality, resource use and minimize environmental impact

RECENT PROJECTS
Irrigation Education and Training Program for Leaching Ground Water Protection Areas in CA (Writing Training Materials and Coordinating Program)

Offsite movement of agricultural pesticide residues -- writing risk assessment and best management practice publications. (Department of Pesticide Regulation)

Evaluation of best management practices to reduce offsite movement of ag residues. (State Water Quality Control Board)
PERSONAL EXPERIENCE

Farm owner/operator, Farmington and Oakdale, CA
Growing walnuts and beef cattle.
Consulting in California / US / Abroad in the area of Crop Water Management/Stress Physiology
Consultant to SJ County Resource Conservation District and South Delta Water Agency 2000 to present.
Certifications: Certified Professional Crop Advisor, Soil Scientist, and Agronomist. DPR QAC

PEER-REVIEWED PUBLICATIONS (selected presentations from past ten years)


Schwankl, L., Hanson, B., Prichard T. Reducing Runoff from Irrigated Lands, Causes and Management of Runoff from Surface Irrigation in Orchards. UC-ANR Publication 8214.
Schwankl, L., Prichard, T., Hanson, B. 2007 Reducing Runoff from Irrigated Lands, Managing Existing Sprinkler Irrigation Systems. UC-ANR Publication 8215

Schwankl, L., Prichard, T., Hanson, B. 2007 Reducing Runoff from Irrigated Lands, Soil Intake Rates in Sprinkler-Irrigated Orchards. UC-ANR Publication 8216

Schwankl, L., Prichard, T., Hanson, B. 2007 Reducing Runoff from Irrigated Lands, Tailwater Return Systems. UC-ANR Publication 8225

Schwankl, L., Hanson, B., Prichard, T. 2008 Maintaining Microirrigation Systems. University of California ANR Publication 21637


Appendix II: Cooperators
Appendix III: Supporters
February 27, 2015

Parry Klassen
CURES
1480 Drew Ave. #130,
Davis, CA 95618

Dear Mr. Klassen,

The CURES CDFA Fertilizer Research and Education Program project proposal “Train the Trainer: A Nitrogen Management Training Program for Growers,” will be instrumental for the development of a nitrogen plan self-certification program. We strongly support this project so that our members have the option to self-certify their Nitrogen Management Plans, a requirement of the Irrigated Lands Regulatory Program.

With this letter I am confirming our commitment to work with CURES as a collaborator, including providing technical assistance and outreach, as needed.

We look forward to working with you on this project.

Sincerely,

Joseph McGahan
Executive Director
Westside San Joaquin River Watershed Coalition
February 27, 2015

Parry Klassen  
CURES  
1480 Drew Ave. #130,  
Davis, CA 95618

Dear Mr. Klassen,

After reviewing the CURES CDFA Fertilizer Research and Education Program project proposal “Train the Trainer: A Nitrogen Management Training Program for Growers,” the Coalition believes completion of this work will substantially assist our coalition in fulfilling the mandates of the Irrigated Lands Regulatory Program including identifying and implementing management practices effective in reducing the discharge of nitrates to groundwater. The development of a training program will be valuable in helping to educating Coalition members on nitrogen stewardship practices.

San Joaquin County and Delta Water Quality Coalition will work with CURES to collaborate on the program by providing technical assistance and help to facilitate the training program.

We look forward to working with you on this project.

Sincerely,

Mike Wackman  
San Joaquin County &  
Delta Water Quality Coalition
February 27, 2015

Parry Klassen
CURES
1480 Drew Ave. #130,
Davis, CA 95618

Dear Mr. Klassen,

The CURES CDFA Fertilizer Research and Education Program project proposal "Train the Trainer: A Nitrogen Management Training Program for Growers" will be instrumental for the development of a nitrogen plan self-certification program. We strongly support this project so that our members have the option to self-certify their Nitrogen Management Plans, a requirement of the Irrigated Lands Regulatory Program.

With this letter the Sacramento Valley Water Quality Coalition (Coalition) expresses its strong desire to work with CURES as a collaborator, including providing necessary technical assistance and facilitating location of study sites in the coalition region.

We look forward to working with you on this project.

Sincerely,

Bruce Houdesheldt
Executive Director
Sacramento Valley Water Quality Coalition