MAKING LID WORK FOR US

LOW IMPACT DEVELOPMENT WORKSHOP

For The Greater Stanislaus County Region's Engineering and Development Community

* Hosted by
  The City of Riverbank
* Brought to you by
  The Local Government Commission

With financial support from the State Water Board

[ECONOMIC & ENVIRONMENTAL BENEFITS OF LID FOR NEW AND IN-FILL DEVELOPMENT]

THURS. APRIL 30 2015

All Day 8:30AM - 4:30PM
Registratioin begins at 8:00am
1st Session begins promptly at 8:30am

(RIVERBANK COMMUNITY CENTER)
3600 Santa Fe St., Riverbank, CA 95367

Local Government Commission
California Water Boards
City of Riverbank Est. 1922
O'DELL ENGINEERING
DF ENGINEERING, INC. CIVIL ENGINEERING AND SURVEYING
REM 888-526-4736

WORKSHOP DESCRIPTION:

We will discuss strategies for removing barriers and integrating LID into sustainable community planning, design and construction. Strategies for integrating LID into community-wide planning efforts and taking a neighborhood, multi-site approach to LID implementation for in-fill development will be shared.

AGENDA

Session:	Topic:	Presenter/Lead:
Introductions 8:30-8:45am	Purpose of the workshop, introductory ice	Danielle Dolan, LGC
1 LID 101 Panel 8:45-10:30am	a) Philosophy, principles, and benifits of low impact development (LID). b) Brief presentation on LID and Urban Forestry c) State Water Board presentation on MS4 Permit Regulation & Compliance.	a) Melanie Carr, CBEC Eco Engineers b) Jennifer Alvarez, CivicSpark c) Bill Hereth, State Water Resources Control Board
2 Local Panel 10:30-11:30	Local case-study examples of LID projects.	a) David Felix, City of Modesto & Bill Strand, RRM b) Koosun Kim, City of Newman
3 Group Discussion 11:30-12:00	Analyze the presentations, focusing on specific barrriers and challenges. Develop a set of questions, issues, concerns, to be addressed later.	All, Facilitated by LGC & AECOM
LUNCH 12:00-12:30	Networking; lunch provided.	NA
4 Feasibility Study Presentation 12:30-1:30	Lower Stanislaus River LID Alternative Compliance Study.	Eric Zickler, Lotus Water Merril Putnam, AECOM
5 Small-Group Exercise 1:30-2:30	Problem-solving to identify strategies and solutions to challenges identified in session 3.	All, Facilitated by LGC & AECOM
BREAK Clustering Activity 2:30-3:00	Identify preferred technology/treatments for LID via Design Manual Posters.	All, Facilitated by LGC & AECOM
6 Report Out 3:00-3:45	Whole group report back on small-group discussion & synthesize small-group output.	All, Facilitated by LGC & AECOM
7 LID in the SJV 3:45-4:15	Identify preferred approaches and next steps for implementing low impact development in the San Joaquin Valley.	All, Facilitated by LGC & AECOM
CLOSE 4:15-4:30	Exit Evaluation.	All

LOW IMPACT DEVELOPMENT WORKSHOP

For The Greater Stanislaus County Region's Engineering and Development Community

Economic & Environmental Benefits of LID for New & In-Fill Development

Thursday, April 30, 2014 - Riverbank, CA

What:

An interactive workshop for the Greater Stanislaus County Region planning and development Community.

Purpose:

We will discuss strategies for removing barriers and integrating LID into sustainable community planning, design and construction. Strategies for integrating LID into community-wide planning efforts and taking a neighborhood, multi-site approach to LID implementation for in-fill development will be shared.

Attendees:

- City and County Staff (Public Works, Operations, Maintenance, Budgets, etc.)
- Planners
- Civil and/ or Environmental Engineers
- Developers
- Designers/ Landscape Designers/ Architects
- Environmental organizations
- Stormwater managers
- Architects

Desired Outcomes:

- Gain a better understanding of LID Benefits, Principles, and Philosophy.
- Identify challenges & solutions specific to your community.
- Identify preferred strategies and next steps for broader implementation of LID in the Stanislaus region.

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Danielle V. Dolan
Project Manager for Water Programs
Local Government Commission

How did this project come about?

Why are we here today?

What do we hope to accomplish today?

Introductions: Who am I sitting next to?

Name:

Affiliation:

Why did you come/ what do you hope to learn?

One interesting Fact…

LID 101 8:45 - 9:45am

Melanie Carr, P.E., M.S.
CBEC Eco Engineers

What is LID?

- Definition
- Conventional vs. LID Approach
- Applicability

Why is LID Important?

- What is the problem?
- How does LID address the issue?
- Key changes in sw permit
- Key stormwater pollutants

Philosophies, Principles, Benefits:

- Philosophy
- Principles
- Benefits
- Impediments to LID

Examples of LID Projects:

National & Statewide Context/ Importance:

Urban Forestry & LID 9:45 - 10:00am

Jennifer Alvarez
CivicSpark

"Urban Forests Create Livable Communities"

Trees & Low Impact Development:

- Environmental
- Economic
- Public Health & Safety

Benefits of Trees:

Are Trees Worth the Cost?:

- Local & National Case Study Examples

CAL FIRE Urban Greening Grants:

Regulatory Compliance & Permitting 10:00 - 10:30am

Bill Hereth, P.E.
Division of Water Quality, Municipal Storm Water Unit
State Water Resources Control Board

Overview of the MS4 Phase I & Phase II Programs:

LID Requirements:

Approach to Alternative Compliance:

Draft Central Valley General Permit:

For More Information:

Garrison Park Water Quality project 10:30 - 11:00am

David Felix
Associate Engineer, City of Modesto
Utilities Department, Engineering Services Division

William F. Strand, M.S., P.E., Q.S.D.
Manager of Engineering, RRM Design Group

Project Overview:

LID Design:

Permitting & Regulatory Compliance:

Challenges & Successes:

Operations & Maintenance:

Lessons Learned:

Manteca LID Project & Newman LID Planning 11:00 - 11:30am
Koosun Kim, P.E., Q.S.D.
Public Works Director, City of Newman

Woodward Park Parking Lot Project

Project Overview:

LID Design:

Permitting & Regulatory Compliance:

Challenges & Successes:

Operations & Maintenance:

Lessons Learned:

Manteca LID Project & Newman LID Planning 11:00 - 11:30am
Koosun Kim, P.E., Q.S.D.
Public Works Director, City of Newman

Newman Low Impact Development Project

Project Overview:

LID Design:

Permitting & Regulatory Compliance:

Challenges & Successes:

LID Benefits:

Group Discussion 11:30am – 12:00pm

Danielle Dolan, LGC
Eric Zickler, LotusWater

- Danielle and Eric will guide us through three brief discussion sessions, evaluating the information we've learned so far today, and analyzing the various challenges to implementing LID. We will spend approximately ten (10) minutes on each section. The following pages include discussion questions and room to take notes.

3.1: Challenges/ Barriers to LID Implementation & Regulatory Compliance

- Reflect on Melanie Carr and Bill Hereth's presentations.
- Analyze the presentations, focusing on specific barriers and challenges the project team faced.
- Answer the questions provided, for Session 3.1.

3.2: Analyzing the Local Case-Studies

- Analyze the presentations, focusing on specific barriers and challenges the project team faced.
- Answer the questions provided, for Session 3.2.

3.3: Summary of Primary Challenges/ Barriers to Overcome

- Based on our reflections and analysis of the morning's presentations, we will compile a comprehensive list of barriers to or challenges of LID implementation.
- From this list, we will identify the top 3 biggest or most important barriers/ challenges to LID (we will be discussing these in Session 5):

Session 3.1
Challenges/ Barriers to LID Implementation & Regulatory Compliance

Reflecting on the Session 1 presentations, answer the following questions together.

A) Melanie Carr's presentation, "LID-101"

1. What remaining questions do you have that concern you about LID?

2. What is the most challenging aspect of planning for on-site stormwater management for in-fill development projects? What about in greenfield projects?

3. Do the communities you work in take different approaches to meet the stormwater requirements?

4. What is the #1 deterrent for considering and implementing an LID project?

B) Bill Hereth's presentation, "MS4 Regulatory Compliance & Permitting"

The State Board's NPDES permit for MS4 Phase I & Phase II now requires LID strategies:

1. Do you understand the requirements?

2. As a developer, do you feel equipped to meet these requirements; why or why not?

3. What barriers currently exist for incorporating LID into your development projects? (e.g., Fiscal? Building Codes and Regulatory Compliance (stormwater or otherwise)? Environmental Permitting? Please be specific.

Session 3.2
Analyzing the Local Case-Studies

We heard about three Local Case-Study presentations this morning:

A. David Felix & Bill Strand's presentation of the Garrison Park Project
B. Koosun Kim's presentation of the Manteca LID Project
C. Koosun Kim's presentation of the City of Newman LID Plan

Answer the following questions, based on the case study examples.

1. What were the 2-3 most significant challenges the project team faced?

2. Why did these issues arise?

3. Do you have similar challenges in your community/ projects? Explain.

4. What other barriers to LID can you think of that were not addressed in the project presentation?

Session 3.3
Summary of Primary Challenges/ Barriers to Overcome

Based on our reflections and analysis of the morning's presentations, we will compile a comprehensive list of barriers to or challenges of LID implementation.

From this list, identify the top 3 biggest or most important barriers/ challenges to LID (we will be discussing these in Session 5):

1. _____
2. _____
3. _____

LUNCH 12:00-12:30	Networking; lunch provided.	NA

Networking Lunch

With presentation from our lunch sponsor, Revel Environmental Manufacturing (REM)

Marcel Sloane
REM | Revel Environmental Manufacturing, Inc.
960-B Detroit Ave | Concord, CA 94518
Off: 925-676-4736 | Fax: 925-676-8676 | Mob: 925-858-8005
marcel@remfilters.com | www.remfilters.com

Revel Environmental Manufacturing Inc.

REM

888-526-4736

www.remfilters.com

Lower Stanislaus LID Alternative Compliance Study 12:30 – 1:30pm

Eric Zickler LotusWater
Merril Putnam AECOM
Alexander Quinn AECOM

Project Background & Related Work:

- Prop 84 Grants in Riverbank
- Riverbank LID Standard Specifications Manual

Alternative Compliance Concept & Case Studies:

Alternative Compliance Applied to Riverbank:

- Watershed Characterization and Opportunities
- Water Quality Project Concepts

Project Funding Options & Frameworks:

Suggested In-Lieu Fee Structure:

Next Steps:

Problem-solving to identify strategies & solutions 1:30 – 2:30pm

Danielle Dolan
Local Government Commission
Eric Zickler
LotusWater

- Danielle and Eric will split you into groups of 5-6
  - If possible, each group will have one of the presenters
- You'll be tempted to divide the work among you – DON'T!
- Work together as a group to answer all the questions.
- Don't worry if you run out of time.

SESSION 5.1: Strategies for LID Implementation & Regulatory Compliance

- In your group, review your responses to the Session 1 presentations (Melanie Carr and Bill Hereth), as recorded during your Session 3.1 group work.
- Work through the questions provided—together as a group—incorporating any new information you learned from the Sessions today.
- You will have 15 minutes to complete this section.

Session 5.2: **Analyzing the Local Case-Studies**

- Your group will continue analyzing the same Local Case-Study presentation you were assigned for Session 3.2.
- Drawing on the presentations and discussions you've had throughout the day, work with your group to answer the questions provided about your case study example.
- You will have 15 minutes to complete this section.

SESSION 5.3: Summary of Strategies to Pursue

- Based on your group's reflections and analysis of the day's presentations, compile a comprehensive list of strategies and solutions for implementing LID in your region.
  - *Record this list on chart-paper*
- From this list, identify the top three (3) most important and/or effective strategies or solutions for LID implementation.
- Prepare to report back to the rest of the group.
- You will have 15 minutes to complete this section.

SESSION 5.1
Strategies for LID Implementation & Regulatory Compliance

In your group, reflect on the Session 1 presentations and refer to your responses from your Session 3 group work. Answer the following questions together.

A) Melanie Carr's "LID-101" Presentation

1. What are the most important benefits to implementing LID approaches?

   _____

   _____

2. In Session 3.1, your group identified the most challenging aspect(s) of incorporating LID into on-site stormwater management as:

   _____

   What are three (3) strategies, tools, or steps that could help overcome that challenge?

   a. _____

   b. _____

   c. _____

B) Bill Hereth's "MS4 Regulatory Compliance & Permitting" Presentation

1. Thanks to Bill Hereth's presentation, you now have a better understanding of the State Board's NPDES permit for MS4 Phase I & Phase II LID requirements.

   a. How do you anticipate meeting these requirements in your future development projects?

   b. What needs still exist in meeting these requirements?

   c. How can those needs be met?

2. Look back at the barriers you identified in Session 3.1 to incorporating LID strategies into your development projects. What are some ideas or potential strategies for overcoming those barriers?

3. In Session 3.1 you identified how the following codes/ ordinances conflict with LID strategies. What are some ideas or potential strategies for addressing those conflicts?

   a. Building Codes:

   b. Roadway/ Transportation Codes:

   c. Landscape Ordinances:

   d. General Plans:

   e. Specific Plans:

   f. Others:

C) The "Alternative Compliance Study" Presentation by Eric Zickler, Merril Putnam, and Alexander Quinn

1. Do you see "alternative compliance" as a strategy for overcoming some of the barriers to LID for in-fill development projects?
   a. If so, which ones?

   b. If not, why not?

2. Of the alternative compliance funding options presented, which do you prefer? Which do you think is more feasible?

3. Would you take advantage of an in-lieu fee program, similar to the one presented in the AC study, if you had the option?
   a. If not, why not?

   b. If yes, what would it take to get a program like this implemented in your community?

Session 5.2
Analyzing the Local Case-Studies

Your group will be assigned one of the three Local Case-Study presentations from this morning *(circle the case study you will be working on)*:

A. David Felix & Bill Strand's presentation of the Garrison Park Project
B. Koosun Kim's presentation of the Manteca LID Project
C. Koosun Kim's presentation of the City of Newman LID Plan

Drawing on the presentations and discussions you've had throughout the day, work with your group to answer the following questions regarding your case study example.

1. Look back at the challenges your group identified in Session 3.2, what strategies did the project team use to overcome these challenges?

_____

_____

_____

2. Could these same strategies be applied in your community/ or on your projects? Why or why not?

_____

_____

_____

3. What other strategies or ideas have you heard about today that you would be willing to try in your future development projects?

_____

_____

_____

SESSION 5.3
Summary of Strategies to Pursue

Based on your group's reflections and analysis of the day's presentations, compile a comprehensive list of strategies and solutions for implementing LID in your region.

- *Record this list on chart-paper*

From this list, identify the top three (3) most important and/or effective strategies or solutions for LID implementation.

1. _____
2. _____
3. _____

Identify preferred technology/ treatments for LID via Design Manual Posters — 2:30 – 3:00pm

Danielle Dolan
Local Government Commission

Eric Zickler
LotusWater

- Hanging on the walls are six (6) poster-prints of various LID strategies and treatments form the Lower Stanislaus Region LID Manual.
- Eric will walk you through each of the treatments.
- You will have 4 sticky-dots: two (2) green, two (2) red
  - Green = “good/ like/ realistic”
  - Red = “bad/ dislike/ unrealistic”
- Please “vote” for your favorite (green) and least favorite (red) treatments by placing your sticky-dots on the top left corner of the poster.
- You will also have a sticky-note pad:
  - Please write comments on the sticky-notes, and stick them anywhere appropriate on the poster, to make specific recommendations/ thoughts on different aspects of the LID treatments.
- Once you “voted” for the treatments, you’re free to take a break.
- We will re-convene at 3:00pm

Networking & Refreshments Break

Whole group report back 3:00 – 3:45pm
on work-group outcomes & treatment voting.

Danielle Dolan
Local Government Commission

Eric Zickler
LotusWater

Work-Group Reports

- Each group will have five (5) minutes to report on their work-group discussion and outcomes.
- We will record on chart paper each group's:
  - Top 3 Challenges/ Barriers
  - Top 3 Strategies/ Solutions

Voting Results

- Eric Zickler will summarize the outcome of the LID treatment voting and comments
  - Participants will have the opportunity to elaborate on their comments.
- Session Outcomes:
  - Priority list of barriers/ challenges to LID
  - Priority list of strategies/ solutions for implementing LID
  - Preferred LID treatments

Identify preferred approaches and next steps for implementing LID in the SJV.

3:45 – 4:15pm

Danielle Dolan
Local Government Commission

Eric Zickler
LotusWater

Whole Group Discussion:

What are the top 5-6 challenges to implementing LID in the greater Stanislaus region?

What are the top 5-6 solutions for overcoming these challenges?

What critical next steps must be taken to implement these solutions in order to achieve broader implementation of LID in the Stanislaus region?

What are YOU each willing to do to help move this forward?

CLOSE 4:15-4:30	Exit Evaluation.	All

Evaluation 4:15 – 4:30pm

- Please complete the evaluation form in the back of your packet before leaving.
- Answer honestly and completely.
    - We will use this information to improve future workshops, and pursue additional projects in the region.
- Narrative comments and constructive criticism are especially appreciated!
- Leave your evaluation at the registration table on your way out.

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WORKSHOP SPEAKERS – In Alphabetical Order

Jennifer Alvarez
CivicSpark Member

Jennifer Alvarez is a CivicSpark member in the San Joaquin region working out of the Historical Fresno Chandler Executive Airport in Fresno City. Jennifer was born in the Bay Area but was raised in the central valley town of Modesto, where she attended California State University Stanislaus in Turlock. While working towards her Bachelor's degree in Biological Sciences with a concentration in ecology, she worked on a pair of research projects. The most Rewarding research project took place in the Sierra Nevada Mountain range collecting Aspen Tree leaves samples to study the population's genetic composition and physiological characteristics. Taking courses in human ecology, plant ecology, environmental geology and ecosystem service greatly increased Jennifer's passion for sustainability and environmental protection. During the last semester of her undergrad program Jennifer compiled a scientific review of ecosystem services found in urban areas, it included types of services provided by ecosystems, their monetary values, and the types of degradation to these ecosystems. Jennifer hopes to narrow in on her interest while working for LGC and Americorps to pursue a master's degrees in the near future.

Melanie Carr, P.E., M.S.
CBEC Eco Engineers

Melanie has ten years of engineering experience related to wetlands, water quality, modeling, and wastewater and stormwater facilities planning. Melanie graduated with honors from Cornell University, and obtained a master's degree from U.C. Davis in engineering biological systems pertaining to wetland wastewater treatment systems. Her recent project management experience consists of Placer County Low Impact Development Guidebook and Triangle Rock Products Stable Channel Design. Selected experience highlights include development of pre-design of City of Davis Water Pollution Control Plant wetlands and performing field survey and developing hydrology for the Rose Creek Watershed Assessment. She has performed stormwater planning and facilities assessment for the Sacramento County Airport System Sacramento International Airport, City of Yuba City, City of Elk Grove, and Foraker Ranch. She conducted wastewater facilities planning for counties of San Joaquin, Sutter, and Del Norte, and the cities of Davis, Lodi, and St. Helena, as well as stormwater facilities planning for Yuba City, Foraker Ranch, and Triangle Rock Products. This planning included developing hydrologic, nutrient, and metals management for treated effluent storage and land application systems. Melanie's permitting experience consists of obtaining NPDES permit adoption for the Department of General Services (DGS) Central Heating and Cooling Facility, San Joaquin County Service Area 31 (Flag City) and the Cities of Galt, Atwater, and Lodi.

Danielle V. Dolan, M.S.
Local Government Commission

Danielle V. Dolan was hired by the Local Government Commission in 2014 to serve as project manager for LGC's water programs. Her current projects include updating the Ahwahnee Water Principles Guide, developing a community-wide approach to stormwater management, and assisting local municipalities to address barriers to implementing low impact development (LID). Ms. Dolan hopes to expand LGC's water programming to include cross-jurisdictional efforts to addressing watershed health and water security across the state.

Ms. Dolan earned her B.A. in Environmental Studies from Hawai`i Pacific University, and her M.S. in Community Development from the University of California, Davis. Her master's thesis report, Tribal Collaboration in IRWM, is the first outside recommendations document to ever be included in the California Water Plan. Prior to joining the LGC team, Ms. Dolan served as a workshop coordinator for the Sacramento River Watershed Program, and a project coordinator for the UC Davis Center for Watershed Sciences. In her early career, Dolan was a certified schoolteacher, environmental education expert, and water conservation advocate in Florida.

ECONOMIC & ENVIRONMENTAL BENEFITS OF LID FOR NEW AND IN-FILL DEVELOPMENT

David Felix
Associate Engineer, City of Modesto
Utilities Department, Engineering Services Division
[bio unavailable]

Bill Hereth, P.E.
Division of Water Quality, Municipal Storm Water Unit
State Water Resources Control Board
[bio unavailable]

Koosun Kim, P.E., Q.S.D.
Public Works Director, City of Newman
Mr. Kim is currently Director of Public Works with the City of Newman. He manages all engineering and operations related to streets, water, storm drain, wastewater, solid waste, and capital project development.

Prior to Newman, Mr. Kim worked as a registered civil engineer with the City of Manteca and numerous consulting firms. He also worked as a platoon leader with Army Corps of Engineers to oversee the construction of military facilities as well as train engineer soldiers to carry out military tasks. In order to improve LID projects and collaboration with other local government agencies, he has served as an administrator for San Joaquin Valley Storm Water Quality Partnership Group. Mr. Kim received his MS in Civil & Environmental Engineering from Stanford University in 2002 and his MPA (Master of Public Administration) from California State University - Stanislaus in 2013.

Merril Putnam
AECOM
Ms. Putnam is an environmental engineer with a comprehensive understanding of environmental issues as a result of her complementary degree in Environmental Geosciences. Though possessing this broad environmental background, her most recent experience has focused on remediation, sustainable water resources, and low impact development. Specifically, her current work is spread between California and abroad, on diverse projects ranging from city-wide master plans to industrial developments. Prior to joining AECOM she worked at the EPA as a Remedial Project Manager where she oversaw the design, operation, and maintenance of ongoing remedies at several Superfund sites.

Alexander Quinn
AECOM
Alexander Quinn is the Director of Sustainable Economics for the Americas. He has over 16 years of experience in economic consulting. His practice has focused mostly on answering economic questions under a sustainability lens, be it infrastructure, economic development, public finance, or policy. Mr. Quinn uses innovative quantitative analysis techniques to inform policy makers in planning, infrastructure, public policy, and land use strategies. These include building multivariate regression, triple bottom line assessment, carbon pricing mechanisms, economic impact, and life-cycle assessment analyses. Mr. Quinn combines his considerable quantitative skills with an extensive background in sustainability, resource economics, economic development, and public finance.
Mr. Quinn is currently the project manager on the triple bottom line analysis tool for the City of San Francisco, which evaluates environmental, social, and financial consequences of water infrastructure alternatives, including investments to address sea level rise. He also recently completed an analysis of the economic costs and benefits of PlaNYC's 30X30 initiative and evaluated economic efficiency of 200 cities worldwide for the Carbon Disclosure Project (CDP). In addition, Mr. Quinn recently directed the financing strategy for adaptation policies specific to priority development areas in the San Francisco Bay Area. Mr. Quinn served as the project director for estimating the economic importance of the top 30 water agencies in the nation, which was presented to the U.S. Senate.

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William F. Strand, M.S., P.E., Q.S.D.
Manager of Engineering, RRM Design Group

As the leader of our San Clemente office, Bill brings many years of experience in broad based civil engineering experience to RRM. Bill is passionate about assisting his clients deliver successful projects. This passion has guided him through many successful though difficult design and permitting challenges. His areas of expertise include low impact design, hydrology and hydraulics, storm water, water quality, retention and detention, water and sewer, roadways, trails, site development, and residential development. A licensed Professional Engineer in California and Colorado, Bill has a Bachelors degree in Civil Engineering and a Masters degree in Hydraulic Engineering from Colorado State University

Eric Zickler, P.E., M.S.
LotusWater

Eric has dedicated his career to providing sustainable and cost effective infrastructure solutions for public and private clients at scales ranging from individual building sites to major cities. He has successfully applied these solutions throughout California, the US, Asia, the Caribbean, and Latin America over the past fifteen years. Eric joins Lotus with diverse local and international experience, having previously led the San Francisco Sustainable Infrastructure Practice at AECOM. Eric prides himself in his ability to understand the goals of clients and teaming partners to advance engineering solutions to suit their vision. Eric plays a critical role in the strategic growth and client management aspects of the firm, while bringing his unique water resource planning and sustainable design experience. Most recently, Eric has been working on a Proposition 84 grant from the California State Water Resources Control Board to develop alternative water quality compliance mechanisms to assist small communities and developers.