



CAPITAL REGION CLIMATE READINESS COLLABORATIVE

Managing Our Region's Flood Risk: Notes

July 16, 2019 | 12:30 PM – 4:00 PM

The California Endowment, Adelante Room | 1414 K Street, Sacramento, CA 95814

Welcome and Collaborative Updates

Kathleen Ave | CRC Immediate Past Chair & Senior Climate Program Manager, SMUD

- Big recruitment year for CRC! In addition to the members who will present later, CRC has also welcomed welcomed Sierra Club, MotherLode Chapter, which covers a region larger than that of CRC, and most recently (last week!) the City of Elk Grove, the second largest city in Sacramento County! Welcome new members!
- CRC's [next webinar is on August 21st](#) will be with one of our members, the Institute for Local Government. The webinar will focus on Authentic Public Engagement and will provide an opportunity for local agencies, nonprofits, and climate professionals to learn about how to build community capacity, form lasting partnerships, cultivate community buy-in, and strengthen institutional trust in order to build and develop climate action.
- Each year, CRC develops two PSA campaigns focused on flooding and extreme heat to raise awareness about climate risks and to provide public health adaptation strategies for our region. This year's Extreme Heat PSA started in June and will be live until the end of August. SMUD's CivicSpark fellow helped start these efforts last year with the Heat PSA, and Grace has continued and expanded the PSA to include flood risk and safety.
- CRC, Valley Vision, and WALKSacramento (two CRC members) submitted a joint proposal to the Ray C Anderson Foundation last Friday to increase climate communications and awareness in rural communities in our region.
- In June, CRC's Steering Committee formed a Land Use Working Group to discuss the various way that our region's climate adaptation and resilience efforts are dependent on land use. The formation of the group comes at a time when the Mayor's Climate Commission recently debated the feasibility of imposing regional growth boundaries and SACOG is updating the Metropolitan Transportation Plan. While the working group is still just forming, the goal of the group is to educate the CRC membership, partner agencies, and the public on how local and regional land use decisions are connected to climate resilience and equity. Over the long term, the Land Use Working Group may provide technical assistance on policy and other initiatives related to land use and climate. If you're interested, please connect with Grace and she will provide you with more details of how to get involved.

New CRC Member Presentations

Alicia Brown | Project Coordinator, WALKSacramento [[PPT pg. 5-20](#)]

- WALKSacramento leads the Sacramento Region in developing safe, livable communities that promote health and economic growth.
 - Approaches: policy and technical assistance, community-based planning, programs.
- WALKSacramento believes that active transportation is a means of achieving the vision for livable communities, rather than integrating it as a component of the larger vision. Our current transportation systems aren't working for us - in our daily lives and the broader environmental context.
- To reach 2030 GHG goals, reducing VMTs through alternative forms like improving public transportation, densifying communities, and implementing safe, walkable infrastructure rather than solely focusing on changing the type of vehicles (EV/AV) driven will help make destinations more walkable. Walkable communities are resilient communities.
- Our built environment affects access to opportunities, which influences socioeconomic factors. Health should be integrated into planning and policy by being present in all policies, being laid out as an outcome, and improving public safety through environmental design. Creating coalitions between practitioners and built environmental policies. Works to address heat impacts by increasing access to parks/green space, tree canopies, and race/health equity. Safe Routes to Schools Program engages youth to build community capacity.

Julie Ekstrom | Regional Climate Change Specialist, California Department of Water Resources

- Julie is a social scientist with a background from UC Davis. She works with rural communities and a statewide risk mapping project.
- DWR is under the California Resources Agency with 4 regions and regional offices - Sacramento office is the main hub.
- Supports agency internally and other water uses around the state. Climate Change program for the last 10 years. Unique program for a State Agency - does research, provides internal climate resources, climate literacy program trains DWR staff, develops climate projections to support flood planning, water storage investments, sustainable groundwater planning through SGMA program.
- Released climate change vulnerability assessment this Spring and kicking off development of an adaptation plan. DWR is looking at how excess water during wet years can be used for groundwater recharge during drought years. Working with universities to develop assessments based on risk.

Campbell Ingram | Executive Officer, Sacramento-San Joaquin Delta Conservancy [[PPT pg. 22-29](#)]

- Primary state agency to implement ecosystem restoration in the Delta
- Supports the advancement of environmental protection and economic health of Delta residents
- Water Quality Grant Program has awarded \$35,300,000 over 26 projects focused on tidal wetlands, various habitats, flood management, and agricultural protection/enhancement

- Natural and Working Lands Strategy
- Works with public and private landowners on pilot projects
- Works with carbon financiers and investors to market carbon credits
- Collaborates with ARB on developing a compliance program

Jeff Henderson | Deputy Executive Officer, Delta Stewardship Council [[PPT pg. 30-41](#)]

- The Delta Plan is a comprehensive long term plan suggest policies and recommendations to achieve goals. There are a number of regulations that state agencies must comply with. Science Program - established in a format that provides the best possible scientific information to help inform decision making processes. Sets framework for how agencies should be in collaboration. Prioritize key priorities and topics.
- 2 Phases - Climate Change Vulnerability Assessment & Adaptation Strategy
 1. Project Approach - reflect priorities, take into account state agency guidance, lessons learned from the Adapting to Rising Tides Program, integrate best available science.
 2. Expected Outcomes - inform potential future updates, assist state, provide toolkit for local government agencies to use in regulatory documents, ultimately a first step in setting an outline and framework.

Understanding Our Region's Flood Risk

Gary Bardini | Director of Planning, Sacramento Area Flood Control Agency (SAFCA)

- Flood control management is very different than fires and earthquakes. Flood control system needs to operate and be managed properly with adaptation improvements. Adaptation = continuing to improve on the management of the system.
- System was originally designed without dams (uncontrolled flow). 1800s is when our levee system was built - still present today. During major events, 80% of flow goes through bypasses. System was designed for a single purpose, there are multiple needs these days. Bypass system has reservoirs, designed to move hydraulic material. Reservoirs had controlled flow and need to be significantly changed to manage floods.
- 1862 event - American River flooded but Sacramento River contributed. American River was diverted away from downtown Sacramento and moved north of the city after this event. 1955 event was larger than any event we know on record. Another big event 1997 - 24 hour event.
- 30 years since 1986 flood. Insisted it be built up, it hasn't been severely tested since 1986 (this 3 day flood lead to creation of SAFCA). Levee system protects Sacramento and want to bring it to modern standards. People finally realize how serious the floods are after they see the severity. Sacramento did a great deal between 1886-1997. Did the first levee work in Natomas, first major erosion project. Since 1997 we have continued to upgrade the system. \$1.8B federal money to finish the modernization of Sacramento's levee system. Tremendous accomplishments, now virtually funded on the federal and local side to finish the upgraded modernization.

- Just 3 weeks ago the ACE signed a new flood control / operations guide for Folsom Dam to account for the new spillway and operations based on forecasted inflow.
- Operate based on the forecast so we can keep it higher in the winter, draw down in the time of extreme precipitation. Upgrading channel to be able to carry a higher flow through the American River in an environmentally acceptable way. Well under way in accomplishing work on the modernization program and levee updates, expect to meet the state goal of 200 year flood protection by the year 2025.
- 2 new projects -
 1. Widening Fremont Weir so more water can go into the Yolo Bypass and less into the Sacramento River. Requiring us to engage in other interests.
 2. Lower the elevation of the Fremont Weir to allow fish to get into Yolo Bypass on a 2-year rather than 5-year basis.
- Hell Hole and French Meadows reservoirs (Placer County Water Agency) and SMUD reservoir on South Fork are not operated for flood-control because they are used for water storage/hydroelectric generation so they have poor outflow capacity.
- Climate Change indicates more rainfall than history suggests. We don't know the extremes but we understand that to attract public money, want the state taxpayers to help us. Our idea is if we have more flood storage upstream we ought to be able to be more flexible with how we operate Folsom Dam (keep it full) in the wintertime.
- Value of water - how to hold on and make use of it. How do we adapt the system to more rain? Folsom south canal –a 27 mile canal from Natomas Lake. Can be used to recharge groundwater basins by Consumnes River. This would help stabilize water available in Southeast Sacramento County and in groundwater basins.
- Stormwater runoff accounts for a small part of what gets centrally pumped from the streets into the river. It's not consequential, the amount of water being pumped into the river. The condition of the watershed is extremely important and we are still studying it. Not a lot of river water recharge from the Yolo bypass. There are limitations the way the landscape is.
- Q: Modifying the 3 dams, and using the canal, what is the schedule for this? -
 - A: Need to agree with Bureau Land Management on how to use the excess water before we discuss a schedule.
- Q: The story you've told is the water coming into these various systems. How do the inputs and the impervious surfaces connect in planning?
 - A: It's part of the story but not a big part. Stormwater runoff in City of Sac is a small part. Prop 218 covers flood and stormwater. Everyone of SAFCA's assessment has said homeowners are better off paying the assessment to improve their flood management than to pay for home flood insurance. Money management should be the focus.

Equitable Flood Infrastructure and Investments (panel discussion)

Tom Gohring | Executive Director, The Water Forum (moderator)

Dana Carey | OES Coordinator, Yolo County Office of Emergency Services

Cori Ring-Martinez | Sacramento Area Program Coordinator, Environmental Justice Coalition for Water

Gary Bradford | Supervisor, Yuba County [[PPT pg. 45-52](#)]

- Rivers in Yuba County: Feather, Yuba River, and Bear. Feather River has flood control dam because of Oroville. Population 75k (70%) at risk of floods 40k residents in south Yuba basin. New Bullards Bar Dam is the 5th largest dam in the country which was paid for by residents (no federal or state help). Flooding disasters/levee breaks in 96-97. Levee work, including setback levees. Secondary Spillway at New Bullards Bar. Forecast informed operations.

Panel discussion:

Can you say a few words about your organization's involvement in flood protection or response?

- **Cori** - EJCW is not doing direct work on flood protection and response other than working on the Morrison Creek revitalization project (channelized for flood protection). In 1970s the Army Corps restricted communities' access to the creek and as a result many community members don't know about Morrison Creek. This is an example of what happens when agencies make decisions without community input!
 - Our community members experiencing homelessness are most vulnerable when it comes to flooding because they're living on the waterways. Water agencies see it as an issue because of water quality and levee degradation rather than understanding the human rights perspective. Need to see more holistic engagement with all community members. If you plan your system for the most vulnerable, it will work for everyone.
- **Gary** - The County has been focused on levees for flood control. \$415 million in levee work. One of the best projects was the Feather River setback. Moved back half a mile from the river channel, lowering elevation, allowing for additional habitat.
- **Dana** - We attend to some of the flooding issues. Kept water in the bypass in 2017. Yolo bypass is not to today's engineering standards. Need to hold water until summer until it can be repaired. Areas throughout Yolo flooded even though there wasn't a major flooding event this year. Irrigation system was not designed for drainage. Every decision we make increases the risk to our population somehow. It's our job to prepare the public for that and understand the possible effects through mitigation projects and respond to it if it happens. We walk everybody through the complicated recovery process - how to recover their own property, show public agencies the programs they can access.
 - There are nine active slips in Yolo to keep water in the bypass and keep it from inundating the cities during the winter storm season. Sees sediment buildup in canals after events of flooding. They are losing capacity in these spaces that haven't been designed as a flood control system but have been used as a flood control system. If you widen the Fremont Weir it is increasing the risk of flooding to the population of the county.

Gary - *In Yuba and Marysville, flooding is not a theoretical exercise. I assume you've experienced flooding in these areas in your lifetime. Is it on your mind on a day-to-day basis as a supervisor?*

- Yes it's very much on my mind. I never experienced those devastating floods but the area where I live was under 20 feet of water at one point so I can see the impacts from that event. There are more intense storms with climate change that result in higher levels of runoff. Levees are constructed for a certain storm strength but can be overpowered, especially since there are no bypasses in Yuba to protect us - we only have levees and dams.

Part of your profession is to communicate information in all corners of our community. Do you have lessons learned about communicating to the folks who aren't reading the New York Times and following the newsfeed on their phone?

- **Cori** - The biggest issue is language access. You wouldn't believe how much information is mistranslated and misheard. Part of language justice is funding - it's expensive to translate things and provide that information to people. Language access is extremely critical and not receiving the funding it deserves. Need to take portfolio view because you're going to miss people if you focus on one avenue of communication. Social media, television - not everyone participates in this. The most fail-proof way of communicating with your neighbors is talking to people. It's a hard thing for people to understand. You have to do the work - literally walking door to door. Community outreach takes time and money when it's done right. Putting a flyer up in the community center is not going to be enough. Specific to different communities. Going to have differences based on location, culture, socioeconomic status, rural vs. urban communities is a huge problem with the way the messaging is tailored. When working with low income populations cell phone numbers are not given out and numbers change frequently. Level of trust that the government has our information needs to be built.
- **Dana** - Yolo has a well established program. There are complications besides what Cori mentioned that emergency managers have to focus on. Character length (90 characters), cell phone towers, sending people door to door, we put airplanes and officers in their vehicles to go and clear the bypass of the homeless population before we send water down the bypass. In Capay Valley- No cell signal or internet in some areas - use a telephone system or go door to door. Use iconology, pictures, infographics. We launch a map every time now. Maps in attempt to get through language barriers. Pictures are a universal language!
- **Gary** - It's hard to reach people with limited or no cell access, especially during an emergency. A large portion of Yuba County has limited internet and cell phone access. System called Code Red to receive notifications - getting public to sign up and subscribe is the barrier.

Now we have displaced human beings - Is the aftermath, the cleanup of displaced people, is that a bigger burden on the DACs?

- **Cori** - Accessing those resources is a minefield. Language access, just knowing that the assistance programs are there and what they are entitled to. There's also the very real problem that it is really expensive to be poor. Those who are hurting now are the first to die. Once you are already down you now have to deal with a lot of speculative practices. With Chico, rents shot up. People were already displaced, housing stock was already at the limit, yet landlords are raising rents so that they can take advantage of those isolated people. It also depends where

you are. With Katrina, certain parts of the city gets cleaned up first. In New York, Manhattan is always cleaned up first. People who are behind are left even further behind.

- **Dana** - Getting school districts to understand the magnitude of emergency planning. They're focused on active shooters. If you ask them what happens if they lose their whole campus, they don't know what the plan is. School districts need their revenue still, kids still need to go to school. Yolo is involved with MIT to make an online toolkit to create a skeleton for your emergency housing plan for your county. MIT planning process for FEMA preparation – help to address need for electric and sewer connections before a disaster strikes. Areas where you can put trailers (access to electricity, sewage), identifying this ahead of time is important, can't do it in the moment. In the city of Woodland there's a lot of warehouse space and distribution hubs, there are always really large buildings that sit unrented for years at a time. Making agreements with these hubs to turn them into serviceable places to house trailers.
- **Gary** – yes, huge impact and burden on our communities, but especially those who do not have many resources to begin with.

If you had unlimited resources, what would be the first thing you would do to work on response?

- **Dana** - Well housings failed during the drought. Groundwater recharge is very important, levee system as well. Smaller rural counties don't have the same level of buying power - infrastructure built by farmers in 40s. Reclamation districts need support to harden their infrastructure.
- **Gary** - Inadequate evacuation routes. Need better routes and maps for fastest escape routes.
- **Cori** - Community and neighborhood canvassing efforts for neighborhood action plans.

What about with limited funding? Top 3 things you have the resources for now?

- **Cori** - I don't have the resources - I'm applying for grants! Community organization, involvement and planning. Turnout is the biggest issue - people cannot take time off without losing money. Compensating community members for their time is expected when talking about vital community response actions plans.
- **Gary** - Additional spillway and forecasting. Make sure levees in urban areas are constructed to 200 year standards. More of a challenge - levees in more rural areas - less funding than urban areas.
- **Dana** - Self preparedness, only getting adult and aging population but not all those people with after work extracurricular activities. Standardization in the emergency management system as a whole. There are 58 counties doing it different ways. Need to understand our neighbor's systems. Better hazard and analysis inside our county.

Audience Q&A:

How much of our flood infrastructure is going to protect places that we should not be building on in the first place?

- **Gary** - Yes, there are places we should not have built, from a flood hazard point of view. There was already a large population in that part of Yuba County. However, the new development funded flood protection for other residents in that area.

- **Dana** - We can't have pre-planned evacuation routes because we don't know where the hazards will be. Difficult to have a specific evacuation route because you don't want to send people towards a broken levee. You know about multiple routes but have to wait to listen which one to take.
- **Cori** - Not all folks have vehicles or money for gas.

How can we set up a better public transportation system for when we need to evacuate people in Sacramento County?

- **Gary** - Planning is certainly key. Buses in Yuba stop running at 6pm, it's an issue even without a disaster.
- **Dana** - Rally points. Where you can go to hop on a bus, mark as a place where we will send disaster resources. Make it mainly for UC Davis. Have to be able to get people onto mass transit resources - in doing the planning we can give those locations to every bus owner in the form of GIS map.

Emergency response plans and considering climate change?

- **Gary** - Spillway operations driven by climate change
- **Dana** - Specific plan emergency management is required to do. 5 year cycle, ours just renewed 2018. Hazard mitigation plan - introduced an entire section on climate change. For every dollar spent in mitigation you save \$6 in response. Florida is awesome at mitigation planning and using FEMA Hazard Mitigation funds effectively - luckily Yolo has a planner from Florida (me!).
- **Cori** - The first people to die from climate change are our most vulnerable populations with the least protection.

Participant activities

We ran out of time for participant activities, but some tables still participated, thank you!

<p align="center">Personal Actions</p> <p align="center"><i>What you can do in your personal life on each of the following scales?</i></p>	<p align="center">Projects / Policy Implementation</p> <p align="center"><i>What you can do as a professional on each of the following scales?</i></p>
<p align="center">Personal</p> <ul style="list-style-type: none"> ● Reduce contributions to climate change - no meat/cars ● Talk to others about the climate emergency ● Electrify homes 	<p align="center">Community (local government)</p> <ul style="list-style-type: none"> ● Contribute to community education projects/programs ● Put out research regarding which green energy options have the most impact compared to its price. Do the same for green research ● Make climate actions measurable
<p align="center">Neighborhood</p> <ul style="list-style-type: none"> ● Facilitate development of community organizations communication ● Offer to host neighbors/friends/strangers displaced by climate-driven events ● Meet neighbors ● Share tools, rides, produce 	<p align="center">Local (across County Government)</p> <ul style="list-style-type: none"> ● Provide community with climate change adaptation information ● Create neighborhood car fleets so individuals can go car-free ● Make transit more frequent ● Increase parking fees and use for transit
<p align="center">Community</p> <ul style="list-style-type: none"> ● Participate in policy discussions ● Cut air travel ● Shared fund to pay for managed retreat ● Get out of our cars, shared mobility commitment 	<p align="center">Regional (6 county region: Yolo, Sacramento, Yuba, Sutter, El Dorado, Placer Counties)</p> <ul style="list-style-type: none"> ● Drastically reduce VMTs ● Agencies use virtual meetings not air travel ● Understand the scale of the climate crisis and create solutions commensurate with that ● Coordinate climate action plans and link actions