



Central Valley Flood Protection Plan

Meeting Summary Community Applications Workshop Small Communities

August 24, 2010, 9:00 a.m. – 1:00 p.m.

MWH

3321 Power Inn Road Suite 300, Sacramento, CA

Participants: 26

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Dan Peterson	Sutter County
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Mike Hendrick	National Marine Fisheries Service (NMFS)
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Carolyn Lott*	Center for Collaborative Policy (CCP)
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Sam Magill*	CCP
Jim Sandner	US Army Corps of Engineers (USACE)
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This summary only includes comments made during the workshop. For more information on the workshop or to view written comments submitted after the workshop, please visit <http://www.water.ca.gov/cvfmfp>.

Opening Comments and Summary Explanation

Small Communities Management Application Workshop participants met to discuss categories and subcategories of Management Actions (MAs) for the Central Valley Flood Protection Plan (CVFPP) as they apply to small communities throughout the Sacramento and San Joaquin Valleys.

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The following summary outlines comments made on each category/subcategory and divides each into five sections: compatibilities, conditions within small communities that support a given category, implementation challenges associated with that category, ways to alleviate those challenges, and general comments. If a particular section does not appear for a category, participants did not provide specific input in this area.

Comments on the Applicability of MA Categories and Subcategories to Small Communities

Floodplain Management- Wet and Dry Floodproofing

Floodproofing Compatibilities

- Wet floodproofing is generally defined as strengthening structures so that they can withstand temporary partial inundation at shallow (less than one story deep) flood depths. Dry floodproofing refers to developing structural resilience to keep all water out of a structure.
- Clarification is needed on whether this MA category refers to retrofitting existing structures or applies only to new structures. From a National Flood Insurance Program (NFIP) standpoint, doing major retrofits to a structure within the floodplain (even if the intent is to increase structural resilience) could exclude it from the NFIP if the cost of the improvements exceeds 50% of the structure's value.
- In Lake County, there are many areas that would flood to depths of 2-3 feet. Dry floodproofing would apply in these areas. In areas of deeper flooding, floodproofing may not be a viable option.
- Further clarification may be needed on how floodproofing applies to critical infrastructure. In some situations, structures housing critical infrastructure components (such as hospitals or emergency response facilities) could be designed so that all of the most important structural components are elevated above the first floor.
- Participants generally agreed that the idea of floodproofing is only compatible in a small community setting on a site-by-site basis. In the Sacramento Valley, there are many areas subject to deep flooding, rendering floodproofing difficult or impossible. In the San Joaquin Valley, there are many areas where flood depths would generally be shallower, allowing the limited use of floodproofing. In the Cache Creek Basin, there are already some small communities that employ various floodproofing strategies.
- Clarity is needed on whether floodproofing standards apply to new or existing land uses. In general, land uses other than agriculture should be discouraged in areas subject to deep flooding.
- The notion of floodproofing may support multiple objectives.

Conditions Supporting Floodproofing

- When applying floodproofing strategies to “habitable structures,” dry floodproofing must be employed to elevate the habitable space of a home or other unit above projected flood depths. Wet floodproofing would be appropriate on some structures (and is already used in certain instances) such as barns, garages, and other outbuildings.

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- Small communities often serve as support hubs for the surrounding agricultural industry. It is important that these communities are able to withstand periodic flooding. Floodproofing is one strategy that could be employed to accomplish this.
- Many small communities have slow or no growth. It is important to protect existing structures in these areas as a result.
- The hydrostatic pressure of flood depths of 3 feet may be enough to destroy a structure in many instances. Floodproofing to withstand this pressure may not be possible.

Floodproofing Implementation Challenges

- Many small communities in the Delta could be subject to flood depths of 10-15 feet or more. In these instances, floodproofing is not a viable option.
- Federal Emergency Management Agency (FEMA) requirements state that if a structure undergoes significant improvements, the structure may not be eligible for future NFIP benefits.
- Two major challenges for floodproofing are *expense* and *incentive* for landowners to make floodproofing improvements. Many of these owners have lived in a small community for many years, and are unlikely to comply with any voluntary floodproofing measures.

Ways to Alleviate those Challenges

- It may be possible to utilize public funding to retrofit many existing structures. In some cases, the State could partner with FEMA and the US Army Corps of Engineers (USACE) for these types of improvements.
- It is reasonable to assume that proactive floodproofing could be less costly than cleanup and recovery costs after a major flood event. An economic analysis should be done to support the veracity of this assertion.
- Examples of local partnerships between urban/urbanizing areas and small communities exist to improve flood protection in small communities. Urban areas often benefit from flood protection facilities in adjacent or nearby small communities.

General Comments on Floodproofing

- Clarification is needed on whether floodproofing measures are designed for 200 or 100 year protection. The law states that in non-urbanizing areas such as small communities, 100 year (analogous to FEMA) protection is needed. Floodproofing measures speak to keeping existing small communities functional.

Floodplain Management- Acquisitions and Buyouts

Acquisition and Buyout Compatibilities

- Acquisitions and buyouts may be appropriate in certain select cases, but it was generally agreed that this subcategory applies primarily to agricultural areas.
- Acquisitions and buyouts in small communities may be appropriate on a parcel-by-parcel basis (especially in select areas subject to repetitive flooding).

Conditions that Support Acquisitions and Buyouts

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- Although difficult to do *en masse*, acquisitions and buyouts may be the only reasonable solutions in select small communities. One example raised was the community of Robbins: in a major flood event, the entire community could be destroyed.
- In repetitive flooding areas, parcels could be bought and converted to more appropriate land uses such as parks or bikeways. This strategy has been used successfully in some larger communities. DWR has had some success similar buyout programs in the Floodway Corridor Program.

Acquisition and Buyout Implementation Challenges

- It may not be possible to relocate entire small communities, since they serve as service hubs for surrounding agricultural areas. Removing the community from that setting could negate its use as a service center.
- There are some small communities that *can't* be moved to higher elevations since the nearest high ground could be 20-40 miles away.

Ways to Alleviate those Challenges

- This strategy is appropriate on a parcel-by-parcel basis as discussed above. Careful consideration of the area should be made before employing acquisitions and buyouts.

General Comments on Acquisitions and Buyouts

- Entire small communities have been successfully relocated in certain areas of the Midwest. Cost should be considered in these cases, as they represent a *major* investment.

Floodplain Management- Risk Awareness/Mapping and Insurance Modifications

Conditions that Support Risk Awareness/Mapping and Insurance Modifications

- There are some small communities that may provide a greater cost/benefit ratio to insure than urban areas. For example, the entire community of Grimes could be insured at lower cost and greater benefit than many major urban centers.

Ways to Alleviate those Challenges

- Modify insurance programs to identify areas that could be insured without substantial federal investment. This could involve lobbying for changes to the NFIP.
- Continue distributing flood hazard flyers to RD managers in flood prone areas within the State Plan of Flood Control.

General Comments on Risk Awareness/Mapping and Insurance Modifications

- In Congress, HR 5114 passed to remove NFIP insurance "grandfather" clauses. This could have a substantial negative effect on small communities. That said, HR 5114 could allow states to insert their own proposals for modifications to the NFIP system.

Flood Protection System Modification- Ring Levees

Ring Levee Compatibilities

- Ring levees (or partially enclosed "J" levees) are compatible with some small communities, but the decision to build them should be on a site-by-site basis.

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Conditions that Support Ring Levee Construction

- There are examples of ring levees in some communities. Colusa is a good example: a cost/benefit analysis was completed and determined that several large industries would be better served by a ring levee than by relocation. In this case, a “J” levee was built that deflects flood waters away from structures, but does not completely enclose them.

Ring Levee Implementation Challenges

- In some areas, there are habitat issues associated with the construction of ring levees.
- Funding is a major concern for the construction of ring levees: in many areas, the assets protected may not justify the cost of construction. Funding can be borrowed, but must be amortized over a long period.
- Ring levees may not meet NFIP criteria.
- All critical infrastructure for a “ringed” area must be included within the levee. This can significantly increase cost, as things like waste water plants are often significantly removed from the desired protected area (thus requiring a much larger levee).
- Right of way acquisition can be difficult in many cases.
- Operations and maintenance (O&M) costs can be substantial.
- Very little bond funding is available for the construction of ring levees, and legislators/local elected officials may not have the political will to authorize a project.
- There may be areas where ring levees cause an issue of redirected hydraulic impacts. For example, water can pool and pond more deeply on the upstream side of the levee, potentially causing greater damage to any structures on that side of the levee.

Ways to Alleviate those Challenges

- Even if a ring levee is constructed by non-state/federal organizations, USACE PL84-99 funding for non-project levees may be available.
- Dry ring levees constructed behind the desired protected area can be much cheaper than “wet” levees.
- Running ring levees down property lines can help avoid subdividing individual parcels, lower acquisition costs, and reducing landowner objections.
- Including transportation corridors in a ring levee can open up funding opportunities from CalTrans.

General Comments on Ring Levees

- In the Colusa example, mitigation for habitat loss was created by using the borrow pit as new habitat.

Additional Floodplain and Reservoir Storage- Floodplain/Transitory Storage

Floodplain/Transitory Storage Compatibilities

- Meeting participants generally acknowledged that this category and subcategory does not directly apply to small communities.

Conditions that Support Floodplain/Transitory Storage

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- By nature, transitory storage will happen when upstream levees fail. It is important to identify areas where this is likely to happen and formalize them as transitory storage areas in advance of a flood. This is particularly relevant in the San Joaquin River system.
- Diversion structures can be designed and built to divert flows into transitory storage areas, reducing the overall cost of cleanup after a flood. Transitory storage areas can also be designed to function as groundwater recharge basins (depending on soil type and other factors).

Floodplain/Transitory Storage Implementation Challenges

- Political will is a major issue for transitory storage.
- Reducing the peak of a flood event may not have a significant overall effect on flood damage reduction, since many floods are large, sustained events lasting many hours or days at a time.

Ways to Alleviate those Challenges

- Understanding the reality of the system and compensating people through flood easements to use their land as transitory storage is possible.
- The creation of compensation funds for transitory storage area clean up costs could be an incentive in securing flood easements.
- Partnerships between urban areas/small communities and agricultural landowners to provide funding derived from the benefit of transitory storage could be created.

Additional Floodplain and Reservoir Storage- Reservoir Storage

Compatibilities with Reservoir Storage

- Increasing reservoir flood storage is compatible with small communities and provides multiple benefits, particularly around recreation opportunities.

Reservoir Storage Implementation Challenges

- Small communities have *no* capacity to build their own on-stream storage facilities.
- Significant environmental challenges are associated with building new or expanding existing reservoirs.
- Changing the operations of one reservoir can have systemwide impacts.
- Water quality can be negatively affected by the construction of new reservoirs.

Storage Operations- Objective Release/Flood Storage Allocation

Compatibilities with Objective Release/Flood Storage Allocation

- Participants generally agreed that storage operations are not directly compatible with small communities, and suggested developing priorities for categories/subcategories to identify those MAs that apply most directly to small communities. See below for more information under “MA Category/Subcategory Prioritization.”

Conditions that Support Objective Release/Flood Storage Allocation

- It was generally agreed that reservoir releases do not apply to small communities unless they are located directly in the floodway.

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Objective Release/Flood Storage Allocation Implementation Challenges

- Increasing objective releases could have a very positive systemwide effect, but completely destroy small communities located immediately downstream of reservoirs. The community of Snelling was identified as an example of a small community that could be affected.
- Increasing objective releases would require modifications to federal flood control manuals, and could require major modifications to the dams themselves.
- Increasing objective releases could be limited by downstream channel capacity.
- In addition to the US Bureau of Reclamation, USACE, DWR, and state/federal resources agency, the Federal Energy Regulatory Commission (FERC) may not approve increased objective releases.
- Increasing objective releases has significant water supply and water quality ramifications.

General Comments on Objective Release/Flood Storage Allocation

- In limited cases, there are things the state can do within the *storage* space of state owned reservoirs to increase flood capacity as long as they don't impinge on the federal *flood control space*.

Disaster Preparedness and Flood Warning

Compatibilities with Disaster Preparedness and Flood Warning

- Participants generally agreed that increased disaster preparedness and flood warning are compatible with small communities.

Conditions that Support Disaster Preparedness and Flood Warning

- Pre-planning for disaster preparedness could allow small communities to leverage agricultural resources in the area. Often, Levee Maintaining Agencies (LMAs) protecting large agricultural areas are also responsible for maintaining levees around small communities.

Disaster Preparedness and Flood Warning Implementation Challenges

- Flood warning times for some small communities are very short.
- Many small communities do not have adequate equipment to accurately predict flood events in advance (i.e., rain gauges, Doppler systems, etc.)
- Small communities may not have the ability to pre-stage flood fighting materials or do adequate levee patrols during a storm event.
- Small communities often have communications infrastructure challenges such a lack of radios or adequate cell coverage.
- The lack of an "official" warning in small communities can lead to rumors and misdirection of flood fighting resources.

Ways to Alleviate those Challenges

- DWR and USACE both have internet systems designed to show stream gauge data. Expanding these programs and making the data available to small communities could significantly improve disaster preparedness and flood warning.

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- Establishing clear lines of communication and a chain of command within a small community could reduce possible misdirection of resources due to rumors.
- Coordination between citizen-based programs like the Community Emergency Response Training (CERT) program and FEMA could provide a volunteer base for disaster preparedness in small communities.

Flood Fighting, Emergency Response, and Flood Recovery

Flood Fighting, Emergency Response, and Flood Recovery Implementation Challenges

- Small communities often lack medical facilities and associated emergency response personnel.
- Wide spread flooding may make small communities inaccessible and redirect resources to larger communities.
- FEMA recovery funding is intended to make communities more resilient to future flood events. If a small community can't improve levees or flood fighting capabilities, it may not receive as much FEMA funding.
- Paperwork and other basic administrative requirements to receive recovery funding (such as documenting recovery costs) can be difficult for small communities.

Ways to Alleviate those Challenges

- Provide structures/templates for small communities to design flood fighting and evacuation/emergency response plans.
- Allow small communities to take a more direct role in local Council of Government (COG) hazardous and emergency response plans.

General Comments on Flood Fighting, Emergency Response, and Flood Recovery

- Pre-planning for an emergency and flood fighting responsibilities *during* a major flood must be carefully separated to avoid confusion. Additionally, it is important to know how and when the transition from local flood fighting/recovery efforts and state/federal efforts takes place. Local flood fighting and emergency response plans should address this handoff and how to carry out pre-planning.

Finance and Revenue Compatibilities

Finance and Revenue Implementation Challenges

- The benefits of funding flood improvements in small communities are often outweighed by the costs associated with construction and O&M.
- Small communities are often overshadowed by large communities, and can't adequately contribute to federal feasibility studies required for federal cost share and levee construction.
- USACE rules for financing don't apply to or acknowledge some of the benefits provided by small communities to their surrounding areas.
- A basic "proportionality issue" exists in small communities: a new cost/benefit assessment for flood system improvements could expose significant risks for small communities while at the same time showing that costs associated with the improvements outweigh benefits. The amount of flood protection a particular area receives is often based on the

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agriculture protected by levees, not the small community areas (even though small communities may have more to lose in flood).

Ways to Alleviate those Challenges

- Some type of exemption process for small communities to participate in feasibility studies could be useful.
- Benefit/cost assessments could be designed in terms of system performance benefits to large downstream communities provided by upstream levees around small communities. In many floods, upstream levee failures have provided some measure of relief for downstream communities. This should be incorporated with an overall systemwide approach to flood system improvements.
- Provide federal funding continuity so that delays in federal funding do not require starting studies and projects over again from the beginning.

Policy and Regulations

Policy and Regulations Compatibilities

- Participants generally agreed that any modification to the NFIP has significant policy and financing ramifications for small communities. This is discussed in detail above.

Policy and Regulation Implementation Challenges

- Some policy changes at the state and federal level could effectively “legislate” small communities out of existence. Changing land use requirements such as disallowing reconstruction of homes after a fire or flood if the structures are in the floodplain could essentially destroy a small community.

Ways to Alleviate those Challenges

- Design FEMA standards to take into account the differences between rural/small communities and urban areas.
- Design policies and regulations that acknowledge regional differences between different community types as opposed to a “one size fits all” approach. This will help make flood policies relevant to the needs of small communities.

General Comments on Policy and Regulations

- A participant asked what happens if local flood managers ignore federal mandates to stop building in certain areas such as floodplains. The group generally agreed that in a case like this, FEMA could take away all flood insurance.

Operations and Maintenance- Vegetation Management, Dredging/Clearing, Administration of Encroachments, and Inspections

Operations and Maintenance Implementation Challenges

- Small communities are not usually the maintaining agency for their levees. Resources to maintain levees are held by larger reclamation districts (RDs), and small communities are dependent on the RDs priorities.

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- Homeowners in small communities do not pay enough for assessment fees in relation to the benefits they receive. In some cases, fees can be as low as \$25 per home.
- O&M requirements have become more stringent over time, and revenue for O&M in small communities has not been able to keep pace.

Ways to Alleviate those Challenges

- A more direct connection between small communities and LMAs could be made to distribute funding appropriately. The State could also revise original agreements with RDs to readjust the agreements as necessary to meet the needs of small communities.
- Providing notification to small community residents that low assessment fees could result in a loss of O&M capabilities and PL84-99 funding could be useful.

General Comments on Operations and Maintenance

- In many cases, O&M is not a small community issue and is assigned instead to the LMA. USACE recently made a decision that if adjacent LMAs flood because one of them did not adequately perform O&M duties (even if the others did), all of them lose PL84-99 status. The state could consider combining these LMAs to create consistent enforcement of O&M across adjacent areas.

Ecosystem Restoration

Conditions that Support Ecosystem Restoration

- Characterizing aspects of a flood protection improvement project as habitat restoration could help bring in federal funding.

Ecosystem Restoration Implementation Challenges

- The Central Valley Flood Protection Board (CVFPB) is not authorized to participate in ecosystem restoration projects. As a result, it often takes special legislation to authorize multi-benefit projects.
- Participants expressed a general concern about a loss of agricultural land due to large-scale habitat conversion. In particular, habitat mitigation requires proximity to the project being mitigated. Large scale habitat restoration efforts can overshadow small community mitigation needs.

Ways to Alleviate those Challenges

- There are laws in place that allow the use of non-structural alternatives such as flood bypasses or transitory storage to meet the requirements for PL84-99 funding. These types of projects provide both an ecosystem and flood protection benefit.
- Partnerships could be formed between small communities and their urban neighbors to provide system wide habitat benefits.

Permitting

Implementation Challenges

- It can be difficult for small communities to raise the resources necessary to engage in a long permitting process.

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Ways to Alleviate those Challenges

- Developing a permitting handbook could help educate small communities and streamline the permitting process.

Management Action Categories/Subcategory Prioritization

As discussed above, workshop participants discussed a basic prioritization structure for MA categories/subcategories as they apply to small communities. The following issues were identified as high/low priority:

High Priority

- Ring Levees
- NFIP
- Policy and Finance issue specific to small communities
- Disaster Preparedness and Flood Warning
- O&M

Lower Priority

- Ecosystem
- Permitting
- Reservoir issues