Memo

To: George Booth, Sacramento County Department of Water Resources & Charles Bergson, City Manager, City of Isleton

From: Jeffrey Twitchell, PE and Sydney Nye – GEI Consultants

Date: Last Revised August 11, 2021

Re: Non-Structural Measures for the Delta Legacy Communities of Hood, Courtland, Locke, Walnut Grove (east) and Walnut Grove (west) & Ryde, and the City of Isleton Flood Risk Reduction Feasibility Studies

GEI Projects 1800758, 1800776, 1800778, 1800779, 1800783, and 1800488

Modernization of Flood Protection Looking to a Sustainable and Resilient Future

GEI Consultants, Inc. (GEI) is assisting the Sacramento County Department of Water Resources in conducting feasibility studies to evaluate structural and non-structural actions to reduce the risk of flooding to the Delta Legacy Communities located in Sacramento County. Structural actions are those that improve the performance of the flood control system namely the levees. Non-structural terminology includes a wide range of other actions that serve to reduce flood risk.

The feasibility studies are being funded under the California DWR Small Communities Flood Risk Reduction Program. The independent study areas are located in Sacramento County, California, along the Sacramento River Corridor within areas covered by Reclamation Districts (RDs) and/or by a State Maintenance Area. This Technical Memorandum summarizes the non-structural actions available to each of the following communities located within the noted Reclamation Districts:

Sacramento County Delta Legacy Community	Reclamation District(s) or State Maintenance Area Study Area
Hood	State Maintenance Area 9 for Non-Urban Area South of Freeport
Courtland	RD 551 – Pearson District and RD 755 – Randall Island
Locke	RD 369 - Libby McNeil
Walnut Grove (East)	RD 554 – Walnut Grove and portion of RD 563 – Tyler Island
Walnut Grove (West) and Ryde	RD 3 – Grand Island
Isleton	Brannan Andrus Levee Maintenance District (BALMD)

1. Flood Fight Berms, Ring Levees, and Cutoff Levee Systems

The GEI Consultant Team has been assisting Sacramento County and the City of Isleton with evaluating the cost and value of establishing Flood Fight Berms and/or Potential Ring levees previously identified by DWR in concert with potential Relief Cuts (Items 6 and 8a above). More details were shared during public meetings to identify community-preferred flood risk reduction measures.

Flood fight berms (with an approximate top crown width of 20 ft. and an all-weather driving surface) could encircle the densely populated portion of the existing community and isolate the community from potential flood waters that could occur due levee breaches occurring anywhere outside of the immediate community but within the larger agriculturally based reclamation districts (RDs). The flood fight berms would be a minimum of 4 ft. lower than any ring levee system (mentioned below) and would accommodate the temporary flood fight installation of 4 ft. to 8 ft. high *Muscle Wall*. The flood fight *Muscle Wall* (similar to a plastic Jersey barrier containing a 4 ft. wide base) would be stored nearby within the Delta by either the community, the local RD, the County and/or by DWR. One such storage site for *Muscle Wall* and other flood fight materials was recently established in 2021 by Sacramento County OES in East Walnut Grove, within RD 554, just north of the Walnut Grove Elementary School. The *Muscle Wall* could be transported, handled, and assembled expeditiously to fend off rising flood waters that may occur in the larger agricultural basins (RDs) for any of the nearby subject Delta Legacy Communities. The flood fight berms would essentially be a slightly elevated, all-weather roadway to accommodate the temporary placement of the interlocking Muscle Wall during flood fight conditions during inclement weather conditions.

Ring Levees would be permanent flood control structures and would be higher in height than flood fight berms, but likely lower in height than the exiting levees adjacent to the natural waterways, such as the levees adjacent to the Sacramento River or the levees adjoining Snodgrass, Steamboat and/or Georgina Sloughs. A ring levee, similar to a flood fight berm, would encircle the densely populated portion of a community and isolate the community from potential flood waters that could occur due to levee breaches occurring anywhere outside of the immediate community but within the larger agricultural basin. Small ring levees and/or cut-off levee encompassing a small urbanized Delta Legacy Community could be more cost effective than repairing and/or improving substantially longer lengths of a larger perimeter levee system protecting a larger agricultural-based basin. However, the ring levees could isolate the densely populated portion of community from the larger, surrounding agricultural basin; and the ring levee system would have a significant impact on the view shed(s) to the larger agricultural basin currently offered to the residences and businesses located in the lower-lying areas. If constructed, the new ring levee system(s) would require construction to the latest levee design standards to meet FEMA 100-yr accreditation standards, pursuant to 44 CFR, Section 65.10; and to ultimately achieve a 100-yr level of flood protection for the densely populated portion of the community the existing levee system directing adjacent to the same community would also require updating and improvements to meet the same FEMA 100-yr accreditation standards. The ring levee systems are not a preferred alternative for several of the Delta legacy Communities but they offer a cost-comparison of achieving a 100-yr level of flood protection for the densely population portion of the basin relative to either: (1) a lower cost alternative of developing a flood-fight berm around the community; or (2) a higher cost alternative to achieving a 100-yr level of flood protection for the larger, entire agricultural-based basin (RD) in which the communities are located in.

2. Voluntary Elevation of Structures

The structural elevation option involves physically raising existing structures to an elevation equal to or greater than the calculated Water Surface Elevation (WSE) resulting from natural overland flows and/or a levee breach. This option is a common and effective way to minimize damage from flooding and is a key flood protection provision of the Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP). The process mostly consists of:

1) Separating a building from its foundation by vertically lifting with hydraulic jacks, then

2) Placing the structure onto a higher foundation of vertical walls.

Structures can be elevated using several methods, including extended foundation walls, on piers, posts, piles and columns and can be completed in a way to allow garage or storage space below the elevated structure. Although capital costs are required to elevate structures, this non-structural measure is sustainable over the long-term with minimal recurring costs for operation, maintenance, repair, rehabilitation, and replacement.

Hydraulics and hydrologic modeling of the Lower Sacramento River system indicates that the structures in the noted legacy communities would require raising between 5 and 20 feet to be elevated to or above the maximum floodplain. Structure elevations in excess of 8 feet may require additional seismic (and other practical) considerations to ensure stability and continued utility of the structures in question.

The 2014 RFMP identified a structural elevation cost of approximately $100,000 per residential structure (in 2010 dollars), as documented in the 2012 CVFPP. More recently the County of Sacramento, with assistance from FEMA, has assisted several residential homeowners in the County to raise homes above the FEMA Base Flood Elevation (BFE), with the homeowners in some cases paying only 25% of the total cost for raising the structure on the condition that said homeowners must maintain a NFIP insurance policy(albeit at a discounted rate). The total cost to raise homes in Sacramento County, inclusive of a few homes in the North Delta that have been raised by 8 to 10 feet can cost as high as $170,000/each in 2020 dollars. Using this per-structure unit cost of $170,000/each, provided below is a summary table of the cost to raise all of the structures in each of the subject Delta Legacy Communities as well as the balance of each of the larger project study areas. Note that the actual costs would likely be greater when assuming commercial, industrial, and public buildings may be more costly to elevate than single family residential structures.

Table 1: Summary of Costs to Raise Structures in Each of the Small Communities and the Greater Study Areas

Communities and Study Areas	CVFPP Impact Area	Total Structure Count and Cost to Elevate @$170,000/Structure				
		Residential	Commercial	Industrial	Public	Total
Hood Community	SAC 45	104	4	7	2	117
		$17,680,000	$680,000	$1,190,000	$340,000	$19,890,000
Courtland Community	SAC 48	98	10	25	15	148
		$16,660,000	$1,700,000	$4,250,000	$2,550,000	$25,160,000
Courtland Study Area	SAC 47 & 48	262	10	181	15	468
		$44,540,000	$1,700,000	$30,770,000	$2,550,000	$79,560,000
Locke	SAC 51	41	23	4	3	71
		$6,970,000	$3,910,000	$680,000	$510,000	$12,070,000
East Walnut Grove	SAC 52	141	45	21	15	222
RD 554 portion		$23,970,000	$7,650,000	$3,570,000	$2,550,000	$37,740,000
East Walnut Grove	SAC 53-URB	5	0	22	0	27
RD 563 portion		$850,000	$0	$3,740,000	$0	$4,590,000
East Walnut Grove Study Area	SAC 52 & SAC 53-URB	146	45	43	15	249
		$24,820,000	$7,650,000	$7,310,000	$2,550,000	$42,330,000
West Walnut Grove	SAC 50-URB	219	6	4	5	234
(Clampett Tract)		$37,230,000	$1,020,000	$680,000	$850,000	$39,780,000
West Walnut Grove Study Area	SAC 50	513	10	152	5	680
(Grand Island)		$87,210,000	$1,700,000	$25,840,000	$850,000	$115,600,000
City of Isleton	SAC 54-URB	350	70	18	21	459
		$59,500,000	$11,900,000	$3,060,000	$3,570,000	$78,030,000

Communities and Study Areas	CVFPP Impact Area	Total Structure Count and Cost to Elevate @$170,000/Structure				
		Residential	Commercial	Industrial	Public	Total
Isleton Study Area	SAC 54-URB & SAC 54-N2	739	72	69	55	935
		$125,630,000	$12,240,000	$11,730,000	$9,350,000	$158,950,000

The cost to raise structures 8-10 feet in height or greater may be feasible with federal and state participation but may not be desirable for the entire community, particularly large portions of some communities such as Locke, East Walnut Grove, and Isleton that contain large quantities of old, historical buildings that do not lend themselves to structural elevations. However, elevating structures is encouraged on a case-by-case basis wherever feasible, preferably with Federal and state assistance. This non-structural solution would need to be voluntary for residential structures as expressed during public outreach meetings, but it could be mandatory for essential, critical infrastructure facilities in the event the preferred structural alternative elements or structural-based management actions are not fully implemented.

It is recommended that voluntary raising of structures, on a case-by-case basis, be carried forward as a non-structural measure for reducing flood risks in the each of subject Delta Legacy Communities within Sacramento County, including within the City of Isleton. The County has historically encouraged owners of residential properties to elevate utilizing various non-structural mitigation grants.

3. Wet or Dry Floodproofing

When it is impractical to elevate an existing structure floodproofing might be considered. Dry floodproofing allows property owners to fight the floodwater in hopes of reducing flood damages. Sacramento County allows new construction of nonresidential buildings that are dry floodproofed, typically addressing shallow flooding of only a few feet of flood water. Wet floodproofing allows the floodwater to flow into the building in a manner that is hydrostatically balanced. Essentially the water would rise equally inside and outside of the building so that the pressure is equalized. The County allows new barns and garages in the Delta, as they are necessarily constructed at grade, to be wet-floodproofed.

Wet floodproofing involves the construction of structures with flood-resistant materials with openings or vents to allow floodwaters to pass through the structure. Any mechanical or electrical equipment must be waterproofed or affixed above the flood elevation to prevent damage.

Dry floodproofing is allowed for any existing structure and for new non-residential structures. The floodproofing system must be design by a qualified professional. Generally, dry floodproofing is only effective in combatting shallow flooding as the system must be designed to be watertight to keep floodwater from entering the structure. Based on the FEMA definition, dry flood proofing includes, but is not limited to the following:

- Installation of watertight closures for doors and windows;

- Reinforcement of walls to withstand floodwater pressures and impact forces generated by floating debris;

- Use of membranes and other sealants to reduce seepage of floodwater through walls and wall penetrations;

- Installation of pumps to control interior water levels;

- Installation of check valves to prevent the entrance of floodwater or sewage flows through utilities; and

- The relocation of electrical, mechanical, utility, and other valuable damageable equipment and contents above the expected flood level.

Dry floodproofing can be accomplished a distance away from the building using berms, walls, and barriers. If the flood depth at a site is above the practical height limits of available floodproofing barriers, an alternate mitigation method, such as raising of structures should be considered.

Depth of flooding is important in considering floodproofing measures. Hydrologic and hydraulic modeling of the Lower Sacramento River system indicates that most of the structures in most of the Delta Legacy Communities of Sacramento County, including the City of Isleton, are subject to flood depths greater than five feet; and would require floodproof barriers of more than one to four feet , the practical limit for dry floodproofing. As a result, this non-structural solution was deemed infeasible for the vast majority of the communities in the North Delta, particularly for agricultural structures. However, if landowners wish to pursue wet floodproofing solutions, particularly for agricultural structures within and near the subject communities and their larger Reclamation Districts, they should be encouraged to do so, particularly if the county, state, or other Federal agencies can secure cost-sharing reductions.

4. Acquisition and Relocations

This is included as informational only. It is not likely that acquisition and relocation will be a viable or desired mitigation measure for any of the subject Delta Legacy Communities that each contain significant historical and cultural values and are all included with the Delta National Heritage Area (established in March of 2019). This option involves developing likely costs for comparison purposes, but it is not a preferred option by any one of the subject Delta Legacy Communities in the North Delta due to relocations of homes, and businesses being disruptive to residents and the overall community. California DWR and others have suggested select communities subject to either deep or repetitive flooding should consider relocation to higher ground that is not subject to flooding.

The subject Delta Legacy Communities by design, are normally situated in the highest, elevated portions of their respective RDs, with most of the dwellings and business structures subject to the lowest depths of flooding in their respective RDs. It may be possible to relocate some of the outlying, lower-elevated agricultural structures, and dwelling units to higher ground in their respective or adjoining RDs. However, the subject Delta Legacy Communities along the Sacramento River Corridor are all located within the Delta National Heritage Area (established in March of 2019) to protect the cultural and agricultural significance of the Legacy Communities located within the primary Zone of the Delta. Locke in its entirety became registered on the National Register of Historic Places in 1971 as the only town in the United states built exclusively by the Chinese for the Chinese. In 1990, Locke became a National Historic District, and portions of Walnut Grove East and

the City of Isleton contain adjoining Japanese, Chinese and historic districts that are not conducive to moving or relocating structures of historic significance. Although not all of the noted Legacy Communities contain formal historic districts, significant cultural values would be displaced or lost with acquisition or relocations to higher ground that would likely require relocation to areas outside of the boundaries of the Delta National Heritage Area. Any relocations would require moving at least three miles to the east to higher ground, east of Interstate 5 or possibly further east of the Union Pacific Railroad tracks located east of Interstate 5.

Relocating entire communities within the Delta, particularly Delta Legacy Communities, is inconsistent with the goals and objectives of both the Delta Plan and the Sacramento-San Joaquin Delta National Heritage Area designation.

5. Flood Emergency Safety Plans (ESPs)

Each Reclamation District (RD) located within the north delta region of Sacramento County has an Emergency Safety Plan (ESP). Public information, posted at the County's webpage www.StormReady.org (under Flood Safety) includes the following for individual RD ESPs: a Delta Area Flood Map, flood depth maps, how long it will take to flood the individual RDs, evacuation routes, and time tables indicating the duration of time in hours, days, weeks, or months to pump-out and entirely drain the individual RDs, depending upon the rate of pumping capacity.

These were prepared as part of a grant from the California Department of Water Resources (DWR), in June 2017. Sacramento County developed collective Flood Emergency Safety Plans for the eighteen Reclamation Districts collectively located within Sacramento County and within the North Delta. The Emergency Safety Plans (ESPs) provide information, policies, and procedures consistent with the DWR Delta Flood Emergency Management Plan finalized in October of 2018. The ESPs are also in accordance with the Federal Integrated Planning System (IPS), the Federal Emergency Management Act (FEMA), the Comprehensive Preparedness Guide (CPG) 101, the Standardized Emergency Management System (SEMS), and the National Incident Management System (NIMS).

6. Sacramento County OES Decision Support Tool

Via a grant from DWR, the County of Sacramento, Office of Emergency Services sponsored the development of a Flood Operation Decision Support System (FODSS) tool to improve emergency response, emergency management and coordination during high water and flood emergencies within the County, including the City of Isleton Study Area. FODSS is a web-based GIS tool that links the user with information and data for reviewing and responding to emergencies, especially flooding or potential flooding scenarios within Sacramento County and the surrounding areas in the North Delta that may impact Sacramento County. The information included in this tool is based on best available information and should be periodically reviewed and updated as needed to represent the best available data for the system. The elevation data provided in the tool is based on the North American Vertical Datum dated 1988 (NAVD88). This tool supports emergency management by providing information related to:

- Incident Command: Allows the user to report incidents by entering the following: Name, location, critical infrastructure, and incident type.

- Communications: Lists of contacts (agencies and organization staff).

- Planning: Access to critical facilities, topographic data (elevations), levee information, agency boundaries and watersheds.

- Logistics: Location of resources and material calculator.

- Operations: Access to river forecast, water surface profiles, gages, and cross sections.

- Mapping and Evacuations: Provides evacuation routes, flood maps and animations and historical data.

- Recovery: Provides the recommended pump locations and pump flow to empty a basin if a levee were to fail and fill the basin.

By giving customized emergency information vital to flood planning, this tool supports and compliments the Flood Emergency Safety Plans and enhances their utility as a non-structural alternative for each of the Sacramento Delta Legacy Community Study Areas, inclusive of surrounding RDs in the North Delta.

7. Local Hazard Mitigation Plan and Relief Cuts

The levee system(s) protecting the subject Delta Legacy Communities in Sacramento County are normally higher than the river water, and should a levee breach occur the water would fill up to the top of the levee system at the downstream, lower end of the reclamation district. However, a carefully planned relief cut excavated into the levee at the lower, downstream end would allow the water to escape or drain out of the reclamation district at the lowest, downstream elevation of the river. If there is five feet of freeboard at the lower downstream end of the reclamation district the relief cut could potentially reduce flood depths by as much as five feet over the entirety of the reclamation district, while waiting for the lower, downstream levee reach to overtop. The reclamation district personnel know that a relief cut will be necessary should a reclamation district ever flood; however, in most cases there is no written description nor agreement for a planned relief cut.

In 2020, Sacramento County commenced public outreach to update the 2016 Countywide Local Hazard Mitigation Plan (LHMP). The effective plan can be found at www.StormReady.org. The updated LHMP will address where relief cuts would be most advantageous to investigate and potentially formalize, for each reclamation district (RD) and accompanying Delta Legacy Communities within the North Delta area of Sacramento County.

It should be noted that the current effective base flood elevation (BFE) on the 2012 FEMA Flood Insurance Rate Maps (FIRM) for most of the Sacramento County Delta Legacy Communities largely depends upon and/or assumes a relief cut can be deployed at the lower, downstream portion of each RD where each separate community is located. Thus, each of the RDs and communities are encouraged to formalize the preferred location(s) of potential relief cuts to minimize the depths of potential flooding in the event a levee breach were to occur in any given Delta Legacy Community Study Area. The value of relief cuts are greatest to the communities located within the RDs that are large and contain a large hydraulic gradient drop (greater than two to three feet) in the adjoining river system and slough(s) between the upstream and downstream ends of the RD.

Noticeably larger downstream gradients exist in the RDs protecting the communities of Courtland (within RD 551), West Walnut Grove/Ryde, East Walnut Grove (within RD 563), including Brannan-

Andrus Island where the City of Isleton is located. Potential relief cuts should be formalized with the adjoining RDs and DWR for these larger RD Basins.

Relief cuts should also be evaluated for Hood, Locke, and the RD 554 portion of East Walnut Grove that are located primarily in the downstream portion of smaller basins. It may be more difficult to formalize a relief cut for these smaller basins, but they should be explored further in the concurrent LHMP and subsequent LHMP efforts.

8. Alternatives and/or Supplements to current National Flood Insurance Program (NFIP)

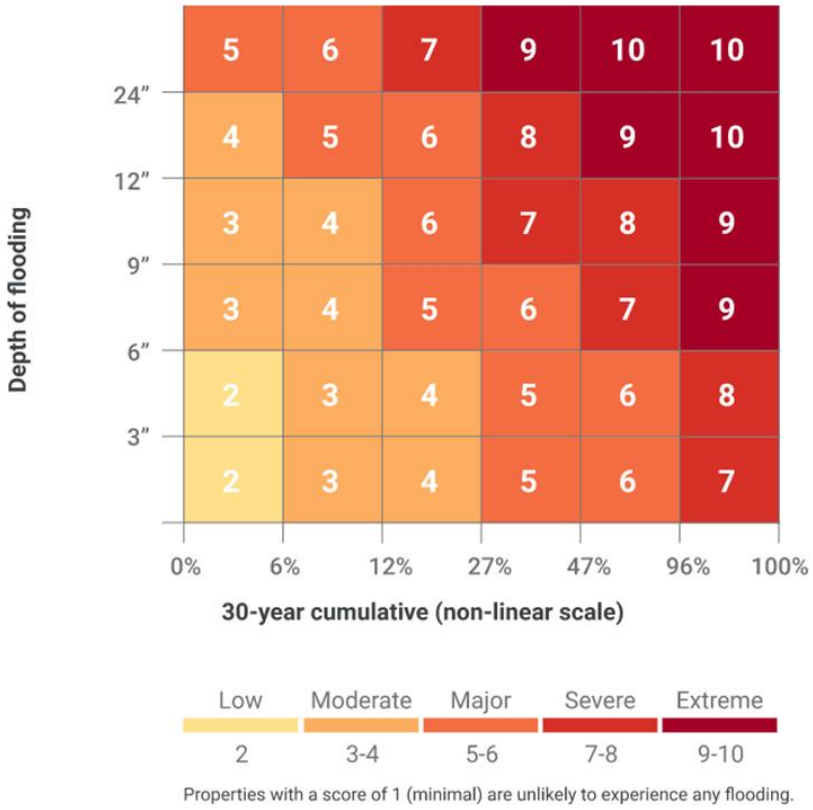
The National Flood Insurance Program (NFIP) is managed by the Federal Emergency Management Agency (FEMA), through its subcomponent, known as the Federal Insurance and Mitigation Administration (FIMA). It is currently the only federally-backed flood insurance program, so the introduction of alternative flood insuring options for homeowners (such as private community-based flood insurance) carries the advantage of offering potentially more favorable terms to residents within any of the noted Delta Legacy Communities of Sacramento County, including the City of Isleton.

A review of FEMA's current and planned mapping procedures, insurance, requirements, insurance rates, and policies indicates that agricultural facilities in leveed areas of the Sacramento Valley, including the North Delta, have been bearing a disproportionately large share of the financial burden of the NFIP. Private sector involvement in the flood insurance industry could protect this area's flood insurance premiums by matching rates to risk through an emerging market for private community-based flood insurance policies. For over 60 years the NFIP has been the principle source of flood insurance in the United States. Since its inception, the NFIP has encouraged homeowners to buy flood insurance by providing homeowners with older homes the opportunity to purchase flood insurance at a discounted or grandfathered rate. Today, roughly half of all policies in the Sacramento Legal Delta are grandfathered policies. The NFIP is increasingly viewed as unsustainable. In response to increasing solvency concerns, congress passed Biggert-Waters (BW-12) in 2012. BW-12 eliminated subsidies for some types of policyholders and moved premiums toward more risk-based pricing. BW-12 progressively phased out the pre-FIRM subsidy at a rate of up to 18 percent per year for primary residences and 25 percent per year for non-primary residences. After expressed outrage in the rapid increase of insurance premiums, congress reevaluated the rate increases and subsequently passed the Homeowner Flood Insurance Affordability Act (HFIAA). While the new law slowed the rate increases, capping them at 15 percent for primary residences for homeowners receiving subsidized rates, it did not eliminate the premium increases.

As NFIP premiums increase, private insurers are entering the market. They are taking advantage of better flood mapping, modeling, the accessibility of increasingly high-resolution national data sets, innovations in statistical analysis, and sophisticated global financial markets to fill the affordability gap. In 2019, over 10,000 private insurance policies were written in California (Wholesale & Specialty Insurance Association, 2019).

Private insurers use their own models to establish the price of a policy. These models, the number of which is increasing, vary in their complexity and detail. For example, the nonprofit First Street Foundation recently released a nationwide flood model accessible from any mobile device similar to many used by private insurers. It is an easily understood, easily accessible nationwide tool for presenting flood risk information. By visiting *FloodFactor.com* one can easily get a general picture of their flood risk. Flood risk is specified by assigning a risk score from 1 to 10. The score is based on

cumulative likelihood of flooding at different flood depths based on riverine, coastal, and pluvial analyses as shown in the figure below.



Flood Factor Matrix (First Street Foundation, 2020)

Flood risk information obtained from sites like *FloodFactor.com* will be different than flood information produced by DWR or FEMA because the methods to assess risk are different. Homeowners and decision makers should recognize that there is a tradeoff between ease of use and flood extent precision and exercise judgement when assessing their appetite for flood risk.

An alternative to individual homeowner policies is a community-based flood insurance program. A community-based flood insurance program would have the opportunity to lower flood insurance costs by working with an insurer to provide better risk information and by actively implementing agreed upon mitigation measures. A community might choose to: (1) sell their risk to an insurer; (2) finance the risk through a capital markets; or (3) they might implement a combination of risk financing mechanisms. By actively managing the flood risk, the community flood risk program would provide the opportunity to both reduce flood insurance premiums and finance levee operation and maintenance.

One way that a community might choose to implement a community-based flood insurance program is through the establishment of a Homeowners Association (HOA) or a Geologic Hazard Abatement District (GHAD). A GHAD is a state-level public agency for the purpose of providing prevention, rapid response, and funding to address hazardous geologic conditions. They were established in 1979

by the Beverly Act to allow local residents to develop self-funding mechanisms that address the long-term abatement and maintenance of structures that protect real property from geologic hazards.

Under this scenario, any one or a collection of Delta Legacy Communities may decide to establish a GHAD. It would be an independent political subdivision of the State governed by a locally elected board by a single community and/or by a small collection of participating communities within the Delta. It would not be an agency or instrument of a local agency, and thus would not be subject to the control of by a local agency. The board of the GHAD would compile the historical flood loss information, and details of the physical flood risk. They would share this information with an insurance broker and risk financing entity.

In a manner similar to other municipal insurance contracts, the broker, the GHAD board, and the insurance and financing sellers would negotiate the best combination of risk transfer options and flood damage payment options. The GHAD might choose to negotiate a traditional flood insurance policy that is capped at $100,000. An analysis of NFIP claims for the Delta finds that 75 percent of all claims payments are less than $50,000 and that the full $250,000 has only been paid once, suggesting that a policy capped at $100,000 would generally meet the recovery needs of homeowners within the Delta. Conversations with insurance providers finds that capping a policy at $100,000 significantly reduces the price and increases the financing options. An additional policy providing the $250,000 of coverage required by lenders could be purchased separately.

Alternatively, the GHAD could issue a parametric insurance policy. A parametric policy is one in which insurers receive a predefined amount given a predefined triggering event, such as a river stage warning triggering an evacuation and/or a levee failure within anyone of the given Delta Legacy Communities Project Study Areas. The payment could be a fixed amount or a percentage of the property's appraised value. Under this scenario, payments would be capped at a maximum dollar amount per property per flood event. As with the traditional payment option, homeowners wishing to purchase additional "wraparound" coverage could do so.

The City of Isleton has already taken the initial steps in June-July of 2021 to formalize a path for property owners within its city limits to aggregate their resources and establish a community-based flood insurance program that can be used to augment and/or replace the current set of NFIP policies held within the City of Isleton. The County is also encouraging the unincorporated North Delta Legacy Communities to consider alternatives to the current NFIP, including a community-based flood insurance program that could be administered with or without developing a GHAD. A similar community-based flood insurance program is being considered for the San Francisquito Creek JPA ,located in the south Bay Area. (See separate Appendix K – Community-Based Flood Insurance, largely prepared by Kathleen Schaefer, P.E., CFM, former FEMA regional administrator of NFIP.)

9. NFIP Flood Insurance Enhancements via Agricultural Floodplain Ordinance Task Force (AFOTF)

The Agricultural Floodplain Ordinance Task Force (AFOTF search: afotftech-memo12.28.16) via its Technical Memorandum of December 28, 2016, has recommended as many as seven administrative refinements of the NFIP to sustain agriculture as a wise use of the floodplain in leveed Special Flood Hazard Areas (SFHA). The NFIP administrative refinements (and amendments proposed by H.R. 830) are focused on improving agricultural sustainability while collectively reducing flood risks in similar leveed agricultural basins that are subject to flooding of depths greater than 5 to 20 ft. The recommendations address how rules and practices could be modified to: (1) reduce or remove elevation and floodproofing requirements for new and substantially improved agricultural structures,

and (2) reduce the cost of flood insurance for agricultural structures with a federally backed mortgage to a more appropriate portion of the financial risk in the NFIP. The key elements include the following:

a. Levee Relief Cuts with Emergency Operation Plans and Floodplain management ordinance,

b. Zone X for certified levee reaches,

c. Wet floodproofing rules for agricultural structures,

d. Insurance rates for nonaccredited levees,

e. Insurance rates for agricultural structures,

f. Insurance rates for wet floodproofed structures, and

g. Add levee risk management activities to FEMA CRS.

Item a – Relief Cuts - Each of the noted Delta Legacy Community study areas, including the study area of Isleton, should seriously consider Relief Cuts, as explained further above in item 6 – Multi-Hazard Mitigation Plan and Relief Cuts. As noted above in Item 6 – FEMA does not necessarily recognize levee relief cuts on FIRMs or consider them when floodplain administrators issue permits for construction in Zone A. If FEMA recognized relief cuts that are properly planned and adopted by a community as part of an Emergency Operation Plan and Floodplain Management Ordinance, this could potentially lead to lower NFIP insurance rates for communities that introduce relief cuts in order to reduce their maximum flooding water surface elevation (WSEL).

Item b – Zone X for certified levee reaches – FEMA's Operating Guidance 12-13 does not allow accreditation of a reach of levee unless the entire levee system can be certified and accredited. The partial accreditation of a basin or levee reach could potentially lead to lower NFIP insurance rates as portions of levee systems are approved. This item could potentially be applied to the larger agricultural area as well as to the densely populated portion for each of the subject Delta Legacy Community study areas.

Item c – Wet Floodproofing rules for agricultural structures – FEMA's rules require flood vents (or openings) for entry and exit of floodwaters in all wet floodproofed agricultural structures. The Task Force recommends allowing human intervention for providing entry of floodwaters into agricultural structures in situations when large doors on at least two sides of the building could be locked open. If human intervention is authorized, appropriate conditions should be established in a Flood Emergency Operation Plan approved by the community and/or community's floodplain administrator. This could allow for greater floodproofing flexibility for agricultural structures relative to stricter rules previously established for residential or commercial structures. This item is therefore very applicable to the agricultural structures in most or all the subject Delta Legacy Community study areas.

Item d – Insurance rates for non-accredited levees – FEMA's insurance rates for structures behind a non-accredited levee are the same as if there were no levee at all. However, many non-accredited levees provide protection from frequent floods and significantly reduce flood risk. The AFOTF recommends that FEMA use sound actuarial science to amend its insurance rates to reflect flood protection provided by a non-accredited levee as documented by a civil engineer, following a specific methodology and meeting specific criteria recommended by the Task Force. This item could be

equally applicable to both the larger agricultural area as well as to the densely populated portion in most or all the subject Delta Legacy Community study areas.

Item e – Insurance rates specific to agricultural structures – When FEMA developed insurance rates for agricultural structures decades ago, there was not sufficient claims data to develop rates unique to agricultural structures. Therefore, agricultural structure rates are generally the same as rates for retail business and industrial structures and may be higher than necessary. The Task Force recommends that FEMA develop insurance rates for agricultural structures separately from other types of structures, update the Flood Insurance Manual with the new rates, and apply them expeditiously. Agricultural structures can anticipate significantly lower flood damages than the typical retail business or industrial structures. Thus, the NFIP premium rates should be lowered to reflect the lower flood damages associated with agricultural structures. This item is therefore very applicable to most or all the subject Delta Legacy Community study areas in Sacramento County.

Item f – Insurance rates for wet floodproofed structures – FEMA's rules allow for wet floodproofing of agricultural structures by variance; however, insurance rates for wet floodproofed structures are the same as if there were no floodproofing. This recommendation would reduce NFIP premium policy for structures that are floodproofed. Currently, unlike dry flood proofing, insurance rates for wet floodproofed structures are the same as if there were no floodproofing. This item would be applicable to the agricultural portion of the subject Delta Legacy Community study areas in Sacramento County.

Item g – Add levee risk management activities to FEMA Community Rating System – FEMA's Community Rating System (CRS) provides credits that can reduce insurance premiums in CRS-participating communities. Several CRS credit categories are applicable in rural/agricultural areas. However, in leveed areas of a community, the credits would be dissipated throughout the larger community, rendering them ineffective for rewarding good levee risk management in a particular leveed area of a community. This recommendation is an attempt to amend the CRS to recognize a subcommunity within a community and offer CRS credits for the following activities:

- High ground evacuation locations
- Federal levees with System Wide Improvement Frameworks (SWIFs)
- Risk-based levee system improvements
- Levee risk management plans

In addition to the seven recommendations identified above for sustaining agriculture located behind levees the AFOTF is very supportive of H.R. 830, the "Flood Insurance for Farms Act of 2019" proposed by Congressman Garamendi.

The subject Delta Legacy Community study areas in Sacramento County would benefit from NFIP reform to support agricultural sustainability in areas that will not achieve 100-year base flood protection through implementation of structural alternatives. It is recommended that the State continue to pursue recommendations made by the AFOTF and also continue to support Federal legislation such as H.R. 830 which proposes "To amend the National Flood Insurance Act of 1968 to allow the repair, extension, and construction, without elevation, of agricultural structures located in special flood hazard zones, and for other purposes."

10. Mokelumne River Conveyance Improvements & Staten Island Overflow Area

In October 2010, a Final Environmental Impact Report (EIR) was published by DWR for the North Delta Flood Control and Ecosystem Restoration Project. The purpose of this project was to implement flood control improvements in a manner that benefits aquatic and terrestrial habitats, species, and ecological processes. Specifically, improvements were sought which were expected to reduce damage to land uses, infrastructure, and the Bay-Delta ecosystem resulting from overflows caused by insufficient channel capacities and catastrophic levee failures in the North Delta study area. One option analyzed and presented in this EIR included dredging components of the channel along the North and South Forks of the Mokelumne River. Dredging is expected to directly reduce flood stages in the Mokelumne River and Snodgrass Slough providing a flood risk reduction benefit to the adjoining, nearby communities of Walnut Grove (East), Locke, Courtland, and possibly Hood. Another option yielding similar results involves raising levee segments along these reaches. Thus, implementation of these screened alternatives has the potential to directly reduce flood risk for the same three primary communities (Locke, East Walnut Grove, and Courtland) impacted by high water stages in the Mokelumne River and Snodgrass Slough. Lowering water states and/or improving the channel capacity of the Mokelumne River on either side of Staten Island will further reduce flood stages in Snodgrass Slough adjacent to the communities of East Walnut Grove and Locke. Furthermore, another option specific to this area which could reduce flood risks to the noted communities involves allowing flood stages along the North and South Forks of the Mokelumne River to overtop into Staten Island, or portions thereof, and serve as a flood relief overflow area. This option's feasibility stems largely from the fact that this area is sparsely populated, and its use for a flood easement would allow for significant lowering of water stages in the North Delta Region adjoining and upstream of the North and South Forks of the Mokelumne River.

In addition to the 2010 Final EIR published by DWR for the North Delta Flood Control and Ecosystem Restoration Project there have been a series of other documents developed by DWR and the CALFED Bay Delta Program to reduce flood risks and improve water conveyance through the North Delta following the flooding of the RD 563 portion of Walnut Grove (East) and Thornton within the New Hope Tract during February of 1986. Three of these documents noted below identify potential flood risk reduction measures that could, to this day, be carried forward to reduce flood risks to the communities of Walnut Grove (East), Locke, Courtland, and possibly Hood.

A. Plan of Action for Flood Control for the Towns of Thornton and Walnut Grove, prepared by DWR – February 1999. This Plan of Action reviewed the possibilities of improving the flood and water supply conveyance capacities of the North and South Forks of the Mokelumne River, including channel dredging of each Fork, and potential setback levees along the South Fork of the Mokelumne River. Channel constrictions were also noted at the two bridge crossings along Walnut Grove -Thornton Road. One bridge constriction being near New Hope Landing (near Wimpy's Boat Marina) at the head of the South Fork, and the other at the Miller Ferry bridge crossing near the head of the South Fork, just downstream of its confluence with Snodgrass Slough. Other measures discussed included a potential pumping plant at the Delta Cross Channel (DCC) to pump excess Mokelumne River/Snodgrass Slough flows (up to 10,000 cfs) into the Sacramento River and Georgiana Slough in lieu of improving the channel capacities of the North and South Forks of the Mokelumne River. A potential bypass floodway on the Mokelumne River utilizing Beaver Slough in San Joaquin County was mentioned as well as improvements to raise the height of the DCC Gates. The plan also included DWR, the USACE, and USBR to provide further input and seek cost sharing for the noted improvements that not only reduce flood risks but also enhance water supply conveyance through the North Delta as it still exists today via the DCC and the Mokelumne River system.

B. North Delta Program Draft EIR/EIS – prepared by DWR November 1990, (finalized in 1991). This joint EIR/EIS with the USACE for the North Delta program was designed "to address problems related to flooding, reverse *delta* flows ,water quality, fishery impacts, and water supply reliability. The preferred alternative includes:

- Various combinations of channel dredging and channel widening along 35 miles of the Mokelumne River and tributaries. Channel widening would be done by building an additional levee that would parallel one of the existing levees. Th old levees would become a series of islands for high-quality wildlife habitat in the wider channel.

- Enlarging the federally operated "Delta Cross Channel Gates"

The Program objectives included, but were not limited to:

- alleviate flooding (as occurred in February 1986) in the North Delta, including the Towns of Thornton and Walnut Grove, and

- Improve State Water Project (SWP) flexibility and water supply reliability

The economic assessment for the North Delta Program (NDP) indicated an annual economic benefit of $49.6 Million alone for the combined State Water Project service areas, excluding the values for flood risk reduction benefits. This indicates multiple values of improving the North Delta channel capacities and levees beyond reducing flood risks.

C. CALFED Bay-Delta Program Levee System Integrity Program Plan Final Programmatic EIS/IER , including Technical Appendix July 2000. This joint programmatic EIR/EIS includes the following problem statements:

- Many Delta levees do not provide a level of flood protection commensurate with the high value of beneficial uses they protect

- Funding for levee work in the Delta is insufficient, inconsistent, and often delayed

- Dredging to increase channel capacity and to provide material for levee reconstruction and subsidence control has been curtailed due to regulatory constraints, causing dredging equipment and trained manpower to leave the Delta

- Levee reconstruction and maintenance often conflicts with management of terrestrial and aquatic habitat resources on or around levees.

- Seismic loading threatens Delta levees

The Levee System Integrity Program identified "The goal of the Delta Levee Special Improvement Projects element is to provide additional flood protection separate from the Base Level Protection element for Delta islands that protects such public benefits as water quality, the ecosystem, life and personal property, agricultural production, cultural resources, recreation, and local and state-wide infrastructure". To-date the community of Walnut Grove (East), via RD 554, has received very limited amounts of Delta Levee Special Improvement funds to conduct geotechnical borings and CPTs to determine the likely levee remediations to restore FEMA accreditation applying current design standards. The community will need

substantial financial assistance from statewide and regional interests to advance geotechnical analyses and subsequent levee improvement designs to restore FEMA accreditation of the RD 554 levees protecting the community. In addition, adjoining levee systems (RD 563 and others) and nearby flood/water conveyance channels will require improvements to reduce regional flood stages and residual risks in the North Delta.

11. Improve FEMA Community Rating System (CRS) Score for Sacramento County/Isleton

Sacramento County is an active participant of the NFIP and through its County-wide Flood Protection Ordinance the County strives to reduce flood risks throughout the unincorporated areas of Sacramento County while also attempting to reduce NFIP premium policy rates. In addition to the above recommendations for modifying the NFIP for agricultural areas that could be applicable to each of the non-incorporated project communities and all other unincorporated areas within Sacramento County that are protected by levees, there could also be opportunity for Sacramento County to reduce flood insurance premiums through the FEMA CRS. As described below, the current CRS score in Sacramento County (which in the future will not likely include the separate, incorporated City of Isleton) is based upon the collective rating score of all the unincorporated areas combined within the County, with the noted exception of the incorporated cities within the County having city-specific CRS scores. As of May 2017, Sacramento County has retained a very favorable CRS credit score (cT) of 5,155 which places Sacramento in the NFIP Community Classification Class 2. The Class 2 designation yields a 40% reduction of NFIP insurance premiums for Special Flood Hazard Areas (SFHAs) within Sacramento County, inclusive of each of the subject community study areas, with the exception of the City of Isleton. Actions to increase the cT score would result in further reductions to insurance premiums within the County.

Sacramento County's current cT score of 5,155 is based upon several FEMA-specific activities carried out by Sacramento County as identified below with corresponding Credits:

NFIP Activity	Activity Credit Score
310 – Elevation Certificates	61
320 – Map Information Service	90
330 – Outreach Projects	350
340 – Hazard Disclosure	65
350 – Flood Protection Information	99
360 – Flood Protection Assistance	100
370 – Flood Insurance Promotion	90
410 – Floodplain Mapping	35
420 – Open Space Preservation	1472
430 – Higher Regulatory Standards	586

440 – Flood Data Maintenance	257
450 – Stormwater Management	245
510 – Floodplain Management Planning	497
520 – Acquisition and Relocation	74
530 – Flood Protection	160
540 – Drainage System Maintenance	336
610 – Flood Warning and Response	269
620 – Levees	177
630 – Dams	37
710 – County Growth Adjustment factor 1.06 applied to 400 Series/Activities	
Total cT Score:	**5155**
Community Classification:	**2**

A review of the above table indicates how the cT is score-derived based upon the County's current CRS activities, and where there may be greater opportunities to increase its current cT score. Sacramento County's current cT score is 5,155, but since the County is lacking the minimum required score for the 600-series of activities, it has a Class 2 designation instead of the Class 1 status typically granted to communities scoring above 4,500 overall. If Sacramento County raises its Activity 600 score(s) associated with improving flood warning systems downstream of Folsom Dam and behind the existing levee systems, it may yield an additional 5% reduction in NFIP insurance premiums (increasing the current discount from 40% to 45%) throughout the county SFHAs, inclusive of all the Delta Legacy Communities in Sacramento County, with the exception of the incorporated City of Isleton.

12. Land Use Regulations and Limitations

Each of the Delta Legacy Communities in Sacramento County, with the exception of the City of Isleton, are within the Primary Zone of the Legal Delta which means that local and County general plans and land use decisions are also overseen by the Delta Protection Commission (DPC) and the Delta Stewardship Council (DSC). With the exception of Isleton, all of the noted communities lie within the Delta Stewardship Council's Delta Plan planning area, which restricts development, and is designated by Sacramento County as a Special Planning Area (SPA), making land use planning in that area fall largely under their domain. New development in the each of the study areas, (including areas outside of the city limits of Isleton) is thus restricted to a designated finite area, with constraints meant for public safety and preservation of agricultural lands.

13. Improved Governance between neighboring LMAs/RDs

The Reclamation Districts in the North Delta are protected by a system of leveed channels, multipurpose reservoirs, and other structures that is now comprised of the Sacramento River Flood Control Project (SRFCP). The goal of the SRFCP is to reduce the chance and consequences of flooding for the communities in Sacramento County. Under the Standardized Emergency Management System (SEMS), Sacramento County establishes an Operational Area (OA). Traditionally, LMAs have not been included in planning or exercises. LMAs have relied mainly on DWR as their primary flood fight trainer, resources provider, and the next link in the SEMS chain of command rather than the local OA management structure. The Sacramento County Delta Flood Emergency Safety Plan (ESP), written in June 2017, is an effort to improve communication between Sacramento County and the Delta LMAs by providing a better understanding of the river system, providing rescue and evacuation mapping, laying out the flood emergency response process, formulating detailed hazard information for LMAs, and providing flood response trainings.

There are other actions Sacramento County is taking to assist the LMAs to better prepare for a flood emergency, including:

- Having coordination meetings as needed and requested by LMAs
- Holding tabletop and functional exercises and annual pre-season flood training
- Developing ESPs for levees under Sacramento County's responsibility. These plans should be coordinated closely with the Operational Area(s) (OAs), nearby communities, and LMAs
- Supporting formulation of Mutual Aid Agreements regarding storage and sharing of flood fight materials
- Supporting development or update of emergency plans and flood-specific checklists by LMAs and greater implementation and utilization of the County's and DWR's collective Flood Operation Decision Support System (FODSS) described above in Section 5 - Decision Support Tool.

The County of Sacramento's governing body is the five-member Board of Supervisors. Each Supervisor represents one of the five districts in Sacramento County. The Delta LMAs, including each of the subject study areas, are located in District 5. The Supervisors, in partnership with County staff, work to ensure the delivery of services and programs essential to public health and safety. The County has several divisions and departments including Sacramento County Office of Emergency Services (OES), a department with responsibilities including:

- Alerting and notifying appropriate agencies when disaster strikes
- Coordinating all agencies that respond
- Monitoring incident status and maintaining situational awareness
- Responding to complex incidents
- Ensuring resources are available and mobilized in times of disaster

- Developing plans and procedures in response to and recovery from disasters
- Developing and providing preparedness materials for the public
- Administering and coordinating the Homeland Security grants for Sacramento County
- Staffing Sacramento County OA
- Designing, conducting, and evaluating periodic emergency staff training and simulated disaster preparedness and response exercises for the entire Sacramento OA, including use of the County's Flood Operation Decision Support System (FODSS) described above in Section 5 - Decision Support Tool.

Sacramento OES also leads the organization, coordination, and management of available resources and is responsible for dealing with all aspects of emergencies, in particular, preparedness, response, mitigation, and recovery. Thus, it is the Sacramento OES who is mainly responsible for coordinating shared resources and enhancing communications between neighboring LMAs/RDs, and the existing presence of an entity with infrastructure in place to facilitate enhanced coordination makes a heightened focus on improved governance an applicable option for all of the unincorporated areas of Sacramento County in the North Delta.

Furthermore, there is the option of merging existing RDs in the area. In the North Delta area, RDs 755 and 551 (Randall Island and Pearson District, respectively) have collectively expressed intent to merge into a single RD in order to consolidate resources and finances to better service and repair the levees that protect Courtland and the outlying communities in these districts. Likewise, there is additional opportunity for RDs near other Delta legacy communities to merge, which has the potential to improve flood response and preparedness, communication, and proper allocation of shared resources.

For Walnut Grove (East) there is the added potential for RD 554 to work more closely and potentially consolidate resources with: (1) RD 369 – Libby McNeil to the north with the community of Locke, north of the Delta Cross Channel; and (2) adjoining RD 563 - Tyler Island located to the southwest containing the industrial portion of Walnut Grove (East) protected by levees along Snodgrass and Georgiana Sloughs, and the North Fork of the Mokelumne River. The levee system on the North Fork of the Mokelumne River failed in February of 1986 and flooded the southern industrial portion of Walnut Grove (East) within RD 563. This same flooding on RD 563 prompted RD 554 and others to construct the emergency cross levee that remains in place today between RD 554 and Rd 563.RD 563's levee system on Tyler Island protects primarily agricultural lands with a project levee along Georgiana Slough and non-project levees along the North Fork of the Mokelumne and Snodgrass Slough. However, RD 563 encompasses and protects a relatively small portion (approximately 50 acres, less than 1% of its assessed area) that is urbanized and contains said southern industrial portion of Walnut Grove (East) outside of RD 554.

The City of Isleton should also collaborate more closely with the Brannan Andrus Levee Maintenance District (BALMD) to repair and improve the existing levee systems SPFC levees, and possibly develop flood -fight berms or cross levee systems within the District, but possibly outside the City limits to further reduce flood risks to the City of Isleton.

14. System-wide Improvement Frameworks (SWIF) and Inspection Reports

Currently, among the RDs in and around the Delta Legacy Communities, RD 3 – Grand Island (encompassing Walnut Grove West and Ryde) and RD 551 – Pearson District (encompassing Courtland) have completed and submitted Letters of Intent (LOI) to obtain USACE approval to move forward with preparation of a System-wide Improvement Framework (SWIF) Plan. These plans will be developed with the support and assistance of the Central Valley Flood Protection Board (CVFPB) staff and in collaboration with the U.S. Army Corp of Engineers (USACE) and environmental, cultural, and historical resource agencies, as well as other interested parties. Simultaneously, the corresponding local maintaining agencies (LMAs) for these RDs will be making improvements that address system-wide issues and correct unacceptable inspection items in a prioritized manner to optimize flood risk reduction. The USACE's approval of these LOIs will allow these levee systems to remain active in the PL 84-99 RP for a period of two years while the SWIFs are being prepared. Other RD's and State Maintenance Areas protecting the subject Delta Legacy Communities in the North Delta, namely Locke, East Walnut Grove, and the City of Isleton, all of which are partially protected by SPFC Project Levees, may also want to consider filing LOI's with their respective LMA's to obtain USACE approvals to move forward with preparation of similar SWIF Plans as contemplated by RD 3 and RD 551. The Community of Hood is protected by SPFC levees operated and maintained by DWR Maintenance Area No. 9 (MA 9) ; and the Hood Community Council (HCC) should also connect with DWR MA9, to prepare a LOI in connection with advancing a SWIF, if not already done so by DWR, for the benefit of Hood and the greater Stone Lakes Impact Area. The community of Hood and portions of stone lakes/Elk Grove is protected by the nine miles of the Sacramento River left bank levee downstream of Freeport that contains a collection of nine known critical and serious sites previously identified under DWR's Flood System Repair Project (FSRP).

Twice a year DWR staff inspects the flood control infrastructure and makes note of issues that may compromise the integrity of the flood system. The inspections are performed in the Spring to assess any issues or damages that may have resulted from highwater events in the preceding wet season, and again in the Fall after the critical summer maintenance period when a considerable portion of the annual maintenance activities are performed. Findings from these inspections are summarized in Levee Maintenance Deficiency Summary Reports, released biannually for maintenance areas. Furthermore, the USACE conducts periodic inspections (PI) once every five years on federally authorized levees in the USACE Levee Safety Program. Findings from these reports can jeopardize Public Law 84-99 (PL 84-99) eligibility. PL 84-99 authorizes the USACE to perform certain emergency readiness and response activities, including the repair and restoration of flood control projects to ensure their continued function after flood related damages are sustained. In order to be eligible for rehabilitation assistance under PL 84-99, the project must be considered "Active" at the time of damage. Active status is determined by adequate inspection and maintenance of the flood infrastructure as required by federal regulations.

The benefits of an LOI are clear in that they lead to the development of a SWIF, which grants PL 84-99 eligibility while helping prioritize deferred levee maintenance and repair issues.

15. Public Education/Public Awareness

The Delta Protection Commission (DPC) designates a week in October to be the annual Delta Flood Preparedness Week, with the goal of increasing public awareness of flooding threats. Additionally, for those families who provide their contact and mailing information, the DPC mails Flood Preparedness Calendars each Fall. These calendars are meant to consolidate important flood-related

information, including emergency phone numbers and websites with flood education as well as safety information.

Sacramento County conducts annual outreach efforts aimed at informing the public of flood hazards and risk mitigation strategies. Sacramento County and other communities that participate in the Community Rating System (CRS) of the National Flood Insurance Program (NFIP) receive credit points for developing and implementing a Program for Public Information (PPI). Sacramento County established such a program in 2015 and has produced Annual Evaluation Reports each subsequent year in which the PPI Committee reviews progress toward established outreach goals and makes changes when needed, such as to reflect the addition of a new target demographic or activity. Currently, outreach topics in the Sacramento County PPI include both mandatory and community specific topics related to understanding, insuring, and taking responsibility for flood hazards. Recommendations in each PPI Annual Evaluation Report are often based largely on flood insurance data, since this is a readily available source of information on flood hazards. Thus, it can be expected that PPI Annual Evaluations will be impacted if flood insurance alternatives to the existing NFIP are pursued, or if changes within the NFIP are made.

A specific outreach plan is developed by the PPI committee to achieve the desired outcome for each of Sacramento County's ten topics. Outreach activities include (but are not limited to):

- Informational materials: Brochures, flyers, and similar documents that are made available upon request or are placed on display for people to take. One example of this is Storm Ready Booklets that are distributed at public gatherings such as neighborhood association meetings.

- General Outreach: Dissemination of materials, presentations to groups, or similar activities that reach out to people. One such example includes radio spots that encourage residents to keep their storm drain free of debris.

- Targeted Outreach: Materials that are distributed to all the members of the target audience. The project must clearly explain why the recipient is getting the notice. An example of this is a newsletter that is mailed to residents living in homes protected by a levee.

Stakeholder Outreach: Through the PPI, the CRS recognizes collateral outreach efforts that are accomplished by other agencies or organizations. To achieve CRS credit, the PPI committee is required to research outside activities that support Sacramento's outreach topics and to document the continuance of these outreach efforts. In addition the County's and the Delta Protection Commission's public awareness/education programs, the DWR Flood Risk Notification Program includes sending annual notices in advance of the flood season to every property owner who is located behind a SPFC levee within the Delta. The individual notices include the property owner's address and informs the owners their property may be exposed to potential flood risk from the failure of the levee system. The notice also suggests each property owner visit DWR's Flood Risk Notification and enter their address to get the most information on the State-Federal levees in their area