AGENDA ITEM 9: **Briefing on Delta Flood Risk Management Assessment District Feasibility Study**

Prepared by: Jennifer Ruffolo Presented by: Jennifer Ruffolo and M.Cubed Team

Requested Action: **Receive report**

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SUMMARY

The Delta Flood Risk Management Assessment District Feasibility Study (DFRMADFS, or the Study) originated in the long-standing policy discussion about how to pay for Delta levees. The Department of Water Resources, which funded the Study, has expressed interest in a beneficiary-pays system for Delta levee improvement and maintenance. The CALFED Record of Decision (August 2000) called for a benefits-based cost allocation for CALFED programs, as reflected in the CALFED Finance Plan (2005). In addition, the Delta Stewardship Council's Delta Plan (2013) recommended that "the Legislature should create a flood risk management assessment district … to provide adequate flood control protection and emergency response for the regional benefit of all beneficiaries, including landowners, infrastructure owners, and other entities that benefit from the maintenance and improvement of Delta levees, such as water users who rely on the levees to protect water quality." (Delta Plan Chapter 7, Recommendation RR R2).

This study will identify feasible financing mechanisms to pay for levee improvements and/or other methods of reducing flood risk in the Delta. The study uses several constructed and representative case studies ("archetypes") to evaluate the potential of a wide range of financial mechanisms. The final report will recommend which suite of funding mechanisms appears to be most promising and the next steps for further analysis and implementation. In short, the study will:

- Identify the classes of relevant beneficiaries and their tangible and intangible assets (e.g., farms, pipelines, roads, through-Delta conveyance, etc.);
- Characterize their level of benefit and their potential financial responsibility under different financing mechanisms (although these estimates will be of orders of magnitude);
- Consider and discuss the legal, institutional, financial, and corresponding political feasibility of financial mechanisms for collecting revenue from beneficiaries; and
- Describe institutional and legal constraints that could influence beneficiaries' ability to make a fair and equitable payment where relevant.

Because this is a feasibility study, the project is not intended to describe precise costs or revenue estimates for Delta levee improvements, nor suggest specific investments or actions. The study will draw broad conclusions about the feasibility of a range of financial mechanisms.

To build on this study and move forward to implementation, more precise and comprehensive information will be needed about levee conditions, the costs of various improvements, the benefits received by the significant beneficiaries, as well as their ability to pay their share of the costs. In addition, the Legislature will need to consider whether to change existing cost share formulas to be consistent with a beneficiary-pays approach, as well as other policy options that the feasibility study generates.

WORK TO DATE

To date, the consulting team has produced eight project memoranda, several with supporting documentation, and conducted three stakeholder workshops. At each workshop, there were representatives of a wide range of Delta interests – from local reclamation districts to water exporters to state agencies. There were approximately 15-20 stakeholders at each workshop.

The work and associated workshops are as follows:

Project Building Blocks: The team gathered information on existing financing mechanisms, institutional settings (e.g., reclamation districts, counties, state, federal, private), and current physical, demographic and economic information on Delta levees. They constructed a set of five "archetypes" that cover a range of typical situations in the Delta that can influence the functioning and attractiveness of financing mechanisms. This work was shared with a stakeholder working group at Workshop #1 on March 9, 2016. At the workshop, the stakeholders reviewed the first three project memoranda, including the proposed archetypes:

- **Project Memorandum #1: Historic Investments in Delta Flood Protection.** This memorandum described the set of facts and assumptions to be used in the DFRMADFS. It described the key characteristics of Delta levees, and outlines past and current federal, state and local funding for levee investment and maintenance. This included an overview of State of California levee subvention and special projects funding, and a summary of local reclamation district financing sources. It included two appendices with more detailed accounting of historic levee funding and reclamation district finances.
- **Project Memorandum #2: Current Legal and Institutional Context for Financing Flood Protection.** This memorandum outlined key State constitutional and statutory provisions that limit State and local government agencies' ability to raise revenue to maintain and improve Delta levees. As the starting point for the feasibility study, this memo described existing constraints on assessments, fees, charges and other revenue

options. Based on this review of legal and institutional constraints, the study team could not exclude any general category of financing mechanism from the study; examples of similar applications to financing public infrastructure exist in all seven of the categories of financial mechanisms examined. And likewise, no single mechanism is able to collect revenues from all beneficiaries in a way that reflects the relative benefits received from flood protection.

- **Project Memorandum #3: Archetypes**. The team developed five archetypes to organize the Delta's complexities and direct attention to the beneficiaries most at risk, most levee-dependent, and most likely to be associated with an assessment program. The memorandum included a mapped representation and an illustration of the key features of each archetype, including: levee type, land uses, exposure to inundation, channel characteristics, type of ownership, and whether solutions can be applied to individual islands or must be part of a broader multi-island or regional effort to be effective. The archetypes help to focus on the features that affect the feasibility of the alternative financial mechanisms:
    - The uses and/or users that are deriving the most benefit;
    - The differences in the conditions or location that would affect the level of flood risk and cost of flood protection; and
    - The administrative and legal issues that would affect the ability to assess (e.g.: federal, state, or private ownership, mixed ownership, unclear ownership, issues of liability).

Establishing a Beneficiaries-Pay Approach: The team developed its approach to estimating the economic factors that must be addressed to determine the feasibility of financing mechanisms. They developed the study's approach to estimating economic benefits for ten categories of beneficiaries. They developed flood protection cost estimates for each of the five archetypes, and developed the process for determining the feasibility of various financial mechanisms to collect revenue from the beneficiaries. The team also developed descriptions of the available and applicable cost allocation methods. At the second workshop on May 24, 2016, the team presented and reviewed three project memoranda with the stakeholders:

- **Project Memorandum #4: The Relationship of Benefits and Costs to Financing Mechanisms.** This memorandum summarized the team's approach for identifying and screening finance options, consisting of the following six steps:
    1. Determine project funding requirements (i.e., what cost needs to be covered for levee construction);
    2. Identify benefits and beneficiaries (i.e., what risks are avoided or value created by levees);

3. Allocate cost responsibility (i.e. who pays and how much based on the benefits accrued);
4. Identify candidate financing mechanisms;
5. Match candidate mechanisms with beneficiaries; and
6. Evaluate candidate financing mechanisms and associated financing structure (i.e., how will a levee investment program be paid for over time) based on multiple attribute criteria (to be detailed in a later memorandum).

The memorandum then elaborated on the economic analysis to be conducted to trace the relationship between benefits and costs (Steps 1, 2, and 3 above):

- Estimate costs for flood protection projects in "archetypes," which are examples of Delta conditions used in this study to screen feasible financing mechanisms.
- Identify beneficiaries of the Delta levees in each archetype, and quantify their potential benefits from flood protection projects.
- Describe available cost allocation methods, pros, cons, and constraints of using them, and identify the most appropriate to be used in the archetypes.

- **Project Memorandum #5: Beneficiaries Analysis.** This memorandum identified the main categories of beneficiaries of levee investment and flood protection in the Delta, and outlined the methods and data to be used to estimate the economic value of the benefits received. In contrast to previous studies of the benefits of Delta levees, this study explicitly identifies a wide range of potential benefits and beneficiaries, including public and indirect benefits such as transportation networks, water supply conveyance, and ecosystem services, rather than lumping many together into a category of "public interest." By "casting a wide net" for beneficiaries, the study will maximize the number of potential beneficiary/financial mechanism combinations, which will then be refined by screening for legal, political, economic, and institutional feasibility in the five archetypes. The ten categories of beneficiaries include:
  1. Community Beneficiaries;
  2. Agricultural Land Owners, Producers, and Water Users;
  3. Municipal Water Providers and End Users;
  4. Infrastructure Owners and End Users;
  5. Upstream Dischargers;
  6. Instream Water Diverters;
  7. General Public Beneficiaries;
  8. State and Local Governments and Special Districts;
  9. State Economy; and
  10. Other Indirect Beneficiaries.

- **Project Memorandum #6: Approach to Estimating the Cost of Levee Upgrade Strategies**. For this study, the team must make reasonable assumptions about future levee improvements, the level of funding that will be required, and the timing of the investment program. The analysis of financial mechanism feasibility must consider, for example, whether a financial mechanism, such as a user fee or a tax, needs to support modest investments in levee maintenance and incremental upgrades, spread out over many years. Alternatively, the financial mechanism might need to generate a substantial amount of revenue to bring flood protection up to current state and federal standards, such as that being undertaken by the Sacramento Area Flood Control Agency, to be undertaken in a relatively short timeframe. Each of the five archetypes used for this study include a set of Delta levee beneficiaries with varying degrees of risk tolerance and requirements for levee improvements, and consequently, different funding needs. In order to analyze the feasibility of financing mechanisms to pay for a range of investments, the team developed cost estimates for two "bookend" scenarios—low-cost and high-cost—for levee improvements. This memo explained the source of the cost estimates and associated uncertainties.

Screening the Financial Mechanisms: The next phase of work elaborated on the legal constraints that affect cost allocation and to refine and apply the financial mechanism screening process. At the third workshop on June 15, 2016, the team presented two project memoranda and described the results of the financial feasibility analysis for one of the archetypes.

- **Project Memorandum #7: Cost Allocation Issues.** This study's approach to identify and screen finance options involves three interconnected, iterative steps to collect data and develop information on costs, benefits, and finance options, as follows:
  1. Determine funding requirements (i.e., what cost needs to be covered?)
  2. Identify possible financing mechanisms and associated structure (i.e., how will a levee project or investment program be paid for over time?)
  3. Identify and assign cost responsibility (i.e. who pays and how much?)

  This memorandum discussed step three, the assignment of cost responsibility, and summarized the legal considerations affecting cost allocation and finance mechanisms. It described where cost allocation fits into the analysis of the feasibility of a beneficiary pays-based approach to financing levee improvements. It also described the disconnect between the federal/state and local approaches to sharing costs for levees, and the State's legal constraints that apply to cost allocation at local level depending on the type of charge, tax, levy, assessment or fee. It then summarized additional issues that will

need to be addressed after this feasibility study in order to implement a beneficiary-pays based approach to financing Delta levees.

- **Project Memorandum #8: Evaluation of Possible Financing Mechanisms.** This memorandum presented the process to identify potential mechanisms within each archetype, and then evaluate the feasibility of various financing mechanisms to generate revenue to pay for levee improvements (or other flood risk reduction activities). The archetypes developed for this study include various sets of significant beneficiaries; applicable financing mechanisms will be matched to those beneficiaries based on the suitability of the mechanism to the activity or purpose that is benefiting. For example, revenues from a farm may be secured with a land-based assessment or tax, while a water utility may be reached with a user or regulatory fee.

  The team identified a comprehensive, though not exhaustive, set of possible mechanisms based on the team's experience, and by reviewing relevant literature. They then grouped the identified revenue-generating mechanisms into broad categories, for example, based on whether they were property-based (e.g., assessment districts), embedded in public financing approaches, user fees, or regulatory charges linked to utilities or infrastructure. In addition, the team evaluated the legal requirements and parameters (e.g., differences in application of Proposition 13 for Board of Equalization as compared with county-assessed entities) as reflected in "Context Memorandum #2: Current Legal and Institutional Context for Financing Flood Protection."

NEXT STEPS

Workshop #4 – Public Presentation of Results–August 2016: Prior to this workshop, the Team will expand the Excel-based screening model to further examine candidate financing mechanisms in different contexts, using the process described in the project memoranda. The completed model will be used to demonstrate a dynamic approach to financing, as well as form the basis for a final evaluation of mechanisms. At the workshop, the Team will present the results of this analysis, summarize the study process and findings, and request broader public input on next steps and implementation.

Final Feasibility Study Report. The team will prepare a Final Report that describes the study's results. The final report will include previously published memoranda and appendices, an expanded table of financial mechanisms with recommendations on the most promising for further development, and a set of recommendations and next steps. The report will describe one or more options for a structured process to conduct the more detailed analyses to develop a financing strategy. It will identify financing options that best fit beneficiary characteristics associated with levee improvements, options that most likely will not work, as well as the linkage of this study's results to the DLIS. The report will include a manual for the spreadsheet tool used to screen the financial mechanisms, which will be made available online.