4

CONTRA COSTA WATER DISTRICT

June 21, 2016

Randy Fiorini
Delta Stewardship Council
980 9th Street, Suite 1500
Sacramento, California 95814

16-107

Subject: Delta Levees Investment Strategy

Dear Mr. Fiorini:

Contra Costa Water District (the District) appreciates the opportunity to comment on the Draft Delta Levees Investment Strategy (DLIS) and Planning Tool. The District supports the Delta Stewardship Council (the Council) on its effort to reduce the risks to people, property, and state interests in the Delta by promoting effective emergency preparedness, appropriate land use, and strategic levee investments (SBX 7-7 Section 85305).

The District's top concern with the DLIS is the lack of definition of "state interests" and the "state as a beneficiary" when determining strategic levee investments and priorities for state investment. Reducing risk to the state interests in the Delta is required by statute and therefore necessary to define to ensure that the DLIS will enable the Council to achieve the requirement. It is also critical to identify the state as a beneficiary because the DLIS is intended to be based on the Delta Plan principle that beneficiaries pay. To date, the DLIS has identified and defined many non-state beneficiaries explicitly (water districts, utilities, in-Delta agriculture, etc.). However, it has not identified the state as a beneficiary. The DLIS should define what the state interests are, identify the state as a beneficiary, and clarify the relationship to the non-state beneficiaries already identified. Establishing these definitions will also help ensure consistency with the Delta Protection Commission's Delta Flood Risk Management Assessment District Feasibility Study.

The District continues to encourage the Council and DLIS to recognize the importance of Delta water quality for municipal, industrial, agricultural, and environmental uses and to recognize the important role the levee system plays in determining the quality and quantity of aquatic habitat for key species of concern. The Planning Tool is predominately a land-based tool and as such, many risks and benefits associated with the water in the channels have not been included in the DLIS. The DLIS should include an evaluation of the aquatic system, in terms of water quality and habitat, to ensure the consequences of state investment in Delta levees are understood in the proper context. The aquatic system is key in ensuring a more reliable water supply for California and in protecting, restoring, and enhancing the Delta ecosystem. Without including an evaluation of the aquatic system in the Delta, the DLIS may not contribute to the Council's achievement of the coequal goals.

In addition to the broad concerns mentioned above, the District has some concerns about the inputs and outputs of the Planning Tool based on information provided at the June 1st water users meeting in Sacramento and the June 6th public workshop in Brentwood. While the Planning Tool provides clear visualizations, several assumptions used in developing the Planning Tool have led to questionable results that warrant further discussion (Attachment). The results of the Planning Tool should be carefully vetted to ensure that they are sensible and consistent with real-world conditions.

The District commends the Council and staff on the work and public outreach completed to date. We look forward to working together to ensure the DLIS and Planning Tool achieve their full potential. If you have any questions, please do not hesitate to contact me at (925) 688-8018 or mpatil@ccwater.com, or to contact Maureen Martin at (925) 688-8323 or mmartin@ccwater.com.

Sincerely,

Marguerite Patil
Special Assistant to the General Manager

MP/MM:wec

Attachment

cc: Aja Brown, Council Member
Frank Damrell Jr., Council Member
Ken Weinberg, Council Member
Patrick Johnston, Council Member
Mary Piepho, Council Member
Susan Tatayon, Council Member
Dustin Jones, Project Manager
Jennifer Ruffolo, Delta Protection Commission

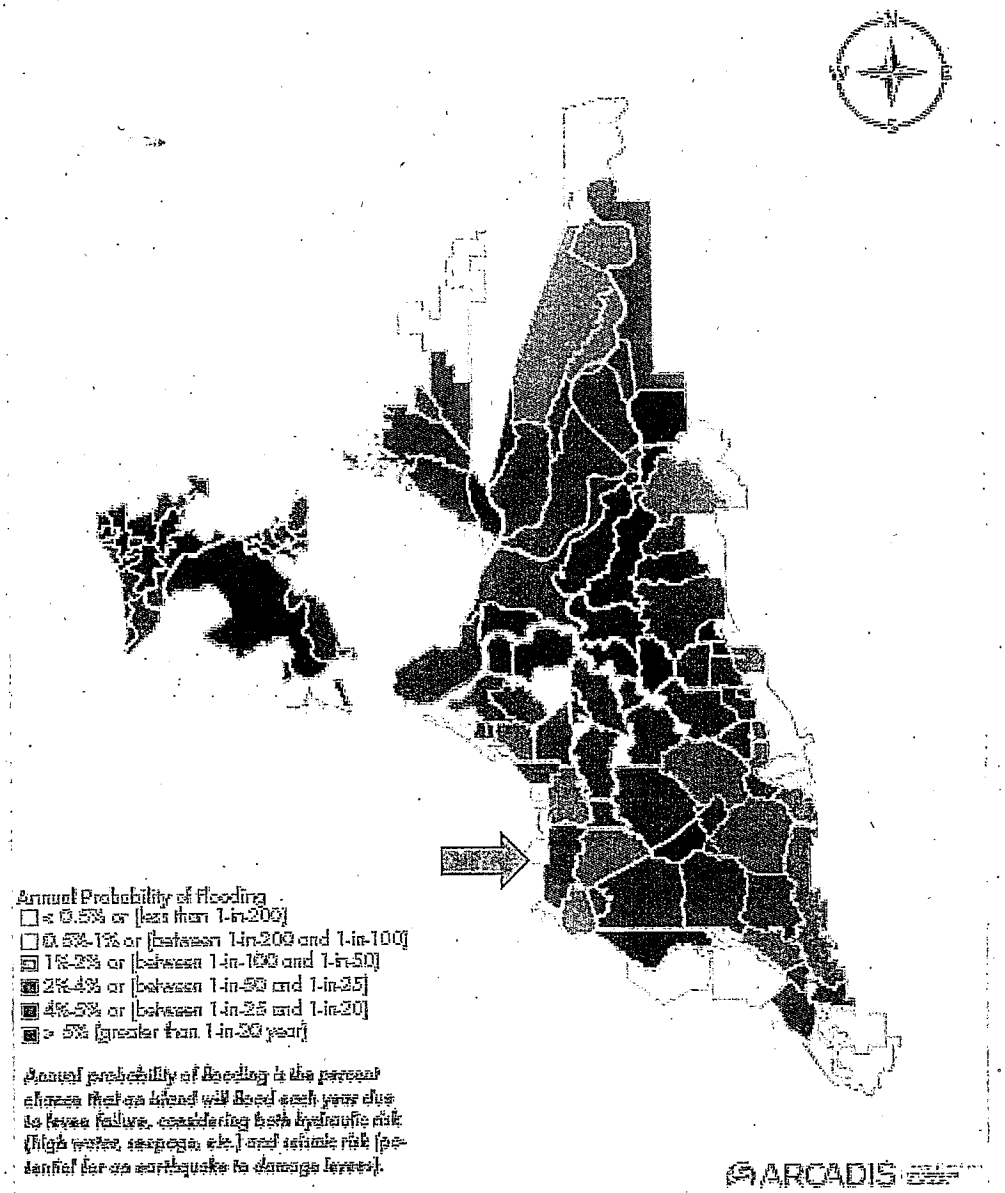
Attachment to Contra Costa Water District Comments on the Delta Levee Investment Strategy
June 21, 2016
Delta Levee Investment Strategy Planning Tool Inputs

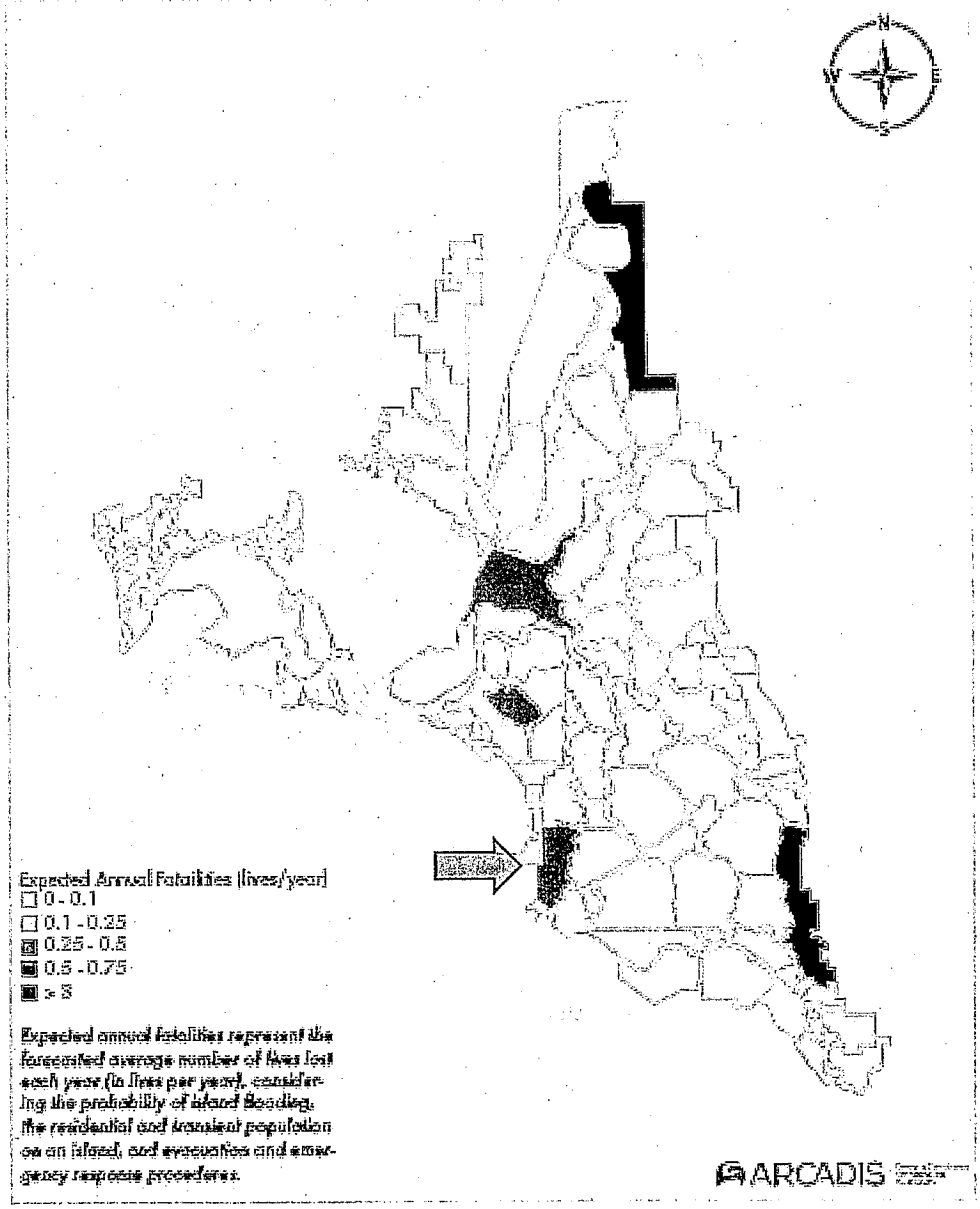
The results of the Planning Tool are heavily dependent on the selection of the parameter values; without reasonable input parameters Planning Tool results cannot be relied upon. However, several parameters rely upon questionable assumptions, are not informed by the necessary hydrodynamic and mixing modeling results, or do not match actual conditions in the Delta.

An example of problematic assumptions for parameter use is the treatment of sea level rise. The Planning Tool does not account for potential flooding of low lying areas under the sea level rise scenarios. Effectively "sea walls" have been assumed when forecasting changes in water levels in the Delta associated with sea level rise. Thus the tool cannot be used to evaluate the need for future levee investments because it assumes the levee investment has already been made. An evaluation of the potential effects of sea level rise should include the potential for areas at elevations below the Mean High High Water level to flood.

Results from a well-calibrated hydrodynamic and mixing model are crucial for properly characterizing the effects of flooding and salt intrusion and necessary to evaluate Delta levee investments. Inundating new areas, either through levee failure or habitat restoration projects, changes Delta hydrodynamics, Delta water quality, aquatic and terrestrial habitats, and the potential for water supply disruption. A valid hydrodynamic model is needed to properly evaluate the benefits and risks posed by levees. Without the incorporation of hydrodynamics into the Planning Tool, the results from the Planning Tool will fail to provide realistic risk assessments and outcomes of levee investments.

An example of using parameters that skew results because they do not reflect actual Delta conditions is the evaluation of Byron Tract. The Planning Tool shows that Byron Tract has an annual flooding risk of 2-4% (1/25 – 1/50 year flood), with some of the highest expected annual damages and annual fatalities (See Figures below from the presentation to the Council at the May 26, 2016 meeting). Accordingly, the Planning Tool ranks Byron Tract as having the fourth highest composite risk score, and presumably would rank it as a priority for investment.


Annual Probability of Flooding
≤ 0.5% or (less than 1-in-200)
0.5%-1% or (between 1-in-200 and 1-in-100)
1%-2% or (between 1-in-100 and 1-in-50)
2%-4% or (between 1-in-50 and 1-in-25)
4%-5% or (between 1-in-25 and 1-in-20)
> 5% (greater than 1-in-20 year)
Annual probability of flooding is the percent chance that an island will flood each year due to levee failure, considering both hydraulic risk (high water, seepage, etc.) and seismic risk (potential for an earthquake to damage levees).
ARCADIS

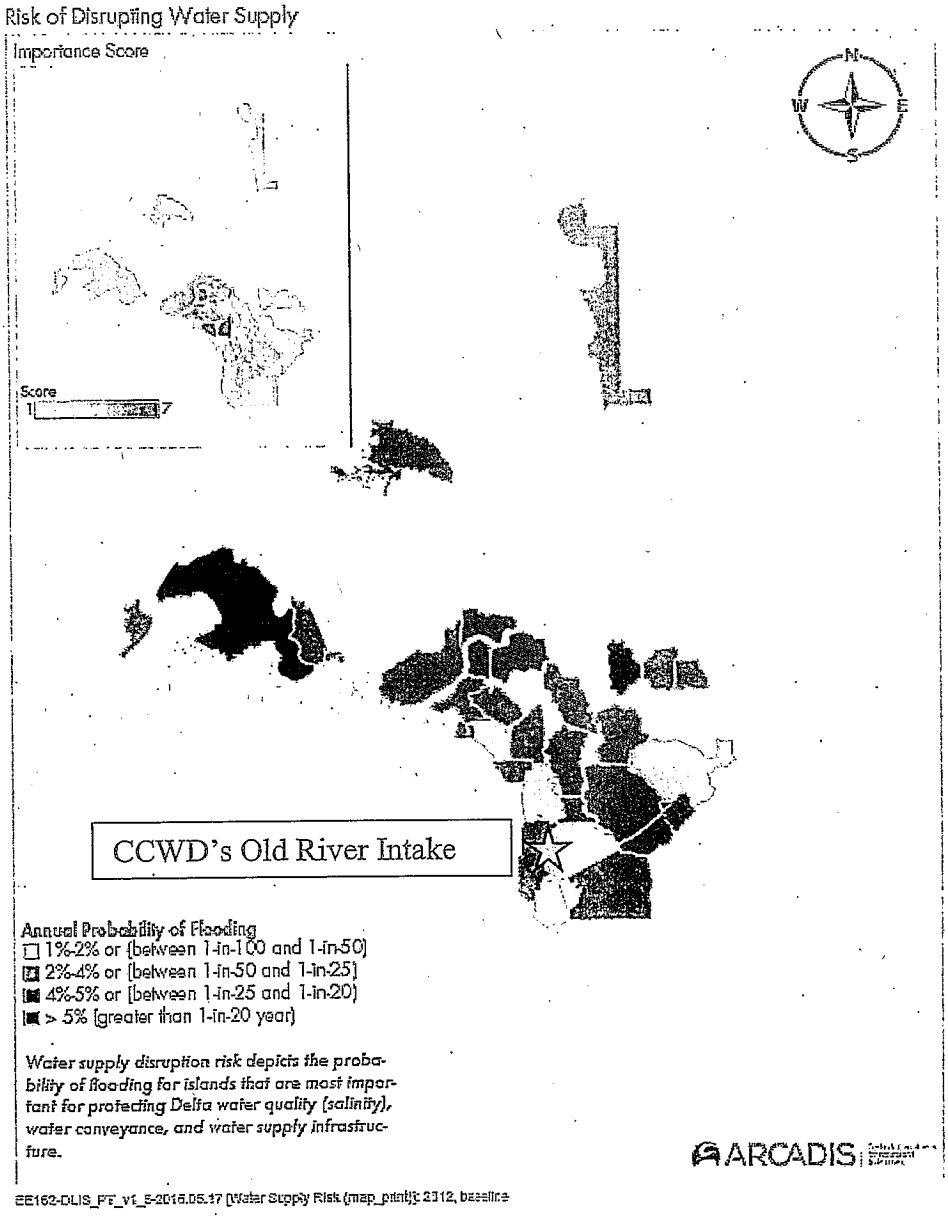


However, it is unclear how the level of flood protection for the community of Discovery Bay, located within Byron Tract, was handled in the Planning Tool. Discovery Bay is a community with approximately 14,000 residents. According to information provided by Reclamation District 800[1], the levees surrounding the community of Discovery Bay meet the federal requirement for 100-year flood protection, and should have an annual flood risk of 1%. As noted above, the Planning Tool indicates that the annual flood risk of Byron Tract is significantly greater than 1%.

[1] http://rd800.org/improvements.html

It is unclear if Discovery Bay's levee system on the interior of the Tract were considered in the overall flood risk assessment, expected annual damage, or annual fatality calculations.

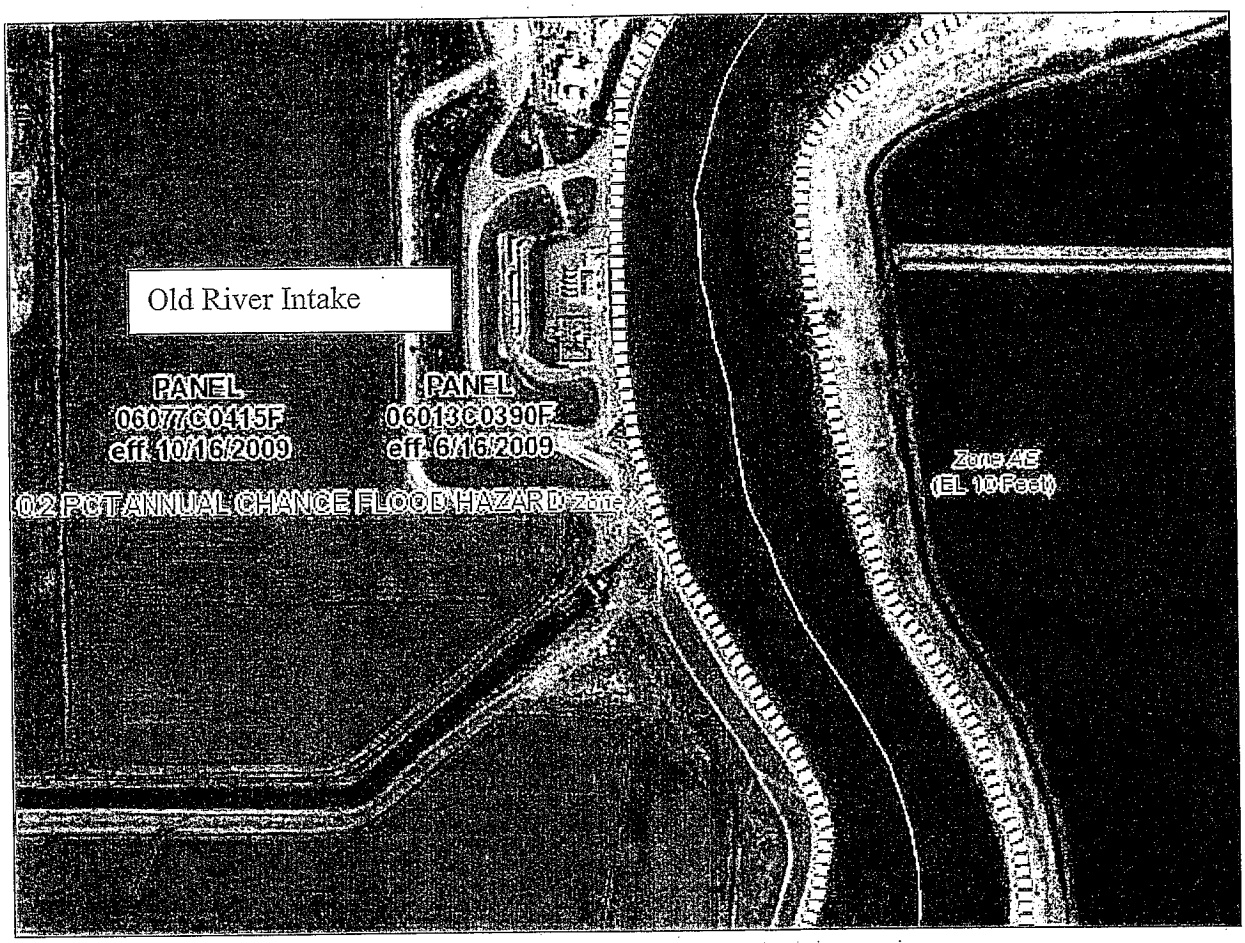
Similarly, Byron Tract was also show to have a relatively high water supply disruption risk, but the real-world conditions indicate a relatively low risk of water supply disruption. The District owns and operates the Old River intake approximately where the star is located on the Figure below.



The Planning Tool indicates that the annual probability of flooding and water supply disruption on Byron Tract is 2-4%. However, according to official flood risk maps from FEMA, the area surrounding the Old River Intake has an annual probability of flooding 0.2% (Figure below).

FEMA's National Flood Hazard Layer (Official)

Data from Flood Insurance Rate Maps (FIRMs) where available digitally. New NFHL FIRMette Print app available: http://tinyurl.com/j4xwp5e



National Geospatial-Intelligence Agency (NGA); Delta State University; Esri | scott.mcafee@fema.dhs.gov

Ring levees were built around the Old River intake to minimize flooding risk to adjacent landowners in the event of a catastrophic failure of the pump station and are at a significantly higher elevation than the perimeter levees on Old River. Water from the Old River intake is conveyed through an underground pipeline across Byron Tract and connects with the rest of the District's facilities to the west of Byron Tract. The flood risk assessment from FEMA, the ring levees surrounding the intake, and the buried pipeline should lead to the conclusion that there is a very low risk of water supply disruption on Byron Tract; yet, the Planning Tool does not reach that conclusion. Discrepancies such as these need to be addressed and the assumptions used in the Planning Tool should be made visible on the same screen as the results.