

## **Melissa Stone**

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**From:** Melissa Stone  
**Sent:** Thursday, May 03, 2018 4:16 PM  
**To:** Board of Directors  
**Subject:** Opposition to the Delta Tunnels

Phone message on 5/3/18 at 4:15 p.m.

I oppose the Delta Tunnels in any number - whether that be one or two tunnels. I oppose it for environmental reasons and because it's not good for the people of California. Taking water from Northern California to supply Southern California does not make sense.

Rhea Pretum  
Los Gatos, CA  
Member of NAIL

## Melissa Stone

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**From:** Becky Donnelly <beckydonnelly@gmail.com>  
**Sent:** Thursday, May 03, 2018 3:42 PM  
**To:** Board of Directors  
**Subject:** Delay twin tunnel vote

Can you not understand how frustrated voters are with these back room deals? Even if this isn't money for a dam, for a vote, for twin tunnels, IT SURE LOOKS BAD.

You say you want the public to get involved but do you really?

We go to a meeting and a compromise of 1 tunnel is reached. That's a good deal. It's something the majority of us could live with.

Next thing we hear, meeting to vote on TWIN TUNNELS after a vote on funding dam.

We are out of town. HOW FAIR IS IT that WE COULD NOT attend meeting. HOW FAIR IS IT THAT WE COULD NOT INFORM OUR NEIGHBORS?

You could wait until July to vote. We trusted you with our vote and our money.

I know it is hard work but no one forced you to run for the board.

YOU OWE US THE TAXPAYER TO DELAY THE VOTE AND GET A HANDLE ON THE TRUE FINANCIAL COSTS.

Sincerely  
Becky Donnelly

Sent from my iPhone

**Melissa Stone**

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**From:** James Fritz <jfritz10@gmail.com>  
**Sent:** Thursday, May 03, 2018 3:36 PM  
**To:** Board of Directors  
**Subject:** Note to Gary Kremen

James Fritz  
14920 Quito Road  
Los Gatos, California 95032

Dear Mr. Kremen,

As a resident of Los Gatos, I wish to voice my opinion on the Delta Tunnel Project. The project has all the attributes of a boondoggle. Governor Brown has pushed two projects, the Train and the tunnels. The cost overruns on the Train have started to show up, and the estimates for the tunnels are grossly understated.

I will be very disappointed in your judgement if you support the tunnel plan.

Thank You,

James Fritz

**Melissa Stone**

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**From:** ML Stefan <mlstefan2013@gmail.com>  
**Sent:** Thursday, May 03, 2018 3:09 PM  
**To:** Board of Directors  
**Cc:** ML Stefan  
**Subject:** Twin tunnels: wish for chance to vote

Honorable Board of the Santa Clara Valley Water District:

I am writing to urge you to have faith in the collective wisdom of voters and give us a chance to vote on the Twin Tunnels.

Many members of the public have already raised concerns about the risks (financial, liabilities, ecological, and operational), unanswered questions, and Staff recommendations which are all too well-aligned with the interests of the Department of Water Resources. As far as I see, the members of public have diverse occupations and experiences. Still, you may wonder, are we just a hot-headed bunch?

A ballot measure will clearly explain things to voters, and engage the vast majority who do not know about the Twin Tunnels. Some Board Members may not have heard from their districts, simply because their constituents do not know. How can elected officials be sure that their constituents are represented in a major decision like the Twin Tunnels, when feedback is not invited?

Thank you for all your hard work.

Sincerely,

Mei-Ling Stefan

Sunnyvale resident

## Melissa Stone

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**From:** Hayden Hamilton <hhamilton@rainbowmwd.com>  
**Sent:** Thursday, May 03, 2018 12:46 PM  
**To:** Board of Directors  
**Cc:** Tom Kennedy  
**Subject:** California WaterFix Support  
**Attachments:** Agenda for RMWD's May 3, 2018 Communications Committee Meeting

An open letter to the Santa Clara Valley Water District Board of Directors

I just read the news that you decided to delay your decision relative to support of the California WaterFix Project until next week.

As cited in this news report was the Board's concern about changing your vote in favor of this project in light of MWD's recent commitment of \$11B for funding both tunnels instead of just one. Please be advised that this decision was strongly opposed by both the San Diego County Water Authority and Los Angeles Department of Water and Power, two of the largest consumers of MWD water.

A number of reasons were cited for this opposition including that MWD's own figures indicate there is no incremental benefit in water supply in building the second tunnel and concern that the projected impact on ratepayers currently range from \$15/month to as high as approximately \$25. And, glossed over in their analysis is that there is NO guarantee of any water at all from this project.

The cost analyses are based on current estimated costs that have no foundation in reality. In fact, we have seen the costs estimates escalate by almost 100 percent from the original estimate and the project is still in early planning stages. There are bound to be technical problems encountered in the execution of this project - no one has ever dug a 40 ft diameter tunnel of any significant length and the only one that comes close is the Boston "Big Dig" transport tunnels (less than 5 miles) that cost taxpayers more 10 times the original estimates and there are ongoing problems with this project.

Californians (both north and south) would be better off putting the funds associated with the WaterFix project into expanding and building water reservoirs, enhanced recycling, and desalination. Particularly when considering that DWR is forecasting reduced snow packs over the next 50 years due to climate change. The indications are that with warmer climate most of our water resources will come in the form of rain (not snow) necessitating capture, as we will not have snow packs as a storage source.

Ignoring the political pressures that I'm sure you are experiencing to force you to vote in favor of supporting WaterFix, I sincerely hope that you'll do what is best in the long term for your ratepayers. Your vote of NO on WaterFix will provide an opportunity force MWD to re-evaluate their support of this project.

**Hayden Hamilton**  
Director, Division 2  
Rainbow MWD

*"NOTICE: All e-mails to and from the Rainbow Municipal Water District may be considered public records and are subject to public disclosure pursuant to the California Public Records Act."*

**Melissa Stone**

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**From:** Paul George <snowcrash98@gmail.com>  
**Sent:** Thursday, May 03, 2018 9:44 AM  
**To:** Board of Directors  
**Subject:** Vote NO on twin tunnels

Dear Water District Board Members -

How you vote today will determine how I vote in November (District 7). Vote no on the tunnels project.

<https://www.mercurynews.com/2018/05/01/editorial-dont-reverse-course-on-delta-twin-tunnels-project/>

Paul George  
501 San Luis Ave  
Los Altos 94024

## Melissa Stone

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**From:** Josephine Robinson <jozrobinson@gmail.com>  
**Sent:** Wednesday, May 02, 2018 5:31 PM  
**To:** Board of Directors  
**Subject:** Waterfix vote

I am a resident of Courtland. I live two blocks away from the delta river, and only several miles from the planned tunnels.

I am incredibly concerned on the impact it will have on the Delta. I fear wildlife will suffer. I am concerned about the possibility of salt water reaching the delta after so much river water is sent down the tunnels to Southern California.

I am totally unclear on why Southern California doesn't invest in a desalinization system, instead of buying (?) water from the Delta.

Josephine Robinson

**Melissa Stone**

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**From:** Andrea Teague <andreateague@teaguecustommarine.com>  
**Sent:** Wednesday, May 02, 2018 5:24 PM  
**To:** Board of Directors  
**Subject:** 05/02/18 Board Meeting Vote

Dear Sirs,

I oppose the twin tunnel Delta water proposal and would like you to vote "no" on this. It is a bad idea to partner with Metropolitan on this project. The ecosystem of the Delta would be ruined if this project goes forward. I would like my comment entered into the record.

Thank you,  
Andrea Teague  
5727 Starfish Court  
Discovery Bay, Ca.  
94505

AndreaTeague@teaguecustommarine.com



## Melissa Stone

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**From:** John Novogradac <thenovogroup@sbcglobal.net>  
**Sent:** Wednesday, May 02, 2018 3:57 PM  
**To:** Board of Directors  
**Subject:** Delta Tunnels for a Brown Legacy

I am counting on you NOT to support Jerry Browns Southern California water fix to drain the Delta quicker and reduce water flow to the lower areas and communities within the Delta. I am a Santa Clara voter and am watching who supports this environmental travesty that will be more costly to the State than other options that are being refuted by the Brown administration so they can further Jerry's Legacy as the Aqueducts did his fathers. Should these tunnels go through there is no real proof other than time that the tunnels will not negatively effect the delta and there are already studies and Civil Engineers that say the tunnels will at a minimum reduce the clarity of the water in outer areas of the delta and claiming to reduce the water flow so it does not sounds good on TV but you all know that the when completed the state will take as much water as they need for whichever community is most political. Nothing is forever except the damage our needs and politics have done to this planet and although Santa Clara may have a deal with the state water board now you cannot guarantee it will last as long as the tunnels your millions will created for the Brown Legacy.

Thank you and enjoy tonight's meeting

John Novo

# LAW OFFICE OF ROGER B. MOORE

LAND, WATER AND ENVIRONMENTAL LAW

337 17TH STREET, SUITE 211  
OAKLAND, CALIFORNIA, 94612  
LANDWATER.COM, RBM@LANDWATER.COM, 510-548-1401  
ADMITTED IN CALIFORNIA

May 2, 2018

May 2, 2018

SENT VIA EMAIL (board@valleywater.org; clerkoftheboard@valleywater.org)

Santa Clara Valley Water District Board of Directors  
5700 Almaden Expressway  
San Jose, CA 95118

Re: Comments for May 2, 2018 Special Board Meeting Urging Rejection of the District's Support, Participation and Financing of the Delta Tunnels Project (California WaterFix)

This letter strongly urges rejection of the District's support, participation and financing of the Delta Tunnels project currently known as California WaterFix. It concurs in and briefly supplements the more detailed comment letter separately submitted today on behalf of Local Agencies of the North Delta, San Joaquin County, Central Delta Water Agency and South Delta Water Agency (LAND letter).

My letter is submitted to briefly underscore the extreme and interrelated financial, legal and environmental risks the District would face if it supports rather than rejects participation. Doing so would undermine the District's adherence to the "guiding principles" the District announced in Resolution No. 17-68 last October, which advocated for flexibility, equity, preparedness, and affordability, as well as protection of the values, priorities and needs as the district's constituents. Furthermore, far from constituting a far-sighted investment in the valley's and California's future, committing vast resources to a foundering and financially troubled project rooted in outmoded 20<sup>th</sup>-century approaches to water infrastructure is far more likely to entrench the District in unforeseen and unwanted debt, limiting opportunities to make more prudent investments in the future.

The Delta tunnels project proposes construction of one of the most costly and risky water infrastructure projects in California's history, and in the history of the State Water Project. Despite monumental cost and complexity, the Delta tunnels project creates no new water supply. The project would entrench and likely compound reliance on unsustainable water exports, to the detriment of communities and water users within and

upstream of the Delta. The project would divert resources needed for investments in long-term water reliability, water quality, reuse, storage, drought and flood protection, and ecosystem improvements. In certifying the FEIR and approving the project, the Department of Water Resources failed to heed torrents of criticism from counties, communities, public agencies and expert reviewers discrediting the project's environmental, economic and legal foundations.

Finessing the glaring absence of federal approval and commitments from Central Valley Project (CVP) contractors, DWR and the Metropolitan Water District of Southern California (MWD) have persisted in placing a disingenuous conservation gloss around a tunnel construction project principally directed at facilitating exports to southern California at the District's potential expense—and at the expense of taxpayers, ratepayers and members of the public. Extensive documentation in Delta tunnels project would damage agriculture, fisheries and protected species, damage urban and rural water quality, compound salinity problems, add to conflicts over water supply, and increase dangers from human exposure to harmful algal blooms. DWR's EIR also contains critical and prejudicial exclusions from its assessment of cumulative impacts, including detailed and updated integration of the hydrologic consequences of climate change.

For several reasons, costs and risks of the project are likely to be far higher than DWR and MWD acknowledge. First, as the LAND letter captures in comprehensive detail, dramatic shifts in project definition and operation have already occurred and are still unfolding. An "avalanche" of litigation and unfinished administrative proceedings threaten to undermine the future ability to proceed with the Delta tunnels, and may render them a stranded asset unable to be lawfully used. Second, as detailed in the letter submitted today by Friends of the River, *et. al*, the financial costs of the project are likely to be far higher than DWR and MWD have disclosed.

Finally, both agencies have failed to clearly disclose the extreme risks that may be faced by participating SWP contractors and constituents. For example, the disputed revenue bond validation presently sought by DWR would operate in an exceptionally broad manner over the long maximum period sought by DWR (70 years after commencement of the Delta tunnels' construction). Section 207 of DWR's general bond resolution for California WaterFix asserts that the bonds shall be "incontestable" from and after the time of payment of the purchase price, and shall not be dependent on or affected in any way" by (a) DWR's future proceedings on acquisition, construction, or completion, (b) any connected contracts made by DWR, (c) DWR's failure to "complete" or "maintain" California WaterFix, or make necessary improvements or replacements, and (d) DWR's acquisition of all "rights, licenses or permits necessary" for California WaterFix's operation. (*Id.* at 14.) Under section 805 of the general bond resolution, DWR "shall charge and collect" amounts for construction or acquisition "*without regard to whether or not the Department is able to construct, acquire, or operate California Water Fix.*" (*Id.* at 25.)

Last year's Oroville Dam crisis provided another sobering reminder of the significant costs and risks the SWP will face in the years ahead, as well as the importance of listening to independent voices willing to ask difficult questions of DWR and other

state water contractors needed to improve economic and environmental sustainability. (See, e.g., Independent Forensic Team report, *Oroville Dam Spillway Incident* (2018), [https://drive.google.com/file/d/15fmj836-EnyYgPg7\\_a\\_JIoK0N8J-mZE/view](https://drive.google.com/file/d/15fmj836-EnyYgPg7_a_JIoK0N8J-mZE/view); R. Stork, et al., *The Oroville Dam 2017 Spillway Incident* (2017), [https://drive.google.com/file/d/15fmj836-EnyYgPg7\\_a\\_JIoK0N8J-mZE/view](https://drive.google.com/file/d/15fmj836-EnyYgPg7_a_JIoK0N8J-mZE/view).) More recently, the foundering but still-pursued Delta tunnels project has prompted major criticisms and rethinking of “water reliability” paradigms from unexpected sources. In a recent op-ed piece, the mayor of Los Angeles warned that “we cannot rely solely on 20<sup>th</sup> century engineering for our 21<sup>st</sup> century water needs.” Mayor Garcetti called for a new “Mulholland moment” focused upon local supplies and sustainability. <https://www.dailynews.com/2018/03/03/los-angeles-new-mulholland-moment-for-safe-and-adequate-water-eric-garcetti/>. At this crucial moment for local and statewide water future, the District should likewise reject the Delta tunnels and support more prudent and far-sighted resource investments.

Respectfully,

/s/

Roger B. Moore



California  
Water  
Research

Deirdre Des Jardins  
145 Beel Dr  
Santa Cruz, CA 95060  
(831) 423-6857  
[ddj@cah2oresearch.com](mailto:ddj@cah2oresearch.com)

May 2, 2018

VIA electronic mail

Board of Directors  
Santa Clara Valley Water District  
5700 Almaden Expressway  
San Jose, CA 95118

**Re: Duty of care in WaterFix project design and construction**

Dear Directors,

This letter is with respect to the actions proposed to be taken by the Board at the May 2, 2018 special meeting. I request that this letter be put in the Board's WaterFix Responsible Agency CEQA administrative record, and the footnoted documents be incorporated by reference.

By the attached letter dated April 18, 2018, the Chief Executive Officers and Board of Directors for Santa Clara Valley Water District and Metropolitan Water District were put on notice of the seismic deficiencies of the WaterFix tunnel design. The Director for Kern County Water Agency was also put on notice. I request that this letter be put in the Board's WaterFix Responsible Agency CEQA administrative record, and the footnoted documents be incorporated by reference.

The attached copy of California Water Research's blog post, WaterFix Tunnel Construction: Gas Wells also describes safety risks from Metropolitan Water District's failure to follow recommendations of the independent review committee on locating abandoned gas wells in the tunnel alignment. I request that this letter be put in the Board's WaterFix Responsible Agency CEQA administrative record, and the linked documents be incorporated by reference.

The standard of care for construction of underground tunnels is defined in the International Tunnelling Association's "Code of Practice for Risk Management of Tunnel Works" and the

Re: Duty of care in WaterFix project design and construction

Page 1 of 3

Underground Construction Association's *Guidelines for Improved Risk Management on Tunnel and Underground Construction Projects in the United States of America*<sup>1</sup>.

The Guidelines state in part:

The process of risk management—including risk assessment, characterization, and response, as well as elimination, mitigation, avoidance, transference, or acceptance—is required to identify and clarify ownership of risks and should detail clearly and concisely how the risks are to be allocated, controlled, mitigated, and managed.

The Delta Conveyance Design and Construction Joint Powers Agreement (“Joint Powers Agreement”) fails this basic standard of care, in that it does not identify how the risks of tunnel construction are to be allocated, controlled, mitigated, or managed. Instead, it simply states that Santa Clara Valley Water District is not liable for the activities of the Joint Powers Agency. It also fails to require the Joint Powers Agency to buy insurance for the tunnel construction.

The Joint Powers Agreement’s attempt to indemnify the member agencies from liability for any claims arising from the WaterFix tunnel design and construction may not stand up to judicial review. In *Tucker Land Co. v. State of California* (2001) 114 Cal. App. 4th 1191, the 2nd District appellate court reviewed Chapter 21 of the Government Code, *Tort Liability Under Agreements Between Public Entities*, and associated Law Revision Commission opinions. The court concluded “these sections make clear that the Legislature intended that member entities of a JPA be liable for the torts of the JPA.”

To address the responsibilities of the member agencies in designing and constructing the WaterFix tunnels, the Joint Powers Agreement should be revised to require compliance with the UCA Guidelines for Improved Risk Management on Tunnel and Underground Construction Projects in the United States of America.

The Joint Powers Agreement should be revised to require the JPA to buy insurance for the tunnel construction.

The Department of Water Resources’ CEQA mitigations for the Delta tunnels construction are inadequate and create a risk to public health and safety, and are being challenged in court. The implementation of the CEQA mitigations is also in question if the Department of Water Resources is not constructing the tunnels.

Since the Director appointed by Santa Clara Valley Water District (“SCVWD”) to the Delta Conveyance Design and Construction Joint Powers Authority will be president of the Construction JPA, SCVWD can and should delay SCVWD’s CEQA findings of fact and adoption of mitigation measures to do further design and adopt the needed CEQA mitigations to protect public health and safety.

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<sup>1</sup> Available at <http://www.smenet.org/SME/media/UCA/Resources/SME3409-GIRM-Report-Booklet-WEB.pdf>. Incorporated by reference.

Doing otherwise fails in the Board's duty of care as a public agency overseeing the design and construction of the WaterFix tunnels, and as a CEQA responsible agency.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. Des Jardins', with a stylized flourish at the end.

Deirdre Des Jardins  
Principal, California Water Research

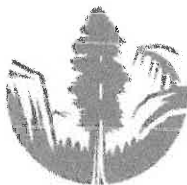
Cc: Norma Carmacho, Chief Executive Officer



California  
Water  
Research



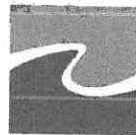
**EXERGU**  
Energy Systems, Inc.



**SIERRA  
CLUB**



Social Eco Education



**LOS ANGELES  
WATERKEEPER®**

April 8, 2018

Via email

Thomas Gibson, Undersecretary  
California Natural Resources Agency  
1416 Ninth Street, Suite 1311  
Sacramento, CA 95814  
[Thomas.gibson@resources.ca.gov](mailto:Thomas.gibson@resources.ca.gov)

Karla Nemeth, Director  
Department of Water Resources  
1416 9th Street, Room 1115-1  
Sacramento, CA 95814  
[Karla.nemeth@water.ca.gov](mailto:Karla.nemeth@water.ca.gov)

Jeff Kightlinger, General Manager  
Office of the General Manager  
Metropolitan Water District  
[OfficeoftheGeneralManager@mwdh2o.com](mailto:OfficeoftheGeneralManager@mwdh2o.com)

Dr. David Sunding  
The Brattle Group  
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San Francisco, CA 94105  
[David.Sunding@brattle.com](mailto:David.Sunding@brattle.com)

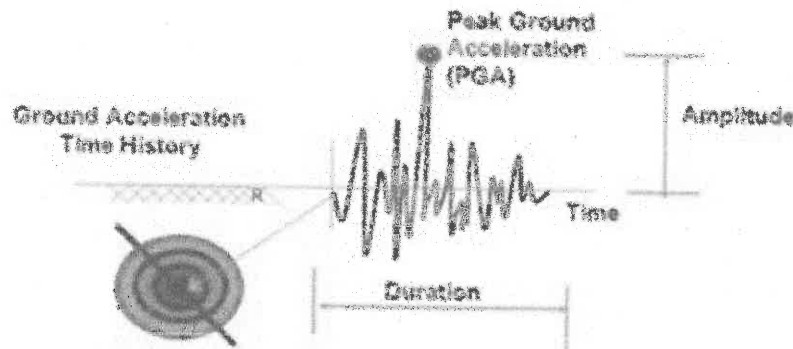


Dear Mr. Gibson, Ms. Nemeth, Mr. Kightlinger, and Dr. Sunding:

We are writing to you about the Department of Water Resources' cost-benefit analysis for the WaterFix project. The February 2018 WaterFix cost-benefit analysis by David Sunding discusses the risks and potential economic costs of export curtailment due to multiple levee failures from a Maximum Considered Earthquake (MCE) on the Hayward-Rogers Creek fault.<sup>1</sup> Sunding's cost-benefit analysis implies that construction of the Waterfix tunnels would result in no reduction in State Water Project and Central Valley Project exports in the event of such an earthquake. This is severely misleading and inaccurate.

The simple fact is that the WaterFix tunnels are *not* currently being designed to withstand a Maximum Considered Earthquake on nearby faults, as defined by the American Society of Civil Engineers' ASCE-7 standard. This is explained in further detail below. The Department of Water Resources and Metropolitan Water District *must* analyze the performance of the Delta tunnels for all seismic hazards in the Delta, including the ASCE-7 Maximum Considered Earthquake. DWR and MWD must also disclose the potential seismic performance of the Delta tunnels to the retail water agencies for the complete range of seismic hazards in the Delta.

The American Society of Civil Engineers ASCE-7 standards define a Maximum Considered Earthquake (MCE) as a 2% in 50 year event (1 in 2,475 years.) Critical structures are required to be designed to withstand ground motions in the Maximum Considered Earthquake.<sup>2</sup> The ASCE-7 standards have been adopted in the California Building Code, and apply to buildings and other above ground structures.



<sup>1</sup> Peak ground acceleration – one measure of maximum ground motion

<sup>1</sup> Dr. David Sunding, Economic Analysis of Stage I of the California WaterFix: Costs and Benefits to Urban and Agricultural Participants, February 12, 2018. Available at [https://www.californiawaterfix.com/wp-content/uploads/2018/02/WaterFixEconomicAnalysis\\_Final.pdf](https://www.californiawaterfix.com/wp-content/uploads/2018/02/WaterFixEconomicAnalysis_Final.pdf)

<sup>2</sup> American Society of Civil Engineers, *ASCE Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, 2016. Available at <https://www.asce.org/structural-engineering/asce-7-and-sei-standards/>.

Although the Department of Water Resources has indicated that the Delta tunnels will be designated critical structures, the WaterFix Final Conceptual Engineering Report only includes probabilistic seismic ground motions for a 5% in 50 year event (1 in 1,000 years), and a 10% in 50 year event (1 in 500 years) (p. 46, Table 3-1.) These are significantly weaker ground motions than a 2% in 50 year event (1 in 2,475 years.)<sup>3</sup> The Conceptual Engineering Report further weakens the ground motions by assuming 50% attenuation at the depth of the tunnels (p. 46.)

DWR's 2010 internal, unpublished seismic analysis of the tunnel lining also showed that the tunnel lining joints could leak in a 5% in 50 year event (1 in 1,000 years.)<sup>4</sup> DWR and MWD engineers then began assuming that peak ground acceleration (a measure of maximum ground motion) would attenuate by 50% at the proposed tunnel depth. This is documented in the published Conceptual Engineering Report (p. 49.)<sup>5</sup> The assumption of 50% attenuation was not based on any seismic data, and is contradicted by an analysis in a peer-reviewed journal article, which found that, for earthquakes above magnitude 6.0, peak ground acceleration fell off by about 30% at 120-160 foot depth.<sup>6</sup> The analysis was based in part on downhole data from the La Cienega site in Southern California, which has soft ground conditions similar to the Delta.

DWR's 2010 internal, unpublished seismic analysis of the tunnel lining also showed that that there could be substantial, continuous liquefaction down to 100 feet.<sup>7</sup> This is an issue for the tunnel shafts, and for the North Delta tunnels. DWR and MWD engineers have weakened the seismic source assumptions for the liquefaction analysis in the conceptual design to a 10% in 50 year event, as documented in the published Conceptual Engineering Report (p. 49.) The Conceptual Engineering Report states that

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<sup>3</sup> The longer the return period, the larger the earthquakes that are likely to occur. The probabilistic hazard curve for Clifton Court Forebay from the Delta Risk Management Strategy is shown at the end of this letter.

<sup>4</sup> California Department of Water Resources, 2010 *Draft Report of the Initial Analysis & Optimization of the Pipeline/Tunnel Option*. Available at [http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/california\\_waterfix/exhibits/docs/dd\\_jardins/DDJ-141%20Initial.pdf](http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/dd_jardins/DDJ-141%20Initial.pdf)

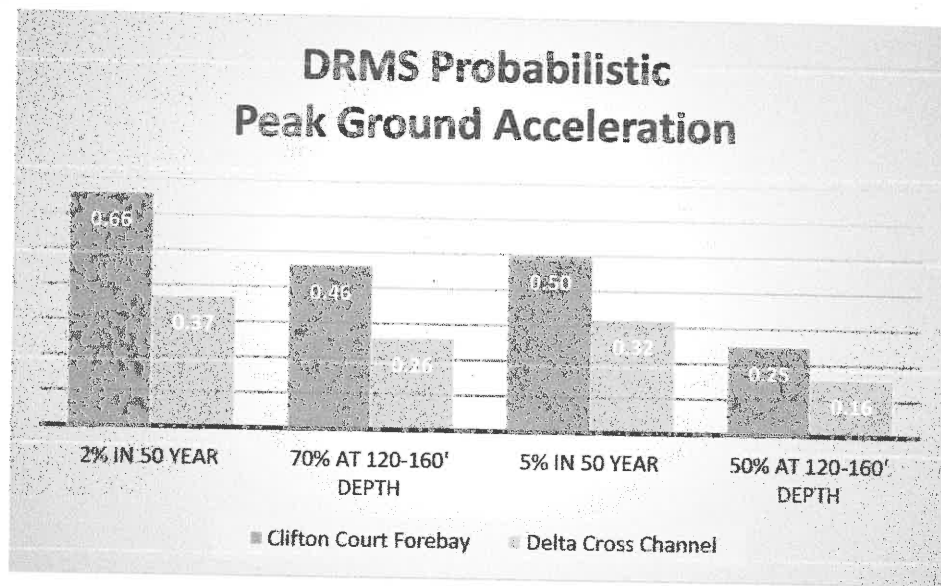
<sup>5</sup> California Department of Water Resources, 2015, *Final Draft Agreement Regarding Construction of Conveyance Project between the Department of Water Resources and the Conveyance Project Coordination Agency*, Available at [http://cms.capitoltechsolutions.com/ClientData/CaliforniaWaterFix/uploads/Draft\\_Final\\_DCE\\_Agreement\\_Combined.pdf](http://cms.capitoltechsolutions.com/ClientData/CaliforniaWaterFix/uploads/Draft_Final_DCE_Agreement_Combined.pdf)

<sup>6</sup> Hu Jin-jun & Xie Li-li, *Variation of earthquake ground motion with depth*, 2005, Section 3.1.2, Soil site, p. 77. *Acta Seimol. Sin.* (2005) 18: 72. doi:10.1007/s11589-005-0008-x. Available at <http://link.springer.com/article/10.1007/s11589-005-0008-x>

<sup>7</sup> California Department of Water Resources, 2010 *Draft Report of the Initial Analysis & Optimization of the Pipeline/Tunnel Option*, p. 38.

liquefaction is only expected to go down to 40-60 feet and is not expected to be an issue for the main tunnels (p. 49.)

California Water Research estimated the following probabilistic Peak Ground Accelerations for 2% based on the seismic hazard assessment in the Delta Risk Management Strategy report,<sup>8</sup> and assumed depth of 120-160 feet below ground, and compared the estimates with the probabilistic 5% in 50 years pga in Table 3-1 of the WaterFix Final Conceptual Engineering Report, and the CER assumed attenuation of 50% at a depth of 120-160' below ground. The 10% in 50 years pga used for the liquefaction analysis is also included. The estimates show that the WaterFix conceptual tunnel lining design used substantially weaker ground motions than would be generated by an ASCE-7 Maximum Considered Earthquake, a 2% in 50 year event.

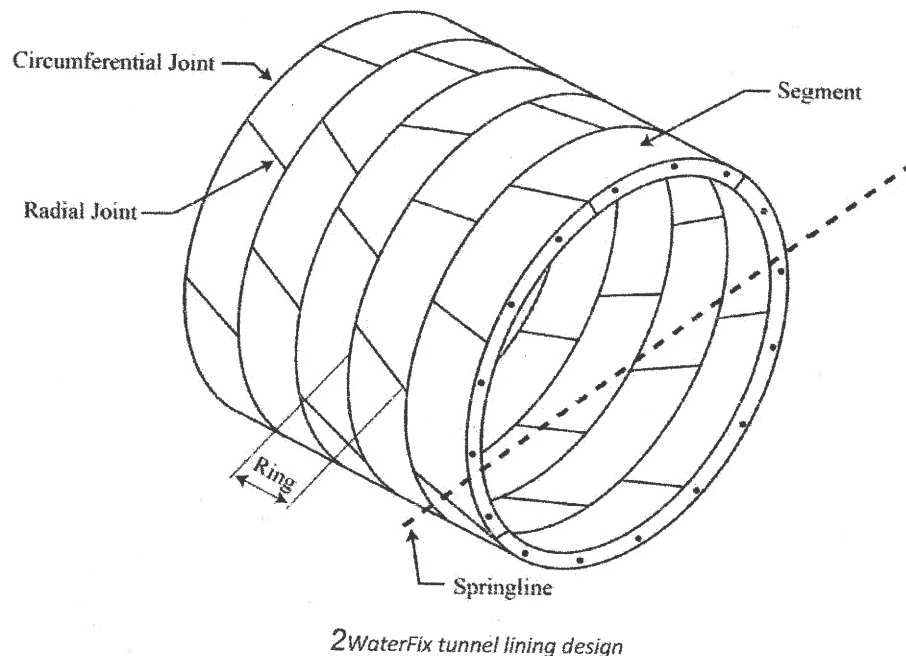


The main considerations cited in the 2015 Draft Design and Construction Enterprise (DCE) Agreement for the choice of tunnel lining were cost and time to construct (p. 9.)<sup>9</sup>

<sup>8</sup> URS, *Delta Risk Management Strategy Final Report, Section 6, Seismic Risk Analysis*, 2009. Available at [http://www.water.ca.gov/floodsafe/fessro/levees/drms/docs/Risk\\_Report\\_Section\\_6\\_Final.pdf](http://www.water.ca.gov/floodsafe/fessro/levees/drms/docs/Risk_Report_Section_6_Final.pdf)

<sup>9</sup> California Department of Water Resources, 2015, *Final Draft Agreement Regarding Construction of Conveyance Project between the Department Of Water Resources and the Conveyance Project Coordination Agency*, Available at [http://cms.capitoltechsolutions.com/ClientData/CaliforniaWaterFix/uploads/Draft\\_Final\\_DCE\\_Agreement\\_Combined.pdf](http://cms.capitoltechsolutions.com/ClientData/CaliforniaWaterFix/uploads/Draft_Final_DCE_Agreement_Combined.pdf)

It is clear that cost is driving the current tunnel lining design. The Department of Water Resources and Metropolitan Water District *must* fully analyze and disclose the tradeoffs between cost and strength of the tunnel lining design, including potential leakage in a 2% in 50 year earthquake on nearby faults.



The simple fact is that, as currently designed, the Delta tunnels may not be a complete "fix" for earthquake risk in the Delta. If the performance of the tunnel lining design is not analyzed for a Maximum Considered Earthquake, it must not be assumed that the tunnel lining would not be severely damaged in a Maximum Considered Earthquake. The risks of the Delta tunnels being damaged in an earthquake must be fully analyzed and disclosed in any cost-benefit analysis.

The Department of Water Resources' bond resolution for the WaterFix clearly recognizes the risks of the project. The bond resolution requires payment for the bonds issued for the project, even if the project is not completed or maintained in repair:

The validity of the authorization and issuance of any of the [California WaterFix Revenue] Bonds shall not be dependent upon or affected in any way by [...] (C) the failure on the part of the Department to complete the California Water Fix or to maintain the same or to make all necessary improvements to or replacements thereof or any part thereof.

There is thus a complete disconnect between DWR's WaterFix bond resolution and the WaterFix Phase I Cost-Benefit analysis.

The ASCE Technical Council on Lifeline Earthquake Engineering produced a reference book, *Guidelines for the Seismic Evaluation and Upgrade of Water Transmission Facilities*, by John Eidinger and Ernesto Avila.<sup>10</sup> The guidelines state the following.

Benefit-cost analysis of seismic upgrades may be considered in four steps:

1. **Seismic Hazard.** The seismic hazard must be specified for the full range of damaging earthquakes affecting the upgrade project site.
2. **Seismic Vulnerability Before Upgrade.** The seismic vulnerability of the water system facility or component must be estimated for the before upgrade as-is condition.
3. **Seismic Vulnerability After Upgrade.** The seismic vulnerability of the water system facility or component must be estimated for the after upgrade condition.
4. **Benefit-Cost Calculation.** Benefits (i.e., the net present value of avoided future damages and losses) are estimated from the above three sets of information, along with the seismic upgrade projects' useful life and the discount rate.

These guidelines clearly prescribe an “apples to apples” comparison, using the same seismic hazard values to assess both the seismic vulnerability before the upgrade, and after the upgrade. DWR’s engineers are not doing this. They are using the Delta Risk Management Strategy seismic hazard analysis to estimate the vulnerability of the Delta levees, but stating in the WaterFix procurement documents that the seismic hazard values for the Delta tunnel design still need to be determined.

If the Delta tunnels did start leak in an earthquake, it could have potentially catastrophic impacts on people and property in the Delta, if the leaks occurred under Delta levees. Two engineers with extensive experience in the Delta testified about potential risks of Delta tunnel leakage to Delta levees in the WaterFix Water Right Petition Hearing on March 14, 15, and 16, 2018.<sup>11,12,13</sup> Dr. Clyde Thomas Williams, a PhD Geologist with

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<sup>10</sup> Eidinger, J. and Avila, E., ASCE Technical Council on Lifeline Earthquake Engineering, *Guidelines for the Seismic Evaluation and Upgrade of Water Transmission Facilities*, 1999. Available at <http://home.earthlink.net/~eidinger/GuidelinesJ.pdf>

<sup>11</sup> California Water Research, blog post, March 30, 2018. *WaterFix Hearing: Tunnels not being designed to withstand maximum earthquake in the Delta*. Available at <http://cah2oresearch.com/2018/03/20/waterfix-hearing-tunnels-not-being-designed-to-withstand-maximum-earthquake-in-the-delta/>

<sup>12</sup> WaterFix Water Right Change Petition Hearing, *Testimony of Josef Tootle*, Principal Geotechnical Engineer at ENGEO Incorporated. Available at [https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/california\\_waterfix/exhibits/docs/COSJ et al/part2/SJC\\_285.pdf](https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/COSJ%20et%20al/part2/SJC_285.pdf)

<sup>13</sup> WaterFix Water Right Change Petition Hearing, *Testimony of Chris Neudeck*, District engineer for 26 of

extensive experience with geotechnical design of tunnel and pipeline projects all over the world, also testified on the risks of inadequate seismic and structural design in Part 1 of the WaterFix Hearing.<sup>14,15</sup>

California Water Research worked with Dr. Clyde Thomas Williams to submit CEQA comments that the Delta tunnels must be designated a critical structure, as defined by ASCE-7 standards, and the preliminary design must ensure that the tunnel lining will survive a Maximum Considered Earthquake without severe leakage from the tunnel lining joints.<sup>16</sup> The requirement would be equivalent to the "No Catastrophic Collapse" requirement for 15% design of High Speed Rail tunnels.<sup>17</sup>

The Department of Water Resources, Metropolitan Water District and the WaterFix proponents must fully assess and remediate risks to water supply, and to people and property in the Delta in the seismic and structural design of the Delta tunnels and shafts, and must fully evaluate and disclose the time to repair the Delta tunnels in a maximum earthquake in the Delta.

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the Reclamation Districts in the Delta. Available at  
[https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/california\\_waterfix/exhibits/docs/COSJ\\_et\\_al/part2/SJC\\_291.pdf](https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/COSJ_et_al/part2/SJC_291.pdf)

<sup>14</sup> California Water Research, Blog post, WaterFix tunnel lining could leak in a large earthquake in the Delta. Available at <http://cah2oresearch.com/2017/10/08/waterfix-tunnel-lining-could-leak-in-a-large-earthquake-in-the-delta/>

<sup>15</sup> WaterFix Water Right Change Petition Hearing, testimony of Dr. Clyde Thomas Williams, PhD geologist. Available at [https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/california\\_waterfix/exhibits/docs/dd\\_jardins/DDJ-163\\_tw\\_testimony.pdf](https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/dd_jardins/DDJ-163_tw_testimony.pdf)

<sup>16</sup> California Water Research, Final EIR/EIS Comments on Conceptual Engineering and CEQA for the WaterFix Project. Available at <https://flowinguphill.files.wordpress.com/2018/04/tunnel-engineering-comments.pdf>

<sup>17</sup> California High Speed Train Project, Technical Memo 2.10.4, Interim Seismic Design Criteria, June 2009. Available at <http://www.tillier.net/stuff/hsr/TM-2.10.4-Interim-Seismic-Criteria-R0-090608-.pdf>. Accessed on January 16, 2017.

Sincerely,



Deirdre Des Jardins  
Principal, California Water Research



Dr. Clyde Thomas Williams



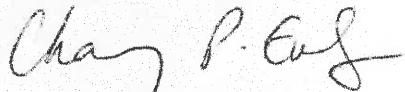
Azita Yazdani, P.E.  
Founder and CEO, Exergy Systems, Inc



Conner Everts  
Executive Director, Southern California  
Watershed Alliance



Kyle Jones  
Policy Advocate, Sierra Club  
California



Charming Evelyn,  
Water Committee, Sierra Club Angeles  
Chapter

Bruce Resnick  
Executive Director, LA Waterkeeper

Martha Camacho-Rodriguez  
Social Eco Education

cc:

Board of Directors  
Metropolitan Water District  
Office of the Board of Directors  
Rosa Castro  
[rcastro@mwdh2o.com](mailto:rcastro@mwdh2o.com)

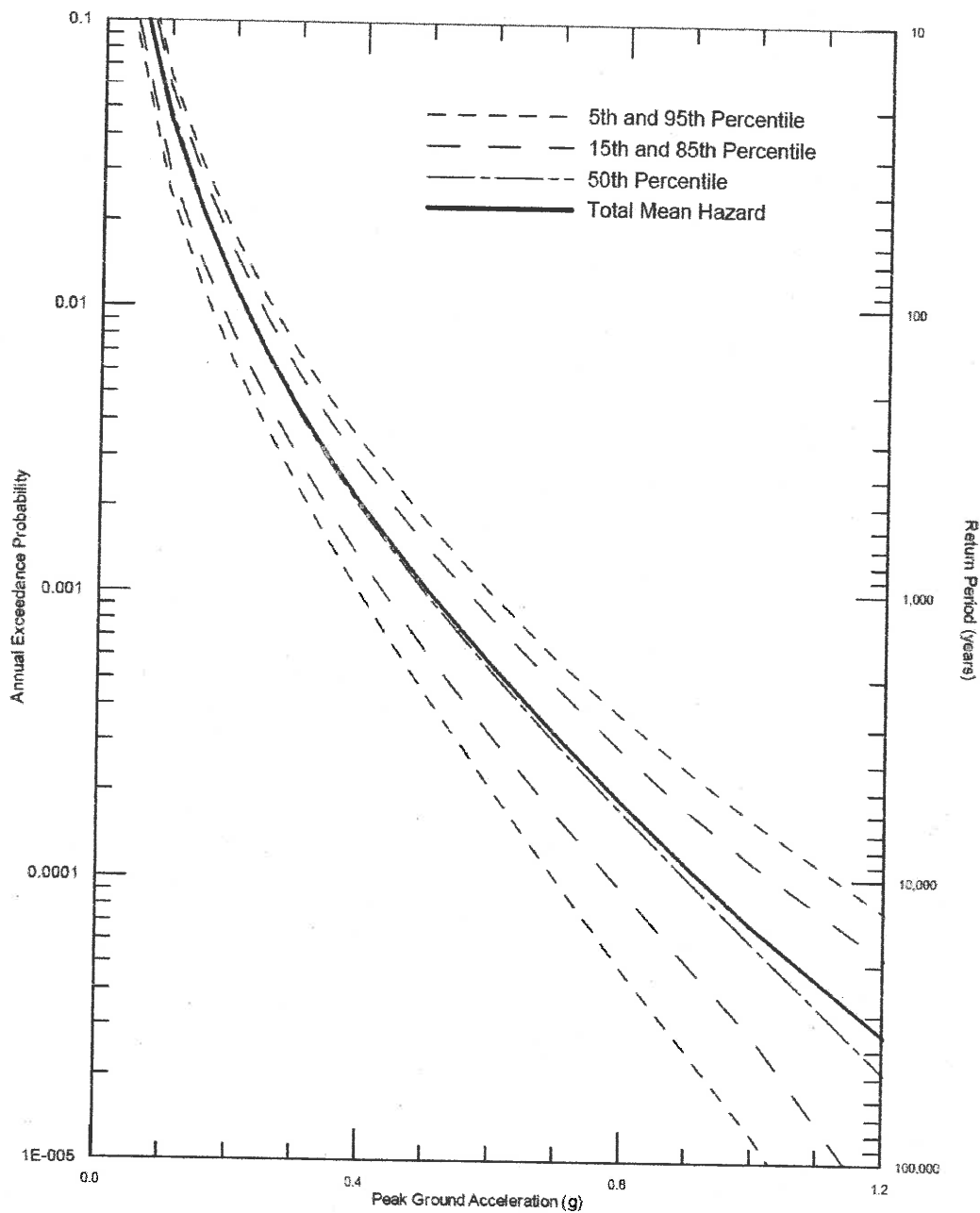
Norma Carmacho,  
Chief Executive Officer  
Santa Clara Valley Water District  
5750 Almaden Expressway  
San Jose, CA 95118  
[ncarmacho@valleywater.org](mailto:ncarmacho@valleywater.org)

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Curtis Creel, General Manager  
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3200 Rio Mirada Dr.,  
Bakersfield CA 93308  
[ccreel@kcwa.com](mailto:ccreel@kcwa.com)

Mr. Dylan Van Dyne, Project Manager  
California Delta Branch, Regulatory Division  
US Army Corps of Engineers, Sacramento District  
1325 J Street, Room 1350  
Sacramento, California 95814-2922  
[Dylan.R.VanDyne@usace.army.mil](mailto:Dylan.R.VanDyne@usace.army.mil)





DELTA RISK  
MANAGEMENT STRATEGY  
CALIFORNIA

Project No. 26815900

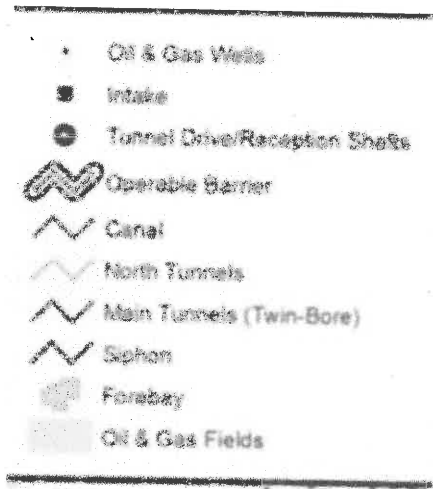
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FOR CLIFTON COURT FOR 2005

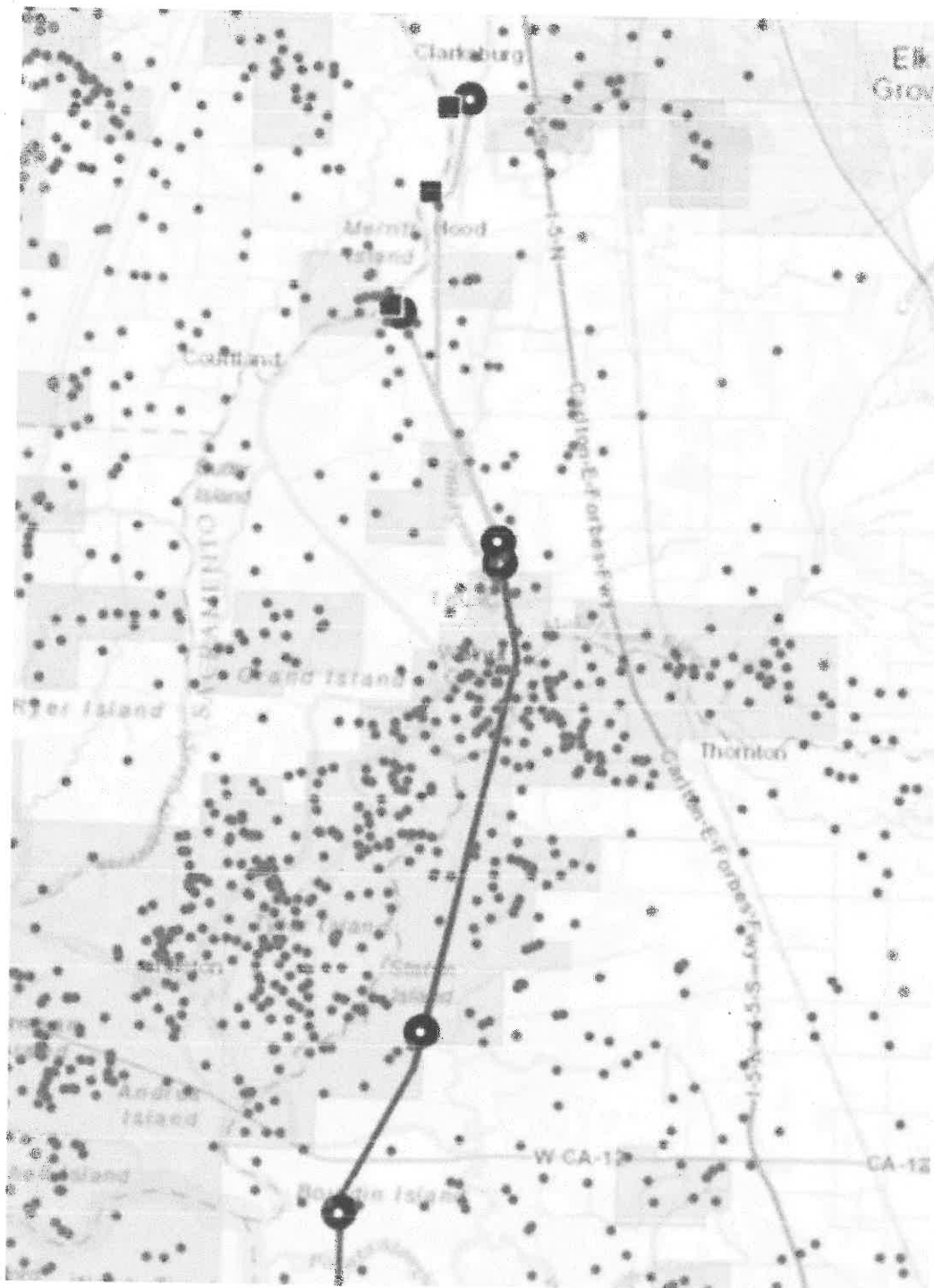
Figure  
6-7

3 Probabilistic ground motions for Clifton Court Forebay. Includes probability of quakes from all nearby faults.

## WaterFix tunnel construction: gas wells

The WaterFix/Delta tunnels go through the West Thornton - Walnut Grove and River Island gas fields, just east of the Rio Vista gas field, the largest natural gas field in California. The map below, a closeup from the map on page 155 the WaterFix 2015 Final Draft Conceptual Engineering Report, shows the high density of gas fields and gas wells in the Delta tunnel alignment near Walnut Grove. The purple shaded areas are gas fields, and the purple dots are gas wells – either producing or abandoned.





The 2010 internal DHCCP engineering document for the Delta tunnels discusses precautions recommended by an Independent Review Committee, which were never publicly disclosed by DWR or MWD:

Proposed Tunnel Alignment Revision

The Outside Reviewers recommended the tunnel alignment avoid any active or idle gas wells and minimize intersection with plugged wells due to the potential for damage to the wells by the tunnel boring machines during mining operations.

The 2010 internal DHCCP engineering document also states that the Independent Review Committee recommended the following:

- Participate in the DOGGR Well Review Program;
- Obtain permits for any well work (active or abandoned);
- Given that well coordinates on DOGGR website are not necessarily accurate, conduct a survey to determine their exact location;
- Avoid all wells to the extent practical; avoid tunneling over wells;
- Given that DOGGR makes no guarantee that wells are properly abandoned or will not leak after abandonment, address each proximate well specifically;
- DWR has neither designed nor constructed a project that passes through a gas field or near existing gas wells, either active or abandoned. Accordingly, and as recommended by the Outside Reviewers, engage the services of a petroleum engineering consultant with experience in the installation and abandonment of gas wells (ideally one familiar with the Delta and its gas wells and fields) to advise the DWR and the DHCCP.

MWD has since taken over the WaterFix tunnel engineering, and appears not to have implemented any of these recommendations.

The only mitigation for gas well risk that MWD's engineers are proposing in the WaterFix Conceptual Engineering Report is to "identify the minimum allowable distance between wells and tunnel excavation" with a future study. The 2015 Conceptual Engineering Report also states that "it is anticipated that the State of California Division of Occupational Safety and Health (Cal/OSHA) may classify the tunnels as 'potentially gassy.'"

North Delta Cares presented testimony in the WaterFix Water Right Change Petition Hearing by Mark Pruner, who is on the Board of Directors for the Clarksburg Fire Protection District. Pruner testified on cross-examination that DWR had *never* discussed the gas well risk with the Clarksburg Fire Protection District, nor disclosed the recommendations of the 2010 Independent Review Committee on tunneling through a gas field. Pruner testified that the Clarksburg Fire Protection District would have commented that DWR *must* follow the recommendations of the Independent Review Committee.

DWR's attorneys objected to the entire line of questioning.

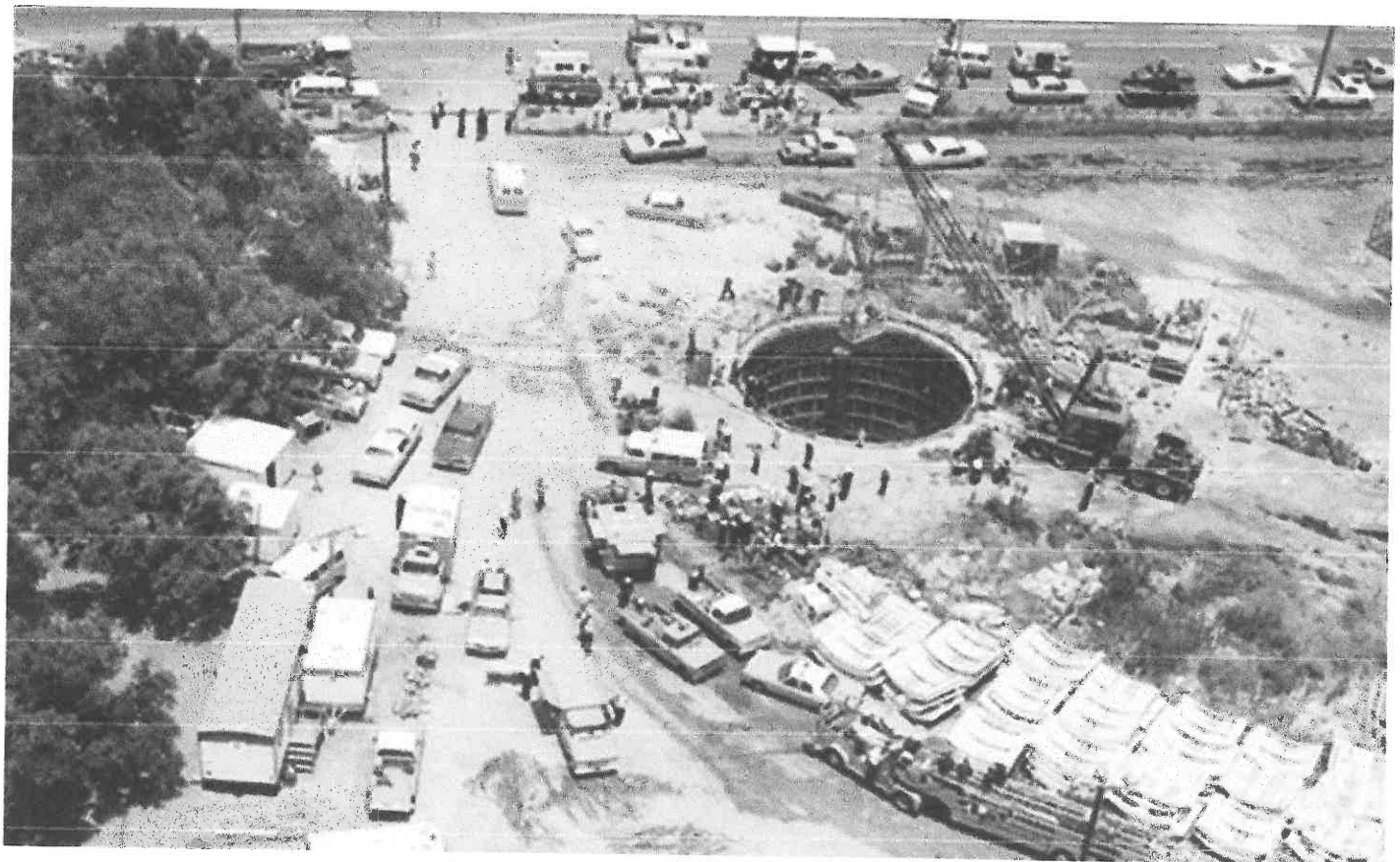
Metropolitan Water District has a disastrous history with tunneling through strata with methane gas. The worst tunneling accident in California history occurred in 1971 during MWD's boring of the 22' Sylmar tunnel to Castaic reservoir with a tunnel boring machine. The Sylmar tunnel was known to go through strata with oil and gas. As documented by in an engineering journal article by Richard J. Proctor, former Chief Geologist for MWD:

(1) The MWD geologic report, given with the Specifications to all bidders, warned of the possibility of encountering oil and/or gas in the western part of the tunnel route. This warning was based on: (a) producing oil fields in the region; (b) oil and tar seeps in the area; (c) the presence of Pico Formation sandstone in the western part of the tunnel route—a known source-rock of oil; (d) the presence of oil and gas in two nearby tunnels—the L.A. Department of Water and Power's Newhall Tunnel in 1912, and the MWD's Balboa Tunnel in 1967; (e) the crossing of the Santa Susana fault, which acts as an oil trap in the nearby Cascade Oil Field.

(2) Several months before the explosion, the contractor posted a notice that stated "Expect explosive gas ahead."

There were other factors listed in the article by Proctor. Lockheed was the low bidder on the tunnel construction contract, and was trying to finish the tunnel quickly to get a bonus from Metropolitan Water District for early completion. Workers on the tunnel were not adequately trained. When workers smelled gas, the supervisor stopped work briefly, but then kept going, and did not implement all the recommended precautions. The day of the fatal explosion, they had to stop work 35 times. Firefighters worked under extremely hazardous conditions in the smoky, water filled tunnel for the next two days, extinguishing fires and searching for workers.

After the fatal explosion, construction was halted for 2 years while MWD, Lockheed, and OSHA figured out how to proceed safely. Lockheed also filed a breach of contract suit against MWD for not warning of the real danger of encountering gas during tunnel boring.



*1 The Sylmar Tunnel Disaster, June 23, 1971 Source: Los Angeles Firemen's Relief Association*

There was a 54-week criminal trial against the tunnel contractor, resulting in the highest municipal fines and some of the greatest civil damages awards of its time. After the longest municipal court trial in U.S. history, Lockheed Shipbuilding & Construction Co., a subsidiary of Lockheed Aircraft, was found guilty of gross negligence and violating state safety laws, and fined \$106,250. Lockheed was also forced to pay \$9.3 million in civil judgments.

MWD dedicated a plaque to the 17 workers who were killed in the explosion in December of 2013. But MWD appears not to have connected the dots with the need to follow the recommended precautions for tunneling through the Rio Vista gas field for the WaterFix project.

*Corrected re: Rio Vista gas field 4/30.*

**From:** Susan Simpson <simpson-susan@sbcglobal.net>  
**Sent:** Thursday, May 03, 2018 4:43 PM  
**To:** Board of Directors  
**Subject:** Regarding Tuesday's vote on the Delta Tunnels

Board of Directors,

I attended Wednesday night's meeting regarding the vote on The Delta Tunnels Project. I prepared some brief comments that I didn't make, describing how deeply affected my family and other families, towns and businesses are affected by this proposal. How it would destroy our community forever and make life miserable during its 10+ years of construction. But I realized that you have heard all of this countless times from many more eloquent than I am. So I will spare you that.

From what I saw and heard last night, the DWR wants us all to believe that the Tunnels are now a given, due to MWD's financial commitment. Whether that is wishful thinking or reality, I don't know, but it sure is suspicious as one of you mentioned (I think it was Barbara Keegan). The idea that SCVWD will pay either way, and be "punished" with less water allocation for a NO response, is really heavy handed, and I hope you can find a good resolution to this.

I am against tunnels of any kind running through the middle of the Delta. One or 2 doesn't matter, the destruction and construction will go on for years and years and our waterways will be changed forever. In fact a phased approach might be worse as it would drag it out even longer. So for me, finding another solution is the right answer. IF, you have to go along, we ask that you *push back* very hard on the location. They are planning to cut the busiest part of the Delta in half with the present plan. It would be far more palatable to move the tunnel sight out of the main channel and to the alternate spot on the east side. That way the marinas and businesses would not be cut off from boat traffic and people from all over Northern California can continue to recreate.

We all love the Delta and are so worried about the outcome of this proposal. Water rights trump the preservation and conservation of this very unique place. Please continue to show the foresight and courage that you did, back in October. I realize that a NO Vote probably does not kill the project.

Respectfully,

Susan Simpson

**From:** William Knaus <knaus@sbcglobal.net>  
**Sent:** Friday, May 04, 2018 5:38 AM  
**To:** Board of Directors  
**Subject:** Delta Tunnel Project

Good Day,  
You know that everything about this project is ill-conceived.  
It will destroy the ecosystems of not only the delta but the S.F. bay and the fisheries off the northern California coast.  
It will not solve California's water problems.  
The final cost will be triple the estimated \$16-18 billion that Jerry Brown is touting. The operational cost as well. The MWD will be coming back to the Valley Water District mandating that you give them more money.  
Don't agree to partake in the project. Stand up to the MWD and say NO!  
Please do the right thing here for yourselves and the state of California.  
Thank you for your time.  
Bill Knaus  
925-260-3163



**Michele King**

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**From:** Board of Directors  
**Subject:** FW: Water fix

**From:** Kathleen Cannuli [<mailto:kattysinc@gmail.com>]  
**Sent:** Friday, May 4, 2018 8:23 AM  
**To:** Communications Unit <[CRU@valleywater.org](mailto:CRU@valleywater.org)>  
**Subject:** Water fix

Hello,

I am writing to let the board know that I do not favor the water fix. I agree with Congresswoman Eshoo completely.

Work on our valley, not sending more water to L.A. SAVE THE DELTA!!!!

Mary Cannuli  
2039 Mardel Lane  
San Jose, CA 95128

Sent from [Mail](#) for Windows 10

## Michele King

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**From:** Michele King  
**Sent:** Friday, May 04, 2018 8:36 AM  
**To:** Board of Directors  
**Subject:** May 8th CA WaterFix Meeting - Phone Call

COB office received phone call on 5/4/18 at 8:30 am stating:

Les and Susan Kushner, Los Gatos Residents

District 7 Director Kremen:

We encourage you and the Water District Board to vote no on the mega tunnels based on the environmental and financial grounds.

**Santa Clara Valley  
Water District**



**MICHELE L. KING, CMC**

CLERK/BOARD OF DIRECTORS

Office of the Clerk of the Board

Santa Clara Valley Water District

5750 Almaden Expy, San Jose, CA 95118-3614

(408) 630-2711

[mking@valleywater.org](mailto:mking@valleywater.org)

[www.valleywater.org](http://www.valleywater.org)

**Michele King**

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**From:** Dennis Smith <dennishsmith60@gmail.com>  
**Sent:** Friday, May 04, 2018 9:16 AM  
**To:** Board of Directors  
**Cc:** Dennis Smith; Ellen Smith  
**Subject:** Gary Kremen - Please Vote NO on the Delta Tunnels

I was shocked to read in this morning's SJMN that the Bord is seriously considering backing this project after unanimously rejecting it not long ago. Please reject it again.

My immediate reaction was that the Board has been bought off. Reading more deeply into the article, indeed so it was, apparently trading \$ for a dam with the state in return for support of the Delta Tunnels.

Shame. The environmental costs are huge. The potential cost overruns on this project will bankrupt either the District or its ratepayers for a project that provides little to no benefit to them. What good is a seat at the table if you have little influence on decisions?

De  
nnis  
and Ellen  
Smith

**Michele King**

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**From:** Bill Washburn <bwashburn@foodpro.net>  
**Sent:** Friday, May 04, 2018 11:39 AM  
**To:** Board of Directors  
**Cc:** 'Restore the Delta'  
**Subject:** Vote Against the Delta Tunnel Project

ATTENTION: John Barela

Your vote against the construction of any "Delta Tunnel" will be greatly appreciated. We should not solve a problem for one part of our state by creating a problem for another part. There are much better means of spending our tax dollars and provide much needed water such as construction more water collection reservoirs.

Sincerely,

Bill Washburn  
21150 Uvas Road  
Morgan Hill, CA 95037