EARTHQUAKE FACT SHEET

The California Water Fix Delta Tunnels don't eliminate earthquake threats to water supply. Earthquake risk mythmaking serves water exporters' interests. Water exporters misrepresent the risk of earthquakes to generate support for the Delta Tunnels.

⇨ Fattening the levees is a more effective solution.

- Californians should work together to build a more seismically resistant Delta that will protect water exports, other critical infrastructure, and save lives -- all at a lower cost than the CA Water Fix.
- Developing regional water supplies provides a more reliable water supply. The best way to prevent earthquake disruption is to invest in local water solutions, including increased comprehensive water conservation and technology, maximizing wastewater reuse and groundwater recharge, while capturing storm water and rainwater, graywater, and fixing local leaky pipes. Cleaning up local aquifers and providing local jobs for local water makes economic sense.
- Rather than a huge investment in faraway tunnels let's instead make the levees in the Delta more resilient and prepare all California communities to be less reliant on imported water.

MYTH #1: The Delta tunnels will protect California's water supply from earthquakes.

FACT: Earthquakes would hit the existing water transfer conveyance in other parts of California harder than they would hit the Delta. The earthquake threat to the Delta is minimal. The Hayward Fault is 40 miles from the Delta's center. *But the State Water Project (SWP) and federal Central Valley Project (CVP) cross right over high-risk fault areas, from Coalinga south to LA, including the San Andreas Fault.* Cement canals in the southern part of the state are more vulnerable to earthquakes than Delta levees. Other parts of the State Water Project are equally or more vulnerable to earthquake than the Delta: the California aqueduct, which overlies the Coast Ranges – Central Valley thrust fault; the San Luis Reservoir, which is acknowledged by DWR and the Bureau of Reclamation to have a "seismic deficiency," the crossing of the San Andreas fault in the Tehachapis, and many elements of the water distribution system in Southern California.

Does it make sense to spend upwards of $50-60 billion to reinforce the first 30 miles of the 400-mile water export system, when earthquake threat is equal or higher in other parts of the system? The astronomical cost of the Delta tunnels threatens investment in a more resilient, and disaster resistant system.

MYTH #2: The Delta tunnels are necessary to fix a vulnerable system whose failure could cast the state into chaos, depriving 25 million Californians of drinking water for years and costing billions of dollars to the state's economy.

FACT: It is totally misleading to imply that 25 million Californians depend on water exported from the Delta for drinking and bathing. **Some fraction of the water supplied to 25 million Californians might come from the Delta, but most water agencies around the state have multiple sources of supply, and the safest strategy for all regions is to move toward regional self-sufficiency.** In a Delta flood event, much of the East Bay Area will still get its Mokelumne River Water through cross-Delta aqueducts that are mostly buried, and SF will get its Tuolumne River water through the Hetch Hetchy Aqueduct. According to the Delta Protection Commission's *Economic Sustainability Plan* (1/9/ 2012), DWR's modeling of salinity intrusion and risk assessments in the event of a flood suggested that "the Delta flushes out more rapidly than had previously been expected, and that exports could be resumed in a *maximum of six months*, but more likely in a shorter period, even if multiple islands have been flooded" (page 87, emphasis added). The latest DWR studies suggest that even a very extreme 50 levee breaches, 20 flooded islands scenario would likely only disrupt water exports for several months. The Metropolitan Water District's 2004 report to the California Legislature, *Snapshots of the Past; Portraits of a New Reality: Achievements in Conservation, Recycling, and Groundwater Recharge*, states that

Riverside County's Diamond Valley Lake "holds six months of emergency water supplies for Southern California in case of a major system interruption due to earthquakes and other unforeseen events" (page 27).

MYTH #3: Delta levees would suffer massive failures in an earthquake.

FACT: The majority of the levees are fine; others can be upgraded to be fine, and none of them has ever failed in an earthquake. See the Economic Sustainability Report of the Delta Protection Commission for more details. **USGS issued a formal apology for exaggerating earthquake hazards in the Delta.**

MYTH #4: The Delta Tunnels will eliminate the earthquake risk for Delta residents and the Delta economy.

FACT: The Delta Tunnels do not address the earthquake risk to the Delta. California Water Fix won't protect the Delta, and do nothing to address most of the costs of an earthquake, nor add to public safety. The Delta Protection Commission's *Economic Sustainability Plan for the Delta* shows that 80% of the cost and 100% of the loss of life, from a hypothetical earthquake would occur in the Delta. Regional infrastructure worth billions of dollars (roads, railroads, electric transmission lines, gas lines) will also be at risk. An additional $2 to $4 billion would be needed to protect the Delta and its people and infrastructure from an earthquake**. The State claims to be worried about an earthquake in the Delta, yet inexplicably is focused not on shoring up the Delta's earthquake defenses, but on building Delta Tunnels to "protect" the water exported.** The State has forgotten that 4 million people live in the five Delta Counties and need to be protected from a catastrophic flood event.

MYTH #5: The Delta Tunnels will ensure reliable export water supplies that are vital to protecting California's economy.

FACT: Ensuring a safe and secure way to get water to California's homes and businesses means fixing LOCAL water systems first, not building another tunnel we can't afford. If there is an earthquake, local water pipes are in jeopardy. If pipes break, local streets will flood.

MYTH #6: The Delta Tunnels will solve the threat of sea level rise & salt-water intrusion to California's water supply.

FACT: The Delta is well positioned to deal with sea level rise – levees can be raised several inches per year. Inland ports may become more important to protect, with sea level rise.

However, salt water intrusion would be exacerbated by excessive water exports, which the Delta tunnels would facilitate. The USGS paper (James E. Cloern and Alan D. Jassby, *Drivers of Change in Estuarine-Coastal Ecosystems: Discoveries from Four Decades of Study in San Francisco Bay)* explores the impacts of reduced amounts and altered timing of freshwater flow beginning in 1956. Looking at the period from 1956-2003, they note that "The Delta effect [saltwater intrusion]. . . increased over time, at the expense of outflow to San Francisco Bay. The trend in Delta effect is due to a trend in [increased] water exports from the Delta …"

The Delta Tunnels would cause devastating economic damage to California fisheries. Bay Area and Northern California fisheries that depend on conditions in the Bay-Delta Estuary have suffered economic harm due to lack of fresh water. For example, the 2008 and 2009 closures of commercial salmon fishing was a multimillion dollar economic loss that has frequently been ignored by those who argue that mega-agriculture on the west side of the San Joaquin Valley needs more water. The agricultural interests that will benefit from the exported water represent 0.3% of California's GDP.

The key to water supply and security is developing local supplies where energy and water costs are the least expensive. **Importing supplies from hundreds of miles away in the Delta is fraught with problems and costs in addition to risks from earthquakes.**