Natural Desalination

Zero energy for desalination and conveyance to shore

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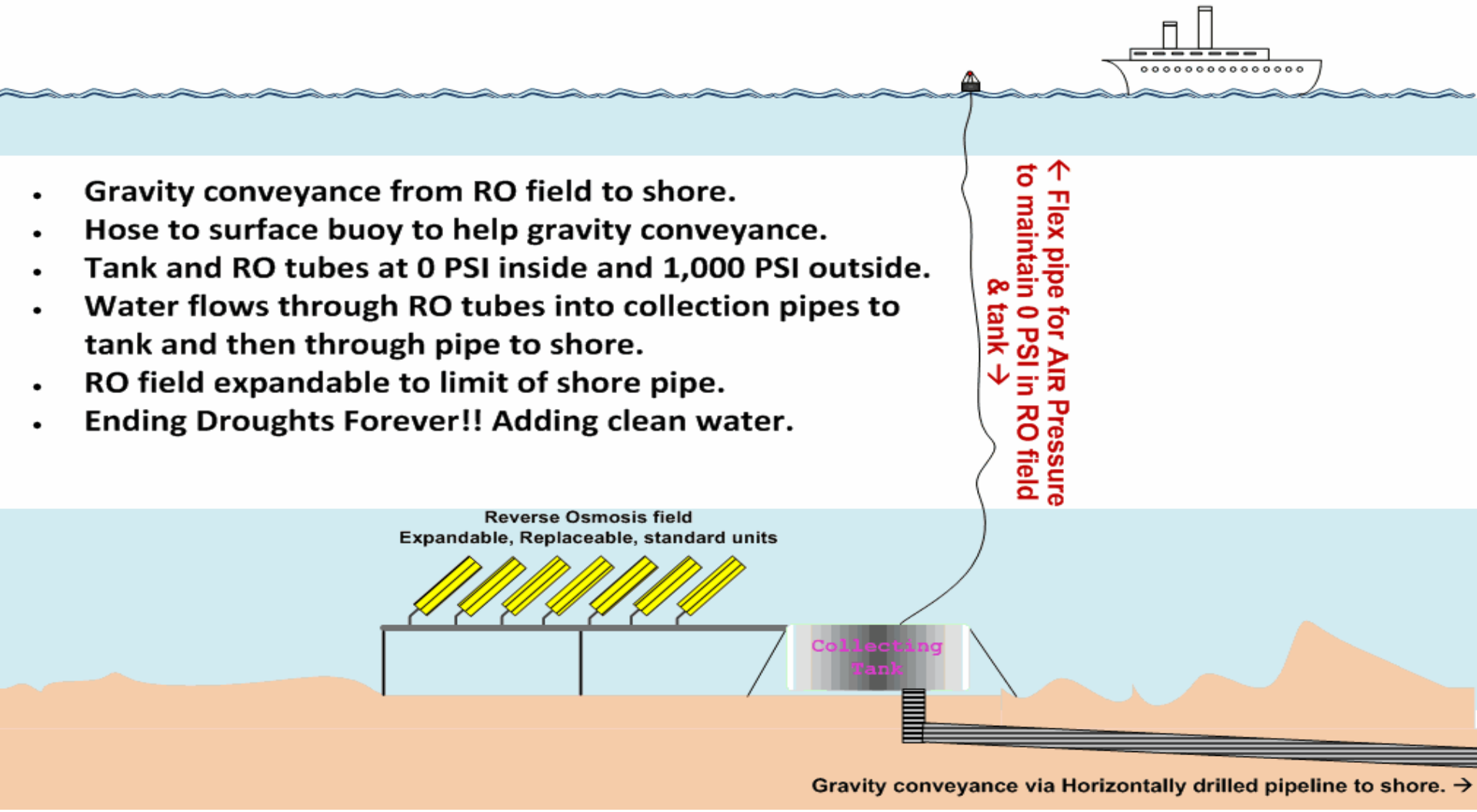
- Reliable endless supply – no droughts
- Under **$20** per acre foot operating cost
- Environmentally friendly
- Easily expandable and repeatable
- Many water lift options at shore
- Many great Locations available
- Mine Shaft Natural Desalination too

Natural Desalination

Zero Power & Cost for Desalination



- Gravity conveyance from RO field to shore.
- Hose to surface buoy to help gravity conveyance.
- Tank and RO tubes at 0 PSI inside and 1,000 PSI outside.
- Water flows through RO tubes into collection pipes to tank and then through pipe to shore.
- RO field expandable to limit of shore pipe.
- Ending Droughts Forever!! Adding clean water.

Reliable endless supply – no droughts

- Located miles from shore makes the water supply less polluted by man kind.
- Constant supply year round.
- Transported to shore and/or inland via FREE gravity conveyance via horizontal well bore(s). Wells connected for long distances.
- Terrorist resistant by being under water.
- **Unlimited drinking water can be supplied.**

Environmentally Friendly

- Construction offshore, so site is easy to find and procure.
- No Visual Blight.

- Using horizontal drilling eliminates or reduces environmental issues.
- No concentrated salt (brine) issues, since only water is extracted from sea water. Large quantity for dilution.
- Farming could increase with added endless water supply, which in turn would reduce green house gasses.
- New supply means healthier water ways & deltas.
- Fish and other ecosystems improve due to less diversions.
- Public health improves with consistently better water.

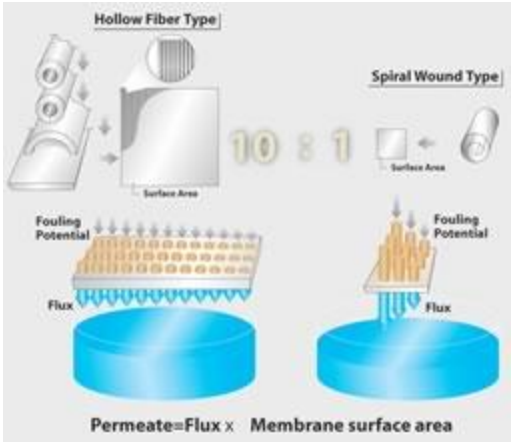
Low operating cost < $20/Acre Foot

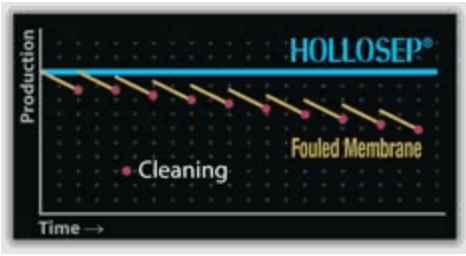
- Lift only “Fresh water” for use as wanted.
- Totally automated, few moving parts (valves).
- Maintenance of RO filters yearly or longer.
- CETO Wave, Wind and Buoyancy power all would only have minimal maintenance costs for operation.
- Suspended near the Ocean floor at about ½ mile down and being off shore more than 1 mile removes Environmental mitigation costs and gives expansion opportunities.
- Robotics' used for RO filter replacements.
- Automated fault (high volume) shut off valves.

Easily expandable and repeatable.

- Standard Nano-Reverse Osmosis (RO) units.
- Connect as many RO units for volume desired.
- Zero energy costs for desalination.
- Ocean is constant & quality consistent.
- Horizontal drilling has been around & accurate.
- Automatic valves can insure quality by shutting off flow if excess water flow in pipes (by leaks).
- Flexible air pipe to surface, that helps create pressure differences, is not a shipping hazard since it would move aside if hit.

Nano Tube - Reverse Osmosis (RO)





ZeeWeed - example

- This is the type of installation for “Natural Desalination” units but using the Hollosep RO type of tubes instead of the nano-filtration (0.04).
- ZeeWeed is great to require for water intakes to SWP and old style desalination plants to only take in what needs to be further processed or used.

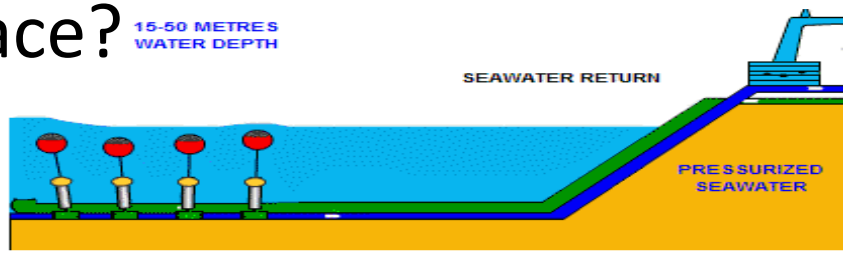
"HOLLOSEP®" is a reverse osmosis membrane module that allows production of permeate of high purity water by rejection of ions.

Hollow fiber membrane elements provide about 10 times the surface area compared to spiral wound elements.

This greater surface area is a key factor to better tolerate potential fouling in the RO module. If the same amount of fouling material is present in the feed water, the much larger surface area of hollow fiber type membrane will be subjected to much less surface fouling than the spiral wound type membrane.

Options for Lift on shore

- Ocean power by CETO Wave Power to pump desalted water to surface?



The CETO Technology produces zero-emission power & water from the ocean's waves

- Other Wave, Wind, Solar and Tidal power are also readily available to make conveyance from sea shore to city water processing plants or to other conveyance like delta aqueduct totally green and renewable.
- Conventional methods powering pumps to lift the water like: Hydo, Nuclear, Natural gas and others.
- New sources like Buoyancy Electric power?

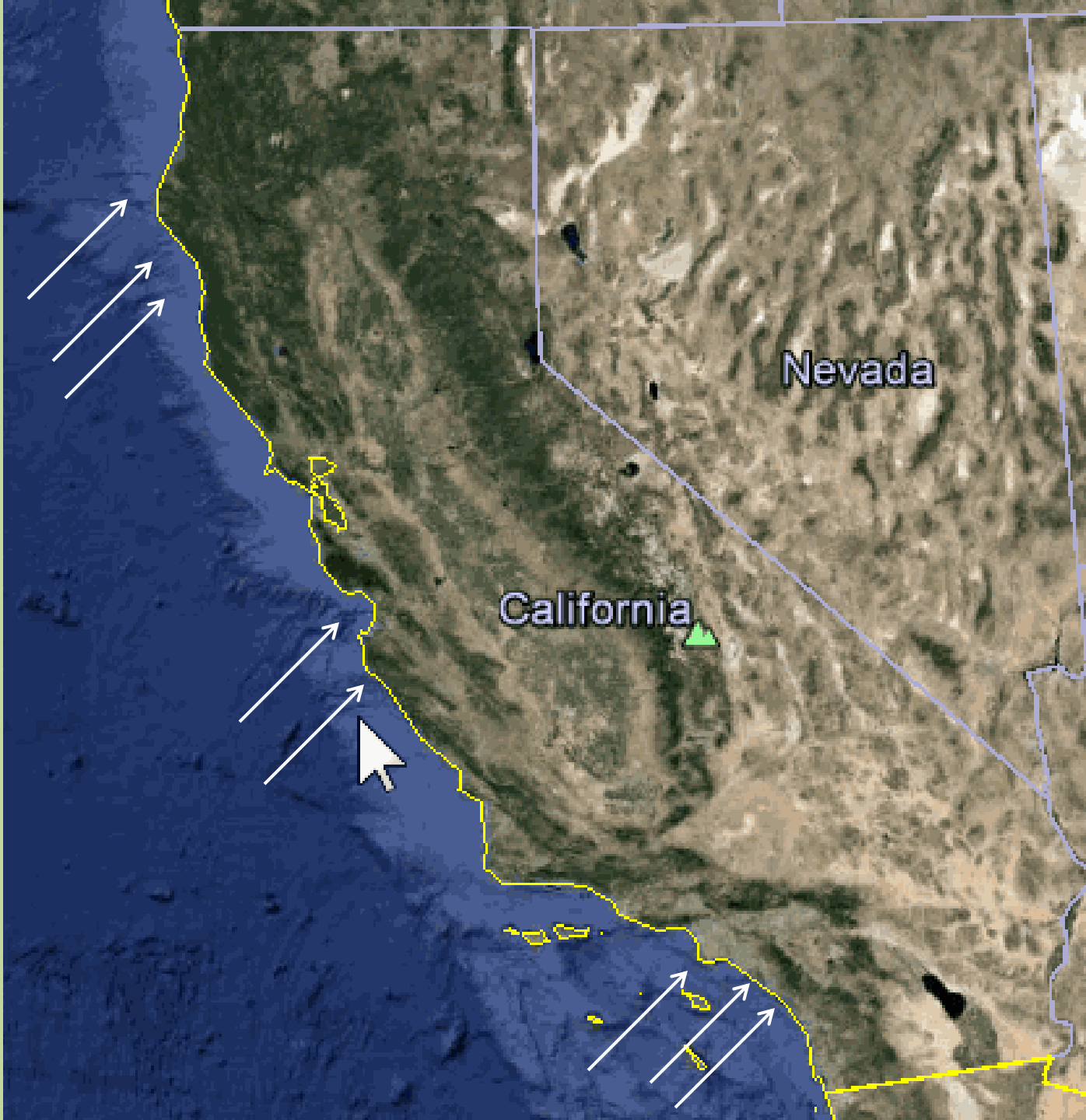
SWP Facts

- Water is lifted 1,926 ft (587 m) over the Tehachapi Mountains. ***Approx. lift needed for Natural Desalination.***
- California Aqueduct is 701 miles long from Sacramento to LA. http://en.wikipedia.org/wiki/California_State_Water_Project
  Approx. 66 miles from Seashore to Aqueducts for ND.

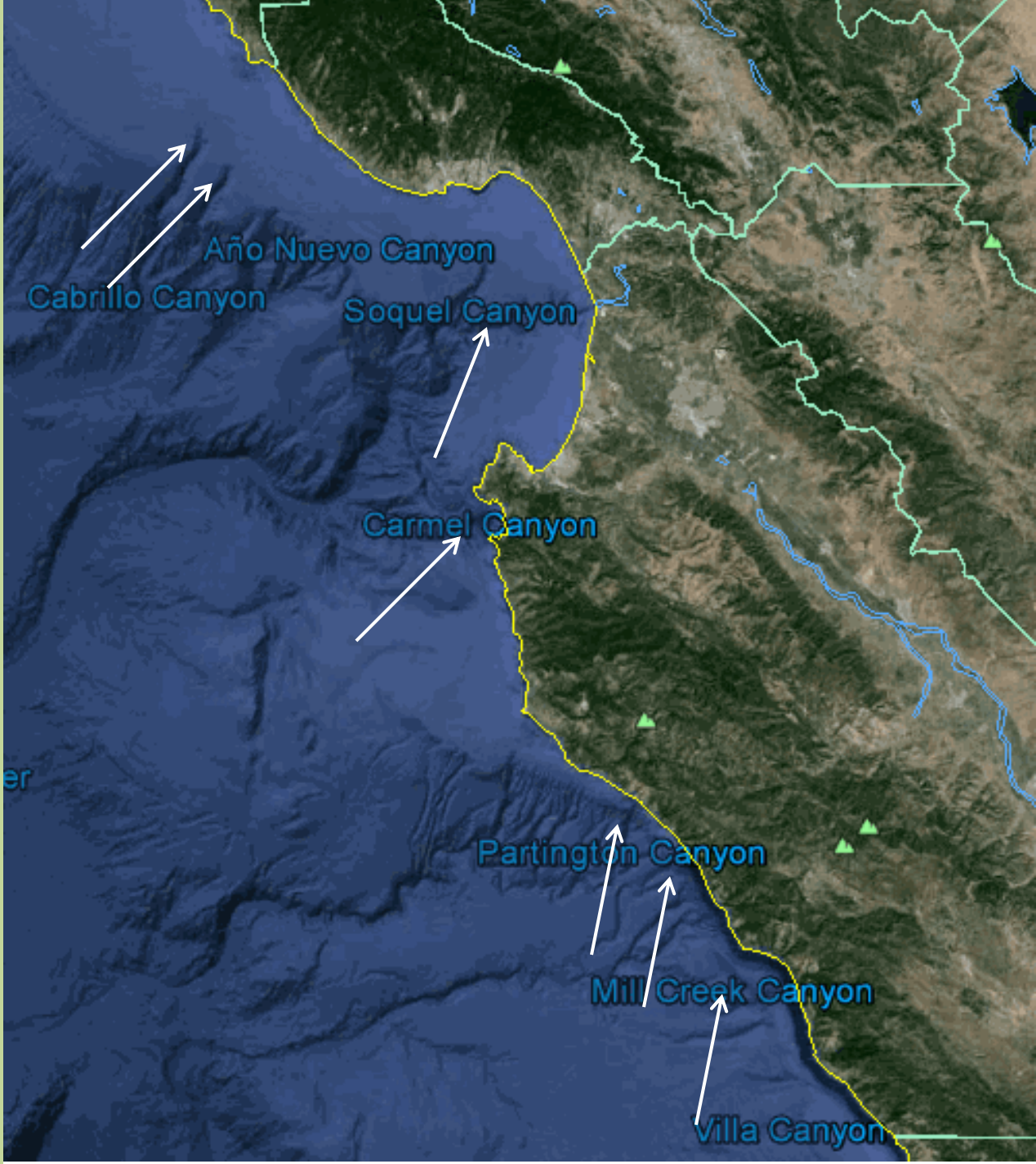
Pump Name	Feet Lifted
Banks	244
Dos Amigos	118
Buena Vista	205
Teerink	233
Chrisman	518
Edmonston	1,926
Total	**3,244**

- SWP costs average $145 per acre foot
  $45 for Agriculture to $298 for cities.
- Proposed twin tunnels in Sacramento are 40 feet in diameter and would go 35 miles each. Estimated to cost $xx billions with ZERO added water for California.

California locations for Natural Desalination



Northern California has several locations north and south of *Monterey* for Natural Desalination



LA area locations for Natural Desal.