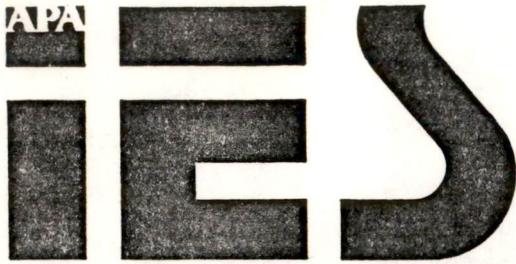


Periph. Canal, 1982

"Somewhere it is written that we ~~must~~ ^{are destined to}
irrigate Mojave + Death Valley. It is our
Manifest Destiny."

Wasting money up north so we can waste
water down south.



INLAND EMPIRE SECTION American Planning Association · California Chapter

November 20, 1981

Dr. Mason Gaffney
3040 Tyler Street
Riverside, CA 92503

Dear Dr. *Mason* Gaffney:

On behalf of the American Planning Association, I would like to thank you for accepting our invitation to speak in opposition to constructing the Peripheral Canal at the group's upcoming meeting on Thursday, December 3, 1981 at the Holiday Inn adjacent to the I-10/I-15E interchange in San Bernardino. As you will note on the enclosed flyer, a cocktail hour will precede the scheduled dinner at 7:00 P. M. Your dinner, of course, will be provided at no cost to you.

It is anticipated that the program on the Peripheral Canal will start at about 7:45 P. M. Since there will be two primary speakers, it would be appreciated if you would limit your formal remarks to about 15 minutes, but no longer than 20 minutes. A similar time frame will be allocated to Ms. Ann Thomas who will be speaking in favor of constructing the Peripheral Canal. A 15 to 20 minute question and answer period will follow after both speakers have concluded their remarks.

Should you have any questions regarding this matter, please call me at 787-7371, otherwise, I will see you on Thursday, December 3, 1981 at the Holiday Inn.

Very truly yours,

Merle G. Gardner, Director
Inland Empire Section APA

SW:MG:DFP

you 1. Making things appear cheap doesn't make them so.

2. State fiscal crunch.

3. New factors: (+ cup was unconstructive before, cite Hirschleifer)

a. Hi i

b. Dear energy

c. State insolvency

*d. Disenchantment w. continuing old patterns of spread
New vision of benign equilibrium
Dim. rets. to growth.*

4. Smoke screens in the middle. (red herrings, etc.) Under price guarantee waste (over)

- waste creates crises, crises used as political drama to whip up public into wasteful spending. "Wasteful" means buying something for more than it is worth.
5. Overexpansion of agric. E.g. avoc. Prodn. controls coming.
 6. Higher distr. costs in south, after 20 more yrs. of spread.
 7. Highly concd. distr. of benefits. An old story.

Idem, purple, coral

1. To Grad. advisers:

Dear Sir: "Please send food aid, & any other relevant resources".

- ~~2. Preaching morality in ST~~

3. We are being manipulated by major benefactors: our unknown biases.

4. Diff. between a man & a boy is cost of his toys.
This explains one big source of support for 200 etc.
Esply. When others are paying.

5. No one in MWD is charged w. telling us the truth. Hard selling.

- b. a. Wd. you pay 3 for 1
b. if you pd. + others got
c.
the others were much richer than you?

7. ~~Periph. Carat serves periph. tends~~

8. Time-tested formula for promoting p.w. Panic voters by fabricating a crisis.

Periph. Canal - Ideas 2

9. Long constr. pd.

Unpaid int. accrues for yrs. before payback starts.
Payback from constr. is immediate.

10. ~~cell~~ Waste vs. constr. (env. extremism is out,
so constr. is back in.)

Big spenders.

Throwing in is easier than taking - if it's
not yr. money. But this time it's our m.

11. ~~q.~~ Roll-in pricing cumulates in several stages

a. Low i.r.

b. Low contract price, wholesale to MWD

c. Low peak price

d. In MWD, low ^{wholesale} price to suburbs, new developers

e. In munis, same thing.

Result is, ungl. consumer, Calif., San Diego, triple
roll-in effect. So ~~demand~~ highest cost demand keeps
expanding, fed by hi-cost & supply.

Then, to block this, we have Urban Act, zoning.

12. (from 8)

Promotional formula

a. Encourage com. & expansion,
low user

remote areas

b. Draw down reserves, jeopardize vital fr.

c. Cry panic

13. License to waste.

14. The sprawl mentality.

Priorities of GM & Exxon shaped our cities.

Periph. Canal, from Harry Ruman's

1. SB 200, 7/80, sqd. by J. Brown, auth. Per. Canal.
2. MWD uses employees, + public funds, to carry its message.

3. Prop. 8, 11/80, guarantees Delta + N. Coast Rivers.

4. a. Edmonston Pumping Plant draws wtr. 2000' over Tehachapis, uses as much power as entire city of L.A. in 1965.

- ✓ b. Expanded SWP will use more: est. 106 kwh in 2000 AD.
Power for 2 m. homes.

(106 kwh @ 10¢ = \$16)

5. Front cost, SB 200, \$56.

" " , added SWP features, \$236

$$\Sigma = 286.$$

p. 11

6. Financing. 3 sources p. 5T-6

- a. DWR has on going authority to sell Rev. Bonds, since CVP Act, 1933. (The cards are stacked. Others can't do this.)
30 yr. bonds.

Bill needed to raise rate to mkt.

Outstanding bonds pay 7%. (Probably this low cost will be rolled in w. new hi. cost.)

Qu: Are rev. bonds tied to one "project", or whole lump, or partial lumps, or what?

b. G.O. bonds. No ongoing BWR authority, require special act.

1960, Burns-Porter Act, state voters approved, \$1.75 b g.o.

Thru '18, only 1.50 b sold. They funded, 72% of SWP. ($1.50 / .72 = 2.08 \text{ b}$). (Why didn't they utilize all of this cheaper funding?) (oil money) still available: \$190m of B-P bonds.

c. Tidelands oil & gas rev.

\$25m/yr of revs. is allocated to new water project construction. As projects are built over several yrs., this is a flow of front money.

Another \$5m goes to pay for past costs (attrib. to rec., fish, wildlife)

Σ of \$550m applied to SWP so far: more coming.

(But this isn't just front money. It's a permanent subsidy.)

7. Referendum on SR 200 is the 1st on ballot since 1952.

8. MWD has a Bd. of 49. Ave. age 67.
~~Not~~ Not elected. Rep. ~~latter~~ r.e. deors & allies.

MWD uses tax in to promote

9. Energy. 1 af, Orville - S. Cal. consumes 5 bbl. oil
 (or 450 ca.)

10. Contracts

a. Coun. require benefit. use.

b. 1/2 contracts were binding, wd. be nothing to vote on.

11. Kern Ag. giant sponge absorbing surplus.

12. 1960-68, AWR signed contracts, "committing" 4.3 m. a.f.
 to 31 contractors. These are legally binding? ~~See~~
 Not sure. How can some AWR or legislat. bind future
 voters?

'79, SWP delivered 2.3 m. a.f. Its "commitments"
 were 1.4 m. a.f. p. 30.

13. Cty. of Origin Law ~~not~~ may reduce future yield, as
 Santa V. takes more. (but this is unaccy. - vice!)

Dennis, 4

14. SB 200 did not approp. any money.
This let it pass w/o 2/3 maj.
Money to come from 3 sources.
15. DWR phy. ~~based~~ is driven by need to meet commitments.
of 4.2 mof.
16. a) Dennis Law Prof., Map Dennis,
a) Mailed Wto. R's Law Reform comm. wrote
recommendations.
b) Leads for initiative to block wto. to SSJ
unless they concur.
So ~~as~~ these alts. must be legal.
b) To forbid filling New Melones on Stam.
until 75% of its wto. has been contracted to
users who agree to pay full cost — no
roll-in.

Info. from others at mtg. 12/4/81

1. 106 kwh/yr is ^{to be} power^{used} by whole system, not just Edmonton plant.
Rate pd. is 2.5¢/kwh. - Bob Krieger

But is there a demand charge?

... " an energy exchange.

If not, this low rate is another subsidy.

Home now pay nearly 10¢.

2. All alt. plan. Orloff bill. uses a Delta x-channel.
Is cheaper, & ~~but~~ does not trigger N. Coast quarantine. Bowell et al. are gambling on getting this one.

3. Med. hi. crime areas pay more for police?

a. Yes, shd. be higher there.

b. Crime spreads, is harder to localize the benefits of police.
Like public health, control of epidemics.

c. Is "hi crime area" the criminals' base & home, or area ~~where~~ on which they prey? People in rich areas benefit from police in crime areas.

d. Etc. Raises a host of issues different from here.

Trigger spray for
Matthew

Wor. + diamonds

Diff. between man + bag, size of toys.

Dear Sir "Mr. said fuel aid, + ~~any~~ other relevant mtd. if any

Lions' Den. Like preaching ^{morality} in S.E., ~~on sanctity~~
~~of family~~ an uphill struggle.

Many will support SB200 + Peri. Canal (PC)
out of regional loyalty. Others will be persuaded
of crisis, see this as cheap insurance.

As I study this, the more it seems it is
neither cheap, nor is it insurance - it's for
expansion. It is not just the canal that is
peripheral, it is the new lands to be given
"unjust enrichment".

So I suggest 3 prime reasons for opposing.

1. You wd. not pay \$3 for wtr. worth \$1.
- John Burnham, the only economist ever to
work for MWD supplies this est. after
retirement.

He ests. cost/af at \$1200. Used
10% i.r. - too low.

2. You wd. not pay 3 for 1 if you pd. ~~the~~ the 3 + others got the 1.

Driving political force behind this is pretty clearly owners of lands to be devd.

No recoupment - thanks to Wilson & Jarvis.

The villain here is "roll-in" pricing.

Add a high-cost Δ that will not pay for itself. Then raise everybody's rates to cover the cost.

This is a promoter's dream. It is a perpetual motion machine for endless expansion. You milk surpluses out of the paying parts, the ec. parts of the wtr. system, to subsidize indefinite expansion.

This proceeds at 3 levels, cumulatively.

a. State level. Periph. Canal Δ may cost \$1200/af, but charge will be much less.

Earlier SWP was ~~not~~ lower cost in real terms.

Was also built at much lower price level; and at much lower i.r.: 7% or so.

Other subsidies are the State's Credit.

And \$30 m/yr. of Tidelands money. (Nominally returned from revs., but only to be re-used in same fund. Nominally pays int., but

b. Regional level. only at 5% ... tokenism, pay.

L.A. pays, but doesn't get.

Riverside

Huge volume goes to KCWA, dump basis,
very cheap.

c. Local level.

Riv. is now contemplating buying SWP wtr. at what for us is a high price, ca. \$80/aF (including our cost) then rolling it into city system, so our consumers pay below AL cost.

Same time, we charge our hi-cost consumers same as low: August, hi elevation.

Pile these 3 subsidies to water expansion, get incredible excess of cost over benefit, at the margin.

Pro forma, we pay \$60 for \$1200 wtr., then pump it to top of our system for hi cost, sell at cheap ~~price~~ rate based on low cost of supplying old gravity zone from old wells in San Bern.

3. You wd. not pay \$3 for \$1 if you pd. the 3, others got the 1, & they were much richer than you.

Few assets are as closely held as spec. land on urban fringe, or agric. fringe. This is where the clout comes from: Irvine, O'Neill, Newhall, Kaiser-Aetna.

More problems

1. State is broke. Ground between upper & middle limestone.

Why relevant?

\$190m

- G.O. bonds, left over from Burns-Porter
- Tidelands money, \$30m/yr.
- Contingent liability for rev. bonds

2. Air quality.

3. Higher costs:

a) Energy. Edmonston Plant, to use 106 kwh by 2000 A.D. Power for 2m homes. At current retail, \$16/yr. Concealed until recently.

Energy cost of moving 1 af, Orville-S.C., 5 kwh oil. At \$30 @, = \$150/af.

b) Interest. No more 7% money.
Or 10%.

What rate? I don't know, but I won't buy one at 20%.

4. No reliable source of info.

MWD is blatantly promotional; candor is not in them. Can be expected to fabricate a crisis, is tried + true technique for manipulating, persuading people into big spending.

They spend taxpayers money on political campaigns
hard sell Tour, etc.

~~Stop~~

5. There are cheap alt. solutions.

Xfr. from I.I.D.

Stop waste

These are exactly what we wd. do if no
BC, + wd. be a better world.

Names, for Peri. Canal Statement

- ✓1. Richard Walker, Geog. By
- ✓2. Michael Stotter, "
- ✓3. Donald Mc Donald, Centre Magazine.
- ✓4. Cal. Ind. eds
- ✓5. Prof. M. F. Sheeham
- ✓6. Pr. Jack Hirschleifer, Ecs., UCLA
- 7. Pr. Henry Vaux
- 8. ~~Dr.~~ Dick Glatz
- 9. James Brookshire
- 10. Judy Ortmann
- 11. Bob Buxton
- 12. Lana Hoffman
- 13. John Burnham
- 14. Dorothy Green
- 15. Bob Gottlieb
- 16. Pr. Wesley Marx, ^{18051 Butler, Irvine, CA 92715} ~~Dept. of Ecology~~, UC Irvine
- 17. Lece Philpot, LUV
- 18. Vincent ~~Wingert~~? Ostrom, Pol. Sci., Indiana U., Bloomington
- 19. E. Castello
- 20. Gene Lee
21. Nindy Sandhu

2
Nanna, P.C.

- 22. Harold Edmunds
- 23. Merrill Goodell
- 24. Chas. Phelps
- 25. Wm. Filante
- 26. Bud + June Wieden
- 27. Bob Tideman
- 28. Don Hagman
- 29. Dick Lindholm
- 30. Antonio Angelides
- 31. Hap Summing
- 32. Joan Patton
- 33. Jessie Myers
- 34. Chas. Loggins
- 35. Steve Hauke
- 36. Harry Pollard
- 37. Polly Roberts
- 38. Tim Brick
- 39. Jeff Fawcett
- 40. Martin Stern
- 41. Cal Turk east.
- 42. Jerry McMinum
- 43. Ron Teeper
- 44. Robt. Zureig

45. Roger

46. Will

\ 47. Frank Trelease

\ 48. Dean Mischynski

\ 49. Wm. Kahl

50. Rev. Weitsman

\ 51. Mike Regan

\ 52. Ron Lowndes

\ 53. Max Neumann

Cordyle Hall Jr., Center for Learning, 10203 Ste. Monica Blvd, La 90067

~~David Shapiro~~

\ Rebecca Morales

\ Cal. Fair Water, 20 N. Raymond Ave, Pasadena, 91103

\ Ernest Engelbert

Jack Wilkey

Nick Norgaard

Cal. Wtr. Plan, Peri. Canal, etc.

The Farm Bureau's big switch on the big ditch



'Why, he looks just like his grandpa!'

By DANIEL J. BLACKBURN

Mark Twain liked to recall the time he was walking up a country road, looking for his friend Henderson's house. He met a farmer and asked, "How far to Henderson's?" The farmer said, "A mile and a half." Twain walked farther, met another farmer, and asked the same question. Again the answer was the same. When the exchange was repeated with still a third farmer, Twain scratched his head and said, "Well, at least I'm not losing ground."

Water-developing interests in California probably don't share that particular view of Twain's in their quest to build the Peripheral Canal, which by now must appear to them like a desert mirage: Every time they get close, it fades and reappears far in the distance.

The concept of the canal has been around for a long time — a link to the 450-mile-long State Water Project that is described variously as "vital" or "unnecessary," depending on whom one talks to. It officially turned sweet 16 this year, this plan to move prodigious quantities of fresh water around the sprawling Sacramento-San Joaquin Delta. And,

Daniel J. Blackburn is a free-lance writer in Sacramento and former assistant to ex-Senate President pro Tempore James R. Mills of San Diego.

like all teen-agers, it is wracked with problems. Unlike other adolescents, however, the canal and its muddle of confusion won't clear up with time. Instead, it is likely to worsen.

Consider, for example, the recent action taken by a conglomerate of farm organizations, the California Farm Bureau Federation, which until recently was a staunch supporter of the canal and its immediate construction. The Farm Bureau, with only whispered opposition, voted to join forces with others in an attempt to negate Senate Bill 200 which authorized the canal's construction and capped a decade and a half of bitter political strife. The farmers' stance, enigmatic as it appears at first glance, is evidence of the labyrinthine conflicts in the objectives of all of the would-be beneficiaries of the canal's operation. The "united front" of political, agricultural, business and industrial interests that have so effectively laced the surface of the state with intricate water facilities over the last 50 years is cracking at the seams.

A battle of giants

Ever since 1959, when the Legislature passed the Burns-Porter Act and authorized building the State Water Project, engineers have perceived the need for some kind of "cross-Delta facility" to alleviate hydraulic problems caused by pumping from the Delta. In 1965, this proposal was identi-



Mike Deaver, the "gatekeeper" for President Ronald Reagan, has told intimates that he plans to remain in Washington only about a year and a half before returning to California. Anybody want to bet whether or not he'll complete the term in the White House?

The word in the Legislature is that Associate Justice Mathew Tobriner of the state Supreme Court will retire in May. He'll be 77 next month. If the prediction is accurate, Jerry Brown will be able to name three new justices virtually at the same time.

Assembly Democrats are hardly sold on the plan to solve the state's fiscal problems through the split-roll property tax. Assemblyman Waddie P. Deddeh promised his home-town San Diego Chamber of Commerce that he would use his influence as chairman of the Revenue and Taxation Committee to kill the proposal.

If anybody keeps paper-blizzard statistics, it's a good bet that freshman Congressman Tom Lantos is breaking the record for the issuance of press releases.

There are so many political dinners these days that an enterprising fundraiser, Joyce Taylor of Sacramento, thinks she can turn a profit selling a monthly calendar of upcoming events. The theory is that politicians will buy her service to make sure they do not schedule their functions on the same date as another officeholder.

The state may earn over \$1 billion this year through the investment of funds on deposit with the state treasury. For the last fiscal year, the earnings were \$874 million, an increase of almost \$200 million over the previous year. On any given day, the state's Pooled Money Investment Fund has some \$10 billion to place in interest-bearing accounts.

From the "Lascher at Large" column in the *State Bar Journal* (soon to be defunct) comes a direct quotation from an Inyo County divorce case: "Custody of the dog — This issue will be decided in accordance with: A. What is the dog's best interest . . . B. The age of the dog is sufficient to indicate that the desire of the dog regarding custody should be given consideration."

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Cover photo courtesy Eros Data Center, United States Geological Survey, Sioux Falls, South Dakota. The photo of the delta west of Stockton was shot by a U-2 aircraft at 65,000 feet.

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The Farm Bureau has joined environmentalists to fight the Peripheral Canal, proving that politics and water mix strangely.

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"The thin green line" is in trouble financially and politically, both in Sacramento and Washington. In this special report, Anne Jackson assesses the environmental lobby's problems and offers an insider's guide to the state's major organizations.

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fied as the ditch that would be called the Peripheral Canal, a 43-mile-long, unlined, man-made river skirting the southeast edge of the triangular region known as the Sacramento-San Joaquin Delta.

The canal's importance (according to proponents) can be attributed to the physical reality that without it, exports of water from the Delta will be sharply limited in both quantity and quality. Environmental interests and others who oppose in principle the canal's construction have found in it a relatively uncomplicated means of forcing the reduction of water exports from the north to the south. Thus it is upon the delicate turf of the Delta that a political struggle of giants will be staged. At stake is the future of California's water resources; the outcome of the struggle will set the pace for water management for years to come.

The current controversy revolves around the hard-won piece of legislation, SB 200, which finally emerged at the end of the 1980-81 session, authored by Senator Ruben Ayala, a Chino Democrat. Ayala makes no secret of the fact that the four years he spent seeking the legislation had wearied him greatly. The bill has two basic functions: It authorizes construction of the Peripheral Canal and supporting facilities, and it outlines environmental and other aesthetic protections that will be afforded to the Delta, its waters and the creatures of those waters.

Ayala's legislation is the culmination of a generation of political wrangling about an engineering opinion. That opinion holds that large quantities of water can be diverted from the Delta channels without doing serious damage to the Delta's water quality. Critics of the canal say that is impossible. Major water-developing interests — mostly from Southern California — describe SB 200 as "a good compromise bill," serving both Delta protection and improved export quality. Other observers insist the bill goes too far; still others say it will fall short of accomplishing what it promises. And anyone who thought the canal was just around the corner when Governor Jerry Brown signed the Ayala measure simply left before the ballgame started.

Cost of the canal — indeed, of all of the facilities said to be needed to complete the State Water Project — certainly is escalating, but it is next to impossible to get a solid grip on the true figures. The state Department of Water Resources pegs the canal's price tag at \$1.3 billion by the time it is built and guesstimates that \$10 billion will have been expended through the year 2000 for construction of the canal and related water storage and power generation facilities. It is becoming increasingly evident that all of those facilities will not be completed — some will not even be started — by the end of the century, and thus their costs virtually are imponderable.

A long-standing dream

Ronald B. Robie, director of the department, says he "won't even guess" about costs after the year 2000. "Everything in terms of construction is happening two years later than it was originally anticipated," says Robie. "With inflation the factor that it is, cost estimates are difficult to come up with."

For a project whose inceptive cost was \$444 million, the canal now is in danger of becoming a plan too ambitious for the state to finance. This possibility, as much as any, has inspired in the canal's proponents a driving need to begin its construction.

Just what is this Peripheral Canal, and why is it tormenting so many people? Many years ago, state engineers envisioned the transfer of water from the rain-rich northern part of the state to the semi-arid regions south of Stockton, into the great central valley, to irrigate crops there.

Those dreams were quashed by the Depression, but the plans were sufficient to intrigue federal planners who even-

tually built the Central Valley Project, extending from Shasta Reservoir to the east and west sides of the San Joaquin Valley. It was not until 1960 under Pat Brown, that the state finally undertook a project of its own.

Cross-delta reference

As with any public works project, supporters of the State Water Project's construction had many reasons for lending their backing, but one was predominant: Customers of the federal project were bound by the 160-acre irrigation limitation, a stipulation which sharply reduced agricultural profiteering; customers of a wholly owned state project would not be so encumbered.

The state water transfer system would originate on the Feather River near Oroville, utilizing the channels of the Feather and Sacramento rivers before being pumped from the Delta into a series of aqueducts and tunnels for transport to Central and Southern California. Enabling legislation to begin construction of the State Water Project made reference to a "cross-Delta facility" that would be necessary at some point in the future, but it was not specific in identifying that project.

Water engineers, asked to describe the purpose of the Peripheral Canal, will liken the Delta to a bathtub, the drain of which is unplugged. Naturally, the water moves toward the drain. That represents the Delta's waters moving naturally out toward the Pacific Ocean, through the Sacramento and San Joaquin Rivers and into San Francisco Bay.

If (in the bathtub scenario) a *larger* drain, located at the tub's midsection, were to be opened suddenly, the water's flow toward the smaller drain would be radically altered. That is occurring now in the Delta, the result of the pulling of water from channels by pumping plants of the State Water Project and the federal Central Valley Project. In several instances, whole rivers have been stilled in their channels and then actually drawn in the opposite direction when the pumps at Tracy are turned on. The overall effect is a reduction of fresh water quantities reaching San Francisco, which in turn allows increases in salt-laden tidal waters within the Delta. When inadequate supplies of fresh water are entering the Delta from the east and southeast, and corresponding pumping of export waters is occurring on the south, more and more salt water rushes inland from San Francisco Bay. A point will be reached (some claim it already has been) when the pumps will begin sucking up an unsatisfactory mix of fresh and salt water.

According to its designers, the proposed Peripheral Canal would solve this problem by isolating the water intended for export, never allowing it to enter the Delta. Rather, the water would be removed from the Sacramento River at Hood, south of Sacramento, and carried in the canal in a southeasterly direction around the Delta to the Tracy pumping plants. Along the way, movable gates built into the side of the canal would allow release of water into specified Delta channels, there to "sweeten" water supplies and encourage good flows seaward.

Here's the quandary: Water diversions from the Delta will increase steadily, year by year, from now until 2020 or so, when demands will catch up with contractual-agreement limitations. Then both transport projects will be carrying maximum loads and all the water in them will be both claimed and utilized.

But long before exports could reach that level, the Delta (having been divested of its normal supply of incoming fresh water by the pumps) would have become intolerably saline, its waters unfit for Brussel sprouts or bourbon, bereft of fresh-water aquatic life and a mere shadow of its former self. Subsequent financial trauma would directly and significantly affect the operations of countless agricultural, business, industrial, municipal and governmental interests; en-

suings litigation would make new millionaires of an army of lawyers.

All in all, it would be a thoroughly untenable circumstance that likely will not come to pass, simply because too many people have too much to lose if it does.

Following the logic of the project's designers, then, only two alternatives remain: Either less water is taken from the Delta directly in order to maintain a salt-free, high-quality product, or the Delta's channels are bypassed entirely, eliminating completely the threat of salt in water intended for export. The first alternative is considered inoperative; the state would be in apparent violation of water delivery contracts, and attorneys on all sides of the canal question agree that possibility would benefit no one but the lawyers. The second alternative is called the Peripheral Canal.

This mindset resulted in passage of Ayala's SB 200 and Brown's ready signature of the bill into law. But the road taken by the canal's backers last year through the tangled jungle of the Legislature was a freeway by comparison to what lies ahead.

As the legislation passed through its transitive stages, it generally was supported by those people who wanted to see the Peripheral Canal built, and opposed by those who feared the possibility of its existence. The lines were clear; the enemy was clearly visible, there for all to see.

Four years ago, Ayala (who has become the somewhat reluctant champion of the Big Ditch That Points South) introduced a series of bills that would have also given state sanction to the canal's construction. Safely padded with generous environmental protections for the Delta, that particular effort attracted the more conservative of environmental groups which — somewhat surprisingly — endorsed it.

Backpedaling and blending

It was at that precise moment that the identities of the canal's proponents and opponents began to blend. Agricultural interests, always supportive of irrigation practices, took one look at the Sierra Club praising the alleged canal bill and began to backpedal, convinced that political support from the environmentalists translated into some fatal flaw in Ayala's legislative offering. The bill failed.

During the last session of the Legislature, Ayala agreed, after some coaxing, to introduce another measure to build the canal. This time, in deference to agricultural interests south of the Delta, certain critical dry-year criteria were deleted from the bill. That action had the effect of substantially reducing the level of environmental protection that could be given the Delta during periods of "drought" or diminished rainfall.

Even with these consumptive environmental provisions removed from the bill, large-scale agricultural consumers were unsatisfied. Fearing that use of the Peripheral Canal in dry years to "sweeten" Delta channels with injections of fresh water would deprive them of supplies, farmers were openly reluctant to support SB 200. But in the end they did endorse it, to preserve the traditional unity of the developing interests and to keep alive the ever-receding vision of the Peripheral Canal.

After the more stringent environmental considerations were blue-penciled from Ayala's bill, a trailer bill was conceived by Senator John Nejedly and written to place Delta protection into another area of California law.

Governor Brown threatened to veto Ayala's SB 200 (which at the time seemed certain to pass legislative muster) unless lawmakers also endorsed the trailer bill. Agricultural interests, which had been watching the governor with mounting suspicion, roared indignantly with a single voice. The final result: Farmers 1, Delta protection 0. Brown signed SB 200, during a televised and widely publicized

ceremony in downtown Los Angeles, and the Legislature quietly disposed of Nejedly's trailer bill.

The organized farmers were still; instead of celebrating the apparent political victory, they were watching another approaching threat. The concept that had been destroyed legislatively in the form of the trailer bill suddenly surfaced as an initiative proposal on last November's ballot. It was popularly known as Proposition 8.

'Stone-cold' crazy

Lending credence to the notion that mass environmental consciousness is not yet dead in the California voter, the electorate passed Proposition 8, giving significant protection to the Delta and appearing to impair future development of several North Coast rivers including parts of the American, Eel, Klamath, Trinity and Smith.

And — almost simultaneously — a petition successfully circulated statewide, qualifying for a future ballot a referendum to invalidate the action of the Legislature in passing SB 200, the canal bill.

The wave of political adversity startled the leadership of the California Farm Bureau Federation, a Sacramento-based conglomerate including 54 county farm organizations and a reported 10,000 individual members. The state Farm Bureau, vociferously supportive of the Peripheral Canal concept, began through its spokesmen to voice concerns about the political atmosphere, even going so far as to say that SB 200 as written and signed by Governor Brown would deter, rather than facilitate, construction of the Peripheral Canal. In addition, Proposition 8's protection of northern streams from additional development gave rise to the theory (one that may prove to be true) that water supplies would eventually become limited to the point where the canal would exist, but water to put in it would not.

The scenario was too much for the Farm Bureau Federation to bear. Publicly reconfirming its support of the canal, the Farm Bureau decided to take a gamble of epic proportions and to throw its considerable political and economic clout into the effort to defeat the canal via passage of the referendum. Then, hearts full of optimism, the farmers would head back to the Legislature to ask for a new canal bill without those pesky environmental excesses.

"They're crazy — absolutely, stone-cold crazy — if they think they can get lawmakers to give them a bill that doesn't take care of the Delta, right after the voters have said to do that in a major election," says a Senate insider begging anonymity because "I still have some work to do with these people."

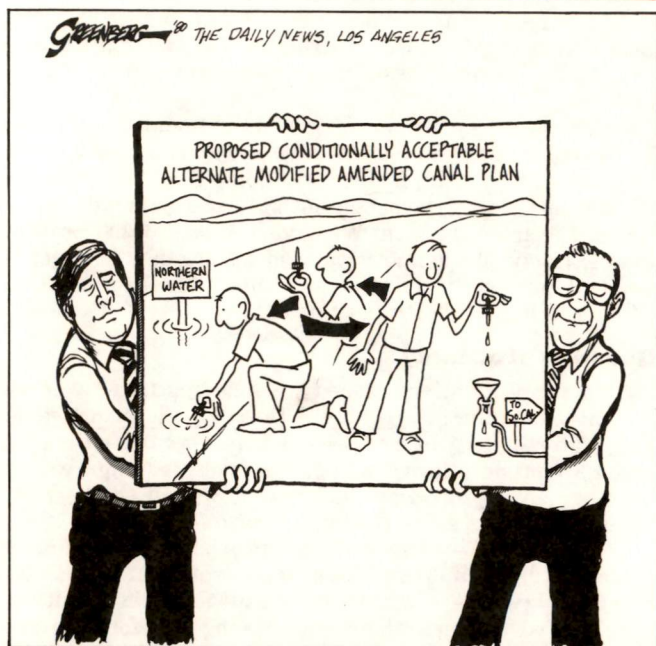
His words may be terse but his message has merit: If a Vegas highroller played the same kind of odds on the same kind of hunch, he'd be escorted to the door by management.

Part of the Farm Bureau's logic revolves around the fact that if Ayala's bill is repudiated at the polls, Proposition 8 also becomes invalid, because the public-works project it now seeks to regulate would no longer be an authorized state project. After gaining that, Bureau officials reason, the business of building a canal carrying water for crops and not a lot of other silly purposes would proceed.

The Farm Bureau's action has divorced the group from the traditional, familiar assortment of canal supporters: business, industrial and governmental agencies with Southern California-oriented clout. It has created a strange new alliance for the Bureau with those who oppose the canal: environmentalists, Delta farmers and many Northern California interests. *The Sacramento Bee* described the Farm Bureau decision as "throwing out its Peripheral Canal baby with the bathwater of Proposition 8."

The farmers' support of the anti-canal referendum also aligns them with the California Cattlemen's Association, which takes a similar stand in contending that SB 200 com-

plicates rather than speeds construction of the canal. Together, the farmers and the cattlemen form the nucleus of a ragtag band that is about to engage in battle a coalition awesome in its composition: the Metropolitan Water District of Southern California, the Agricultural Council of California, the Association of California Water Agencies, the Association of State Water Project Agencies, the California Chamber of Commerce, the Council for Economic and Environmental Balance, the California Municipal Utilities Association, three major labor groups including the Teamsters, Kern County and San Diego water agencies and other water-oriented groups from around the state. While it is true that membership in the Farm Bureau often overlaps



into some of the latter organizations, the Bureau doesn't realistically stand to pick up a whole lot of support for their position.

Farm Bureau President Fred Heringer thinks the stance taken by his group is entirely logical, pointing out that passage of Proposition 8 "locks into the California Constitution Delta standards that have no flexibility." In other words, no adjustment in controlled Delta outflow could be made, even during future dry periods, without subsequent voter approval or a two-thirds vote of the Legislature. Heringer also admits to his concern over Proposition 8's "over-protection" of the northern streams.

In an orchestrated public relations campaign, Heringer signed "letters to the editor" and wrote guest editorials for newspapers all over the state, emphasizing the Farm Bureau's position that "we do not feel we should bankrupt our future by locking up the north coast rivers as the price for securing the Peripheral Canal." Heringer says that "options must be left open" for future water development and asks, "Can a state that relies so mightily on water development turn its back on planning beyond the year 2000?"

Heringer pointed out in the publicity package that the argument of the Farm Bureau is not with guarantees for the Delta: "We believe they are justified and in fact already assured by the language of SB 200." Instead, he noted, restrictions on north coast development is the problem. (The "assurances" for Delta protection are indeed contained in SB 200 — but Heringer and the Farm Bureau are trying to repeal the bill.)

Ayala, nettled by the public relations campaign of the Farm Bureau, shot off a letter to Heringer, citing his belief

that "conventional water development in California is in a state of chaos" and hinting broadly that the Farm Bureau's recent activities have contributed to that state of affairs.

"Politics," wrote Ayala, "is the art of compromise. Agriculture has 95 per cent of the (water) pie via SB 200. The 5 per cent they do not have relates to making water development on the north coast subject to a two-thirds vote of the Legislature in lieu of the present majority requirement. This language appeared in Proposition 8. It was supported by myself and Southern California water interests for one reason and one reason only. We did not believe that Governor Brown would have signed SB 200 if protection of the north coast did not appear in Proposition 8. No signature, no pie. By my standards, 95 per cent of a big pie is better than 100 per cent of no pie."

The governor's surprise

Despite Governor Brown's embrace of SB 200, his popularity with canal proponents was short-lived, because the ink was barely dry on the bill before he was appealing to the federal government to include those very same northern rivers in the National Wild and Scenic Rivers Act. The Farm Bureau — and a host of others — perceived Brown's action as though he had told them, "Okay, boys, you can have your canal, but you can't have any more water to put through it."

But Brown's action was perfectly consistent with his past statements on the subject. Resources Agency Secretary Huey Johnson has convinced his boss that the canal can be justified only on the basis of Delta protection and satisfaction of current water supply obligations. Thus its use in future years to wheel new supplies of water to new, yet-to-be-irrigated croplands would be jeopardized, if not out of the question.

Outraged, the pro-canal forces fanned out into the judiciary, emerging with a pair of injunctions forbidding then-Interior Secretary Cecil Andrus from acting on Brown's request for federal protection of the northern rivers. Interior lawyers returned fire by successfully overturning the injunctions, and Andrus was able, in a last-minute, drama-packed flurry, to make his final official function the designation of 1,235 miles of Northern California rivers as "wild and scenic" and thus out of reach of the dam builders. (An attempt has been commenced to seek reversal of Andrus' order by President Ronald Reagan.)

Whatever the outcome of the new federal order, Brown shut himself off forever from the affection of some of the canal proponents by making the appeal in the first place. Some key members of the farming community's political leadership say that their dislike for the governor, and their suspicions of his motives, would be reason enough to work for the repudiation of SB 200.

The pro-canal coalition has not disintegrated with the departure of the Farm Bureau Federation, nor is it terribly weakened, says William Fairbank Jr., lobbyist for the Metropolitan Water District of Southern California. Fairbank maintains that the farmers will return to the fold after they begin to understand what's going on.

Fairbank says efforts are being made toward that end: "With continued discussion, the fears of those who have these very strong convictions that we (the coalition) have agreed to something completely inflexible will be dissipated. Everyone will get back on board and say, 'Time is wasting, let us get on with the job of building the canal.'"

Fairbank, whose tenure in Sacramento for the MWD started with the original State Water Project back in 1959, is blunt in his analysis of the political acumen exhibited by the Farm Bureau: "It is my belief that — as is typical with the Farm Bureau — they have not had the opportunity to go fully into the ramifications. They are going entirely by gut reactions coming from their water committee, and the pre-

domination of their thinking centers around the taking away of north coast waters. Their understanding of the main issues is in error."

Fairbank said the educational process for the farmers is a priority. "Our whole objective is to get everyone fully comprehending what the language of SB 200 really means, and what the language in Proposition 8 really means."

During the period immediately following passage of Proposition 8 (which was endorsed by the Metropolitan Water District), efforts were made to keep the Farm Bureau from peeling off from the coalition. Crucial to those efforts were arguments that the simple change from a majority to a two-thirds vote of the Legislature to further restrict development of the north coast rivers was "not that serious."

"California wants to control its own destiny," says Fairbank. "It doesn't of course want anything in the federal system. We want it to be controlled by the Legislature and by the people of California. If one reads SB 200, one sees that the bill's supporters all agreed in the consensus that for the immediate future we are concentrating on developing the surplus waters of the Sacramento Valley to impound either above or below the ground's surface."

"The coalition is suggesting very strongly that reclamation, conservation and the conjunctive use of ground water south of the Delta is a complete part of our plan, and that until we fully explore that, we won't go to the north coast. We won't need to go to the north coast, because the engineering and financial facts are that these other ways are a lot less expensive (than north coast development)."

Fairbank says that the coalition — including the Farm Bureau — agreed not long ago that these alternative steps would be taken during the next 15 years and "if those prove to be unfeasible, then we are all together in saying that the only place left to go is the north coast. As a consequence, we don't see that we are writing off the opportunity to develop the north coast at all, but today just isn't the day."

The argument failed, Fairbank contends, when Brown petitioned Andrus to take the north coast rivers under the federal wing. "With all of the discussions that we all have had with the governor's office, no one had any idea whatsoever that the governor would take that step. Quite to the contrary, we had made very clear to the governor that in the process we were keeping control of the north coast rivers in the hands of the Legislature and the people of this state. And when he shot off that letter to Andrus, he completely destroyed the confidence of many in him. We at Metropolitan were shocked, and we said so."

Farm Bureau Federation President Heringer takes umbrage at the suggestion that his organization made its choice to oppose SB 200 without all of the facts. "We think the integrity of the State Water Project is non-existent without having access to the water of the north coast, and so we think we should just start over at this time by defeating the Peripheral Canal bill," he says.

The farmers, linked arm-in-arm with their new allies, the environmentalists, will take their case to the voters. If the governor does not call for a special election, the referendum to repeal SB 200 will be on the June 1982 ballot. If the referendum passes, the farm lobby will then throw its support behind new enabling legislation that it — and not Southern California interests — has written.

'Let's proceed'

Fairbank believes that the pro-canal coalition will prevail. A glance at its membership (in addition to those already listed) alleviates any question one may have about its political muscle: the Newhall Land and Farming Company, the Irvine Ranch Company, Rockwell International, Security Pacific Bank, Bixby Ranch, Pacific Lighting, Southern California Edison, Fluor Corporation, Pacific Mutual Insurance,

Mission Viejo Land Company, Union and Getty Oil.

The coalition plans to spend several million dollars to gain voter sanction of SB 200, but failing that, other alternatives remain. Fairbank explains: "Most of us who favor the canal believe SB 200 was not necessary, that the Burns-Porter Act of 1959 provided the necessary authority — which could have in the past been exercised but was not — to proceed with the Peripheral Canal's construction. After the people have made up their minds, and should they decide to turn down what the Legislature has done, then the real thrust as far as contractors and the state of California are concerned would be to say, 'Forget the legislation, proceed with the Peripheral Canal.' We have the authorization to do that; we always have said that. This would be done even if concurrently someone was running another bill to authorize the canal all over again. It would strike me that the thing to do is to go to the Department of Water Resources and say, 'Let's proceed.'"

Fairbank says criticism of MWD is unfounded: "We are being consistent in our position. We truly mean what we said 20 years ago, that this project was going to be developed in the interest of all of the people of California, with full protection to the areas of origin. We have adhered to that proviso in every way, shape and form, and we are now being condemned for the reiteration of our support for the protection of the north through Proposition 8."

Question of quantity

MWD representatives indeed were saying that two decades ago, but their interest in the Delta's maintenance came much later — early in the '70s — when it became clear that political considerations would probably always require such environmental protection, and that it was in the best interests of MWD to support such a position.

That decision — to agree to the provision of sometimes-large quantities of diversions of fresh water into the Delta during dry periods — rankles agricultural interests south of the Delta who foresee "their" water being used for purposes other than irrigating their crops.

Because of the attention focused on water quality in the Delta, the question of quantity too often is ignored, but it is this latter issue that complicates rational discussion. In years when precipitation in the northern part of the state is "normal," storage reservoirs are full and the only limitation on water deliveries is the lack of facilities to make those deliveries. In dry periods, however, the situation is reversed: There is insufficient water to place into the conveyance system.

The answer to this problem, as proposed by developers, is additional construction of dams and storage reservoirs. And the only rivers in the state where such extensive supplies are available are on the north coast.

In the end, however, one unalterable truth will emerge: There is not enough water in California to make everyone happy, nor will there ever be enough. Those who achieve and maintain control of future supplies will have done so through brute strength. That is how it always has been.

Like Mark Twain's search for Henderson's place, no real ground is being lost by proponents of the canal, nor has any been lost during the endless efforts to start construction of the project during its 16 years as an official proposal. But after countless words, agreements and arguments, the canal is no closer to reality than it was at its inception in the early 1960's. And if it ever is to be built, it may be on the basis of legal authority that allegedly has existed all along. Judges — not voters — may have the ultimate say in the matter of the Peripheral Canal.

Twain was right in something else he said: Thunder is good, thunder is impressive, but it is lightning that does the work.

The case for regional groundwater management

B. Delworth Gardner □ Richard E. Howitt □ Carole Frank Nuckton

A dual allocation problem is encountered in determining the best use of any groundwater basin: its best use over time (intertemporal allocation) and the best distribution of the resource among users (spatial allocation). If only one claimant were making decisions within one year, the allocation problem would disappear. A single farmer whose farm overlies a basin and who considers only this year's use of the water would pump the amount producing his greatest net return. Thus, he would earn the greatest possible "rent" for the water, extracting it as long as the value in use of an incremental unit of water exceeds the costs of pumping it.

The first complication—an intertemporal allocation problem—is that use of the water this year means foregoing rents that the water could earn if pumped in future years. The expected future rents earned by the water, however, must be discounted before a valid comparison can be made with the water's current earning power.

The decision either to use or save the water is further complicated by changing yields, prices, and costs over time and by increased future pumping costs (which also must be discounted) as pumping lowers the water table.

Adding to the dilemma for just the one farmer are other water claimants—other landowners whose properties overlie the basin. Now one farmer's pumping means that less water is available to others as well as himself, it is at lower depths, and it may be of lower quality. Thus, one farmer's pumping increases costs for each of the others, and the more he pumps in the present, the higher the future costs to himself and the others.

Since an individual pumper does not have exclusive rights to future use of the water, he tends to disregard future values in decision making, considering only the value he gets from using the water in relation to his personal pumping costs. Each pumper can be expected to act similarly. As a result, the pool is exploited at a faster rate than is most beneficial for the basin as a whole; the economic rents that the water might have yielded are dissipated, and the entire basin is drawn down to a no-profit situation. Fur-

ther, the individual pumper, in attempting to capture the groundwater before the stock is depleted by other pumpers, is likely to overinvest in size of wells, pumps, and other equipment.

The better-than-average farmer may still be able to extract some rent from the water after the others have reached the no-profit state, but even this farmer would be far better off had the basin been managed for the mutual benefit of all users. To correct this "common pool" problem some regional management entity, operating in the best interests of the joint pumpers, is needed to stop overdrafting the basin at exactly the socially optimal point where the overall rent to all users is at a maximum.

First, many groundwater aquifers are actually underutilized. Obviously, a basin such as Kings, which has perhaps 62 years before reaching the optimal steady-state level, does not yet need controls. Water policy must permit enough flexibility to impose controls only where needed.

Second, rents earned by water use over time have been increasing. Cost-reducing technological advance, for example, and expansion of foreign trade in agricultural products have increased the value of water in use, thus perhaps shielding farmers from the isolated effects of overutilizing groundwater aquifers. Long-term rents could be still higher, however, if the optimal steady-state level for the region were achieved.

Economic Benefits of Regional Regulation				
	Tule	Kaweah	Kings	Madera
Years to regional optimum	11.5	17.7	62	36
Years to no-profit state	53	67	154	93
Benefit per acre at time of optimal steady state, 1979 dollars	152.85	194.04	453.52	286.33

We made some rough calculations for four adjacent San Joaquin Valley basins: Tule, Kaweah, Kings, and Madera. "Steady state," when net withdrawals equal the average annual recharge, can be established at various levels, but only one level is best for a particular basin. Using a discount rate of 8 percent and an electricity price of 6 cents per kilowatt-hour, we computed for each basin the number of years until the optimum level steady state would be reached at current rates of overdrafting. We also computed the years to reach the no-profit state and the per-acre benefit of stopping at the regional optimum rather than continuing to overdraft to the no-profit state (see table).

With such impressive benefits to be achieved by stabilizing at the best level for the region, why have California farmers resisted regional control?

Third, farmers fear that regulations will bring a shift of control from farmer to non-farmer interests. As the number of farms has declined, the number of municipal, industrial, and recreational users competing for scarce water has increased greatly. Farmers feel that extracting ever-diminishing water rents is still preferable to losing the water entirely to nonagricultural uses.

Fourth, controls that diminish pumping mean giving up, for the sake of the future, dollar values that could be enjoyed this year. Still, reducing pumping to the regionally optimum level has to be the best for all over the long term. Some of the immediate negative impacts of pumping reductions could probably be mitigated by water-saving technology and improved irrigation efficiency.

Finally, some farmers believe that newly developed replacement water will arrive in

time to avert the no-profit, depleted state. Given the political environment today, however, it is by no means clear that significant new water development will bail out users of depleted groundwater basins.

In sum, farmers' resistance to controls over groundwater extraction is understandable. State-level management would be particularly onerous, since many basins may not need regulation for years. For some basins intervention is needed. The boundaries of the control agency should correspond as closely as possible to the boundaries of the aquifer. Personnel imposing the controls should be elected by representatives of the basin's water users, if controls are to be approved and if confidence in their administration is to be high.

Luckily, most California groundwater basins will eventually arrive at optimal steady state at a level high enough to sustain a prosperous overlying agriculture. By contrast, the Ogallala, a California-size aquifer stretching from Texas to South Dakota, is threatening to run dry. Regulatory agencies are attempting to curb each farmer's urge to pump what remains. A Kansas farmer was quoted recently by the *Wall Street Journal* (August 6, 1980): "It's a shame we didn't have water management back in the year 1950. We could have put controls on and instead of lasting 40 years, the Ogallala would have lasted 80."

Water can be managed wisely in California so that users of basins in critical overdraft conditions can realize the most from the

resource. Local cooperation to maximize long-term benefits from a basin, including the associated land values, is essential. Other basins far from the critical stage now should, nevertheless, be monitored periodically. The key to California's water management is enough flexibility so that each basin can be assessed independently. Water analysts can contribute to the decision-making process, which should probably remain basically a local matter.

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San Joaquin Valley hydrological study areas.

Is overdrafting groundwater always bad?

Richard E. Howitt
Carole Frank Nuckton

Like money in the bank, groundwater can be spent now or saved for the future. Unlike a normal bank account, however, overdrafting a groundwater source does not result in a negative balance requiring instant attention, but only indicates that withdrawals exceed deposits and the balance is declining. In nearly all basins, overdrafting initially contributes more to the community overlying the basin than it costs. As the level of the aquifer drops, however, overdrafting costs increase. Thus, a depth will inevitably be reached at which costs will exceed benefits. Clearly, overdrafting should not exceed this depth.

Continuing our banking analogy, the groundwater stock can be compared with capital that can be either invested in business (growing crops) or saved to draw interest. "Interest" accrued by the decision not to

overdraft is collected in the future through savings in pumping costs. Overdrafting, of course, lowers the water table so that, as time goes on, pumps must draw more deeply at increased cost.

Setting aside other bad features associated with overdrafting, such as land subsidence and water quality deterioration, let us consider only the economic choice between using capital and reserving it. In reserving it, the farmer must use less water on existing cropland, cut back on irrigated acreage, or import costly surface water. He would probably cut back on the least profitable irrigated crop. In the decision procedure, net return on the area's least profitable irrigated crop must be balanced against future savings in pumping costs. Money in hand today, however, is worth more than money received in the future, not just because of devaluation of the dollar, but because today's dollar can be invested at the going rate of interest. Economists use a discount rate to determine the "present value" of a sum to be received in the future. Using, for example, 8 percent, the rate a conservative investor can receive on government bonds, \$100 received next year is worth \$92.59 today, since \$92.59 invested at 8 percent will be worth \$100 in a year. The formula allowing for continuous compounding and for various time spans, becomes more complicated, but the principle is the same. Putting alternative investment strategies into present value terms allows clear comparisons to be made.

Again, using the banking analogy, the "steady state" of a groundwater source is the point at which deposits (recharge) equal withdrawals. A hydrologic system is in a steady state if net withdrawals equal the average rate of natural recharge. This state can be attained at various groundwater levels; the more overdrafting, the deeper the level. When the aquifer has been sucked almost dry and pumping has to equal annual recharge, this, too, is a steady state, but one with very high pumping costs.

Sooner or later all groundwater aquifers must reach steady state, although, it is hoped, not when empty. The management decision to be made for each aquifer is when and at what depth to stop overdrafting. Irrigated agricultural production dependent on a steady state groundwater source will have to stabilize at exactly the level sustainable by withdrawals, balanced with natural and artificial recharges.

The calculation of the optimum level for steady state of a particular aquifer depends on several variables, including the present

TABLE 1. Optimal Economic Steady State for Four San Joaquin Valley Groundwater Basins.

	Madera	Kings	Kaweah	Tule
Return, dollars*	36.50	37.15	39.44	40.07
User cost, dollars†	16.45	19.88	21.81	19.88
Average depth to groundwater level, feet, 1979	84.9	77.9	85.7	129.4
Current average rate of overdraft (drop in depth to water), feet/year	2.5	1.6	3.9	4.2
Depth of optimal steady state, feet	176	178	155	177
Years to steady state at current rates of overdraft	36	62	17.7	11.5

*Net return of an additional acre-foot of water when applied to the least profitable crop in the area. Calculated from an economic computer model of the region.

†Present value of future savings in pumping costs of extracting an additional acre-foot of water. Calculation was made using average basin depth to groundwater, average regional pump efficiency of 55 percent, net efficiency of application incorporating specific yield of the aquifer and proportion of applied water that percolates back, discount rate of 8 percent, and future energy price of \$0.06/kilowatt-hour.

depth to groundwater, the discount rate chosen, and the profitability of irrigated agricultural production in the area relative to costs of energy for pumping. Absolute values of net returns received for farm products or prices paid for energy are not important in the decision-making process; it is their comparison that is relevant.

Is overdrafting bad? Not as long as the net revenue from the least profitable crop exceeds the present value of future savings in additional pumping costs. (We are still ignoring environmental effects of overdrafting.)

To illustrate that overdrafting under certain circumstances is not always detrimental, we have selected for study four groundwater management basins out of thirteen defined as subject to critical overdraft conditions, according to the recent California Department of Water Resources report (Bulletin No. 118-80). The basins, adjacent to one another on the east side of the San Joaquin Valley, are Madera, Kings, Kaweah, and Tule.

Results of our computations for the four basins (table 1) must not be taken as definitive, because they are based on provisional aggregate data. Effects of water quality degradation and land subsidence have been omitted from the costs. The provisional results, however, demonstrate the ease with which the steady-state target can be computed, given the data, the relative sensitivity of the optimal steady state to the agriculture/energy price ratio, and the discount rate selected. From the results, the approximate degree of urgency for basin management can be estimated in terms of years to steady state at the current rate of overdraft.

Although there is not much difference among basins in the value of an additional acre-foot of water applied to the least profitable crop, there is considerably more varia-

tion in the value of water remaining underground.

Kaweah Basin is the only one to differ in optimal depth to steady state with a permanent 155-foot basin, compared with 177 in the other districts. Since Kaweah is bounded on two sides by Tule and Kings basins, the hydrologic interconnections may cause problems in achieving these levels in the long run. Given the time to steady state, however, it is clear that Kings Basin will not cause problems for Kaweah.

The number of years to steady state shows that Tule and Kaweah will soon face long-term economic costs and should start planning immediately for steady state "no overdraft" adjustment. Madera and Kings basins have, respectively, 36 and 62 years before current levels of overdrafting become uneconomic. This long period in which current levels of overdraft are economically beneficial to the regional agricultural economy should allow plenty of time to formulate plans for future steady-state adjustments. In such regions, the costs of detailed hydrologic planning are better deferred, and an audit of the situation in about five years should suffice for the time being.

The steady-state depths and times on which these conclusions are based, however, depend on two key factors—the discount rate and the agriculture/energy price ratio. In table 2 sensitivity of the results to changes in the relative energy price (up 50 percent from 1979 prices, 100 percent, 150 percent) and discount rates of 5 and 10 percent are analyzed. As expected, lower discount rates and higher energy costs shorten the time to steady state.

At a 5 percent instead of 8 percent discount rate, both Tule and Kaweah have

already gone past the point of optimal steady state. When the effect of 7.5 cents per kilowatt-hour is combined with a 5 percent discount rate, all the basins should stabilize at a very shallow depth. Given the current rate of inflation, however, and escalating energy prices, a much more likely combination is a high discount rate and high energy prices. The effect of 7.5 cents per kilowatt-hour dominates the offsetting effect of the shift to the 10 percent discount rate, significantly reducing the time to steady state. Tule Basin would reach optimal steady state in only 2.9 years.

Without regional management and regulation in the critical overdraft basins, such as Tule, individual pumps are economically inclined to pump beyond the steady-state point optimal for the basin. In fact, each farmer would keep pumping until a steady-state depth of no profit is reached—that is, overdrafting would continue to the water table depth at which individual pumping costs equal the value of water used on the least profitable crop. At this point the farmer would cut back on rates of groundwater extraction, the basin would be in hydrologic steady state, and crop acreage would be reduced by the same amount as under regional management, but at a later date. The problem is, however, that pumping costs would be so high that marginal crops (the least profitable crops) would be generating no profit.

By contrast, under regional management, overdrafting would be stopped at a higher

water level, hydrologic steady state would be reached sooner, pumping costs would be lower, and marginal crops would still show a profit. Long-range benefits to the basin and to individual farmers far outweigh short-term profits extracted by pumping beyond the optimum point.

On the other hand, Kings Basin under high discount rate and high energy cost assumptions still has 38 years before reaching the steady-state level optimal for all farmers drawing from that aquifer. Basins in such an enviable position can delay costly regulatory actions, at least for a time.

Several economic and hydrologic problems with overdrafting have been simplified in this analysis. For example, it is difficult to attach dollar values to some of the environmental factors. Land subsidence resulting from the drawdown of the water table causes problems with overlying roads, canals, and well linings. These costs are not major when compared with increased pumping costs for all future periods. There are, however, serious concerns about the permanent loss of storage capacity as an emptying aquifer partially caves in. Salinity appears to increase as water stocks diminish. In some areas, sea water intrusion in drawdown aquifers is a problem.

Obviously, water managers must find a way to add environmental and water quality deterioration costs associated with overdrafting into their computation of the optimum steady-state level of an aquifer. One way would be to shorten times and raise optimal

steady-state depth computations (say 10 or 15 percent). A safety margin should also be built into the optimal steady-state target level to allow for drought years when natural recharge is below normal.

Conclusion

Overdrafting groundwater is not always bad, nor is it all bad. Overdrafting can be economically beneficial in some areas even for many years to come, but ultimately a point will be reached at which long-term costs of overdraft exceed short-term benefits in present value terms. This critical point varies greatly from basin to basin, and the urgency with which basin management and overdraft controls are needed varies accordingly.

At present groundwater levels and pumping costs in the San Joaquin Valley, it is clearly essential to define basins of workable size for management and determine if and when overdraft will become costly to water users. Groundwater management plans, however, should not require that overdrafting cease or that large amounts of money be spent on detailed regulation programs for basins many years away from reaching optimal steady-state depths. In other basins, rapidly approaching the critical steady-state point, effective and equitable groundwater management must be quickly established.

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TABLE 2. Sensitivity of Steady State to Changes in the Discount Rate and in Energy Costs

Discount rate = 5%				Discount rate = 10%			
Cost/kilowatt-hour	User cost	Depth to steady state	Time to steady state	Cost/kilowatt-hour	User cost	Depth to steady state	Time to steady state
\$	\$	ft	yr	\$	\$	ft	yr
Madera				Madera			
0.045	19.19	201.2	46.2	0.045	10.05	307.5	88.3
.060	25.59	95.7	4.3	.060	13.40	202.6	46.7
.075	31.99	31.6	-21.2*	.075	16.76	138.1	21.1
Kings				Kings			
0.045	19.69	203.0	77.7	0.045	10.32	312.0	145.4
.060	26.26	95.5	10.9	.060	13.75	205.2	79.1
.075	32.82	30.3	-29.6*	.075	17.19	139.6	38.3
Kaweah				Kaweah			
0.045	25.03	167.5	21.0	0.045	13.11	306.1	56.7
.060	33.38	53.2	-8.4*	.060	17.48	192.6	27.5
.075	41.72	-0.0†	-26.1*	.075	21.85	123.0	9.6
Tule				Tule			
0.045	23.19	196.3	16.1	0.045	12.15	324.7	46.9
.060	30.92	80.3	-11.8*	.060	16.20	209.4	19.2
.075	38.65	9.9	-28.7*	.075	20.25	141.6	2.9

*Negative values indicate the number of years ago that optimal water for steady state was exceeded at current overdraft.

†At this low discount rate and high relative energy cost, no drawdown of the water level is justified.

under current ass., are already there!

WATERLOG

the quarterly newsletter of the
WORKING ALLIANCE TO EQUALIZE RATES
801 HOLMBY AVENUE • LOS ANGELES, CALIFORNIA 90024 • (213) 270-4151

VOLUME 3

ANALYSIS OF SB 200

SPRING, 1981

PERIPHERAL CANAL REFERENDUM QUALIFIES SETS STATE RECORD

The first referendum in thirty years qualified with a record breaking number of signatures, gathered in record breaking time. A million signatures were gathered in 65 days with no lead time to prepare any literature or a grassroots organization. 843,000 were turned in.

SB 200, which authorizes the peripheral canal package of water development facilities, was the most hotly debated issue in the state legislature last year. More money has been spent on its behalf both in lobbying expenditures and campaign contribution rewards than any other piece of legislation in our state's history. Now the debate and massive expenditures of money will continue.

The referendum will appear on our ballots in June of 1982, the next statewide election, unless the Governor decides to call a special election in November. There are indications that he might do this. Then the citizens of California can decide whether to accept or throw out the action taken by the state legislature and by Governor Brown when they passed

and signed SB 200 into law. No work can progress on any of the many facilities authorized by SB 200 as long as the election is pending.

This issue of WATERLOG contains an in depth analysis of SB "200. It shows that the legislature has given away a great deal of power and authority for future decision making. Southern California will have a surplus of water far into the next century without building anything more. The highly touted environmental protections in SB 200 are worthless when practical realities and past history are examined. Water projects have never paid for themselves. California needs a comprehensive water policy that will insure that water is used efficiently and according to its worth.

This will be one of the most important decisions the people of California will make at the polls for the next generation. Study the issues well and vote wisely.

Dorothy Green, Coordinator.

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SB 200 - an analysis of THE PERIPHERAL CANAL PACKAGE OF WATER DEVELOPMENT FACILITIES

A BLANK CHECK TO BUILD.

Twenty years ago, the voters of California narrowly approved (by 108,000 votes) the Burns-Porter Act that authorized the sale of General Obligation Bonds to build the State Water Project. The voters were led to believe that that bond issue would provide enough money to "meet the water needs of the state." How those needs were to be met was left quite open ended.

The Burns-Porter Act calls "for the construction of such additional facilities . . . necessary and desirable to meet local needs . . . and to augment the supplies of water in the Sacramento-San Joaquin Delta from multiple purpose dams, reservoirs, aqueducts and appurtenant works in the watersheds of the Sacramento, Eel, Trinity, Mad, Van Duzen and Klamath Rivers . . . It also calls for a delta transfer facility, rather than a peripheral canal.

Now that the \$1.75 billion dollar bond issue is essentially spent, we are being told that we need to spend an additional \$20 billion by the year 2000 to "meet the water needs of the state."

When the \$1.75 billion dollar amount was set for the bond issue more than twenty years ago, members of the legislature and administration knew it would be far from adequate to build all that was planned. The size of the bond issue was a political judgement as to the maximum amount of money the people would approve.

SB 200 continues the same blank check as Burns-Porter. Total discretion has been given to the Director of Water Resources to decide when, where and under what conditions it is "feasible" to build the next facility.

"NEED" NEVER ESTABLISHED.

The way in which "need" for water development was determined is a lesson in bureaucracy without restraint. The state first inventoried all the water resources in the state and published this inventory as Bulletin 1. Then the state inventoried all the "irrigable" land in the state, published as Bulletin 2. These were put together in Bulletin 3, the California Water Plan. There has never been a comprehensive financial analysis.

The benefit/cost analysis performed for the 1960 ballot election produced a positive ratio only because the costs of Oroville Dam were not included in the figures. No adequate benefit/cost analysis has been performed on the package of facilities in SB 200.

No analysis has ever been made as to how much it will cost to deliver water from one end of the state to the other, and if, in fact, there would be customers for the water at that cost.

State law requires that the users pay. There are indications that San Joaquin Valley farmers are already having trouble meeting their state water bill despite the fact that they are currently heavily subsidized by the Metropolitan Water District.

SB 200 NEEDED TO MEET CONTRACTUAL OBLIGATIONS.

Senate Bill 200 authorizes the construction of additions to the State Water Project (SWP) in order to fulfill contracts to deliver water signed by the state in the 1960's, after the Burns-Porter Act was passed. To meet the contracts, the state will have to pump twice as much water out of the Delta for export as can now be taken without greatly aggravating serious environmental problems that exist in the Delta and endangering the Delta's water quality. Several additional dams and reservoirs, additional canals and pumping facilities, and additional power generating facilities as well as the peripheral canal will have to be built in order to meet the contracts. (See below for list of facilities authorized.)

The contracts were signed in another age when natural resources were seemingly unlimited and energy very cheap. Oil was selling for \$2 a barrel and nuclear power, it was thought, would be so cheap it would not have to be metered. The economy was expanding at a fast pace with apparently no limits on our ability to pay or to borrow.

These contracts are clearly no longer appropriate considering present realities and must be renegotiated. All the good dam sites have already been built on, energy prices are spiraling ever higher, the state's financial resources are spread exceedingly thin, and the Delta environment cannot tolerate the removal of any additional water.

CONTRACTS MUST BE RENEGOTIATED.

The terms of the contracts call on the state to deliver if practicable the prescribed amount of water - to make a good faith effort. It is acknowledged that during drought years, the state may not be able to meet delta environment standards and ship all the contracted water south. It is also clear that as the environmental needs of the San Francisco Bay and Delta are more fully understood, they should have some claim on the available water. Ability to fulfill the contracts must be viewed in the context of meeting all the needs of the state for water.

NO NEED IN SOUTHERN CALIFORNIA.

Additional water supplies are not needed to meet the needs of Southern California despite the threats of dire consequences issued continuously by the Metropolitan Water District of Southern California (MWD). MWD's supply

and demand projections contain zero conservation. State mandated conservation measures now in place that require no special action by anyone will produce a larger savings, according to state officials, than the dire predictions of shortages now issued by MWD. Increasing water costs, especially as old energy contracts are renegotiated, will trigger further conservation. There will be a surplus of water in southern California in 2000 without building any additional facilities. Other cheaper sources are also available. (For a fuller discussion, see below.)

ENERGY NEEDS ARE ENORMOUS.

Although not mentioned in SB 200, the state will have to build additional power plants to pump the water south. The State Water Project is now the single biggest user of electricity in the state and will more than double the energy it uses should SB 200 pass. MWD is the second largest user of electricity in the state.

Authorization to build whatever generating facilities are needed already exist in the Central Valley Act passed in the 1930's. Revenue bonds that do not require a vote by the people are being sold on an ongoing basis to build what the Director of Water Resources decides is needed. The legislature has given away its authority to review these decisions. (See below for power facilities planned.)

ENVIRONMENTAL PROTECTIONS FOR DELTA ARE ILLUSORY.

SB 200 contains four measures that are supposed to protect the Delta environment: fish screens that function so as to keep small fish, eggs and larvae from going down the canal to the pumps, a plan to restore historic levels of fish and wildlife in the Delta, water quality standards (salt content), and an environmental impact report that must consider how operation of the peripheral canal will affect the level of nutrients needed to sustain life in the Delta. It is exceedingly unlikely that any of these so-called Delta protections will or can be implemented so as to achieve the stated desired goals. (For full discussion see below.)

CONSERVATION, REUSE, GROUND WATER STORAGE.

The present state administration is very proud that SB 200 finally gives them specific authority to carry out conservation, water reuse and ground water storage programs. Current water law does not include such clear authority. However, SB 200 states that these programs can only be carried out after contracts are signed with the local water agency within which the program would be carried out. Considering the long standing and vehement opposition by local water agencies to these kinds of programs, it is extremely unlikely that many such contracts will be signed.

WATER FACILITIES AUTHORIZED BY SB 200

PERIPHERAL CANAL -

The Peripheral Canal would be built to carry up to 80% of the Sacramento River around the San Francisco Bay Delta directly to the pumps located at the south end of the Delta. It would be 43 miles long, as wide as 32 freeway lanes (400 feet), and as deep as a three story building (30 feet). Big enough to float an oil tanker.

LOS VAQUEROS RESERVOIR -

Los Vaqueros Reservoir would be built in the southern Delta region and could store up to one million acre feet of water.

GLENN RESERVOIR -

Glenn Reservoir would be built on the north fork of Stony Creek in Glenn County, north of Sacramento on the eastern slope of the Coastal range of mountains. It would be able to store up to 5.5 million acre-feet of water.

SHASTA DAM OR COLUSA RESERVOIR -

If the Glenn Reservoir is found not to be feasible, SB 200 authorizes either enlarging Shasta Dam or constructing the Colusa Reservoir. The choice is left to the discretion of the Director of the Department of Water Resources.

MID-VALLEY CANAL -

The Mid-Valley Canal would convey other than state water to the agricultural interests in the Fresno area supposedly to alleviate a ground water overdraught problem. This facility was included to gain the vote of Assemblyman Richard Lehman.

RELOCATE CONTRA COSTA CANAL INTAKE -

The canal that brings water to many Contra Costa County residents would be relocated to the same pool of water from which both the State Water Project and the Central Valley Project pump. This provision was included to insure the support of the Contra Costa County Water District for SB 200.

SUISUN MARSH -

Mitigation facilities for present, past and future damage to the wildlife resources of Suisun Marsh are authorized.

ADDITIONAL CONVEYANCE FACILITIES -

to serve the counties of the San Francisco Bay and Delta areas.

FINANCING AND SUBSIDIES

APPOINTED OFFICIALS GIVEN GREAT POWER.

Nowhere in SB 200 are there provisions for public participation or legislative review in any of the many crucial decisions that are yet to be made. The Director of Water Resources alone decides when it is feasible to build the next water facility or power plant. The Directors of both Water Resources and Fish and Game together establish a plan to restore the historic levels of fish and wildlife in the Delta (no mention of implementing the plan) and decide when the fish screens work in a satisfactory way. The Water Quality Control Board enforces water quality standards.

All of these officials are appointees of the Governor, whoever that might be at the time. Tremendous power is given away to people whose self interest is best served by building ever bigger systems and bigger bureaucracies to manage those systems.

INTERRELATIONSHIP WITH FEDERAL GOVERNMENT.

The federal Central Valley Project also pumps water out of the delta. Previous bills were written to include federal participation in paying for and operating the peripheral canal since both systems would benefit. However, the feds are not interested in paying for a canal they consider uneconomic. They are also reluctant to release water in drought years to protect the Delta environment. Their contractors have first call on their water.

SB 200 provides that the peripheral canal cannot be used to transport federal water unless the Feds cooperate in maintaining Delta water quality and in the attempt to restore historic levels of fish and wildlife. If the feds do not cooperate, the state must release additional water from its reservoirs. This is the most stringent measure in SB 200 and the only real reason why some agri-business interests oppose it.

AREA OF WATER'S ORIGIN PROTECTED.

The Sacramento Valley's water supply would be protected so that the Valley can continue to grow.

TWO STUDIES.

A study of the San Francisco Bay System to determine the need for high winter and spring flushing flows to maintain the health of the Bay is to be carried out with no time certain to finish it. Also to be studied are the effects of the operation of the State Water Project on the water supplies of the Bay and Delta areas. Construction is to go forward while both of these studies are in progress.

"Build first and ask questions later", was the way in which the Burns-Porter Act was sold in 1960. This continues to be the philosophy behind the expansion of the State Water Project today.

FINANCING FOR SB 200

The package of water development facilities in SB 200 is the biggest pork barrel project in U. S. history and it is a state only project. Newly revised state estimates (in Bulletin 132-80) of the cost now say that \$10.1 billion in current dollars will be spent by the year 2000. Spending is projected to continue to 2035 to meet contracted "need".

There are no financing provisions contained in SB 200 because a money bill needs a 2/3 majority vote in the legislature to pass. Financing is now expected to come from Revenue bonds that will be dependent on water sales, the revenue of the project. Authorization to sell revenue bonds for water development date back to the 1933 Central Valley Project Act, the same Act that permits revenue bonds to be sold for water related power facilities. Both water and power bonds can be issued by the Administration without legislative approval or public comment.

General obligation bonds that have the full faith and credit of the state behind them would require a 2/3 vote of the people and would sell at a lesser interest rate. This would be even more difficult to achieve than a 2/3 vote in the legislature.

SUBSIDIES.

TIDELANDS OIL MONEY has been providing a \$30 million a year subsidy to the California Water Fund which is used for building water projects. This yearly gift, which now totals over \$400 million, is expected to continue.

ELECTRIC RATES are higher all over California because of the drain on our power system caused by the State Water Project. So much cheap hydro power is used for pumping water, that the rest of the state must pay, in their electric bills, for the newer more expensive power plants. It is projected that the state will be paying 1/5 the statewide average for electricity in 2000.

PROPERTY TAXES are levied by most water districts as a major source of income. State law requires that water users pay, but user has been derided as the contractor for water, not the consumer. MWD gets about one third its income from property taxes.

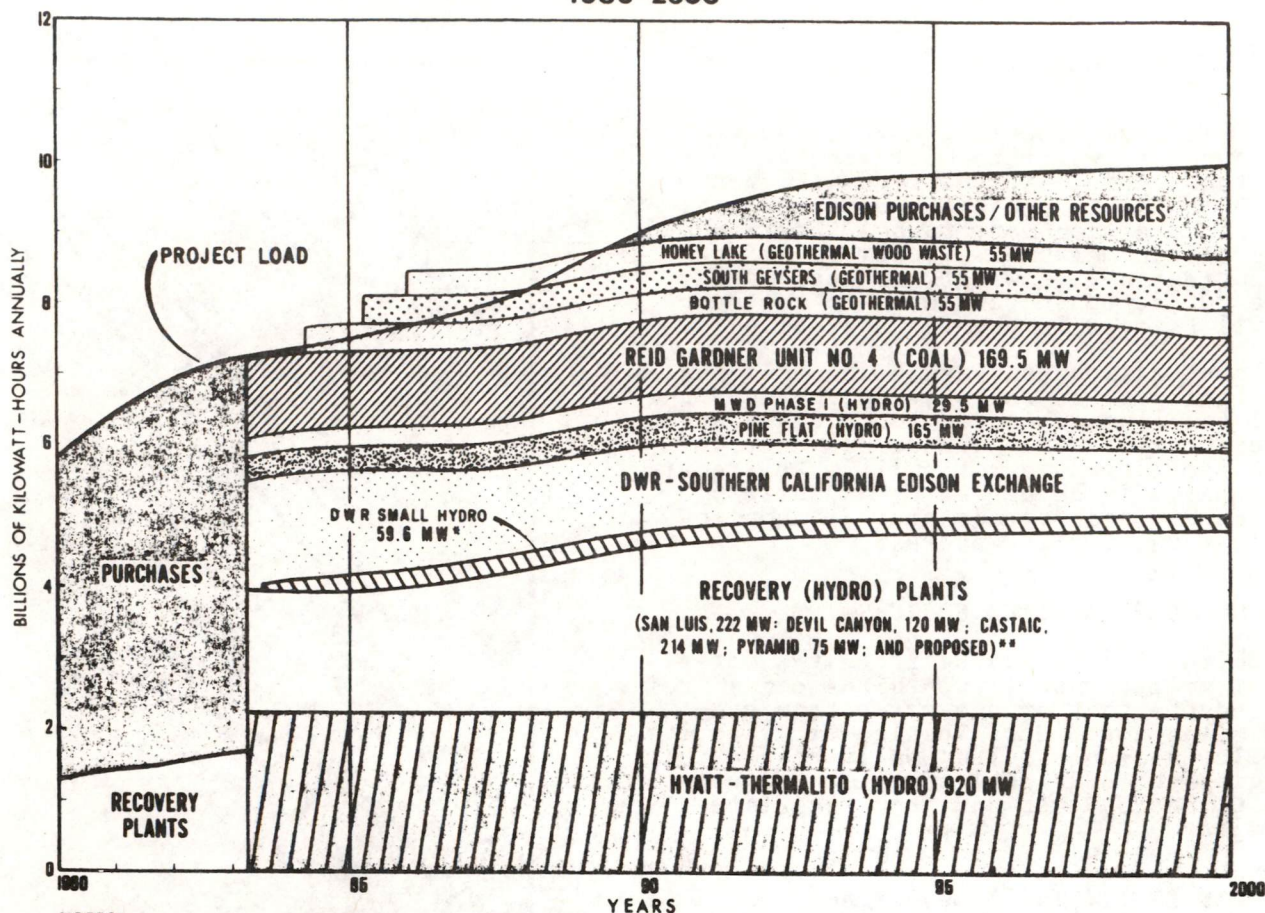
FLOOD CONTROL AND FISH AND WILDLIFE problems created by the project are to be corrected or mitigated by use of General Fund monies.



CALIFORNIA STATE WATER PROJECT

ESTIMATED ELECTRICAL ENERGY LOADS AND RESOURCES

1980-2000



NOTES:

*BASED ON ESTIMATED PROJECT PUMPING DURING MEDIAN CONDITIONS OF WATER SUPPLY IN THE SACRAMENTO-SAN JOAQUIN DELTA AND PROJECT SERVICE AREAS
 **MAXIMUM GENERATING CAPACITIES SHOWN IN MEGAWATTS (MW) FOR THE RESPECTIVE PLANTS DO NOT REPRESENT DEPENDABLE CAPACITIES AND ARE SUBJECT TO INTERRUPTIONS, WATER DELIVERY REQUIREMENTS, AND OTHER LIMITATIONS
 * INCLUDES 16 UNITS AT 12 SITES INCLUDING COTTONWOOD POWERPLANT.
 ** FUTURE RECOVERY PLANTS INCLUDE PUMPING-GENERATING PLANTS AT GLENN AND LOS VAQUEROS RESERVOIR COMPLEXES.

2000 Supply, in billions of kWh

IDENTIFIED RESOURCES

- | | |
|--|--|
| <p>(1) Edison Purchases/Other Purchases, estimated maximum possible off-peak energy purchases from Southern California Edison Company under the Power Contract signed October 11, 1979, based on a preliminary analysis of available transmission capacity (approximately 225 MW)..... 0.7</p> <p>(2) Honey Lake, a proposed 55-MW wood-waste/geothermal development. Feasibility studies are underway, jointly funded by the Department of Energy, U. S. Forest Service, GeoProducts, Inc., and DWR. 0.4</p> <p>(3) South Geysers, a 55-MW geothermal development proposed to be constructed by the DWR in the Sonoma County portion of The Geysers area -- currently in the NOI process before the CEC..... 0.4</p> <p>(4) Bottle Rock, a 55-MW geothermal development proposed to be constructed by the DWR in the Lake County portion of The Geysers area -- currently in the APC process before the CEC..... 0.4</p> <p>(5) Reid Gardner Unit No. 4, the estimated portion to be available to the DWR from the output of a 250-MW unit to be constructed jointly by the DWR and Nevada Power Company under an executed Participation Agreement. All construction permits have been secured and major equipment has been ordered (169.5 MW DWR share)..... 1.0</p> <p>(6) MWD, the output, under an executed purchase contract, from five small hydroelectric developments being constructed by The Metropolitan Water District of Southern California on its distribution system -- totalling about 29.5 MW capacity..... 0.3</p> | <p>(7) Pine Flat, the output, under an executed purchase contract, from a proposed 165-MW hydroelectric plant to be constructed by the Kings River Conservation District at the base of existing Pine Flat Dam. Revenue bonds have sold by the District to finance construction costs and the primary construction contract awarded..... 0.4</p> <p>(8) Small Hydro, the output of 15 small Hydroelectric powerplants located at a dozen Project sites, including proposed Cottonwood Powerplant (15 MW) with a total capacity of 60 MW..... 0.4</p> <p>(9) DWR-Southern California Edison Exchange, the estimated amounts of off-peak energy to be made available to the DWR in exchange for 485 MW of SWP on-peak capacity to be provided the Southern California Edison Company, under the Power Contract signed October 11, 1979..... 1.1</p> <p>(10) Recovery Plants, the DWR's share of output of constructed Castaic Powerplant (214 MW), San Luis Pumping-Generating Plant (222 MW), and Devil Canyon Powerplant (120 MW); Pyramid Powerplant now under construction (75 MW); and pumping-generating plants at the proposed Glenn and Los Vaqueros Reservoir Complexes..... 2.6</p> <p>(11) Hyatt-Thermalito, the output from existing hydroelectric plants (920 MW combined capacity) located below Oroville Dam which is now sold to the California Companies under a power sale contract to be cancelled effective April 1, 1983. 2.3</p> <p style="text-align: right;">TOTAL, ALL IDENTIFIED SOURCES..... 10.0</p> |
|--|--|

WATER SURPLUS TO CONTINUE IN SO. CALIFORNIA

NO ADDITIONAL WATER NEEDED FOR SOUTHERN CALIFORNIA

Southern California does not need one more drop of developed water to meet its needs far, far into the future. The Metropolitan Water District's (MWD) own projected dry year deficit will be more than made up by state mandated conservation measures already in effect. The escalating cost of water, as real energy costs are reflected in the costs to the consumer, will trigger further conservation.

Yet Southern Californians are being told that they are "going to be thirsty and there is the potential for a human and economic disaster" if the peripheral canal package of water development facilities is not built. This scare tactic campaign is being led by a public agency, the MWD, an agency that is supposed to represent the public interest.

SOUTHERN CALIFORNIA WATER SOURCES.

About a third of southern California's water comes from wells. About two-thirds comes from three aqueducts that brings water from hundreds of miles away. Los Angeles city has its Owens Valley Aqueduct. The MWD is responsible for bringing in additional supplemental water from the Colorado River and from the State Water Project.

MWD PREDICTS AN 11% TO 14% DRY YEAR DEFICIT BY YEAR 2000.

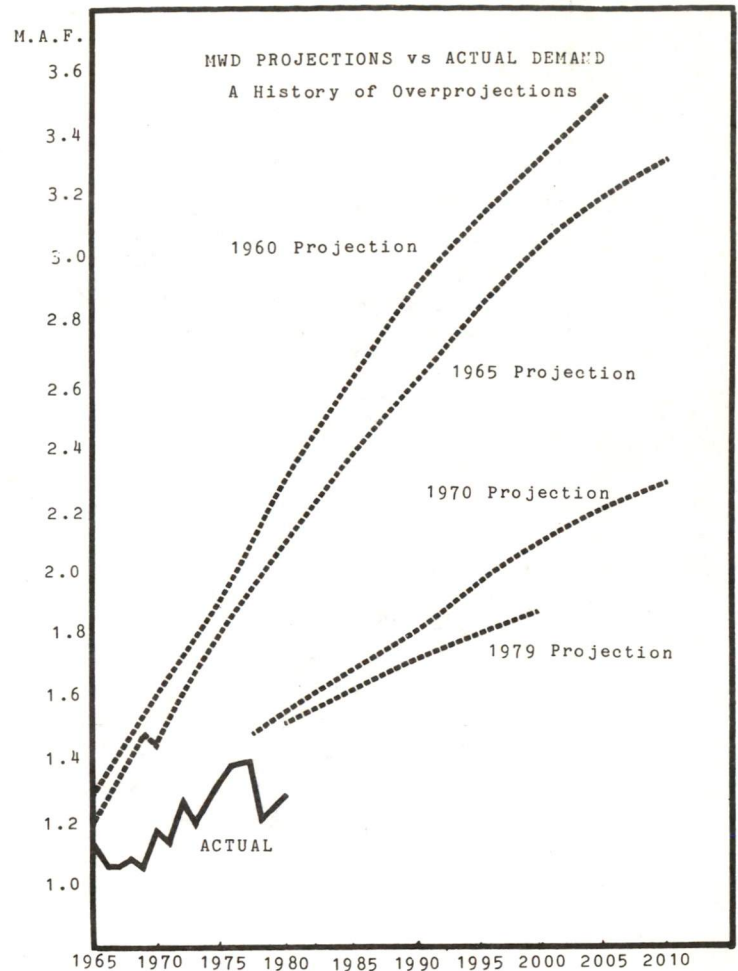
After Arizona is able to take its entitlement from the Colorado River and some Indian claims are settled, the MWD estimates a dry year deficit, year 2000, of between .4 and .5 million acre feet (MAF) a year to meet its 3.6 MAF estimated need in its service area. .5 divided by 3.6 equals 14%.

MWD INCLUDES GROWTH FOR THE FUTURE.

MWD has included in its projections a 25% increase in population within its service area in the next 20 years - from 11 to over 14 million people. In 1960, MWD predicted a southern California population of 28 million people in year 2000 and a need for 4 MAF of supplemental water at that time, 3.3 MAF by the year 2000. It was this prediction upon which the contract with the state was signed. Since then, MWD's estimates of need have been revised repeatedly downward until now 1.9 MAF will meet its needs in year 2000. (See graph below.)

MWD HAS INCLUDED ZERO CONSERVATION.

When MWD'S demand projections are analyzed, it is clear that no conservation has been included. Demand projections are based on the estimated gallons per person per day usage multiplied by the number of people that are expected to live within the service area. MWD



is figuring that people will be using the same amount of water, per person, per day, in year 2000 as they used in 1970. A slight decrease in the average used in 1980 is attributed by the MWD to changing life styles. As the cost of housing escalates, more people are living in apartments and condominiums, reducing the need for watering back and front yards. (About 40% to 45% of residential water is used outside.) Therefore, we conclude that zero conservation has been included in MWD's projections.

STATE MANDATED CONSERVATION IN EFFECT NOW WILL SAVE 14% TO 17%.

In response to the drought of 1977, the state has mandated various conservation measures. Only low flow toilets, shower heads and faucets are now in the marketplace. These will slowly replace current models in old buildings and will automatically be installed in any new construction. A leak detection program with other minor conservation measures will save between 14% and 17% by the year 2000 according to state officials. These measures require no conscious effort on the part of people.

ENERGY IS A LARGE AND INCREASING PART OF WATER COSTS.

The State Water Project is now the single largest user of electricity in the state and is due to more than double its energy consumption. The MWD is the second largest user of electricity. Present energy costs for pumping water are not reflected in the price. Energy contracts were signed back in the 1960's when oil was selling for \$2 a barrel and nuclear was thought to be so cheap it would not have to be metered. Those contracts run out in March, 1983. The cost of energy is expected to increase five times as the contracts are renegotiated. Other contracts for hydro power from Hoover and Parker Dams used to pump Colorado River water also come up for renegotiation in the 1980's. New power facilities yet to be built will, of course, produce even more expensive energy than old facilities already built and operating.

SWP WATER COSTS TO INCREASE 5 TO 8 TIMES.

In testimony before the State Energy Commission, the Department of Water Resources has testified that the cost of state water will increase 5 to 8 times by the year 2000. This despite the fact that electricity for pumping water will cost only one fifth the average cost of electricity in the state. (Orange and Los Angeles Counties Water Reuse Study.)

INCREASING COSTS WILL FURTHER REDUCE USE.

The California Council for Environmental and Economic Balance, in a position paper in support of SB 200, states that people will conserve 25% when the cost of water doubles. A UCLA study into the effect of increasing water costs on consumption concludes that for each 10% increase in cost, there will be a 5% reduction. People's response to increasing costs of energy has been to use less. There is no reason to believe the MWD when it states that water is different, and that people will use it just as freely as they do now after the price doubles, triples, or quadruples.

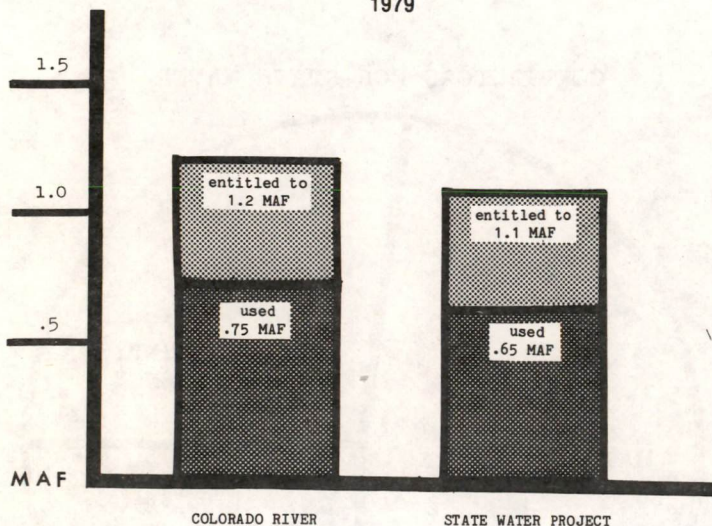
DROUGHT OF 1977 ONLY IN THE NORTH

The water lobby always reminds us how northern California suffered during the drought of 1977. MWD brags about leaving its state water in the north in exchange for the energy to pump additional water from the Colorado River, and called for 10% voluntary conservation. They forget to tell us that the ground water basins of southern California were full and could have been pumped for additional supplies. There is also much surplus water stored on the Colorado River behind Lakes Mead and Powell to which MWD has claim.

The City of Los Angeles instituted mandatory conservation of 15% with penalties because its own water supply from the Sierras via Owens Valley was limited. This despite Los Angeles' 30% entitlement to MWD water, an entitlement paid for by 50 years of property taxes for drought insurance paid to the MWD.

SOURCES OF MWD WATER

1979



ADDITIONAL WATER DEVELOPMENT UNNECESSARY.

When state mandated conservation measures are added to people's reaction to the enormous price increases that are coming, it is clear that we can expect a minimum savings of 25%, or about double the amount MWD says we will be short. There will be a continuing supply of surplus water in southern California without building any more facilities.

YET SOUTHERN CALIFORNIANS WILL PAY.

Since MWD has contracted for 48% of all the water the state can deliver, it must pay for the capital costs, the steel and concrete, needed to deliver that amount of water to southern California regardless of the amount of water actually used. Southern Californians will be paying for half of all the additions to the State Water Project in SB 200 for zero benefit - paying for a series of projects that are not needed to meet its water needs far, far into the future.



THE KERN COUNTY CONNECTION

Since southern California does not need more water, who then stands to benefit from this giant public works project? It is instructive to look at who has contracted for SWP water and who is actually using it.

75% OF SWP WATER IS CONTRACTED FOR BY TWO WATER AGENCIES.

Metropolitan Water District of Southern California has contracted for 48% of all the water from the state. The Kern County Water Agency has contracted for 27%. The capital costs of meeting these contracts are born by the contractors regardless of the quantity of water actually taken from the system. The rate-payers and taxpayers of southern California will be paying for half the cost of any additions to the State Water Project and will get no water in return.

MWD DOES NOT USE ITS FULL ENTITLEMENT.

MWD now uses only about half of its entitlement to state water, only about two-thirds its entitlement to the Colorado River. (See Graph.)

KERN COUNTY DEPENDENT ON MWD'S "SURPLUS".

MWD's unused entitlement is sold by the state to the Kern County Water Agency (KCWA) for just the cost of the energy needed to pump the water out of the Delta to Kern County. This cost is about 1/10 what KCWA pays the state for its own entitlement water. The taxpayers and ratepayers of southern California are not only paying for an aqueduct system far larger than they will ever need, but the state is practically giving away the water to which MWD is entitled.

The combination of KCWA's own entitlement and MWD's "surplus" being used in Kern County now equals more than KCWA will be entitled to when the system is built out. (1.153 million acre feet full entitlement vs. 1.290 million acre feet used in 1979.)

2/3 OF KERN COUNTY'S STATE WATER USED IN FOUR WATER DISTRICTS.

State water was originally promised to farmers in Kern County who had seriously depleted their underground water supply. However, state water is being used instead to irrigate new land that has no natural ground water, land that is worthless for agriculture without imported water. Most of this new land is located in four little water districts along Interstate 5 and the aqueduct, in the rain shadow of the coastal mountains. This land has increased in value as much as 1400% because of public investment.

The four water districts are Lost Hills, Berrenda Mesa, Belridge, and the Wheeler Ridge -

Maricopa Water Districts. Two thirds of the land in these water districts is owned or operated by multi-national corporations, tax dodge operators (Berrenda Mesa Farms and Tejon Agricultural Partners), and, with the most land yet to develop, the Tejon Ranch owned in large part by the Chandler family of the Los Angeles Times.

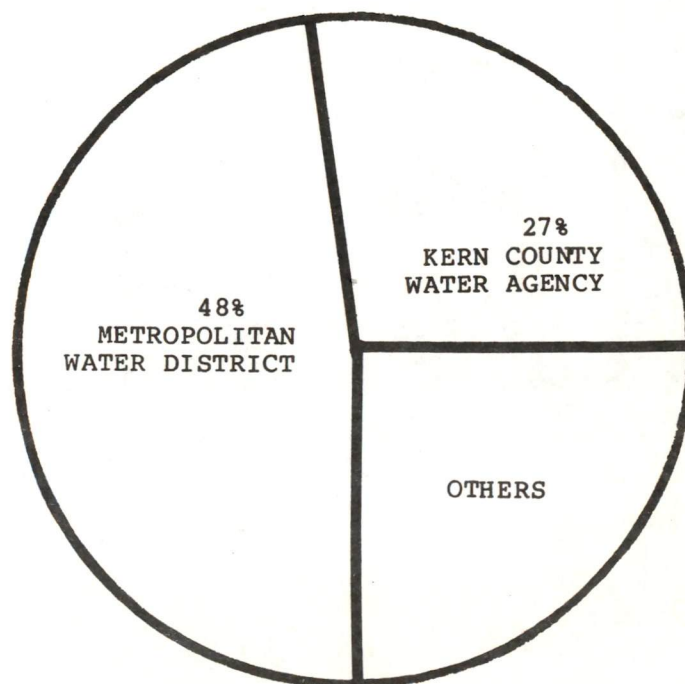
SUMMARY OF MAJOR LAND OWNERS OR OPERATORS OF IRRIGATED LAND.

Tejon Ranch	41,560
Chevron and Standard Oil	32,916
Getty Oil	31,473
Belridge (Shell Oil)	29,574
Blackwell (Lazar-Freres)	22,318
Tenneco	19,432
Berrenda Mesa Farms	12,390
Union Oil	3,979
Southern Pacific	3,717
Buttes Gas and Oil	2,445

Total 199,804 acres

out of a total gross acreage of 281,320

CONTRACTORS FOR STATE WATER



CROPS GROWN FOR TAX WRITE-OFFS.

Crops grown in these districts are not those that feed the hungry of the world, but are those that have the biggest tax advantages. Such crops as pistachios that take twelve years to mature, almonds and grapes are grown with entitlement water. "Surplus" water cannot be used for permanent crops and is used mostly to grow cotton which has benefited from federal price supports.

FURTHER DEVELOPMENT IN KERN COUNTY DEPENDENT ON GUARANTEED SUPPLY OF MWD "SURPLUS".

Since the KCWA's full entitlement is already being used, there can be no new development within its service area unless some existing user gives up his water, or there is a guaranteed supply of "surplus" from the MWD. The MWD has contracted for much more water than it will ever need and can therefore fill the needs of Kern County developers - at subsidized water costs.

The Tejon Ranch has filed plans with the Kern County Planning Department to develop 112,000 acres into recreational, commercial and residential subdivisions. The Keene Ranch is also planning major new developments.

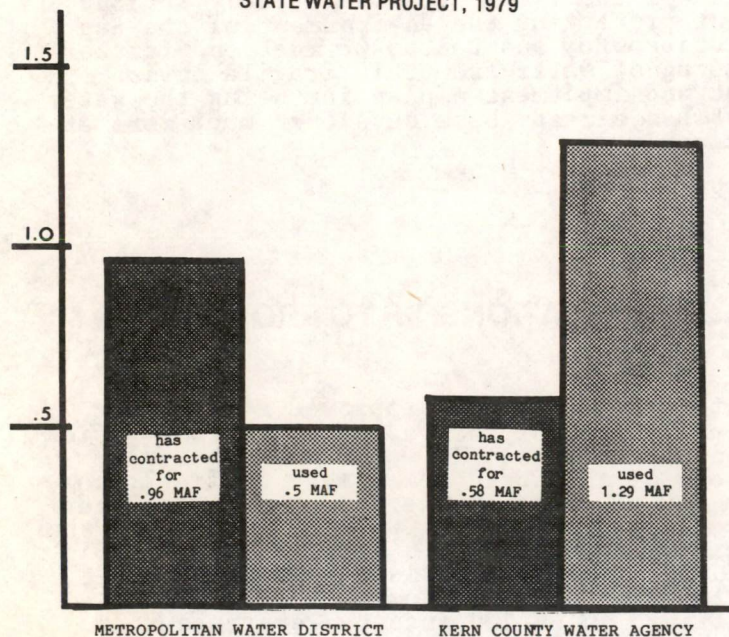
LOS ANGELES TIMES COVERAGE OF WATER ISSUES INADEQUATE.

The ownership by the Chandler family of both the Los Angeles Times and the Tejon Ranch raises questions about the totally inadequate news coverage given SB 200 and the referendum campaign in the Times. The few articles that have appeared always reiterate the scare tactics of the MWD about the impending drought and what that will mean. Concern is expressed for the Delta environment, but none for the pocketbook of the southern California rate and tax payer. Only one two-day series published a year ago discussed the cost of the project and therefore what water would cost and questioned if it would be salable at that price, who pays and who benefits, the energy needs of the project, and possible alternatives to further construction. Editorials in support of construction have been numerous.

SOUTHERN CALIFORNIA MEDIA FOLLOWS THE TIMES.

Since none of the radio or TV stations and few other newspapers have the staff to research such a complex subject as water politics, the media in southern California has taken its lead from the Los Angeles Times and the Water District officials who traditionally represent the interests of large land owners.

CONTRACTORS vs USERS
STATE WATER PROJECT, 1979



DWR Bulletin 132-80, Table 3, Page 86

WHAT IS THE MWD?

The Metropolitan Water District of Southern California is a public agency established by the legislature in 1928 to build the Colorado River Aqueduct to supply supplemental water to the coastal plain of Southern California. It serves 11 million people from Ventura to the Mexican border. It is the major contractor with the state for water delivered by the State Water Project.

BOARD OF DIRECTORS are appointed by the 27 member agencies of MWD, the 27 customers to whom MWD wholesales water. These are cities which have their own water departments or other water agencies that may resell the water several times before it gets to the consumer. The 50 directors are appointed and vote in proportion to the assessed property value within each member agency.

REVENUE OF MWD comes from two sources. About a third from property taxes not affected by Prop. 13, the balance from water rates. Property taxes are levied equally across the entire service area without regard to amount of MWD water used in each area. The city of Los Angeles, for example, has its own water supply from the Owens Valley and buys very little extra water from MWD. In fiscal year 1978-79, it paid 23% of all the property taxes collected by MWD for 1.5% of the water MWD sold.

ENVIRONMENTAL PROTECTIONS ARE ILLUSORY

The San Francisco Bay Delta is now in serious environmental trouble. A recent state report tells us that 60% of the striped bass present ten years ago, when pumping from the Delta started, are now gone. Of those left, over half of the adult fish are full of parasites, over a third are deformed with evidence of past lesions. Skeletal structure abnormalities are common and their immune systems are weak. Previous studies concluded that the survival rate of the striped bass was directly related to the amount of fresh water outflow through the Delta.

Levies that protect islands of rich Delta farm land are being eroded by the velocity of the water pulled through the Delta by the pumps. This same pumping action causes reverse flows in some of the channels, confusing the fish who migrate upstream to spawn, and sometimes pulls salt water from San Francisco Bay into the pumps.

Salmon fishing off the coast has had to be curtailed because 95% of all the salmon spawning grounds in the state have been destroyed by water development projects. There are too few sturgeon left in the Delta to study.

There is growing concern for the health of San Francisco Bay which is also dependent on high water flows from the Delta in the spring and winter to flush out the south end of the Bay. Planned water storage facilities (called conservation facilities by some) would store more of the high flows of winter and spring to be released in summer and fall.

SB 200 contains four measures supposedly designed to protect the Delta environment.

1. **FISH SCREENS.** The peripheral canal is to be built in three stages starting at both north and south ends. The third stage, the final 10% which connects the two ends together, is to be built only after the Directors of Water Resources and Fish and Game agree that fish screens to prevent small fish, eggs, larvae, etc. from going down the canal to the pumps work adequately. Many, including engineers working on the fish screens, believe they will never work. Many also believe that when the canal is 90% complete, no fish screen will stand in the way of the completion of the canal. (See map.)

2. **HISTORIC LEVELS OF FISH AND WILDLIFE.** SB 200 requires the Directors of Water Resources and Fish and Game to adopt a plan whereby the historic levels of fish and game can be restored. The historic levels are defined as the average adult populations that existed between 1922 and 1967. Between 60% and 70% of all the water that would normally flow through the Delta and out to the Bay is already being diverted, either before it gets to the Delta or pumped out from it, according to the U. S. Fish and Wildlife Service. Since the survival rate of striped bass, the most studied fish in the Delta, has been proven to

be directly related to the amount of fresh water that flows through and out, it is extremely unlikely that fish and wildlife populations can be increased by taking more water out of that fragile environment.

3. **MINIMUM WATER QUALITY STANDARDS** (the salt content) are to be established in contracts to be signed with Delta water agencies. Existing water quality standards established by the state were not enforced during the 1977 drought, just when the standards were needed most. Other standards, set at other times, were also ignored when needed. Because of this track record, there is no assurance that administration officials will enforce such agreements in the future.

4. **AN ENVIRONMENTAL IMPACT STATEMENT** is to be written on the peripheral canal that includes a discussion of the sources of mineral, nutrient, and biological components of the Sacramento River. Biologists question what will happen to the life in the Delta when most of the nutrients that come down the Sacramento River dive down the canal directly to the pumps. Will the Delta turn into a biological desert? SB 200 states, "To the extent practicable, the department shall mitigate adverse impacts . . . caused by the operation of the canal".

It is clear that when these so called protections are evaluated, none of them are very meaningful in practical terms. They are truly illusory, dependent on political appointees to administer according to the political pressures of the time. If we are truly serious about protecting the environment of the San Francisco Bay and Delta, we must end further pumping of water from this fragile environment and implement a plan for using the water that has already been developed much more efficiently.

SB 200'S RELATIONSHIP TO PROPOSITION 8

Last November, voters approved a constitutional amendment that appeared as Proposition 8 on our ballots. It would make the Wild Rivers of the North Coast more difficult to tap for additional water for the State Water Project by requiring a two-thirds vote of the legislature or an initiative vote of people before any of them could be dammed. And it would place the environmental protections contained in SB 200 into the state constitution. Prop. 8 can only take effect if SB 200 is law. Should SB 200 be defeated at the polls, then Prop. 8 goes down with it.

There is some controversy in parts of the environmental community about what would be lost should SB 200 be voted down. The fear is that

the water lobby will come back to the legislature after election day and push through a different water development bill that would be more damaging to the Delta. Others, however, believe the defeat of SB 200 will mean that the voters are opposed to and will not pay for further water development. Then the whole subject of water law reform can be raised in the legislature again with the expectation that reform measures then will be taken seriously.

While SB 200 was going through the legislative process, a number of attempts to couple it with a reform package to establish a water policy for the State were made. The reforms provided for conservation, especially in the agricultural sector, management of our groundwater in conjunction with surface water supplies, water reuse, and the reservation of some water in our rivers and streams.

Many public interest groups were persuaded to support SB 200 if the reforms were adopted. However, when none passed, support for the water development bill fizzled. These much needed policies were not adopted because the people of California know little about water politics and policies, and therefore did not communicate with their legislators to support these measures.

The ballot measure campaign will educate many Californians about the need for a comprehensive water policy for the state. An informed constituency will evolve on behalf of such a policy and make it possible to convince the legislature to make the greatly needed changes in our water law.

If SB 200 passes, the legislature will not have to address water policy issues again for at least a generation.

A WATER POLICY FOR CALIFORNIA

IN CONCLUSION.

The history of water development in the state has been one of arrogantly bringing water from where it is to where it isn't, without ever analyzing all the costs, without comparing costs with benefits, or even determining if customers exist for the water at the price the state will have to charge.

"We must build and answer questions later," was the battle cry of the Director of Water Resources in 1960. We can no longer afford such irrationality and irresponsibility. Whenever financial studies were made in the past, water projects have flunked the test, never paying for themselves.

WATER POLICY NEEDED.

We must begin to look toward other policy options to meet the real and affordable water needs of the state. We need a comprehensive policy that will eliminate the institutional barriers that stand in the way of rational water use. The policy must contain the following elements:

CONSERVATION when cheaper than building new.

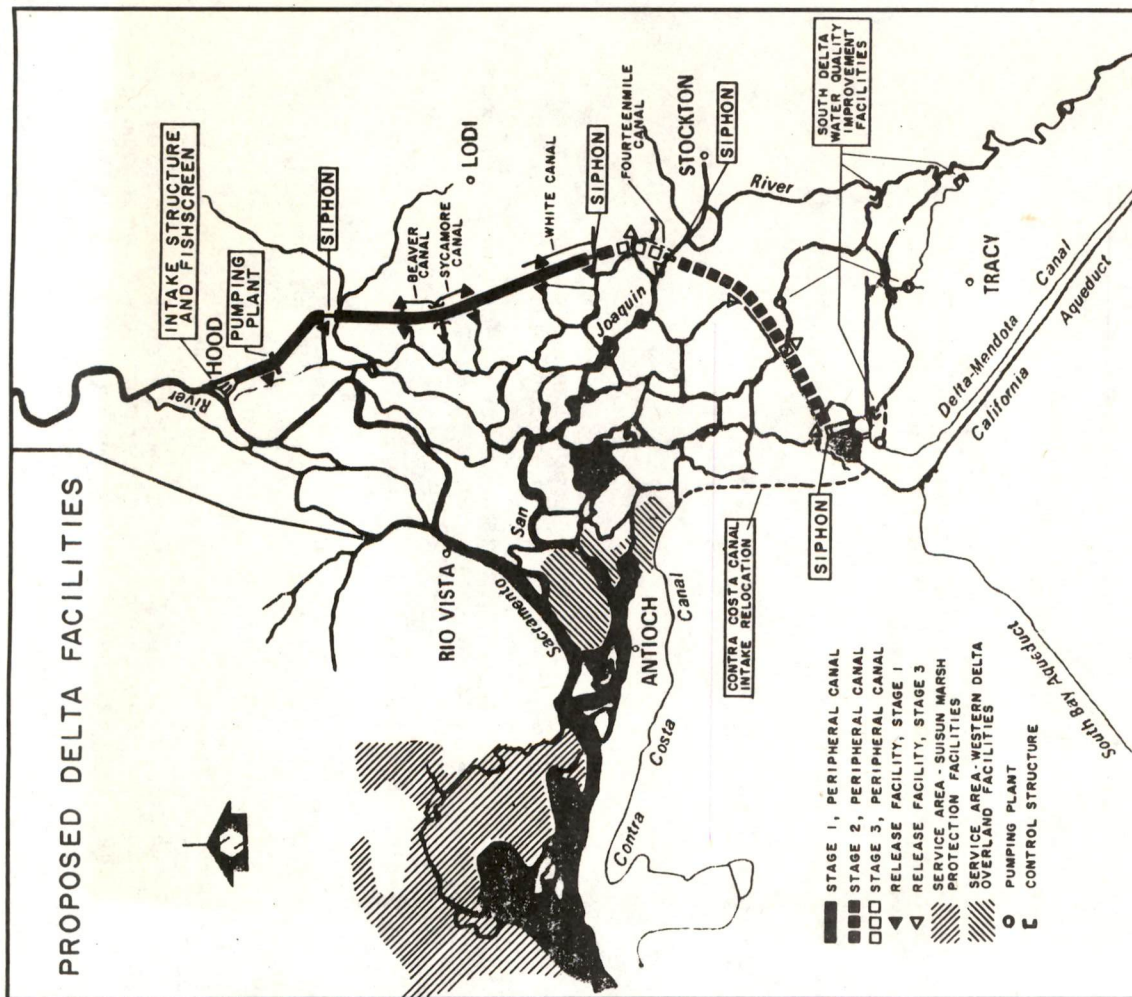
WATER REUSE when cheaper than building new.

GROUND WATER MANAGEMENT so that underground aquifers can be used to store wet year run off for use in dry years.

PRICING POLICY that ends subsidies so that water will be used according to its worth.

WATER TRANSFERS BETWEEN DISTRICTS so that water rich districts can share with water poor ones in an equitable way.

IN STREAM USE. Some water must be left free flowing in rivers and streams to maintain natural eco-systems, spawning grounds for fish, and the recreational and aesthetic values associated with free running water.



PROPOSED DELTA FACILITIES

Directors:

Jane Bayes
 Tim Brick
 Charlotte Cohen
 Kathy Callanan
 Jo Ann Cherno
 Stanley Cherno
 John Dotson
 Laura Dotson
 Wong Sang
 Bruce Flaxman
 Dorothy Green
 Jack Green
 Sydney Halem
 Billie Heller
 David Hirsch
 Betsy Laties
 Don May
 Sue Nelson
 Nancy Pearlman
 Jo Seidita
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 Emilie Martin
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SPECIAL - - SB 200 ANALYSIS

"IF YOU DON'T GET THE WATER,
 YOU WON'T NEED IT."
 William Mulholland,
 Builder of the Owens River Aqueduct.

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Bringing home the canal issue

Pat Brown, as vigorous and as enthusiastic as ever, has picked out a good subject for his enthusiasm: the Peripheral Canal, the topic of a speech the former governor gave in Riverside Thursday.

For all the controversy the project has stirred up, very few who have studied it from a dispassionate point of view do not support completion of this too-long delayed phase of the State Water Project. The opposition, on the other hand, is sectional and emotional.

The critics main point is that water in Northern California belongs to the North. Southern California grows too fast as it is, they say. If "we" send more of "our" water, it will make it easier for "them" to vote to take away even more from "us" in the future.

Former Governor Brown provided the answer for that: "We're not taking water from Northern California. We're taking it from the Pacific Ocean where it would otherwise flow. . . ."

Far greater interest is shown in this issue in the North than in the South. And a large number of Northerners subscribe to the argument pretty much in "us-them" terms. They may not always

spell it out that way, but that's how they react when it comes down to who is "stealing" whose water.

In contrast, Southern Californians—evidence little awareness of the project and the statewide referendum next June that will determine the fate of it. Yet the South has much at stake.

While being far-sighted is part of it, approval of the Peripheral Canal is not simply a matter of preparing for what might be water needs of years or decades ahead. If California comes into a dry cycle, the Southern end of the state would be in bad shape. A single dry year could cause severe water shortages. The canal is needed for long-range planning, but it is more urgently needed now.

The State Water Project was one of the proudest achievements of the Pat Brown administration. Seeing the canal becoming linked to the aqueduct, as originally intended, has become one of the former governor's major causes. Riverside was his first stop in this kind of tour on behalf of the canal and, given how forceful an advocate he can be, it can be hoped he will continue to speak out.

Re SWP 8/15/81

Reas. Leig Johnson sez:

Wtr. from New Melones Dam, Stan. R. recently
built, costs \$140/af to produce.

Farm users pay \$10

Taxpayers pay \$130.

He favors wtr. pricing.

Gov. Brown is non-committal re Auburn Dam,
Calm. R. Auburn was held up by quake, redesigned,
declared safe. But now must be reauthorized,
bes. of higher costs.

Pat Brown pushes canal in city talk

By CARLA LAZZARESCHI
Press-Enterprise Staff Writer

Former Gov. Edmund G. "Pat" Brown yesterday said the proposed Peripheral Canal will help California plan for a future that includes 400,000 new residents each year.

Speaking to an audience of about 350 at Riverside's Raincross Square, Brown said an increasing population would require additional water supplies. And he repeatedly stressed that the time has come to stop allowing surplus water to flow out of the San Francisco Bay into the Pacific Ocean.

"We have plenty of water in California if we conserve it," Brown said. "Not just conservation in use but the foresight to build the projects to conserve our water for the future."

Brown's appearance, at the invitation of Riverside County water districts and chambers of commerce, was billed as the kick-off for a local political action organization to support the canal, the subject of a statewide referendum vote next June.

The Riverside County chapter of Citizens for Water is being headed by Jacques Yeager, president of the E.L. Yeager Co., a highway construction firm located in Riverside.

The 43-mile canal would carry water from the Sacramento River, around the eastern edge of the Sacramento-San Joaquin Delta to pumps feeding the state aqueduct, a 444-mile channel carrying water from northern California rivers to farming areas of the Central Valley and heavily populated Southern California.

The aqueduct, northern California dams and a trans-delta canal were envisioned in 1960 legislation authorizing the \$1.7 billion State Water Project. But while dams and the aqueduct were largely completed by 1970, the canal around the delta has been debated for years.

Many northern California residents and environmental groups claim the canal is unnecessary, expensive and potentially damaging to the farming and water life in the Sacramento-San Joaquin Delta. Southern California water companies and Central Valley farmers respond that the canal will ensure a stable supply of water for crops and an increasing population.

The canal was approved by the state Legislature last year, but has been challenged and faces a referendum vote on next June's primary ballot.

Brown, who fought for the State Water Project during his two terms as governor, claimed the canal bill approved by the Legislature would protect the environment at the same time it provides water Southern California needs and northern California can afford to give up.

"We're not taking water from northern California. We're taking it from the Pacific Ocean where it would otherwise flow," Brown said. "The Peripheral Canal will just regulate the flow."

However, before Brown's speech, leaders of a new Riverside group opposing the canal had a press conference to claim the project was too costly a way of supplying Southern California with water.

James Brookshier, a Riverside resident and a leader of the local chapter of Californians for a Fair Water Policy, said Southern California water needs can be met through conservation in use, the building of underground water storage tanks and the elimination of subsidized water for farmers.

Brookshier, a vocal opponent of Riverside's participation in the San Onofre nuclear power plant, was joined by Riverside City Councilman Robert Buster and Barbara Riggs, a member of the city's Environmental Protection Commission.

The former governor estimated the canal's cost at \$1 billion to \$8 billion. But Brookshier cited

state reports that say the cost could soar to \$23 billion, including financing charges and the cost of electricity to pump the water over its several-hundred-mile route from one end of the state to the other.

The cost of the project would be covered by revenue bonds that would be repaid from charges assessed the water consumers.

"If we spread out the costs over 20 years, we can't afford not to build it," Brown said. Brown added that while he is "deeply concerned" about the cost of the energy needed to pump the wa-

ter, he said he also has little patience for those who would defer projects because of the cost.

"I get so damn mad at people who don't want to invest in the future. In California you've got to look to the future. You can't keep people out."

Brown, the father of the current governor, lives in Beverly Hills and is a senior partner in the Los Angeles law firm of Ball, Hunt, Hart, Brown and Baerwitz.

Before Brown's speech, Earle Blais, chairman of the Metropolitan Water District, said the need

for conservation has been recognized, but not at the expense of forcing a change in its residents' habits.

"We believe in water conservation. We know water is precious and we want people to care for it," Blais said. "But the people talking conservation are talking water rationing. They're telling us to change our way of life if we want water. That's nonsense. In Southern California we have always looked to the future and tried to make sure that those needs are met."



Former Gov. Edmund G. "Pat" Brown, right, talks across table with former county campaign manager Harry Dougherty during luncheon yes-

terday. At far left is Jacques Yeager. Beside Brown is Earle Blais, chairman of the board for the Metropolitan Water District.

From Brookline

By ?

SOME ARGUMENTS AGAINST AND FOR THE PROPOSED PERIPHERAL CANAL, WITH
POSSIBLE REPLIES

The proposed canal is not economically or financially justified.

There are huge hidden, implicit costs and subsidies--

interest

inflation

auxiliary installation--side canals, pumping stations, etc.

the cost of electrical energy (to be renegotiated in 1983)

MWD pumps water up 1600 feet.

SWP pumps it up over 4000 feet.

The proposed canal benefits a top minority of growers and land
speculators--a feudal few.

It will double water costs for most farmers.

It ignores other ways to increase the amount of water available;

especially it almost totally ignores the needs for agriculture to
conserve water.

It encourages waste, not conservation.

It ignores the need for Legislative changes providing, among other things,
that each farmer, farm corporation, or water district pay the full
costs for water it uses, without any averaging of costs or any
resort to cheap "surplus" water.

that all groundwaters come under State control, with State control
of pumping from aquifers.

that property-tax subsidies to water districts come to an end.

The proponents for the canal talk of the need for conservation of household water (though residences, municipalities, and industry use only 15% of California water) and largely ignore the need for conservation by agriculture, which is wasteful, engaged in much non-beneficial use of water--since agricultural water is cheap, subsidized, and often priced far below its cost to society.

Pro-Canal reply: Rises in the cost of water will mean rises in the cost of agricultural products. Anti-Canal reply: So be it. Let's have costs out in the open.

California agriculture could save immense amounts of water by one means or another:

short-season crops such as wheat instead of rice, deep-rooted crops instead of shallow rooted ones

seepage control. There is a 10% loss from unpaved canals and laterals and from on-farm ditches

weed and phreatophyte control in ditches, sumps, and in fields of row crops, orchards, and vineyards

salt management

irrigation scheduling--automatic or computerized

reuse of reclaimed water

pipng to transfer runoff from furrows, basins, and borders (which on the average are only 58% efficient)

sprinklers (which are 76% efficient)

drip or trickle (most water efficient of all methods but expensive to install). This system is 90% efficient.

Agriculture, which stands to gain the most from the proposed canal, uses 85% of California water. If agriculturists had to pay the full costs of the water they buy they would work at conservation of water.

The proposed canal is not environmentally sound. Basically it is a water-conduit system, with only sideline concern for the environment, recreation, and scenery.

There is as yet no fish screen to protect fish eggs, fry, invertebrate food, and to revive salmon and striped bass runs.

The canal cannot stop reverse flow of water.

It cannot soundly protect the waterfowl of the Suisun Marsh.

It further endangers water (quantity and quality) in the Delta. #

It further endangers the waters of San Francisco Bay, especially if the Westside or San Luis drainage canal gets dug.

Pro-Canal reply: Fish & Game sees the Canal as the way to protect fish and fowl and stop reverse flow.

In California today irrigation is not the only claim on surface water. Among competing interests are fishing, boating, scenery, and riparian wildlife.

#There has always been salt intrusion into the Delta waterways. In summertime or in drought years, with less water entering from the Sacramento and San Joaquin rivers, saltwater has intruded. Already the annual flow is down from 33MAF (before SWP) to 15 MAF, and only 9 of these flow to San Francisco. The bottoms of Delta waterways are below sealevel and only a big volume of water can push the saltwater westward and prevent inward bottom flow of saltiness.

The proposed canal is unsound, inequitable public policy. It is not ethically sound.

It puts one important, established agricultural area (the Delta) in jeopardy in order to benefit, perhaps only temporarily, an area (the southern San Joaquin Valley) that has put itself in jeopardy by overpumping, overdeveloping new land, and overspeculating in cropland.

It effect it will further burden citizens and taxpayers to pay subsidies to corporation "farmers," whom it undercharges when they buy "surplus" water at below-cost rates.#

✓ It gets part of its support from Tidelands Oil revenues, which are meant to go to education

#Los Angeles City taxes pay 33% of the costs of MWD water, yet the City uses only 2% of the water.

The proposed canal is not necessary to supply Southern California with water. There is no crisis over Colorado River water, as the MWD says there is.

The allocation of river water has been clear from 1928 to the present. In 1963 the Supreme Court only reaffirmed the allocations. When there was drought in California in the mid 1970s there was abundant precipitation in the Colorado Basin. The reservoirs are full, and enormous quantities of river water have seeped sideways into the sandstone cliffs.

The MWD overforecasts both needs and shortages. It is legally bound to supplying municipal needs but in actuality it is closely and deeply tied to agricultural interests.
from the Colorado River.

MWD is entitled to 1.2 MAF a year/ It is now taking 800,000.

It takes much less than its entitlement of SWP water and lets the unused entitlement go to Kern County for a tenth of what the Kern County Water Agency pays the state. (L.A. is subsid much of this.

The MWD needs to abandon average pricing and charge users for the actual, the marginal, cost. It needs to end contract pricing and surplus pricing.

The MWD should--and can--go in for underground storage, conjunctive use, and water banking; for recycling water for use on freeways and golf courses, etc.

It should work toward legislation that would allow buying and transferring water from one district to another.

The canal helps the American Way, the free enterprise system.

Anti-canal reply: It helps only a minority, at a vast cost to the majority. State and Federal projects, heavily subsidized, are not free enterprise.

Also, in California water districts in Kern and other countries, the voting is by amount of property owned, the opposite of one owner, one vote.

Kern County Water District and other such districts want enormous public help but want to retain local control by water districts where a few big landholders dominate the voting--not the traditional American Way.

The canal opens land and keeps it productive and thus helps America feed the world.

Reply: Acreage figures show Kings County devoting 43 of its cultivated acreage to inedible cotton and Kern County devoting 54% to cotton.

The canal is needed to replenish aquifers.

Anti-canal reply: The record shows that SWP water has been going to open new land while pumps kept lowering the water table, with or without surface subsidence. It is ridiculous to say that the problem is not overpumping but instead lack of imported water. # See page 6.

Contracts with the SWP are "sacred."

Anti-canal reply: They are secular. In the early 1960s estimates were overoptimistic. When contracts are physically or financially unfeasible they can be breached or renegotiated. (No one loses money he never made.)#

California needs to bring more of its land into production.

Reply: It would be better to have statewide planning and zoning, and tax laws that protect prime agricultural lands--stopping urban sprawl and the subdivision of the best crop lands.

Alameda, Santa Clara, and Southern California counties need more water for urban growth.

Reply: This is the argument of land speculators, financial institutions, and contractors.

#Kern spokesman: "We bought the package back in 1960 and feel that we have a right to expect delivery of the goods."

During the 20 years 1958-1978 the Kern County overdraft came to 17 MAF, an annual overdraft of 800,000 AF. Meanwhile the County opened 300,000 new acres. The State Water Project partly offset the depletion.

Every new 100,000 acres increases the average annual overdraft by 250,000 acre feet. A drainage canal pulling off water adds to overdraft. Improper use of water or chemicals that degrade water indirectly increase overdraft by limiting the total usable supply. In the Arvin-Maricopa area there were artesian wells in 1905. By 1948 water level was at the surface. In 1965 the water table was down 150 feet, and some land had subsided eight feet. The process was hastened after World War II by improved well-drilling equipment and deep well turbines.

The proposal canal is physically feasible.

Anti-canal reply. Yes, but at great cost to the environment, the taxpayer, and the consumer. The canal is feasible, so are filling in San Francisco Bay, turning Mount Vernon into a Howard Johnson Lodge, building a Century City of high-rise buildings below Half Dome in Yosemite Valley, filling in Santa Monica Bay for an exclusive residential and resort area, or bulldozing flat the San Gabriel and San Bernardino mountains so that smog can blow eastward.

It will stop the scouring and erosion of Delta levees.

Reply: Probably true--but create new, greater problems.

Its 12 gates will flush good water into Delta channels, improving on nature.

Reply: Improving on nature. The present Federal and State pumping to fill south-going canals have created the present problem. How will a bigger canal, bigger pumps, bigger commitments further improve on what nature had a century ago?

The proposed canal will provide for the public good:

more business

a stimulated state economy

more employment, especially during the building of the canal

more growth

an expanded tax base

vast profits for land owners and speculators, whose income will trickle down through the economy.

Reply: Growth is no longer a rallying slogan. These arguments are questionable and do not face squarely the basic issues that the canal raises.

Without the canal, or with it and insistence on replenishing, owners will have to abandon 250,000 or more acres of productive land.

Reply: So that could happen in the southern San Joaquin. With the canal, and with it intrusion of salt water, the Delta stands to see the same acreage, 250,000 lost to production.

AN OVER-ALL NOTE

There is no shortage of developed water in California in the foreseeable future. The state has ample water for its present needs. It is speculative talk of future needs that throws off the equations. While conservation of water in dwellings, factories, and commercial establishments is all to the good, the big task is to get conservation on agricultural lands by making farmers pay for the full cost of their water, making aquifers part of the public domain, fully regulated by the State, and encouraging the installation of water-saving techniques. Also, encouraging farmers to make changes in the crops they raise and the use they make of their lands.

The Peripheral Canal is not the North-South contest some make it out to be. It is in part a pro-Kern County and anti-Kern County contest, part a pro-San Francisco Bay and anti-San Francisco Bay contest, and also part a pro-MWD and anti-MWD tussle. In the debate over the canal there are big corporate ranchers on both sides, and there are some environmentalists on both sides (divided in part by concern over the North Coast rivers). Those persons most for it are perhaps the big land interests in the southern San Joaquin counties and in coastal San Diego County (which now siphons generously from the MWD canals). In general the contest has big financial and land-speculation interests on one side, backed by bureaucrats up and down the hierarchy; on the other side are many small farmers, most environmentalists (in the opinion of some observers), and the vast, often bewildered taxpaying public.

08/28/81

Periph. Canal

Cal. has an 11% i.r. limit on g.s. bonds.
State $\therefore$ fails to sell latest issue, \$100m for
parks & rec., 9/2/81.

As an economist, interested solely in the well-being of Southern Californians, I urge a vote against SB 200 and the Peripheral Canal. The proponents, by emotional appeals and scare tactics, have seduced us into believing that the Canal is absolutely necessary for our survival, but only by concealing many facts. We Southern Californians have three good reasons for voting against the Canal: (1) We don't need it, (2) We can't afford it, and (3) We won't get the water anyway.

NEED. Water demand in the year 2000 probably will lag far behind that claimed by the Canal proponents. Yes, more people use more water, but outside residential uses of water (such as lawn watering) decline on a per person basis as population density increases; ^{-but is it?} other urban uses of water will be held down by conservation measures already enacted; and water demand differs from usage when water is sold at artificially low rates, as now. Normal water demand in the year 2000 will be much less than the quantity claimed by the proponents.

However, the main reason we can get along without the Canal is the availability of water through use of management techniques that are well developed and understood in the industry. We can put water into groundwater storage basins when it is available and withdraw it in dry years. We know this program will work because we have used it before.

Only about two-thirds of MWD water imports (the portion delivered directly for urban uses) must be provided on a continuous basis. This quantity can easily come from water that will always be available from the Colorado and from the State project without the Canal. If there is a water shortage, MWD not only can, it is legally required to curtail delivery of water for groundwater replenishment and other surplus water uses.

COST. If the Canal is to be affordable for Southern California,

benefits from the use of the water must exceed the costs of getting it.

Construction will cost about \$1 billion; interest on this amount at 10 percent is \$100 million per year, and MWD must pay half, or \$50 million per year.

might
change to
12%

MWD would benefit from the Canal only during a shortage on the State Water Project, about one year out of seven. The rest of the time there would be enough water for MWD without it. We Southern Californians will pay for the Canal seven years for each year that we benefit from it, receiving an average of only one-seventh of the full benefit (or about 40,000 acre-feet of water) for each year's payment. The \$50 million annual additional capital cost for the Canal would be about \$1,200 per acre-foot for just the construction of the Canal; other capital costs of the distribution system and all operating costs would be additional, the same as for other water.

this is
what
MWD has
been
saying

At the same time, water from the Canal would be the least valuable water in the MWD service area, worth perhaps \$300 or \$400 per acre-foot, when it is used for lawn watering, car washing and swimming pool filling. None of this water would be required for any important or life-supportive use.

AVAILABILITY. Even if we need it, we probably won't get the water the Canal should make available to us. The so-called "drought" of 1976-77 taught a lesson. The Central Valley farmers said they needed the water, and they got it. Although we had paid for a firm supply and the farmers had not, we were ordered to cut our water use 10 percent so the farmers could have more. Until everyone agrees that urban water uses must be honored before agricultural uses, we would be foolish to agree to pay for more water supply facilities.

Farmers
caused
drought in
first place

most do
say they
will

CONCLUSION: The Peripheral Canal should be defeated if any of the

1/10 acre foot per person

Keen to
growers
15x the
benefit

MWD
300 MAF
÷ 3 million

Don
May
made
points

above arguments is valid. If, as seems to be the case, they are all correct, there is no question: we owe it to ourselves to vote against the Canal in the coming referendum.

Interest Rates. The \$50 million annual payment by MWD for the Canal referred to above is based on an assumed interest rate of 10 percent. At present the municipal bond market is approaching a 12 percent interest rate, but no doubt it will decline some time. Most experts doubt that rates will ever return to pre-1980 levels, and availability of 50-year bonds in the future is especially unlikely. Probably most of the Canal would have to be financed at 10 percent, whereas the average interest rate on funds used for previous construction was under 5 percent. Finally, legal restrictions on the interest rate that the state can pay for money to invest in the project may also cause problems in completing the project if it is started. With all these uncertainties, no one can predict the financial impact of the Canal at this time.

August 29, 1981

—John T. Burnham

DATE: September 8, 1981

TO: S. Edmunds, GSA
{Speaker's Committee,
{Department of Economics

FROM: M. Gaffney *MA*

A hot topic this year is the Peripheral Canal. Two "con" speakers worth considering are:

1. John Burnham, economist recently retired from MWD.
2. Tom DeVries, Natural Resources Defense Fund.

The subject has deep economic content. For details, contact James Brookshire.

cc: James Brookshire
3754 Roslyn
Riverside, CA
682-9831
689-6434

Periph. Canal.

Est. cost, \$3.6 b.

LA Times, 12/8/81, alleged by Mike Carb.

A Case for the Peripheral Canal

There Just Isn't Any Effective Alternative to It

By EARLE C. BLAIS

Critics of the Peripheral Canal are seeking to minimize Southern California's impending loss of Colorado River water to Arizona. These critics try to explain away our Colorado River problem with wishful thinking about changing long-standing water allocation contracts, storing extra water from the Colorado River or from the State Water Project or relying on the possibility of future surplus Colorado River water. However, none of these proposed remedies is actually feasible, and the effort to link them together as a "program" does not make them any more practical as alternatives to the Peripheral Canal, which would carry Sacramento River water around the Sacramento-San Joaquin Delta for delivery to Southern California.

The basic facts apparently are not disputed. Construction of the Central Arizona Project is on schedule and will begin operation in 1985. At that time, California, which currently uses about 5 million acre feet of Colorado River water a year, will be limited, as a result of a 1964 U.S. Supreme Court decree, to an annual allotment of 4.4 million acre feet. (An acre foot of water covers an acre to a depth of one foot and is the average amount of water used annually by a family of five.) The critics also concede that under existing contracts the major portion of this loss must be borne by the Metropolitan Water District (MWD), rather than the agricultural districts in the Imperial, Coachella, Palo Verde and Yuma valleys. But at that point they let their imaginations take over.

They suggest that because the allocation agreement between MWD and the agricultural districts is 50 years old, there is a basis to renege on it. Frankly, what the age of an agreement has to do with its validity is a mystery.

The reason the agricultural districts were given first priority 50 years ago was that they were then already largely developed. They were, therefore, entitled to a priority over later water users such as the MWD. The agreement was, in effect, assurance by city dwellers that they would not take water to which farmers had prior rights. Without such recognition, there would have been

legal and political obstacles to obtaining authorization for both the Hoover Dam and the Colorado River Aqueduct.

Changing these priorities now could disrupt the economic balance of the entire state, for water rights throughout California are divided on a "first-in-time, first-in-right" basis. Such a change would be much like suggesting that water suddenly needed elsewhere could be taken at the expense of the Southern California economy that is based on our contracted supplies of imported water. We would then no longer receive either Colorado River or Northern California water. We would be left with a developed region where two-thirds of the water must be imported, but with no available source.

Some argue that a relevant factor is Imperial Irrigation District's alleged waste of some of its share of Colorado River water through canal seepage. But it is noteworthy that the district has already lined half of its 1,650 miles of canals and is currently spending \$2 million a year to line the other half.

More important, the focus should not really be on the agreement between MWD and the agricultural agencies. The priorities for Colorado River water to California agencies, including MWD, derive from contracts of the U.S. government with each of the California agencies. They are legally binding contracts, and the government has no authority to renounce them.

Critics also suggest that MWD take more Colorado River water in the next few years, while it is still available, and store some of our state water in reservoirs in Northern California so that it would be available to us later in the decade. But this proposal is impractical because the two state reservoirs in Northern California—Oroville and San Luis—are fully utilized under existing operations. Until additional large reservoirs are built in Northern California, as envisioned in water legislation passed last year, there is no way to store extra water over long periods of time.

A related suggestion is that we should store additional water in Southern California groundwater basins in the next few

years. However, all but one of our groundwater basins are essentially full at the present time. After they were severely depleted many years ago, most of our groundwater basins were refilled during the 1960s and 1970s.

The only groundwater basin with significant available storage space is the Chino Basin in the Upper Santa Ana Valley. MWD and the state are developing plans to store state water there, but large-scale replenishment must await construction of major pipelines and other facilities. Significantly, the Peripheral Canal will help the Chino storage program by enabling us to divert more water from the delta into storage during the seasons when it is available.

Finally, critics argue that surplus Colorado River water will probably be available to Southern California after the Arizona project goes into operation. Under the 1964 decree, California is entitled to half the surplus Colorado River water in any given year, provided that the secretary of the interior determines that such a surplus exists. The problem is, no one knows if and when there will be such surplus, since the flow of the Colorado River varies greatly.

It is simply not possible to explain away the loss of our Colorado River water and dismiss the need for the Peripheral Canal. The canal is an essential facility of the State Water Project, and it is deplorable that controversy has delayed it so long. Fortunately for us, the Central Arizona Project was also delayed more than 10 years—longer than we originally expected. But that delay is now behind us.

Under even the most optimistic assumptions, there still will be a gap of at least five years between operation of the Arizona project in 1985 and completion of the Peripheral Canal in the early 1990s. Californians should not let wishful thinking cause further delays in going forward with the Peripheral Canal.

Earle C. Blais is chairman of the board of the Metropolitan Water District of Southern California. He is a lawyer who practices in Burbank.

Life's a Prison of Bitter and Constant Blue

By ANDREW J. NATHAN

"Dear Friend: Isn't it a wonderful world that people concern themselves about others despite many obstacles—oceans, mountains and even walls and bars—between them?"

So began the first letter to our chapter of Amnesty International from the prisoner in Malaysia who had been assigned to us. Amnesty International seeks freedom for political prisoners around the world. Prisoner

dy, I was compelled to leave there just before the final examination. . . . I was arrested in mid-1967 when I was a paid secretary of a trade union. Since then, I became a detainee until this very day. The detention order is still going on, no one will tell when the final date is."

In a second letter, Ong wrote: "I write this while it is raining. The humidity of such weather

liefs. To a woman named Robin in our group, he wrote: "If you hadn't explained to me about your name, I might well have referred to you in this letter as mister. Among us here, the phenomenon of a woman taking a man's name seems to be on the increase, perhaps because of women's struggle for equality with men. Every instance of this gives us a feeling of joy—perhaps because

Reagan dumps fiscal responsibility for biggies
Write Watt & Congress

In a fanfare of mucho bravado, Reagan's Interior Secretary JAMES WATT said he was going to cut the biggies' Westlands water welfare from \$142 an acre foot to only \$136.50. In other words, if Watt had his announced way, us U.S. taxpayers would cough up on \$136.50 of Westlands per acre foot water costs while the biggies would repay \$13.50.

The biggies roared, "The government is breaking its promise to us by trying to cut our subsidy!"

Paper Tiger Watt roared back, "You'll either pay more to cover the 'cost of delivery' or I'll shut your water off!"



"Cost of Delivery" : gas money

"Cost of delivery" sounds like "full costs," but it isn't. "Cost of delivery" is like saying that the full cost of owning a car is just buying the gas. "Cost of delivery" in federal irrigation projects jargon does NOT include:

- (1) all the capital costs of facilities benefitting the district
- (2) any interest charges at all
- (3) planning & engineering costs
- (4) a prorata share of administration expenses of the Dept. of Interior
- (5) legislative expenses
- (6) the hydro-electric subsidy

WESTLANDS TOTAL "FULL COSTS" = \$150.00 per acre foot +

Real "full cost" water charges for Westlands would require that the present \$8 per acre foot water prices be increased to over \$150 an acre foot (1 acre, 1 foot deep). Watt's "brave" \$13.50 per acre foot price is a pale reflection of that reality which has been confirmed by independent researchers at least twice:

- 1- 1979 at University of California
- 2- 1981 by the General Accounting Office (the re-search arm of Congress)

Anyway, the biggies sued Paper Tiger Watt. The State of California and the Environmental Defense Fund tried to intervene. The judge said they couldn't. Presently, there was an out-of-court "compromise" ratified by the judge:

Westlands biggies will pay into an interest-bearing trust account the water fees that Watt demands, and Watt won't shut off the water. Then, someday, the court will decide what the "correct" water rate is.

Obviously, in that process, the "compromise" will be compromised further. But even if it isn't, that battle is almost meaningless because the bulk of the 86% subsidy remains in effect during the delayed decision process.

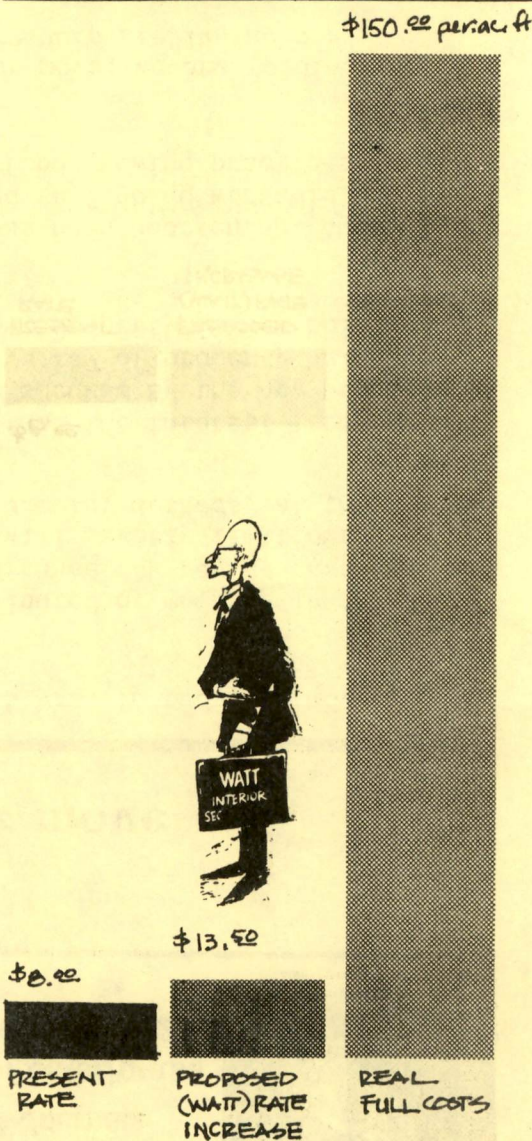
WRITE WATT: Tell him you're on to his charade, and that the biggies should pay real FULL COSTS on the projects, or the land & water should be divided as re-quired by law.

WRITE: James Watt, Secretary of Interior, Wash D.C. 20240

WRITE YOUR CONGRESSPERSON: Outline Watt's charade. Demand that as the poor are taken off welfare, the rich be taken off also.

Congressperson, House Office Bldg., Wash. D.C. 20515

WESTLANDS WATER RATES

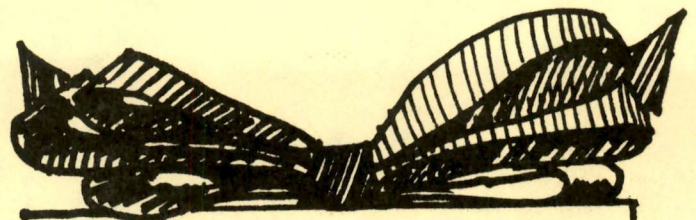


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green, 16" x 22"



*La tierra pertenece al que la trabaja...
The land belongs to those who work it*

Short term loan needed to make move

LAND TRUST FUND REACHES \$70,000

NLP is now seeking a \$140,000 no interest loan for 5 yrs. in order to move and enlarge its arid land field station.

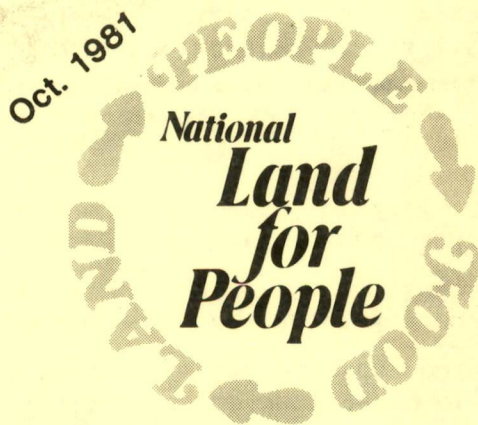
The loan is needed in addition to the \$70,000 contributed by members in the past year, so that we can make the best possible land purchase (*by paying cash*) and avoid the maize of paper & interest payments which will severely limit our developmental work (*low-tech, low-energy, low-capital growing methods*) at the new site.

The tax advantage to the person making the loan is that the interest foregone could be deductible as a donation. The loan will be secured by the new property we will acquire, and by payments (*over the next 5 years*) of property being sold for the benefit of the trust. The sale of the present property is now being finalized, so the loan will be doubly secured.

Membership response to our land trust fund appeal has been heartening, and a confirmation that our membership is really committed to finding workable, livable alternatives to the short-sighted energy & food growing practices; and public policy on water, food & land in this country.

As we are looking for a loan, the last hurdle in our move; we are folding our work into 5 gallon cans and seed packets (*as surveyors are laying out the subdivision stakes*).

If you've missed us in the mail this Fall, be prepared for a double issue this Winter. We've been busy with things you'll hear about soon. Things have been quiet on the legislative scene, but we'll keep you posted.



2348 N. Cornelia, Fresno, CA. 93711
(209) 233-4727

*Mason Gaffney
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TIME VALUE

Watt tries to collect a nickel from Westlands