

**SIGNIFICANT ENVIRONMENTAL IMPACTS
OF REDUCED STATE WATER PROJECT DELIVERIES TO THE
SANTA ANA RIVER WATERSHED AND ORANGE COUNTY AREA**

**Submittals to the State Water Resources Control Board
at its Hearing to Consider Interim Water Rights Action**

June 1992

WATER ADVISORY COMMITTEE OF ORANGE COUNTY

There are several specific actions that the Board is contemplating including both non-flow and flow related measures. No significant environmental impacts are expected to result within WACO's service areas from the non-flow related measures. However, the flow-related measures being considered by the Board will result in significant environmental impacts within the WACO service area.

Specific programs, projects, and activities within the WACO service area that would be impacted include:

Sea water intrusion barriers (See WACO Testimony, Exhibit No. WRINT-WACO-3, p. 11).

Wastewater reclamation and reuse programs (See WACO Testimony, pp. 25-28).

Groundwater recharge and conjunctive use programs (See WACO Testimony, pp. 14-18, 21-22).

Public trust resource programs (including recreation and fish and wildlife habitat areas) (See WACO Testimony, pp. 29-34).

The potential flow-related measures would result in reduced exports from the Bay-Delta or restricted timing of exports, both of which would trigger a chain of significant environmental impacts in the WACO service area. General impacts resulting from the implementation of the proposed flow-related measures include:

- Impact No. 1 Reduction in the current and planned replenishment of the Orange County groundwater basin by OCWD as part of established groundwater management programs to enhance supplies and protect or improve groundwater quality.

- Impact No. 2 Reduction in the amount, and degradation in the quality, of runoff (urban and agriculture) and recharge (from the discharge of treated wastewater) in the WACO service area due to a reduction in the quantity and quality of water delivered to users.

- Impact No. 3 Accumulation of salts in the lower Santa Ana Basin as a result of higher TDS recharge water.

- Impact No. 4 Reduced ability to develop reclaimed wastewater use due to high TDS in delivered water.

Impact No. 5 **Reduced water supply available for storage in local reservoirs to meet peak demands.**

Impact No. 6 **Reduced flows in the Santa Ana River available for public trust resources, including recreation and wildlife habitat.**

Specific impacts include:

Impact No. 7 **Construction of additional wells and/or deepening of existing wells to increase groundwater extractions.**

Impact No. 8 **Construction of additional artificial and/or enhanced recharge facilities including additional sea water intrusion barriers and spreading facilities to capture more storm runoff.**

Impact No. 9 **Construction of desalination plants.**

Impact No. 10 **Construction of additional water reclamation and reuse facilities.**

Impact No. 11 **Construction of additional reservoirs.**

Under CEQA, if a lead agency concludes it can be "fairly argued" on the basis of substantial evidence that a proposed action may have a significant impact, the agency must prepare an EIR and categorical exemptions do not apply. This standard sets a very low threshold requirement for preparing an EIR. The CEQA Guidelines define "significant effect on the environment" as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project" (CEQA Guidelines 15382). The determination of significance is based on professional judgment, using factual data to the extent possible (CEQA Guidelines 15064). The CEQA Guidelines provide some principles for this judgment, including the use of an environmental checklist and "mandatory findings of significance" which follow:

The checklist and supporting narrative responses analyze the environmental impacts likely to occur within the WACO service area if the proposed flow-related measures are implemented.

CHECKLIST OF ENVIRONMENTAL IMPACTS

ISSUE AREA	YES	MAYBE	NO
<p>1. <u>Geology, Soils, and Topography.</u> Will the proposal result in:</p>			
<p>a. Change in topography or ground surface relief features?</p>	X		
<p>b. Disruptions, displacements, compaction or over-covering of the soil?</p>	X		
<p>c. Unstable earth conditions or changes in geologic substructures?</p>			X
<p>d. The destruction, covering or modification of any unique geologic, paleontological, or physical features?</p>			X
<p>e. Any increase in wind or water erosion of soils, either on or off the site?</p>	X		

ISSUE AREA	YES	MAYBE	NO
f. Exposure of people or property to geologic hazards such as earthquakes, landslides, fault rupture, high seismicity, subsidence, liquefaction, expansive soils, mud slides, ground failure, or similar hazards?	X		
g. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?	X		
2. <u>Water Resources.</u> Will the proposal result in:			
a. Changes in currents, or the course or direction of water movements, in either marine or fresh waters?	X		
b. Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff?	X		

ISSUE AREA	YES	MAYBE	NO
c. Alterations to the course or flow of flood waters?	X		
d. Exposure of people or property to water related hazards such as flooding or tidal waves?			X
e. Change in the amount of surface water in any water body?	X		
f. Discharge into surface waters, or in any alteration of surface water quality, including, but not limited to, temperature, dissolved oxygen or turbidity?	X		
g. Change in the quantity of groundwaters, through direct additions, withdrawals, change in recharge area, or through exposure of an aquifer by cuts or excavations.	X		
h. Change in groundwater quality?	X		

ISSUE AREA	YES	MAYBE	NO
i. Alteration of the direction or rate of flow of groundwaters?	X		
j. Reduction in the amount of water otherwise available for public water supplies?	X		
3. Air Quality. Will the proposal result in:			
a. Air emissions or deterioration of ambient air quality?	X		
b. The creation objectionable odors?			X
c. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?			X
4. Botanical Resources. Will the proposal result in:			
a. Change in the diversity of species or number of any species or plants (including trees, shrubs, grass, crops, and aquatic plants)?	X		

ISSUE AREA	YES	MAYBE	NO
b. Reduction of the numbers or habitat of any rare, endangered, or otherwise sensitive species of plants?		X	
c. Disturbance of any sensitive plant community or valuable tree specimens?	X		
d. Introduction of new species of plants into an area, or an impediment to the normal reproduction and growth of existing species?	X		
5. <u>Fish and Wildlife.</u> Will the proposal result in:			
a. Alteration or loss of fish or wildlife habitat?	X		
b. Change in the diversity of species, or numbers of any species of animals (mammals, birds, amphibians, reptiles, fish, shellfish, benthic organisms or insects)?	X		
c. Reduction on the numbers or habitat of any endangered or otherwise sensitive species?	X		

ISSUE AREA	YES	MAYBE	NO
d. Introduction of new species of fish or wildlife into an area, or result in a barrier to the migration of movement of species?	X		
6. Agriculture. Will the proposal result in:			
a. Reduction in acreage or production of any agricultural crop?	X		
b. Disruption of agricultural activities, including cropping and grazing?	X		
c. Use of Williamson Act lands for non-agricultural uses?			X
7. Natural Resources. Will the proposal result in:			
a. Increase in the rate of extraction and of use of any natural resources?	X		
b. Depletion of any nonrenewable natural resources?	X		

ISSUE AREA	YES	MAYBE	NO
8. <u>Cultural Resources.</u> Will the proposal result in:			
a. Alteration or destruction of a prehistoric or historic archaeological site?		X	
b. Adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?		X	
c. A physical change which would affect unique ethnic cultural values?		X	
d. Restrict existing religious or sacred uses within the potential impact area?		X	
9. <u>Land Use and General Plan Consistency.</u> Will			
the proposal result in:			
a. Conflicts with existing land uses and community character?		X	
b. Conflicts with future planned land uses and community character?		X	
c. Inconsistency with General Plan policies?		X	

ISSUE AREA	YES	MAYBE	NO
<p>10. Recreation. Will the proposal result in?</p> <p>a. Impact upon the quality of quantity of existing and future recreational opportunities?</p>	X		
<p>11. Aesthetics. Will the proposal result in:</p> <p>a. Obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?</p>	X		
<p>12. Light and Glare. Will the proposal result in:</p> <p>a. New light or glare?</p>	X		
<p>13. Noise. Will the proposal result in:</p> <p>a. Increases in existing noise levels?</p>	X		
<p>b. Exposure of people to disturbing noise levels?</p>	X		

ISSUE AREA	YES	MAYBE	NO
<p>14. Population. Will the proposal result in:</p> <p>a. Alteration of the location, distribution, density, or growth rate of the human population of an area?</p>	X		
<p>15. Housing. Will the proposal result in:</p> <p>a. Affect existing housing, or create a demand for additional housing?</p>			X
<p>16. Transportation/Circulation. Will the proposal result in:</p> <p>a. Generation of additional vehicular movement and traffic volume?</p> <p>b. Impact upon existing transportation systems?</p> <p>c. Effects on existing parking facilities, or demand for new parking?</p> <p>d. Alterations to waterborne, rail or air traffic?</p>	X		
			X
			X
			X

ISSUE AREA	YES	MAYBE	NO
e. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?			X
f. Alterations to present patterns of circulation or movement of people and/or goods?			X
g. Barriers to accessibility by handicapped persons?			X
<p>17. Public Services. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:</p>			
a. Fire protection?			X
b. Police protection?			X
c. Schools?			X
d. Parks or other recreational facilities?	X		
e. Maintenance of public facilities, including roads?			X

ISSUE AREA	YES	MAYBE	NO
f. Other governmental services?	X		
18. <u>Utilities.</u> Will the proposal result in: a. A need for new systems, or substantial alterations to public utilities?	X		
19. <u>Human Health.</u> Will the proposal result in: a. Creation of any health hazard or potential health hazard (excluding mental health)? b. Exposure of people to potential health hazards?			X
			X
20. <u>Risk of Upset.</u> Will the proposal result in: a. A risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals or radiation) in the event of an accident or upset condition?			X

ISSUE AREA	YES	MAYBE	NO
21. Energy. Will the proposal result in:			
a. Use of substantial amounts of fuel or energy?	X		

CEQA Guidelines Section 15065 set forth mandatory findings of significance. If the lead agency determines an action could result in one or more of the following effects, the effect(s) must be categorized as significant.

Mandatory Findings of Significance. Will the proposal result in:

- a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate plant or animal community, reduce the number of restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

- Yes. The proposed action by the Board will reduce the amount of water available for wildlife habitat, including the habitat of threatened or endangered species, and recreation, thereby significantly injuring those public trust values.
- b. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals: (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future.)
- No.
- c. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.)
- Yes. The various responses to a reduction in imported water supplies are likely to cause regional cumulative impacts on groundwater, surface water, wetland and riparian habitat, and recreation.

d. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

- Yes. Indirect impacts in the region in the next 10 to 20 years cannot be predicted. However, they could result in substantial effects on the economic conditions and lifestyles in southern California.

RESPONSES TO CHECKLIST ITEMS

1. Geology, Soils and Topography

- 1a. The development of enhanced recharge projects, artificial recharge projects, and reservoirs would result in the grading and alteration of natural contours, particularly in low-lying floodplain areas or watercourses.
- 1b. The development of reclamation plants, desalination facilities, recharge facilities, and reservoirs would result in the disturbance and compaction of soils at the project sites.
- 1e. Reduced storage in reservoirs could result in exposed mudflats along the margins of the reservoirs that would be exposed to wind erosion.

1f. A prolonged increase in groundwater extractions in basins throughout the service area could result in substantial draw-downs, creating a potential for land subsidence.

1g. The development of reservoirs and spreading facilities will result in modification of stream channels.

2. Water Resources

2a. An increase in wastewater reclamation and reuse by upper basin agencies would result in decreased discharges to the Santa Ana River as the reclaimed water is consumed, thereby reducing base flows.

2b. See 2a.

2c. Construction of additional facilities to capture additional surface water runoff, especially storm flows, would reduce flows to the ocean.

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unoff,
- 2e. Reductions would occur in the amount of water stored in reservoirs, flows of the Santa Ana River, and spreading basins which are used for recreational purposes. Reductions in carryover, emergency, and seasonal storage at existing reservoirs would decrease the amount of surface water storage facilities in the OCWD service area.

 - 2f. Reductions would occur in wastewater discharges to the Santa Ana River as a result of increased wastewater reuse or exportations out of the river system upstream.

 - 2g. Increased groundwater extractions to replace the lost State Water Project supply and the curtailed use of conjunctive use programs in response to a reduction in imported water, would exacerbate current overdraft conditions in the Orange County groundwater basin. The increased overdraft will not only reduce groundwater supplies in the region, it may also cause irreversible damage to groundwater aquifers by land subsidence resulting in aquifer compaction.

- 2h. Reduction in State Water Project water deliveries would result in an increase in the TDS of recharge waters which would in turn result in an accumulation of salts in the groundwater basin. Reduction in water available for injection at the Alamitos Barrier project and Talbert Barrier project would result in increased sea water intrusion into inland aquifers.
- 2i. Increased extractions of groundwater in response to reduced imported water supplies would reduce groundwater elevations and alter the movement of groundwater in individual basins by creating localized cones of depression and drawdowns. Increased extractions of groundwater from the coastal aquifers would induce the movement of high salinity groundwater from the ocean, particularly at the Alamitos Barrier which is reliant on imported water.
- 2j. Decreased deliveries of imported water would create a shortage of local supplies available for public water supplies.

3. **Air Quality**

3a. Pumping requirements would increase as groundwater elevations are lowered. Construction and operation of reclamation plants, desalination plants, and production wells would require additional electrical energy. This energy is likely to be generated by the combustion of fossil fuels in the region, thereby adversely affecting air quality.

4. **Botanical Resources**

4a. The long-term reduction of deliveries of State Water Project water would likely result in a reduction in treated wastewater discharges to Santa Ana River (due to increased water conservation and reuse in the upstream watershed area). The reduced Santa Ana River flow would result in a reduction of water availability for wildlife habitat particularly at the Prado Basin area and Santa Ana Canyon, which are considered by the U. S. Fish & Wildlife Service to be the most significant riparian habitat areas Southern California supporting a number of rare, endangered, and economically important species.

4b. See 4a.

4c. See 4a.

4d. See 4a.

5. Fish and Wildlife

5a. See 4a.

5b. See 4a.

5c. See 4a. The Prado Dam area and Santa Ana Canyon serve as habitat to 32 species of special status. See WACO Testimony (Exhibit No. WRINT-WACO-3), pp. 29-33.

5d. See 4a.

6. Agriculture

6a. As a result of TDS buildup, there will be a reduction in the quantity and quality of water available for agricultural use resulting in decreased crop yield of Orange County farming operations.

6b. See response to Item 6a.

7. Natural Resources

7a,b. Activities to offset reduced supplies of State Water Project water, including increased reclamation, desalination, and groundwater extractions, are energy-intensive requiring the burning of fossil fuels for power generation.

8. Cultural Resources

8a. During the construction of new facilities such as recharge projects, wastewater reclamation plants, and desalination plants, cultural resources could be disturbed.

8b. See response to Item 8a.

8c. See response to Item 8a.

8d. See response to Item 8a.

9. Land Use and General Plan Consistency

9a. The siting, development, construction, and operation of new facilities could involve conflicts with adjacent sensitive land uses due to nuisance impacts (i.e., noise, lighting, traffic, odors, etc.). However, it is anticipated that these impacts will be minimized through the environmental review process at the local level for these facilities.

9b. See response to Item 9a.

9c. It is anticipated that construction of new facilities and modification of existing facilities would be designed to be consistent with the local General Plan Elements.

10. Recreation

10a. Reduction in flows of State Water Project water would result in a reduction in water to OCWD's spreading basins used recreationally for fishing, and reduction of water available for diversion to duck ponds used for hunting and dog training at Prado Basin.

11. Aesthetics

11a. Construction of new water facilities such as desalination plants, reclamation plants, and reservoirs could result in potential adverse visual impacts, depending on the location and design of the facilities. Lowering of the water levels in reservoirs due to reduced storage could also result in adverse visual impacts.

12. Light and Glare

12a. Construction and operation of new desalination and reclamation plants and additional production wells could result in potential adverse impacts to the public due to night-time lighting, depending on the location and design of the facilities.

13. Noise

13a. Construction and operation of new desalination and reclamation plants and additional production wells could result in increased noise levels and potential adverse impacts to sensitive receptors, depending on the location of the facilities.

13b. See response to Item 13a.

14. Population

14a. Reduction of State Water supplies to Orange County will impede growth in the area due to inadequate water supplies to meet increased demand.

16. Transportation

16a. Construction and operation of new facilities such as desalination plants, reclamation plants, and production wells would result in localized increases in traffic volumes.

17. Public Services

17d. See 10a.

17f. Reduction in the deliveries of State Project water will affect the operations of WACO member agencies, which include cities and special districts responsible for water supply and wastewater reclamation activities in Orange County.

18. Utilities

18a. Reduction of State Water Project supplies or the restriction of the timing of exports would result in the need for additional wells and/or deepening of existing wells; construction of additional artificial and/or enhanced recharge facilities including additional sea water intrusion barriers and spreading facilities to capture additional storm runoff; construction of additional water reclamation and reuse facilities; and construction of additional reservoirs.

21. Energy

21a. See 7a.