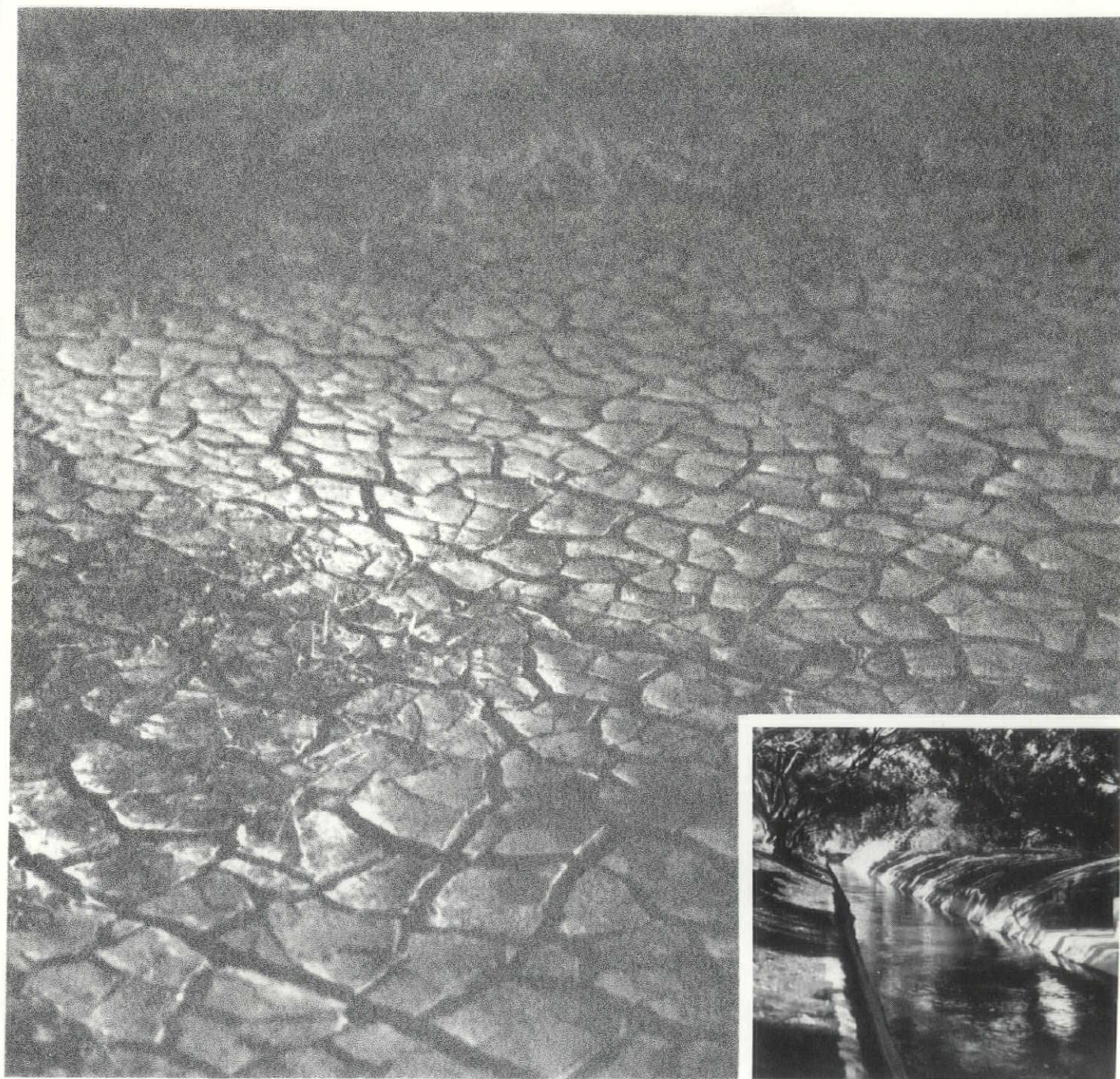


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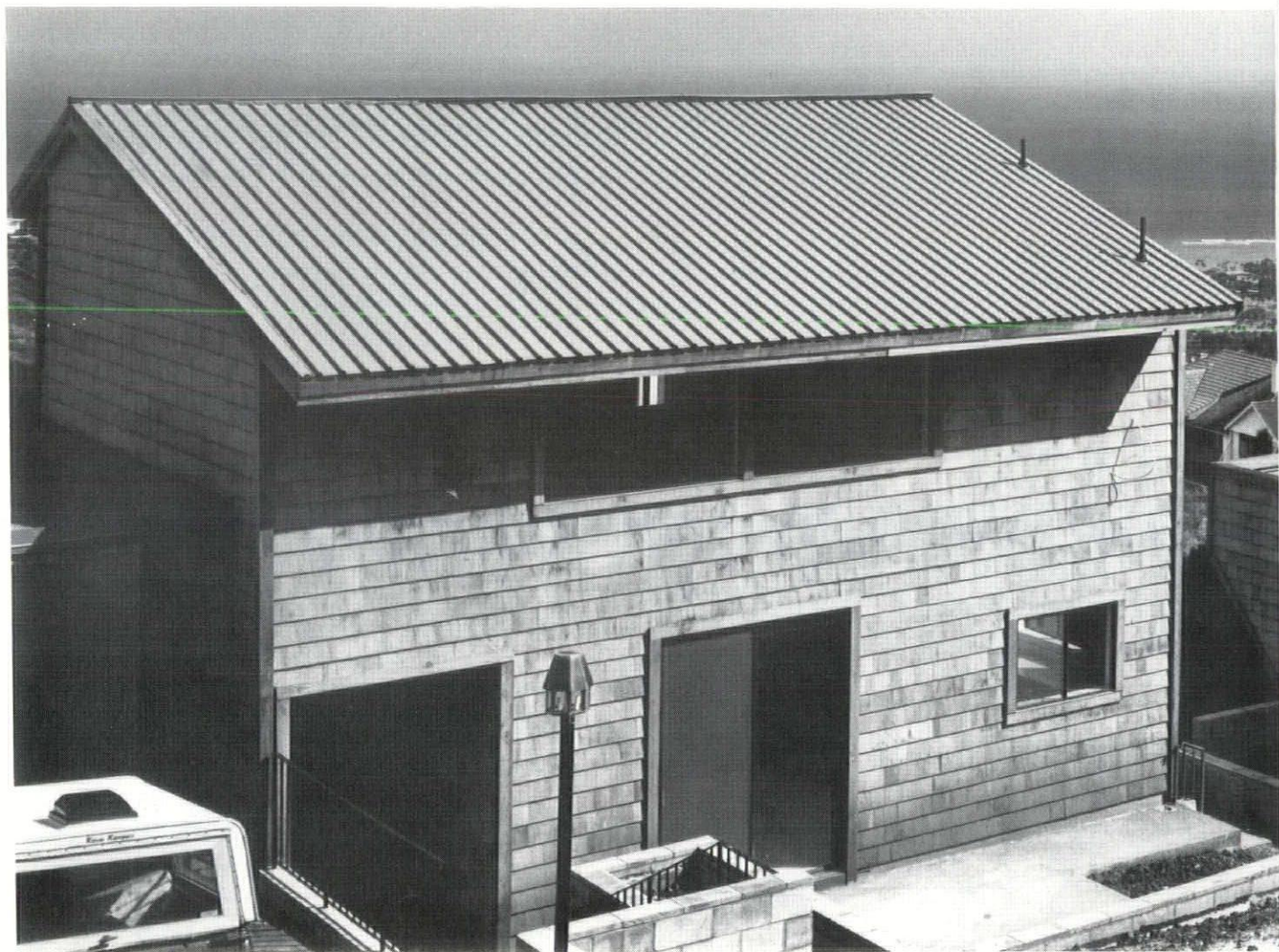




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# HAWAII ARCHITECT

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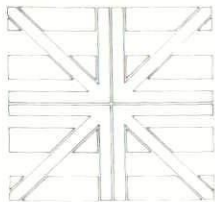
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## Headlines

# Dues, Water, and DC-10s

by DONALD D. CHAPMAN, AIA  
President, Hawaii Society/AIA

The amount of empty white space on this page is not so much a question of what to say but one of timing. In this day of instant coffee, instant photography, instant communications — really instant everything, instant going to press for the Hawaii Architect is approximately six weeks down the line. Odds are better than even that what seems pressing today will be resolved, or have dissolved, by the time this reaches you. One such issue is that of HS/AIA dues.



Donald Chapman, AIA

Our March business meeting is set to discuss two issues, that of dues and student voting rights. Resolving the question of yes, we raise the dues, or no we won't, will in a large measure decide for your excom what programs we adopt or drop. Many hours have been spent by a number of your colleagues trying to place priorities on society programs. Which ones survive should be established by the time we next go to press.

This issue focuses on water resources. It discusses water rights, what is involved in getting water for development, and updates the shoreline management permit process.

Water is a timely subject for us, as evidenced by the request and board approval of Kazu Hayashida, the Board of Water Supply's manager and chief engineer, to hold a public hearing on a proposed amendment to Chapter I of the rules and regulations and tentative adoption of proposed water commitment guidelines. This public hearing is scheduled for April 23, 1981.

The proposed amendment adds a new Subsection 5 to Section 1-101, availability of water. It provides for the issuance of water commitments to proposed projects under three different conditions of water supply availability. Advance water commitments may be issued in areas of adequate water supply. Restricted water commitments may be issued in areas with limited additional water supply. No water commitments will be issued in areas of no additional water supply except the issuance of a single five-eighths-inch meter to proposed developments on existing vacant lots.

Hayashida is also recommending tentative adoption of proposed Water Commitment Guidelines for the purpose of implementing the issuance, or non-

issuance, of water commitments as provided for in the proposed amendment.

Seems as though our expanding individual water requirement multiplied by our expanding number of individuals is catching up to our available non-expanding water resources as it is with energy. Living in an island community with "water all around" it is hard to visualize the day when you turn on the faucet and "not a drop to drink" comes out. Farfetched? I hope so. However, it can and does happen in other areas where resources are being stretched. I've just spent several days in a city that turns off the water completely when the level drops to the minimum required for fire safety. Even the hospital is not exempt. Proper planning and community awareness now should prevent such conditions from ever occurring here.

Under the heading "I'm not superstitious, but . . ." Last week several of us journeyed to Washington, D.C. on a flight that took only 24 instead of the normal 11 hours. How come? After a scheduled 6 hours wait in Los Angeles for a connecting flight we boarded our non-stop to D.C., and sat on the ground for two more hours before being told the plane couldn't, or wouldn't fly, which triggered another series of delays and misconnections. Our problem? All five of us were sitting in Row 13 on a DC-10 with hydraulic problems. The best part? We survived! **A**



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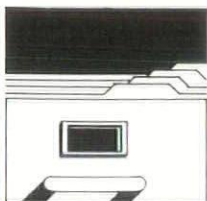
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# Critical Water Issues of the 80s

by **ROBERT T. CHUCK**  
**Manager-Chief Engineer**  
**Division of Water and Land Development**  
**Department of Land and Natural Resources**

Water development in the state of Hawaii reached its peak in the sixties and the decade of the seventies ended with much concern and debate about the state of water resources in Hawaii. Problems of prolonged dry weather in the mid-seventies led to drafting of strict water conservation rules for the citizens of Oahu and the governor commissioned a panel of water experts to assess the water situation of the state. The twenty-five-year-old Hanapepe water case continued in federal courts on appeal and a new water litigation began in state courts involving taro farmers and the Honolulu Board of Water Supply over use of Waihee Stream waters on Oahu.

Conflict over use of the Hanawi Stream waters also surfaced in East Maui between environmental/Hawaiian cultural groups and A&B, Inc. The 1978 Constitutional Convention specifically addressed water resources management in one of the many amendments approved by the people.

## **WATER RESOURCES MANAGEMENT**

Government management of water development and use in Hawaii is a very new experience. Prior to 1979, only groundwater resources development on Oahu was regulated and was done at the county level by the Honolulu Board of Water Supply, also heavily involved in groundwater development. Surface water development is currently unregulated on all islands as well as groundwater developments on the Neighbor Islands.

The state got involved with water management activities in late 1979 by the designation of the Pearl Harbor Ground Water Control Area by the Board of Land and Natural

Resources. Under the land board's management, authorized by the state's Ground Water Use Act, Chapter 177, HRS, the existing withdrawals have been certified for continuance and new ground water developments and uses now require authorization from the land board by permit. The land board is limiting withdrawals equal to the sustainable yield of 225 million gallons per day in order to stabilize the long-term decline in water levels of the Pearl Harbor Ground Water Control Area. The draft and sustainable yield relationship for various areas on Oahu are shown in the illustration on Page 7.

The groundwater resources on Oahu occur in various underground forms. The most abundant supply is the basal groundwater where rainfall percolating into the ground and reaching sea level forms a freshwater lens that floats on sea water that underlies all of the islands. The lens is separated into varying water levels by geologic barriers and in certain areas extensive geologic barriers or dikes trap the percolating ground waters high in the mountains.

Because of this hydrologic relationship and for other hydrologic reasons, such as decline in water levels and increase in salinity of existing wells, the BLNR is considering the designation of the Honolulu and Waialua areas as ground water control areas. This action will impose strict groundwater controls by the state over all of Central Oahu from Kaena Point to Hawaii Kai. The windward areas of Koolauloa and Koolaupoko and the Waianae coast will remain under the control of the Honolulu Board of Water Supply.

There are no controls over groundwater developments and uses on the Neighbor Islands at the present time other than the regis-

tration of groundwater development information with the Department of Land and Natural Resources. There are also no controls over surface water developments and uses in the state.

As a means to implement the major thrust of the constitutional mandate that the legislature designate a state agency to regulate surface and groundwater resources on a statewide basis, the state administration is proposing amendments to the state's Ground Water Use Law. The amendments extend the regulatory authority of the Board of Water and Natural Resources to surface water controls and to groundwater controls in non-designated areas on a statewide basis. The designation of critical water areas will be retained in the proposal to allow for strict controls. The bills are designated SB No. 502 and HB No. 752 by the 1981 Legislature.

Another administration sponsored bill, SB No. 501 and HB No. 751 would provide for the review, updating and codification of Hawaii's water laws. The proposal calls for the Department of Land and Natural Resources to serve as lead agency and involves experts in all sectors of the community in the process of completing the codification of Hawaii's water laws in three years for legislative action.

The impetus for codification resulted with the constitutional amendment on water resources calling for broad water use policies taking into account all aspects of Hawaii's water resources needs. The state Water Commission specifically recommended codification. In its findings the commission concluded that water laws in Hawaii have been formulated for the most part on case laws rather than statutory laws. The lack of statutory laws has allowed or forced the courts to render decisions on a case-by-case basis which in time



has formed the basic framework for Hawaii's water law.

Other events which have led to this codification effort include the litigations now in the courts, the shift to conjunctive management of surface and groundwater resources, recent developments in

aesthetic values such as waterfalls and scenic waterways; navigation; hydropower generation; water quality maintenance; and conveyance of water supplies to downstream points of diversion.

In water resources appropriations, instream uses have been ac-

calls for establishing interim protection measures and instream use standards on a stream-by-stream and site-by-site basis for significant instream uses.

## NEW APPROACHES

A major water issue confronting all of Oahu is the adequacy of water supplies needed for the year 2000 and beyond. Water projects, like any major public works, require much lead time from conceptual plans to construction to operational status and require large financial resources usually requiring joint funding among governments.

Although estimates show that additional water supplies are available for development on Oahu at a higher cost per unit of developed water, innovative approaches need to be developed and managed to meet the Island's total water needs. Difficult problems need to be addressed such as water ownership, means of financing, agency responsibilities, as well as technical solutions yet requiring research and investigation. Because of time constraints, a unified approach to solve Oahu's future water needs requires immediate attention by all responsible public and private entities.

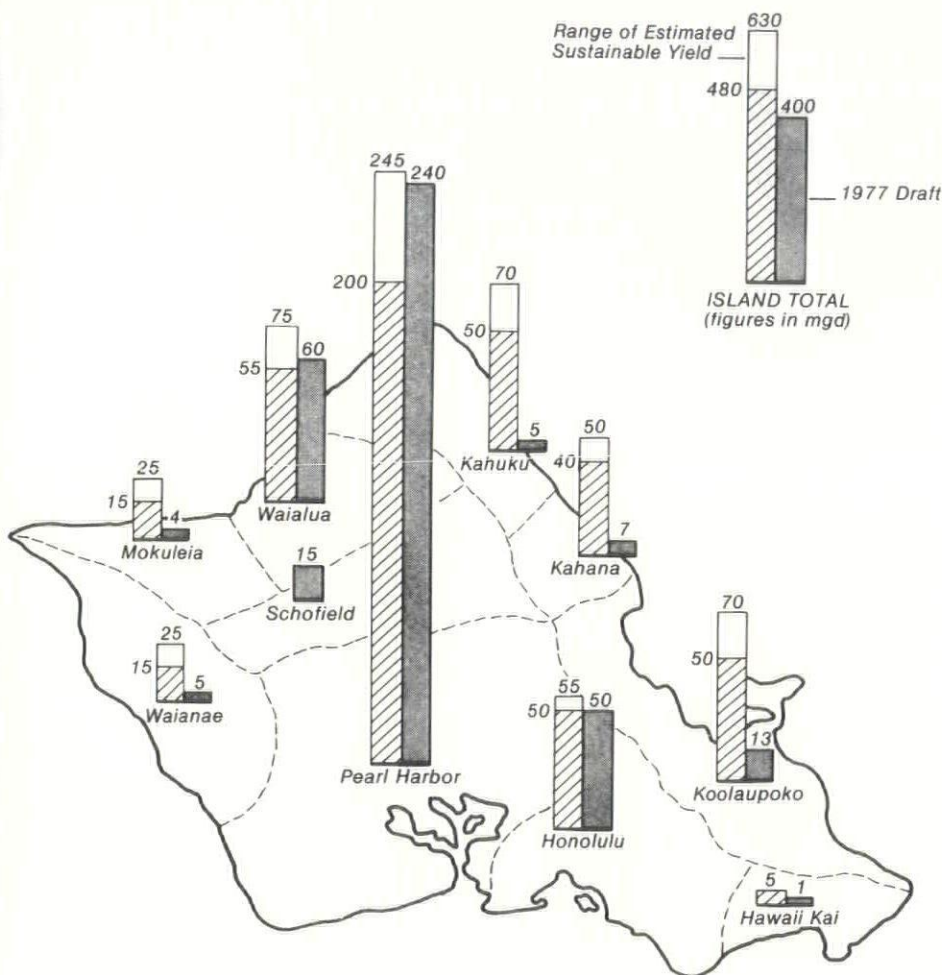
As a suggestion the following actions generally would start the unified approach to solve Oahu's water needs.

- Organize an advisory and coordinating group comprised of water officials from the public and private sectors and citizens representing all geographic areas of Oahu to guide agency programs and projects to achieve the goals and objectives to optimize the developments and uses of Oahu's water resources.

- The water resources of Oahu should be reviewed on an Island-wide basis and analyzed regionally only as dictated by natural geologic and hydrologic boundaries.

- Islandwide water needs should be reviewed in the context of the Hawaii State Plan, County General Plan, State Functional Plans, and County Regional Development Plans.

- Islandwide hydrologic solutions need to be re-identified and reviewed. As an example, Koolau



Sustainable yield of groundwater on Oahu.

water quality programs and the need to further coordinate state and county agency responsibilities in water resources management.

## INSTREAM USE OF WATER

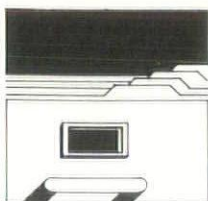
Instream uses of water have been recognized and accepted as state policy in the legislative-approved Hawaii State Plan. The instream uses requiring streamflows of certain quantity and quality at a particular site include the maintenance of fish and wildlife population; maintenance of outdoor recreational activities; ecosystem maintenance such as estuaries, wetlands and stream vegetation;

cepted as being beneficial and to be in the public interest. Instream uses are considered equally to have as much right to the use of water as traditional uses such as municipal, agricultural and industrial uses.

A proposed legislation, sponsored by the state administration and designated as SB No. 1470 and HB No. 1882, is up for consideration by the 1981 Legislature. The bills are aimed at providing protection of instream uses of water through regulation by the Board of Land and Natural Resources. The legislation mandates the land board to develop an ongoing instream use program and

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# Water Supply in the Future

by Denise DeCosta  
Honolulu Board of Water Supply

To ensure the adequacy of water supply in the future, the Board of Water Supply has addressed two major concerns — the water resource development charge and water commitment policy.

Kazu Hayashida, manager and chief engineer of the Board of Water Supply, says that the two concerns are part of the board's overall plan to assure the prudent allocation of existing water resources to proposed developments and to insure the development of new sources to accommodate the increasing water demand of the future.

The water resource development charge is an assessment upon a new service for our cost to install new sources, transmission mains, and reservoirs that are required to accommodate the new services. The water commitment policy is the issuance or non-issuance of water commitments to new developments depending upon the condition of our water sources and transmission systems.

## DEVELOPMENT CHARGES

The water development charges have been devised by the Board of Water Supply to finance expansion of the water system, according to Hayashida.

"Basically, it provides that any new services which come into the system will have to pay a water development charge," Hayashida said. The water development charges were adopted by the Board of Water Supply after a public hearing two years ago. The subject is under further study by a consultant to the board.

"The philosophy is that the new customers are putting new requirements on the system, so they should pay the costs to expand our water systems," he said.

This idea of assessing costs of water system expansion to developers and new customers is not

new or unique, according to Hayashida. The development charges, he said, are basically a modification of previously used methods for assessing fees for new water services.

It was once known as a "special agreement charge," and later "water facilities charge." The charges have provided relief to existing customers in the form of lower water rates.

"If we did not go to some kind of development charges, the alternative would be to cut back system expansion in line with available monies or to proceed with needed



Exploratory testing and drilling of new wells are covered by the water development charge.

development with higher water usage rates," Hayashida said.

Many water departments across the country are considering or have already begun to assess similar charges to finance the escalating costs of expanding the water systems for new customers.

The next step the board made was to determine what a "fair" cost would be to assess new customers and developers. Since such an as-

essment had never been made here before, it looked for a model upon which to pattern the development charges.

"We decided to use average charges based on a model system that had been recently installed and, at that time, Mililani town was coming in," Hayashida said. "This was an ideal model for us, we found, because of two factors: first, it was a large-scale development made up of many types of consumers; and second, it was an isolated, self-sufficient water system complete with source, storage, and transmission mains in addition to local feeder mains."

The board established the charges that would encompass all user categories according to the zoning of the land parcel and the type of development.

Basically, the development charges come in three parts, any or all of which can be credited to the developer if these segments are constructed by the applicant: source development, main construction, and storage facilities.

Hayashida assures that the issue is far from over, and that a consultant is presently studying all water service and development charges to determine if any changes are needed to make the system more equitable for all consumers. That study is expected to be completed within a year.

## WATER COMMITMENT POLICY

As water became limited, there was a need to formulate a water commitment policy. A proposal is before the board for adoption as part of the Board of Water Supply rules.

"Right now, we're doing it administratively," Hayashida said, "but we think it should be formally adopted by the board after public hearings and discussion."

Basically, restricted water com-

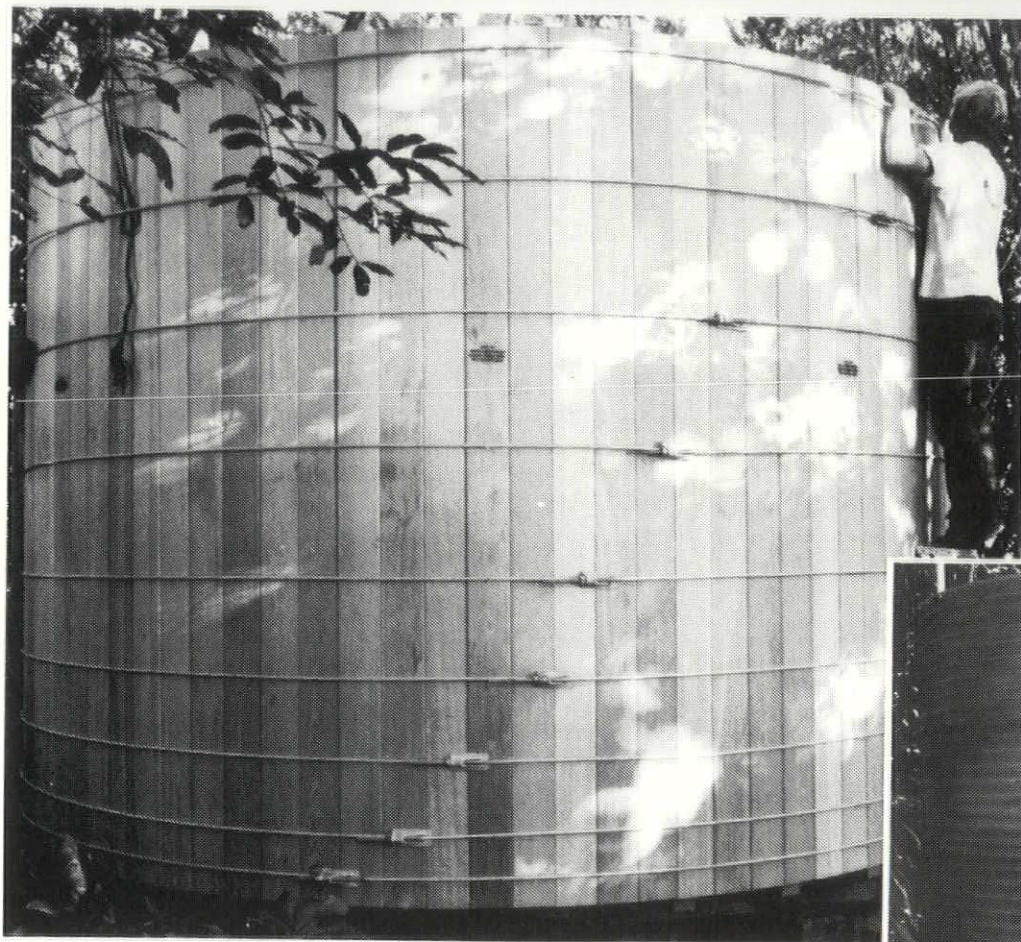
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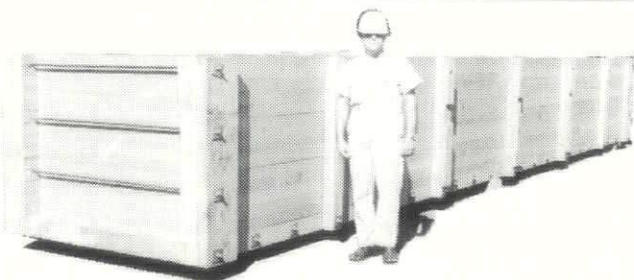
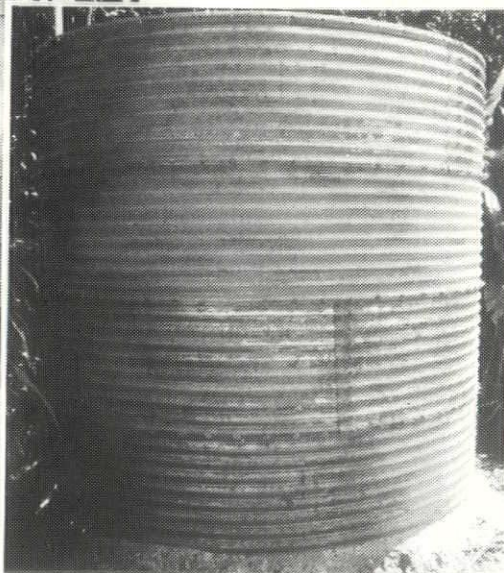


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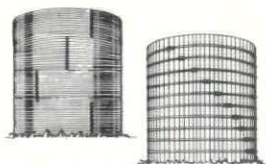


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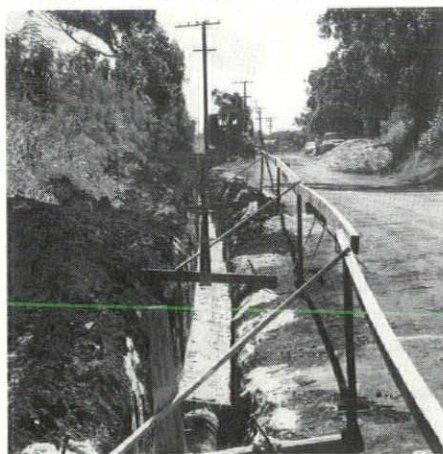
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# Water Supply in the Future

Continued from Page 8

mitments will be issued to proposed developments in areas with limited additional water supply. The restriction shall consist of issuing the commitment only after construction drawings or building permits, whichever are applicable to the project, are submitted to the department and approved.

The water commitments are



Cost of pipe transmission system installation is covered by the water development charge.

valid as long as the approved construction plans or building permit, whichever are applicable to the project, is valid. Water commitments shall not be issued in areas with no additional water supply except for the issuance of a single five-eighths-inch meter to proposed developments on existing single vacant lots.

The commitment policy is needed because of what Hayashida calls the "tight water situation."

"We have only a very limited amount of water until we develop new sources, which will take about four or five years," he said. "We have found that we can't possibly keep up with all the developments that are being planned, and our past water commitments greatly exceed our available water supply."

Therefore, all prior commitments have been set aside and

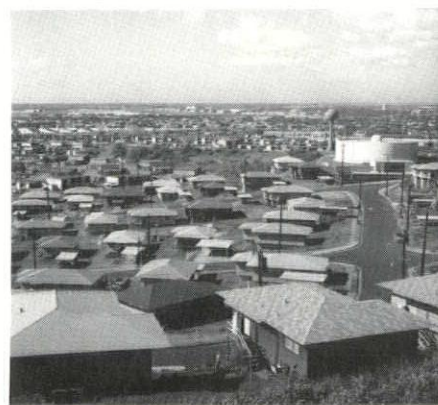
new applications are required to receive current approvals.

He said the Board of Water Supply does not want to have developers come in and ask for a water commitment from the board if the project is not scheduled for construction within four or five years. "What we are attempting to do is to assure adequate supplies to projects that are ready to go within this period," he said.

Asked whether this kind of policy creates a sense of insecurity among developers, Hayashida acknowledged that "the developers are taking a risk."

"We haven't turned down anything yet for most of Oahu," he said, "but we have stopped approving projects in the Waianae and Ewa areas. Only five-eighths-inch meters for an existing lot are permitted in these areas."

"We are working very hard and diligently to develop new sources to avert greater hardship for new customers. In addition, we are asking everyone to use water wisely and not to waste it. Conservation will help to extend the life of the existing supply." FA



Water storage and supply facilities are evident wherever large urban growth occurs.

Editor's Note: A pamphlet detailing the schedule of water development charges is available from the Honolulu Board of Water Supply.

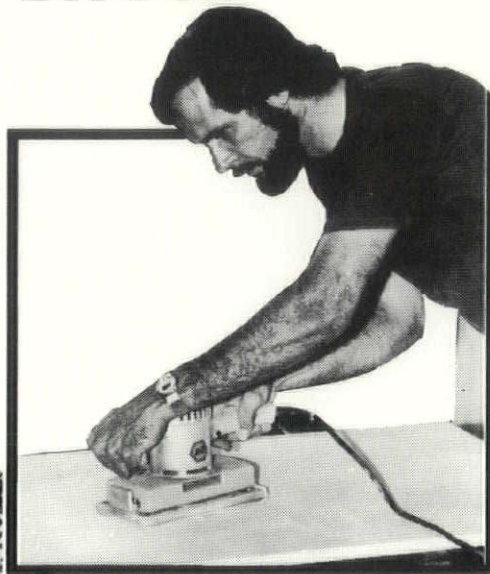
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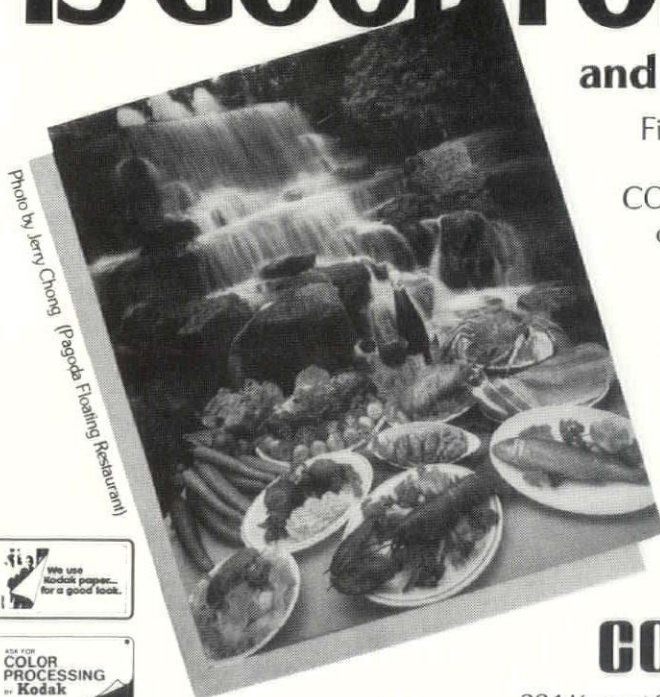


Photo by Jerry Chong / Papad's Floating Restaurant





# Water — A Landscape Architect's View

by **THOMAS P. PAPANDREW, ASLA**  
Director of Planning  
Belt, Collins & Associates

Water availability is a central issue in practically every major development project with which we become involved as landscape architects and planners. This is an issue of growing concern on Oahu because domestic, agricultural, industrial, and recreational activities are making increasing and competing demands on the water supply.

Over the years we have experienced a substantial increase in per capita water consumption. Ten years ago we often designed for per capita consumption of 100 gallons of domestic water per person per day. It then jumped to 150 gallons, and now one of the county departments of water supply has established the criteria of 180 gallons of water per person per day.

Five years ago we worked on a planning project for the interior of Alaska and were surprised to find that an adjacent community used 10 gallons of water per person per day. Water as a resource in this community was highly valued. The cost of transmission through a heater utilidor was a prohibitive economic constraint. The community shower, in which families paid a dollar per head, developed out of this socioeconomic condition.

The point is that rather than conserving or reducing our water consumption, we have actually increased our use of this resource.

As design professionals, our role and responsibility is to provide the expertise for sound planning and management practices and design of facilities which would make best possible use of our water resource.

On the Island of Oahu, the Pearl Harbor groundwater basin is often mentioned as the one most seriously impacted by agricultural and domestic use for urban expansion in the Ewa/Central Oahu area

coupled with increasing demand for water in Honolulu proper.

Overdraft is nothing new to the Pearl Harbor basin. Information I have seen indicates concern as far back as about 1910. Many years ago, the Ewa District Water Users Association (EDWUA) was formed to coordinate plans in such a manner as to prevent overdraft. The demands on Honolulu and its

## **"Future growth . . . may depend on better water management practices."**

urban expansion precluded success of this association.

The Board of Water Supply exports about 42 million gallons out of the Pearl Harbor basin to service the greater Honolulu area every day. Thus, water availability is not just related to this specific hydrologic area but rather is an Island-wide problem. The Board of Water Supply uses about 25 to 35 percent of the 225 to 250 million gallons of water per day pumped from this basin. Agriculture, Hawaiian Electric Co. and the U.S. government will use the remainder.

The general plan for Honolulu adopted in January 1977 proposes that growth occur primarily from Kahala to Pearl City (Primary Urban Center, PUC) and in the Ewa/Central Oahu area of the Island of Oahu. Future growth in these areas may depend on better water management practices, innovative design, and a water conscious community effort.

A number of possible water management and design alternatives exist which could be instituted to correct this groundwater basin in balance. Briefly, we could:

1—Potentially recharge the basin from storm runoff from the land surrounding Pearl Harbor. It

has been estimated that about 10 million gallons per day (MGD) might be recovered by artificial recharge.

2—Import storm water via Waihole Ditch during winter months which could provide additional 10 MGD to the groundwater flow.

3—Reuse of sewage effluent, either diluted or direct from the sewage treatment plants in the area, could add several MGD to the basin recharge.

4—Use recycled water rather than high quality groundwater for cooling purposes as well as use brackish water and sewage effluent for agricultural, park, and roadside landscape irrigation which would conserve additional fresh water.

5—Design community infrastructure to minimize the amount of impervious surface in roadways, paving, and roof surfaces which would decrease the amount of storm runoff. As an aside, landscape architects in communities in Oregon are currently concerned with the amount of petrochemical products needed to manufacture asphalt, and as an energy conserving measure are beginning to question "gold plated" road standards developed during the sixties and seventies.

6—Prohibit channeling and disposing of surface runoff into the sea as contrary to good water management.

7—Begin to tie flood control, recreation, irrigation, and artificial recharge into working chains. A system for flood control, drainage, and recharge is currently being designed for a new community on Maui.

8—Find ways to reuse water, recycling it from agricultural to domestic use (for example, from watercress farms to domestic use) and from domestic use to agricul-

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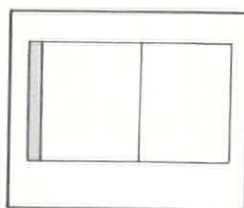
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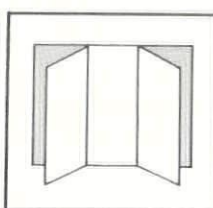
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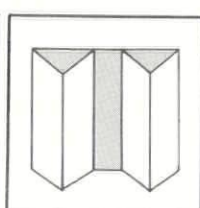
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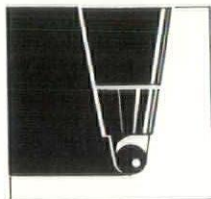
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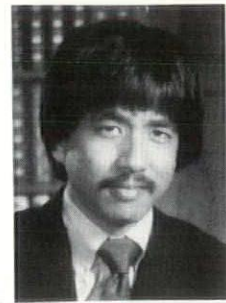




Commentary

# McBryde-Robinson Doesn't Matter

by WILLIAM B.C. CHANG  
University of Hawaii School of Law



WILLIAM B.C. CHANG

*William B.C. Chang was born and raised in Honolulu, Hawaii, and attended Princeton University and the University of California School of Law at Berkeley. He has been an assistant professor of law at the University of Hawaii School of Law for the past five years and teaches in the areas of water rights, corporations, securities regulation, and corporate tax.*

*For the past two years he has been the principal investigator of a federally funded project on native Hawaiian water rights. He is also a special deputy attorney for the state of Hawaii representing the chief justice of the Hawaii Supreme Court as an amicus curiae in Robinson v. Ariyoshi. Professor Chang argued the case before the Ninth Circuit Court of Appeals in San Francisco, September 1980.*

What does the decision in Robinson v. Ariyoshi mean? It should be noted that this article was written before the Ninth Circuit Court of Appeals' decision was released. Normally one would assume that it is impossible to comment on a decision before it appears.

However, this commentator feels that whatever the decision in Robinson, the result will not have a substantial effect on water rights in Hawaii. In effect, my view is that Robinson v. Ariyoshi is primarily about the relationship between federal and state courts. Although it appears to be concerned with water rights, even a final decision (assuming U.S. Supreme Court review of some sort) will not provide relative certainty in water rights.

How can this be so? Let's take both possible outcomes. If we assume that the state wins, then, the water rights rules expounded in McBryde v. Robinson will apparently become "law." Basically, those rules were:

1—The state is the "owner" of the surplus waters of the stream (i.e. there are no *konohiki* rights).

2—The natural flow theory of riparianism is the law of Hawaii.

3—There are no prescriptive rights.

4—Surface waters cannot be transported out of the watershed.

Even if the state were to be victorious in Robinson v. Ariyoshi, the real impact of these rules would remain unclear.

The confusion after a major decision such as McBryde is not uncommon. One need only recall the confusion following Brown v. Board of Education (desegregating schools) and the debate over "equal educational opportunity" to note a similar situation. Only when it has an opportunity to respond through a decision will the Hawaii Supreme Court have a chance to clarify the ultimate direction of these rules. Thus, even if the state prevails in Robinson, McBryde v. Robinson does not represent the ultimate word on water rights.

As to the other side of the coin — let's assume the state loses in Robinson v. Ariyoshi and the sugar companies win — will there then be certainty in Hawaiian water rights? The answer is no. While the state would have to agree that it lost the battle as to the Hanapepe River, it has not yet lost the war. The state may choose to assert the validity of McBryde and the invalidity of Robinson in every other watershed in the state.

Since the injunction in Robinson was against state officials and not the Hawaii Supreme Court, there is nothing to prevent the Hawaii Supreme Court from applying the same reasoning it used in McBryde to other parties as to other waters.

In other words, the state, like the IRS, may simply decide not to acquiesce with the implications of the

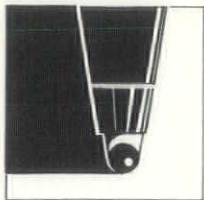
ruling, if it loses, in Robinson. Since every case involving different parties is a new case, Robinson would not be binding on the outcome of yet undecided cases. Thus, if the state chose not to acquiesce in the result in Robinson, and continues to litigate the issue whenever it arose, there would still remain a great deal of uncertainty in water rights.

The point is that the judicial system will never produce certainty in water rights. Whatever the outcome of Robinson, there will remain very little agreement as to what is the state of water rights. Moreover, it is this quality of certainty which is the ultimate goal to those investing in water rights. Without such assurances of certainty, there will not be much investment in land development or industry where water is important.

The upshot of all this, of course, is that we should encourage the development of a permit system. Those presently using water uniformly oppose a permit system because they perceive that they can only lose under such a system. But, what they hold now, they hold under a cloud of uncertainty. As I have pointed out, even if the Robinson decision is decided in favor of the private interests, uncertainty would continue if the state chose not to acquiesce.

Thus, what the parties have to gain under a permit system is ultimately what they seek — certainty. A permit represents the state's pledge that a certain amount of water use will not be challenged by the state or other parties. Without such a system, every user of water lives under the threat, as so dramatically illustrated in McBryde, that the law may change. HA





Commentary

# McBryde-Robinson Does Matter

by RICHARD H. COX  
Vice President  
Alexander & Baldwin, Inc.



*Richard H. Cox, vice president (engineering), Alexander & Baldwin, Inc., has been directly involved in the Hanapepe water controversy from the original filing with the Kauai Circuit Court.*

*At that time, he was civil engineer with McBryde Sugar Co., one of the two sugar plantations which had utilized surface water from the watershed. Cox continued to represent the plantation after he joined Alexander & Baldwin, Inc.*

*Cox's responsibilities at Alexander & Baldwin, Inc., include water resource management at its two plantations, McBryde and Hawaiian Commercial & Sugar Co. on Maui.*

The Hawaii Supreme Court in 1973 in a startling reversal of water law, attempted to upset a century of judicial and water management practices with its decision in the Hanapepe case (McBryde v. Robinson). McBryde Sugar Co. had initiated an action to settle disputed water rights in Kauai's Hanapepe Valley with the Circuit Court acting as water commissioner.

The Circuit Court in determining quantities of water gave a judgment in accordance generally with prevailing case law, awarding a flow of water to the sugar plantation, as well as a flow for other land owners, including the Robinson

family and their lessee Olokele Sugar Co., the state, and numerous kuleana owners, mainly in the lower valley.

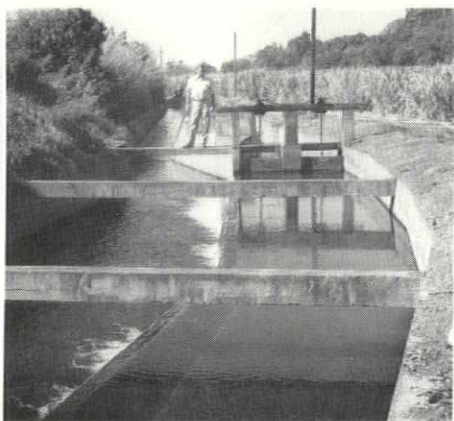
On appeal, the Hawaii Supreme Court overruled the Circuit Court and declared all prior Hawaiian cases inconsistent with its judgment.

The Hawaii Supreme Court declared that since the mahele in the middle of the 19th century, the state had been, and was, the owner of all of the water flowing in the valley, subject only to appurtenant rights for use in the valley only on the lands actually used for taro. It also awarded riparian rights to owners along the natural watercourse to have a flow of the river in the shape and size given it by nature.

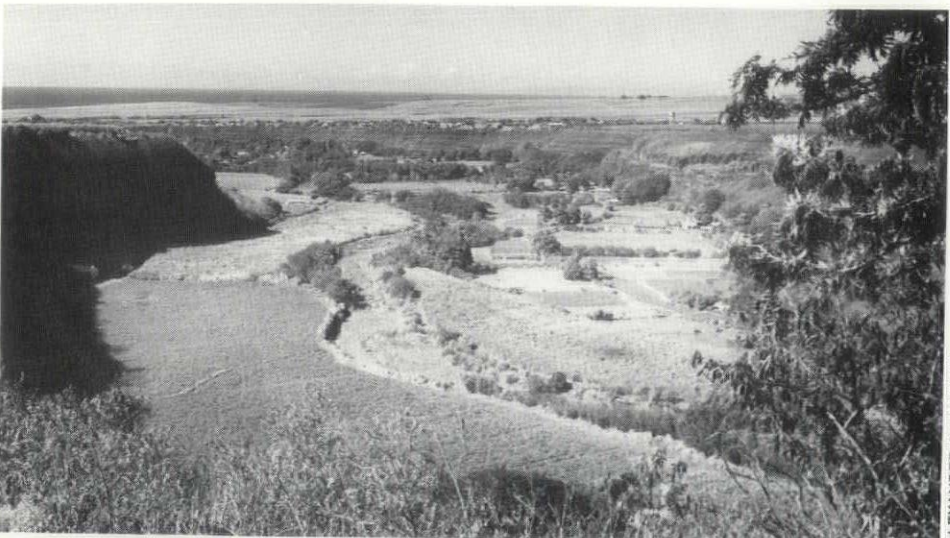
Thus, no private owners had the right to the use of the surplus waters nor could anyone with appurtenant water rights transfer the water off the lands to which the water was anciently appurtenant.

The decision, if enforced as rendered, would have negated practices initiated and encouraged by the government during the time of the monarchy of using water for irrigation, thus permitting the growth of the sugar industry. The blatant and unexpected transfer to the state of adjudicated private property rights by the Hawaii Supreme Court has brought the normal and necessary development of surface water resources in both the public and private sectors virtually to a standstill.

The private parties unable to get a constitutional hearing before the state Supreme Court initiated an action in the U.S. District Court to enjoin state officers from taking action to enforce the decision of the Hanapepe case on the grounds that the Hawaii Supreme Court had



**Above: Main irrigation ditch at McBryde Plantation. Left: Intake ditch at Hanapepe. Below: Hanapepe Valley.**



ALEXANDER & BALDWIN

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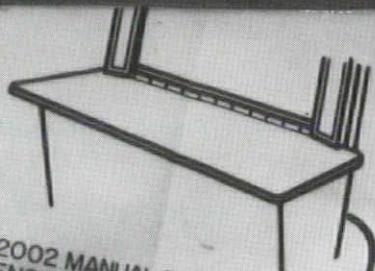
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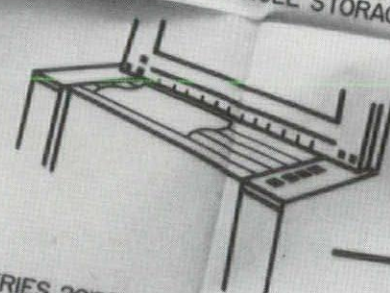
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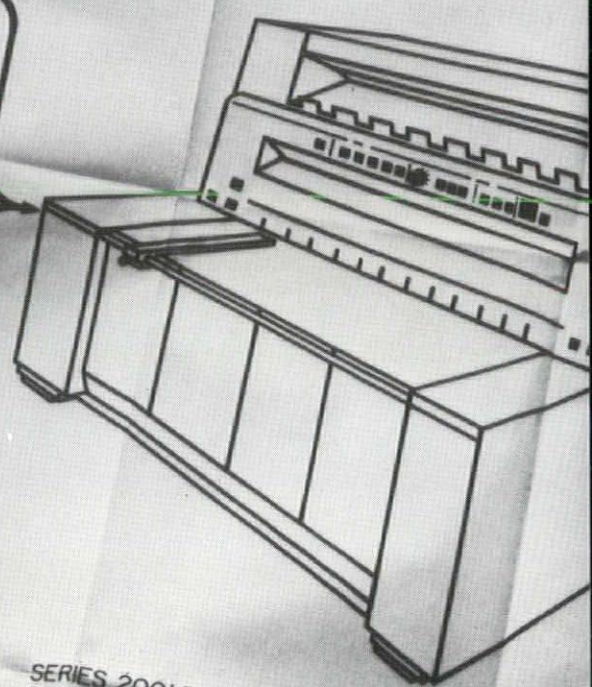
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## McBryde-Robinson Does Matter

Continued from Page 15

erred procedurally and substantively.

The U.S. District Court ruled in favor of the private parties in 1977

This action was then appealed by the state to the Ninth Circuit Court of Appeals. A decision is expected this spring. The decision by the Ninth Circuit and any subsequent litigation, as well as legislation, is bound to affect all water resource management decisions and private investments in water development.

The Hawaiian water system, as generally understood, was a recognition of rights arising from the Great Mahele of 1848. The water rights were founded on the subsistence economy of the native Hawaiians in the growing of taro, the main source of their food. Much of the taro was grown in wetland (submerged culture) paddies known as *lois*. The ancient Hawaiians constructed ditches called *auwais* to divert water from the many streams flowing out of the wet mountain areas. These ditches delivered water to thousands of acres under cultivation for taro.

When the king divided his land at the time of the mahele, many of these taro lands came to be owned by the common people who cultivated them.

The balance of the taro lands were distributed to the chiefs (or *kono-nikis*), the government, or continued to be held by the king.

The amount of water that was actually used to irrigate the taro lands at the time of the mahele determined the water rights of the land on which it was used. It became known as appurtenant water rights.

The balance of the surface water runoff was called surplus water, water over and above the appurtenant and prescriptive rights. Through a series of decisions of the Supreme Court of Hawaii be-

Continued on Page 20

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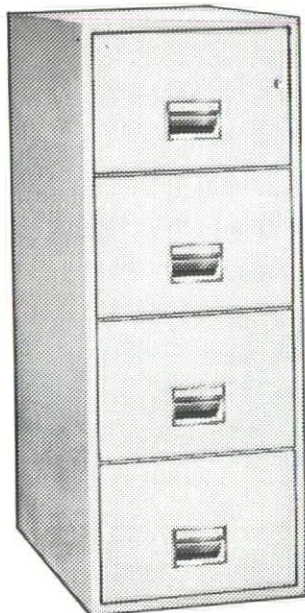
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## McBryde-Robinson Does Matter

Continued from Page 19

ginning in 1867, all surface water rights were held to be freely transferable and severable from the land to which they were appurtenant, subject of course, to a limitation that diversions would not adversely affect a downstream owner with water rights.

Sugar planters purchased taro lands or the taro land water right, as well as the konohiki lands and water rights, and transported the water along with normal and wet weather surplus water to areas formerly without irrigation.

As early as 1876, the Kingdom of Hawaii passed statutes to promote the construction of irrigation ditches. These statutes permitted the irrigation companies to acquire easements over lands owned by others where beneficial use of the water could be shown. A similar provision was provided by the constitution of the Republic of Hawaii in 1894 authorizing condemnation of private rights-of-way for irrigation facilities.

The public interest in support of water transport was confirmed after annexation by the United States through the adoption of a special provision of the Organic Act.

The irrigation systems utilized by the plantations include the largest privately owned system in the world on Maui with 75 miles of ditches, tunnels, and flumes. With a capacity of 455 million gallons per day, these flumes deliver 62 billion gallons a year from wet windward East Maui to the dry but fertile isthmus. On Oahu the Waiahole system collects water on the windward side and transfers it to Central Oahu, irrigating much of the land surrounding Pearl Harbor.

Probably the first in-depth investigation of water rights in Hawaii was contained in the 1917 report of the Water Commission of the Territory of Hawaii. The com-

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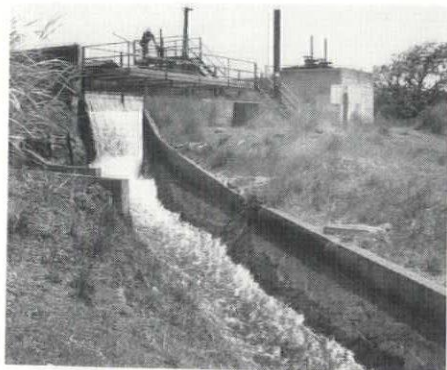


ported that no legislation respecting surface water rights should be adopted since Hawaii already had a very good workable method for determination of rights to surface waters, the law relative to which had been fairly definitely settled by a series of decisions."

In 1940, a comprehensive study for the Honolulu Board of Water Supply resulted in the publication of "The Hawaiian System of Water Rights." Wells Hutchins, the writer, a water economist and member of the bar employed by the federal government, notes in his foreword, "The basic system of water rights in the Islands is the outgrowth of customs which have been followed from time immemorial; it appears to be, in general, a workable system for its environment . . ."

The Hawaii Water Authority in its report, "Water Resources in Hawaii" in 1959 similarly concluded, "Surface water rights in Hawaii are considered property rights and can be sold or acquired separately from the land to which they are appurtenant. The legal right in Hawaii to transport surface water from one watershed to another, not permitted under riparian water law,

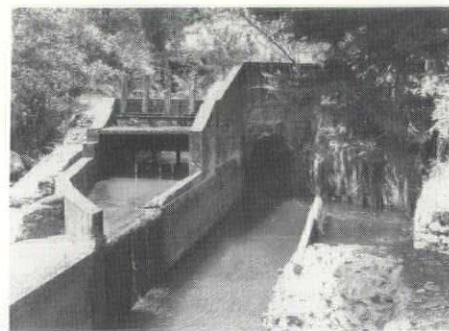
has made it possible to provide irrigation to Hawaii's water-deficient and generally better arable lands and develop a sound agricultural economy. Extensive developments of surface water have been accomplished under Hawaii's existing surface-water rights law. It can be concluded that the many court decisions have firmly established the principles of surface-water rights in Hawaii. It does not seem likely that any legislation enacted to materially alter existing surface-water rights law would be held constitutional by Hawaii's courts. Nor does



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there appear any need at this time for legislation to strengthen or change this system of water law."

Since the Hanapepe case, a report to the governor by the state



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Water Commission in 1979 noted the disruption caused by the Hawaii Supreme Court in 1973 with "two alternative systems . . . one representing the cumulative effects of many court decisions during the period from the Great Mahele to 1973, the other being the opinion rendered in 1973 . . ."

The Hawaii Supreme Court in the Hanapepe case apparently determined that it would change by judicial enactment the settled surface water system of the Islands by overturning the entire body of Hawaiian surface decisions. First, the court held that the appurtenant water rights which belonged to the owners of ancient taro lands could no longer be severed from the lands for transport and use else-

**Continued on Page 26**

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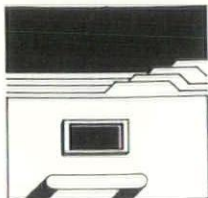
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Index

# Help Ahead for the Shoreline Permit Application Process?

by MARILYNN METZ  
Planner, Group 70

Spend a few hours in front of a computer terminal with Norman Okamura of the University of Hawaii Urban and Regional Planning Program and you will walk away convinced that something can and is being done that will simplify the preparation and review of development applications and facilitate permit approvals, at least for developments within the coastal zone.

Okamura is the consultant project coordinator for the demonstration of a statewide computerized permit tracking and information sharing system (H-PASS) being developed by the state Department of Planning and Economic Development (DPED) with the help of the university's Urban and Regional Planning Program (with federal funding assistance) as part of the Hawaii Coastal Zone Management Program.

Now in the second year of a five-year research and demonstration project, the computer applications that have already been developed and those that are currently being worked on give strong indications

The major purposes of H-PASS are permit tracking, permit monitoring, permit coordination, and information support with the goal of facilitating state and county enforcement responsibilities in the coastal zone. At the end of the five-year demonstration program, it is expected that H-PASS will have linked all of the major coastal-related land and water development permits and approvals into a single system.

The computerized linking of permits within the CZM network will enable ongoing monitoring of coastal developments. Through the system, basic project data on applications initiated can immediately be accessed and reviewed. This should result in better coordination among the agencies involved and could ultimately reduce the time required from application to permit approval.

Of equal interest to planners and architects is the resource information base which is being designed as part of the system. The savings in time in preparing applications and analyzing the feasibility of sites for various types of developments could be considerable.

H-PASS is being designed to promote information management by providing summary information of studies, data, and other planning management information. Some of the existing planning data bases which are to be included are the land use inventories for each county, cultural resources inventories by site, and flood and hazard information. Eventually, census, economic, and additional environmental data such as slope, wildlife habitat, and the like may be added.

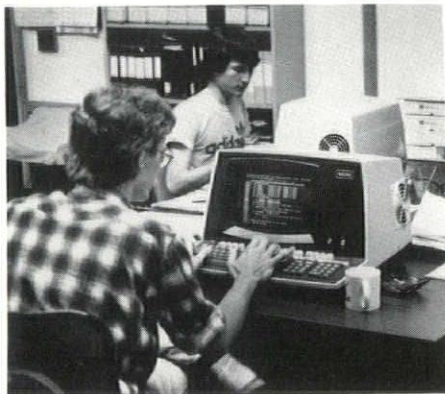
In conjunction with this, an index of selected environmental and resource information, sources of such information, and estimates of its quality will be created and maintained. These data sources will be cross-referenced by agency

and data type. Some of this information, particularly for critical areas, will be accessible by Tax Map Key; thus providing an overall picture of development constraints for a particular site.

The resource information base is being designed for easy maintenance and updating so that some time in the near future we will no longer have to be content with two to five-year-old data.

The H-PASS user network encompasses all agencies, both state and county, that are responsible for the management of coastal areas.

The system is designed so that each agency will enter its own data (i.e. permit information, land use inventory parcel information, and text) and transmit it to the H-PASS computer for storage. The agency will also be able to call the central computer and request transfer of additional information from other agencies, subject to certain security requirements. For example, if an agency wants to know what other applications for a particular type of project in a specified location are currently in process it will be able to obtain this information in printout form. Permit applications and approvals to be included in the H-PASS system are Special Management Area (SMA) permits, Conservation District Use Applications (CDUA), Environmental Impact Statements (EIS) and negative declarations, Zone of Mixing and National Pollutant Discharge Elimination System (NPDES) permits; Department of Health permits and approvals for sewage, cesspools, and solid waste treatment; state Land Use District boundary amendments; Federal Consistency Review, A-95 Project Notification and Review System, Historic Sites Review, and DOT Harbors Division Shorewater construction permits and negative declarations.

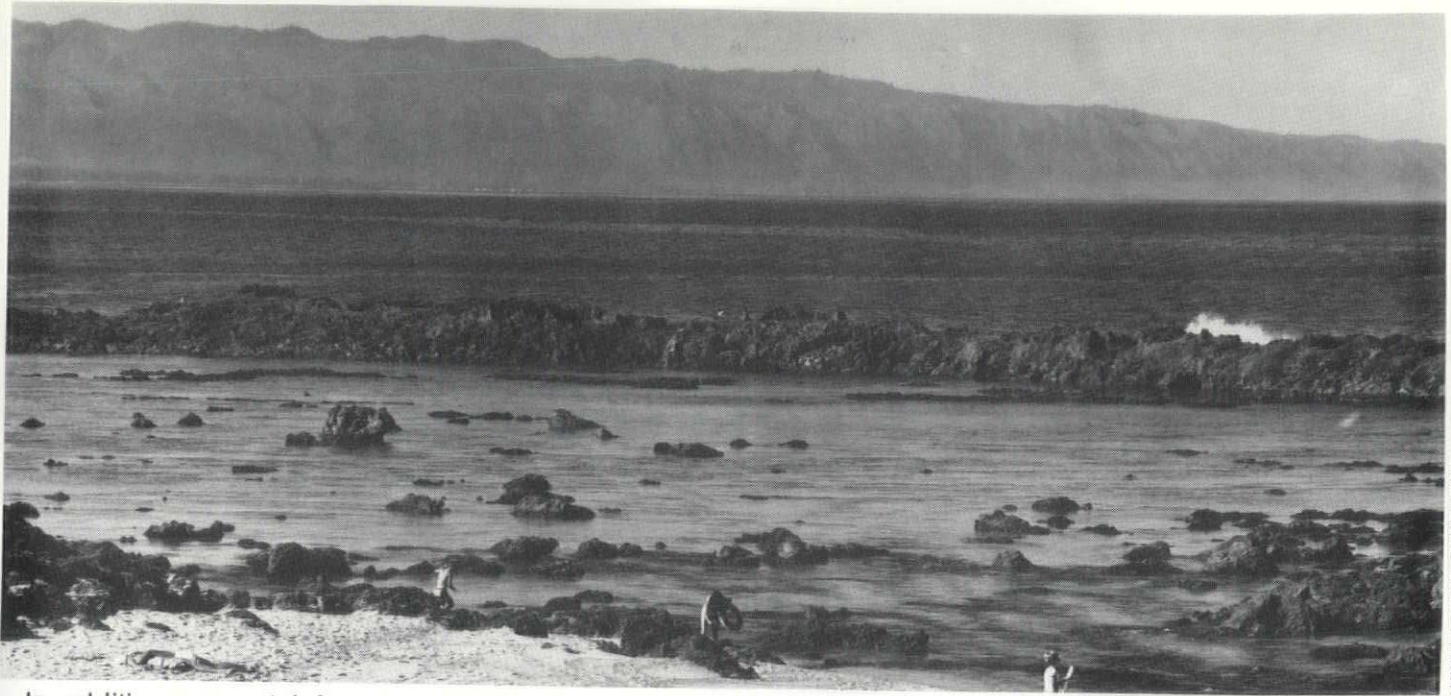


STANLEIGH WONG

**The H-PASS computer system.**

that the system cannot only accomplish its primary objectives of facilitating management of the coastal zone but could eventually serve many other purposes and users than it was originally designed for.





HAWAII COASTAL ZONE NEWS

In addition, current information on state and county Capital Improvements Program (CIP) projects will also be part of the system. An Energy Data Management System, which provides for the tracking of all energy activities identified by the State Energy Plan and all energy facilities, has already been implemented.

It is not expected that county building permits will be included in the system because of their sheer number and variety. The City and County of Honolulu Department of Land Utilization (DLU) is, however, developing a complementary system with CZM monies that will eventually include county level permits.

State members of the H-PASS user network will access the system via remote terminals located in various agency offices through dedicated lines to the host computer. The counties will use independent word processors as terminals and communicate with the host computer in batch mode by telephone. Their terminals can then be used for word processing functions when not connected to the computer.

No special programming expertise is required on the part of user's personnel on either the state or county level, because the system is being designed with preformatted screens in its data entry and update sub-systems. This should simplify and facilitate updating of information, since the work can be accomplished by regular clerical

personnel. Keeping data bases and other information current has been a continual problem in past computer-based information systems.

The most remarkable aspect of H-PASS is that it is actually being implemented — it is not a pipe-dream destined to oblivion as so many ideas for "coordinated-integrated" systems have been in the past. To date, the project has met all of its benchmarks for application development and it has done so within budget.

A "one-stop" land use information service would be as invaluable to planners and architects in the private sector as to those in government. The savings in time and money for our clients could be considerable. Potential problems could be identified early on in the development planning process before much money and time is expended. For example, applications such as Land Use Commission petitions for boundary change could be submitted with full knowledge of all other similar projects in the area that are in one stage or another of the application and permit process.

The chance of surprises when the application is reviewed will be greatly minimized; not to mention the time that could be saved by utilizing the information base and bibliographical information in actually preparing the application.

There are, however, potential obstacles that must be overcome before H-PASS becomes a fully

operational reality. Both the state and the federal government must be convinced that the benefits of the system outweigh the costs of implementing and operating it. This can be difficult because better coordination and improved management decision-making are difficult variables to quantify and the initial capital investment in hardware and software can be considerable.

Re-orientation of federal spending priorities could also seriously affect the project which is 80 percent dependent on federal funds.

H-PASS is worthy of our support. We should encourage its continued development and urge our legislators to provide the necessary funding if federal funds are no longer available.

We should do everything that we can to assure that the private sector will have timely access to H-PASS information. On-line access may be too much to expect as there are security precautions that have to be taken. However, a planning information service which would not only answer telephone queries but provide printouts of information pertinent to a particular project is something which we should convince the legislature to support.

Although many of the benefits of this system to the private sector may not be realized until sometime in the future, making sure that H-PASS becomes operational in the shortest possible time frame should be everyone's concern. **HA**





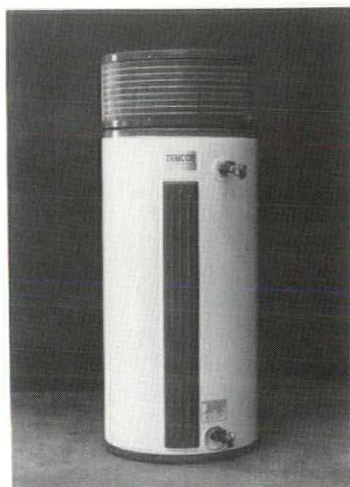
## New Products

### WATER HEATER

An energy-saving water heater that uses one-third to one-half the energy required by conventional electric water heaters has gone into commercial production. The manufacturer is "Energy Utilization Systems, Inc. (EUS), of Pittsburgh, Pa.

The water heater, being marketed under the trade name TEMCOR, uses a heat pump to heat the water, instead of the traditional immersion electric element. Using heat from the surrounding air, the unit will not only heat the water to a temperature of 140 degrees Fahrenheit, but supplies about a half-ton of cooling.

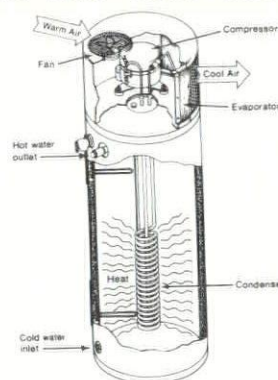
Development of the new heat



pump water heater was sponsored by the Department of Energy's (DOE) Office of Buildings and

Community Systems, Conservation and Solar Applications, in cooperation with EUS. The results of tests with 225 units used by 75 utilities showed that TEMCOR would save the average consumer about 50 percent of the energy used by a conventional electric resistance water heater, as well as the operating costs of such a system.

A DOE spokesman, involved in some of the initial tests on TEMCOR, says that an average family of four using about 5,000 kilowatt hours (kwh) of electricity per year for heating water can cut that consumption rate to about 2,500 kwh with the new water heater. Translated into dollars, that means that at eleven cents per kwh (the current HECO rate) the family that would normally spend \$550 a year to heat water electrically



could expect to pay only about \$275 with a TEMCOR water heater.

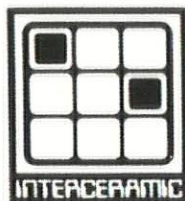
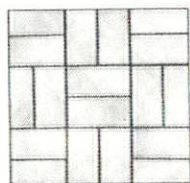
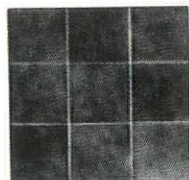
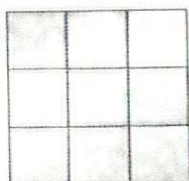
TEMCOR heat pump water heaters are being manufactured at EUS's facility in Johnson City, Tennessee, in unit capacities of 50, 66, and 82 gallons. EUS President Robert L. Dunning says sales of the units are expected to be in the neighborhood of 10,000 units this year and 100,000 units by 1985. The TEMCOR water heater also is marketed under the names of W.L. Jackson Co. and King Solar Industries. The unit is available through Hawaii Pipe & Supply which has units in stock and will act as the service and installation center.

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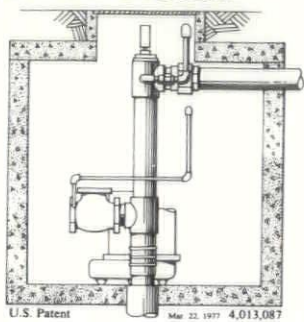
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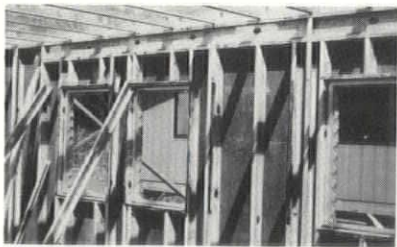
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## McBryde-Robinson Does Matter

Continued from Page 21

where.

Second, the court held that a normal surplus waters were the property of the state and not included when the lands were first transferred into private ownership.

Third, the court held that no surface waters including storm and freshet waters could be transferred outside of the watershed on which they arose. Thus, the two plantations which had been using Hanalei surface waters since the turn of the century outside of the watershed were to be prohibited from continuing their irrigation practice utilizing systems costing millions of dollars to develop.

There was an indication that the court may have believed it was awarding virtually all of the surface water of every stream to the state, allowing the government to exercise absolute control over its use for agriculture or other uses with the concurrent ability to raise significant additional revenue by licensing the use of water to third users.

Literally, however, the decision would not permit such a procedure since the newly applicable Massachusetts riparian doctrine of 1800 requires the continued flow of a stream "as at the time of the measurement, without substantial diminution, or the right to flow of a stream in the form and size given it by nature" and would not permit the "artificial" use of the stream for irrigation.

The practical result of this doctrine is non-use. It may have been reasonable in New England where streams were primarily utilized for mills for the grinding of grain, but it does not permit the wise use of surface water resources. In Hawaii it was rejected by the Hawaiian courts.

The riparian right doctrine was never adopted in water short western states and is rapidly being abandoned in the East as the new



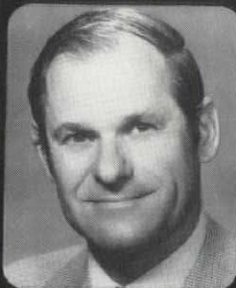
to develop water continues. The Hanapepe decision is clearly against the modern trend aside from its constitutional informatics.

The Hawaiian system of water rights, as enunciated in the many court decisions prior to the Hanapepe case, encouraged beneficial use of water. Users with the most economically feasible projects for the use of water could buy out those having less valuable uses. The water could be transferred to where it was most needed. Normally, this was from wet windward areas to dry fertile leeward plains.

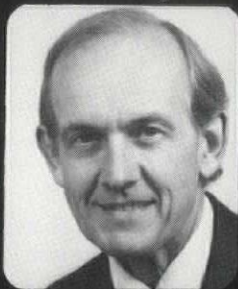
If the Ninth Circuit Court of Appeals permits the state to substitute the riparian system for the traditional Hawaiian system, it could create complete uncertainty as to the rights to the use of water. Under the riparian system, a use reasonable one day may give rise to being unreasonable the next. Endless litigation will result and with the passage of time, relitigation on the same water rights will arise. The insecurity of water ownership will preclude the major investments needed to develop needed water resources. The change in the ground rules by the Hawaii Supreme Court in the Hanapepe case, if upheld, is a signal to investors in Hawaii's future that private property rights may no longer be relied upon.

In response to those advocating government ownership, it is important to remember that even under the surface water rights system as we knew it for the century before Hanapepe, the government had the right to condemn water rights required for public purposes which right, as we all know, was exercised on many occasions. Further, reasonable regulation of water use, recognizing that vested water rights cannot be appropriated without compensation, is always available to prevent abuses in its use. HA

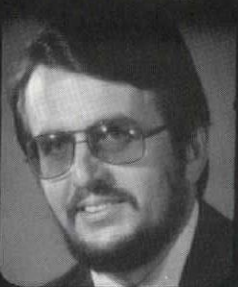
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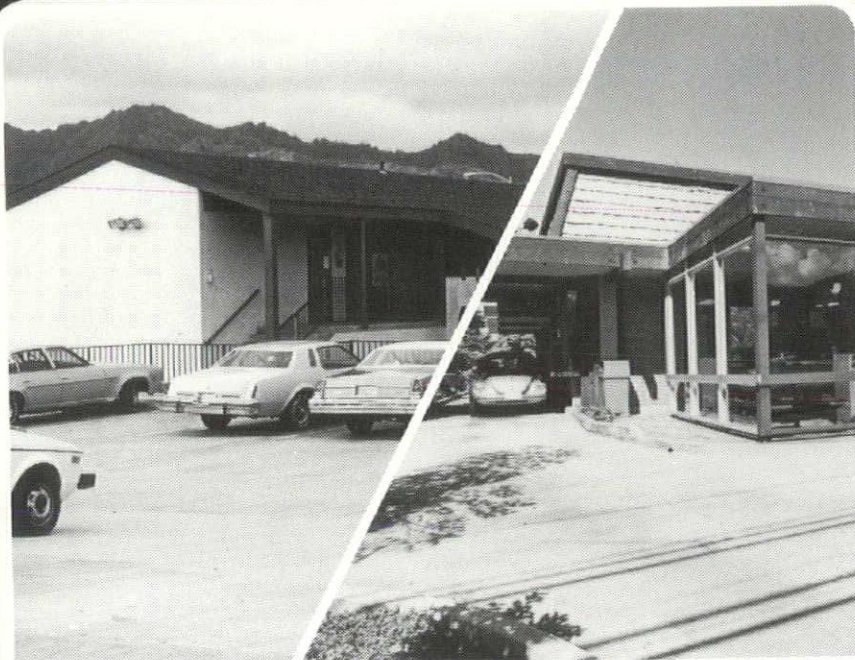
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## Water Issues of the 80s

Continued from Page 7

dikes could be bulkheaded to restore original groundwater storage during winter seasons and to use this stored water in combination with the Schofield high-level groundwater during dry weather periods to stabilize basal aquifer pumpage in the Honolulu and Pearl Harbor areas.

- Other solutions include:

Developing alternate sources of irrigation water, such as sewage effluent, high quality brackish water, and re-use technology to stretch available water supplies.

Developing caprock water for highway irrigation and other landscaping purposes.

Intensifying exploratory drilling for high-level and basal groundwater supplies Islandwide.

Providing adequate water supplies for in-area uses before exporting elsewhere.

- Monitor gains in conservation practices of municipal, agricultural, industrial and military water users.

### SUMMARY

The critical water issues needing attention by Hawaii's people in the decade of the eighties include key legislative proposals on regulating all surface and groundwater developments and uses on a state wide basis, codification of Hawaii's water laws, and providing adequate protection of instream uses of water.

Other major issues include the protection of our underground drinking water supplies from contamination and the need to unify efforts to solve Oahu's water need for the year 2000 and beyond. HA



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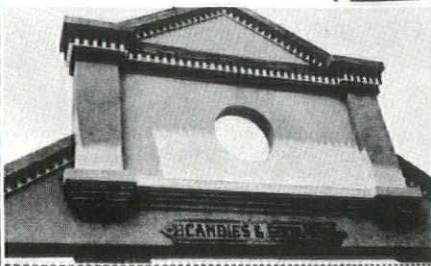
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## View

Continued from Page 12

tural use (for example, from STP effluent to golf course or cane irrigation).

9—Continue to develop better agricultural irrigation practices.

10—Develop dual transmission systems within communities using our high quality water only for potable uses and using secondary and tertiary sewage effluent for irrigation, fire protection, and other uses not needing high quality water.

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### Note:

References for this article were: (1) Oahu Land Study by Belt, Collins & Associates (Steve Bowles, consulting hydrologist-geologist for the study); (2) Honolulu Board of Water Supply annual reports; (3) Honolulu Star Bulletin, February 23, and February 26, 1981.

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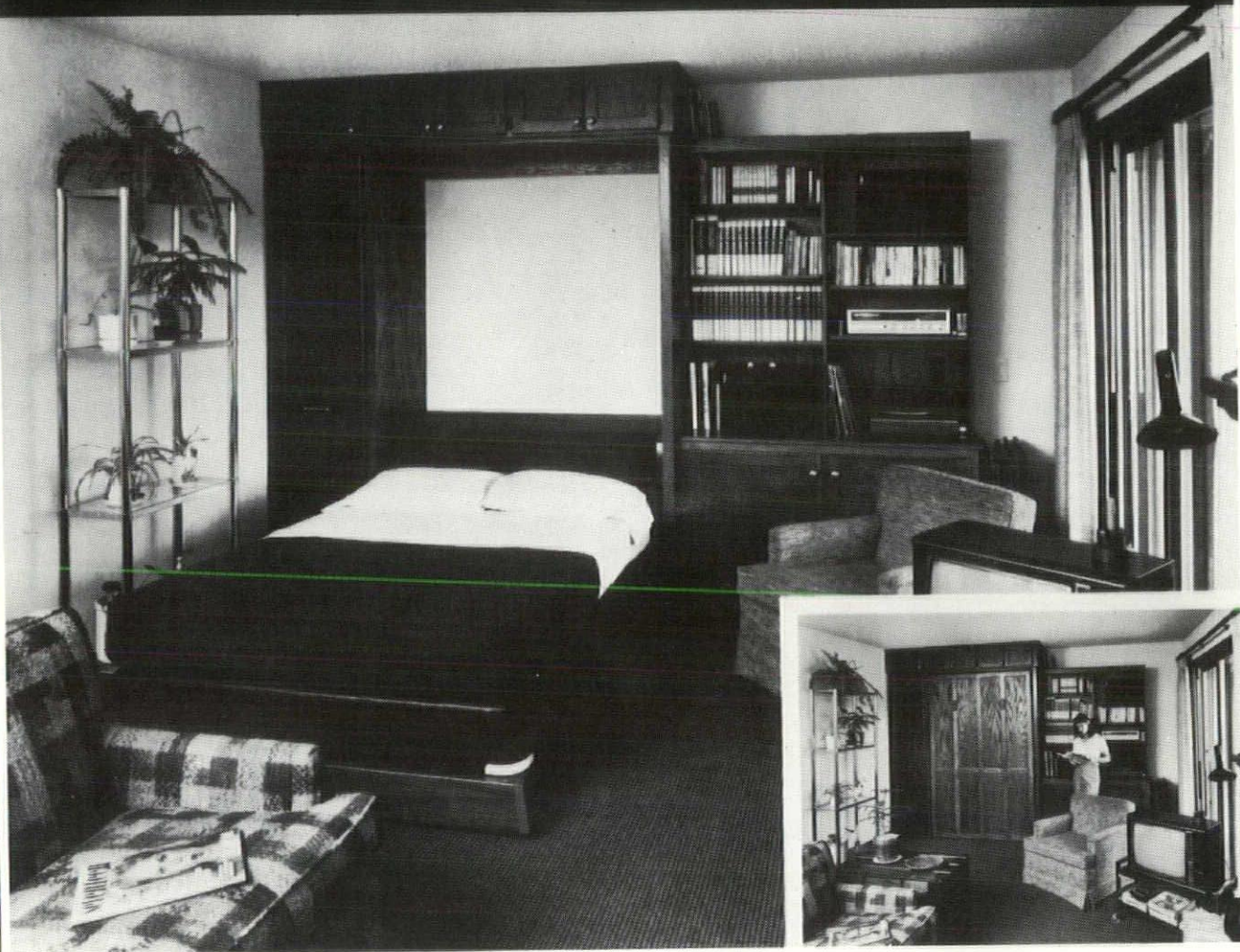
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