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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Land Division
Honolulu, Hawaii 96813

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Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

STATEWIDE

Approval of Watershed Management Protection Cost Share Formula and Contribution for Leases of Water Rights Pursuant to Section 171-58(e), Hawaii Revised Statutes (HRS); and Adoption of Guidelines to Determine Whether a Lease of Water Rights May Be Exempt from the Preparation of an Environmental Assessment or Environmental Impact Statement Under Chapter 343, HRS.

BACKGROUND

At its meeting on December 8, 2017 under agenda item D-4, the Board approved as amended the holdover of revocable permits for water use for the islands of Hawaii and Kauai. As part of the approval, the Board directed staff to clarify lease requirements in Section 171-58, HRS in regards to compliance with Chapter 343, HRS and the development of a watershed management plan. Specifically, the Board inquired whether 1) existing watershed management plans are sufficient to meet the requirement of Section 171-58(e), HRS, and 2) certain leases may be exempted from an environmental assessment or environmental impact statement.

In addressing the watershed management plan issue, Land Division was greatly assisted by staff from the Division of Forestry and Wildlife (DOFAW) and the Commission on Water Resource Management (CWRM), along with the Department of the Attorney General. It was determined that for the current permittees, there are watershed management plans in existence for the water lease areas. As the statute requires a lessee to both develop and implement a watershed management plan, staff worked to devise an alternative to address the current situation. Rather than requiring the lessee to expend significant funds and time to achieve duplicative results, it would be preferable for the lessee to contribute funds to DOFAW to support the management plans already in existence. Additionally, as lessees generally lack the staff and resources to implement plans and DOFAW and watershed partners have available staff and field crews, this would be a more productive alternative. To determine the appropriate amount that the lessee should contribute, staff developed a watershed management plan cost share formula, which is now brought to the Board for review and approval.

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REMARKS

HRS 171-58(e) Watershed management cost-share formula

The cost share formula calculates the amount that the lessee must contribute on an annual basis to support implementation of a watershed management plan by considering three factors: 1) the amount of water used by the lessee daily per million gallons (mgd), 2) the available amount of water from the stream or aquifer, determined by median stream flow for surface water or sustainable yield for ground water, and 3) estimated daily management cost for the watershed area contributing to either the surface flow (for stream diversions) or groundwater recharge (for wells). The formula is calculated as follows: the amount of water used, divided by the amount of water available, multiplied by estimated daily management costs, multiplied by 365 days.

The foregoing provides a conceptual framework aimed at developing a cost-share structure to serve the intent and purposes of Chapter 171-58(e), HRS, which requires that any lease of water rights shall contain a covenant that requires the lessee and the Department to jointly develop and implement a watershed management plan. Sections (e) and (f) of HRS 171-58 were added in 1990 (HB3286). At that time, the Legislature found it vital to encourage the prudent management of watershed forests in Hawaii, requiring incorporation of a watershed management plan into all water rights lease agreements to help protect this important natural resource. Originally intended to be a State-developed plan implemented by the lessee, it was amended to be jointly developed and implemented by the Department and the lessee. Accordingly, both the State and the lessee have a duty to protect public trust resources.

Prior to 1990 few watershed management plans existed. Today there are numerous watershed plans, including those implemented by DOFAW and groups like the Watershed Partnerships. Therefore, the Department has determined that existing watershed management plans can be used in lieu of the Department and lessee developing new plans. Currently, implementation of existing watershed management plans is partially supported by State funding appropriated by the Legislature and administered by DOFAW. The proposed watershed protection cost-share would provide an additional source of funds to support on-the-ground management and protection of public trust fresh water resources. The cost-share will be primarily geared towards supporting activities that help maintain watershed function and yield (stream flow and recharge) within the water lease area.

In general, the goal of watershed protection is to maintain watershed function and yield and to restore or maintain a certain level of biological integrity that is the foundation of a healthy watershed. The watershed management cost-share is based on cost estimates for watershed protection activities within a specific watershed or watershed(s) that provide source water for the lessee. Estimates are based on the current cost of management and future planned management activities within the next five years. Accurate cost estimation for the long-term management of Hawaii's watershed forests is challenging because the threats and the management effort needed to detect and control those threats vary in space and time. Similarly, timing of use of certain management tools, such as fencing, may vary depending on when the plans or decisions to install them are completed or the frequency of maintenance or replacement. That being said, there are certain principles that guide watershed management activities and these can be used to provide reasonable cost estimates.

The following approach was considered by the Department when estimating watershed management costs: 1) identify watershed management area (geographic source of water), 2) identify biological goals and objectives, 3) identify management strategy, 4) determine methods and effort, and 5) cost to implement on-the-ground management activities.

The following management activities were identified to help estimate watershed management costs: 1) construction and maintenance of ungulate proof fencing within the watershed(s); 2) ground and aerial ungulate control within the watershed(s); 3) biological monitoring for species richness and diversity, and invasive species early detection and control, consisting of aerial (digital sketch mapping), imagery (pictometry) and ground (targeted surveys); 4) aerial and ground invasive species removal; and 5) administration activities including planning and logistics, data management, analysis and reporting.

For groundwater, the estimate of water availability is based on the maximum sustainable yield of the aquifer system which benefits from the watershed management. Each aquifer sector and system's sustainable yield is set by CWRM based on best available information regarding groundwater recharge and hydrogeology. An aquifer's sustainable yield may change over time based on new information, specifically with regard to revisions in future rainfall estimates, land-cover, or geology that may influence recharge estimates. The amount of water used is based on the maximum withdrawal rate of the installed pump or the total estimated flow from the development tunnel. For example, the sustainable yield of the Naalehu aquifer system is 118 million gallons per day (mgd) and the total available yield from the Noguchi Tunnel (1 & 2) is 0.934 mgd. Thus, the proportion of water that could be used is 0.79%.

The availability of surface water is based on the best available information regarding runoff and groundwater contributions to surface flow which is influenced by the watershed management from which the cost-share is estimated. Because of the complexity of surface flow and the unique geology of volcanic islands, the management of upslope regions may influence stream flow in one or more adjacent watersheds. For example, the management costs for protecting the eastern portion of the Alakai Swamp benefits groundwater recharge and runoff that contributes to surface flows in the Wainiha, Wailua (Wai'ale'ale & Waikoko streams), and Hanalei watersheds. The water available (total median flow) from the streams flowing from this region of the Alakai Swamp is estimated at 103.8 mgd:

USGS station[1]	River	Median flow (mgd)
16108000	Wainiha	49.1
16101003	Hanalei	40.7
16061200	Wai'ale'ale & Waikoko	14.0
	Total =	103.8

[1]USGS Scientific Investigations Report 2016-5103

With an estimated amount used of approximately 14.0 mgd, the proportion of water used by diversions 714 and 716 on Wai'ale'ale and Waikoko streams respectively is 13.49 % (a diverted amount of 14.0 mgd divided by an available amount of 103.8 mgd).

To illustrate the potential amounts that would be paid by a lessee, a table is attached as **Exhibit A** that calculates the annual cost share amount for the permittees based on the amount of water currently diverted. Note that the cost share amounts are estimates only and would be subject to adjustment depending on the amount of water used under the lease. Even though some of the permittees currently use a small amount of water, the Board is requested to set a minimum annual cost share in the amount of $2,500.00, as any amount less would have minimal benefit to watershed management[1]. Furthermore, regardless of how much water a lessee uses, or if such use is non-consumptive, effective watershed management is critical to ensure a sustainable water supply to allow for long-term water use.

As this is an alternative to the watershed management plan requirement in HRS Section 171-58, the cost share will be a payment distinct from, and in addition to, the lease rent. The cost share will not be considered revenue for the purpose of payments to the Office of Hawaiian Affairs (OHA) and the Department of Hawaiian Homelands (DHHL). OHA and DHHL will receive their shares of the lease rent of 20% and 30% respectively. In order to ensure that the lessee contributes an appropriate amount through the term of the lease, the Department will re-evaluate the amounts used in the watershed cost share formula and make adjustments as appropriate. Finally staff notes that for future water leases, the Board could still impose the statutory requirement to develop and implement a watershed management plan if none already exists.

Guidelines for HRS Chapter 343 exemption

Pursuant to the Board's directive to determine whether it may be appropriate to exempt certain leases from an environmental assessment (EA) or environmental impact statement (EIS), staff offers the following guidelines for review and acceptance by the Board to assist in future decision making when individual leases are brought before the Board for approval. To clarify, the Board is not requested to exempt any particular lease at this time. The guidelines are intended to provide guidance to the applicants of the conditions under which certain water leases may be granted an exemption. The applicants would still be responsible to comply with Chapter 343, HRS for their water lease request.

In reviewing the water use of the permittees, it appears as though many permittees use a small amount of water, especially in proportion to the amount of available water. In those instances, an exemption may be appropriate under Hawaii Administrative Rules Section 11-200-8, exemption class 1 which states "operations, repairs or maintenance of existing structures, facilities, equipment, or topographical features, involving negligible or no expansion or change of use beyond that previously existing." Additionally, item 47 of the Department's exemption list approved by the Environmental Council on June 5, 2015 applies to "leases of state land involving negligible or no expansion or change of use beyond that previously existing."

The exemption item could be applied to water leases[2], provided that the Board finds the amount of water diverted under the lease is minimal in relation to the amount of available water from the

[1] For example, $2,500 would pay for a crew to conduct invasive species removal for a single day. Any cost share amount that would provide for significant management activities would likely be burdensome for many lessees.
[2] HRS Section 171-1 includes water in the definition of land.

ground or surface source and the proposed amount and purpose of water allowed by the lease is negligible or no expansion or change of use beyond that previously existing. An extensive review of each lease application would be required in order to determine whether an exemption is appropriate. Factors that would be considered by the Board would include but not be limited to whether the proposed lease would use only pre-existing structures, or whether new improvements could be constructed. Other factors would include whether the proposed amount and use of water is consistent with past uses, such as previous water leases. Additionally, cumulative impacts would also be considered, such as the potential effects on downstream users and uses. For example, in its determination, the Board would consider whether an applicant seeks to use water for agricultural purposes, or a more intensive use such as a development. Under this guideline, larger water users that have a greater impact on the water source, such as hydro-electric projects and other large scale or intensive uses would not be exempt, even though the proposed use of the water is consistent with prior uses. Staff will recommend whether an exemption is appropriate when individual projects are brought to the Board for approval. However, staff notes that the even if the Board approves an exemption, such exemption could still be subject to challenge.

RECOMMENDATION: That the Board:

1) Approve the watershed management protection cost share formula and contribution for leases of water rights pursuant to Section 171-58(e), Hawaii Revised Statutes (HRS); and

2) Adopt the guidelines to determine whether a lease of water rights may be exempt from the preparation of an environmental assessment or environmental impact statement under Chapter 343, HRS.

Respectfully submitted,

Ian Hirokawa
Special Projects Coordinator

APPROVED FOR SUBMITTAL

Suzanne D. Case, Chairperson

Formula = usage divided by available; multiply by $/day for mgmt; multiply by 365 days

		USAGE consumptive/non-consumptive	AVAILABLE Surface mgd	Ground mgd	MGMT. COST		
Island	Applicant	Amount used (mgd) (est.)	Median stream flow	SY	$/day for management	Days	Watershed Cost Share/year*
Kauai	KIUC	14	103		$1,609.17	365	$79,833.58
Kauai	East Kauai Water Users Coop	2	74		$1,609.17	365	$15,874.24
Kauai	Jeffrey Lindner	0.15		17	$255.95	365	$824.31
Maui	EMI	67	450		$4,061.60	365	$220,725.40
Hawaii	HELCO	47	250		$3,847.95	365	$264,046.33
Hawaii	Edmund C. Olson Trust	0.0161		118	$2,863.01	365	$142.58
Hawaii	Kapapala Ranch	0.113		118	$2,863.01	365	$1,000.72
Hawaii	Kuahiwi Contractors	0.369		118	$2,863.01	365	$3,267.83
Hawaii	Wood Valley	0.0605		118	$2,863.01	365	$535.78

Estimated Annual Watershed Management Costs

Location	$/year	$/day
East Maui	$1,482,487.00	$4,061.60
Blue Hole/East Kauai	$587,347.00	$1,609.17
Moloaa FR	$61,302.00	$255.95
Hilo	$1,404,500.00	$3,847.95
Kau	$1,045,000.00	$2,863.01

* Lessee would contribute the amount determined by the formula or $2500, whichever is greater.

EXHIBIT "A"