
A BILL FOR AN ACT

RELATING TO WATER.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

1 SECTION 1. (a) There is established a two-year irrigation
2 water conservation best management practices pilot program,
3 under which the department of accounting and general services,
4 department of transportation, and department of land and natural
5 resources shall implement irrigation water conservation best
6 management practices, as established by the Landscape Industry
7 Council of Hawaii, to improve the efficiency of all existing and
8 new landscape irrigation installations through low cost,
9 practical measures. Irrigation water conservation best
10 management practices shall include:

- 11 (1) Best management practices for maintenance; and
12 (2) Best management practices for new installations or
13 major renovations.

14 (b) As used in this section:

15 "Best management practices for maintenance" includes the
16 use of:

- 17 (1) Seasonal timing adjustments to irrigation controller
18 systems;



- 1 (2) Aeration of lawns when compaction increases, and short
2 run-time cycle irrigation in areas where runoff and
3 ponding occur;
- 4 (3) Irrigation controllers programmed for long run times
5 to water as deeply, evenly, and infrequently as
6 possible to encourage deep rooting and increased
7 drought resistance;
- 8 (4) Mulch, organic matter in soils, and drought-tolerant
9 plants or plants that are naturally occurring at the
10 site and surroundings;
- 11 (5) The practice of allowing grass to grow taller to
12 conserve water; and
- 13 (6) Schedule systems to run water at night;
- 14 provided that best management practices for maintenance may also
15 include periodic practical water audits to review the system
16 components and verify that the components meet the original
17 design criteria for the efficient operation and uniform
18 distribution of water.

19 "Best management practices for new installations or major
20 renovations" includes the use of:

- 21 (1) New installations that require a coverage test prior
22 to acceptance; and irrigation system designs, plans,



- 1 and specifications that remain on site and contain
2 water conservation language;
- 3 (2) Systems designed with sprinklers spaced head-to-head
4 coverage or better, and with a precipitation rate not
5 exceeding the soil infiltration rate;
- 6 (3) Systems designed to irrigate similar site, slope, sun
7 exposure, soil conditions, and plant materials with
8 similar water use on the same circuit;
- 9 (4) Climate-based automatic irrigation controllers
10 utilizing either evapotranspiration and weather
11 sensors, or soil moisture sensors;
- 12 (5) Flow sensors with a malfunction valve shutoff system
13 capability in an irrigation controller and water
14 submeters that measure outdoor water usage on larger
15 sites;
- 16 (6) Water conserving irrigation components and check
17 valves and drip irrigation for individual specimen
18 plants;
- 19 (7) Storm water design methods, including infiltration
20 beds, swales, and basins that allow water to collect
21 and soak into the ground on site, utilizing low impact
22 development principles;



- 1 (8) Nonpotable water sources when available; and
- 2 (9) A qualified irrigation designer, such as an Irrigation
- 3 Association-certified irrigation designer, Irrigation
- 4 Association-certified irrigation contractor, and a
- 5 maintenance contractor with water conservation
- 6 expertise.

7 SECTION 2. The department of accounting and general
8 services, department of transportation, and department of land
9 and natural resources shall each submit a report regarding the
10 results of the two-year irrigation water conservation best
11 management practices pilot program, including any proposed
12 legislation, to the legislature no later than twenty days prior
13 to the convening of the regular session of 2016.

14 SECTION 3. There is appropriated out of the general
15 revenues of the State of Hawaii the sum of \$ or so much
16 thereof as may be necessary for fiscal year 2014-2015 for the
17 implementation of a two-year irrigation water conservation best
18 management practices pilot program pursuant to this Act.

19 The sum appropriated shall be expended by the department of
20 accounting and general services for the purposes of this Act.

21 SECTION 4. This Act shall take effect on July 1, 2050.



Report Title:

Water Conservation; Best Management Practices; Public Agencies;
Appropriation

Description:

Establishes a two-year pilot program requiring DAGS, DOT, and DLNR to implement irrigation water conservation best management practices, as established by the Landscape Industry Council of Hawaii. Requires DAGS, DOT, and DLNR to submit a report regarding the results of the pilot program. Makes an appropriation. Effective 07/01/2050. (SD2)

The summary description of legislation appearing on this page is for informational purposes only and is not legislation or evidence of legislative intent.



NEIL ABERCROMBIE
GOVERNOR



Testimony of
GLENN M. OKIMOTO
DIRECTOR

Deputy Directors
JADE BUTAY
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RANDY GRUNE
JADINE URASAKI

IN REPLY REFER TO:
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

March 20, 2013
10:30 a.m.
State Capitol, Room 309

S.B. 803, S.D. 2
RELATING TO WATER

House Committee(s) on Transportation & Water and Land

The Department of Transportation (DOT) **supports** the use of irrigation water conservation best management practices on state roads and highways, and supports this bill, which encourages conserving irrigation water.

The DOT incorporated these water conservation best management practices in the DOT Manual of Sustainable Highway Maintenance published in 2011. In addition, the DOT Statewide Sustainable Landscape Master plan will include these water conservation best management practices to be completed in the fall of 2013.

Thank you for the opportunity to provide testimony.

NEIL ABERCROMBIE
GOVERNOR OF HAWAII



**STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES**

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

**Testimony of
WILLIAM J. AILA, JR.
Chairperson**

**Before the House Committees on
WATER & LAND
and
TRANSPORTATION**

**Wednesday, March 20, 2013
10:30 AM
State Capitol, Conference Room 309**

**In consideration of
SENATE BILL 803, SENATE DRAFT 2
RELATING TO WATER**

The purpose of Senate Bill 803, Senate Draft 2 is to establish a two-year irrigation water conservation best management practices pilot program within the Department of Accounting and General Services (DAGS), Department of Transportation, and Department of Land and Natural Resources (Department). This measure also appropriates an unspecified amount of funding to DAGS for the pilot program. The Department supports this measure since it would help preserve Hawai'i's precious fresh water resources, demonstrate government's leadership by example, and reduce these agencies' water bills – provided that it does not replace or adversely impact priorities indicated in our Executive Budget.

The landscape irrigation conservation best management practices (BMPs) established by the Landscape Industry Council (LICH) of Hawaii were developed in close consultation with landscape professionals across the state and are recognized nationally as industry standards (e.g., Irrigation Association, U.S. Environmental Protection Agency). These BMPs are categorized into installation and maintenance practices. The agency cost of implementing installation BMPs in new and renovation projects is not expected to increase significantly over existing practices. Agencies implementing maintenance BMPs should not experience any meaningful increase in operation and maintenance expenses.

In order to facilitate this pilot program, the Department would like to see BMP education and training for agency landscape maintenance staff offered by LICH (or other qualified organizations). The Department also notes that other state agencies use significant amounts of water for landscape irrigation, notably the Department of Education and the University of Hawaii system, and would also benefit financially by implementing these BMPs and reducing their water bills.

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ESTHER KIA'AINA
FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

ichiyama1 - Tate

From: lowen1-Kyli on behalf of waltestimony
Sent: Monday, March 18, 2013 11:33 AM
To: ichiyama1 - Tate
Subject: FW: Submitted testimony for SB803 on Mar 20, 2013 10:30AM

From: mailinglist@capitol.hawaii.gov [mailto:mailinglist@capitol.hawaii.gov]
Sent: Monday, March 18, 2013 8:43 AM
To: waltestimony
Cc: CHRIS.DACUS@GMAIL.COM
Subject: Submitted testimony for SB803 on Mar 20, 2013 10:30AM

SB803

Submitted on: 3/18/2013

Testimony for WAL/TRN on Mar 20, 2013 10:30AM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
CHRIS DACUS	LANDSCAPE INDUSTRY COUNCIL OF HAWAII	Support	No

Comments: We suggest the following amendments to improve Senate Bill 803 SD2: • We recommend including only one state agency for the pilot program to reduce training costs. We recommend the Department Of Accounting And General Services, to report on landscape BMPs implemented in the existing 10 capital district buildings that are part of a pilot study on energy and water conservation and report on how much water savings they realized. It's our understanding they have a consultant already on board and the raw data is already being collected. • All construction projects in the design phase at less than 60% completed projects, specifications and estimates should implement the construction BMPs. The Landscape Industry Council of Hawaii is willing to provide construction specifications in the state format free of charge. • We realize the implementation of the construction BMPs within the two year duration of the Senate Bill when state construction projects take 3 – 6 years could present a problem and suggest a 4 year duration to ensure meaningful data is collected. The state should at the minimum complete four (4) projects with a total of 25,000 square feet of landscape irrigation installed using the BMPs. • The purpose of the pilot is to determine the water savings of employing the BMPs. To achieve meaningful reporting for future broader implementation in a prudent manner, recommend that the state include a report of training conducted, installation measures, and water savings as measured by gallons.

Please note that testimony submitted less than 24 hours prior to the hearing , improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

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March 18, 2013

Subject: SUPPORT FOR SENATE BILL N.O. 803 SD2

Honourable Chair and Members of the Committee.

As the only EPA WaterSense Partner who specializes in Landscape and Turf Irrigation in Hawaii, I fully support Senate Bill 803 Relating to Water by encouraging the use of water conservation best management practices by large public water users.

Landscape irrigation uses upwards of fifty percent or more of our domestic water. A poorly maintained or installed irrigation system can waste up to fifty percent of that water due to inefficient irrigation practices, poor components, evaporation and runoff.

Maintaining and installing water efficient irrigation systems is one of the most effective ways to reduce wasted drinking water, reduce run-off, reduce stormwater sediments and optimize plant health by applying the correct amount of water.

The recommendations provided by the Landscape Industry Council of Hawaii Best Management Practices and as outlined in this Bill have been proven reduce water usage outside the home by 30 to 50% using low or no cost methods of controlling the irrigation system. The LICH Irrigation Conservation BMPs can be found online at: [www.landscapehawaii.org/ library/documents/lich_irrigation_conservation_bmps.pdf](http://www.landscapehawaii.org/library/documents/lich_irrigation_conservation_bmps.pdf)

Senate Bill 803 encourages large public water users to adopt these common sense Best Management Practices in order to improve the efficiency through these low-cost and no-cost practical measures.

Thank you for the opportunity to testify.

Allan G. Schildknecht, ASLA-CID

IRRIGATION HAWAII, LTD.

Certified Irrigation Designer #34038



March 18, 2013
TESTIMONY FOR SENATE BILL N.O. 803 SD2
HOUSE COMMITTEE ON WATER & LAND
AND
HOUSE COMMITTEE ON TRANSPORTATION

Please note that Christopher McCullough, President, Hawaii Island Landscape Association, STRONGLY SUPPORTS Senate Bill 803 SD2 Relating to Water by encouraging the use of water conservation best management practices by large public water users.

Landscape irrigation uses upwards of fifty percent or more of our water. A poorly maintained or installed irrigation system can waste up to fifty percent of that water due to inefficient irrigation practices, inefficient irrigation system components, evaporation and runoff. Maintaining and installing water efficient irrigation systems is one of the most effective ways to reduce wasted water, reduce run-off, reduce storm water sediments and optimize plant health by applying the correct amount of water.

Senate Bill 803 SD2 encourages large public water users to adopt common sense Irrigation Water Conservation Best Management Practices to improve the efficiency of existing and new landscape irrigation installations savings upwards of fifty percent through low-cost and no-cost practical measures. There should be no costs in landscape maintenance utilizing BMPs, and the small incremental construction costs to implementing the BMPs are quickly paid back in less than a year.

By employing these common sense and low cost BMPs with today's technology, the State of Hawaii will be a leader by example in potable water conservation.

Thank you for the opportunity to testify.

Christopher McCullough
President
Hawaii Island Landscape Association
Board Member
Landscape Industry Council of Hawaii

ichiyama1 - Tate

From: lowen1-Kyli on behalf of waltestimony
Sent: Monday, March 18, 2013 11:34 AM
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Subject: FW: Submitted testimony for SB803 on Mar 20, 2013 10:30AM

From: mailinglist@capitol.hawaii.gov [mailto:mailinglist@capitol.hawaii.gov]
Sent: Monday, March 18, 2013 9:17 AM
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Subject: Submitted testimony for SB803 on Mar 20, 2013 10:30AM

SB803

Submitted on: 3/18/2013

Testimony for WAL/TRN on Mar 20, 2013 10:30AM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Boyd Ready	Individual	Support	No

Comments: Dear lawmakers: Very large volumes of potable water flow through lawn & landscape irrigation systems at improved grounds on State land. More frequently than not, far more water is used than is necessary for the health and good appearance of the plantings. Our practical environmentalists, the landscape and arborist and landscape architect community, have independently and on their own dime organized, conferred, studied, compiled, and produced 'Best Management Practice' water conservation methods for Hawaii. Private landowners are often careful to use optimum watering methods because they pay the water bill out of their own pocket. But in many public facilities those actually controlling the water use are not similarly motivated. In fact, in my experience turning landscape projects over to the State's employees as directed by contract, universally, I have found my required orientation to maintenance personnel on optimum water conserving methods is attended only by harried, untrained, and, for the purpose, incompetent persons (not derogatory, just the fact) with little interest in understanding or ability to use the information. Due to the robotic, repetitive nature of an irrigation timer, a single mistaken setting for an excessive run-time or too many days per week by an unskilled person can result in huge, literally gigantic, volumes of potable water being used for months or years. Unless a broken head attracts attention, the waste will not be noticed by anyone. The many other simple methods of repair & rain-switches and monitoring are also, usually, not performed effectively on public sites. We owe it to our public duties as legislators, public servants, and citizens, to use best management practices with our precious water resources, pumped, usually, at great electric expense. These also mitigate erosion and runoff into surface waters and the ocean. I urge you to approve this bill utilizing the freely developed BMP practices offered to the State by the Landscape Industry Council of Hawaii. I note that the recent Water Conservation advisory committee of the State Water Commission found that the LICH BMP's had already met the requirement that the dozens of others on the advisory committee had yet to provide for the deliberations. I have no doubt that the pilot program in this bill, if implemented conscientiously, will yield good results. Sincerely, Boyd Ready Former LICH President & Emeritus Director Haleiwa 808-306-9307

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

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