

State Building Code Subcommittee of Building Officials
Meeting
Tuesday, May 13, 2014

Department of Accounting and General Services
Comptroller's Conference Room 410
Kalanimoku Building
1151 Punchbowl Street
Honolulu, Hawaii 96813

West Hawaii Civic Center
Building "E", First Floor
74-5044 Ane Keohokalole Highway
Kailua-Kona, Hawaii 96740

Telephone Call-In - 800-910-8278 then 6547519

MINUTES

1. Call to Order – 8:33 a.m.

2. Attendees:

Tim Hiu	Ryan Takahashi
Doug Haigh	Robert Aquino
Jai Ho Cheng (via telephone)	Stella Kam
Glen Ueno	Jim Reinhardt
Al Lardizabal	Socrates Bratakos
Peter H.M. Lee	Lloyd Rogers
Neal Fujii	Howard Wiig
Thad Tomei	Aaron Ackerman
Kraig Stevenson (via telephone)	Ken Takenaka
Shannon Alivado	Pat Onesta
Sherman Wong	Bill Brizee
Yo Ratanapeanchai	

3. Neal Fujii submitted a memorandum dated May 13, 2014 (see attachment), proposing amendments to the 2012 Uniform Plumbing Code (UPC). After much discussion, the Subcommittee did not incorporate any of the proposals into the 2012 UPC.

4. The Subcommittee discussed the working document submitted by Tim Hiu of the Hawaii Administrative Rules adopting the 2012 UPC (see attachment). The Subcommittee approved the adoption of the 2012 UPC with amendments. Tim Hiu will present the 2012 UPC with these amendments at the next State Building Code Council meeting on June 10, 2014.

5. No Subcommittee meeting in June.

6. Adjournment – 9:14 a.m.

Attachments: Memorandum dated May 13, 2014, from Neal Fujii (DLNR)
2012 State Plumbing Code (draft by Tim Hiu)

State of Hawaii
Department of Land and Natural Resources
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. Box 621
Honolulu, HI 96809

May 13, 2014

MEMORANDUM

TO: Mr. Douglas Haigh and Mr. Timothy F.T. Hiu
State Building Code Subcommittee of Building Officials

FROM: Neal Fujii, State Drought and Water Conservation Coordinator

SUBJECT: Adoption of 2012 Uniform Plumbing Code: Proposed Amendment

This is to submit proposed amendments to the 2012 IAMPO Uniform Plumbing Code (2012 UPC), which is under consideration for adoption by the State Building Code Council in its process of updating the State's suite of building codes.

Background

The Commission on Water Resource Management (Commission) has a responsibility to protect the public trust water resources of the state, which includes water conservation programs and practices. The Commission completed its *Hawaii Water Conservation Plan* in 2012 (Plan), which identifies implementation actions to improve water conservation and efficiency in Hawaii. The following *policy action* is recommended in the Plan (p. 7-14):

Explore policy changes to make improvements in water use efficiency and related reporting (e.g., State Water Code, green plumbing codes [IAMPO; ICC], county ordinances, etc.) via the State Building Code Council, Hawaii Legislature, and County Councils. (P3).

The Plan also recommends a priority *program element* for implementation (p. 7-4):

Model Ordinance for Landscape and Irrigation Design – Implementation Program: Development of a statewide, model landscape and irrigation design code that emphasizes water use efficiency; and providing assistance to local governments to aid in adoption.

The *IAMPO 2012 Green Plumbing & Mechanical Code Supplement* contains numerous water efficiency requirements which are more progressive and water efficient than current code (and 2012 UPC) requirements. These provisions affect plumbing fixtures, HVAC, rain water catchment, landscaping, gray water and use of recycled water. The adoption of these provisions will help to implement the Plan priority implementation actions noted above.

Proposed Addenda to IAMPO UPC 2012

1. Adoption of the following Chapters in the *IAMPO 2012 Green Plumbing & Mechanical Code Supplement*:

Chapter 4 Water Efficiency and Conservation

Chapter 5 Alternate Water Sources for Non-Potable Applications

Appendix A Method of Calculating Water Savings

Appendix B Potable Rainwater Catchment Systems

2. Adoption of additional requirements that plumbing fixtures and equipment have EPA WaterSense and/or Energy Star certification whenever it is applicable.

There is another proposed amendment to the 2012 UPC, involving the 2012 International Green Construction Code – Water Efficiency Provisions. This IgCC proposal is complimentary and similar to this memo and could work in conjunction should they also be adopted. Thank you for the opportunity to comment on this important process of updating Hawaii's Building Codes. Feel free to contact me at 808-587-0264 to discuss this matter.

DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES

Amendment of Chapter 3-183
Hawaii Administrative Rules

SUMMARY

1. Chapter 183 of Title 3, Hawaii Administrative Rules, entitled "State Plumbing Code," is amended to read as follows:

HAWAII ADMINISTRATIVE RULES
TITLE 3
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
SUBTITLE 14
STATE BUILDING CODE COUNCIL
CHAPTER 183
STATE PLUMBING CODE

Subchapter 1 Rules of General Applicability

- §3-183-1 Purpose
- §3-183-2 Scope
- §3-183-3 Definitions
- §3-183-4 Adoption of the *Uniform Plumbing Code*
- §3-183-5 Permit Authorization

Subchapter 2 Amendments to the ~~2006~~ 2012 IAPMO Uniform Plumbing Code

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- §3-183-6 Title
- ~~§3-183-6.1 Organization and Enforcement~~
- §3-183-7 Definitions
- §3-183-8 General Regulations
- §3-183-9 Plumbing Fixtures and Fixture Fittings
- §3-183-10 Sanitary Drainage
- §3-183-11 Vents
- §3-183-12 Storm Drainage
- §3-183-13 ~~[Gray Water Systems]~~ Alternate Water Sources for Nonpotable Applications
- §3-183-14 [Appendix K – Private Sewage Disposal Systems]
- §3-183-15 Reference Standards

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Historical Note: Chapter 183 ~~[is]~~ was added to Title 3 of the Hawaii Administrative Rules [Effective]

**SUBCHAPTER 1
RULES OF GENERAL APPLICABILITY**

§3-183-1 Purpose. The purpose of this chapter is to adopt the state plumbing code as required by Section 107-25, Hawaii Revised Statutes (HRS).

[Eff _____] (Auth: HRS §107-29)(Imp: HRS §107-24, 107-25)

§3-183-2 Scope. This chapter sets forth minimum requirements for the design, installation, alteration, repair, and construction of plumbing and drainage systems, and shall apply to all new construction, relocation, alteration, repair or reconstruction.

[Eff _____] (Auth: HRS §107-29)(Imp: HRS §107-224, 107-25)

§3-183-3 Definitions. In this chapter, unless the context otherwise requires:

“Chapter” means chapter of this HAR Chapter 183-3.

“IAPMO” means the *International Association of Plumbing and Mechanical Officials*,

“UPC” means the *Uniform Plumbing Code* as published by the International Association of Plumbing and Mechanical Officials.

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“Section” means a section of a chapter of the *Uniform Plumbing Code*.

[Eff _____] (Auth: HRS §107-29)(Imp: HRS §107-24, 1007-25)

§3-183-4 Adoption of the *Uniform Plumbing Code*. The “*Uniform Plumbing Code, [2006] 2012 Edition*” including ~~all~~ appendices A, B, C, G, and I as copyrighted and published by International Association of Plumbing and Mechanical Officials, 5001 East Philadelphia Street, Ontario, CA 91761-2816 is adopted by reference and made a part of this chapter. This incorporation by reference includes all parts of the *Uniform Plumbing Code* subject to the amendments hereinafter set forth. The IAPMO, *Uniform Plumbing Code, [2006] 2012 edition* is made a part of the chapter, subject to the amendments provided in this chapter.

[Eff _____] (Auth: HRS §107-29)(Imp: HRS §107-24, 107-25)

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§3-183-5 Permit Authorization. Each county may, by ordinance, require that a permit be obtained from the Building Official for any area regulated by this chapter.

[Eff _____] (Auth: HRS §107-29)(Imp: HRS §107-24, 107-25)

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SUBCHAPTER 2
AMENDMENTS TO THE [2006] 2012 IAPMO UNIFORM PLUMBING CODE

§3-183-6 **Title.** Section 101.1 is amended to read as follows:

“**101.1 Title.** This document shall be known as the “[~~Uniform Plumbing Code~~” of the State of Hawaii] State of Hawaii Plumbing Code, and may be cited as such, and will be referred to herein as “this code”.”

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[Eff] (Auth: HRS §107-29)(Imp: HRS §107-24, 107-25)

§3-183-6.1 **Organization and Enforcement.** Section 102 is amended to read:

“**102 Organization and Enforcement.** In accordance with HRS 107 the provisions of this code are State standards and are enforced when adopted by the counties or as an interim code if the counties fail to adopt. Provisions for licensing of design professionals and any person to perform plumbing work shall be in accordance with HRS 444, 448E and 464.”

[Eff] (Auth: HRS §46-1.5)(Imp: HRS §448E-4, 464-2)

§3-183-7 **Definitions.**

Section 204.0 is amended to read as follows:

204.0 -B-

Building Drain – That part of the lowest piping of a drainage system that receives the discharge from soil, waste, and other drainage pipes inside the walls of buildings and conveys it to the building sewer beginning [~~two (2) feet (610 mm)] five (5) feet (1524 mm) outside the building wall.”~~

[Eff] (Auth: HRS §107-29)(Imp: HRS §107-24, 107-25)

Section 210.0 is amended to add the following:

210.0 -H-

Health Officer – Health Officer shall mean the Director of Health of the Department of Health, State of Hawaii, or the Director’s authorized agent.”

[Eff] (Auth: HRS §107-29)(Imp: HRS §107-24, 107-25)

Section 218 is amended to read as follows:

“218.0 –P-

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Plumbing System - Includes all potable water, building supply and distribution pipes all reclaimed water systems, all plumbing fixtures and traps, all drainage and vent pipe(s), and all building drains including their respective joints and connection, devices, receptors, and appurtenances within the property lines of the premises and shall include potable water piping, potable water treating or using equipment, medical gas and medical vacuum systems, and water heaters and vents for same.

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Section 210.9 is amended to add the following:

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221.0 -S-

Single Stack Vent System – A specially designed plumbing system wherein a common stack serves as a drainage pipe as well as a vent pipe.”

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[Eff] (Auth: HRS §107-29)(Imp: HRS §107-24, 107-25)

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§3-183-8 General Regulations.

Section 301.2 is amended by adding a third paragraph to read:

The use of the International Plumbing Code may be used in lieu of the Uniform Plumbing Code when approved by the administrative authority. A written request by a Hawaii licensed mechanical engineer with the concurrence of the building or project owner must be made to the administrative authority. The details of this approval shall be recorded and entered in the files of the department. Plans submitted shall be stamped by the Hawaii licensed mechanical engineer. This section shall only apply to a new building or project and shall not be applied in conjunction with an existing building. Provision of the Uniform Plumbing Code and the International Plumbing Code shall not be combined or interchanged unless approved by the administrative authority. Plans submitted shall clearly state on the submitted title, plumbing and/or mechanical sheets that the International Plumbing Code was used as the basis of design.

Section 314.8 is renumbered to read:

“[314.8] 313.8 Seismic Supports. Where earthquake load are applicable in accordance with the building code, plumbing piping supports shall be designed and installed for the seismic forces in accordance with the building code.”

[Eff] (Auth: HRS §107-29)(Imp: HRS §107-29)(Imp: HRS §107-24, 107-25)

§3-183-9 Plumbing Fixtures and Fixture Fittings.

Section [412] 422, Table [4-1, and Table A] 422.1 are deleted in their entirety, and replaced to read as follows:

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"~~[412.0] 422.0 Minimum Number of Required Fixtures. Plumbing fixtures shall be provided for the type of building occupancy and in the minimum number required in Chapter 29 of the International Building Code.~~"
[Eff] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)

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§3-183-10 Sanitary Drainage. Section 715.1 is amended to read as follows:

"**715.1 Materials.** The building sewer, beginning [~~two (2) feet (610 mm)] five (5) feet (1524 mm) from any building or structure shall be of such materials as prescribed in this code."
[Eff] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)~~

§3-183-11 [Vents. Section 911.0 is added to read as follows:

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~~"**911.0 Single Stack System.** When approved by the administrative authority, a single stack system based on engineered studies and tests may be used in lieu of other related provisions in this code. Plans and specifications of such systems shall be prepared and stamped by a Hawaii-licensed mechanical engineer."
[Eff] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)~~

§3-183-12 Storm Drainage. Section 1101.11.1 is amended to read as follows:

"**1101.11.1 Primary Roof Drainage.** Roof areas of a building shall be drained by roof drains or gutters. The location and sizing of drains and gutters shall be coordinated with the structural design and pitch of the roof. Unless otherwise required by the Authority Having Jurisdiction, roof drains, gutters, vertical conductors or leaders, and horizontal storm drains for primary drainage shall be sized based on a storm of sixty (60) minutes duration and 100 year return period. Refer to [~~Table D-1.1 (in Appendix D)] the National Weather Service rainfall map for 100-year, 60-minute storms at various locations."
[Eff] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)~~

§3-183-13 [Gray Water Systems – General] “ALTERNATE WATER SOURCES FOR NONPOTABLE APPLICATIONS”

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~~[Section 1601.0 (A) is amended to read as follows:~~

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~~"**1601.0 (A)** The provisions of this chapter shall apply to the construction, alteration, and repair of gray water systems for underground landscape irrigation. Installations shall be allowed only in single-family dwellings or as allowed by the Authority Having Jurisdiction. The system shall have no connection to any potable water system and shall not result in any surfacing of the gray water. Except as otherwise provided for in this chapter, the provisions of this code shall be applicable to gray water installation."
[Eff] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)~~

[Section 1601.0 (D) is amended to read as follows:

~~“1601.0 (D) No permit or approval for any gray water system shall be issued until a plot plan with appropriate data or design plans satisfactory to the Authority Having Jurisdiction has been submitted and approved for use. When there is insufficient lot area or inappropriate soil conditions for adequate absorption of the gray water, as determined by the Authority Having Jurisdiction, no gray water system shall be permitted.”~~

[Eff] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)

Section 1601.3 is amended to read as follows:

“1601.3 Permit or Approval

It shall be unlawful for any person to construct, install, or alter, or cause to be constructed, installed, or altered ~~[any gray water]~~ an alternate water source system in a building or on a premises without first obtaining a permit or approval to do such work from the Authority Having Jurisdiction.”

[Eff] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)

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~~[Section 1604.0 is amended to read as follows:~~

~~“1604.0 Drawings and Specifications.~~

~~The Authority Having Jurisdiction may require any or all of the following information to be included with or in the plot plan before a permit or approval is issued for a gray water system, or at any time during the construction thereof:”~~

[Eff] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)

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~~[Section 1604.0 (A) is amended to read as follows:~~

~~“1604.0 (A) Plot plan drawn to scale and completely dimensioned, showing lot lines and structures, direction and approximate slope of surface, location of all present or proposed retaining walls, drainage channels, water supply lines, wells, paved areas and structures on the plot, number of bedrooms and plumbing fixtures in each structure, location of private sewage disposal system [and 100 percent expansion area] or building sewer connecting to the public sewer, and location of the proposed gray water system.”~~

[Eff] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)

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Section 1602.7 is amended to read as follows:

“1602.7 **Drawings and Specifications.** The Authority Having Jurisdiction shall require the following information to be included with or in the plot plan before a permit or approval is issued for a gray water system, or at a time during the construction thereof.”

[Section 1607.0 is amended to read as follows:

“1607.0 Required Area of Subsurface Irrigation/Disposal Fields (See Figure 16-5.)

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~~The Authority Having Jurisdiction may require that each [Each] valved zone shall have a minimum effective irrigation area in square feet as determined by Table 16-2 for the type of soil found in the excavation, based upon a calculation of estimated gray water discharge pursuant to Section 1606.0 of this chapter, or the size of the holding tank, whichever is larger. The area of the irrigation/disposal field shall be equal to the aggregate length of the perforated pipe sections within the valved zone multiplied the width of the proposed irrigation/ disposal field. Each proposed gray water system shall include at least three (3) valved zones, and each zone shall be in compliance with the provisions of the section. No excavation for an irrigation/disposal field shall extend within ~~five (5)~~ three (3) vertical feet of the highest known seasonal ground water, nor to a depth where gray water may contaminate the groundwater or ocean water. The applicant shall supply evidence of groundwater depth to the satisfaction of the Authority Having Jurisdiction.”]~~

[Eff] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)

[Section 1608.0 is amended to read as follows:

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~~“1608.0 Determination of Maximum Absorption Capacity.~~

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~~(A) Wherever practicable, irrigation/disposal field size shall be computed from Table 16-2 and Table 16-3, or Water Demand based on Evapotranspiration (ET) data.~~

~~(B) In order to determine the absorption quantities of questionable soils other than those listed in Tables 16-2 and 16-3, the proposed site may be subjected to percolation tests acceptable to the Authority Having Jurisdiction.~~

~~(C) When a percolation test is required, no gray water system shall be permitted if the test shows the absorption capacity of the soil is not acceptable as determined by the Authority Having Jurisdiction or is less than eighty three hundredths (0.83) gallons per square foot (33.8 L/m²) or more than five and twelve hundredths (5.12) gallons per square foot (208.5 L/m²) of leaching area per twenty-four (24) hours.~~

~~D) The following formula can be used to estimate the square footage of landscape to be irrigated based on ET data:~~

$$\frac{LA}{ET \times PF \times 0.62} = \frac{GW}{0.62}$$

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~~Where: GW = estimated gray water produced (gallons per week)~~

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~~LA = landscaped area (ft²)~~

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~~ET = evapotranspiration (inches per week)~~

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~~PF = plan factor, based on climate and type of plants~~

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~~0.62 = conversion factor (from inches of ET to gallons per week)”]~~

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[Eff] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)

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[Section 1611.0 is amended to read as follows:

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1611.0 Irrigation/Disposal Field Construction. (See Figure 16-5.)

~~"The Authority Having Jurisdiction may permit subsurface drip irrigation, mini-leach field or other equivalent irrigation methods which discharge gray water in a manner which ensures that the gray water does not surface. Design Standards for subsurface drip irrigation systems and mini-leach field irrigation systems are as follows:~~

~~(A) Standards for a subsurface drip irrigation system:~~

~~(1) Minimum 140 mesh (115 micron) filter with a capacity of 25 gallons per minute, or equivalent, filtration, sized appropriately to maintain the filtration rate, shall be used. The filter back wash and flush discharge shall be caught, contained and disposed of to the sewer system, septic tank, or with approval of the Authority Having Jurisdiction, a separate mini-leach field sized to accept all the back wash and flush discharge water. Filter backwash water and flush water shall not be used for any purpose. Sanitary procedures shall be followed when handling filter backwash and flush discharge of gray water.~~

~~(2) Emitters shall have a minimum flow path of 1200 microns and shall have a coefficient of manufacturing variation (Cv) of no more than seven percent. Irrigation system design shall be such that the emitter flow variation shall not exceed plus or minus ten percent. Emitters shall be recommended by the manufacture for subsurface use and gray water use, and shall have demonstrated resistance to root intrusion.~~

~~(3) Each irrigation zone shall be designed to include no less than the number of emitters specified in Table 16-3, or through a procedure designated by the Authority Having Jurisdiction. Minimum spacing between emitters is 14 inches in any direction.~~

~~(4) The system design shall provide user controls, such as valves, switches, timers, and other controllers as appropriate, to rotate the distribution of gray water between irrigation zones.~~

~~(5) All drip irrigation supply lines shall be polyethylene tubing or PVC class 200 pipe or better and schedule 40 fittings. All joints shall be properly solvent cemented, inspected and pressure tested at 40 psi, and shown to be drip tight for five minutes, before burial. All supply lines will be buried at least eight inches deep. Drip feeder lines can be poly or flexible PVC tubing and shall be covered to a minimum depth of nine inches.~~

~~(6) Where pressure at the discharge side of the pump exceeds 20 pounds per square inch (psi), a pressure reducing valve able to maintain downstream pressure no greater than 20 psi shall be installed downstream from the pump and before any emission device.~~

~~(7) Each irrigation zone shall include a flush valve/anti-siphon valve to prevent back siphonage of water and soil.~~

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~~(B) Standards for a mini-leach field system:~~

~~[(A)](1) Perforated sections shall be a minimum three (3) inch (80 mm) diameter and shall be constructed of perforated high-density polyethylene pipe, perforated ABS pipe, perforated pvc pipe, or other approved materials, provided that sufficient openings are available for distribution of the gray water in to the trench area. Material, construction, and perforation of the pipe shall be in compliance with the appropriate absorption fields drainage piping standards and shall be approved by the Authority Having Jurisdiction.~~

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~~[(B)](2) Filter material, clean stone, gravel, slag, or similar filter material acceptable to the Authority Having Jurisdiction, varying in size from three-quarter (3/4) inch (20 mm) to two and one half (2 1/2) inch (65 mm) shall be placed in the trench to the depth and grade required by this section. The perforated section shall be laid on the filter material in an approved manner. The perforated section shall then be covered with filter material to the minimum depth required by this section. The filter material shall then be covered with untreated building paper, straw, or similar porous material to prevent closure of voids with earth backfill. No earth backfill shall be placed over the filter material cover until after inspection and acceptance.]~~

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[Eff] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)

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[Section 1612.0 (A) is amended to read as follows:

~~1612.0 (A) Other collection and distribution systems such as laundry only gray water systems may be approved by the local Authority Having Jurisdiction, as allowed by Section 301.0 of this code].~~

[Eff] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)

[Table 16-1 is amended as follows:

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**Table 16-1
Location of Gray Water Systems**

Minimum Horizontal Distance in Clear Required From:	Holding Tank Feet (mm)	Irrigation/Disposal Field Feet (mm)
Building structures ¹	5² (1,524 mm)	[2³] 5 ([610] 1,524 mm)
Property line adjoining private property	5 (1,524 mm)	5 (1,524 mm)
Water supply wells ⁴	550 (15,240 mm)	[100] 1000 ([30,480] 304,800 mm)
Streams and lakes ⁴	50 (15,240 mm)	50⁵ (15,240 mm)
Sewage pits or cesspools	5 (1,524 mm)	5 (1,524 mm)
Disposal field (and 100% expansion area)	5 (1,524 mm)	[4⁶] 5 ([1,219] 1,524 mm)
Septic tank	0 (0)	5 (1,524 mm)
On-site domestic water service line	5 (1,524 mm)	5 (1,524 mm)
Pressurized public water main	10 (3,048 mm)	10⁷ (3,048 mm)

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— Add new Table 16-3 as follows:

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**Table 16-3
Subsurface Drip Design Criteria for Six Typical Soils**

Type of Soil	Maximum Emitter Discharge (gal/day)	Minimum Number of Emitters per gpd of gray water production
Sand	1.8	0.6
Sandy loam	1.4	0.7
Loam	1.2	0.9
Clay loam	0.9	1.1
Silty clay	0.6	1.6
Clay	0.5	2.0

Section 1614.0 is amended to read as follows:

~~1614.0 Definitions~~

~~“Reclaimed water is water that, as a result of tertiary treatment of domestic wastewater [by a public agency, is suitable for a direct beneficial use or a controlled use that would not otherwise occur. The level of treatment and quality of the reclaimed water shall be approved by the public health Authority Having Jurisdiction], is at all times oxidized, then filtered, and then exposed, after the filtration process, to:~~

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~~(A) A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque-forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least resistant to disinfection as polio virus may be used for purposes of demonstration; and~~

~~(B) A disinfection process that limits the concentration of fecal coliform bacteria to the following criteria:~~

~~(1) The median density measure in the disinfected effluent does not exceed 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days from which analysis have been completed; and~~

~~(2) The density does exceed 23 per 100 milliliters in more than one sample in any 30-day period; and~~

~~(3) No sample shall exceed 200 per 100 milliliters.~~

~~The level of treatment and quality of the reclaimed water shall be approved by the Department of Health [public health Authority Having Jurisdiction].~~

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For the purpose of this chapter, tertiary treatment shall result in water that is adequately oxidized, clarified, coagulated, filtered, and disinfected so that at some location in the treatment process, the seven (7) day median number of total coliform bacteria in daily samples does not exceed two and two-tenths (2.2) per one hundred (100) milliliters, and the number of total coliform bacteria does not exceed twenty three (23) per one hundred (100) milliliters in any sample. The water shall be filtered so that the daily average turbidity does not exceed two (2) turbidity units upstream from the disinfection process.

~~Specifically excluded from this definition is gray water, which is defined in Part I of this chapter.~~

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~~For the purposes of this section, the words "reclaimed" and "recycled" may be used interchangeably."~~

[Eff _____] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)

Section **§3-183-14 Appendix K Private Sewage Disposal Systems**: is deleted in it's entirety

~~**§3-183-14 Appendix K Private Sewage Disposal Systems:**~~

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Section K 1 Private Sewage Disposal Systems—General

The following language is added to the end of Section K 1 (A):

~~"Construction plans for private sewage disposal systems shall be prepared by or under the supervision of a Hawaii licensed engineer registered in the State of Hawaii. All private sewage disposal systems shall be constructed or modified by a person meeting the requirements of section 444, Hawaii Revised Statutes (HRS) and any pertinent rules promulgated by the department of commerce and consumer affairs, State of Hawaii."~~

[Eff _____] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)

Section K 1 (E) is amended to read:

~~"[All private sewage disposal systems shall be designed that additional seepage pits or subsurface drain fields, equivalent to at least one hundred (100) percent of the required original system, may be installed if the original system cannot absorb all the sewage. No division of the lot or erection of structures on the lot shall be made if such division or structure impairs the usefulness of the one hundred (100) percent expansion area.] The lot area shall not be less than 10,000 square feet except for lots created and recorded before August 30, 1991. For lots less than 10,000 square feet which were created and recorded before August 30, 1991, only one private sewage disposal system shall be allowed. The total wastewater flow into one private sewage disposal system shall not exceed one thousand gallons, and one private sewage disposal system shall not serve more than five bedrooms, whether they are in one dwelling unit or two. For buildings, other than dwellings with highly variable wastewater flow rates, such as but not limited to schools, parks, and churches, the private sewage disposal system may exceed a design flow rate of 1,000 gallons per day."~~

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[Eff _____] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)

The following language is added to the end of Section K 1 (J):

~~"Aerobic systems shall be required for the direct disposal of sewage to groundwater."~~

[Eff _____] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)

Section K 2 Capacity of Septic Tanks

Section K 2 is amended to read:

~~"The liquid capacity of all septic tanks shall conform to Tables K-2 and K-3 as determined by the number of bedrooms [or apartment units] in dwelling occupancies and the estimated waste/sewage design flow rate or the number of plumbing fixture units as determined from Table 7-3 of this Code, whichever is greater in other building occupancies. The capacity of any one septic tank and its drainage system shall be limited by the soil structure classification, as specified in Table K-4."~~

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[Eff _____] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)

Section K 3 Area of Disposal Fields and Seepage Pits.

Section K 3 is amended to read:

~~"The minimum effective absorption area in disposal fields in square feet (m²) of sidewall, shall be predicated on the required septic tank capacity in gallons (liters) and/or estimated waste/sewage flow rate, whichever is greater, and shall conform to Table K-4 as determined for the type of soil found in the excavation[, and shall be as follows:]. The minimum effective absorption area could also be based upon a flow of 200 gallons per bedroom per day in accordance with Table K-6. Soil percolation tests shall be conducted at a minimum depth of three feet."~~

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[Eff _____] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)

Section K 4 Percolation Tests.

The first sentence of Section K 4 (C) is amended to read:

~~"When a percolation test is required, the test shall be conducted at a minimum depth of three feet, and no private disposal system shall be permitted to serve a building if that test shows the absorption capacity of the soil is less than 0.83 gallons per square foot (33.8L/m²) or more than 5.12 gallons per square foot (208 L/m²) of leaching area per 24 hours."~~

[Eff _____] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)

Section K 5 (N) (1) is amended to read as follows:

~~"The septic tank shall be certified by IAPMO or a third party certification body accredited in accordance with ISO Guide 65, entitled "General Requirements for bodies operating product certification systems." [Manufactured or prefabricated septic tanks shall be IAPMO certified or comply with all approved applicable standards and be approved by the Authority Having Jurisdiction.]~~

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[Eff _____] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)

Section K 7 Seepage Pits.

The first sentence of Section K 7 (C) is amended to read as follows:

~~“Each seepage pit shall be circular in shape and shall have an excavated diameter of not less than [four (4) feet (1,219 mm)] six (6) feet (1,829 mm).”~~
~~[Eff: _____] (Auth: HRS §107-29) (Imp: HRS §107-24, 107-25)~~

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Table K-1 Location of Sewage Disposal System.

The minimum horizontal distances was revised to be consistent with Hawaii Administrative Rules Chapter 11-62 “Wastewater Systems” distances.

See attached table for changes.

Table K-2 Capacity of Septic Tanks.

Under column “Single-Family Dwellings-Number of Bedrooms”, delete “1 or 2 and 3” and replace with “4 or less”.

Under column “Multiple Dwelling Units or Apartments-One Bedroom Each”, delete “3 through 10”.

Delete entire column “Other Uses: Maximum Fixture Units Served per Table 7-3”.

Under column “Gallons”, delete “750”; delete “1,200” and replace with “1,250”; delete “1,500 to 3,500”.

Under column “Minimum Septic Tank Capacity in (Liters)”, delete “7,570 through 13,248”; delete “1,200” and replace with “1,250”; delete “1,500 to 3,500”.

Delete “*Note: Extra Bedroom, 150 gallons (568 liters) each. Extra dwelling units over 10: 250 gallons (946 liters) each. Extra fixture units over 100: 25 gallons (95 liters) per fixture unit.”

See attached table for changes.

Table K-6

Table K-6 is added as attached.]

A new section §3-183-15 is added.

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§3-183-15 Referenced Standards

Table 14-1 is amended by adding between Standard Number SAE-J1670-2008 and TCNA A118-1-2011* to read:

Standard	Standard Title	Application	Referenced
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Number			Sections
State of Hawaii – Rev. Sept. 2000	Standard Details for Public Works Construction	Various	Various
State of Hawaii – 2002	Water System Standards	Various	Various

2. The adoption of Chapter 183 of Title 3, Hawaii Administrative Rules, shall take effect ten days after filing with the Office of the Lieutenant Governor.

3. Material, except source notes, to be deleted is shown by strikethrough and brackets. New material is underscored.

I certify that the foregoing are copies of the rules, drafted in the Ramseyer format pursuant to the requirements of section 91-4.1, Hawaii Revised Statutes, which were adopted on _____ and filed with the Office of the Lieutenant Governor.

Chair
State Building Code Council

Director
Department of Accounting and
General Services

APPROVED AS TO FORM:

Deputy Attorney General