

Appendix A
DWSRF Priority List of Projects for SFY 2016

						County of Maui, Department of Water Supply			
15	100	DW213-0012	#213 DWS Makawao	27,642	Maui DWS	Hamakuapoko Wells Upgrades: Replacement of the existing well pumps and motors at the two well locations with submersible pumps and related electrical equipment. A new 100,000 gallon tank will be added with related piping.	Energy Efficiency (Categorical)	SFY 2015	\$ 2,000,000
12	100	DW217-0004	#217 DWS Hana	1,134	Maui DWS	Hamoia to Koali Waterline Project: Replace 2,000 LF of inadequate and leaking pipeline with 8-in waterline to serve the Koali area of Hana.	Water Efficiency	TBD	\$ 1,000,000
39	90	DW213-0017	#213 MDWS Makawao	68,054	Maui DWS	Holokai Road Waterline Improvements: Replace an existing waterline with a new 8" line for reliability. Add a new 8" waterline to address low pressure in the area due to a new water tank.		Jan-16	\$ 1,500,000
7	120	DW214-0006	#214 DWS Lahaina	18,598	Maui DWS	Honokahua Well "A" GAC Treatment: Installation of Granular Activated Carbon Adsorption System to provide treatment for the removal of DBCP from well serving Mahinahina (Lahaina) system.		TBD	\$ 2,500,000
53	90	DW214-0016	#214 DWS Lahaina	18,598	Maui DWS	Honokahua Well C Exploratory Well Construction: Construct an Exploratory well at Honokahua to provide additional source for the Lahaina system		TBD	\$ 2,000,000
25	90	DW218-0002	#218 DWS Honokohau	42	Maui DWS	Honokohau Water Source Replacement: Installation of a new well or treatment facility to replace source for the Honokohau system.		SFY 2017	\$ 1,500,000
55	90	DW214-0012	#214 DWS Lahaina	17,967	Maui DWS	Hydro Electric Facility at the Honokowai Tank Site: Construction of a hydroelectric facility. Electric power will be generated from the high pressure waterline that fills the existing 2 MG Honokowai.	Energy Efficiency (Categorical)	TBD	\$ 750,000
16	100	DW212-0015	#212 DWS Wailuku	68,054	Maui DWS	Iao Surface Water Treatment Plants Upgrades: Upgrade the existing 1.2 MGD Iao Surface Water Treatment Plant. Upgrades includes a building to shelter the microfiltration units (the existing units are exposed with no building), install new microfiltration units and related filter backwash facilities for a 1.2 MGD capacity. The project will provide a reliable water treatment facility. High efficiency pumps will be installed.	Energy Efficiency (Categorical)	SFY 2016	\$ 15,000,000
23	90	DW233-0002	#233 DWS Ualapue	1,001	Maui DWS	Kualapuu MCC Upgrades: Replace MCC and related electrical controls.		Oct-15	\$ 500,000
33	90	DW215-0010	#215 DWS Upper Kula	6,918	Maui DWS	Kula 200 #1 Tank Replacement: Replace 25K Gal Steel Tank with equal or larger size glass lined tank <i>(Binding commitment executed)</i>		Mar-15	\$ 1,200,000
54	90	DW214-0015	#214 DWS Lahaina	18,598	Maui DWS	Lahainaluna Road Booster-Phase 1: Construction of a booster pumping system to provide back-up for the Lahaina WTF		Nov-15	\$ 1,700,000
37	90	DW213-0016	#213 DWS Makawao	27,642	Maui DWS	Lower Baldwin Avenue Waterline upsizing: Design to replace approximately 6000 feet of 8" waterline with 12" for fire protection.		SFY 2016	\$ 4,000,000
5	140	DW214-0008	#214 DWS Lahaina	18,598	Maui DWS	Mahinahina Water Treatment Facility Retrofit: Retrofit WTF from multimedia to membrane filtration to achieve positive barrier to enhance water quality.		TBD	\$ 11,121,000
31	90	DW247-0008	#247 DWS Lower Kula	3,246	Maui DWS	Omaopio 2.1 MG Tank Replacement: Construct a new 2.1 MG concrete water tank to replace the existing Omaopio Tank		Mar-16	\$ 4,000,000
30	90	DW247-0007	#247 DWS Lower Kula	3,246	Maui DWS	Phase 10 Booster Pump Upgrades: Replace booster pumps and related equipment at 4 booster pump stations; Pookela, Maluhia, Olinda, and Lower Kula water tanks	Energy Efficiency	Mar-17	\$ 6,000,000
13	100	DW215-0009	#215 DWS Upper Kula	6,918	Maui DWS	Phase 6 Booster Pump Upgrades: Replace booster pumps and related equipment at 3 booster pump stations; Kula Kai, Middle Kimo, and Upper Kimo water tanks. <i>(Binding commitment executed)</i>	Energy Efficiency	Aug-15	\$ 6,500,000

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40	90	DW213-0011	#213 DWS Makawao	68,054	Maui DWS	Photovoltaic System - Kamole Water Treatment Plant: Construct a photovoltaic system at the Kamole Water Treatment Plant. The system will provide electrical power to the treatment plant. This will reduce the department's dependence on Maui Electric Company and fossil fuels.	Energy Efficiency (Categorical)	TBD	\$ 200,000
14	100	DW215-0012	#215 DWS Upper Kula	6,918	Maui DWS	Piiholo WTF Control Upgrades: Replace existing auto control system with new control/operation system	Energy Efficiency	Oct-15	\$ 1,300,000
65	90	MDWS-0001	MDWS	140,000	Maui DWS	Source Generator Installation - 4 sites: Replace source generators at 4 well-sites.		Oct-15	\$ 1,200,000
8	115	DW233-0001	#233 DWS Ualapue	1,031	Maui DWS	Ualapue Well Replacement: Installation of replacement source for Ualapue System, which has increasing chloride levels and may be susceptible to becoming a groundwater under the influence of surface water.		SFY 2017	\$ 3,500,000
56	90	DW212-0017	#212 DWS Wailuku	68,054	Maui DWS	Waiehu Heights Well A Refurbishment/Replacement: Refurbish or replace existing Waiehu Well A due to high chlorides and low pump capacity		Aug-17	\$ 5,200,000
57	90	DW212-0018	#212 DWS Wailuku	68,054	Maui DWS	Wailuku Heights Tank 30 Booster Replacement: Replace booster pumps and motors, and related piping. Replace MCC and related electrical controls.		Dec-15	\$ 1,200,000
38	90	DW213-0010	#213 DWS Makawao	68,054	Maui DWS	Wind Turbine - Kamole Water Treatment Plant: Construct a wind turbine system to generate electricity. The system will produce electrical power for the water treatment plant and the high lift pumps. The system will reduce the department's dependence on Maui Electric Company and fossil fuels.	Energy Efficiency (Categorical)	TBD	\$ 2,000,000
City and County of Honolulu, Board of Water Supply									
58	90	DW331-0060	#331 BWS Honolulu-Windward-Pearl Harbor	665,735	Hon BWS	Ala Moana Boulevard 24-inch Main: Install 24-inch main and appurtenances along Ala Moana Blvd from Ward Ave to Atkinson Dr - approx. 6,200 LF.	Water Efficiency	SFY 2019	\$ 6,820,000
95	80	DW331-0044	#331 BWS Honolulu-Windward-Pearl Harbor	665,735	Hon BWS	Anoi Road Water System Improvements: Install 8-inch main and appurtenances along Anoi Road from end to end; along Keaahala Road from Kamehameha Highway to Keaahala Place; along Kamehameha Highway from Kahuhipa Street to Keole Street and along Luana Place from Paleka Road to end - approx. 5,850 lin. ft.		SFY 2016	\$ 6,560,000
98	80	DW331-0043	#331 BWS Honolulu-Windward-Pearl Harbor	665,735	Hon BWS	Diamond Head Water System Improvements, Part II: Install 12-inch mains and appurtenances along 22nd Avenue from Kilauea Avenue to Diamond Head Road, along Diamond Head Road from 22nd Avenue to Kahala Avenue, and along Kulamanu Street from Kahala Avenue to Kulamanu Place - approx. 5,235 lin. ft. Install 8-inch mains and appurtenances along Kulamanu Place from Kulamanu Street to end, along Malapua Place from 22nd Avenue to end, along Ulupua Place from 22nd Avenue to end, along Huanui Street from 22nd Avenue to Huanui Place, along Kaalawai Place from Diamond Head Road to easement, and along Kuine Place from Kulamanu Street to end - approx. 2,270 lin. ft.		SFY 2015	\$ 3,180,000
64	90	DW331-0068	#331 BWS Honolulu-Windward-Pearl Harbor	665,735	Hon BWS	Energy Savings Performance Contracting (ESPC) - BWS Facilities: Implement an ESPC project on BWS facilities with a goal of reducing energy demand by 20%	Energy Efficiency (Categorical)	TBD	\$ 800,000
11	110	DW335-0011	#335 BWS Waipahu-Ewa-Waianae	175,326	Hon BWS	GAC Treatment for Waipio Heights Wells and Waipio Heights Wells I, Part A: Part A: Install 16-inch mains and appurtenances along Lumihoahu Street from Waipio Heights Wells and Wells I to Lumiaina Street, along Lumiaina Street from Lumihoahu Street to Kamehameha Highway, along Kamehameha Highway from Lumiaina Street to Waipahu Wells III - approx. 4,000 lin. ft. Part B (non-SRF): Install two (2) GAC units at Waipahu Wells III, appurtenances and piping to connect to main		SFY 2018	\$ 5,300,000
105	80	DW331-0045	#331 BWS Honolulu-Windward-Pearl Harbor	665,735	Hon BWS	Hui Ulili Street 12-Inch, 8-Inch and 4-Inch Mains: Install 12-inch, 8-inch and 4-inch mains and appurtenances along Hui Ulili Street from Hui Kelu Street to Hui Oi Street - approx. 2,825 lin ft.		SFY 2017	\$ 1,240,000

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92	80	DW335-0009	#335 BWS Waipahu-Ewa- Waianae	175,326	Hon BWS	Kahuaiani Street Water System Improvements: Install 12-inch mains and appurtenances along Mokuola Street from Waipahu Street to 70 feet beyond Nalii Street - approx. 500 lin. ft. Install 8-inch mains and appurtenances along Kahuaiani Street from Hikimoe Street to end, along Puamano Place from Waipahu Street to end, along Kahiki Place from Puamano Place to end and along Hikimoe Street from Waipahu Depot Street to FH L4002 – approx. 4,020 lin. ft. Install 4-inch mains and appurtenances along the side street from Hikimoe Street to end - approx. 115 lin. ft.		SFY 2017	\$ 1,810,000
99	80	DW331-0030	#331 BWS Honolulu-Windward- Pearl Harbor	665,735	Hon BWS	Kaimuki Water System Improvements, Part I: Install 8-inch mains and appurtenances along Maunaloa Avenue from 16th Avenue to 20th Avenue; along Kaimuki Avenue from 16th Avenue to 21st Avenue; along Pahoa Avenue from 18th Avenue to 150 feet beyond FH M-3591; along 17th Avenue from Kilauea Avenue to Kaimuki Avenue and along 18th Avenue from Kaimuki Avenue to Pahoa Avenue; along 19th and 20th Avenues from Maunaloa Avenue to Pahoa Avenue - approx. 9,850 lin. ft.		SFY 2017	\$ 2,930,000
61	90	DW331-0061	#331 BWS Honolulu-Windward- Pearl Harbor	665,735	Hon BWS	Kalakaua Avenue Water System Improvements, Phase III: Install 16-inch mains and appurtenances along Kalakaua Avenue from Beretania Street to Kapiolani Boulevard - Approx. 3,200 LF.	Water Efficiency	SFY 2020	\$ 3,600,000
94	80	DW331-0073	#331 BWS Honolulu-Windward- Pearl Harbor	665,735	Hon BWS	Kalawahine 180 2.0 MG Reservoir: Install 2.0 MG reservoir and appurtenances (TMK: 2-3-043:082) and 23-inch main - approx. 6,000 lin. ft.		SFY 2017	\$ 8,000,000
82	80	DW332-0005	#332 BWS Waialua	13,067	Hon BWS	Kamehameha Highway - Haleiwa Water System Improvements, Part I & II: Part I: Install 8-inch mains and appurtenances along Kamehameha Highway from 625 feet northeast of FH C00049 to 10 feet northeast of FH C00041 and along Pohaku Loa Way from Kamehameha Highway to Kamehameha Highway - approx. 6,600 lin. ft. Install 8- inch and 4-inch mains and appurtenances along a private road (TMK: 6-1-012:040) from Kamehameha Highway to end of road across of FH C00501, along Punalau Place from Kamehameha Highway to end, along Ikuwai Place from Kamehameha Highway to end, along Ikuwai Way from Kamehameha Highway to end, and along various side streets - approx. 2,700 lin. ft. Install 2-inch mains along TMK 6-1-011:010, TMK 6-1-011:001, TMK 6-1-011:002, and TMK 6-1-011:015 - approx. 1,150 lin. ft. Part II: Install 12-inch main along Kamehameha Highway from Papailoa Road to approximately 300 feet northwest of Kawailoa Drive - approx. 2,400 lin. ft. Install 8-inch main along Kamehameha Highway from 16-inch main interconnection near FH C00059 to approximately 550 feet northeast of FH C00056 - approx. 4,900 lin. ft.		SFY 2018	\$ 11,900,000
77	80	DW366-0001	#366 BWS Waialeale- Sunset Beach	4,219	Hon BWS	Kamehameha Highway-Sunset Beach Water System Improvements: 16-inch Main, Pupukea Road to Waialeale, Part I: Install 16" mains & appurtenances along Kamehameha Highway from F.H. C-6 (300' north of Kaunala Street) to vicinity 600 feet south of Paumalu Stream (Sunset Beach 206 Reservoir Access Road) - approx. 5,300 lin. ft.		SFY 2014	\$ 3,500,000
97	80	DW331-0048	#331 BWS Honolulu-Windward- Pearl Harbor	665,735	Hon BWS	Kapahulu Water System Improvements, Part I: Install 8-inch mains and appurtenances along Palili Street, Mokihana Street, and Olu Street, along Kaimuki Avenue from 4th Avenue to Kapahulu Avenue; along Lincoln Avenue from 4th Avenue to Kapahulu Avenue; along Pahoa Avenue from 4th Avenue to 3rd Avenue; along 3rd Avenue from Kaimuki Avenue to H-1 and from H-1 to Waialae Avenue; along Belser Street from Kaimuki Avenue to H-1 and from H-1 to Harding Avenue; along 2nd Avenue from Lincoln Avenue to FH M-1349 and from H-1 to Waialae Avenue; and along Aloalo Place from Harding Avenue to end - approx. 8,400 lin. ft.		SFY 2015	\$ 4,000,000
100	80	DW331-0050	#331 BWS Honolulu-Windward- Pearl Harbor	665,735	Hon BWS	Liliha Water System Improvements, Part V: Install 8-inch mains and appurtenances along Liliha Street from Wyllie Street to end, along Puunui Avenue from Wyllie Street to Hawaii Street, along Kauai Street from Liliha Street to Puunui Avenue, along Lanai Street from Wyllie Street to Liliha Street and along Hawaii Street from Liliha Street to Puunui Avenue - approx. 5,600 lin.ft.		SFY 2015	\$ 2,600,000
106	80	DW331-0072	#331 BWS Honolulu-Windward- Pearl Harbor	665,735	Hon BWS	Luluku Road Water System Improvements: Install 12-inch and 6-inch mains and appurtenances along Luluku Road and Kamehameha Highway - approx. 1,800 lin. ft. Transfer service laterals along Apapane Street from Luluku Road to near FH W01009 - approx. 600 lin. ft.	Water Efficiency	SFY 2017	\$ 1,100,000

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63	90	DW331-0064	#331 BWS Honolulu-Windward- Pearl Harbor	665,735	Hon BWS	Manoa Estates Water System Improvements : Install 12-inch main and appurtenances along Waaloa Way from Waaloa Place to Manoa Chlorinator - approx. 1,630 LF. Install 8-inch mains and appurtenances along Manoa Estates Road from Pinoa Street to Waaloa Way - approx. 1,290 LF.	Water Efficiency	SFY 2017	\$ 1,310,000
104	80	DW331-0054	#331 BWS Honolulu-Windward- Pearl Harbor	665,735	Hon BWS	Monsarrat Avenue Water System Improvements : Install 16-inch and 8-inch mains and appurtenances along Monsarrat Avenue from Paki Avenue to Campbell Avenue - approx. 3,200 lin. ft.		SFY 2017	\$ 1,670,000
59	90	DW331-0065	#331 BWS Honolulu-Windward- Pearl Harbor	665,735	Hon BWS	Nimitz Highway 16-Inch Main : Install 16-inch mains and appurtenances along Nimitz Highway from Waiakamilo Road to Sumner Street and along Waiakamilo Road from Nimitz Highway to Hart Street - approx. 6,200 lin. ft.	Water Efficiency	TBD	\$ 6,100,000
101	80	DW331-0055	#331 BWS Honolulu-Windward- Pearl Harbor	665,735	Hon BWS	Pacific Heights Water System Improvements, Part II : Install 12-inch main and appurtenances along Pacific Heights Road from Haili Road to Ahekololo Street, along Ahekololo Street from Pacific Heights Road to Booth Road, along Booth Road from Ahekololo Street to Kekuanoni Street - approx. 4,800 lin. ft. Install 8-inch main and appurtenances along Laniloa Road from Pacific Heights Road to end, along Pacific Heights Place from Pacific Heights Road to end, along Hiolani Street from Booth Road to end and along various side streets - approx. 2,055 lin. ft.		SFY 2017	\$ 2,540,000
62	90	DW331-0066	#331 BWS Honolulu-Windward- Pearl Harbor	665,735	Hon BWS	Palolo Water System Improvements, Part III : Install 12-inch mains and appurtenances along Palolo Avenue from Kiwila Street to Palolo Place and along 10th Avenue from Palolo Place to Ahe Street - approx. 5,220 LF. Install 8-inch mains and appurtenances along Kaululoa Place from Palolo Avenue to end, along Palolo Avenue from Kauhana Street to Palolo Place, along 10th Avenue from Palolo Place to Ahe street, and along Makanui place from 10th Avenue to end - approx. 4,520 LF. Install 4-inch mains and appurtenances along Holomua Place from Makanui Place to end - approx. 365 LF.	Water Efficiency	SFY 2018	\$ 1,859,000
60	90	DW331-0069	#331 BWS Honolulu-Windward- Pearl Harbor	665,735	Hon BWS	Palolo Water System Improvements, Part IV : Install 16-inch mains and appurtenances along Pakui Street from 10th Avenue to Wilhelmina Rise 405 Reservoir, along 10th Avenue from Maluhia Avenue to Pakui Street, along Pukele Avenue from 7th Avenue to Maluhia Avenue, along 7th Avenue from Kaau Street to Pukele Avenue, along Kaau Street from Palolo Avenue to 7th Avenue and along Palolo Avenue from Kaau Street to Waialae Avenue - approx. 4,150 lin. ft. Install 12-inch mains and appurtenances along Kalua Road from Mahana Street to 10th Avenue - approx. 985 lin. ft. Install 8-inch mains and appurtenances along 9th Avenue from Paalea Street to Kiwili Street - approx. 2,410 lin. ft. Replacement of pipeline needed to reduce water main breaks and leaks.	Water Efficiency	SFY 2017	\$ 4,700,000
103	80	DW331-0056	#331 BWS Honolulu-Windward- Pearl Harbor	665,735	Hon BWS	Pensacola Street Water System Improvements : Install 12-inch main and appurtenances along Pensacola Street from Kapiolani Boulevard to Young Street - approx. 2,550 lin. ft. Install 8-inch main and appurtenances along Pensacola Street from Young Street to existing 8-inch main (TMK 2-4-033:028) - approx. 3,540 lin. ft. Install 8-inch and 4-inch mains and appurtenances along Piikoi Street from Pensacola Street to Lewalani Drive - approx. 430 lin. ft.		SFY 2015	\$ 2,050,000
91	80	DW335-0010	#335 BWS Waipahu-Ewa- Waianae	175,326	Hon BWS	Puhawai Road, Kuwale Road, Puuhulu Road Water System Improvements : Install 8-inch mains and appurtenances along Puhawai Road from Puuhulu Road to Paheehee Road, along Wikolia Place from Puhawai Road to end, along Puuhulu Road from Puhawai Road to Kuwale Road, along Kuwale Road from Puuhulu Road to Paheehee Road, along Haama Place from Puuhulu Road to end, along Puululu Place from Puuhulu Road to end, and along the side street from Kuwale Road to end – approx. 10,780 lin. ft.		SFY 2017	\$ 4,200,000
80	80	DW333-0002	#333 BWS Wahiawa	24,547	Hon BWS	Wahiawa Water System Improvements, Part I : Install 12-inch mains and appurtenances along California Avenue from Maalo Street to Mahele Street - approx. 2,100 lin. ft. Install 8-inch mains and appurtenances along California Avenue from Maalo Street to Auhili Place, Kaalalo Place, Lei Awapuhi Place, Lei Aloalo Place, Longley Place, Kukui Street, Olive Street from Kamehameha Highway to Cypress Avenue, Ohai Street, Ohai Place, Milikana Place, Koele Way, Kilani Avenue from Lehua Street to Holoku Place, Kamehameha Highway from California Avenue to Avocado Street, and along Nihiwai Place and Hiwi Place - approx. 15,950 lin. ft.		SFY 2017	\$ 7,060,000

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81	80	DW333-0003	#333 BWS Wahiawa	24,547	Hon BWS	Wahiawa Water System Improvements, Part III: Install 8-inch mains and appurtenances along Uluwehi Street from California Avenue to Walea Street, along Uluwehi Place from Walea Street to end, along Hoolulu Road from Uluwehi Street to Hoomaha Street, along Walea Street from Uluwehi Street to Walea Uka Place, along Hoomaha Street from California Avenue to Walea Street and along Walea Uka Place from Walea Street to end - approx. 4,720 lin. ft. Install 4-inch mains and appurtenances along the side street from Hoomaha Street to end - approx. 135 lin. ft.	Water Efficiency	SFY 2017	\$ 2,100,000	
93	80	DW331-0022	#331 BWS Honolulu-Windward- Pearl Harbor	665,735	Hon BWS	Waialae 180 3.0 MG Reservoir Replacement: Demolish existing 1.0 MG reservoir and construct 3.0 MG reservoir, influent- effluent main, retaining wall, rock slide barricade, access road improvements, landscaping, irrigation system and appurtenances at existing Waialae 180 Reservoir site (TMK: 3-5-020:011)		SFY 2020	\$ 12,000,000	
102	80	DW331-0070	#331 BWS Honolulu-Windward- Pearl Harbor	665,735	Hon BWS	Water Main Replacement at Various Streets: Install 8-inch mains and appurtenances along Miller Street from Magellan Street to Prospect Street, along Frear Street from Magellan Street to end, along 13th and 14th Avenue from Waialae Avenue to Mahina Avenue, along Iholena Street from Lolena Street to end, along Iholena Place from Iholena Street to end, along Mikahala Way from Sierra Drive to Sierra Drive, along Komaia Place from Komaia Drive to end, along Hema Place from Hao Street to end and along Oswald Street from Saint Louis Drive to Saint Louis Drive - approx. 5,145 lin. ft.	Water Efficiency	Nov-15	\$ 2,500,000	
96	80	DW331-0071	#331 BWS Honolulu-Windward- Pearl Harbor	665,735	Hon BWS	Wilhelmina Rise Water System Improvements, Part IV: Install 8-inch mains and appurtenances along Sierra Drive from Wilhelmina Rise to 125 feet east of FH M01653; along Nihipali Place from Sierra Drive to end; along Hilo Place, and Lilioe Place from Wilhelmina Rise to end; along Lanihale Place from Sierra Drive to end; along Mariposa Drive from Sierra Drive to Monterey Drive; along Paula Drive from Mariposa Drive to FH M02338; along Iwi Way from Paula Drive to end of existing water main; along Niele Place from Iwi Way to end; along Nioi Place from Niele Place to end; and along Pakahi place from Paula Drive to end - approx. 11,340 lin. ft. Install 4-inch mains and appurtenances along Palua Place from Paula Drive to end - approx. 170 lin. ft.	Water Efficiency	SFY 2015	\$ 6,000,000	
County of Kauai, Department of Water										
20	90	DW402-0001	#402 DOW Anini	156	Kauai DOW	ANI-01B; Anini-Kalihiwai-Kilauea (Phase 2) Pipeline: Replace approximately 10,000 feet of pipeline (Phase 2 section). The Department proposes to construct a new transmission waterline from its Kilauea-Waipake-Kalihiwai Water System to provide water supply to current DOW customers. The transmission route will be located along Kuhio Highway, Kalihiwai Road, crossing underneath Kalihiwai Stream, and Anini Road. In addition to supplying customers directly along the transmission route, the waterline will also reconnect to waterlines along Kalamania Road, Kaohe Road, and Kalihiwai Valley Road. The purpose of the project is two-fold. First, it will provide fire flow protection to several locations along the transmission route, which the current waterlines are not capable of doing. Second, it will replace the water supply to current DOW customers along Anini Road and Kalihiwai Valley Road, which is currently provided by another water purveyor (Princeville Utilities) through financial agreements with DOW, thereby providing greater system security by affording DOW complete control over the water system.	Water Efficiency	Oct-15	\$ 3,300,000	
21	90	DW403-0004	#403 DOW Hanalei	988	Kauai DOW	H-05: Weke, Anae & He'e Roads Water Main Replacements: Project involves replacing 3300 LF of 8-in and smaller diameter waterline along the subject roads, and installation of related appurtenances (i.e., valves, hydrants, service laterals, etc.). Existing pipe is beyond useful life (>50 yrs) and project will extend/enhance domestic service levels.	Water Efficiency	Jul-15	\$ 1,300,000	
74	80	DW403-0003	#403 DOW Hanalei	988	Kauai DOW	H-07, Replacement of Hanalei (Princeville) Tank: Demolish and construct a 150,000 gallon storage tank at Princeville, Hanalei.		Jun-16	\$ 1,500,000	
70	80	DW403-0002	#403 DOW Hanalei	988	Kauai DOW	H-08, (West) Hanalei Tank, Well #2 and Connecting Pipeline: Construct a 0.5 MG storage tank and drilling, testing and development of a 300 gpm potable water well with approximately 10,000 feet of pipeline and access road.		Jan-17	\$ 10,000,000	

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78	80	DW404-0006	#404 DOW Hanapepe-Eleele	4,457	Kauai DOW	HE-01, Hanapepe-Ele'ele Water System Interconnection: Project involves installing 3000 LF of 12-inch water main between Hanapepe and Ele'Ele distribution systems. Water main would be located along Kaunualii Highway between Hanapepe Road and Waialo Road. The project would provide water supply, transmission and storage sharing enhancements between the two service areas. The results could lower pumping expenses, improve water quality (residence time) and provide redundancy/safety.		Jan-16	\$ 3,500,000
79	80	DW404-0004	#404 DOW Hanapepe - Eleele	4,457	Kauai DOW	HE-03a, Hanapepe (Town) Well #1 Repair and Renovations: Replace submersible motor and pump assembly, replace control building, and motor control center; improvements to site drainage and repair access road.		Apr-16	\$ 350,000
28	90	DW404-0007	#404 DOW Hanapepe-Eleele	4,457	Kauai DOW	HE-03b, HE-03c: Hanapepe Wells A & B Enhancements: Project involves replacement/enhancement of the MCC and disinfection system. The existing, aging MCC will be replaced with newer, higher-efficiency equipment to reduce electrical expenses and improve operational flexibility. The existing disinfection system (chlorine gas) will be replaced with a sodium-hypochlorite feed system and 30-day on-site supply. This conversion will reduce disinfection maintenance expenses (labor, etc.).	Energy Efficiency	Oct-16	\$ 500,000
29	90	DW404-0005	#404 DOW Hanapepe-Eleele	4,457	Kauai DOW	HE-14: Ele' Ele Booster Rehabilitation: Project involves rehabilitation of the subject booster station. Specific tasks include pump and other electrical/mechanical appurtenance replacements, as well as system reconfiguration. The existing pumps and related operational equipment have exceeded their useful service, which requires DOW labor and other expenditures in excess of typical daily/weekly maintenance. Project will increase the operational efficiency of the station while reducing the current maintenance levels.	Energy Efficiency	Oct-15	\$ 350,000
73	80	DW415-0004	#415 DOW Haena-Wainiha	1,010	Kauai DOW	HW-11, Haena 0.2 MG 144' Tank and Connecting Pipeline: Construct a two hundred thousand gallon storage tank and approximately 5,000 feet of connecting pipeline and access road at Haena.		Jun-16	\$ 2,000,000
71	80	DW415-0005	#415 DOW Haena-Wainiha	1,010	Kauai DOW	HW-12, Wainiha Well #4: Drill, test, and develop Wainiha Well #4 (100 gpm).		Jan-16	\$ 3,000,000
75	80	DW415-0003	#415 DOW Haena-Wainiha	1,010	Kauai DOW	HW-13; Wainiha 0.01 MG 217' Tank and Connecting Pipeline: Construct a 10,000 gallon storage tank and approximately 5000 feet of connecting pipeline at Wainiha.		Jun-17	\$ 1,500,000
83	80	DW434-0002	#434 DOW Kalaheo	13,581	Kauai DOW	K-01; Kalaheo 1111' & 2222' Water System Improvements: Planned improvements include replacing two existing water tanks, and constructing a new production well, new transmission main, booster pump upgrade, relocation of existing pressure reducing valve stations, and modifying a booster pump station affected by the upgrades. These improvements are needed to adequately serve the current and future Kalāheo-Lāwa'i-'Ōma'o water service area. Two existing tanks, Nursery and Clearwell, will each be replaced with a new 0.5-MG water tank. The Nursery Tank replacement will be located on a nearby property acquired from the Yamada family and will be identified as the Yamada Tank. The new Clearwell Tank replacement will be located near the existing Clearwell. Along with the new tank, a production well and booster pump station will be constructed on the Yamada site. At the existing 908 Tank site, modifications will be made to the existing booster pump station and new transmission main will be constructed along Po'ohiwi Road and Pu'uwai Road to the Yamada Tank site. There are also planned improvements for extending the transmission main in Kikala Road. Modifications to existing and proposed pressure reducing valve stations are also planned within Pu'uwai Road and Kikala Road.		Apr-16	\$ 15,000,000
41	90	DW434-0009	#434 DOW Kalaheo	13,581	Kauai DOW	K-05A: Kukuiohono 866/ 0.5-MG Tank: Project involves demolition of an existing tank and erection of a new 0.5-MG tank. The existing 0.2-MG concrete tank has been taken out of service due to condition (>70 yrs) and warranted repairs. Water storage needs are currently met with management of other system tanks; however, the proposed 0.5-MG tank will not only replenish the previous storage volume, but also meet the future demands of the service area. The project also involves erecting the new tank next to another existing tank, as to consolidate operations and improve efficiency.		Apr-16	\$ 3,500,000
10	115	DW434-0006	#434 DOW Kalaheo	15,108	Kauai DOW	K-17; Kalaheo Water Treatment Plant: Renew the Kalaheo gravity water source utilizing surface water from Alexander Dam reservoir. This project will bring the source into compliance with the Safe Drinking Water Act for treated surface water. Estimates show that the Department can offset approximately 500,000 kWh/year in pumping costs by taking advantage of the high level gravity source and utilizing membrane technology.	Energy Efficiency (Categorical)	Jan-17	\$ 4,500,000

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44	90	DW434-0008	#434 DOW Kalaheo	15,108	Kauai DOW	K-18; 8-Inch Water Main Replacement Along Halewili Road: The Department currently has a water line easement through a residential lot. This water line is in very poor condition and recently required a major repair. It is the intent of this project to eliminate this line through the residential property, provide additional/ adequate flow to the service area, and relocate the water line to the public ROW. Replace ~1650 LF of pipe.	Water Efficiency	Jun-15	\$ 800,000
85	80	DW434-0012	#434 DOW Kalaheo	13,581	Kauai DOW	K-2, Rehabilitate Jelly Factory Booster Pump Station (2-250 gpm): Project involves the rehabilitation and upgrading of existing booster pump. The Kalaheo jelly factory booster pump station serves as an interconnection between Kalaheo and Lawai-Omao System. In order to transfer water from Lawai-Omao System to Kalaheo System with the flow rate of at least 400 gpm, the existing booster pump station will require rehabilitation and upgrading. Specific tasks include pump, electrical and mechanical appurtenance replacement as well as system reconfiguration.		Aug-16	\$ 350,000
84	80	DW434-0005	#434 DOW Kalaheo	13,581	Kauai DOW	KP-05, Poipu 1.0 MG 245' Tank and Connecting Pipeline: Construct a one million gallon storage tank at Poipu.		Jan-17	\$ 4,000,000
43	90	DW434-0010	#434 DOW Kalaheo	13,581	Kauai DOW	KP-09: Koloa Wells 16A & 16B Well, Site and Building Enhancements: Project involves replacement/ enhancement of critical equipment and structures at Koloa Wells 16A & 16B. The existing control building at 16B will be demolished and a new building erected. Both 16A & 16B control buildings will receive new motor control centers (MCC), disinfection systems and related operational equipment. Well 16B will receive new pump and modified discharge piping. The project tasks will remove dilapidated, high-maintenance equipment and replaced with new, higher-efficiency counterparts.	Energy Efficiency	Oct-15	\$ 1,400,000
26	90	DW406-0009	#406 DOW Kekaha-Waimea	5,392	Kauai DOW	KW-07, Paua Valley Tank No. 1 Water Loss Abatement: Project involves abating water loss in Puau Valley Tank No. 1. This concrete tank has exhibited leaks along the wall/floor joint. Project tasks include draining the tank, sealing/ repairing the leak points and applying a new interior liner to extend tank service life.	Water Efficiency	Jun-16	\$ 500,000
76	80	DW406-0008	#406 DOW Kekaha-Waimea	5,392	Kauai DOW	KW-28: Kekaha-AMFAC Shaft 11 Renovations: Project involves renovating AMFAC Shaft 11 as an additional water source for the Kekaha-Waimea water system. The DOW's WaterPlan 2020 identified the need for an additional water supply in this service area, therefore implementing this project will address this issue. Project tasks include deployment of pump, control building, electrical/mechanical systems, disinfection and construction of site/access improvements.		Jan-17	\$ 4,000,000
46	90	DW434-0011	#434 DOW Kalaheo	13,581	Kauai DOW	Lawai Well No. 22 Enhancements: Project involves replacement/ enhancement of the MCC. The existing, aging MCC will be replaced with newer, higher-efficiency equipment to reduce electrical expenses and improve operational flexibility.	Energy Efficiency	May-16	\$ 200,000
42	90	DW434-0004	#434 DOW Kalaheo	13,581	Kauai DOW	LO-08, LO-10; Lawai Water Main Replacements: Replace approximately 8100 feet of 6- and 8-in water main along Koloa Rd and other streets.	Water Efficiency	Oct-15	\$ 1,400,000
45	90	DW434-0007	#434 DOW Kalaheo	13,581	Kauai DOW	LO-19; Omao Tank Micro-Turbine: The Department currently drops approximately 1 MGD of potable water from the Lawai-Omao-Piwai 677' Water System down to the 366' Koloa Water System. A bank of control valves at the Omao Tank site are used to dissipate and effecuate the energy loss. This project consists of replacing one of the existing control valves with a new parallel hydro turbine, appurtenant controls and installation of electrical transmission lines. A hydro turbine at the Omao Tank/Reservoir has the potential to generate approximately 47 kW of power and total annual power generation of approximately \$0.02/kWh. This equates to revenue in the range of \$40,000 per year by selling power to the Kauai Island Cooperative, the island electric utility.	Energy Efficiency (Categorical)	Oct-16	\$ 650,000
27	80	KDOW-0002	KDOW	70,000	Kauai DOW	M-02: Moloaa 50k Gal Tank: Project involves the demolition of the existing 5000 gal tank and erection of a new 50,000 gal tank. The storage needs of the DOW's Moloaa water system is deficient for both current and future demands (WaterPlan 2020). The installation of the new storage tank and related system controls will address storage needs and improve overall water system efficiency and safety.		Oct-16	\$ 1,000,000
89	90	DW406-0010	#406 DOW Kekaha-Waimea	5,392	Kauai DOW	Paua Valley Well Enhancements: Project involves replacement/ enhancement of the MCC and pump/motor. The existing, aging MCC will be replaced with newer, higher-efficiency equipment to reduce electrical expenses and improve operational flexibility. The existing oil-lubrication type pump/motor will be exchanged for one of water-lubrication type. The alemnative equipment will reduce maintenance costs and improve safety.	Energy Efficiency	Oct-16	\$ 300,000

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4	80	DW400-0012	#400 DOW Lihue-Kapaa	27,055	Kauai DOW	PLH-01A: Grove Farms Tanks No. 1 & 2 Replacement: Project involves demolition of two existing water tanks and erection of a new 0.5-MG tank. The existing tanks (2 @ 0.1-MG) are constructed of concrete masonry units (CMU) and wood/metal roof, and is approximately >50 years old. Due to the tank condition, and to improve site access in conjunction with adjoining private development, a single 0.5-MG conc tank will be constructed.		Oct-15	\$ 2,000,000
48	140	DW412-0003	#400 DOW Lihue-Kapaa	27,055	Kauai DOW	PLH-02, PLH-42: Kokolau Tunnel Water Treatment Plant Construction and Pipeline Replacement: The Department plans to renew the Kokolau Tunnel gravity water source. The tunnel was previously used as a drinking water source until it was determined to be under the influence of surface water and is currently off-line. The project consists of constructing a new membrane type treatment plant at the existing Grove Farm Tank Site and replacing a segment of leaky concrete pipeline in between the tunnel and the proposed WTP. This project will bring this water source into compliance with the Safe Drinking Water Act for groundwater sources under the influence of surface water. Furthermore, our estimates show that we can offset approximately 300,000 kWh/year in pumping costs by taking advantage of the high level gravity source and utilizing membrane type treatment technology.	Water Efficiency	Jan-17	\$ 5,000,000
49	90	DW400-0004	#400 DOW Lihue-Kapaa	27,055	Kauai DOW	PLH-03; Kahili Horizontal Directional Drilled Well: This project is for the purpose of reducing power costs by developing water that doesn't need electricity to produce potable water. The scope of the project is to drill horizontally into the Ridge on the south side of Iole Stream to develop dike water. This water would come out at the 1100 to 1200 foot elevation with a pressure of up to 1200psi. This pressure would be monitored so the supply is taken at a sustainable rate of an expected 2-5 million gallons per day rate, which would replace existing sources. Eliminating existing source has the potential of reducing the power cost for DOW by 20-40% or about \$0.6-\$1.2 million per year. At this location in the forest reserve there is high expectation of the water having no chemical contaminants or VOCs. Length of the hole would be about 9000 feet and would be 18 inch in diameter if the maximum amount of water is developed. A transmission line to bring the water to the Lihue system would need to travel about 6 miles. Cost would depend on flow rate. <i>(Binding commitment executed)</i>	Energy Efficiency (Categorical)	Jan-20	\$ 60,000,000
90	90	DW400-0003	#400 DOW Lihue-Kapaa	27,055	Kauai DOW	PLH-26, Isenberg Camp Main Replacements: Replace approximately 12,500 feet of pipeline along Fujii, Inouye, Hiraoka, Jerves, Nakamura, Kanakolu, Eha, Eono, Elima, Ekolu Streets, Maalo, Noi, Laukini Roads, Lihue.	Water Efficiency	Jan-18	\$ 7,000,000
86	80	DW400-0013	#400 DOW Lihue-Kapaa	27,055	Kauai DOW	PLH-27, Kuhio Hwy (Hardy - Oxford) 16" Main Replacement (1,680): Project involves replacing 1,680 LF of 16-inch A.C. and smaller diameter waterline and appurtenances along Kuhio Hwy between Hardy St. and Oxford Road. The existing pipe is beyond useful life (>50 yrs).	Water Efficiency	Jan-17	\$ 1,200,000
88	80	DW400-0010	#400 DOW Lihue-Kapaa	27,055	Kauai DOW	PLH-36; Expansion to Grove Farm's Surface Water Treatment Plant at Hanamaulu: Expand the Grove Farm surface water treatment plant by three million gallons per day.		Jan-18	\$ 10,000,000
52	80	DW400-0005	#400 DOW Lihue-Kapaa	27,055	Kauai DOW	PLH-38; Lihue 393' Tank and Connecting Pipeline: Construct a one million gallon storage tank with approximately 500 feet of pipeline and access road.		Jan-18	\$ 7,000,000
3	90	DW400-0009	#400 DOW Lihue-Kapaa	27,055	Kauai DOW	WK-01; Rehabilitate Moelepe Tunnel and Access Road: The Department is currently using Moelepe Tunnel as a source of high level groundwater. The tunnel access road, chlorination station, source tunnel entrance, etc. are in need of rehabilitation. This project helps ensure the source meets all of the requirements of the Safe Drinking Water Act. The Department saves approximately 400,000 kWh/year in pumping costs by taking advantage of this high level water source.		Jun-16	\$ 900,000
87	140	DW413-0003	#400 DOW Lihue-Kapaa	27,055	Kauai DOW	WK-02; Akulikuli Tunnel Repairs, Water Treatment Plant Construction and Pipeline Replacement: The Department plans to renew the Akuikuli Tunnel gravity water source. The tunnel was used as a drinking water source until it was determined to be under the influence of surface water and is currently off-line. The project consists of repairing tunnel portals, constructing a new membrane type treatment plant at the existing Ornellas Tank Site and pipeline replacement between the tunnel and proposed WTP. This project will bring this water source into compliance with the Safe Drinking Water Act for groundwater sources under the influence of surface water. Furthermore, our estimates show that we can offset approximately 450,000 kWh/year in pumping costs by taking advantage of the high level gravity source and utilizing membrane type treatment technology.		Jun-17	\$ 5,500,000

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51	80	DW400-0008	#400 DOW Lihue-Kapaa	27,055	Kauai DOW	WK-10 & WK-21; (Upper) Wailua Homesteads 1.0 MG 538' Tank, Well and Connecting Pipeline: Construct a one million gallon storage tank and drilling, testing and development of a 500 gpm potable water well with approximately 5000 feet of pipeline and access road for the upper Wailua Homesteads community.		Jan-18	\$ 9,500,000
50	90	DW400-0007	#400 DOW Lihue-Kapaa	27,055	Kauai DOW	WK-11; Upper Wailua Houselots Booster Pump Station and Pipeline Replacements: Construct a 200 gpm booster pump station and the replacement of approximately 3500 feet of pipeline for the upper Wailua Houselots community.	Water Efficiency	Jan-18	\$ 2,500,000
72	90	DW400-0006	#400 DOW Lihue-Kapaa	27,055	Kauai DOW	WK-33; Kahuna Road 12" Main Replacement, Kapaa Homesteads: Replace approximately 9500 feet of 12" pipeline along Kahuna Road for the Kapaa Homesteads community.	Water Efficiency	Jan-18	\$ 6,000,000
107	80	DW407-0002	#407 DOW Kilauea	2,803	Kauai DOW	WKK-15: Kilauea-Pu'u Pane 466/ 1.0-MG Tank: Project involves the demolition of the existing 0.1-MG tank and erection of a new 1.0-MG tank. The storage needs of the Kilauea-Waiipake-Kalihiwai water system, 466 Pressure Zone, is deficient for both current and future demands (WaterPlan 2020). The installation of the new storage tank and related system controls will address storage needs and improve overall water system efficiency and safety.		Oct-15	\$ 2,500,000