

WAIIAHI HYDRO UPDATE

Wailua-Kapaa Neighborhood Association

February 23, 2019



Overview

- Current conditions
- Background/history
- Compliance activities
- Why are the hydros important to Kauai?



Stream Flow – Downstream to Upstream



Stream Flow – Diversion to Downstream



Stream Flow – Sluice Gate Release



Stream Flow Gauging

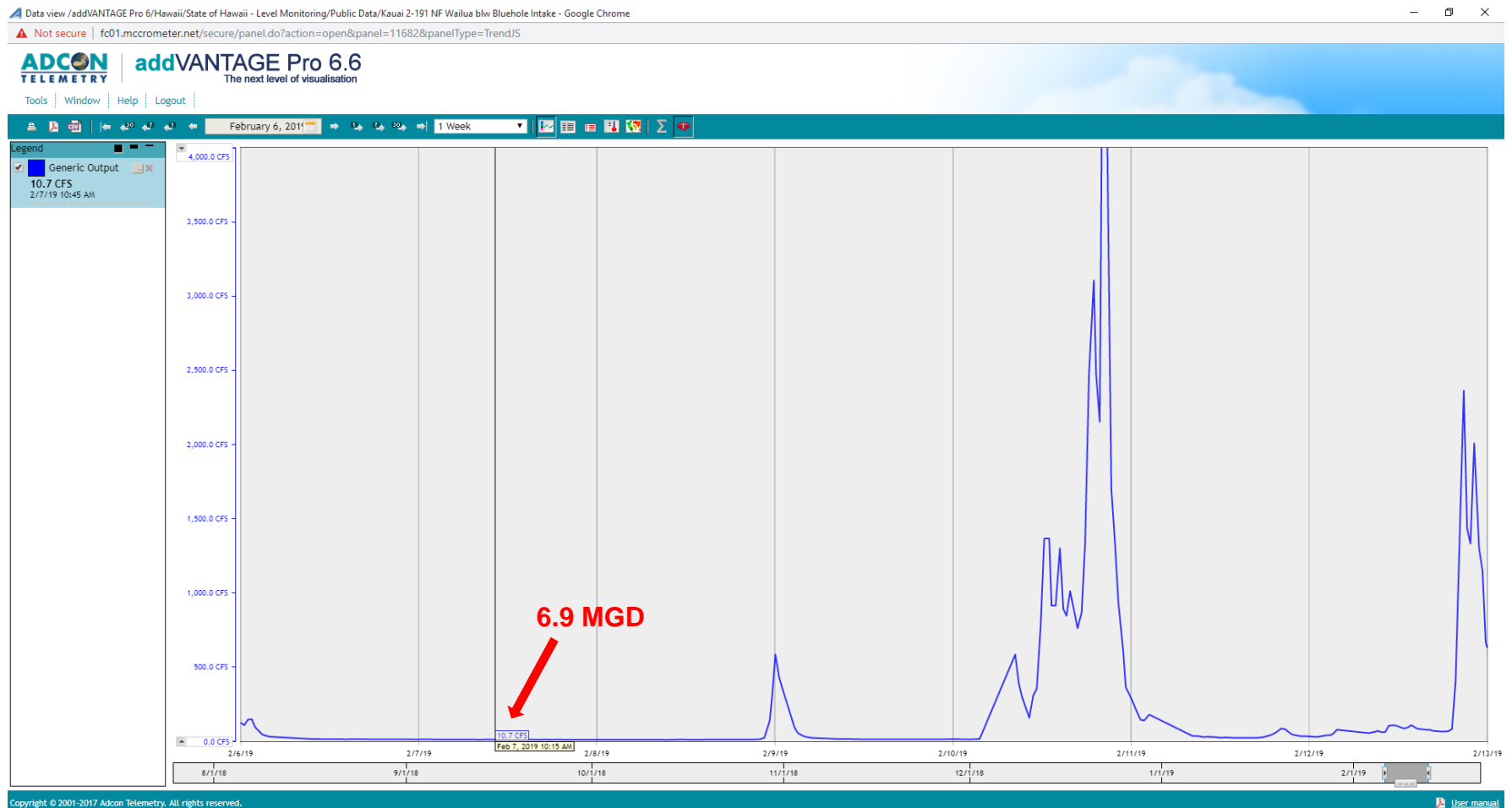
New CWRM gauge downstream of North Fork diversion

- *Period of record from July 2018 to present*
- *Measures flow in stream approximately 500 yards downstream of North Fork diversion*

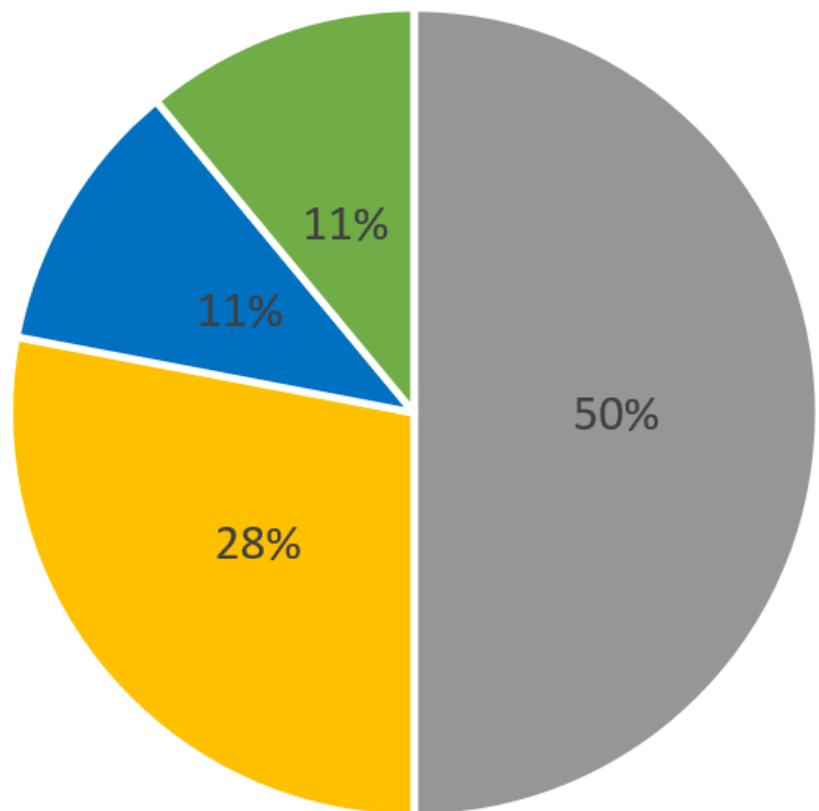
*Shows water in the stream every day
during period of record*

<http://fc01.mccrometer.net/secure/explorer.do?panel=8a0018df671e6f430167762be3612ec3>

Stream Flow Gauging: Feb. 6-13, 2019

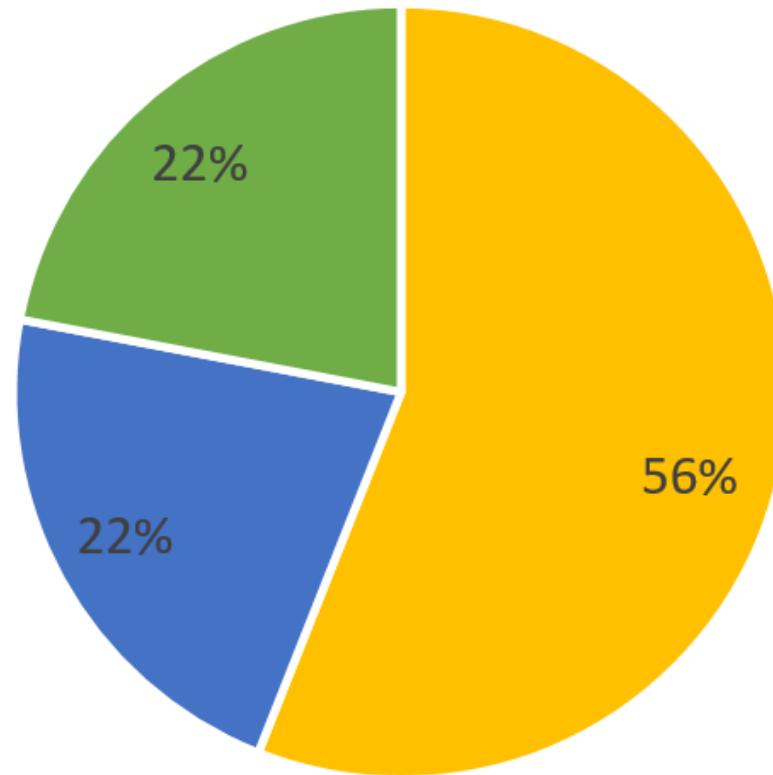


KIUC Fuel Mix - 2019



■ Diesel ■ Solar ■ Hydro ■ Biomass

KIUC Renewable Portfolio - 2019



■ Solar ■ Hydro ■ Biomass

Hydropower on Kauai

- Eight hydro facilities on Kauai
- Produce 11 percent of Kauai's electricity
- Reduces diesel use by 4.3 million gallons annually
- Enough power generated to serve 10,000 homes



Waiahi Hydros

- KIUC uses the water to generate renewable electricity for the benefit of its member-owners
 - *Produces up to 1.5 megawatts*
 - *Lowest cost generation source*
 - *Contributes to State mandate: 100 percent renewable by 2045*
 - *Displaces 675,000 gallons of diesel annually*
 - *Saves \$1.75 million annually versus price of diesel fueled generation*

Upper Waiahi has been upgraded and modernized to achieve maximum efficiency

History of System Operation and Permitting

- 1920's - Built by Lihue Plantation Company
 - Provide irrigation water for fields along South Fork Wailua
 - Produce energy
- 1965 - First lease issued by the State to East Kauai Water Company (*30 year term*)
- 1995 – Lease is replaced with Revocable Permit (RP)
- 2000 – Lihue Plantation closes, Kauai Electric applies for RP
- 2003 – RP is assigned to KIUC

History of System Operation and Permitting

- 2004 – KIUC applies for long-term lease/OHA files for contested case
- 2006 - KIUC and OHA sign MOA
 - *Stream Biota Study*
 - *Cultural Impact Study*
- 2012 - OHA withdraws contested case
- 2016 - State passes law to allow three additional RP holdovers
- 2019 – KIUC anticipates filing lease application
 - *Pending outstanding process issues to be resolved by DLNR*
 - *Subject to IIFS standards by CWRM*

Studies Conducted by KIUC and Others

- Cultural Impact Assessment
 - *Cultural Study – completed 2010*
 - *Original consultant unable to complete work, new consultant engaged in 2017*
 - *Additional outreach and field trips conducted in 2018*
 - *Draft final impact study under review*
- Stream Biota Studies completed – 2008, 2018 with additional scope
- Stream Habitat Assessments completed –2013, 2018 with additional scope
- Socio-Economic Survey - July and August 2018
- USFWS - Critical habitat designation upstream of diversion
 - *March 2018 USFWS survey and updated report*
 - *No Newcomb's snails found at or in the vicinity of the Blue Hole diversion*

Chapter 343 Environmental Compliance

- Meetings held with regulatory agencies in January and June 2018 to consult on environmental compliance
 - *Included Land Division, CWRM, DHHL, OCCL, DOFAW, USFWS, OHA*
- KIUC is preparing an environmental assessment (EA) in compliance with Chapter 343 requirements for the long-term lease
 - *Completed studies will form basis of EA*
 - *KIUC to file EA with DLNR Land Division*
 - *EA will be posted by DLNR for public comment*
- KIUC's lease application will be filed after environmental compliance is complete

Complexity of Lease Process

“The Department acknowledges the need for additional time to convert existing water revocable permits to long term leases. As the State’s public trust obligations are integral in the management of its water resources, the water leasing process is appropriately complex and time consuming, requiring oversight and approvals from several state agencies. Within the Department, staff from the Land Division, the Division of Forestry and Wildlife, and the Commission on Water Resource Management are working in collaboration with the Department of the Attorney General and the Department of Hawaiian Home Lands to establish and implement a water leasing process that is fair, transparent, compliant with statutory requirements and consistent with the public trust. Additionally, the permittees are working with the agencies to obtain long term leases.”

*DLNR testimony on HB1326, Proposed HD2
February 20, 2019*

2017 Holdover Approval - BLNR Amendments*

1. Within one year, KIUC will provide the Board with a proposal for the partial restoration of flow to the Wailua River (which could be satisfied by the adoption of interim instream flow standards). *Completed Spring of 2018*
2. Direct DLNR staff to work with landowners on what is expected for the watershed management plan. *Continuous collaboration with DOFAW*
3. KIUC shall consult with DHHL and honor DHHL's reservation rights of water under the law. *Completed Spring of 2018. CWRM has approved DHHL water reservations*

* Taken from December 2017 meeting minutes

Ditch Intake Restriction at North Fork & Waikoko



Stream Restoration at North Fork



Stream Restoration at Waikoko



Stream Restoration at Waikoko



2018 Holdover Approval with Reduced Diversion*

“Based on the proposed amended IIFS developed by CWRM staff, the available amounts that could be diverted at median stream flow would be 8 MGD from the Wai'ale'ale stream and 1.6 MGD from the Waikoko stream. At times of higher stream flow more water could be diverted provided that a sufficient amount of water, as determined by the proposed amended IIFS, remains in the streams.”

CWRM staff recommended amended IIFS calls for 4 MGD to remain in stream at North Fork and .8 MGD at Waikoko at all times

** Taken from December 2018 staff submittal*

2018 Holdover Approval - BLNR Condition*

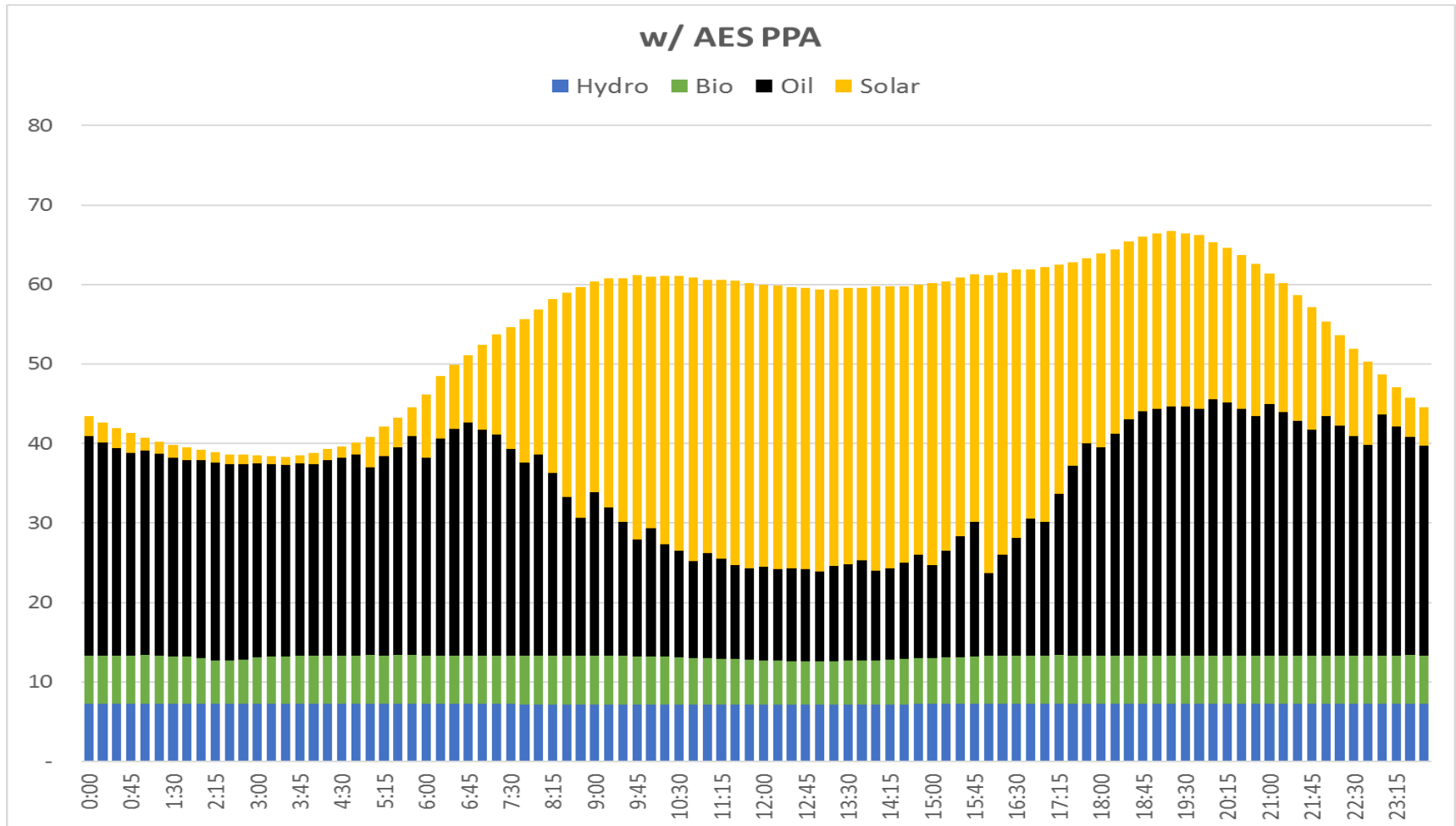
“KIUC is to invite Earthjustice, Kia’i Wai O Wai’ale’ale, Sierra Club, Grove Farm, and the Department of Hawaiian Homelands (together, the “Working Group”), to participate in a facilitated discussion regarding their respective positions on KIUC’s request to use State water for its hydroelectricity plants in the permit area, as well as any other relevant matters they choose to discuss. The Working Group may invite other individuals or organizations to participate in the discussion. KIUC shall report back to the Board on the progress of the discussions in three months.”

** Taken from December 2018 draft meeting minutes*

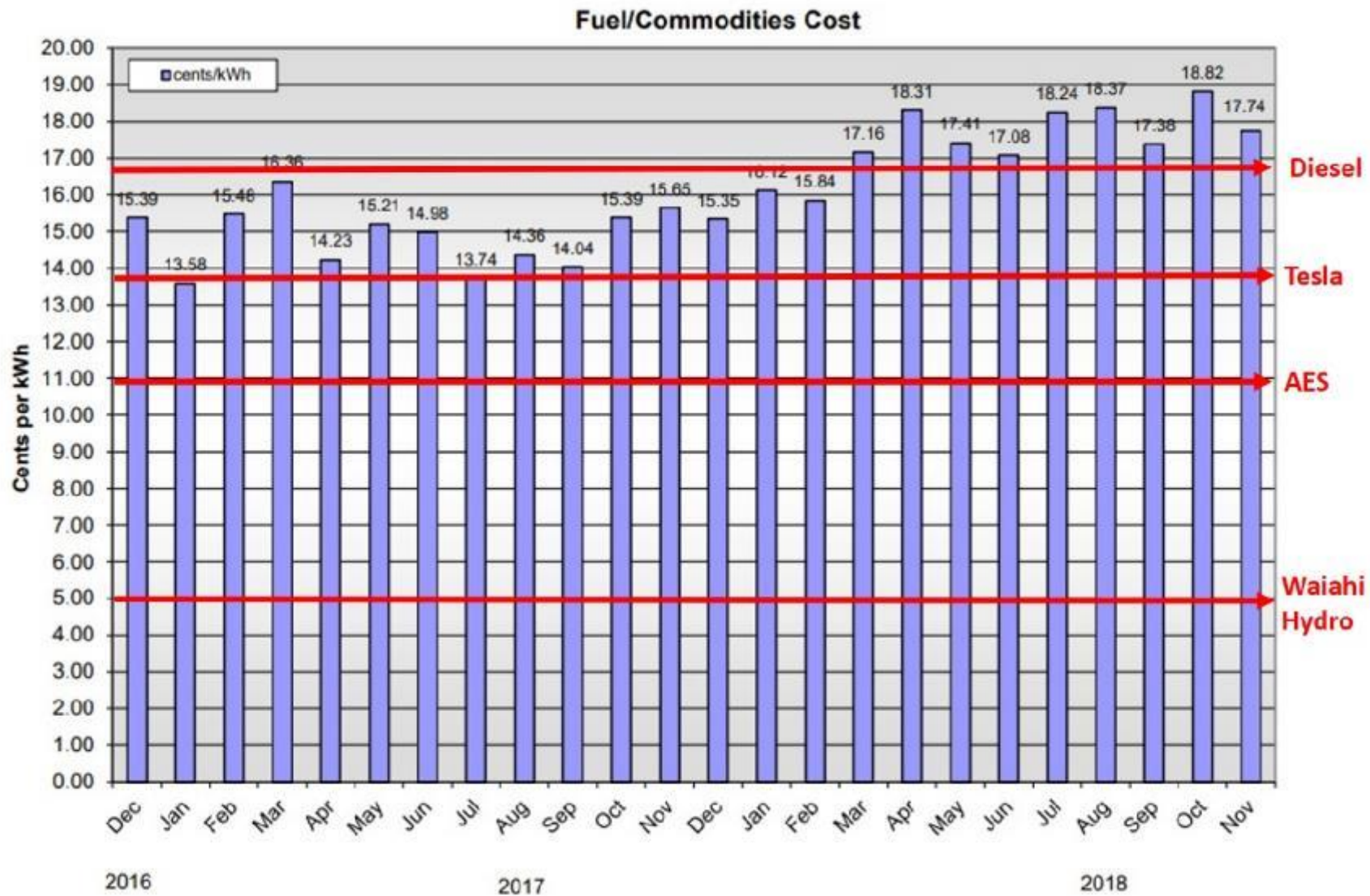
Why These Hydros are Important to Kauai

- Hydro is an important all-hours renewable generation source that can't be replaced by solar
- Clean climate benefits of hydro
 - *Water returned to Waiahi Stream after hydro generation*
 - *Less diesel consumption contributes to improved air quality*
- Hydro has been deemed a beneficial off stream use by the State
 - *State Water Code, Chapter 174C, §174C-2 (c)*
 - *Waimea River Mediation Agreement*

2019 Projected Dispatch



Critical Downward Pressure on KIUC Rates



Beneficial Downstream Uses

Supplements natural stream flow and supports important downstream uses of the water

- Agriculture and ranching
 - *75 tenants on 10,000 acres*
- Drinking water
- Ecotourism/recreation
- Aquifer recharge
- DHHL lands



Impact to Downstream Uses

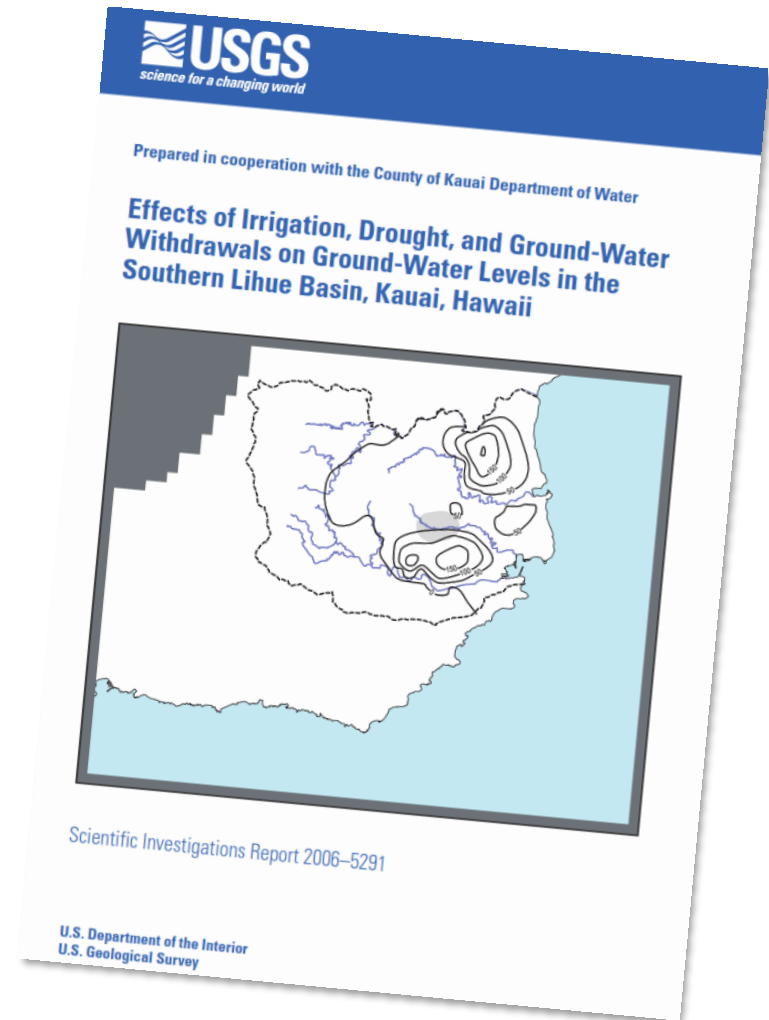
Testimony of East Kauai Water Users Cooperative to BLNR
December 14, 2018

“The present deliberations regarding the KIUC water license must take into account the continued supply of water to the State ADC Kalepa lands. A failure to do so will not only leave hundreds of acres of prime ag land without irrigation potential, but likely make impossible the conveyance of water to the DHHL lands at the end of the existing system.”

Jerry Ornellas, President

Aquifer Recharge

“The observed decline in ground-water levels in the Lihue Basin was approximately concurrent with events that could have affected ground-water recharge, including a drought from 1998 to 2002 and a decrease in the volume of water diverted from surface-water sources for irrigation between 1981 and 2000. Analysis of the water budget of the Lihue Basin indicates that both events caused a substantial reduction in ground-water recharge (Izuka and others, 2005).”



“Results of this study indicate that irrigation reduction was the primary cause of the observed decline in ground-water levels.”

Ecological benefits

- Diversion acts as barrier for further migration of invasive species (e.g. small mouth bass)

James E. Parham, Ph.D.



Ecological benefits

- Ditch has become effective habitat for 'Opae kala'ole

James E. Parham, Ph.D.



Important Takeaways

- KIUC understands that preservation of our natural resources is critical and balance between uses is necessary
- Mauka to makai stream flow has been restored and the river ecosystem is healthy
- Revocable permits come with conditions, and KIUC has complied
- Continued use of the hydros benefits all of Kauai

Questions?

