APT Committee

From: Matt Rosener <laminarmatt@gmail.com>
Sent: Tuesday, March 16, 2021 10:09 AM
To: APT Committee
Subject: Please see attached
Attachments: NSH Maui Water Delivery System Assessment Slides.pdf

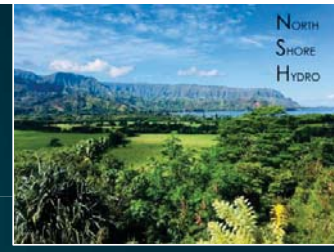
Slides attached for today's APT committee meeting.

Mahalo,

matt

Matt Rosener
Hydrologist / Water Resources Engineer
Port Angeles, WA / Hanalei, HI

Assessment of Maui Water Delivery Systems



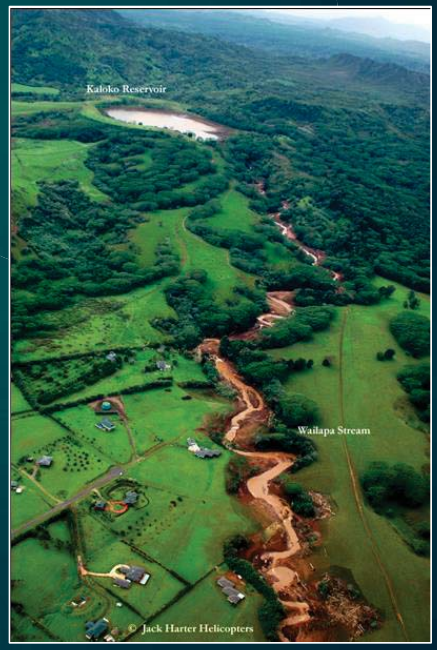
MATT ROSENER, PE, HYDROLOGIST/WATER RESOURCE ENGINEER

NORTH SHORE HYDROLOGICAL SERVICES, HANALEI, KAUA'I

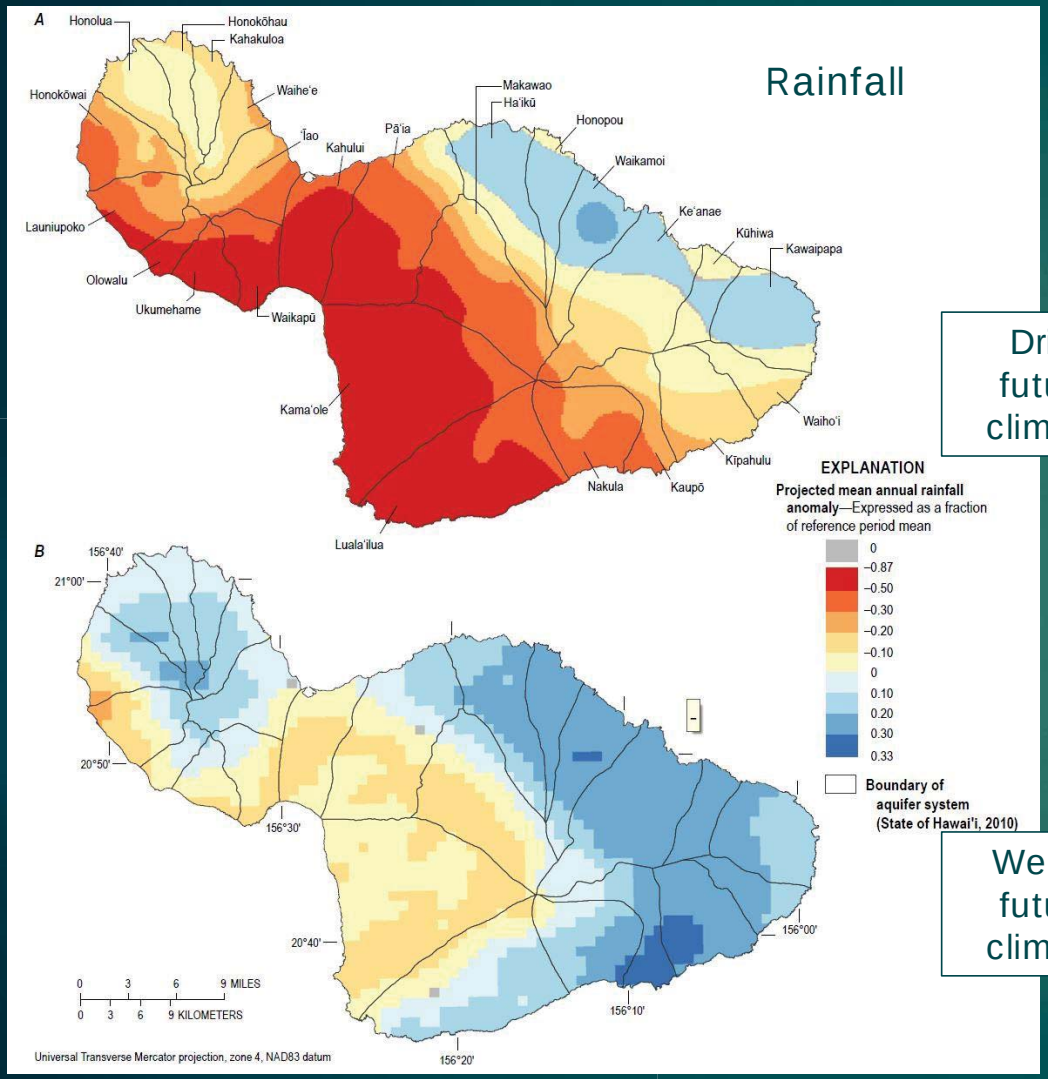
Water Diversion & Delivery Systems: Assets vs. Liabilities

- Sugar era “ditch” systems are important community assets

- These systems can also be liabilities due to potential impacts to:
  - Human safety
  - Infrastructure, property
  - Ecosystems and environmental health

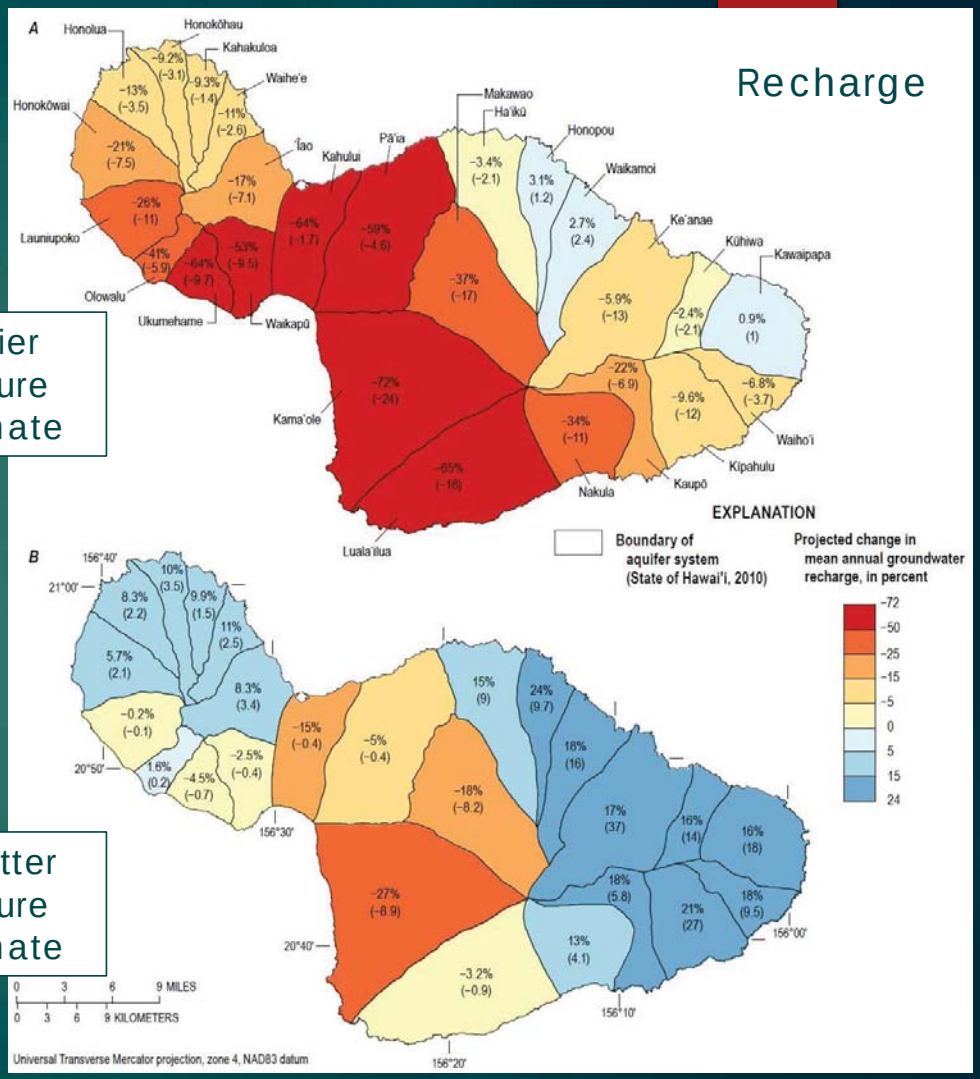


- Assessment is critically-important to understand capabilities and limitations of existing systems



Drier future climate

Wetter future climate



HAWAII NEWS

Tens of thousands of Hawaii residents live in areas vulnerable to dam failure

By Timothy Hurley · Today · *Updated 10:53 am*

BRYAN BERKOWITZ / SPECIAL TO THE STAR-ADVERTISER

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Water crests dam, destroys bridge and damages homes

Residents downstream forced to evacuate, others trapped by flooded roads

LOCAL NEWS

MAR 9, 2021

LILA FUJIMOTO AND KEHAULANI CERIZO

Staff Writers

lfujimoto@mauinews.com, kcerizo@mauinews.com

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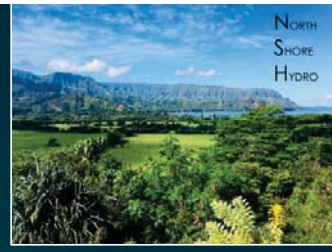
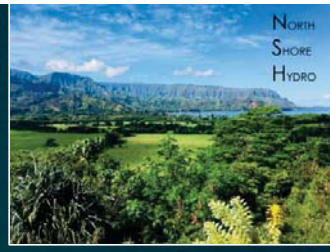
Swift-moving floodwater sweeps over Hana Highway near West Kuiaha Road on Monday afternoon, cutting off passage in several directions and forcing some residents to find shelter for the evening. The Maui News / KEHAULANI CERIZO photo

Much of the sugar era ditch infrastructure was built before downstream development so risk and hazard levels should be reassessed periodically



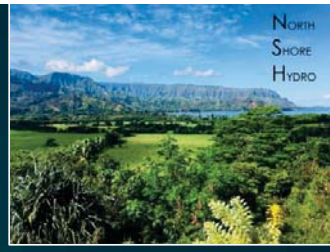
Hanalei Hill Landslide 3/11/21

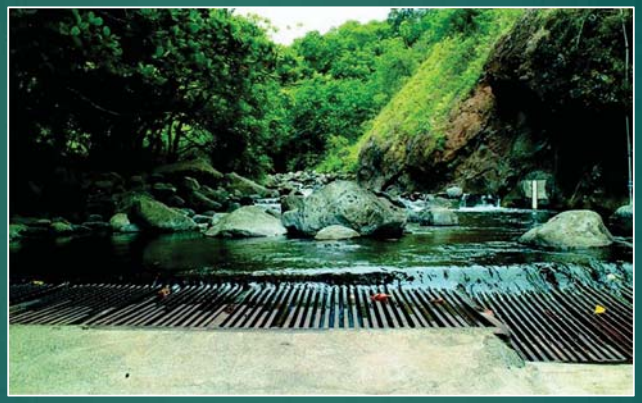
Abandoned irrigation tunnel likely contributed to slope failure



Engineering/Environmental Assessment Includes:

- Describe existing infrastructure conditions (ditch, tunnels, flumes, etc.)
  - Requires physical inspection, flow measurements for seepage losses
- Identify safety concerns
- Evaluate stream ecosystem impacts for existing conditions
  - Impacts to streamflow/habitat, barriers to fish passage
- Analyze system capacity, accounting for In-stream Flow Standards, losses, etc.
- Identify opportunities for efficiency improvements, using new technologies
- Cost estimation for:
  - Repairs needed for water diversion & transmission
  - Modifications needed for impact mitigation (IIFS, fish passage barriers)
  - System O&M including monitoring
- Community Engagement





DITCHES
TUNNELS
FLUMES
DIVERSION DAMS
INTAKES & CONTROLS
MONITORING STATIONS
STORAGE DAMS/RESERVOIRS
ACCESS ROADS
ETC.


MAHALO