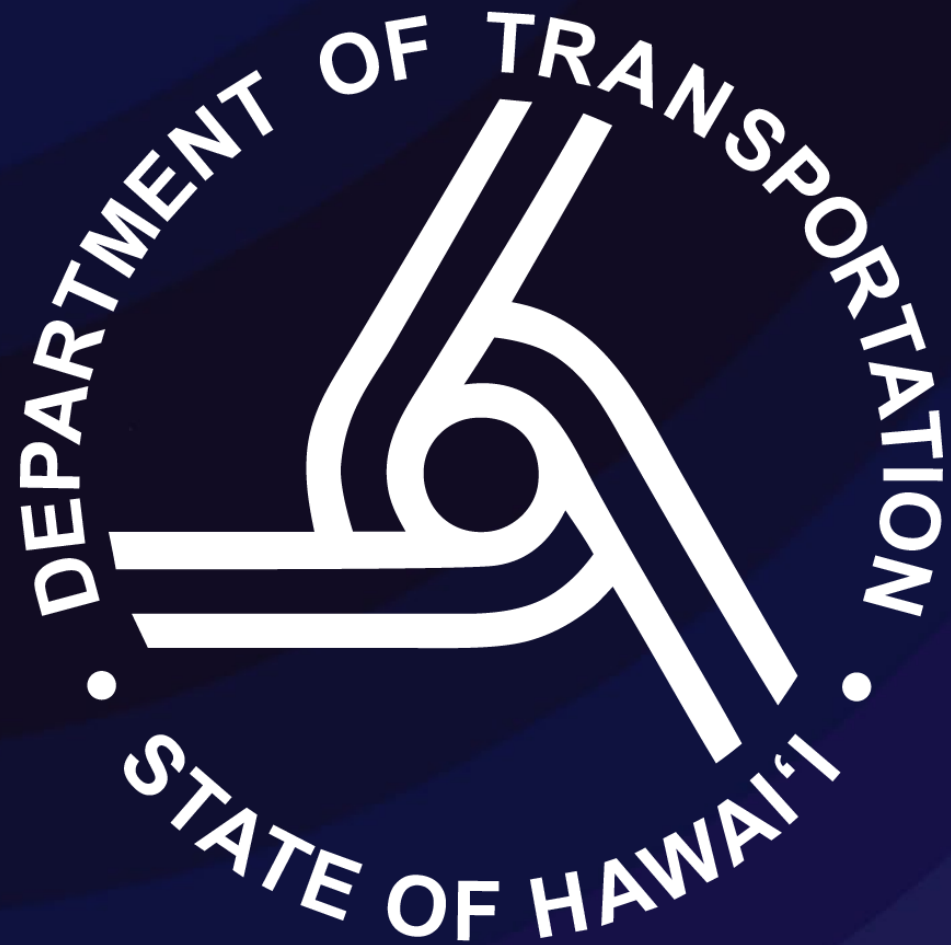


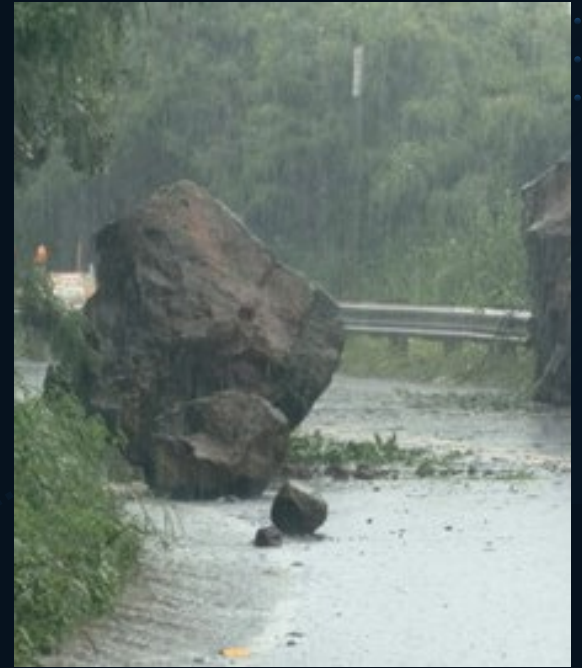
**SPRING STORM  
EVENTS AND  
HAZARD  
MITIGATION**





# Water

- Hydraulic vulnerability can occur from overtopping, constrictions at bridges/culverts and rising levels of groundwater.



# Rocks/slopes

- The geological age of slopes above and below highways can pose hazards from slope destabilization, landslides or rockfall.

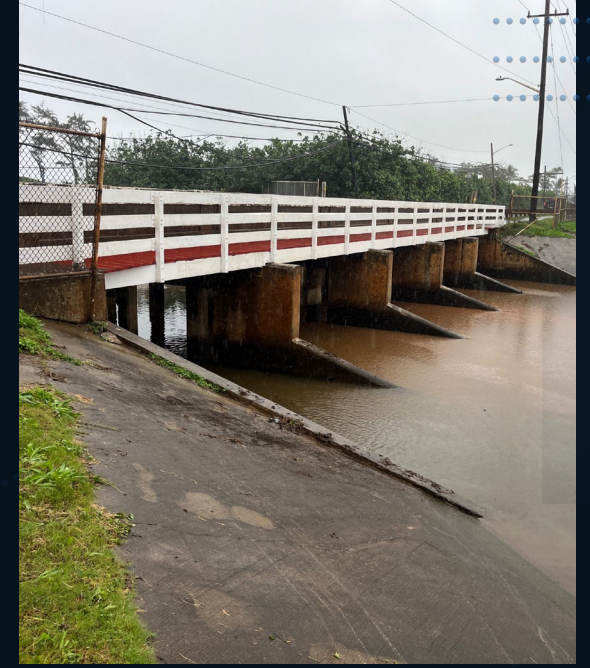


# High Winds

- High winds, especially in atypical directions such as Kona winds and especially when soil is already saturated, can cause tree falls and downed utility poles/lines.



High Waves



# Storm Prep

- To prepare before and between storms, HDOT checks drainage structures and pumps and removes debris.



# Mitigation Strategies

# Mid-term mitigations

## Kaua'i Priority Streams

- Hanalei
- Wailua River

## O'ahu Flood-Prone Priority Streams:

- Kaukonahua
- Waiahole
- Waikane
- Kalihi
- Waiawa

## Maui County Priority Streams:

- Kaunakakai Stream

- Kawela Stream
- Keawanui Gulch
- Kakalahale Stream

## Hawai'i Island Priority Streams/Areas:

- Kawaihae – Route 270 (near Kawaihae Harbor):
- Kawaihae Stream Bridge
- Makahuna Stream Bridge
- Makeahua Stream Bridge
- Ka'ū – Route 11 (Pāhala to Honu'apo):
- MP 58.7 — Kawa Flats
- MP 60 — Near Honu'apo Bridge



# Long-term mitigation

- Road realignment by section
- Stabilizing slopes by scaling and covering

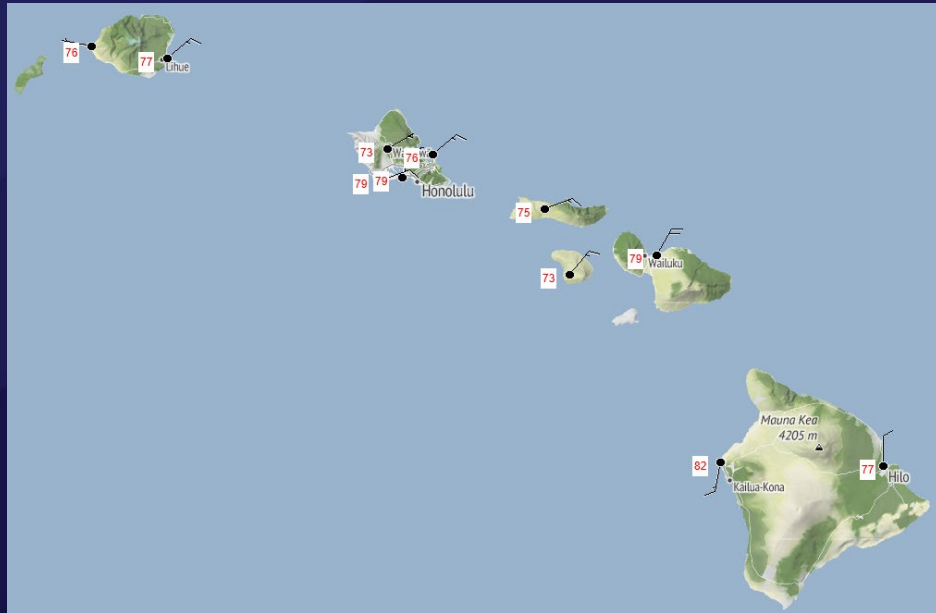


Figure 9: Near Saipan Ramp Towards Kam Hwy on 7/7/25. Pc: B. Crispino





# Evacuation Routes

# New strategies

- Connecting to community resources prior to storm
- More instrumentation (deer cams for situational awareness)