PALI HIGHWAY REPAIR PROJECT

...and State Highways resilience strategies.
OUTLINE

• Why is resilience of the highway system important?
• Recent impacts to the highway system & repair strategies
  • Pali Highway Emergency Repairs
  • Kuhio Highway Emergency Repairs
  • Lower East Rift Zone Event - Kilauea
  • Kamehameha Highway Emergency Repairs
• Long-term Strategy
Honolulu-bound motorists on the Pali Highway are contraflowed in the Kailua-bound lanes from 5am - 9am. Follow the cones and signs at the designated crossover points for each lane.
Pali Highway - Concept

Protect rockface under Old Pali Road through installation of soil nail, shotcrete, and mesh attenuators to catch loose material.

Secure rockface above existing tunnel with soil nail and mesh. (Example shown from Kuhio Highway Emergency Work).

Extend Pali Tunnel #2 to provide rockfall protection on the Koolau bound roadway between tunnels.
Pali Highway - After
2018-2019 NATURAL DISASTERS

- April Floods – Kauai & Oahu
- East Rift Zone Eruption - Hawaii Island
- Hurricane Lane - Hawaii Island, Maui, Oahu, Kauai
- Tropical Storm Olivia - Maui, Molokai, Oahu (No DDIRs submitted)
- Pali Highway and Honoapiilani Highway landslide/rockfall
Kuhio Highway - Before
Kuhio Highway - After
## ROCKFALL MITIGATION

<table>
<thead>
<tr>
<th>No.</th>
<th>Highway and Route</th>
<th>Mile Mark</th>
<th>Cost</th>
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<tr>
<td>1</td>
<td>Kamehameha Highway (Route 83), MM 5.4-5.52</td>
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<tr>
<td>2</td>
<td>Hawaii Belt Road (Route 19), MM 21.04-21.49</td>
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<td>Pali Highway (Route 61), MM 6.04-6.55</td>
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Repair Site 2 Design
WHAT CAN WE DO?

- Create policies for adaptation, protection or managed retreat that take communities and funding into account.
- Work with experts to prioritize sites and design mitigation measures.
- Work with stakeholders on land use, access, and other considerations.
- Future decisions for roads require more than just DOT buy-in. Need alignment with State, County and Fed agencies and community.
RESILIENCY STUDY

• Kicked-off resiliency study in December 2019 to develop a comprehensive inventory of potential extreme weather and climate change system impacts to our Highway system.

• The study is to identify:
  • locations where risks/impacts are most pressing to focus resources,
  • methods by which to incorporate climate change risks and related uncertainty into agency practice, and
  • the information/data needed to inform long-range and capital decisions

• When complete, the study will provide recommendations on how HDOT can best plan, design, operate, and maintain our infrastructure to be more resilient to current and long-term risks.
MAHALO

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