***Strategy 1: Prevention & Early Detection/Rapid Response for New Terrestrial Invasions.* Objective 1:Keep Hawaii’s top invasive species threats from arriving and establishing in the state,** by identifying and addressing high-risk pathways and major modes of introduction, and by improving early detection/rapid response.

* + 1. Key Action: HDOA, HISC, and other partners collaborate on generating a **non-regulatory Hawaiʻi Prevention Priority List** to guide prevention and rapid response. Tasks:
       1. Develop criteria for prioritizing and listing species that includes consideration of anticipated shifts/changes in climatic conditions.
       2. Assess whether there are known technologies to detect, mitigate and/or treat each species on the list, and whether these technologies may also detect other potential, problematic invaders.
       3. Communicate with global quarantine agencies, IUCN, plant industries and others to identify current pests spreading through trade that are not yet known to occur in Hawaii.
       4. Analyze vulnerable shipping types, container types and shipping materials (e.g., wooden containers, plants in soil, or pallets) and encourage clear commodity descriptions to address cryptic packaging.
       5. Get input from WHO and DHS on advances in nano technology for efficient screening as a potential tool for mass shipping containers.
       6. Use the Prevention Priority list to generate political and public support for implementing key actions, using diverse communication tools.
    2. Key Action: Assess **capacity to detect, mitigate and/or treat each species on the HI Prevention Priority List,** including procedures, training, and technology.
       1. Identify pathways and feasible mitigations for the HI Prevention Priority List species.
    3. Key Action: Conduct **risk analyses and risk assessments** along known & high potential pathways for invasive species introductions*.*
       1. Identify **major foreign and domestic pathways & other introduction modes** (e.g. commodities) for new invasive species to Hawaiʻi, including agricultural and non-agricultural species (including imported aquatics).
       2. Support HDOA in analyzing **e-manifest data to identify high-risk commodities and pathways** for commodities covered under that program.
       3. *Design and conduct a* ***total risk assessment (blitz*) and analysis of domestic imports at Honolulu International Airport** to guide improved inspection effectiveness and capacity, especially for conveyances outside the e-manifest program.
       4. Support expansion and information sharing of federal data for **foreign import risk analyses**.
       5. Build or maintain **capacity within federal and state agencies to assess and analyze risk** for terrestrial and aquatic invasive species, to better inform federal and state agency procedures, programs, rules, regulations, needs and expenditures.
       6. Begin planning a **Honolulu Harbor cargo risk assessment** and analysis of domestic imports by 2025.
       7. Work with military and USGS to **adapt and implement model risk assessment methodology for Wake Island in HI.**
    4. Key action: Address **regulatory gaps** for terrestrial invasive species in Hawaiʻi to address high-risk pathways and other modes of introduction.
       1. Clarify HDOA authority to screen and inspect **domestic nonagricultural commodities and cargo.**
       2. Carry out HIBP **Pre-border Policy-Related Implementation Tasks** to address high-risk pathways and other modes of introduction.
       3. Promulgate rules to carry out the **HDOA Biosecurity Program** found in part VI of chapter 150A to address high-risk pathways and other modes of introduction.
       4. Adopt and regularly update the **restricted plant list and noxious weed list**, including Administrative Rules to add harmful plant species to the restricted plant list.
    5. Key action: Continue to support adoption and implementation of **Myrtaceae import restriction** (domestic and foreign) and apply this approach for the protection of additional key native and economically important plant species.
    6. Key action: Fund and **fill** **key positions in HIBP** to enforce existing and new Administrative Rules & Hawaiʻi Revised Statutes. *[link to Obj 6]*
       - 1. Using risk assessment and other data, identify and craft the programmatic justification for additional positions, technology, and other items identified in the HIBP. *[link to Obj 6]*
    7. Key action: Support HDOT to make the **Māmalu Poepoe airports pilot project** permanent to enhance monitoring and detection of the Federal Aviation Administration approved list of invasive species (disease spreading mosquitos, fire ants, coconut rhinoceros beetle, and Africanized bees). *[link to Obj 2]*
       1. Explore feasibility of expanding HDOT monitoring to **harbors and shipping ports**
    8. Key action: Identify and provide **Best Management Practices** (BMPs) for reducing pest risk at critical control points in systems, such as airports, harbors, and procurement contracts.
       1. Identify BMPs for **contractors operating at HDOT Airports and Harbors** to minimize invasive species risks associated with facility operation and maintenance
       2. Draft and provide **language for contracting and procurement specifica**tions that include invasive species BMPs.
       3. Support **grow local and import substitution (food & flowers)** to reduce pathways for introduction.
    9. Key action: Strengthen **early detection and** **rapid response capacity** on each island for regulatory agencies and partnership projects, including mobilizing species-specific teams for high-risk terrestrial incursions.
       1. Maintain or expand current staff levels for **EDRR teams on all islands**, including early detection botanist/entomologist for each island currently lacking such a position.
       2. Assess **additional capacity and needs**, including infrastructure and equipment for detecting and addressing different types of invasive pests (e.g. spray rigs, drones, training) *[link to Obj 6]*
       3. Create and periodically update **EDRR plans** for high-threat species likely to arrive in HI to facilitate immediate action, including projected climatic shifts and \*flexible, science-based workflows determining management strategies.
       4. Serve as a **repository for developed plans** and identify opportunities for **table-top exercises.**
       5. Support the expanded use of **canine detection** for EDRR. *[link to Obj 6]*
       6. Expand **federal support** for EDRR in Hawaii to respond to pests earlier in the invasion curve and, if necessary, adjust those curves to reflect shifts in climatic conditions.
       7. Continue to **coordinate EDRR efforts across agencies/organizations** to strengthen synergies.
    10. Key action: Support HDOA in implementing **transitional inspection** **facilities** and opportunities to inspect other high-risk commodities.
        1. Ensure that transitional facilities are **hurricane compliant** and not located in areas that will be impacted by **sea-level rise**.
    11. Key action: Support HDOA to promote and achieve **clean nursery operations** (e.g., treatment requirements, incentives).*[link to Obj 2 & 7]*
        1. Identify the **cost-benefits** of a model clean nursery program.
        2. Develop invasive species control **protocols for nurseries** and make tools available for implementation.
    12. Key action: Maintain and strengthen the Pest Risk Committee and other mechanisms for **federal and state agencies to share data, effective practices, lessons learned** and informal observations.
    13. Key action: Track and **report annually on status of HI Priority Prevention List species** (e.g. not established, prevented at source; detected & intercepted, established). *[link to Obj 2]*
        1. Track status of **species and pathway of introduction**.

1. ***Strategy 2: Inter/intra-island movement of terrestrial invasive species.* Objective 2:Keep Hawaii’s top inter/intra-island invasive species threats from spreading within Hawaiʻi (between and across islands),** by identifying and addressing high-risk sources, pathways and major modes of introduction and spread, and by improving early detection/rapid response for new populations.
   * 1. HDOA, HISC and other partners collaborate on generating a **Hawaiʻi Limited Distribution Priority List** of high-impact localized invasive species to address inter-island and intra-island movement.
        1. **Develop criteria** for prioritizing and listing species that includes consideration of anticipated shifts/changes in climatic conditions **and regularly update** the Limited Distribution Priority List in consultation with partners and key land management agencies.
        2. **Support the work of the Bishop Museum** to collect, voucher, maintain, and update lists of known species to occur in Hawaiʻi.
        3. Assess whether there are **known technologies to detect, contain, and/or treat** species on the list.
        4. Assess **capacity to address** each species on the list (e.g. funding, staffing).
        5. Adopt the Limited Distribution Priority List, or a subset thereof, as the list of species to be used in HISC’s administrative rules related to **private property access authority**.
     2. Include an assessment of the HI Limited Distribution Priority List to support HDOA in developing and executing a **clean nursery program** that reduces inter/intra-island movement of invasive species. *[link to Obj 1]*
     3. Conduct **risk analyses and assessments** to identify and prioritize pest pathways and high-risk gaps for movement of terrestrial invasive species within Hawaii.
        1. Clarify authority of HDOA to quarantine and require **infested nurseries** to cover the cost and labor to eradicate species detected on their properties.
     4. Identify and implement **cost-effective tools, technologies, and methods** that improve management of priority pathways by state agencies and private companies.
        1. Implement use of **canine detection** for EDRR for species with limited distributions within Hawaii
        2. Identify cost-effective tools and methods for **pre-treatment of nursery/agriculture goods** prior to interisland shipment, including chemical and non-chemical treatments
     5. Clarify HDOA authority and determine capacity needed to assess and inspect **high-risk non-agricultural commodities and cargo** and develop voluntary initiatives to mitigate risk.
        1. Using risk assessment and other data, identify and craft the **programmatic justification** for additional positions, technology, and other items needed to conduct inspection of non-agricultural commodities.
        2. Develop **legal analyses and administrative rules** to clarify HDOA authority to screen and inspect non-agricultural commodities and cargo moving within Hawai'i.
        3. Identify and advocate for necessary **capacity and technologies** to adequately assess and inspect high-risk non-agricultural commodities.
        4. Partner with Young Brothers, Hawaiian Airlines, other interisland carriers, companies moving equipment between islands (e.g., HELCO, MECO, etc.) and other commercial activities (e.g. cruise ship ships) to **raise awareness** about risks of moving invasive species interisland through materials that are not inspected (e.g., construction equipment, cars/trucks, shingle, hiking and camping gear, boats). *[link to Obj 7]*
        5. Encourage **voluntary biosanitation** of these high-risk goods, either by carriers or the users shipping these goods
     6. Work with ISCs to increase **County support for prevention and rapid response** of invasive species not known to occur on their island(s). *[link to Objective 6]*
     7. Support **HDOT** implementation and 2022 update of **the Statewide Noxious and Invasive Pest Program Strategic Plan** in cooperation with public and private stakeholders.
     8. Create **standardized contract language for BMPs** to minimize the spread of invasive species and incorporate into contracts by state agencies and other partners.
     9. Promote the use of the State **Pest Reporting System**. *[link to Objective 7]*
     10. Track and **report annually on status of species on the HI Limited Distribution Priority List** (e.g. prevented at source, detected & removed, established, other).
         1. Develop and maintain a **spatial database of island distribution** for species on the Limited Distribution Priority List based on field observations from partners.