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Agenda Item: B.1 Goal 2.4 | Mauka to Makai Watershed Management

Date Received: 2/1/23 via email

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1/25/2023

Clarifying Comments to South Maui CPAC Reconvened meeting submitted on 2/1/2023

PROCEDURAL REQUEST: Offer virtual, interactive option for receiving oral testimony at CPAC meetings

GOAL 2.4 Mauka to Makai Watershed Management

It is crucial that the community plan recognize that the mauka portion of the watersheds of South Maui are not in the South Maui Planning area, and include measures to facilitate cooperative planning between communities in the same watershed.

Definitions: Add Natural and nature-based infrastructure definition

“Natural” infrastructure approaches refer to intact or restored systems, such as wetlands, forests, and coral reefs; “nature-based” infrastructure approaches mimic natural systems but are designed and constructed by people. Table 1 shows comparison of conventional approaches to natural or nature-based infrastructure approaches to hazard risk reduction.

See Table 1 for examples

Source: Glick, P., E. Powell, S. Schlesinger, J. Ritter, B.A. Stein, and A. Fuller. 2020. *The Protective Value of Nature: A Review of the Effectiveness of Natural Infrastructure for Hazard Risk Reduction*.

Washington, DC: National Wildlife Federation.

Table 1. Examples of natural infrastructure for hazard risk reduction

| Natural hazard | Conventional approaches | Natural or nature-based approaches | Examples |
|------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inland flooding and erosion | Dams, dikes, levees, stream channelization, stormwater sewers, combined sewers, pumps | <ul style="list-style-type: none"> • Floodplain and watershed restoration • Green stormwater management • Protecting floodplains from development | <ul style="list-style-type: none"> • Levee setbacks • Wetland, forest and watershed restorations • Rain gardens and natural infiltration systems • Minimizing stream alterations • Permeable pavement • Voluntary buyouts • Avoiding new development in floodplains • Open space acquisition and protection |
| Coastal flooding and erosion | Seawalls, bulkheads, dikes, breakwaters, levees | <ul style="list-style-type: none"> • Coastal habitat protection and restoration • Living shorelines • Protecting sensitive coastal areas from development | <ul style="list-style-type: none"> • Intact or restored shoreline systems (e.g., wetlands, mangroves, beaches, dunes, and barrier islands) • Coral and oyster reefs • Restored/constructed marsh with sills or breakwater structures • Constructed oyster reefs • Voluntary buyouts • Coastal land acquisition and easements |
| Extreme heat and drought | Dams and reservoirs, air conditioning | <ul style="list-style-type: none"> • Watershed protection and restoration • Urban green infrastructure • Water conservation | <ul style="list-style-type: none"> • Forest and watershed restoration • Beaver restoration • Urban trees and other vegetation • Green roofs and cool pavement • Rain barrels • Xeriscaping |
| Wildfire | Wholesale suppression of wildfires, clearing firebreaks | <ul style="list-style-type: none"> • Ecological forest management • Helping communities live with fire • Managing wildfires (when possible) to benefit ecosystems | <ul style="list-style-type: none"> • Combined fuel reduction treatments • Prescribed fire • Post-fire restoration • Fire-adapted communities, such as through Firewise USA® neighborhood mitigation • Collaborative risk management • Avoiding new development in high-fire-risk areas |

Policy 2.4.1 :

Add "Maui County Ordinance 5421" after traditional historic knowledge
Delete or define "federal nexus". Not needed if you include the Maui County ordinance.
Define if you leave it in as the federal definition of US Waters keeps changing

Policy 2.4.2 Add Natural infrastructure to list of prioritized strategies

Policy 2.4.4 Add natural infrastructure to the list of **requirements**

Policy 2.4.5 delete clause after the word gulches "unless low impact development strategies are implemented to prevent stormwater runoff"

Note that top of bank changes when erosion is out of control so may not be best marker

Also, use a legend to identify what you mean by gulches. There are streams and open spaces indicated by the legend but it does not say gulches. Streams need to be included in this policy, map needs to be clear on what the policy refers to as "gulches"

Policy 2.4.6 Replace "shall be encouraged" with "**shall be required**". That new development and redevelopment install vegetative buffers and erosion control using native plants ADD "**or other appropriate, non invasive plants such as vetiver** "

Policy 2.4.7 Replace the word encourage with "**require**" avoiding changes to hydrology

Policy 2.4.8 Replace word "**appropriate**" with "**where possible or feasible**"

Policy 2.4.9 Don't delete setback item A

Item C delete word "Encouraging: **Require no development or irrigation of dunes except as needed to establish native plants appropriate to the environment**

Item D define what you mean by beach cell level

2.4.12 Add "**all wetlands and those properties that are functioning as wetlands**" to list of environmentally sensitive areas

2.4.13 Require stormwater management and retention volume to be adequate to remove pollutants prior to leaving the site or discharge to the ocean

Additional Policies needed

In an effort to truly recognize mauka to makai solutions, **add a policy to implement and continue to update the Southwest Maui Watershed Plan on an ongoing basis starting immediately.** Don't wait for another couple of decades. We should implement solutions in real-time as they are discovered; we know so much more than we knew even 5-10 years ago.

Also, **add a policy that requires coordination between South Maui and Upcountry groups in discussing, planning, and managing the S. Maui watershed.**

ACTIONS:

4.01 Add **“utilizing natural infrastructure and nature-based systems to the fullest extent possible”**

4.02 Add **“natural Infrastructure and nature-based solutions”** to the list of priorities for development

4.03 Add **“Quality”** e.g. **Develop a Stormwater Quality Management Plan**

4.05 Add **“natural infrastructure and nature-based solutions”** to mitigate stormwater runoff and minimize damage from flooding

4.06 Add **“ including dryland forest”**

4.15 Add **“natural infrastructure”**

4.17 Add the word “restoration” e.g. “proposed facility improvements and **restoration approaches**

Additional actions needed :

Implement the Southwest Maui Watershed Plan

Create a Watershed Management PROGRAM which requires the Department of Planning and Department of Public Works to comply with the watershed plans and practices when issuing permits. It is evident and clear to everyone that the S. Maui Watershed (50,000 acres) IS THE DRAINAGE area from which the water comes down mauka to makai that floods S. Kihei

Establish a watershed advisory group which includes participation from Stakeholders Mauka to Makai including agencies that manage or regulate lands, residents and landowners, interested community groups and NGOs (for example Dick Mayer and his group of activists who are concerned Kula (mauka) citizens, the newly formed Malama Haleakala non-profit, which works with owners of ranches and other mauka lands, Save the Wetlands Hui, and Aha Moku Council).

Establish a watershed wide water quality monitoring program to measure the quality of runoff and the mass loading of pollutants from the major gulches/streams/waterways

Additional Guidance to CPAC

Formally recognize that leeward areas of natural land and watershed areas have been disturbed and destroyed because of a multitude of reasons, but this is the situation S. Maui faces in trying to control the Watershed/Drainage areas from causing more bodily and property harm and put in mitigation plans for repairing this area

Recognize that data shows that hardscaping methods for their watershed or drainage plans using concrete and other non-natural materials have failed on the mainland. Many towns and municipalities are having to now REMOVE those concrete hardscapes to undo that damage and use natural solutions instead.

We must attempt multiple solutions at one time. There is no ONE way to solve these watershed and drainage issues

Require measures that slow, capture and store water. using natural and nature-based solutions to the fullest extent possible. This would allow for directing water to other areas for irrigation and to infiltration into the aquifer. It would also address the drought issues Maui has to have additional water storage for distribution and use in this area that does not have its own water source