South Molokai

Shoreline Erosion Management Plan Project

DHHL Virtual Focus Group Meeting
February 10, 2021

DHHL Planning Office / Planning Consultants Hawaii, LLC / Coastal Planners, LLC

Project Purpose

1. Enable DHHL to proactively plan for and manage shoreline erosion;
2. Investigate the causes of shoreline erosion, and likely future progression;
3. Identify effective and sustainable shoreline erosion management strategies; and
4. Educate the community as to the causes of shoreline erosion and appropriate management responses.

Project Area

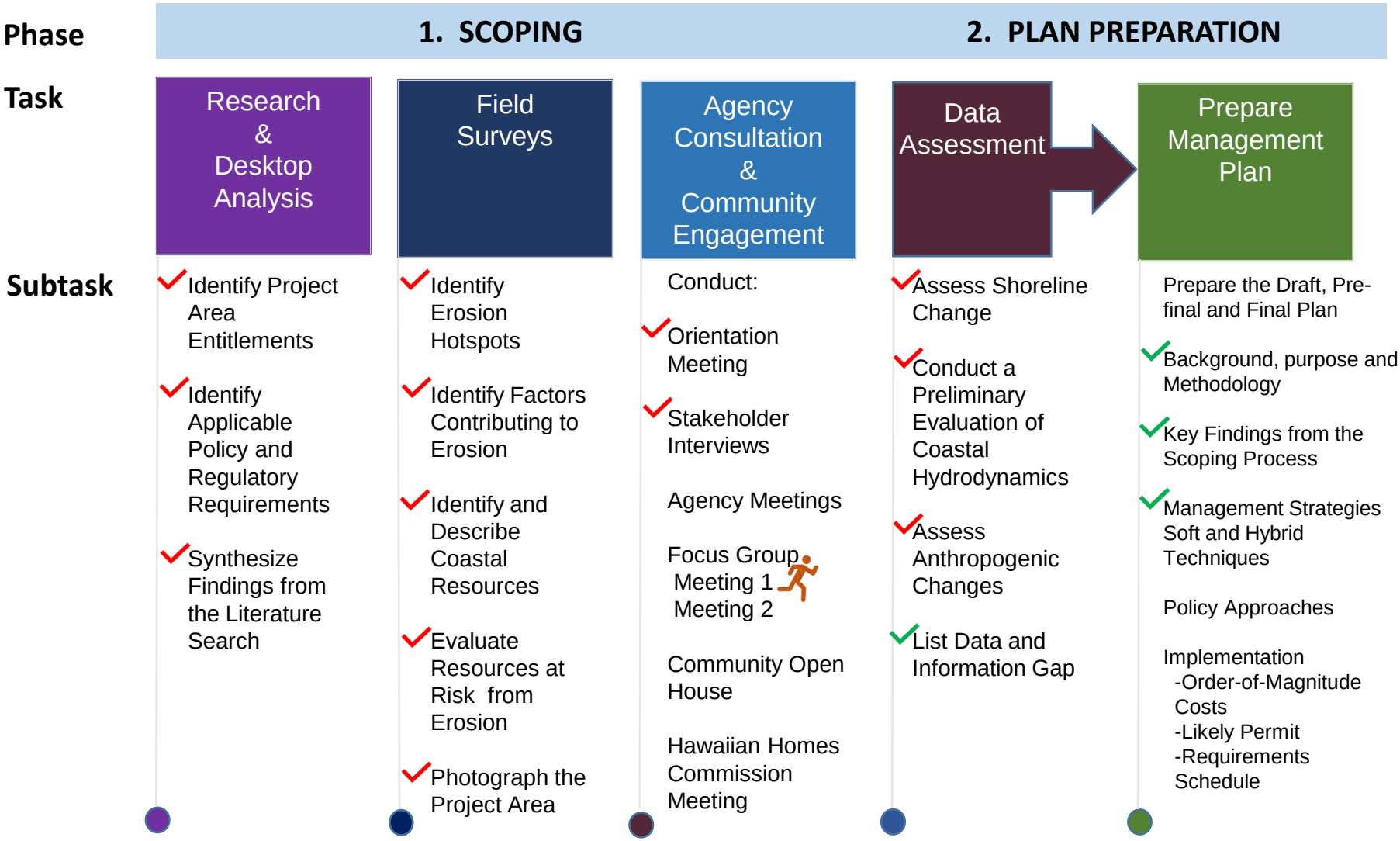
Planning Consultants Hawaii, LLC

N W E S

400 Feet

Figure 1.1
PROJECT AREA
Moloka'i Shoreline Erosion Management Plan

Planning Process



Overview of the Project Area's coastal hydrodynamics

Kaunakakai

Kamehameha V Highway

Kaloko'eli Fishpond

Moloka'i Shores

Hotel Moloka'i

Ali'i Fishpond

Kānoa Fishpond

Kamehameha V Highway

Cell D

Cell C

Cell B

Cell A

Trade winds

Trade winds

Trade winds

LEGEND:

- Ocean Currents During Trade Wind Conditions
- Reef Crest
- Waves and Swell

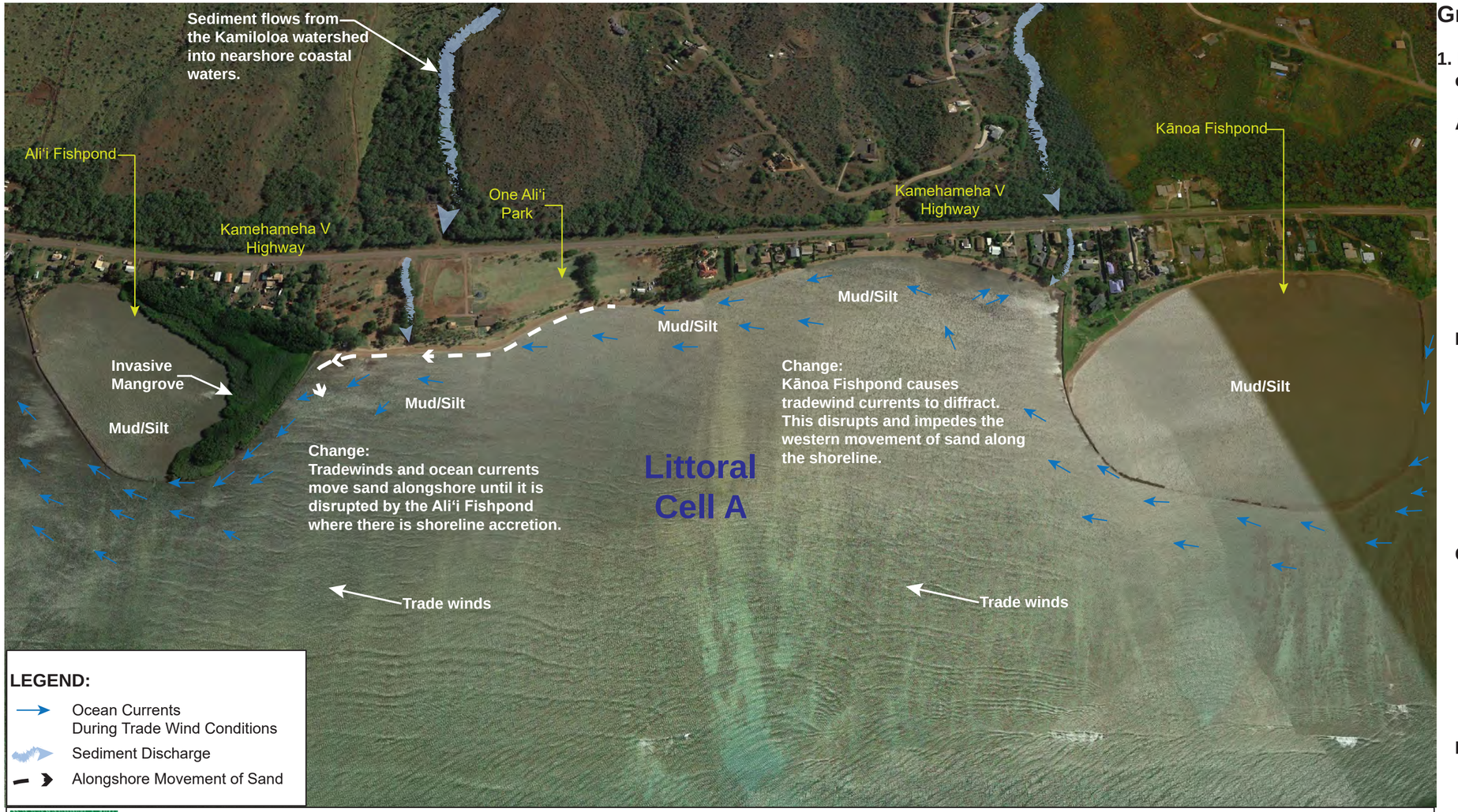
Planning Consultants Hawaii, LLC

N E S W

400 Feet

Figure 4.3
LITTORAL CELLS
Moloka'i Shoreline Erosion Management Plan

DRAFT - NOT FOR DISTRIBUTION



Planning Consultants Hawaii, LLC

N E S W

85 Feet

Figure 4.4
LITTORAL CELL A:
Coastal and shoreline processes
Moloka'i Shoreline Erosion Management Plan

Group Discussion:

1. Please examine the exhibit. Would you like to correct or add to the following:

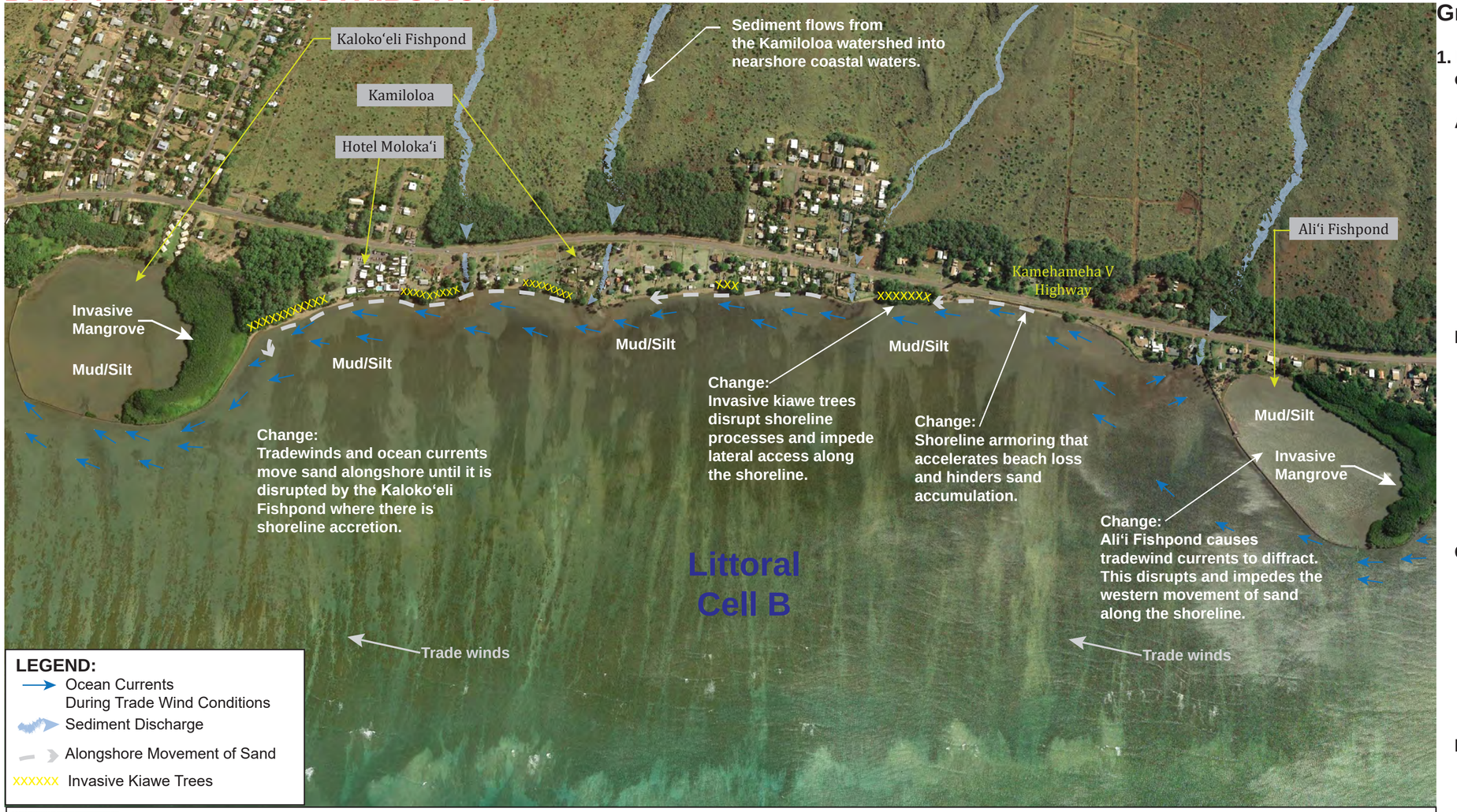
A. Wind, current, erosion patterns?

B. Location of sediment discharge into the ocean?

C. Areas of erosion and accretion?

D. Flooding hotspots?

DRAFT - NOT FOR DISTRIBUTION



Planning Consultants Hawaii, LLC

N E S W

110 Feet

Figure 4.5
LITTORAL CELL B:
Coastal and shoreline processes

Moloka'i Shoreline Erosion Management Plan

Group Discussion:

1. Please examine the exhibit. Would you like to correct or add to the following:

   A. Wind, current, erosion patterns?

   B. Location of sediment discharge into the ocean?

   C. Areas of erosion and accretion?

   D. Flooding hotspots?

DRAFT - NOT FOR DISTRIBUTION

Planning Consultants Hawaii, LLC

N E S W

125 Feet

Figure 4.6
LITTORAL CELL C:
Coastal and shoreline processes
Moloka'i Shoreline Erosion Management Plan

Group Discussion:

1. Please examine the exhibit. Would you like to correct or add to the following:

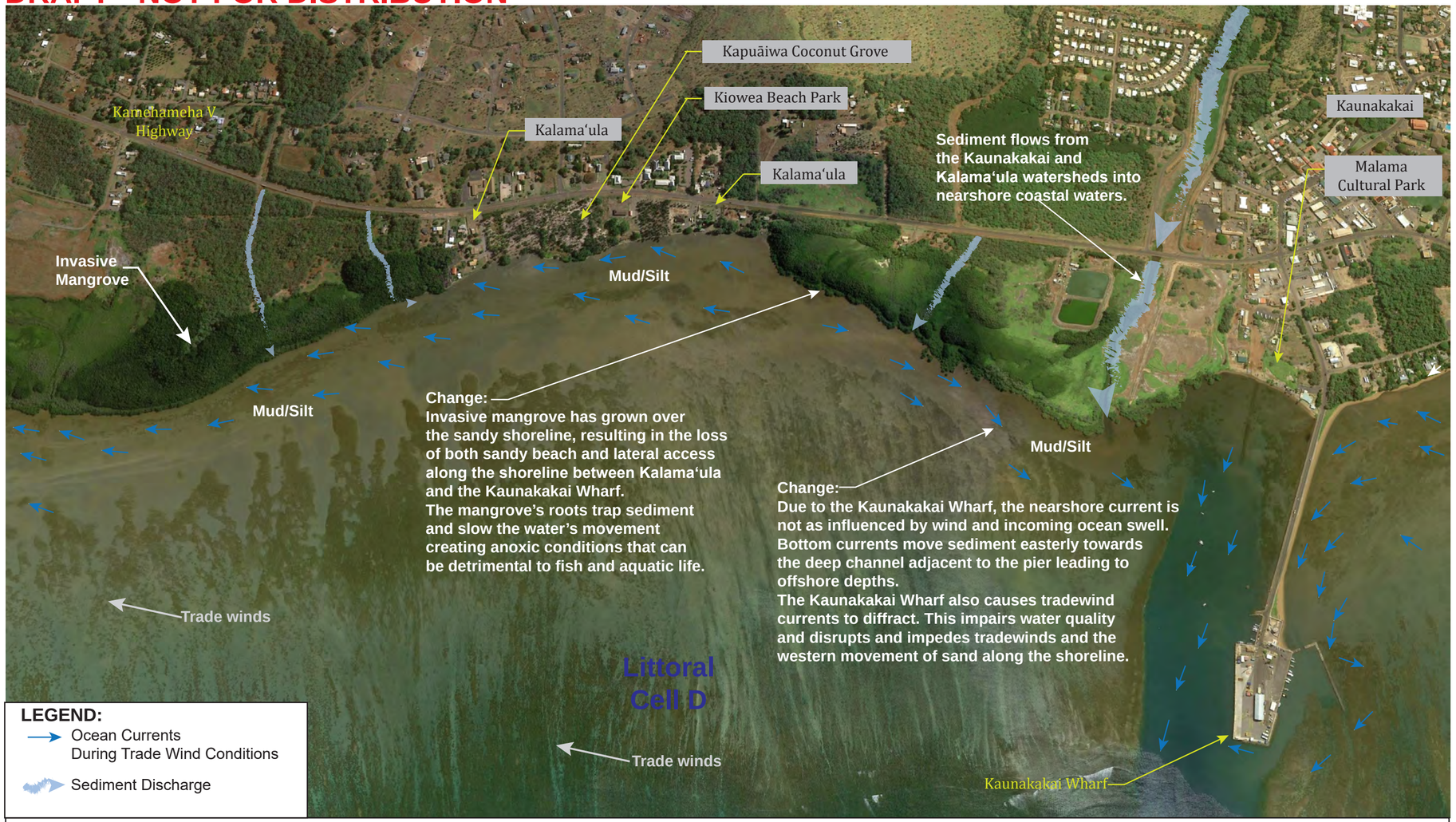
   A. Wind, current, erosion patterns?

   B. Location of sediment discharge into the ocean?

   C. Areas of erosion and accretion?

   D. Flooding hotspots?

DRAFT - NOT FOR DISTRIBUTION



Planning Consultants Hawaii, LLC

N E S W

135 Feet

Figure 4.7
LITTORAL CELL D:
Coastal and shoreline processes

Moloka'i Shoreline Erosion Management Plan

Group Discussion:

1. Please examine the exhibit. Would you like to correct or add to the following:

   A. Wind, current, erosion patterns?

   B. Location of sediment discharge into the ocean?

   C. Areas of erosion and accretion?

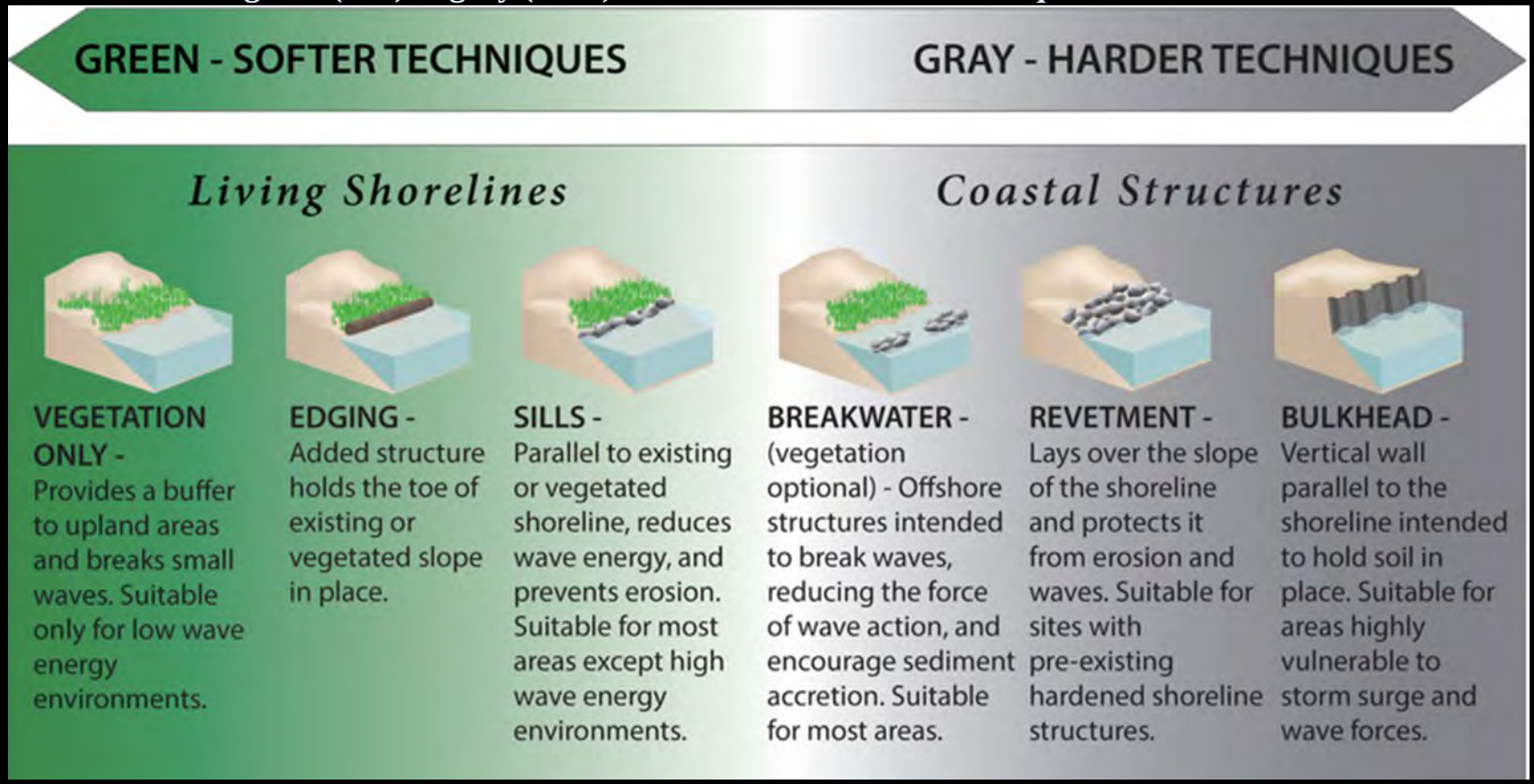
   D. Flooding hotspots?

Invited Opinion Exercises

1. Table 1 – Response Options to Changing Shorelines
2. Table 2 – Threatened Assets and Possible Actions
3. Beach Cell Existing Conditions (time permitting)

EXERCISE 1
Table 1 – Response Options to Changing Shorelines

A continuum of green (soft) to gray (hard) shoreline stabilization techniques



Source: Systems Approach to Geomorphic Engineering (SAGE) Natural and Structural Measures for Shoreline Stabilization brochure in NOAA Guidance for Considering the Use of Living Shorelines, 2015, page 8.

WORD DOCUMENT

Invited Opinion Exercises

EXERCISE 2

Table 2 – Threatened Assets and Possible Actions

TABLE 2 - THREATENED ASSETS AND POSSIBLE REMEDIES

	WHAT IS UNDER THREAT	RESPONSE or REMEDY	X = Dislike √ = OK ♥ = Like	WHAT ARE THE COSTS & BENEFITS: Effectiveness, Environmental, Pollution & Visual Impacts
CARPORT	 	1. Soft & Green 2. Sand Bags 3. Rock Sill & Sedge 4. Rock Gabions 5. Boulder Mound 6. Sheet Pile Bulkhead 7. Seawall 8. Rock Revetment 9. Groin 10. Realign / Retreat	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____

Extra Notes:

TABLE 2 - THREATENED ASSETS AND POSSIBLE REMEDIES

	WHAT IS UNDER THREAT	RESPONSE or REMEDY	X = Dislike √ = OK ♥ = Like	WHAT ARE THE COSTS & BENEFITS: Effectiveness, Environmental, Pollution & Visual Impacts
PAVILLION	 	1. Soft & Green 2. Sand Bags 3. Rock Sill & Sedge 4. Rock Gabions 5. Boulder Mound 6. Sheet Pile Bulkhead 7. Seawall 8. Rock Revetment 9. Groin 10. Realign / Retreat	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____

Extra Notes:

TABLE 2 - THREATENED ASSETS AND POSSIBLE REMEDIES

	WHAT IS UNDER THREAT	RESPONSE or REMEDY	X = Dislike √ = OK ♥ = Like	WHAT ARE THE COSTS & BENEFITS: Effectiveness, Environmental, Pollution & Visual Impacts
HOUSE (episodic erosion, king tides)		1. Soft & Green 2. Sand Bags 3. Rock Sill & Sedge 4. Rock Gabions 5. Boulder Mound 6. Sheet Pile Bulkhead 7. Seawall 8. Rock Revetment 9. Groin 10. Realign / Retreat	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____

Extra Notes:

TABLE 2 - THREATENED ASSETS AND POSSIBLE REMEDIES

	WHAT IS UNDER THREAT	RESPONSE or REMEDY	X = Dislike √ = OK ♥ = Like	WHAT ARE THE COSTS & BENEFITS: Effectiveness, Environmental, Pollution & Visual Impacts
HOUSE (chronic erosion)	 	1. Soft & Green 2. Sand Bags 3. Rock Sill & Sedge 4. Rock Gabions 5. Boulder Mound 6. Sheet Pile Bulkhead 7. Seawall 8. Rock Revetment 9. Groin 10. Realign / Retreat	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____

Extra Notes:

TABLE 2 - THREATENED ASSETS AND POSSIBLE REMEDIES

	WHAT IS UNDER THREAT	RESPONSE or REMEDY	X = Dislike √ = OK ♥ = Like	WHAT ARE THE COSTS & BENEFITS: Effectiveness, Environmental, Pollution & Visual Impacts
KALANIANAOLE HALL	  Photos: Mason Architects	1. Soft & Green 2. Sand Bags 3. Rock Sill & Sedge 4. Rock Gabions 5. Boulder Mound 6. Sheet Pile Bulkhead 7. Seawall 8. Rock Revetment 9. Groin 10. Realign / Retreat	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____

Extra Notes:

TABLE 2 - THREATENED ASSETS AND POSSIBLE REMEDIES

	WHAT IS UNDER THREAT	RESPONSE or REMEDY	X = Dislike √ = OK ♥ = Like	WHAT ARE THE COSTS & BENEFITS: Effectiveness, Environmental, Pollution & Visual Impacts
ROADWAYS (flooding, sinkholes, erosion)	 	1. Soft & Green 2. Sand Bags 3. Rock Sill & Sedge 4. Rock Gabions 5. Boulder Mound 6. Sheet Pile Bulkhead 7. Seawall 8. Rock Revetment 9. Groin 10. Realign / Retreat	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____

Extra Notes:

TABLE 2 - THREATENED ASSETS AND POSSIBLE REMEDIES

	WHAT IS UNDER THREAT	RESPONSE or REMEDY	X = Dislike √ = OK ♥ = Like	WHAT ARE THE COSTS & BENEFITS: Effectiveness, Environmental, Pollution & Visual Impacts
PARKS INFRASTRUCTURE (flood innundation, erosion)	 	1. Soft & Green 2. Sand Bags 3. Rock Sill & Sedge 4. Rock Gabions 5. Boulder Mound 6. Sheet Pile Bulkhead 7. Seawall 8. Rock Revetment 9. Groin 10. Realign / Retreat	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____

Extra Notes:

TABLE 2 - THREATENED ASSETS AND POSSIBLE REMEDIES

	WHAT IS UNDER THREAT	RESPONSE or REMEDY	X = Dislike √ = OK ♥ = Like	WHAT ARE THE COSTS & BENEFITS: Effectiveness, Environmental, Pollution & Visual Impacts
KAPUĀIWA COCONUT GROVE (erosion, SLR & salt water intrusion)	 	1. Soft & Green 2. Sand Bags 3. Rock Sill & Sedge 4. Rock Gabions 5. Boulder Mound 6. Sheet Pile Bulkhead 7. Seawall 8. Rock Revetment 9. Groin 10. Realign / Retreat	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____

Extra Notes:

Next Steps

1. Process the results from this Focus Group Meeting.
2. Develop the plan's preliminary draft recommendations.
3. Host a second focus group meeting to vet the plan's preliminary draft recommendations.
4. Revise preliminary draft recommendations to reflect input received during Focus Group Meeting 2.
5. Host a public open house.
6. Prepare the pre-final and final draft plan.

MAHALO

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Coastal Planners, LLC

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