

**LOCAL ACTION STRATEGY:  
LAND BASED SOURCES OF POLLUTION  
Commonwealth of the Northern Mariana  
Islands**



An aerial photograph of a tropical coastline. The image shows a lush green hillside on the left that descends to a sandy beach. The water is a clear, light blue near the shore, transitioning to a deeper blue further out. The overall scene is bright and scenic, typical of a tropical island environment.

# Laolao Bay Project

- Values
- Threats
- Strategy/Project Approach
- Projects
- Challenges and Needs
- Benefits
- Future Plans

# Laolao Bay Values

- Well-developed coral reef & marine ecosystem
- Saipan's best all-weather dive site (up to 200/day)
- Major recreation site for island residents
- Turtle nesting habitat
- WW II and archaeological sites

# Threats to Laolao Bay



## • Sedimentation:

- unpaved access roads
- streambed erosion
- upland erosion

## • Water Quality Degradation



# Project Approach/Strategy

An aerial photograph of a tropical coastline. The image shows a large bay with clear, turquoise water transitioning to a sandy beach. The land is covered in dense, lush green forest. The sky is overcast, and the overall scene is serene and natural.

- Collaborative Planning
  - Watershed Group (Agency Partnerships)
  - Community Involvement
- Links science & management
  - Monitoring
  - 305(b) Water Quality Assessment Report
- Model for CNMI

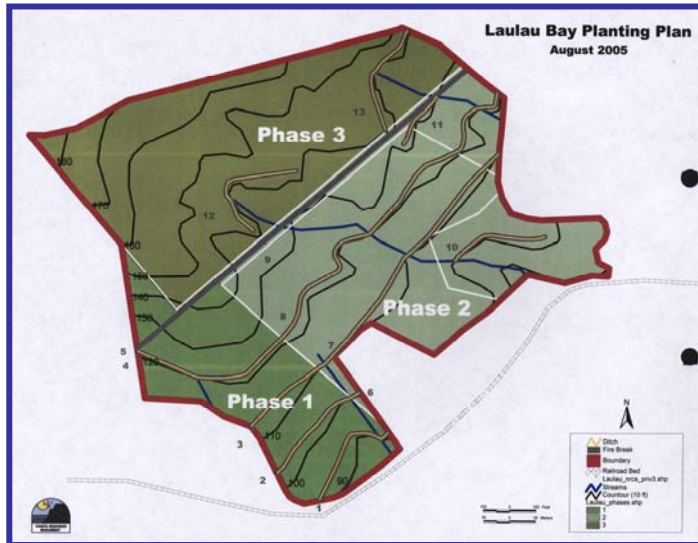
# Projects



- Revegetation
- Nearshore Reef Monitoring
- Completed A & E designs for stormwater and erosion controls

# Upper Watershed Revegetation

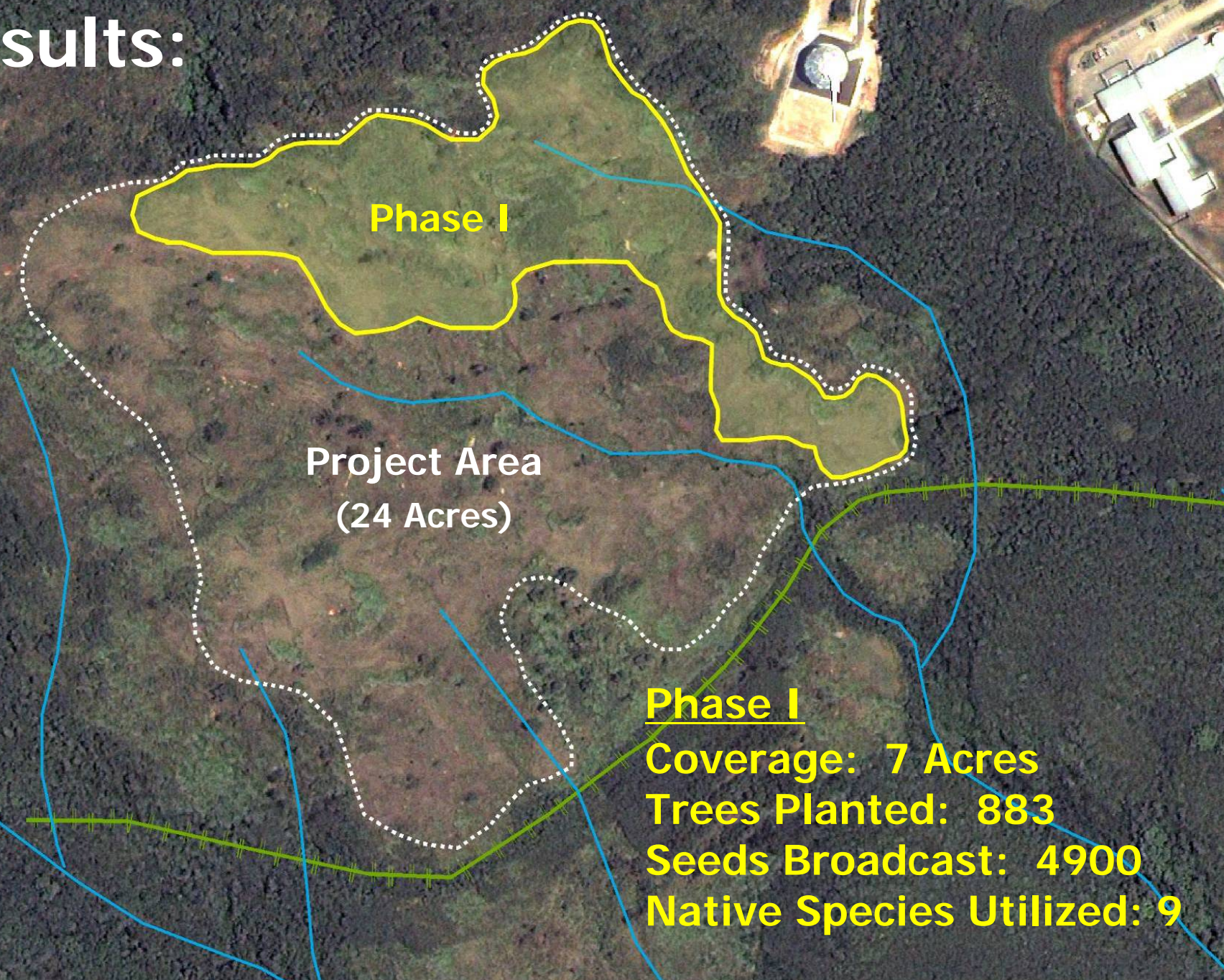
- Planting plan
- Nursery expanded
- Private donations
- Landowner agreement
- Community volunteers







# Results:



**Phase I**

**Project Area  
(24 Acres)**

**Phase I**

**Coverage: 7 Acres**

**Trees Planted: 883**

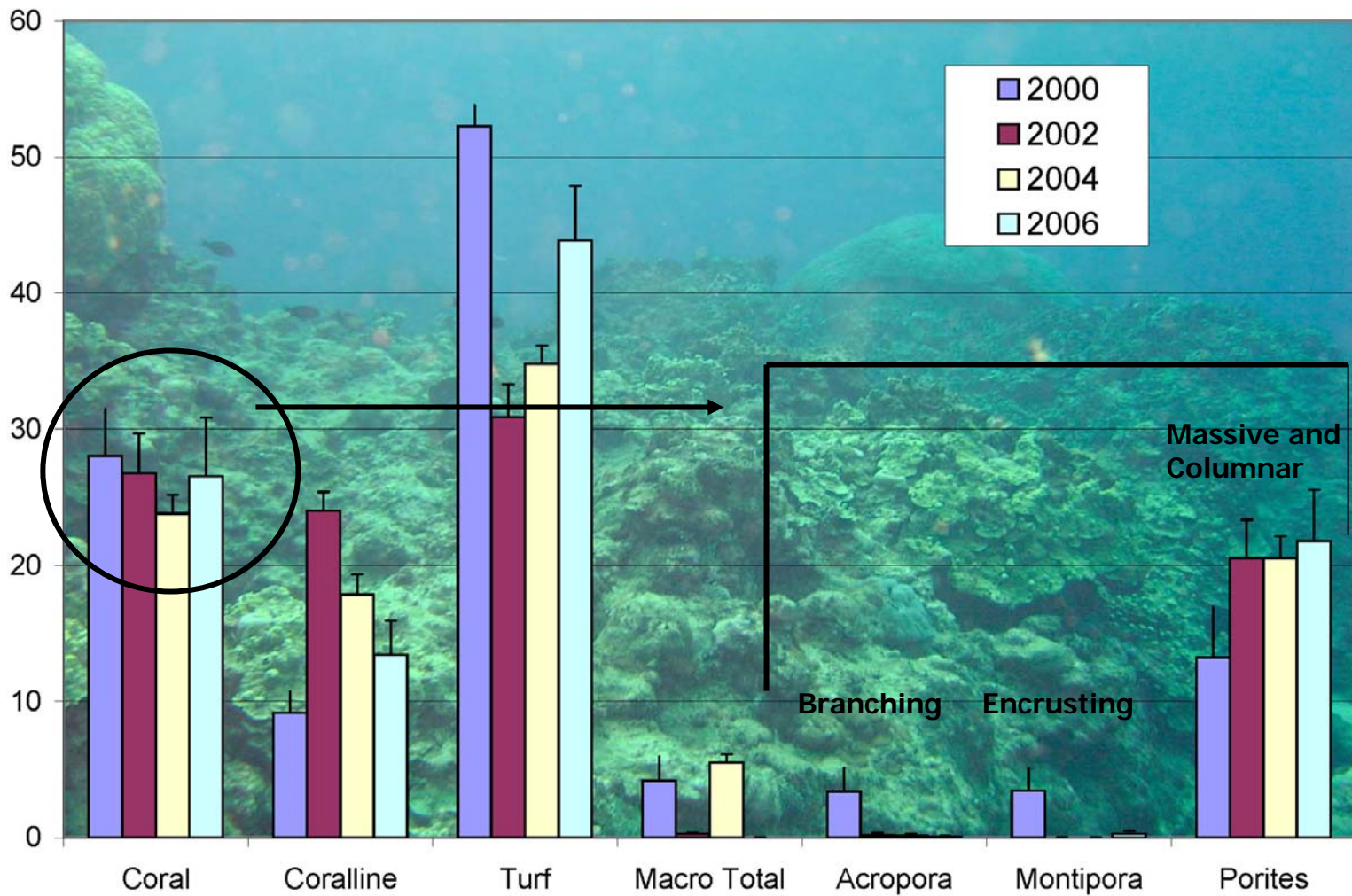
**Seeds Broadcast: 4900**

**Native Species Utilized: 9**

# Nearshore Reef Monitoring

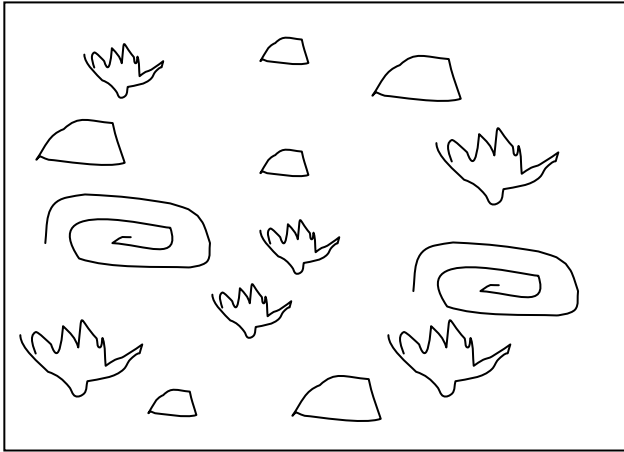
A diver in full scuba gear is shown underwater, positioned over a vibrant coral reef. The diver is holding a blue rectangular device, likely a camera or data logger, and appears to be recording or inspecting the reef. The water is clear and blue, and the reef is densely populated with various types of coral.

- Continued monitoring for changes overtime

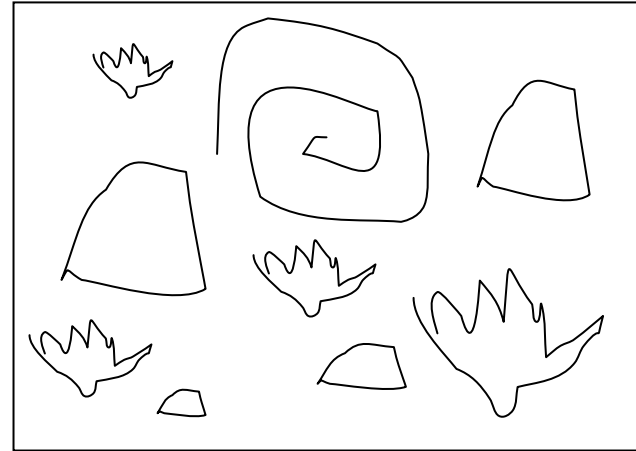


# Summary of Change at Laolao – Lack of recovery from disturbances

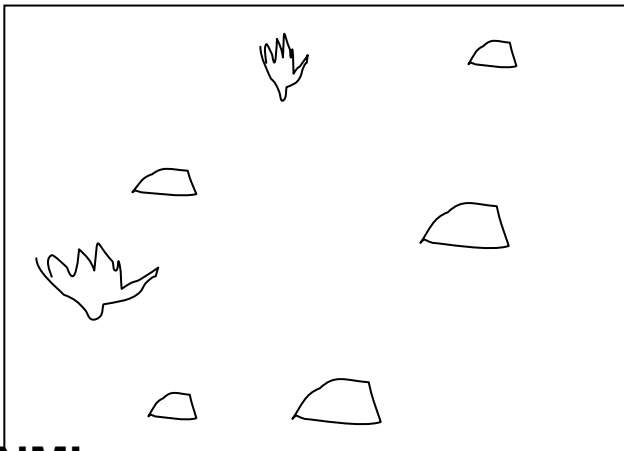
TIME 1



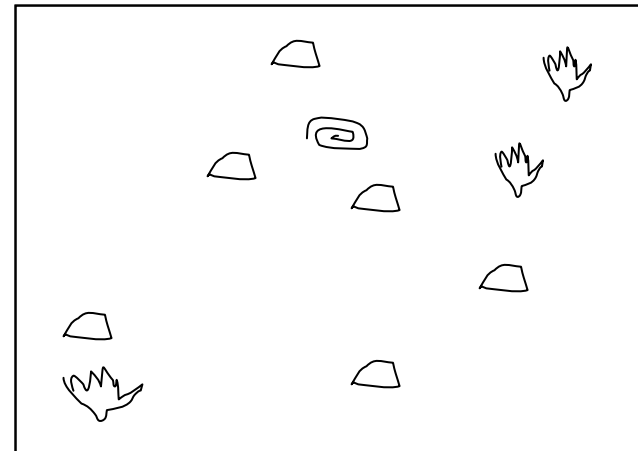
TIME 2



TIME 4



TIME 3



Lack of  
recovery

Disturbance



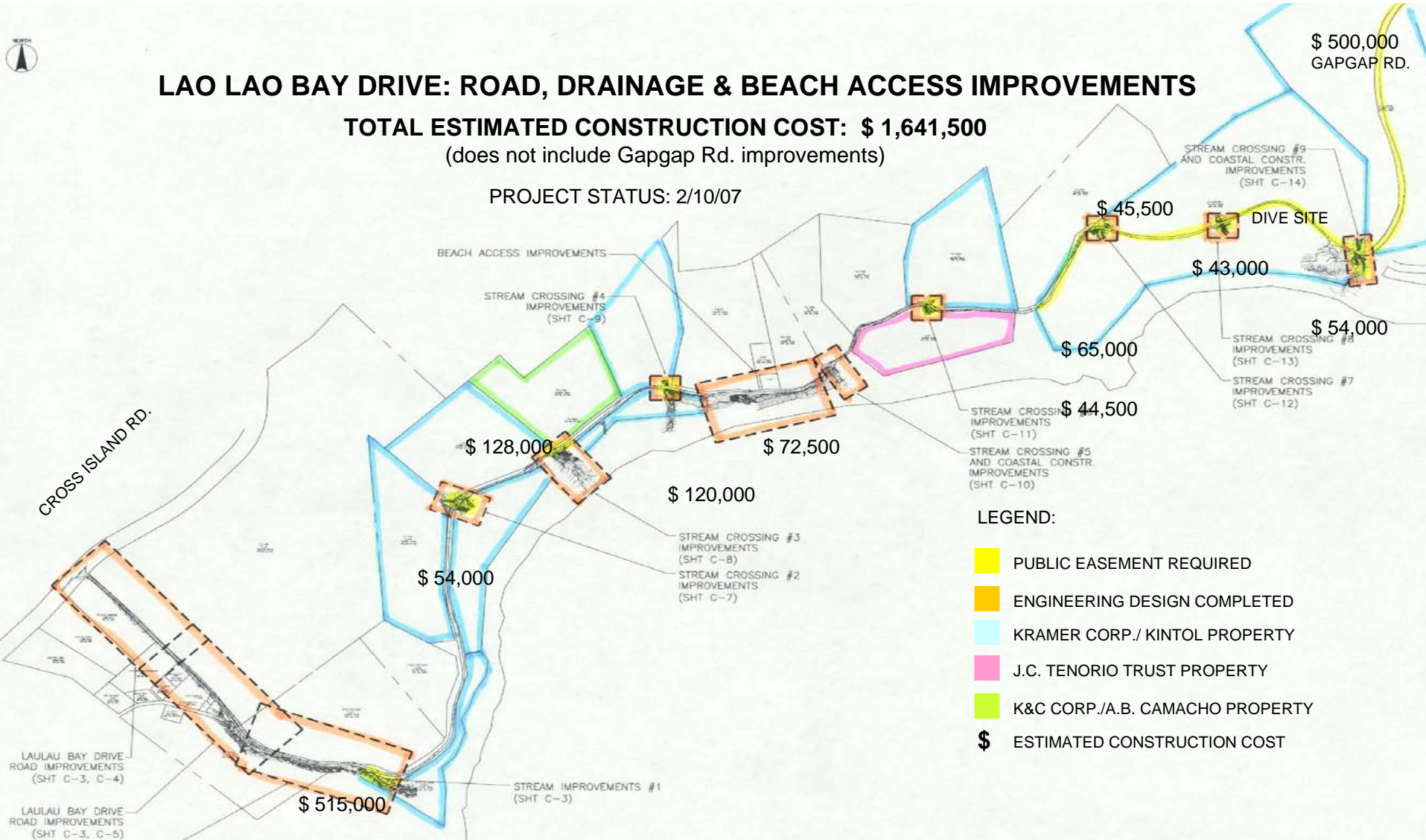
# Stormwater and Erosion Controls

## LAO LAO BAY DRIVE: ROAD, DRAINAGE & BEACH ACCESS IMPROVEMENTS

**TOTAL ESTIMATED CONSTRUCTION COST: \$ 1,641,500**

(does not include Gapgap Rd. improvements)

PROJECT STATUS: 2/10/07



**LEGEND:**

- PUBLIC EASEMENT REQUIRED
- ENGINEERING DESIGN COMPLETED
- KRAMER CORP./ KINTOL PROPERTY
- J.C. TENORIO TRUST PROPERTY
- K&C CORP./A.B. CAMACHO PROPERTY
- \$** ESTIMATED CONSTRUCTION COST

# Laulau Bay Watershed Proposed Actions



**Know Your Watershed Awareness Campaign**

**Stream Mapping & Monitoring**

**Revegetate Upper Watershed**

**Gaggap Rd. Paving & Drainage**

**Paving & Drainage of Access Road**

**Beach Access Improvements**

**Dive Site Stormwater Controls**

**Stormwater Controls at Stream Crossings**

**Coral Reef & Water Quality Monitoring**

## LEGEND

- Watershed Boundary
- Private Lots
- Revegetation Zone
- Old Railroad Location
- Estimated Stream Locations
- Road Improvements
- Erosion Control Sites

# Challenges and Needs

- **Land Acquisition**
  - private property
- **Funding**
  - \$1.5 million to implement
- **Technical Capacity**
  - DOT (road paving plans, stream crossings, erosion controls)
  - NRCS for planting plan

# Benefits

- Coral reef health and resilience
- Watershed and ecosystem health
- Sea turtle habitat protection
- Tourism and economy
- Recreation
- Community stewardship



## FUTURE PLANS:

Evaluate existing LAS in this focus area

Develop of a new round of LAS for watersheds in other CNMI islands

Collaborate with partnering agencies to identify priority watersheds

Seek assistance from federal partners for funding and technical capacity



**Si' Yu'us Ma'ase!  
Olomwaay!  
Thank You!**

U.S. Coral Reef Task Force Meeting  
FRAN CASTRO, CNMI

March 2007