Oahu Metropolitan Planning Organization
Citizen Advisory Committee

April 19, 2017

I. Call to order by Chair

II. Approval of the March 15, 2017 Meeting Minutes

III. Report of Policy Board Meeting

IV. Unfinished Business

a. None

V. New Business

a. Separate Left-Turn Phase Alternatives Study

–Kelly Akasaki

Updated Guidelines for Warranting Left-Turn Signal Phasing

Prepared for:

City and County of Honolulu

Department of Transportation Services

Prepared by:

Austin Tsutsumi & Associates, Inc.
Engineers & Surveyors

Purpose and Goals

- Update warrant guidelines for left-turn phasing at signalized intersections to reflect current national and jurisdictional guidelines
- Apply guidelines to various intersections as examples:
  - Kapiolani Boulevard/Kamakee Street
  - Moanalua Road/Kuala Street/Waimano Home Road
  - Waialae Avenue/6th Avenue
  - Monsarrat Avenue/Leahi Avenue
  - Nuuanu Avenue/North Kuakini Street/South Kuakini Street
  - Kailua Road/Hamakua Drive/Kainehe Street
  - Dillingham Boulevard/Kalihi Street

Major Tasks and Deliverables

- Task 1 – Update Left-Turn Signal Phasing Guidelines
  - Review existing federal and jurisdictional literature for left-turn phasing warrants.
  - Consult with DTS staff to identify issues with current left-turn phasing warrant guidelines.
  - Synthesize existing left-turn phasing warrant guidelines that consider factors such as design speed, peak hour volume, vehicle delay, roadway geometrics, and accident data.
  - Report of findings and resulting warrant guidelines.
- Task 2 – Warrant Application
  - Traffic data collection and observations at project intersections.
  - Apply warrants developed in Task 1 to each of the intersections.
  - Report of assessment and analysis, recommendations, and conclusions.

Conclusions/Recommendations

- To date, no nationally established warrants for left-turn phasing, although some local and federal agencies have developed own guidelines.
- The Traffic Signal Timing Manual was the only federal publication found to:
  - Arrange guidelines in a flowchart format.
  - Provide guidelines that differentiate between protected-only, permissive, and protected + permissive phasing.
- Recommended criteria to determine left-turn phasing:
  - Crash history
  - Sight distance
  - Roadway geometry and vehicle speeds
  - Intersection volumes and operation
- Resulting left-turn phasing warrant guidelines:
  - Mostly adapted from the flowchart and guidelines provided in the Traffic Signal Timing Manual.
  - Includes additional considerations for use.
  - Engineering judgment should always be applied in making the final determination.

V. New Business

a. Separate Left-Turn Phase Alternatives Study

–Kelly Akasaki

Requested Action: Recommend Policy Board approval as evidence that the work was carried out and direct staff to use the study recommendations in the OahuMPO's planning processes.

V. New Business

b. CAC Self-Evaluation

–Kiana Otsuka

V. New Business

c. CAC By-Laws Permitted Interaction Group

-Dick Poirier

Requested Motion: Establish Bylaws Permitted Interaction Group to evaluate the effectiveness of Section III.A.7-11, and recommend changes as appropriate.

V. New Business

d. Other Land Use/Transportation Planning Topics of Interest

–Andrea Anixt

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Kawela Bay
Kahuku
83
Laie
Haleiwa
Hauula
Kaaawa
99
93
83
Wahiawa
Mākaha
750
O'ahu
830
MCBH
Wai'anae
H2
H3
Kaneohe
Kailua
Pearl City
H1
Nānākuli
Aiea
63
76
61
Kapolei
Waimanalo Beach
Honolulu
WAIKIKI
72

January 2015 Conditions

Courtesy HDOT website

April 2017 Conditions

Courtesy Helen Matheus

April 2017 Conditions

Courtesy Helen Matheus

Bus Stop: Ka‘a‘awa Transit Station

Courtesy Helen Matheus

Bus Stop: Ka‘a‘awa Transit Station

Courtesy Helen Matheus

SITE PHOTOS

Courtesy HDOT April 21, 2015 Public Meeting Presentation (from website)

SITE PHOTOS

Temporary Fix

Courtesy HDOT April 21, 2015 Public Meeting Presentation (from website)

CONSTRUCTION OPTIONS

- Option 1 – 24/7 Lane Closure
  - 1 Lane closed 24/7
  - No night work
  - Approx. Construction Duration: 3½ - 4 months
  - Probable Construction Cost: ~$5.4M
- Option 2 – 24/7 Lane Closure with Continuous Work
  - 1 Lane closed with work on-going 24/7 (including nights and weekends)
  - Approx. Construction Duration: 3 months
  - Probable Construction Cost: ~$7.1M
- Option 3 – Lane Closure during Working Hours Only
  - 1 Lane closed during daytime working hours
  - 2 Lanes open during night-time non-working hours
  - Approx. Construction Duration: 5 months
  - Probable Construction Cost: ~$6.6M

Courtesy HDOT April 21, 2015 Public Meeting Presentation (from website)

2016

- ½ mile down the road…
- Week of repairs
- Makai lane closed 24/7

khon2

NEWS ▾ WEATHER ▾ WAKE UP 2DAY ▾ LIVING808 ▾ SPORTS ▾ TRAFFIC ▾ REPORT IT

Repairs to crumbling Kamehameha Hwy. in Kaaawa begin Saturday

By Kristine Uyeno and Web Staff
Published: February 11, 2016, 4:53 pm | Updated: February 15, 2016, 2:31 pm

Related Coverage

State outlines long-term plan to fix crumbling Windward Oahu highway

The Hawaii Department of Transportation is moving forward with repair plans on Kamehameha Highway near Kaaawa.

Courtesy KHON2 website

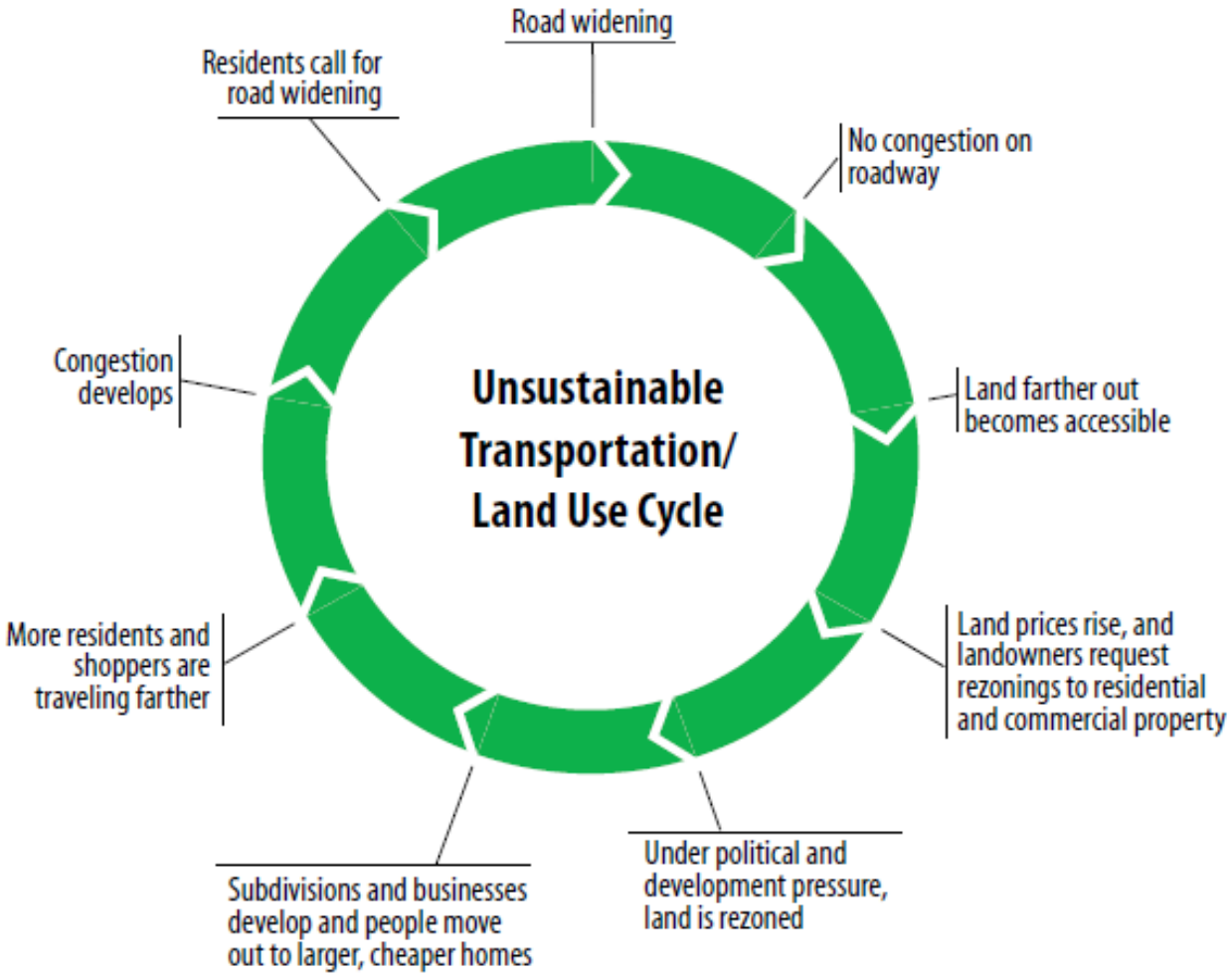
May 2016 conditions

Courtesy Brian Walsh/Andrea Anixt

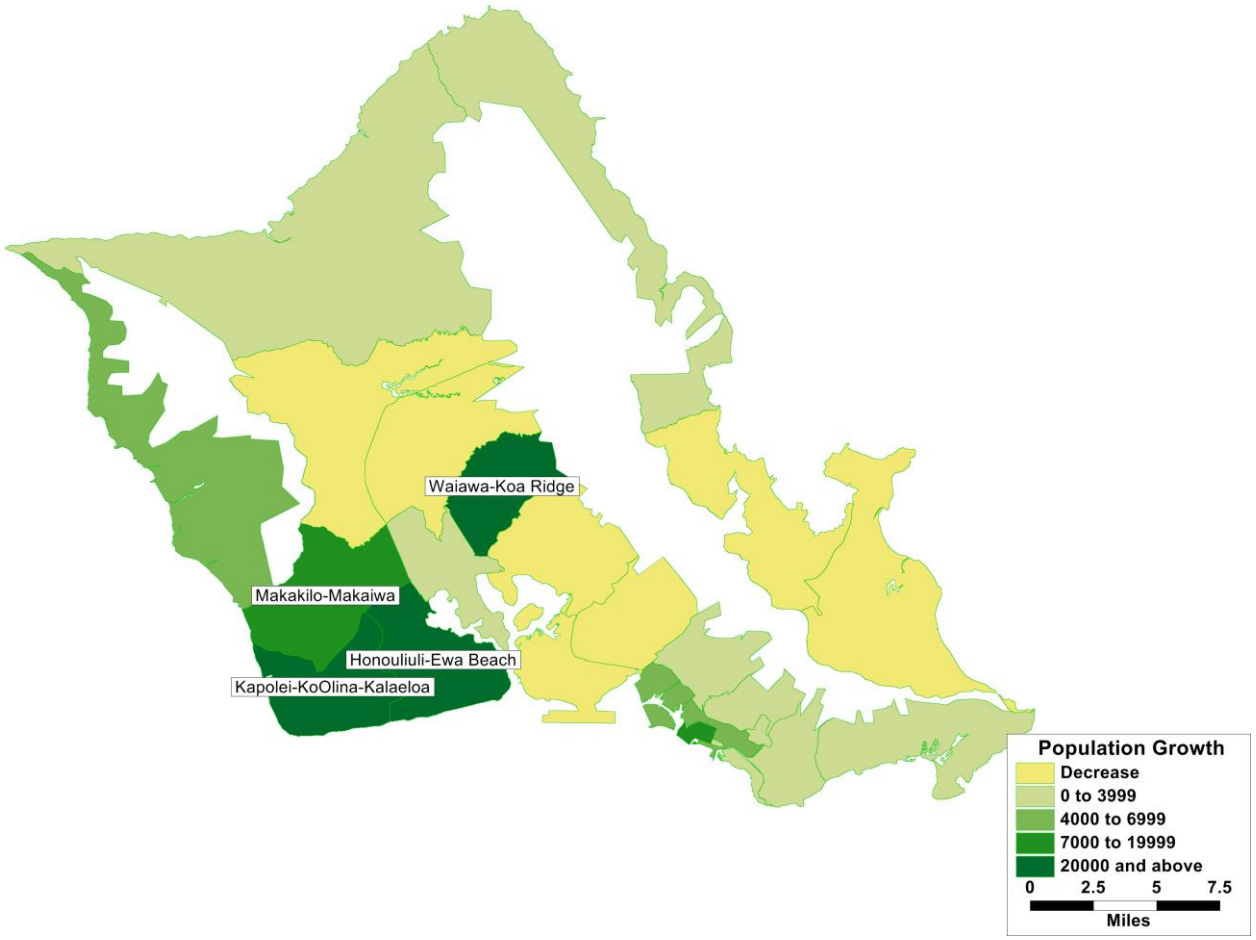
May 2016 conditions

Courtesy Brian Walsh/Andrea Anixt

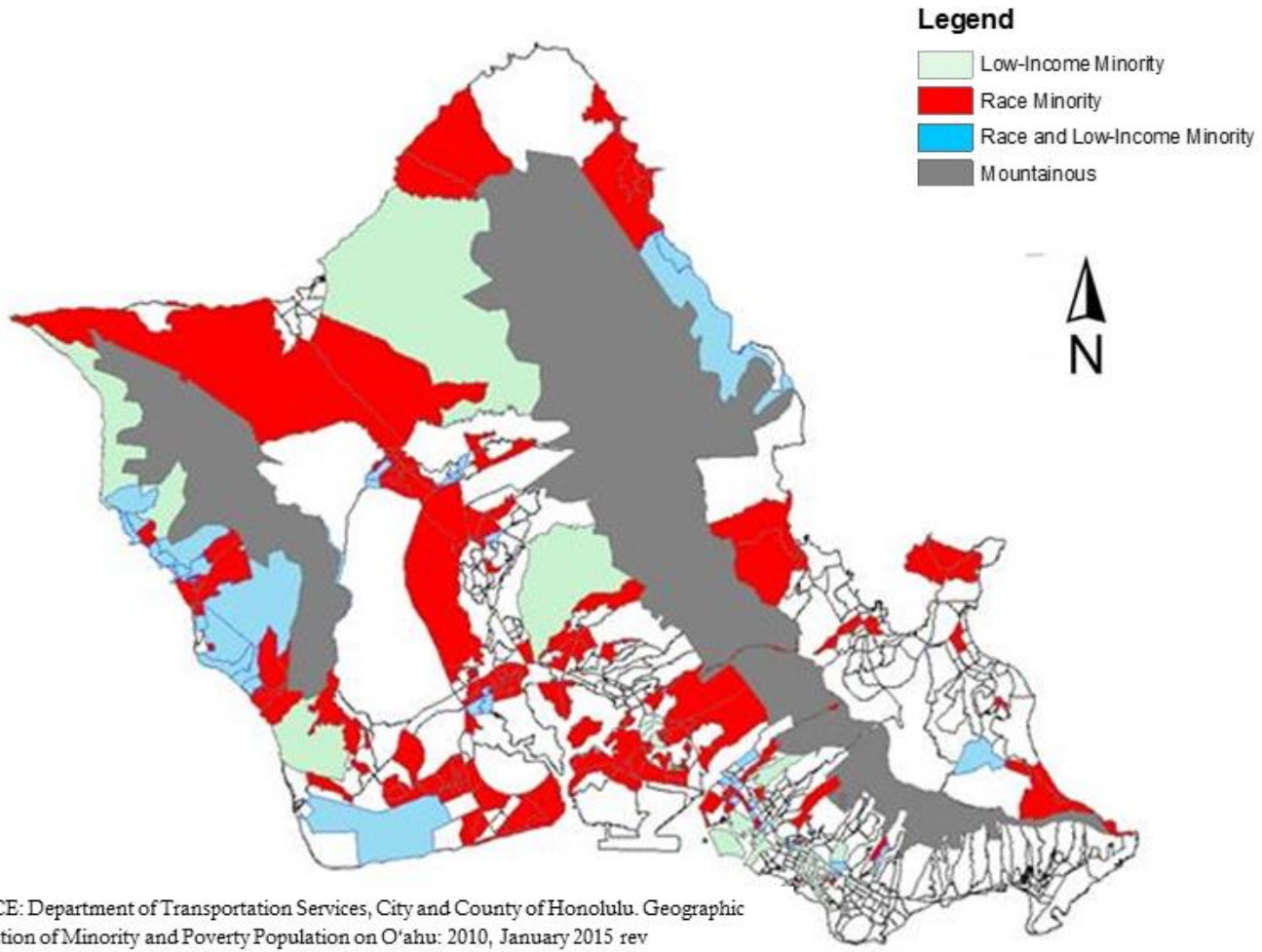
ORTP 2040: Figure 1-1 Transportation/Land Use Cycle



ORTP 2040: Figure 2-6 Population Growth, 2010-2040



ORTP 2040: Figure 6-13 Minority and Low-Income Title VI/EJ Areas: 2010



SOURCE: Department of Transportation Services, City and County of Honolulu. Geographic Distribution of Minority and Poverty Population on O'ahu: 2010, January 2015 rev

ORTP 2040: Figure 6-14 Investment by Geography

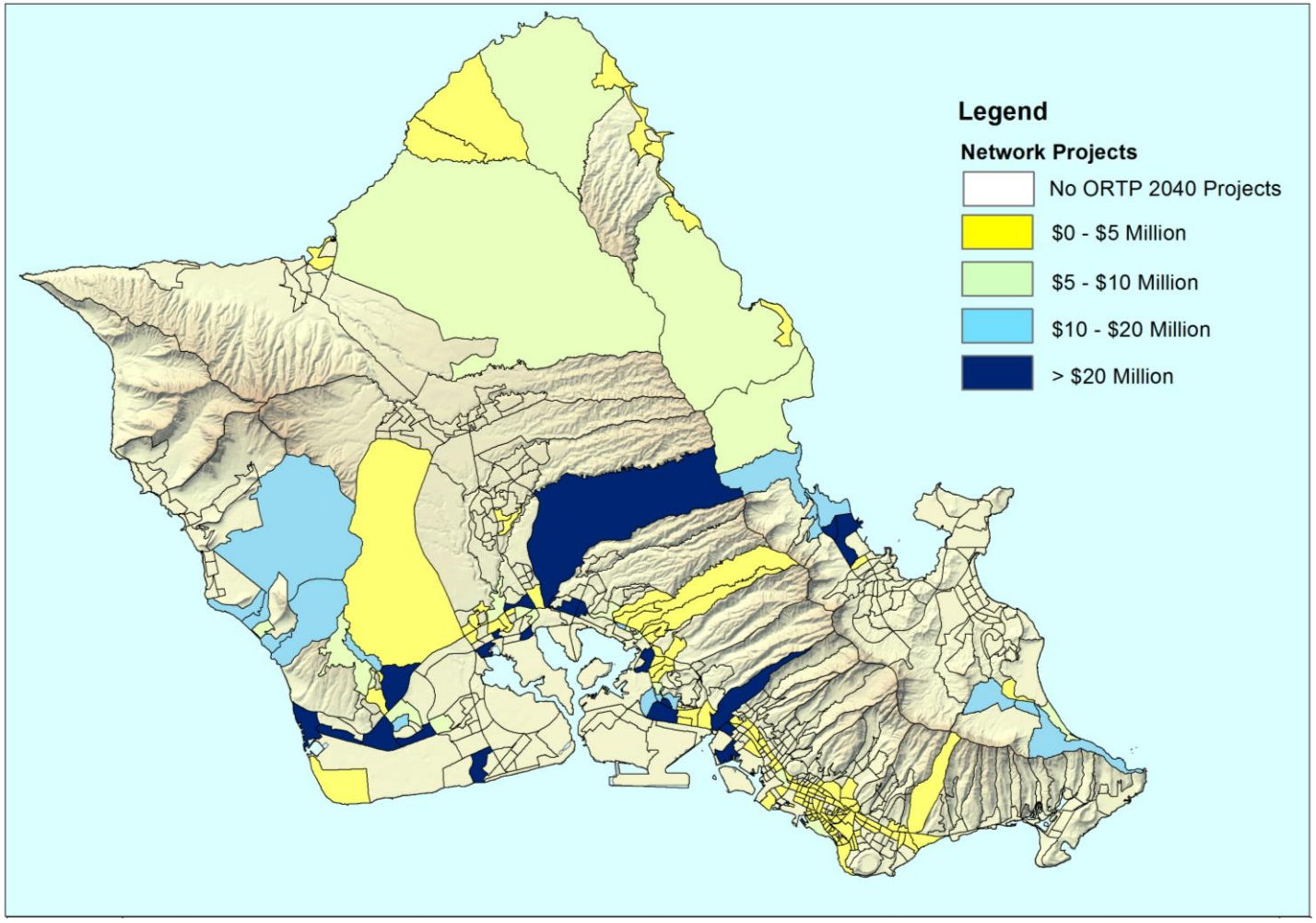


Table A-1 Public and Intergovernmental Comments Received during Comment Period

Comment #	Content/ Section	Originator (Person/ Agency sending in comment)	Comments	Response
90	General	CAC - Andrea Anixt	Congestion on the North Shore is detrimental to quality of life and will be exacerbated by additional development. (Support for this comment was also shown through petitions with 10 signatures and 13 resolutions from neighborhood boards and community associations, all of which had been previously submitted in comment on the FY2015-16 Overall Work Program.)	A copy of this comment and all ORTP 2040 comments were made available for review by the Policy Board on the OahuMPO website.

Table A-1 Public and Intergovernmental Comments Received during Comment Period

Comment #	Content/ Section	Originator (Person/ Agency sending in comment)	Comments	Response
91	General	CAC - Andrea Anixt and Brian Walsh	A comprehensive study of the North Shore transportation system should be performed because the roadway system is unable to support existing traffic and proposed development would overwhelm it. (Support for this comment was also shown through petitions with 136 signatures, 5 resolutions from neighborhood boards and community associations, and 182 letters of support, all of which had been previously submitted in comment on the FY2015-16 Overall Work Program.)	Planning studies are programmed by OahuMPO through the Overall Work Program (OWP). If a comprehensive North Shore Corridor Study were completed, and if it resulted in a recommendation that was supported by an implementing agency, that project could then be considered for inclusion in the ORTP in the future.

Table A-1 Public and Intergovernmental Comments Received during Comment Period

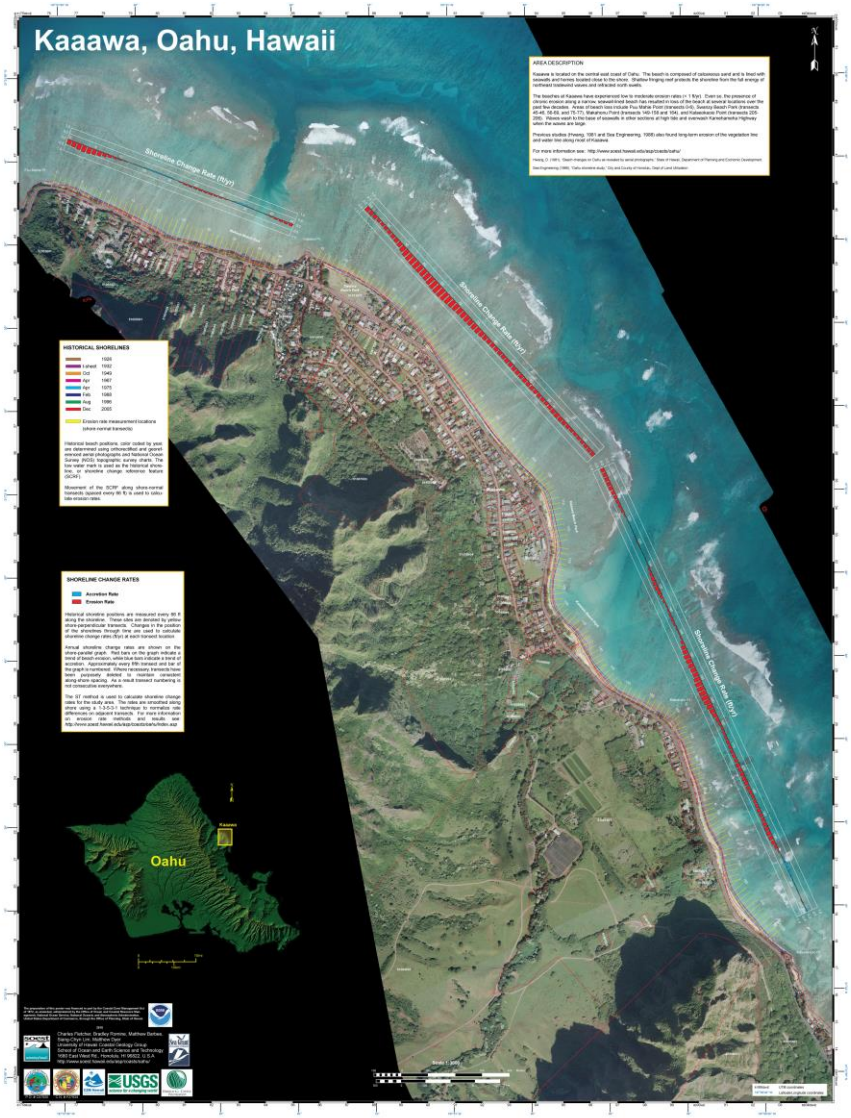
Comment #	Content/ Section	Originator (Person/ Agency sending in comment)	Comments	Response
92	General	CAC - Andrea Anixt and Brian Walsh	Population figures used in the ORTP 2040 seem not to accurately reflect ongoing and anticipated development.	Population forecast presented are consistent with the State of Hawaii Department of Business and Economic Development's population projections for Oahu in 2040 and do not represent an ultimate build out scenario. The forecasts presented are DPP's interim forecast, additional consultant support has been funded in the OahuMPO's OWP, and an official update to the DPP population forecast from 2007 is anticipated.

Table A-1 Public and Intergovernmental Comments Received during Comment Period

Comment #	Content/ Section	Originator (Person/ Agency sending in comment)	Comments	Response
93	General	Christopher Goody	The ORTP should NOT allow for any new major expansion in roadways in Koolau Loa, and instead focus on fixing and protection our current roadways. It is a clear case of the special interests of a portion of a single community in Laie and Turtle Bay wanting to impose their vision upon the rest of Koolau Loa, while they make enormous personal profits, leaving the rest of us to pay for it in the form of lost natural resources, increased traffic, stressed infrastructure, and quite possibly a manmade disaster.	A copy of this comment and all ORTP 2040 comments were made available for review by the Policy Board on the OahuMPO website.

Table A-2 Public and Intergovernmental Comments Received after Comment Period Deadline

Comment #	Content/ Section	Originator (Person/ Agency sending in comment)	Comments	Response
8-L	General	Andrea Anixt + 23 signatures	A petition requesting HDOT and the City/County of Honolulu "to expedite the solution to the flooding of the only road, Route 83, on Kamehameha Highway at Waikane."	This comment was provided to HDOT and DTS for consideration. A copy of the petition and all ORTP 2040 comments were made available for review by the Policy Board on the OahuMPO website.
9-L	General	Andrea Anixt + 19 signatures	A petition stating "No "third" city on North Shore's Gunstock Ranch in Malankahana."	This comment was provided to DTS for consideration. A copy of the petition and all ORTP 2040 comments were made available for review by the Policy Board on the OahuMPO website.



AREA DESCRIPTION

Kaaawa is located on the central east coast of Oahu. The beach is composed of calcareous sand and is lined with seawalls and homes located close to the shore. Shallow fringing reef protects the shoreline from the full energy of northeast tradewind waves and refracted north swells.

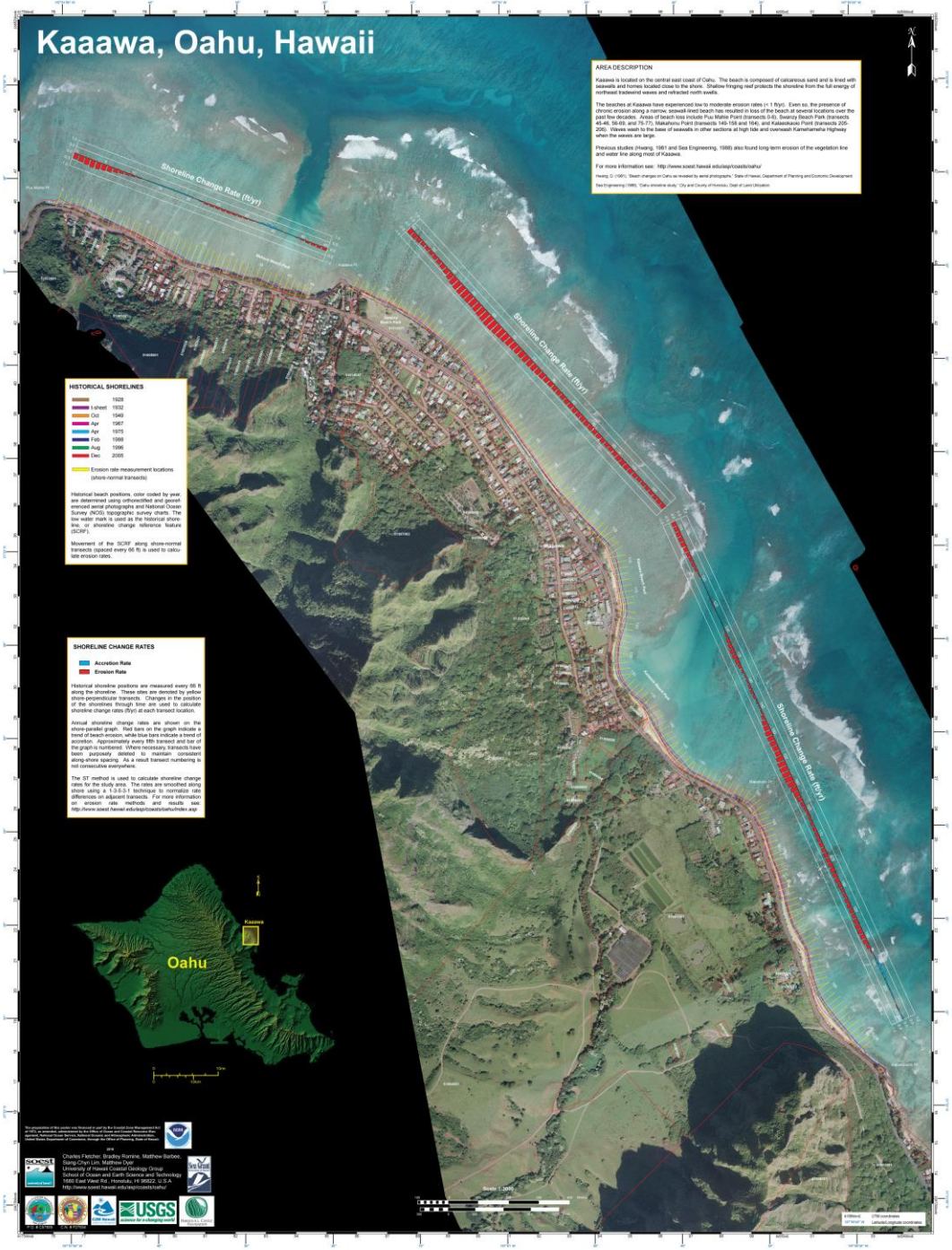
The beaches at Kaaawa have experienced low to moderate erosion rates (< 1 ft/yr). Even so, the presence of chronic erosion along a narrow, seawall-lined beach has resulted in loss of the beach at several locations over the past few decades. Areas of beach loss include Puu Mahie Point (transects 0-6), Swanzy Beach Park (transects 45-46, 56-69, and 75-77), Makahonu Point (transects 149-158 and 164), and Kalaeokaoio Point (transects 205-206). Waves wash to the base of seawalls in other sections at high tide and overwash Kamehameha Highway when the waves are large.

Previous studies (Hwang, 1981 and Sea Engineering, 1988) also found long-term erosion of the vegetation line and water line along most of Kaaawa.

For more information see: http://www.soest.hawaii.edu/asp/coasts/oahu/

Hwang, D. (1981), "Beach changes on Oahu as revealed by aerial photographs," State of Hawaii, Department of Planning and Economic Development.

Sea Engineering (1988), "Oahu shoreline study," City and County of Honolulu, Dept of Land Utilization.



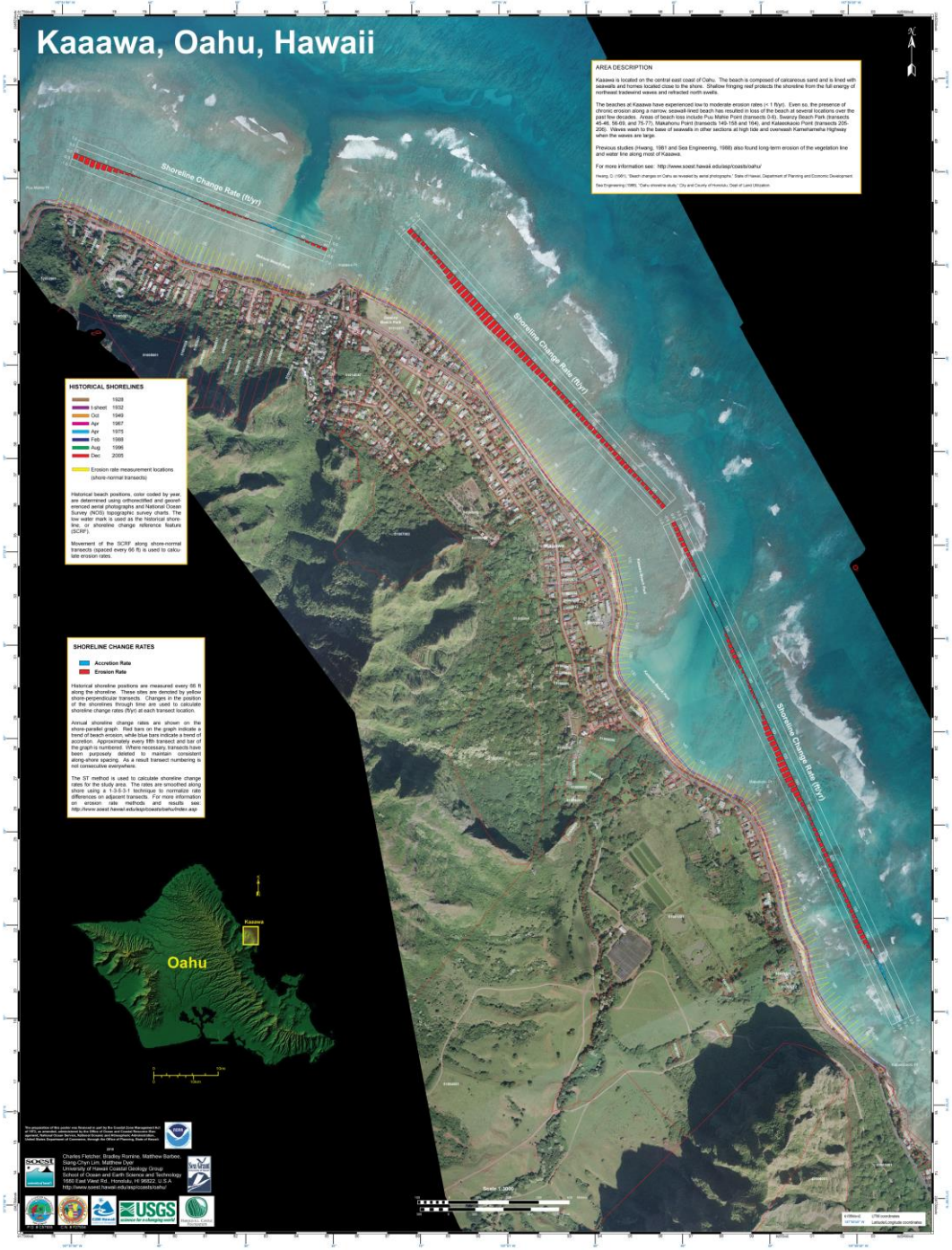
HISTORICAL SHORELINES

		1928
	t-sheet	1932
	Oct	1949
	Apr	1967
	Apr	1975
	Feb	1988
	Aug	1996
	Dec	2005

Erosion rate measurement locations (shore-normal transects)

Historical beach positions, color coded by year, are determined using orthorectified and georeferenced aerial photographs and National Ocean Survey (NOS) topographic survey charts. The low water mark is used as the historical shoreline, or shoreline change reference feature (SCRF).

Movement of the SCRF along shore-normal transects (spaced every 66 ft) is used to calculate erosion rates.



SHORELINE CHANGE RATES

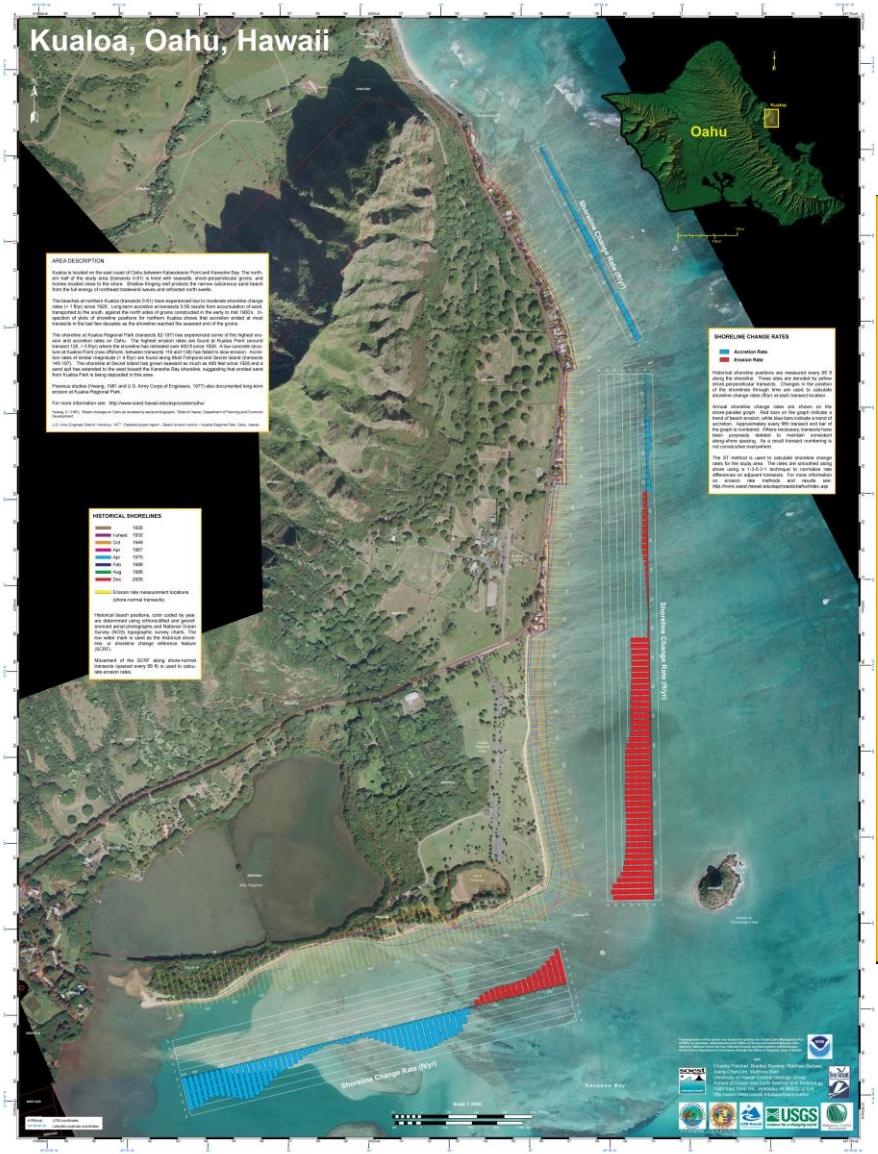
Accretion Rate

Erosion Rate

Historical shoreline positions are measured every 66 ft along the shoreline. These sites are denoted by yellow shore-perpendicular transects. Changes in the position of the shorelines through time are used to calculate shoreline change rates (ft/yr) at each transect location.

Annual shoreline change rates are shown on the shore-parallel graph. Red bars on the graph indicate a trend of beach erosion, while blue bars indicate a trend of accretion. Approximately every fifth transect and bar of the graph is numbered. Where necessary, transects have been purposely deleted to maintain consistent along-shore spacing. As a result transect numbering is not consecutive everywhere.

The ST method is used to calculate shoreline change rates for the study area. The rates are smoothed along shore using a 1-3-5-3-1 technique to normalize rate differences on adjacent transects. For more information on erosion rate methods and results see: *http://www.soest.hawaii.edu/asp/coasts/oahu/index.asp*



AREA DESCRIPTION

Kualoa is located on the east coast of Oahu between Kalaeokaoio Point and Kaneohe Bay. The northern half of the study area (transects 0-81) is lined with seawalls, shore-perpendicular groins, and homes located close to the shore. Shallow fringing reef protects the narrow calcareous sand beach from the full energy of northeast tradewind waves and refracted north swells.

The beaches at northern Kualoa (transects 0-81) have experienced low to moderate shoreline change rates (< 1 ft/yr) since 1928. Long-term accretion at transects 0-56 results from accumulation of sand, transported to the south, against the north sides of groins constructed in the early to mid 1900's. Inspection of plots of shoreline positions for northern Kualoa shows that accretion ended at most transects in the last few decades as the shoreline reached the seaward end of the groins.

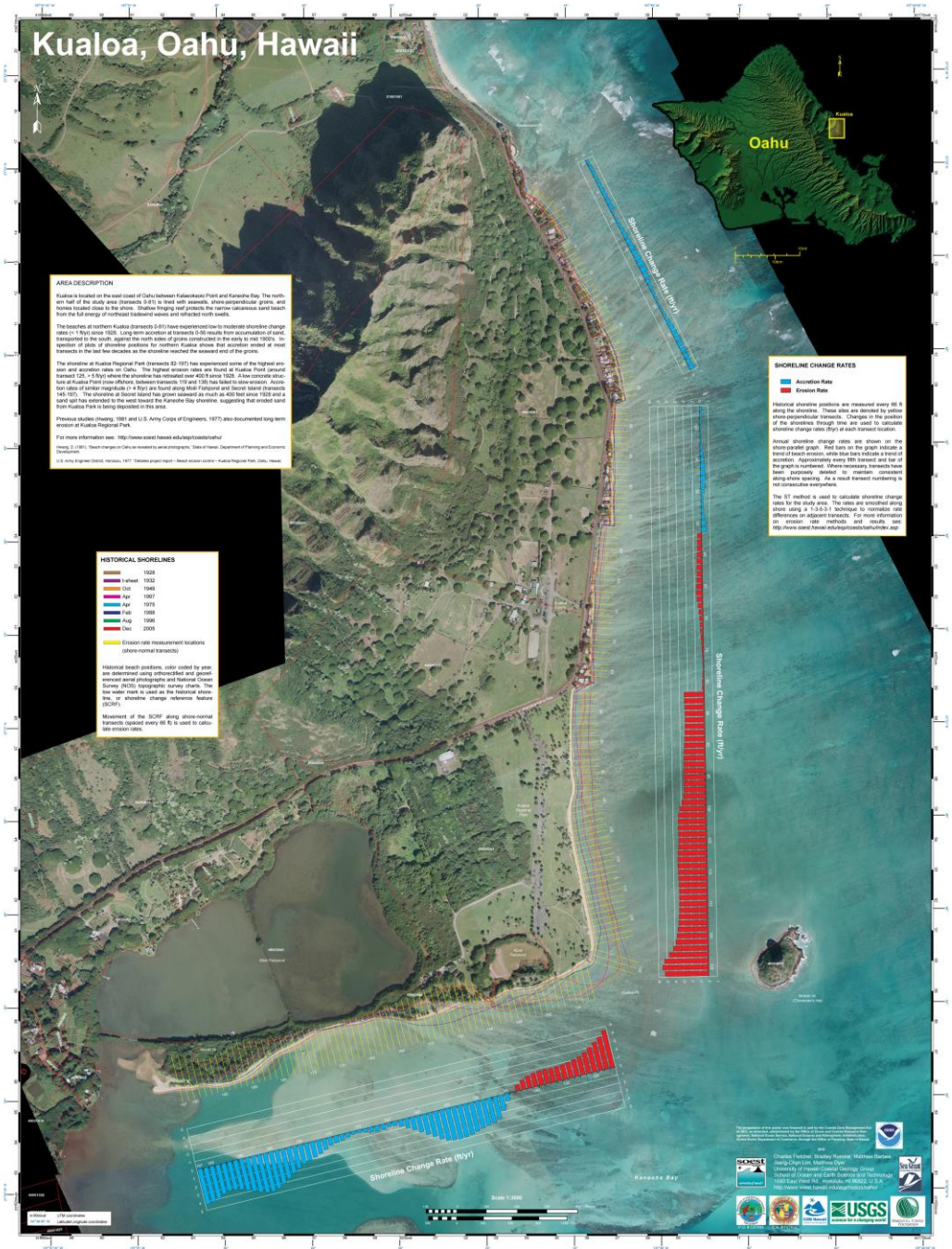
The shoreline at Kualoa Regional Park (transects 82-197) has experienced some of the highest erosion and accretion rates on Oahu. The highest erosion rates are found at Kualoa Point (around transect 125, > 5 ft/yr) where the shoreline has retreated over 400 ft since 1928. A low concrete structure at Kualoa Point (now offshore, between transects 119 and 138) has failed to slow erosion. Accretion rates of similar magnitude (> 4 ft/yr) are found along Molii Fishpond and Secret Island (transects 145-197). The shoreline at Secret Island has grown seaward as much as 400 feet since 1928 and a sand spit has extended to the west toward the Kaneohe Bay shoreline, suggesting that eroded sand from Kualoa Park is being deposited in this area.

Previous studies (Hwang, 1981 and U.S. Army Corps of Engineers, 1977) also documented long-term erosion at Kualoa Regional Park.

For more information see: http://www.soest.hawaii.edu/asp/coasts/oahu/

Hwang, D. (1981), "Beach changes on Oahu as revealed by aerial photographs," State of Hawaii, Department of Planning and Economic Development.

U.S. Army Engineer District, Honolulu, 1977. "Detailed project report – Beach erosion control – Kualoa Regional Park, Oahu, Hawaii.



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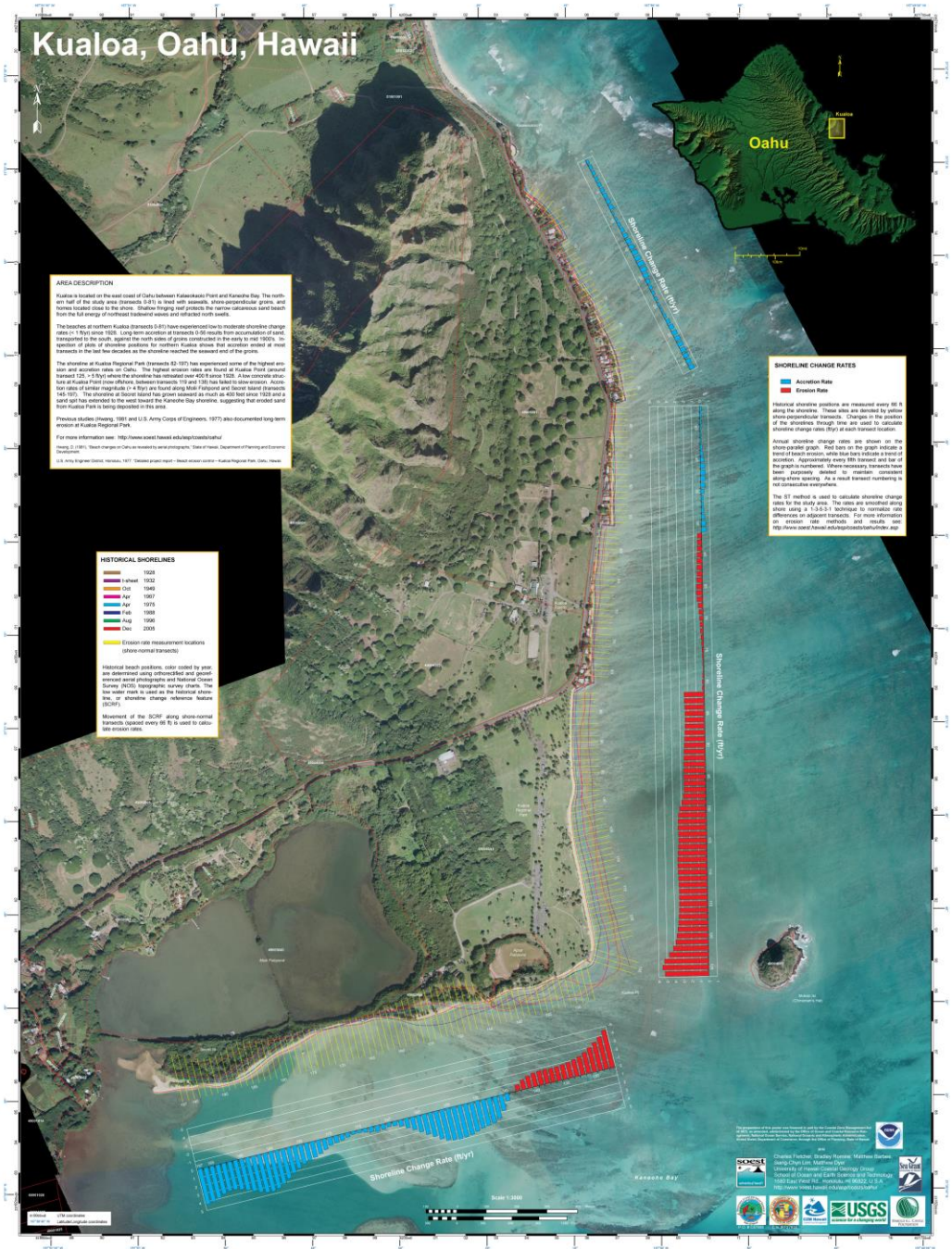

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VI. Invitation to interested members of the public to be heard on matters not included on the agenda

VII. Announcements

VIII. Announcement of next scheduled meeting

The next anticipated meeting is May 17th

IX. Adjournment