RE-IMAGINE THE FUTURE OF LOWER TOPANGA

Public Meeting

ZOOM

02 27 21

CALIFORNIA STATE PARKS SINCE 1864

RCD RESOURCE CONSERVATION DISTRICT OF THE SANTA MONICA MOUNTAINS

WELCOME, ZOOM LOGISTICS

PLEASE KEEP VIDEO OFF UNTIL WE GO TO BREAKOUT ROOMS

TECH SUPPORT- CHAT HOST

WELCOME

RECORDING

<u>BREAKOUT ROOMS:</u>

UNMUTE

TURN VIDEO ON

PLEASE PUT QUESTIONS IN THE CHAT,
WE WILL READ THEM AT Q&A BREAKS

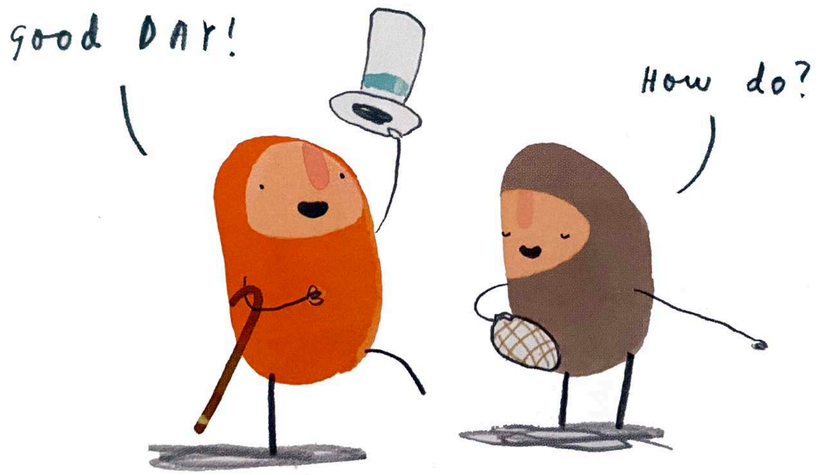
THANK YOU FOR YOUR TIME

MEETING GOALS

- REVIEW CONCEPTUAL DESIGN ALTERNATIVES
- REVIEW MODELING RESULTS
- GATHER INPUT ON ALTERNATIVES

INTRODUCTIONS, ROLES

- CALIFORNIA STATE PARKS
  LANDOWNER, CO-LEAD
- RESOURCE CONSERVATION DISTRICT OF THE SANTA MONICA MOUNTAINS (RCDSMM)
  CO-LEAD
- STATE COASTAL CONSERVANCY
  FUNDER/PARTNER
- MOFFATT & NICHOL
  CONSULTANT
- ENVIRONMENTAL SCIENCE ASSOCIATES
  CONSULTANT
- OTHER PUBLIC AGENCIES
- MEMBERS OF THE PUBLIC




ASM. BLOOM IN THE FIELD

NEED FOR PROJECT

NEED FOR PROJECT

PROBLEMS AT TOPANGA LAGOON, PARK AND BEACH:

- Coastal erosion and SLR
  - Retreating beach leaving limited “towel space” during high tides
  - County lifeguard headquarters and restrooms threatened
- Resource impacts
  - Constricted lagoon habitat (less than 2 acres of historic 11 acres)
  - Reduced biodiversity due to invasive species
  - Limited fish passage opportunities due to velocities associated with narrow (82’) PCH bridge span
  - Water quality problems associated with bird, dog and human fecal bacteria
- Public Access and recreation/Visitor Services
  - Sub-standard septic systems for the existing concessions and ranger residence
  - Loss of overnight accommodations due to Topanga Ranch Motel deteriorated condition
  - Limited trail access on the north side of PCH
  - No interpretive information regarding the archaeological, cultural and historic stories or natural resources
  - No coordinated visitor serving and recreation plan
- Emergency services
  - Access limitations for helicopters, ambulances, lifeguards and rangers

WHAT YOU DID IN 2020

OVER 100 MEMBERS OF THE PUBLIC PARTICIPATED IN WORKSHOP

PUBLIC INPUT- PRIORITIES

HABITAT

CLIMATE ADAPTATION

SEA LEVEL RISE

CULTURAL/HISTORICAL

EMERGENCY

VISITOR SERVICES

RECREATION

FACILITIES

WHAT WE HEARD

RESTORE LAGOON TO GREATEST EXTENT POSSIBLE

PLAN FOR RESILIENCE TO SLR AND COASTAL EROSION

WHAT WE HEARD

AVOID IMPACTS TO SURF BREAK

WHAT WE HEARD

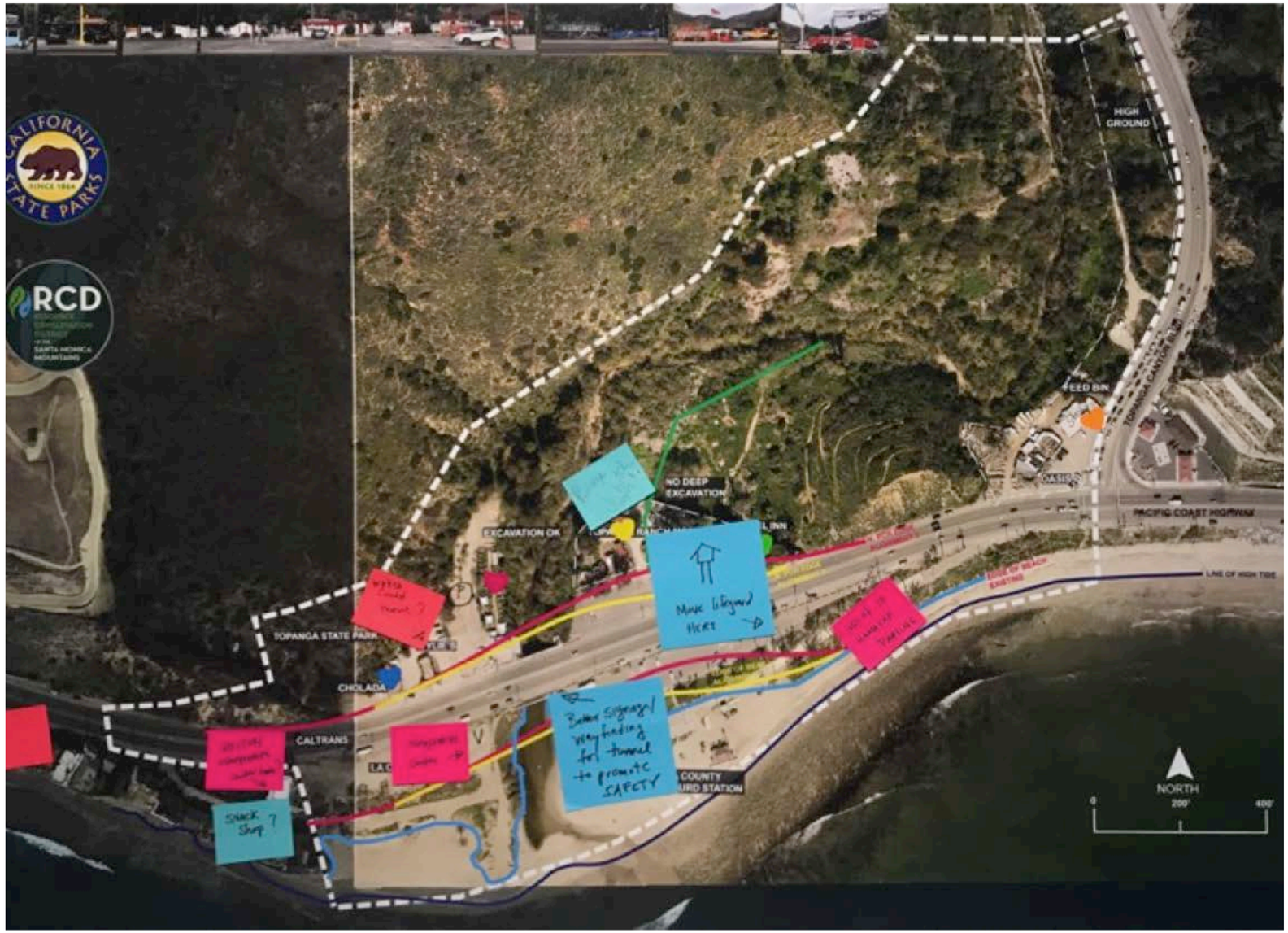
IMPROVE ECOLOGICAL FUNCTION OF LAGOON:

- MAINTAIN/ENHANCE GOBY HABITAT;
- IMPROVE FISH PASSAGE FOR STEELHEAD;

- PROTECT NESTING & BEACH HABITAT;
- IMPROVE WATER QUALITY;
- INCREASE WETLAND & TRANSITIONAL UPLAND HABITAT

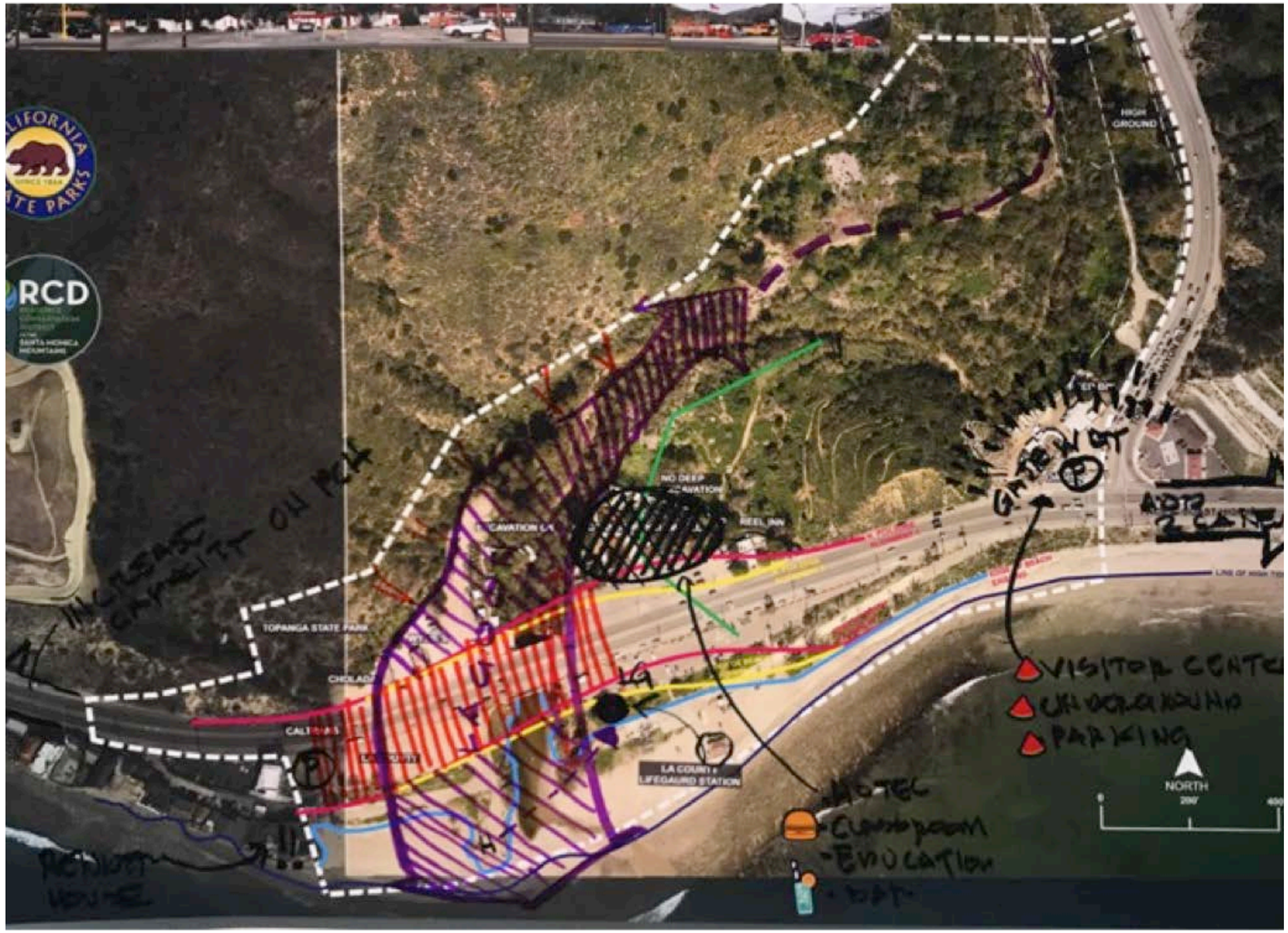
WHAT WE HEARD

MOVE LIFEGUARD HEADQUARTERS/ RESTROOMS AND HELIPAD TO BETTER LOCATION



WHAT WE HEARD

PROVIDE INTERPRETATION OF SITE HISTORY FROM NATIVE AMERICANS TO PRESENT



WHAT WE HEARD

MAINTAIN SOME VISITOR SERVING BUSINESS, LIKE REEL INN, CHOLADA, WYLIE'S BAIT SHOP

WHAT WE HEARD

PUBLIC SENTIMENT WAS DIVIDED:

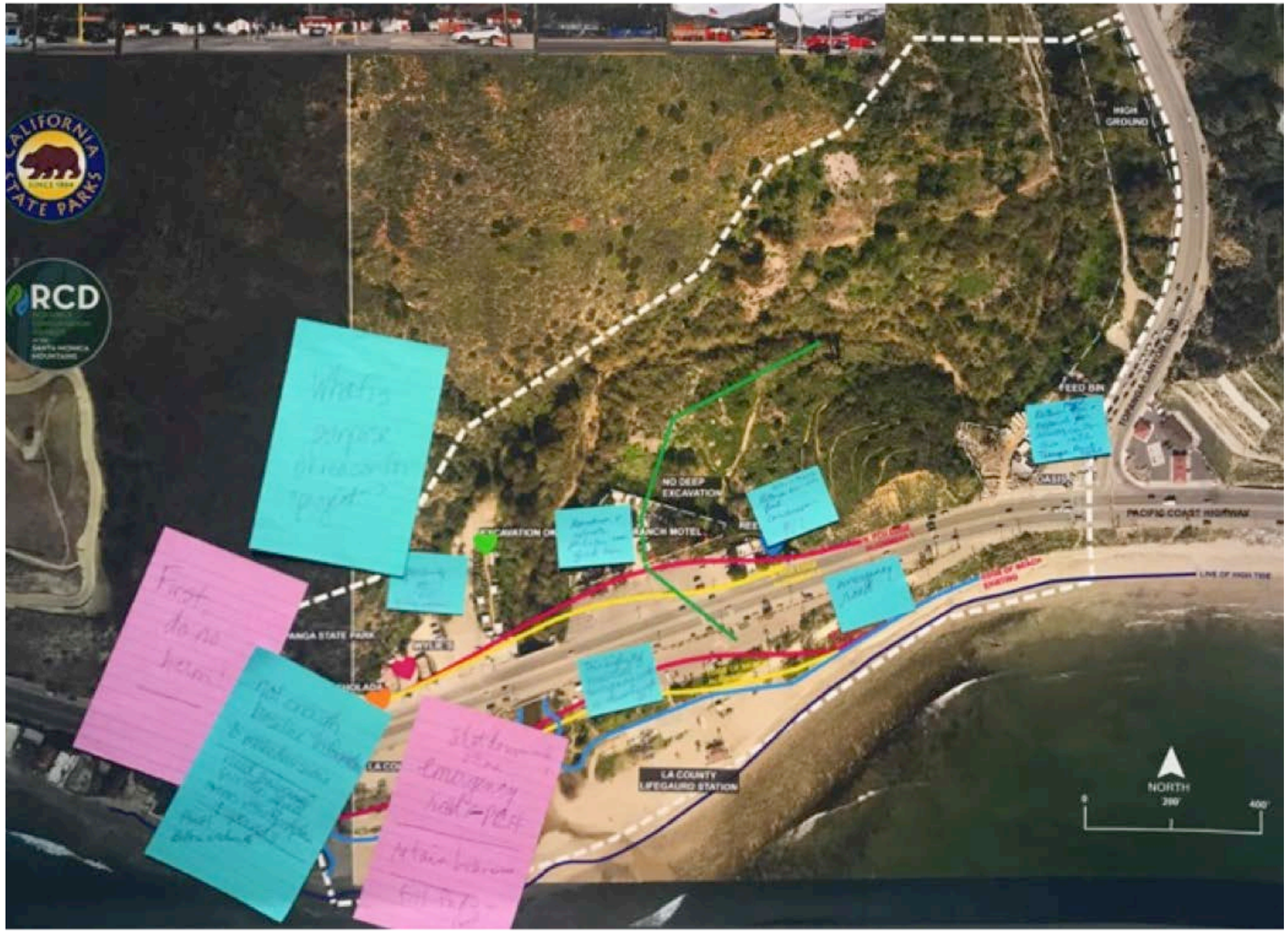
PRIORITIZE DAY USE

VS

EVALUATE OPPORTUNITY FOR TOPANGA RANCH MOTEL TO PROVIDE LOW COST OVERNIGHT ACCOMODATIONS

WHAT WE HEARD

INCREASE/IMPROVE
EMERGENCY ACCESS



WHAT WE HEARD

PRESERVE PARKING- ESPECIALLY FREE PARKING!

INCREASE PUBLIC TRANSPORTATION ACCESSIBILITY

MAINTAIN TRAFFIC FLOW DURING CONSTRUCTION

WHAT WE LEARNED

SUMMARY OF BASELINE STUDIES AND MODELING RESULTS

WHAT WE LEARNED

LAGOON ENTRANCE MONITORING FROM LIFEGUARD HQ

WHAT WE LEARNED

STEELHEAD AND GOBY UPDATE

Monthly snorkel surveys (RCD) and lifecycle monitoring station, thanks to CDFW

Regular observations with lagoon monitoring Nov 2020 Habitat, Abundance and Predation Survey funded by CDPR

WHAT WE DID

ALTERNATIVES DEVELOPMENT- INTEGRATING DATA AND PUBLIC INPUT INTO DESIGN

DESIGN ELEMENTS COMMON ACROSS ALTERNATIVES

- Many elements are only shown on Alt 1 for illustration and comparison (such as location of helipad, lifeguard HQ, and dendritic pattern on west side of channel) but could be applied to any of the alternatives.
- Protection of cultural resources is universal. A cap of 2’ minimum is left to protect all cultural resource areas in all alternatives. No grading into those areas is proposed.
- Locations of parking and concessions can be moved to accommodate the proposed lagoon restoration in each alternative.
- Beach access will be provided on both sides of the lagoon in all alternatives.

WHAT WE DID

PRELIMINARY COMPARISON OF ALTERNATIVES

	Alternative 1 No Project/Managed Decline	Alternative 2	Alternative 3	Alternative 4
North side of PCH				
No grading in known historic areas	No change	2' minimum cap over cultural resources	2' minimum cap over cultural resources	No change
# of 24 Ranch Motel structures to remain in place/ reconfigured within Motel footprint/ reconfigured historic grade nearby /removed	17/3/0/3 1 collapsed structure not rebuilt	0/0/0/24	17/3/0/3 1 collapsed structure not rebuilt	14/3/0/6 1 collapsed structure not rebuilt
Retaining wall height for Ranch Motel and underpass	None required	None required	12' max	2'-16' at PCH, 12'at motel wall, and 2'-6' at wetland edge
East side graded wetland-riparian transition area (10' el. toe, 10'-13' el. top of slope)	0 acres	2.8 acres level at 10' elev. 1875 wet area footprint	1.75 acres 1:10-1:3 slopes	**1.99 acres** level-1:10 max slopes
East side graded riparian-upland transitional area (10'-13' el. toe, 25'-40' el. top of slope)	0 acres	**2.67 acres** planar- majority of slopes at 4%/1:25 10'-18' el.	0.96+0.43=**1.39 acres** 1:3 slope south, 1:10-1:3 north	0.56+0.23= **0.79 acres** 1:3-1:5 slopes
East side riparian-upland trans. No grading area	0 acres	**0.15 acres** sycamore only	**0.5 acres** sycamore/ toe of knob	**1.1 acres** sycamore/ upper basin
West side graded wetland-riparian transition area (10' el. toe, 10'-13' el. top of slope)	0 acres	**2.74 acres** 10' elev. level with "starter channels" 1875 lobe	**2 acres at** level-1:10 max slope, 1:3 at narrows	**2 acres** level-1:10 max slope, 1:3 at narrows
West side graded riparian-upland transitional area (10'-13' el. toe, 25'- 40' el. top of slope)	0 acres	**1.13 acres** 1:2 native slope if parking above, add 0.31 if not	**1.37 acres** at 1:3 slope	**1.2 acres** at 1:3 slope

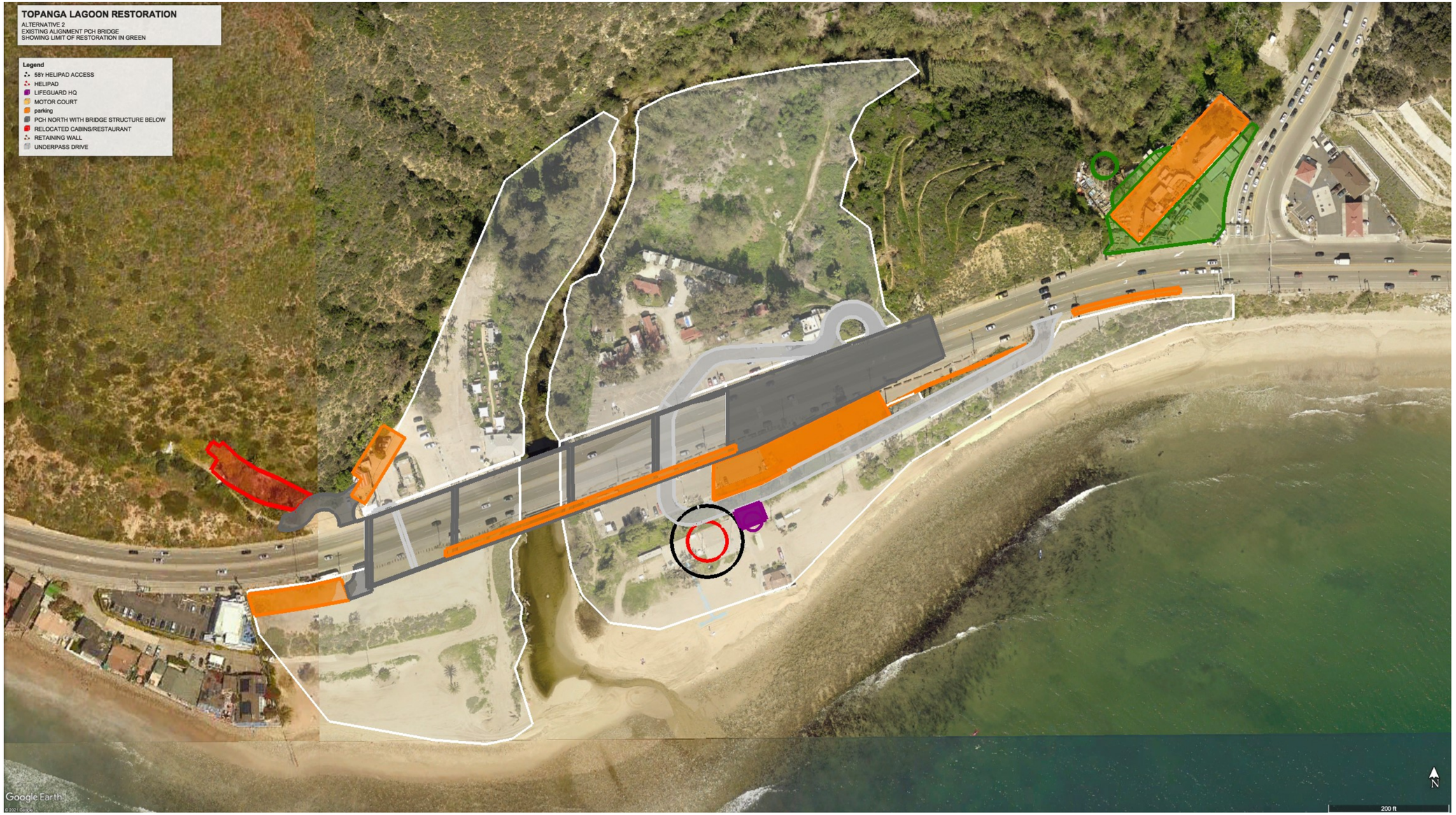
WHAT WE DID

PRELIMINARY COMPARISON OF ALTERNATIVES

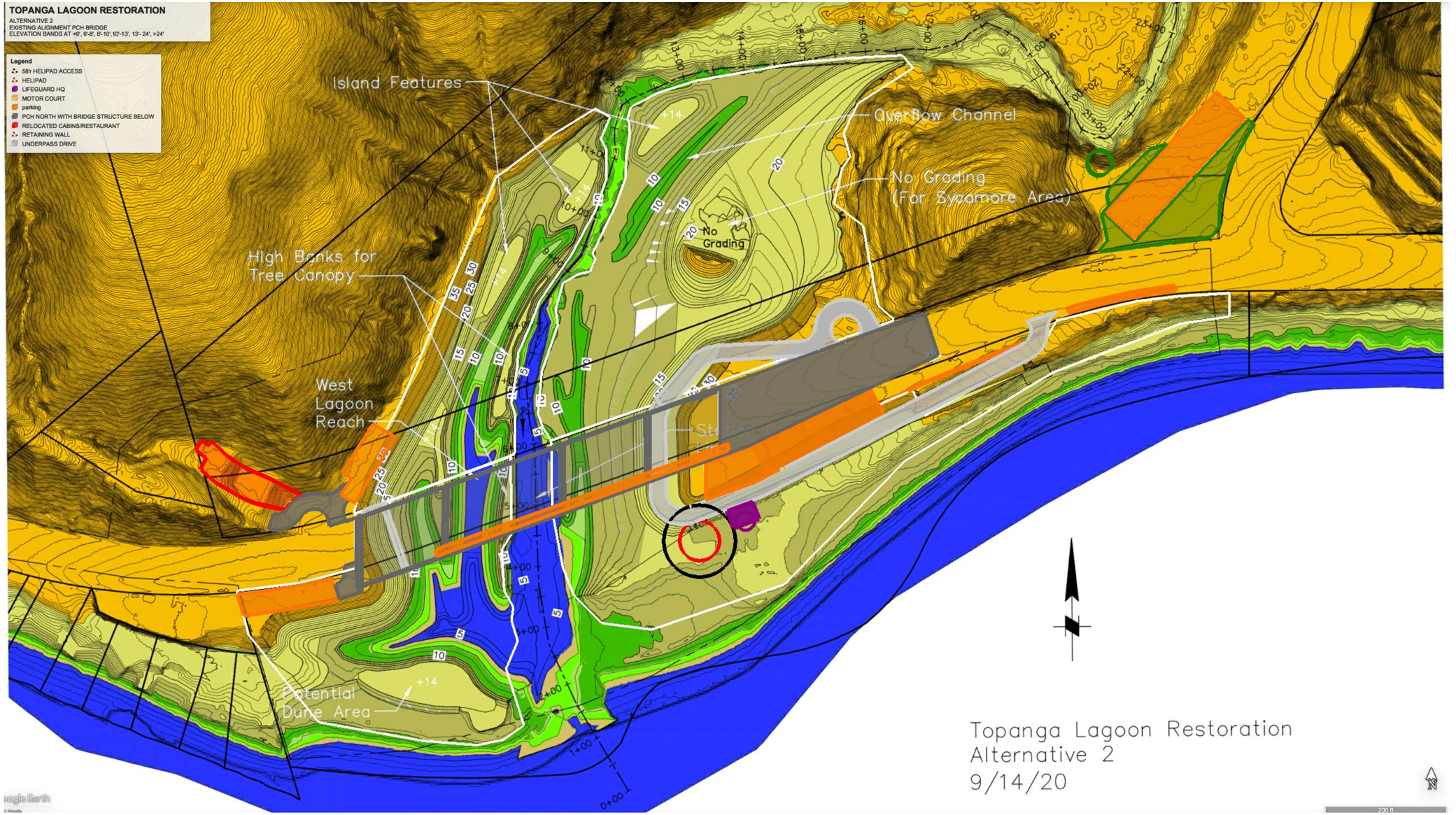
	Alternative 1 No Project/Managed Decline	Alternative 2	Alternative 3	Alternative 4
South side of PCH				
East side graded beach transitional	0 acres	0.69 acres incl. dune	0.59 acres	0.94 acres
West side graded beach transitional	0 acres	0.75 acres incl. dune	0.5 acres	0.54 acres
Additional beach "towel space"	0 acres	0.77 acres	1.67 acres	2.2 acres
TOTAL ALL RESTORED HABITATS	0 acres	11.7 acres add 0.31 if no west parking or services	9.77 acres	10.76 acres

ALTERNATIVE 1. NO PROJECT/MANAGED DECLINE

ALTERNATIVE 2.



ALTERNATIVE 2.



ALTERNATIVE 3.

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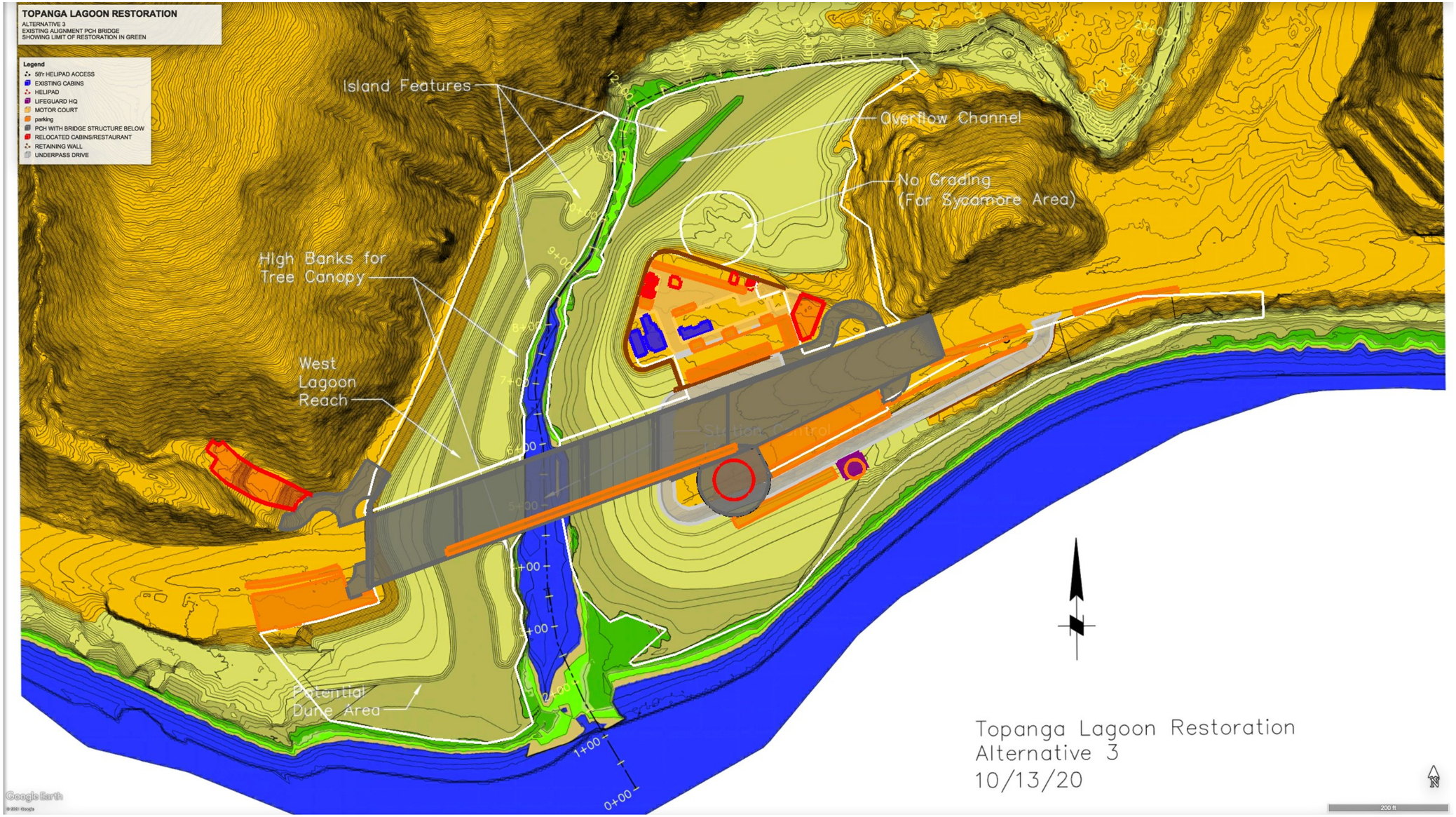
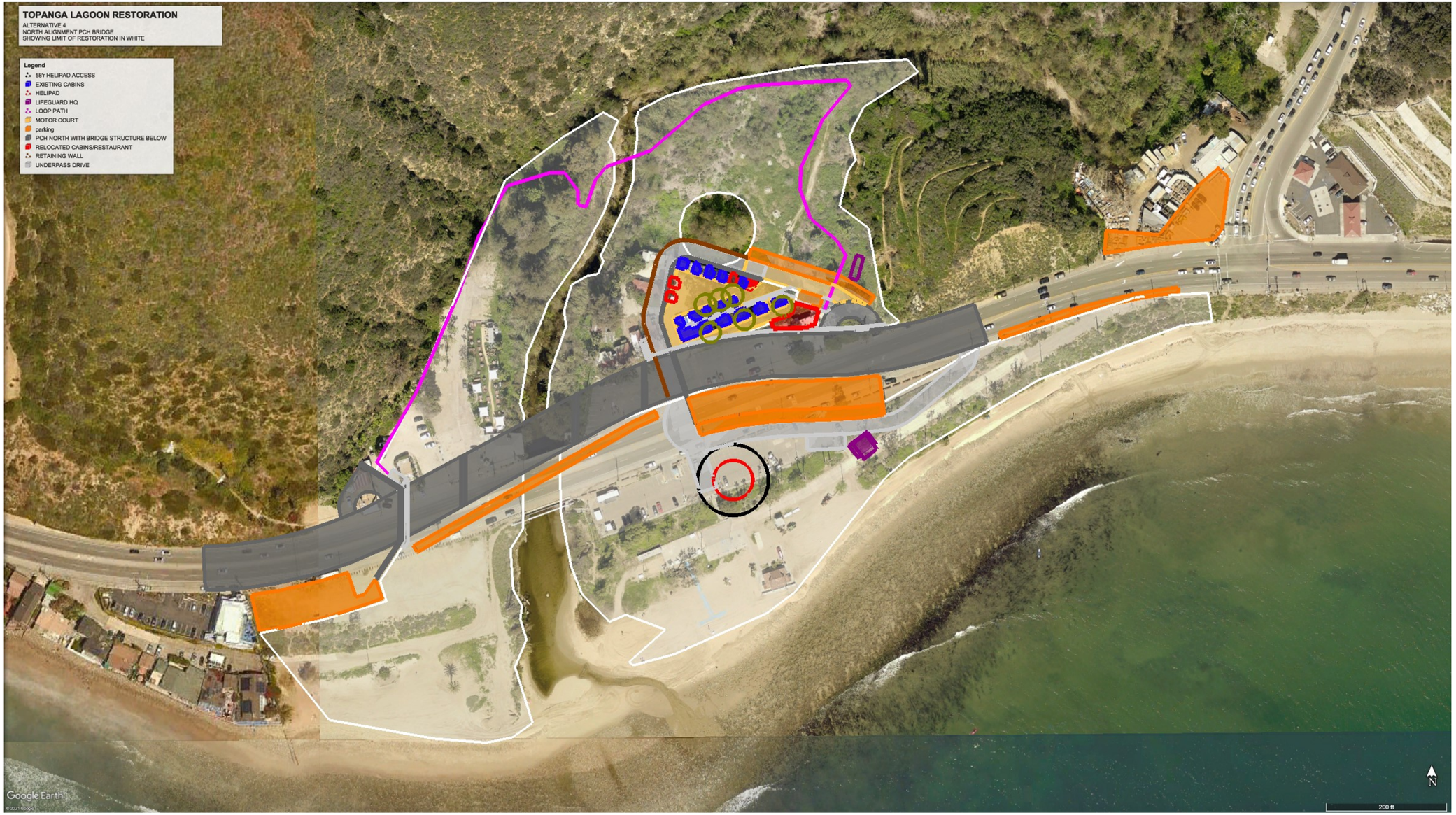
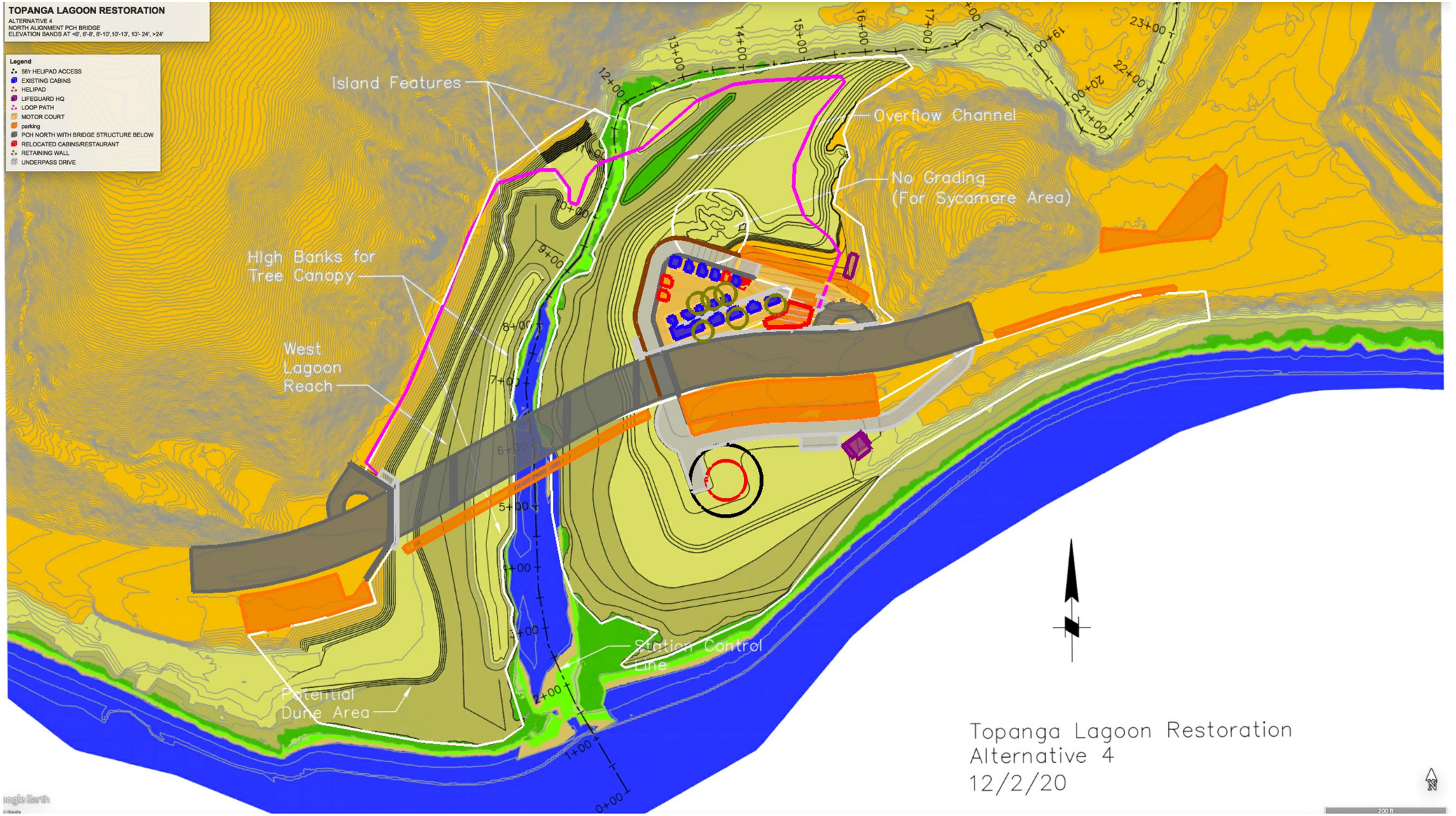


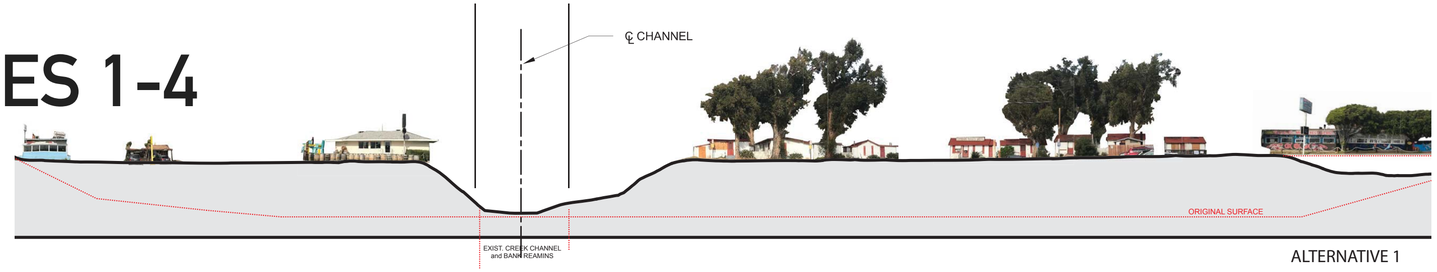
ALTERNATIVE 4.



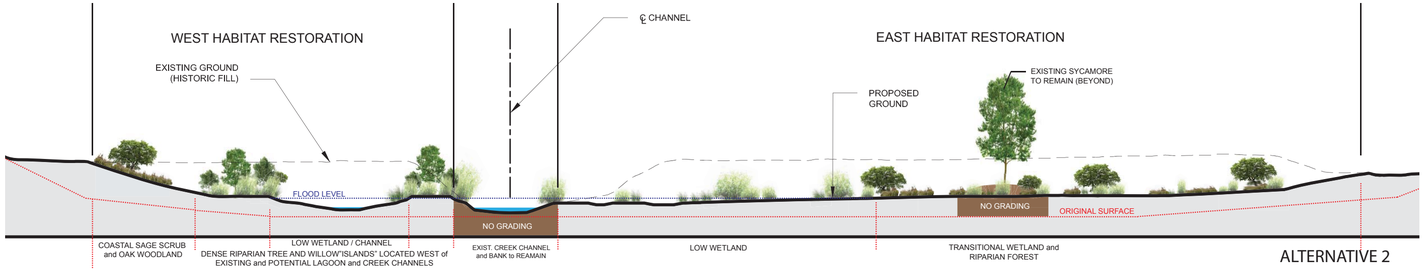
ALTERNATIVE 4.



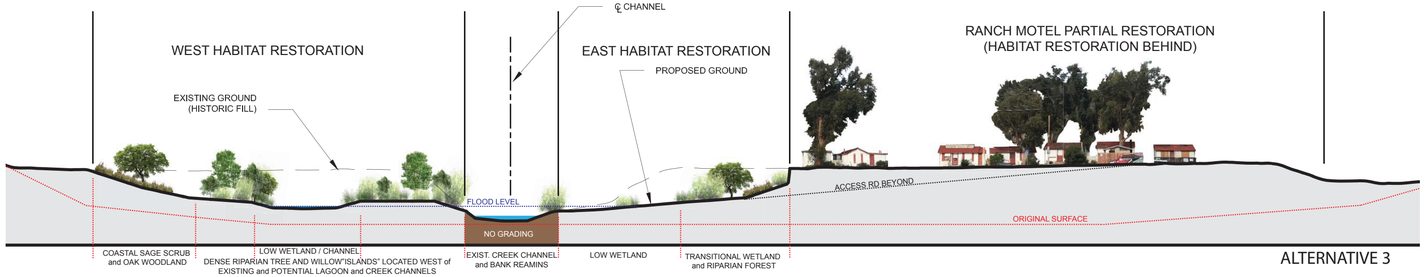
ALTERNATIVES 1-4



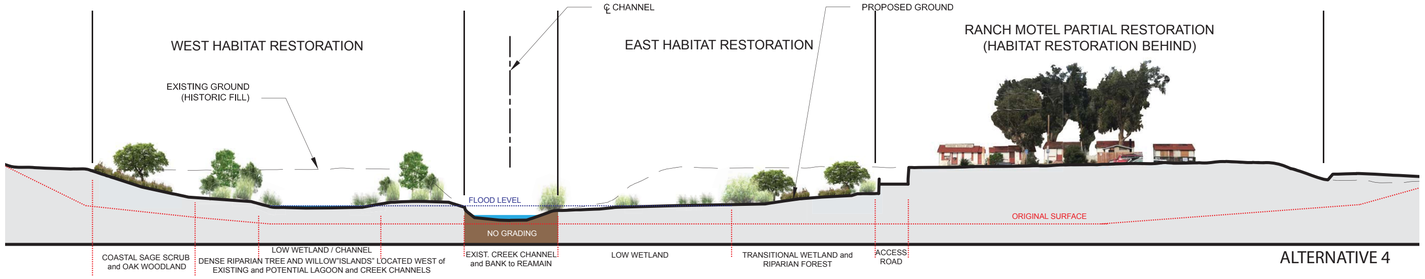
ALTERNATIVE 1



ALTERNATIVE 2



ALTERNATIVE 3



ALTERNATIVE 4

ESTIMATED NON-CONFORMING PARKING DATA

	ALT 1	ALT 2	ALT 3	ALT 4
PARKING (+/-)	**341** spaces (+0)	**209** (-132)	**238** (-103)	**244** (-97)
PCH Parking	No change-**70**	**33** (-37)	**49** (-21)	**38** (-32)
LA County Beach Parking- Alts 2-4 propose 2 levels (lower level parking under cantilever)	**95** (+0): 87 at PCH + 8 spaces ADA and Lifeguard HQ at beach	**122** (+27): 66 east + 16 west PCH level +40 beach level including ADA & Lifeguard	**126** (+31) 48 east + 38 west spaces PCH level + 40 beach level including ADA & Lifeguard	**146** (+51): 66 east + 38 west spaces PCH level + 42 beach level including ADA & Lifeguard
North DPR parking	156 spaces	10 (-146)	43 spaces	40 spaces
Parking TCB/PCH	20 spaces	44 (+22)	20 (+0)	20 (+0)

Caltrans

Beaches and Harbors

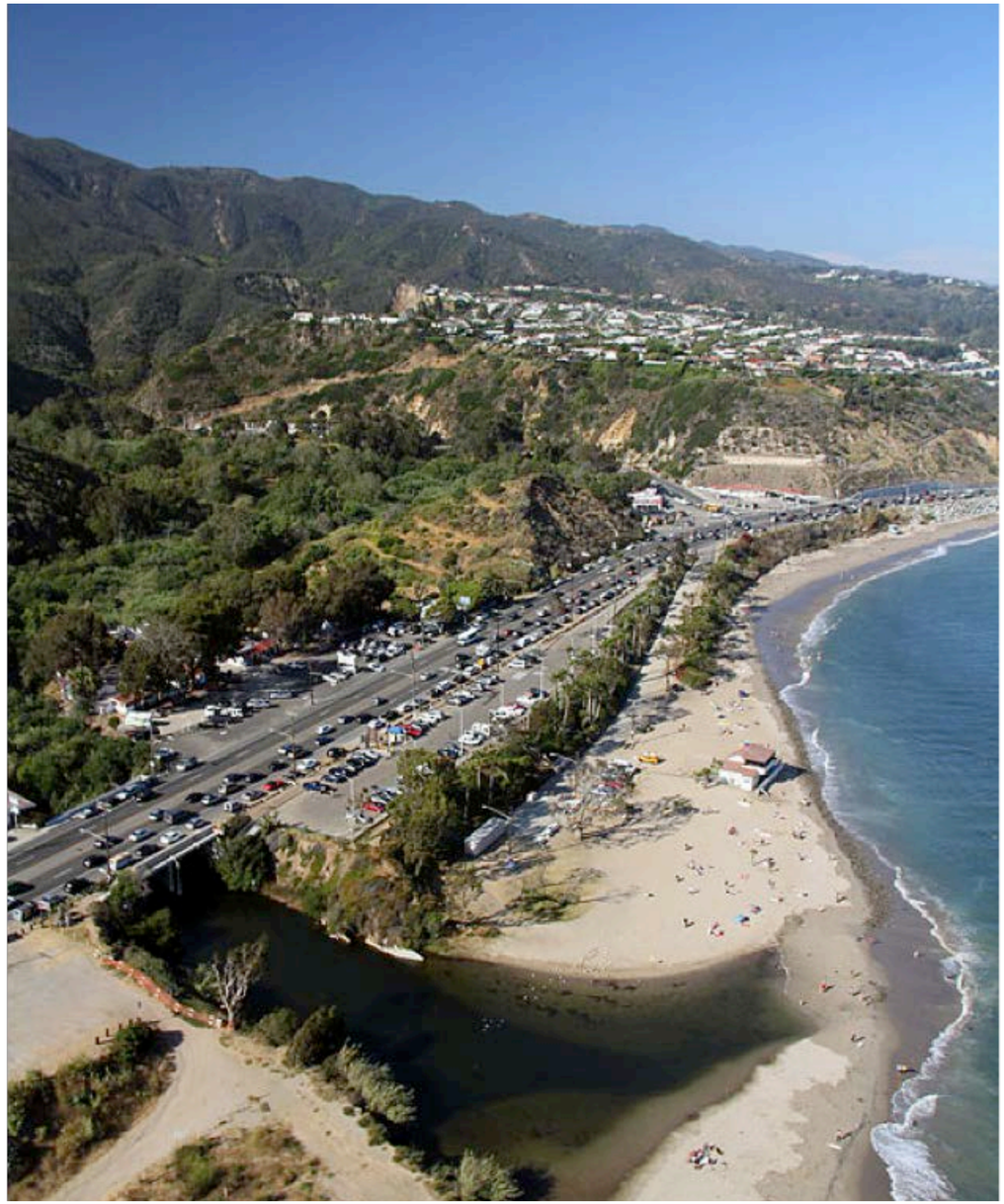
CDPR

Q+A

NUMERICAL MODELING

1-D Sediment Transport Modeling

2-D Hydraulic Modeling



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1-D SEDIMENT TRANSPORT MODELING

Model: MIKE 11

Purpose: To determine

- sedimentation in the lagoon

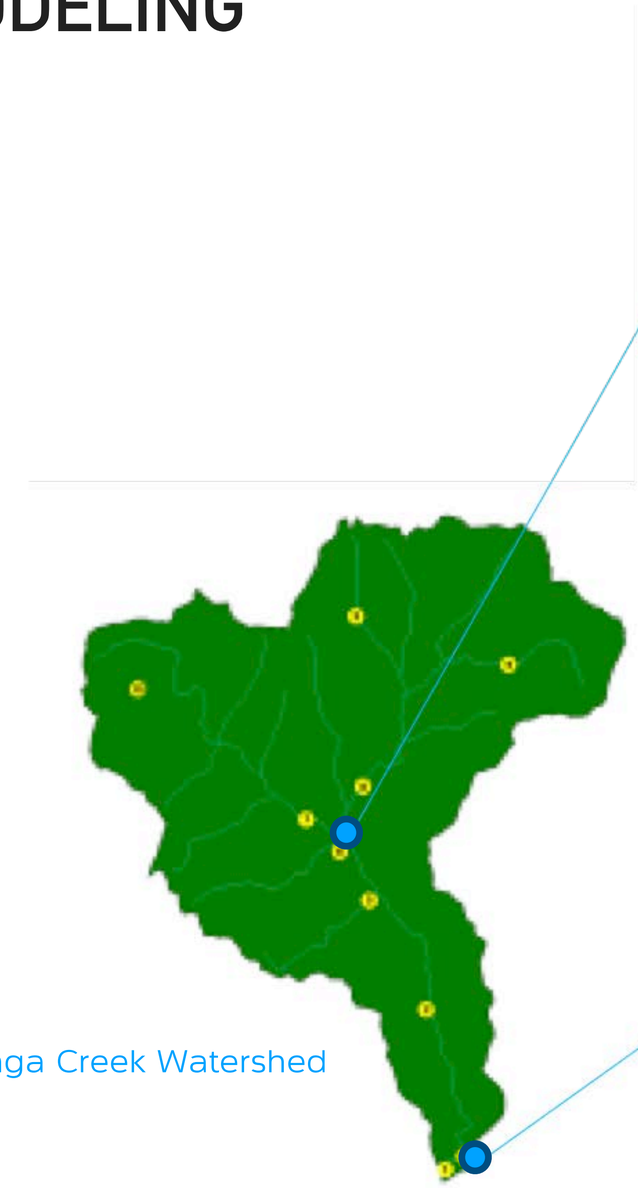
- transport to the ocean

Modeling Reach: Confluence to ocean

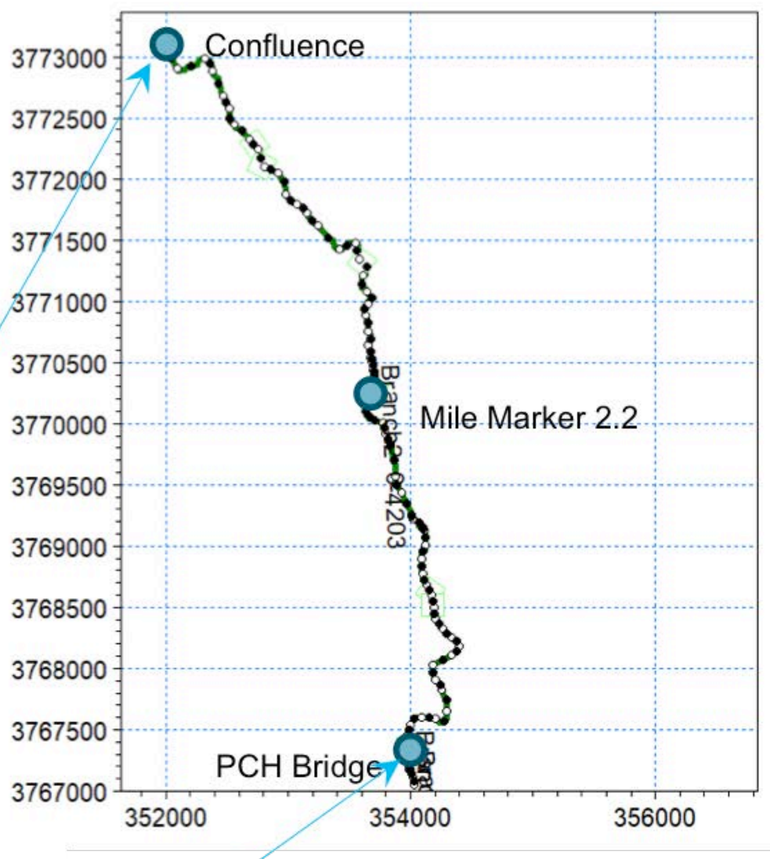
Modeling Scenarios:

- wet period: 1980-1984

- average period: 1997-2001



Topanga Creek Watershed

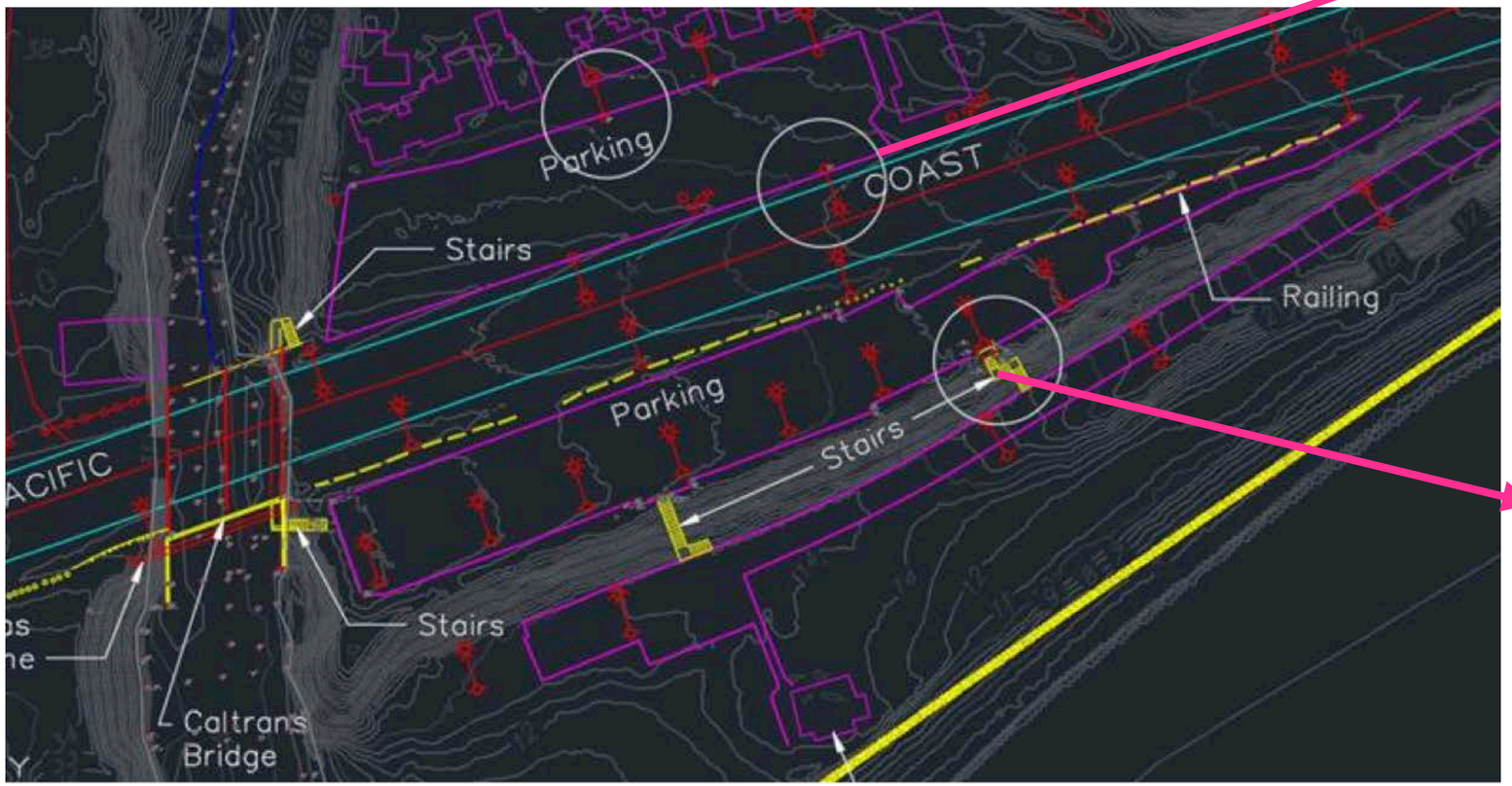


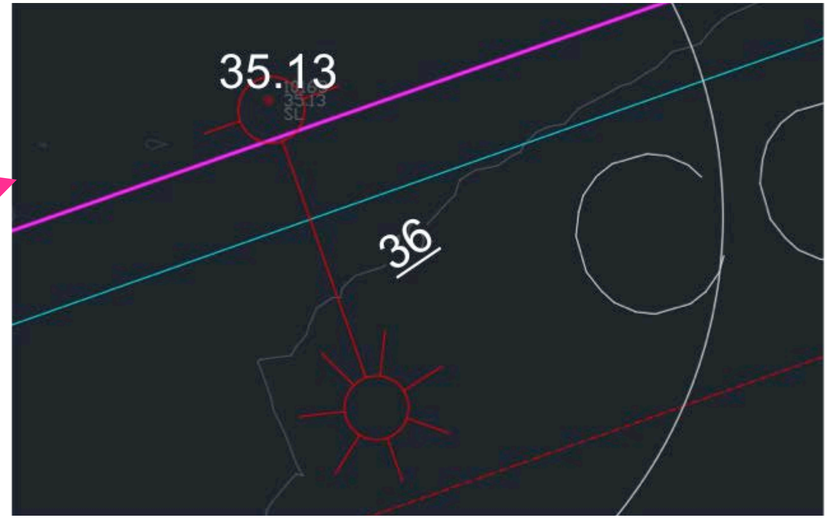
1-D model network

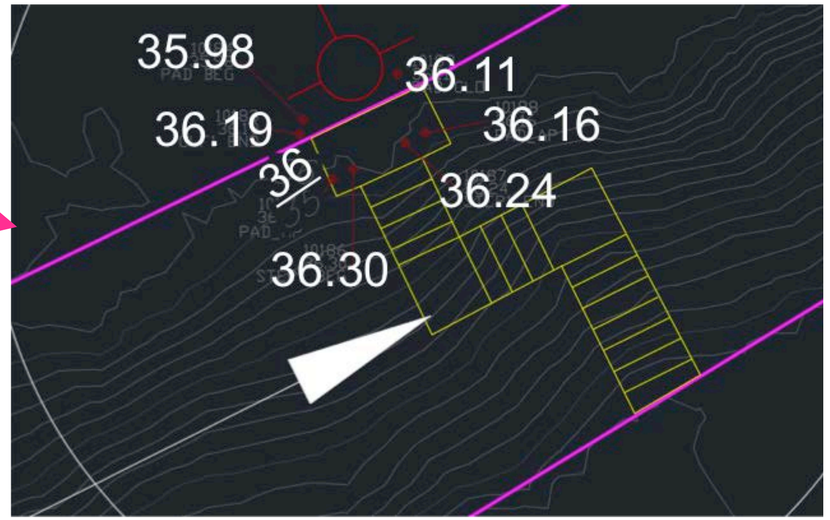
LIDAR AND SURVEY DATA USED FOR BUILDING MODELS

Lagoon bathymetry surveyed in Jan 2019

Lidar data were verified with survey







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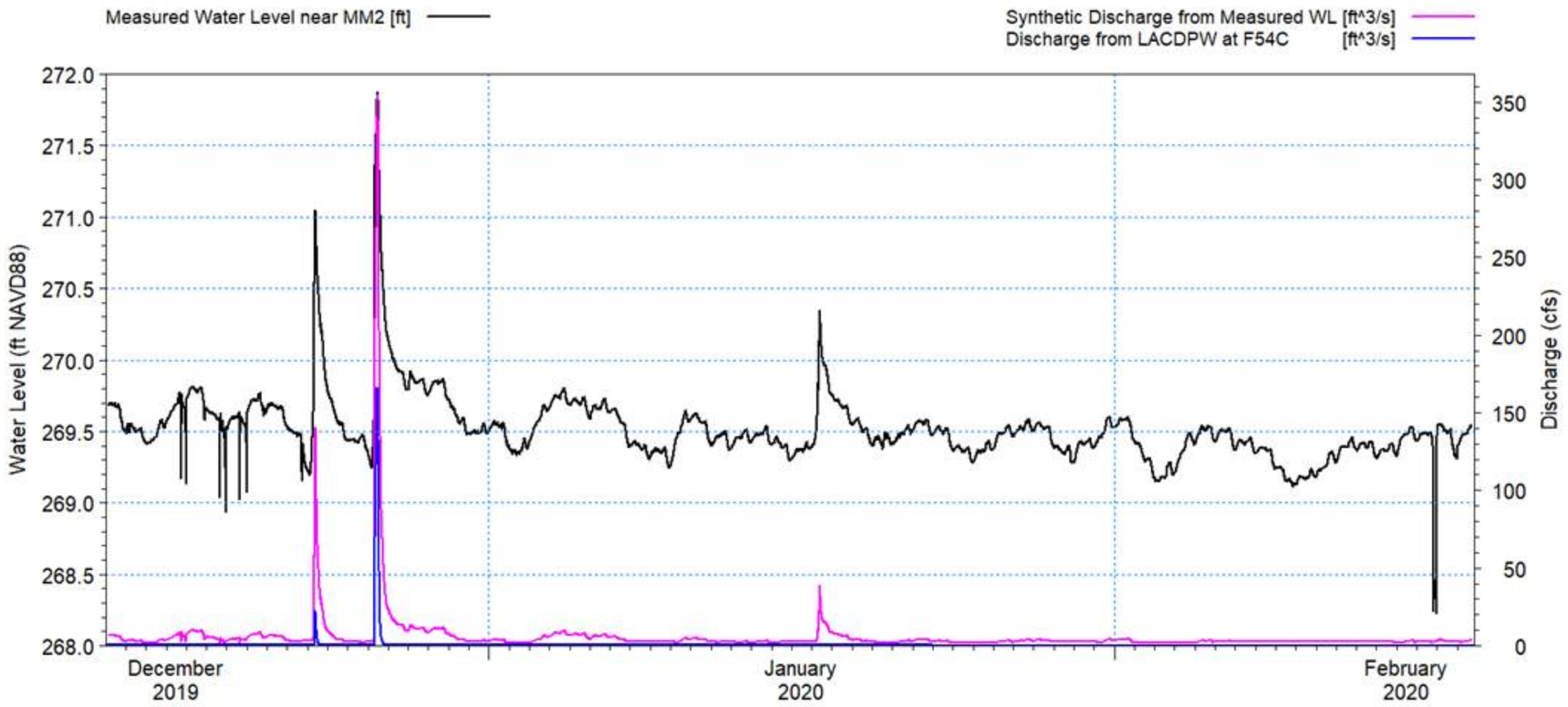
UPSTREAM GAUGE FLOWS

Stream flow was monitored at MM2 for

- Supplementing LACDPW's gage data for low flows, and
- Model Calibration



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MODELING RESULTS

SEDIMENTATION IN LAGOON

Under Average Flow Conditions:

- Restoration does not change sedimentation.
- SLR does not change sedimentation.

Under High Flow Conditions:

- Alternative 2 has slightly more sediment accumulation due to larger lagoon area.
- SLR will increase watershed generated sediment deposition In the lagoon.

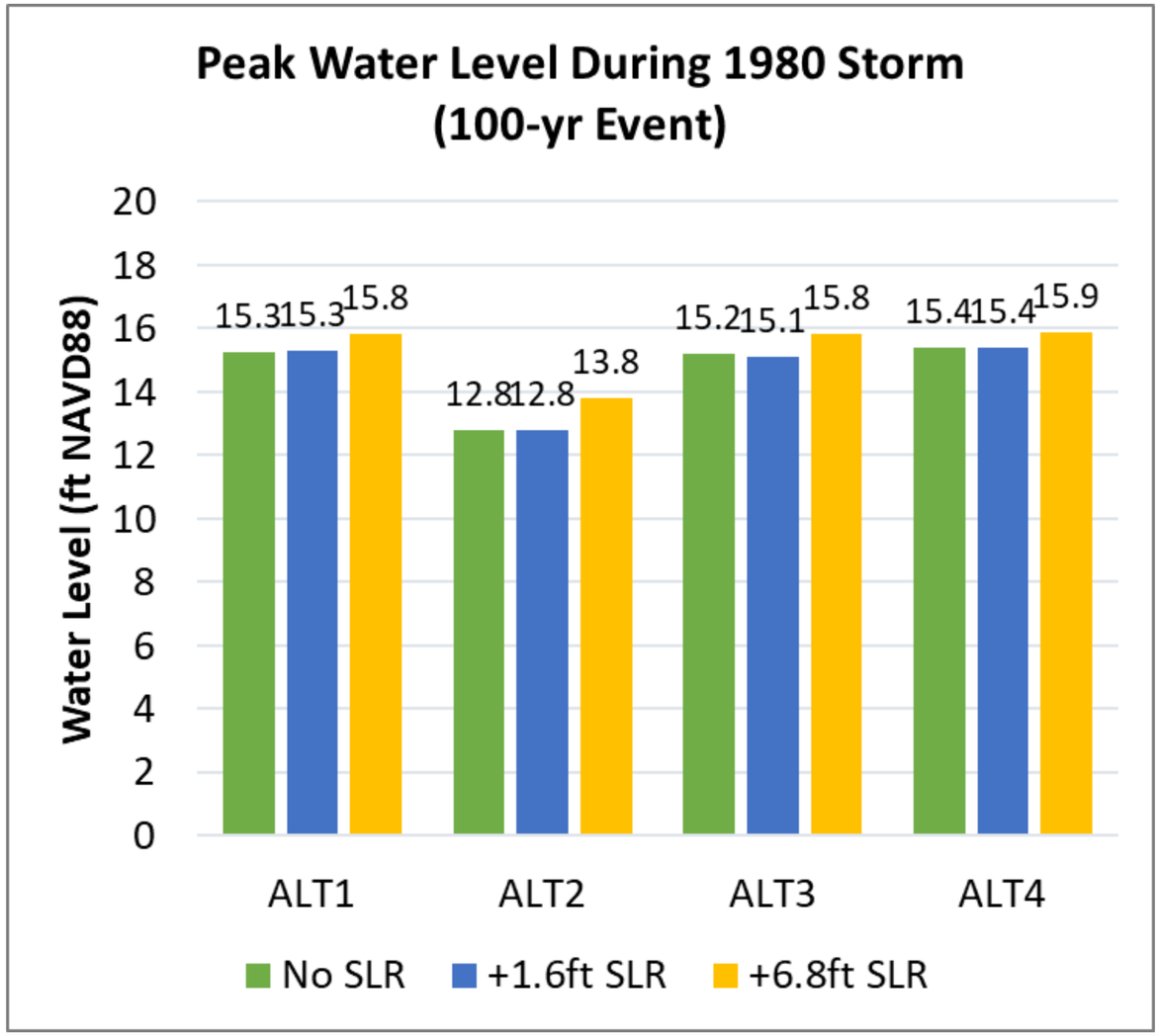
SEDIMENT TO OCEAN

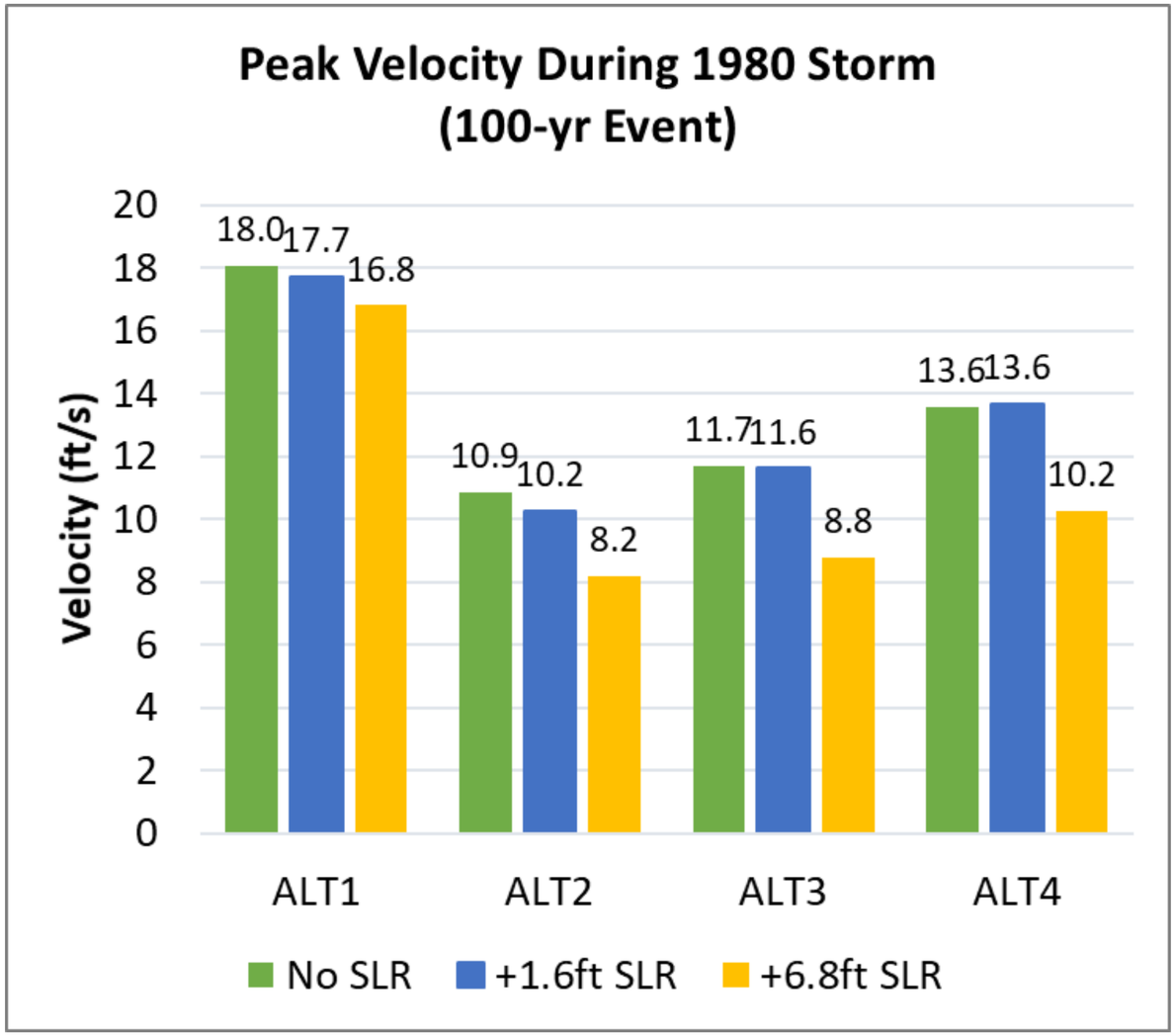
Under BOTH Average and High Flow Conditions:

- Restoration does not change sediment transport to the ocean.
- SLR slightly reduced sediment transport to the ocean under the average flow condition.
- SLR has more effect on sediment transport to the ocean under the high flow condition.

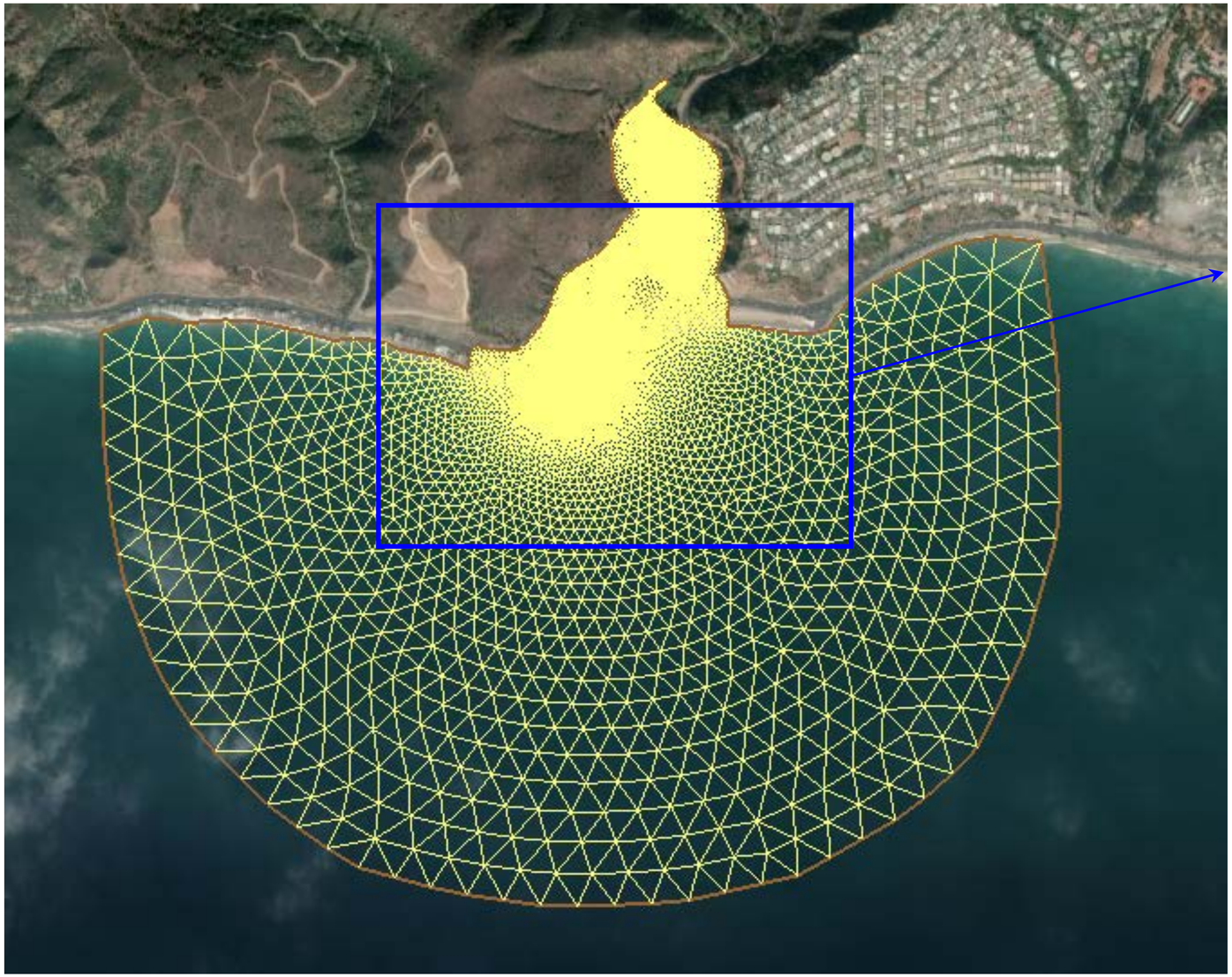
RESTORATION DOES NOT RESULT IN THE LAGOON FILLING IN OVER TIME.
RESTORATION DOES NOT AFFECT THE SURF BREAK.

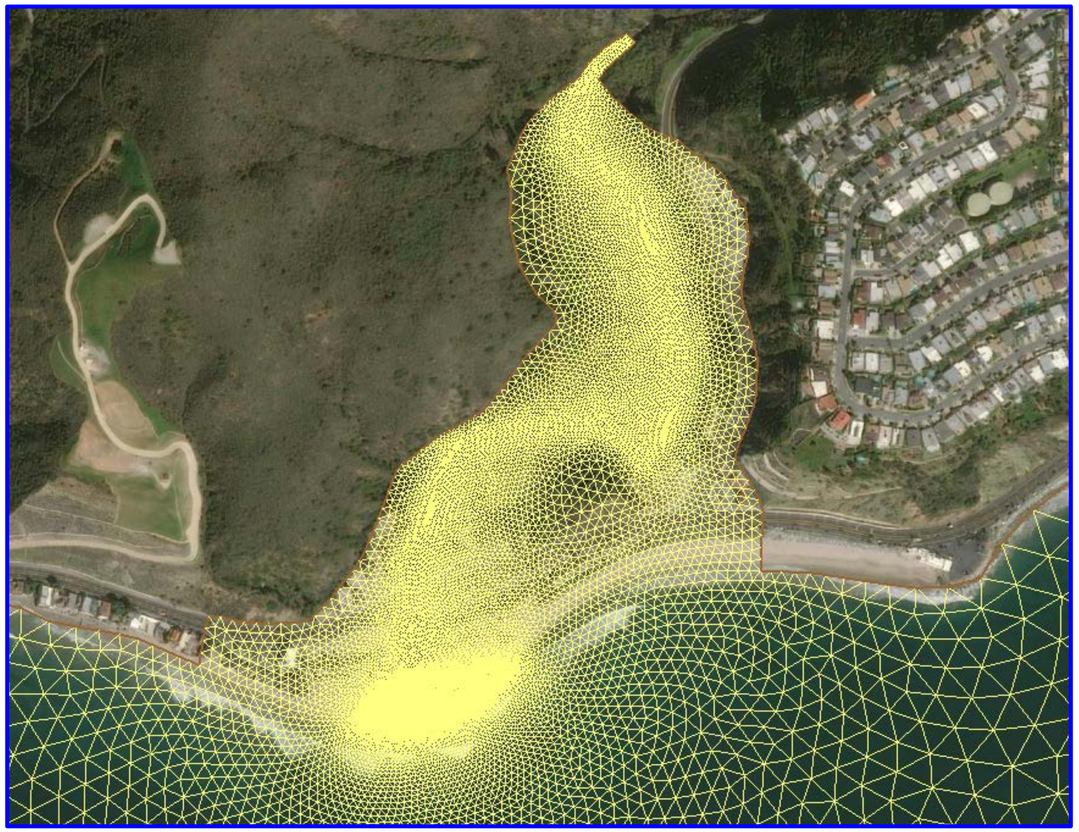
PEAK WATER SURFACE ELEVATION AND VELOCITY AT PCH BRIDGE DURING 1980 STORM (100-YR EVENT)





2-D HYDRAULIC MODEL DOMAIN AND MESH



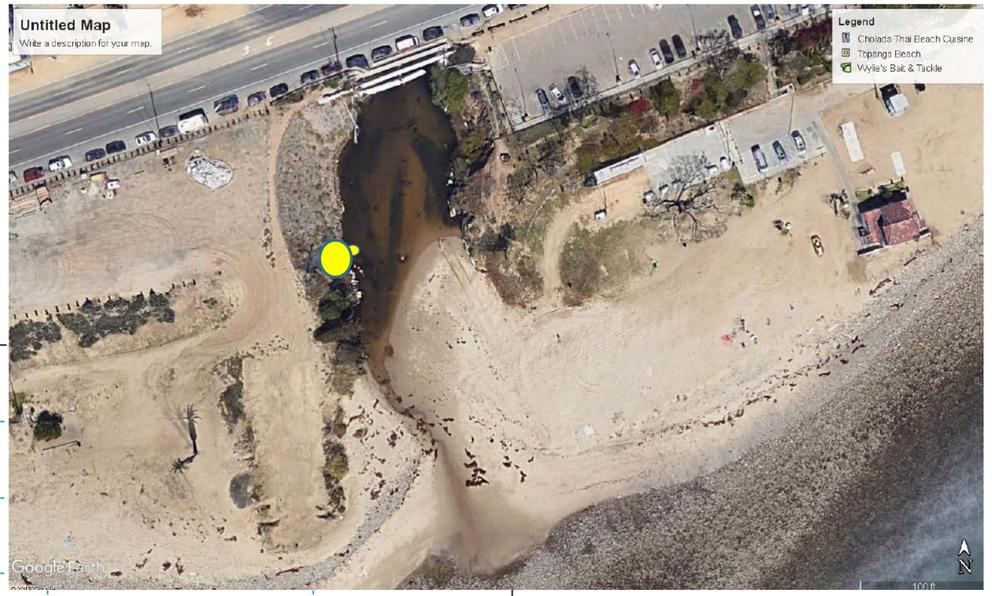


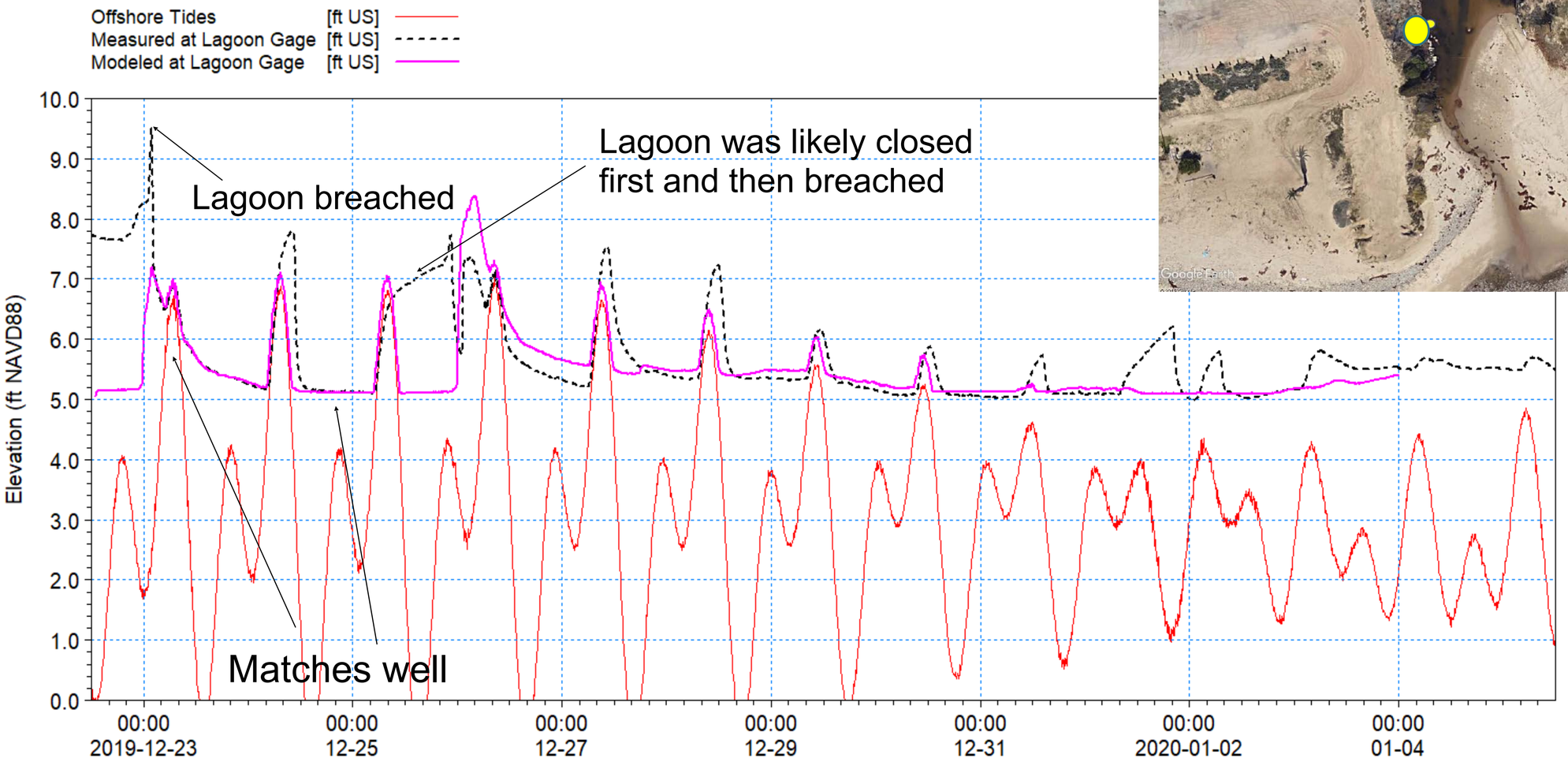
Approximate sizes of mesh elements:

- Offshore: 100m
- Beach Berm and Inlet Channel: 1m
- Upstream: 4m

2-D HYDRAULIC MODEL CALIBRATION

Lagoon gauge- see yellow dot along west shore





Inlet channel width is 3m/10ft, berm breach elevation is +1.2m /+4ft NAVD88.

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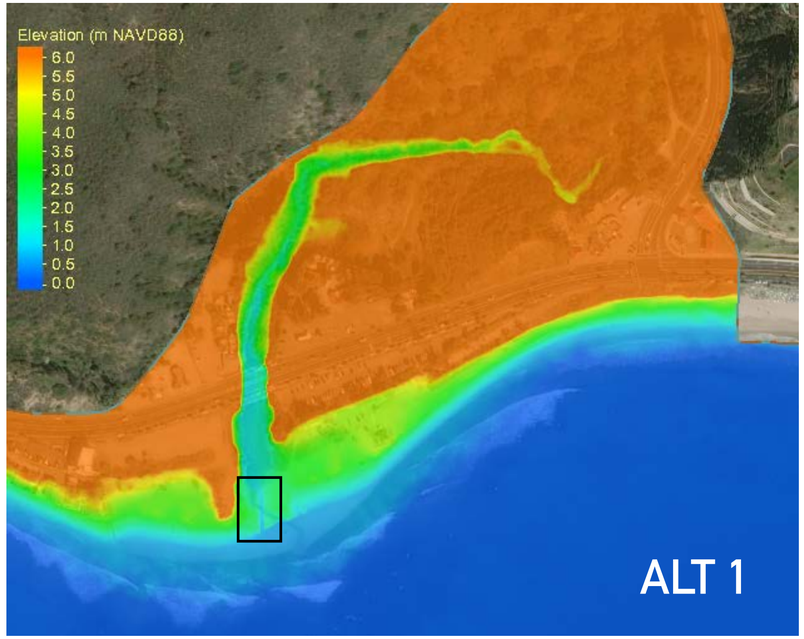
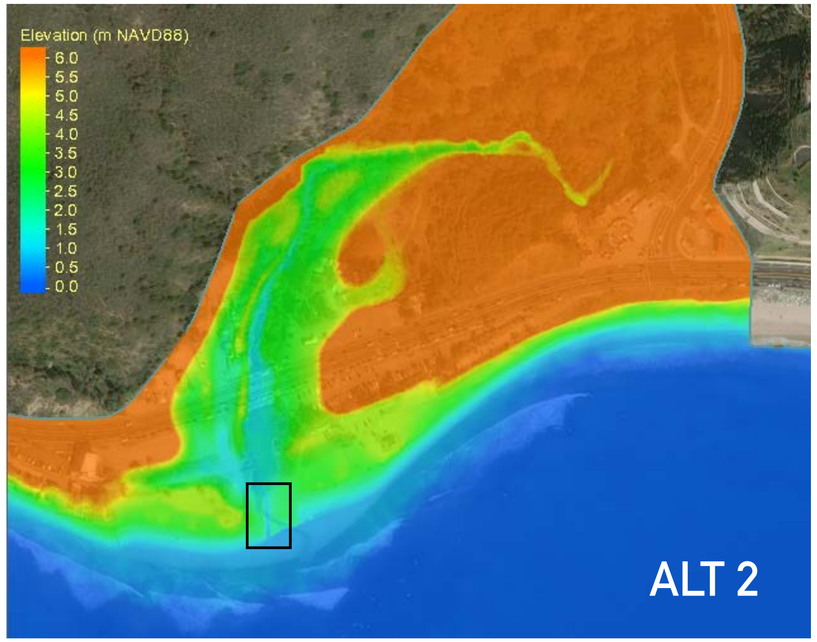
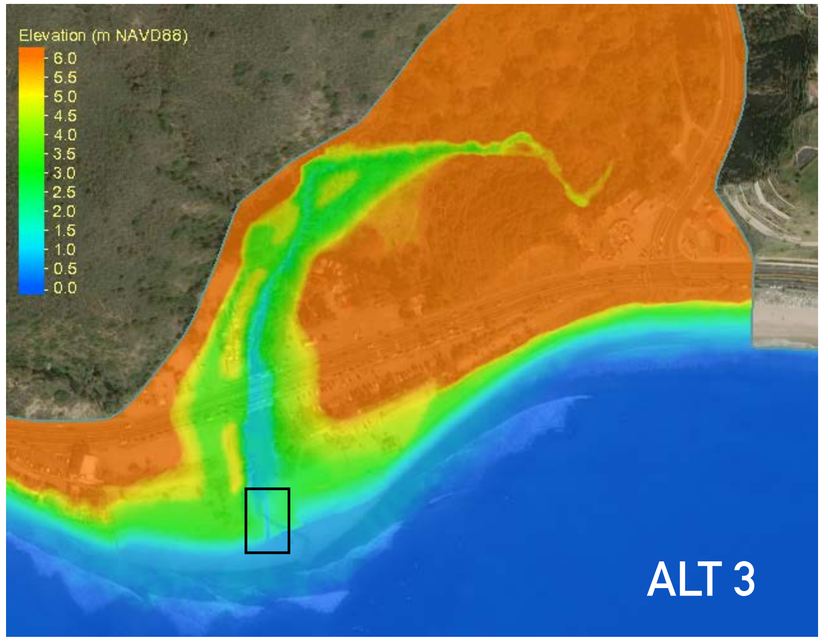
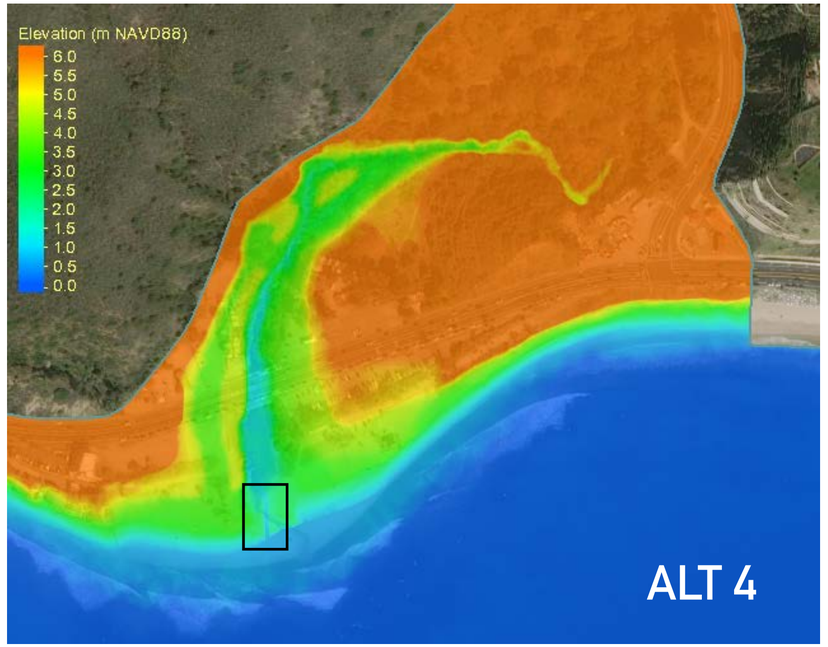






*Inlet channel option for plotting is the narrow straight channel.

2-D HYDRAULIC MODEL - MODEL BATHYMETRY OF ALTERNATIVES



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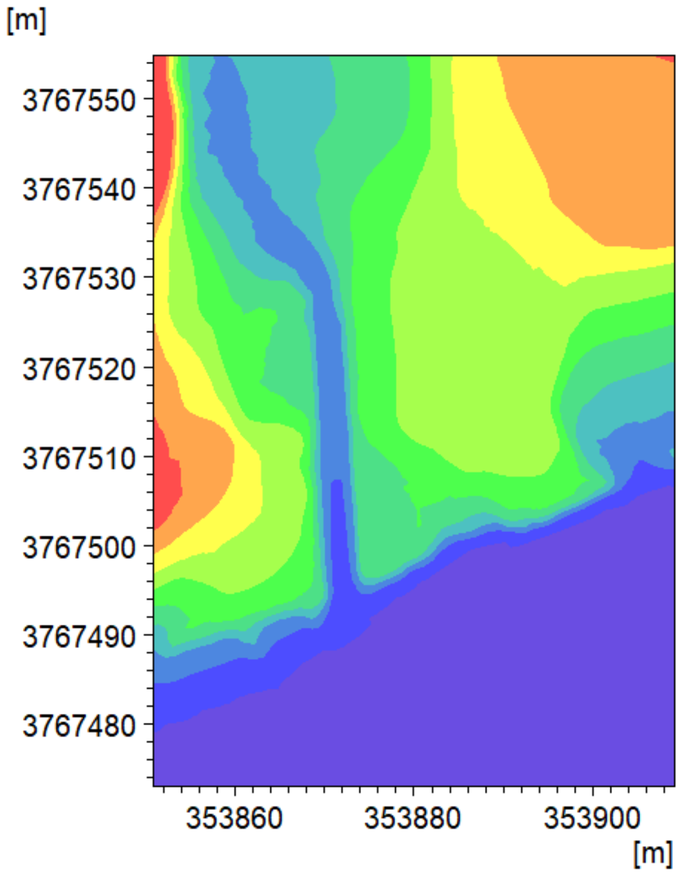
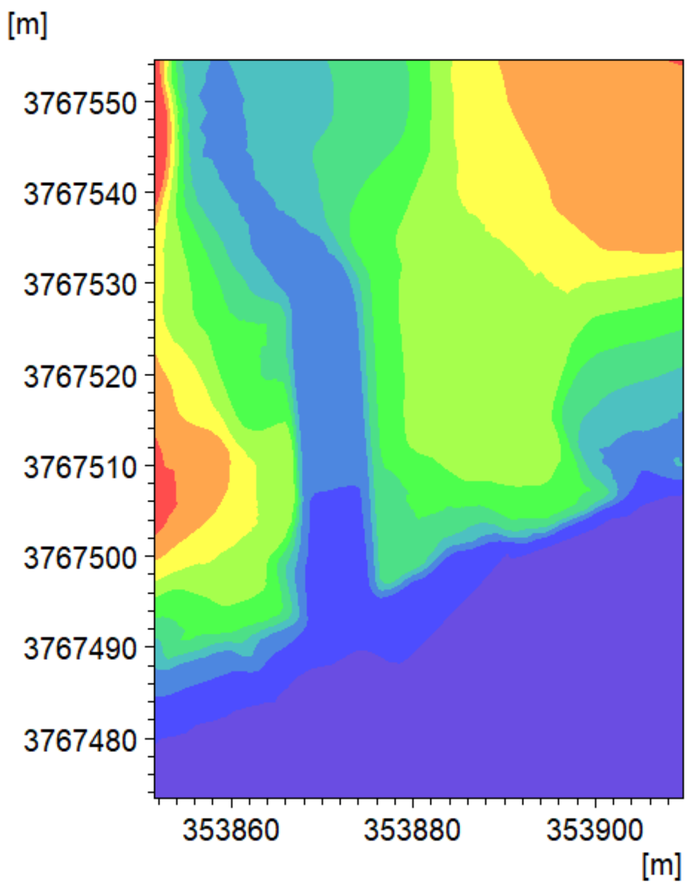
BATHYMETRY - STRAIGHT CHANNEL ALIGNMENT

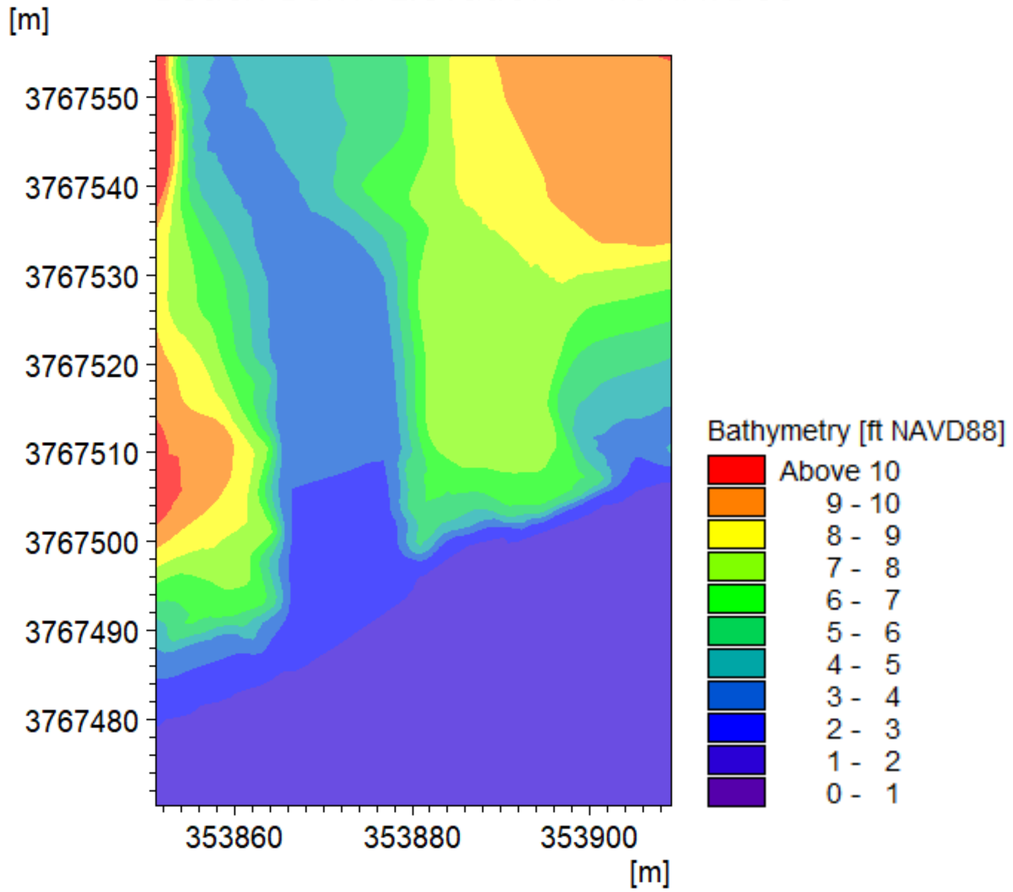
Beach Berm Elevation: +4ft NAVD88



10ft by 160ft straight channel



25ft by 160ft straight channel



40ft by 160ft straight channel

*Base model mesh used for plot is the existing condition mesh.

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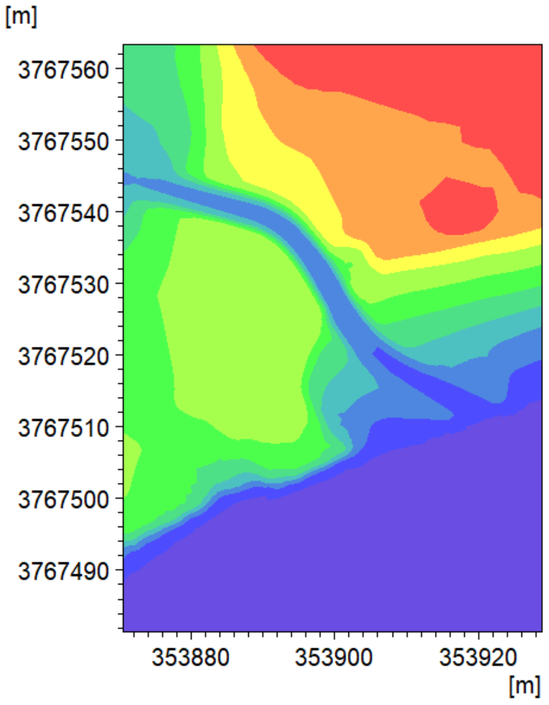
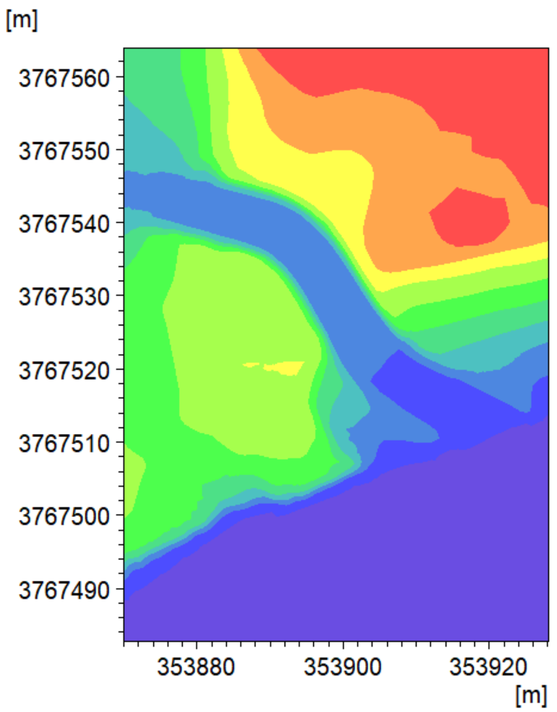
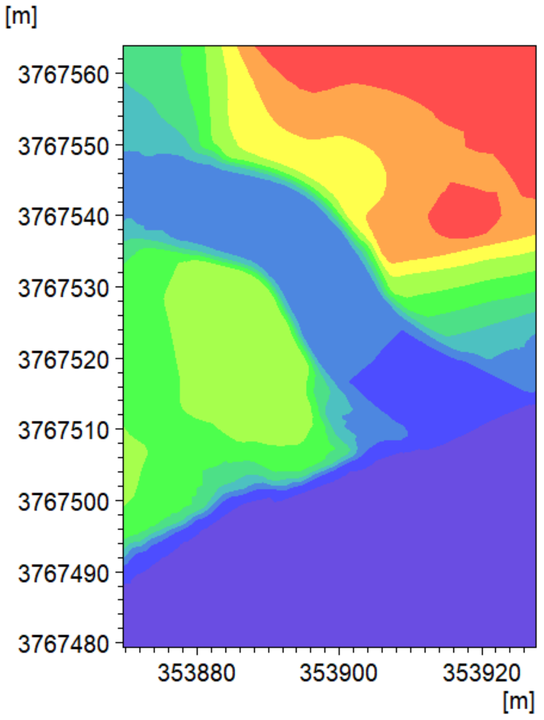
BATHYMETRY - MIGRATED CHANNEL ALIGNMENTS



10ft by 200ft migrated channel

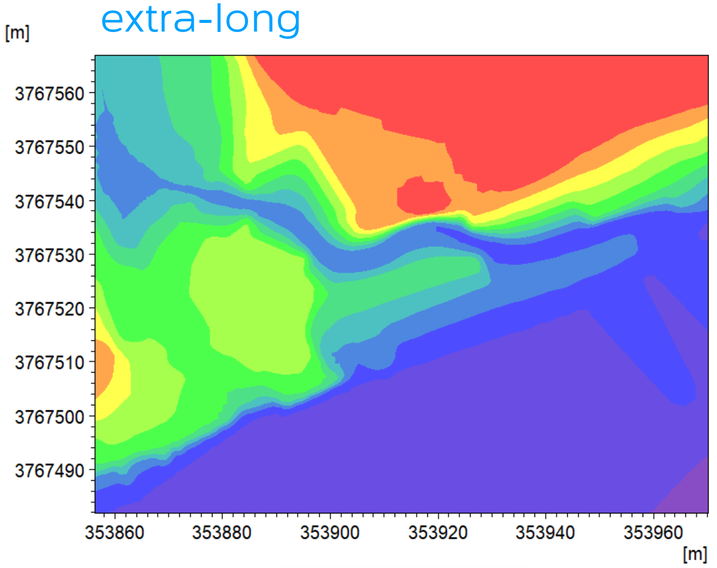


25ft by 200ft migrated channel

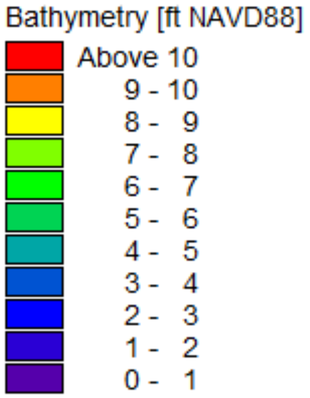


40ft by 200ft migrated channel

extra-long



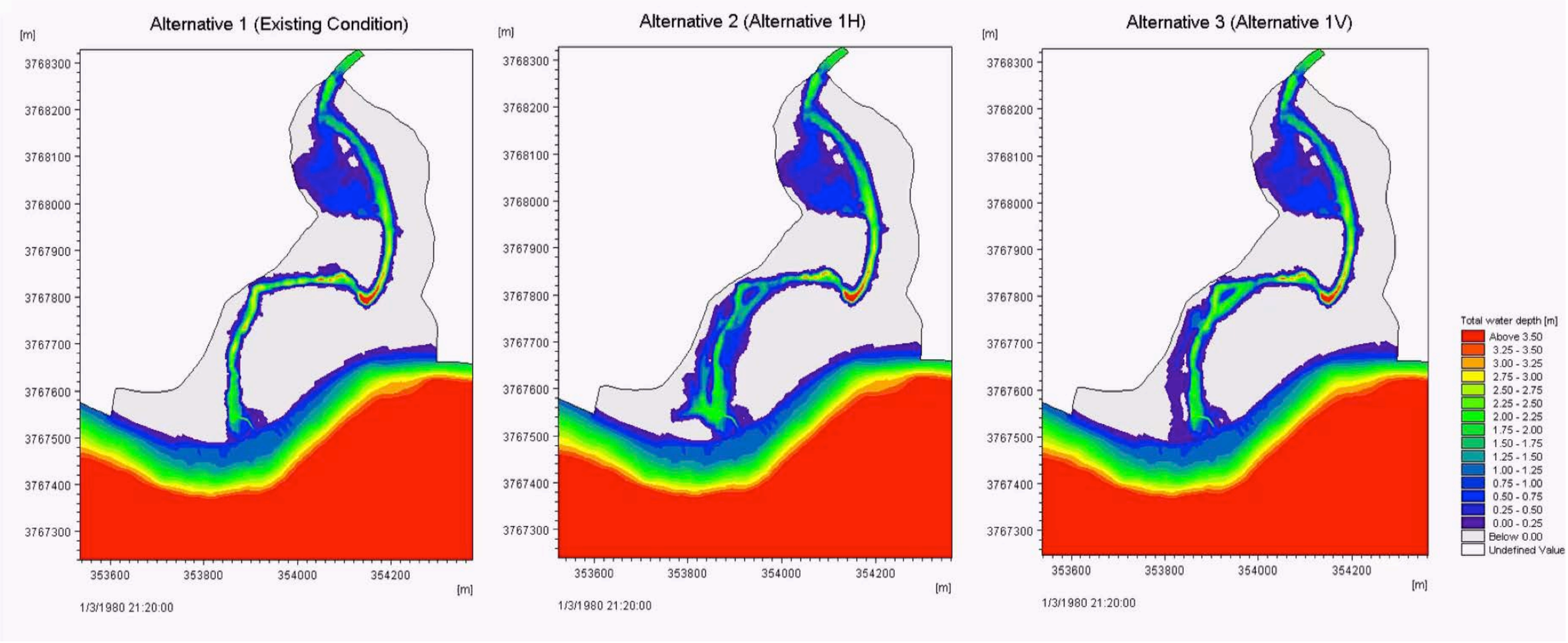
9ft by 350ft migrated channel



*Base model mesh used for plot is the existing condition mesh.

2-D HYDRAULIC MODEL RESULT, ALT 1-3

RESULTS OF MODELED WATER DEPTHS WITH DISCHARGE INCREASING FROM 0 TO 4000 CFS



SUMMARY OF MODELING RESULTS

PARAMETER	COMPARISON
Lagoon Sedimentation	Alt 2 more, rest similar
Sediment Transport to the Ocean	All very similar
Storm Water Surface Elevation	Alt 2 lowest, Alts 3&4 < Alt1
Storm Velocity	Alt 2 much lower, Alts 3&4 < Alt1
Fish Passable Area under PCH Bridge	Alt2 slightly increased, rest similar

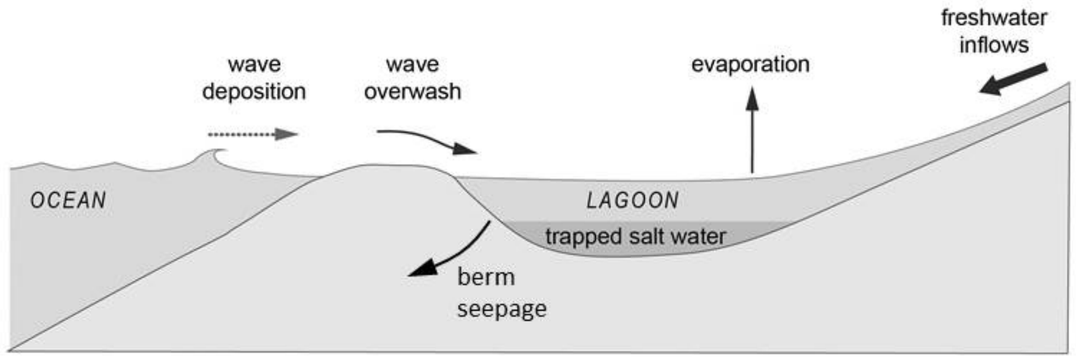
FISH PASSAGE & HABITAT SUITABILITY ANALYSIS

LAGOON MOUTH DYNAMICS & WATER LEVEL MODEL

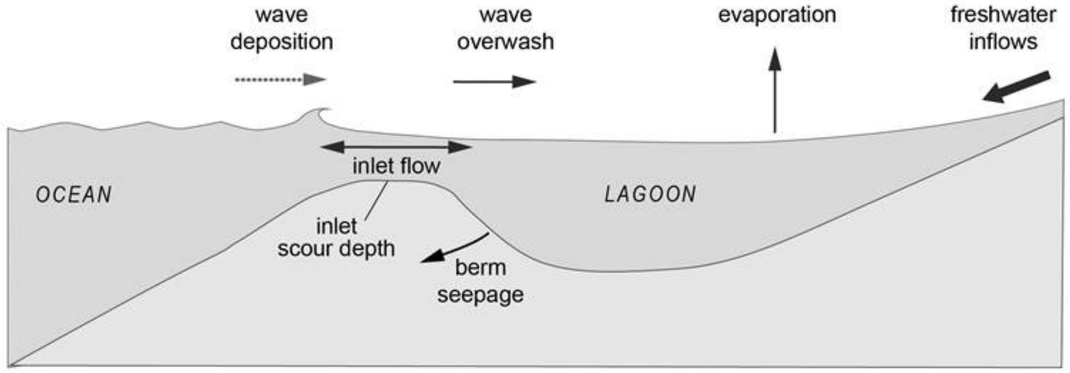
Closed is most common condition

Breach is rain-driven only

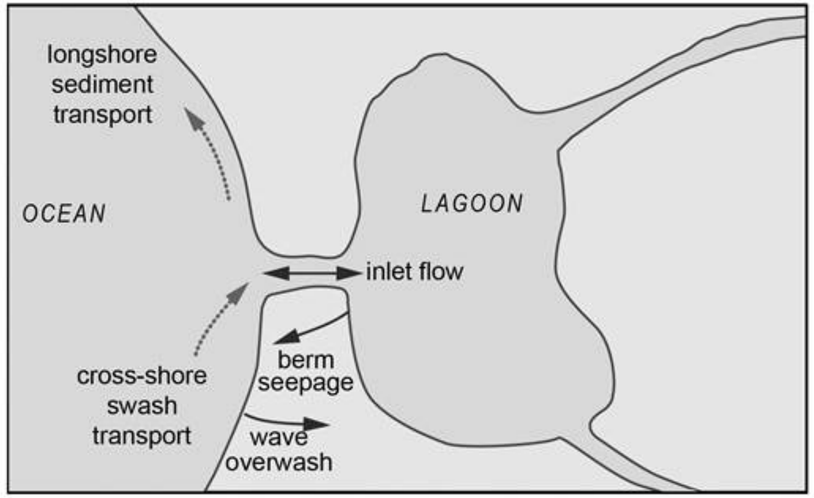
Closed Lagoon



Open Lagoon



Lagoon Plan View



LEGEND

= sand transport

= water transport

Source: ESA/Behrens and others 2015

FISH PASSAGE & HABITAT SUITABILITY

Analysis of 200 ft span bridge:

- Adult & juvenile Southern Steelhead passage and refuge habitat
- Tidewater goby refuge habitat

Constraints: DO NO HARM!

There will be NO change to the existing wetted channel during construction of any alternative. Grading occurs outside of that area however there will be a temporary impact during removal of old bridge.

Components:

- 2-D Hydraulic Model results
- Lagoon Mouth Dynamics & Water Level Model
- Velocity & depth criteria for fish passage & refuge
- Apply the above to 2011 – 2020 discharge record
- Compare existing conditions & alternatives

NOTE: 200 ft span bridge provides opportunity for natural channel migration and evolution in response to SLR over time.

FISH PASSAGE & REFUGE CRITERIA

	Adult Steelhead Passage	Tidewater Goby & Juvenile Steelhead Refuge (during mouth openings)	Juvenile Steelhead Passage
Maximum Velocity	10 ft/s (a)	1 ft/s (b)	1.5 ft/s (a)
Minimum Depth	0.8 ft (a)	NA	0.3 ft (a)

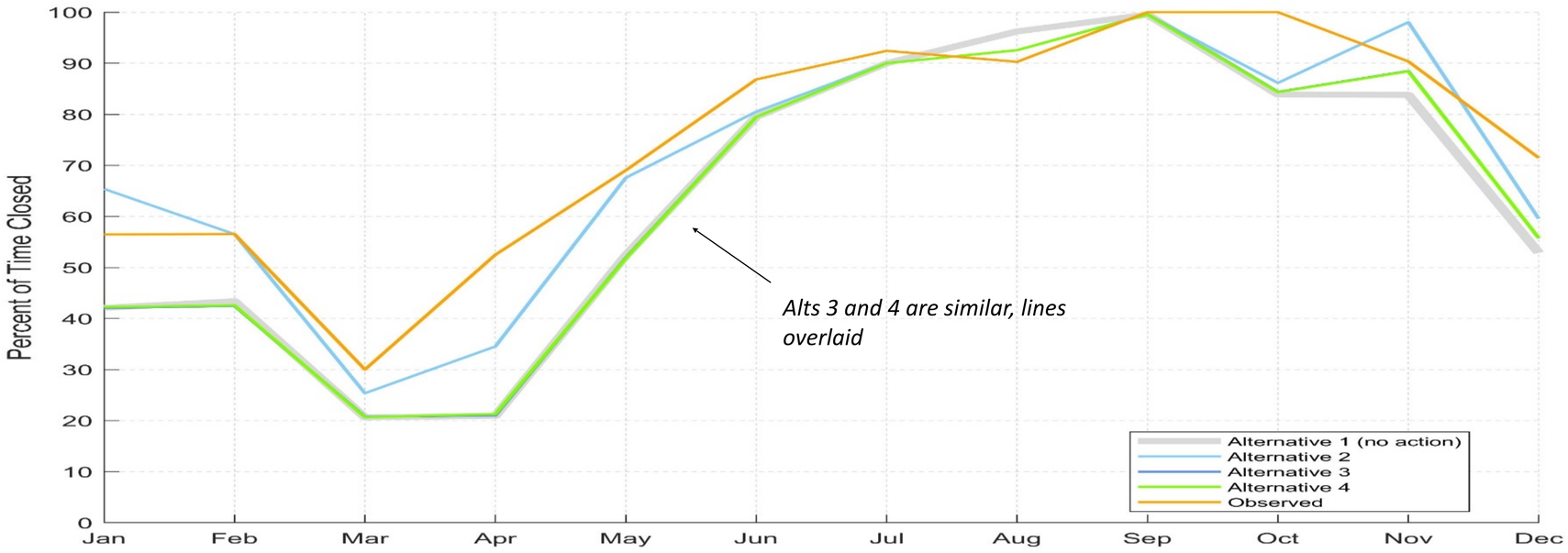
Sources

CDFW criteria for Southern Steelhead (CDFW 2004)

ESA criteria used for Scott Creek Lagoon Restoration (ESA 2019)

OBSERVED & MODELED MOUTH CLOSURE: 2011-2020

REALLY STRONG CALIBRATION AND VALIDATION



Most of the time the lagoon will remain closed. Breach occurs when lagoon water level elevation reaches +9.5 ft.

Storm event breaching may take a little longer to initiate with Alternative 2 but the breach will stay open and passable longer due to tidal exchange.

Alt 3 and 4 will perform very closely to existing condition.

COMPARISON OF FISH PASSABLE AREAS THROUGH PCH BRIDGE

Alternative 1 existing 82 ft span

Alternative 2 200 ft span significantly improves conditions for steelhead passage by:

- increasing bridge length and channel width
- reducing velocities during high flow passage events

Alternative 3 200 ft span existing location AND

Alternative 4 200 ft span north alignment

do not significantly change conditions for steelhead passage compared to existing

	2/17/11	2/24/11	2/25/11	3/16/12	3/24/12	2/27/14	3/5/16	1/16/19	2/1/19	2/13/19	3/5/19	4/5/20
ALT1												
ALT2												
ALT3												
ALT4												

Note: No SLR Condition:
The Alternative with the largest or similar passable area under each storm event is highlighted.

ADULT STEELHEAD PASSAGE RESULTS

For Alternatives 2, 3, 4:

- Breach channel is passable during high tides when lagoon is open
- During high storm flows, breach is passable during high and low tides

TIDEWATER GOBY & JUVENILE STEELHEAD REFUGEE RESULTS

For Alternatives 2, 3, 4:
Lagoon provides refugia during low flow conditions when mouth is open
Storm flows reduce refugia area

Compared to existing conditions (Alternative 1):
Alternative 2 significantly improves refugia during storm flows and provides more adult steelhead passage opportunities.

Alternatives 3 and 4 significantly improve refugia for juvenile steelhead, but do not significantly improve refugia for tidewater gobies or for adult steelhead passage opportunities.

ESA

Q+A

BREAK

10 MINUTES

STRETCH

HYDRATE

COME BACK FOR BREAKOUT ROOM ACTIVITY

POLL

TIMELINE* AND MILESTONES

*ESTIMATED

PHASE 1	
2019-2020:	Data collection; Modeling; Conceptual design of 3 alternatives; Technical Advisory Committee, Public Stakeholder, Landowner and Caltrans meetings
TODAY:	Public meeting to review and refine preliminary concept alternatives
OCT-DEC 2021:	TAC and stakeholder meetings to finalize concept alternatives
WINTER 2022:	30% Conceptual Plans completed
PHASE 2	
2022-2025:	Final design, CEQA/NEPA, permitting
PHASE 3	
2026*:	Construction Plans, Bidding
PHASE 4	
2027*:	Construction begins, estimated duration 2-3 years

NEXT STEPS, MORE INPUT

I SPEAK FOR THE FISH...

PROVIDE ADDITIONAL INPUT:

DO YOU HAVE A PREFERRED ALTERNATIVE?

IS ANYTHING MISSING?

ADD COMMENTS TO CHAT NOW OR SUBMIT ON WEBSITE

SPRING SURVEY!

WWW.RCDSMM.ORG/RESOURCES/TOPANGA-LAGOON-RESTORATION/

NEXT PUBLIC MEETING

DECEMBER 2021

THANK YOU