



Commonwealth Ports Authority Saipan Harbor Masterplan Update

Presentation for the:

Association of Terminal Operators, Stevedoring and
Shipping Companies of Micronesia

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August 1, 2018

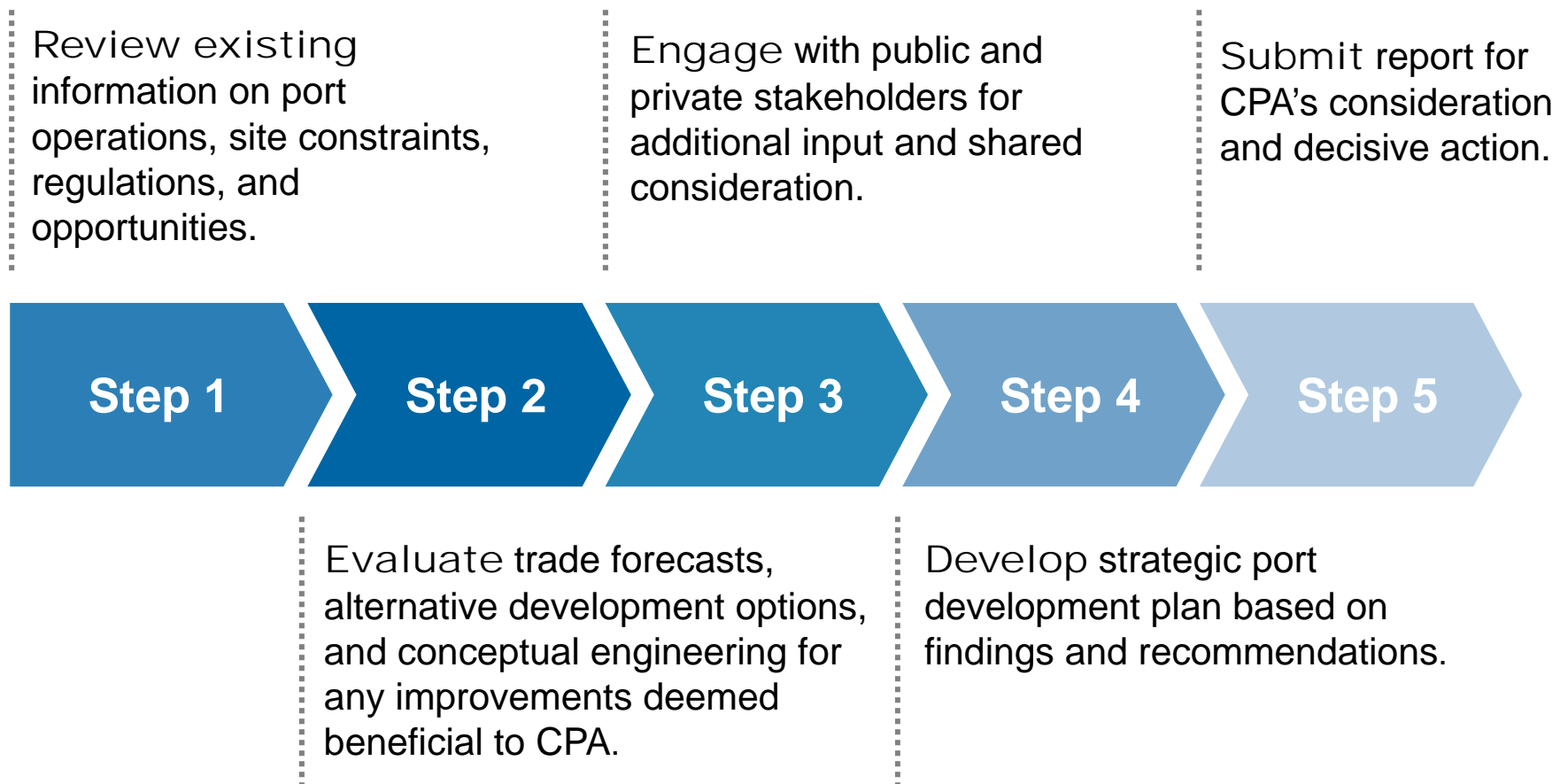


Presentation Overview

- Port Operations
- Port Infrastructure
 - Navigational Infrastructure
 - Berthing Infrastructure
 - Container Infrastructure
- Cruise Infrastructure
- Ro-Pax Infrastructure
- Master Plan Overview
- Small Craft Marina Concept



Saipan Harbor Master Plan Development



Key Considerations

- Port operations
- Land and sea constraints
- Environmental regulations
- Commercial expansion
- Market opportunities



Channel and turning basin

Charlie Dock (517 ft)

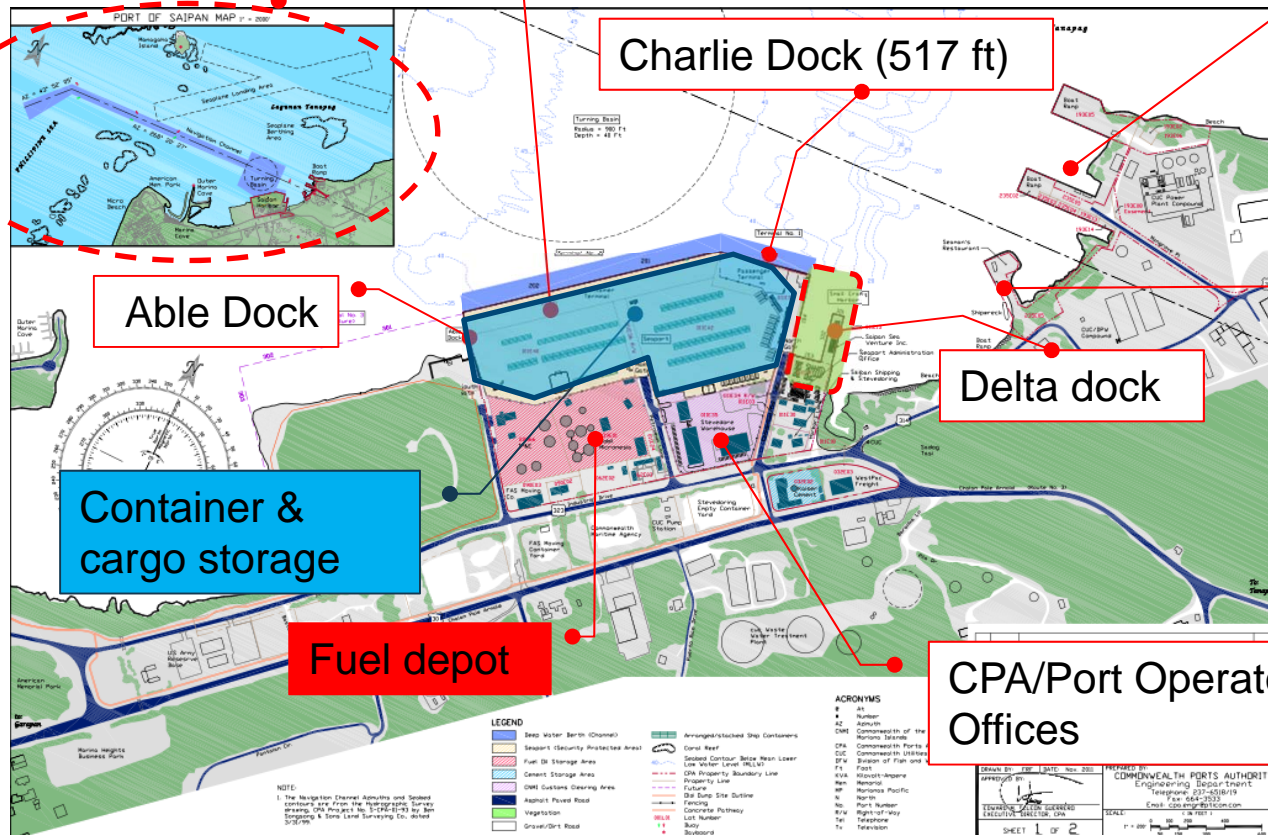
Seaplane Ramps

Echo Dock

Delta dock

Container & cargo storage

Fuel depot

CPA/Port Operator
Offices

Notable Observations

- Port access roads and stormwater management need of improvement
- Wharf capacity is satisfactory but alongside depth cannot be increased
- Sheet piles require further inspection to verify maintenance needs
- Bollards / fenders are undersized for future vessels – some damage exists
- Delta dock has been condemned
- Channel has some evidence of siltation



Development Opportunities

Improve
Charlie-1

Additional CPA
Waterfront Assets

Opportunity to add
berth infrastructure

Small craft
facility
potential

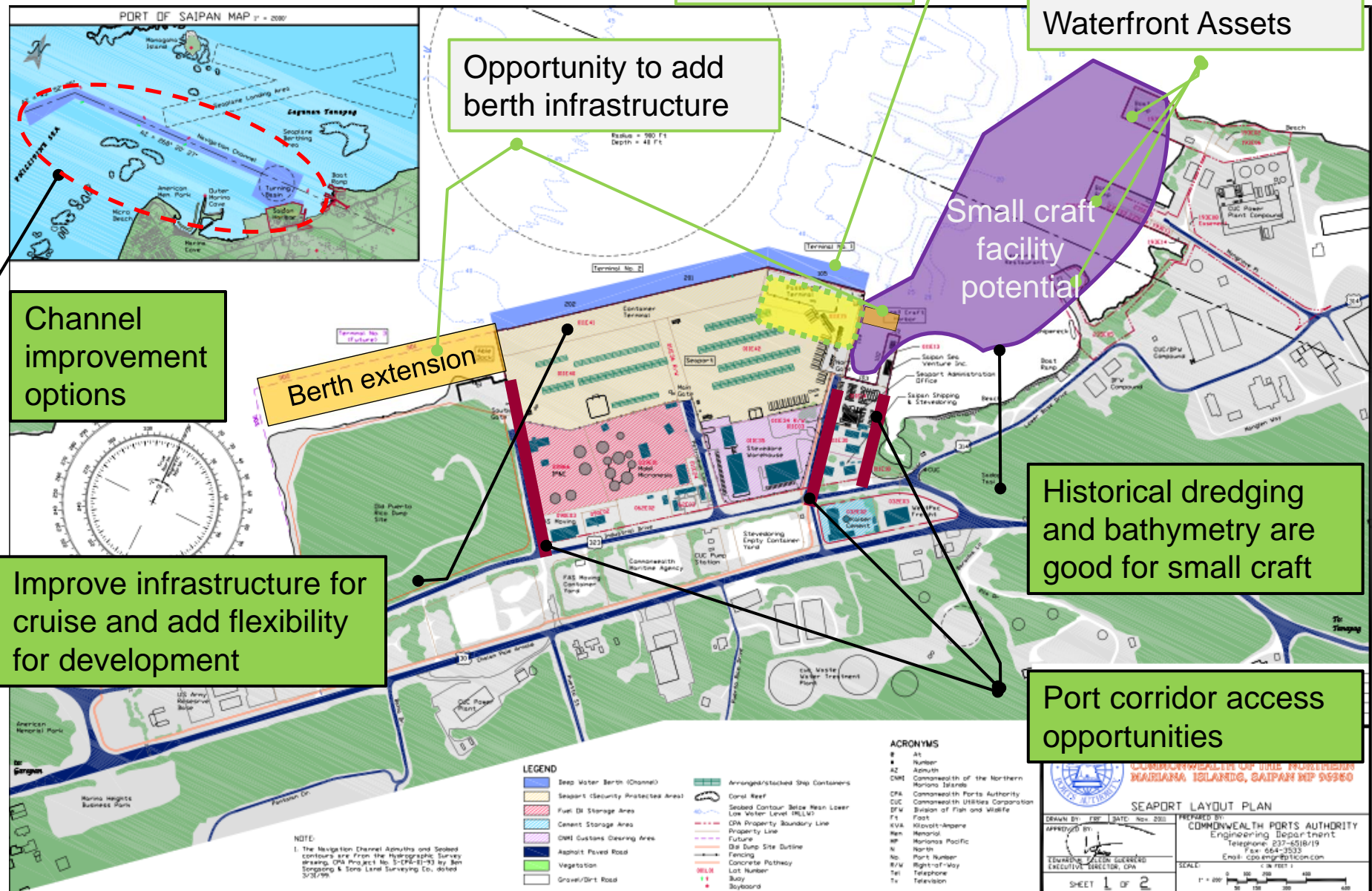
Channel
improvement
options

Berth extension

Improve infrastructure for
cruise and add flexibility
for development

Historical dredging
and bathymetry are
good for small craft

Port corridor access
opportunities



Trade & Market opportunities

Cruise:

- Strong potential to increase call visits to Saipan
- Requires improved infrastructure and a reduction commercial port charges



Tourism

- Increasing visitor numbers & hotel development
- Prime opportunity for passenger ferry / touring services
- Recreational boating increase = marina / boat maintenance opportunity

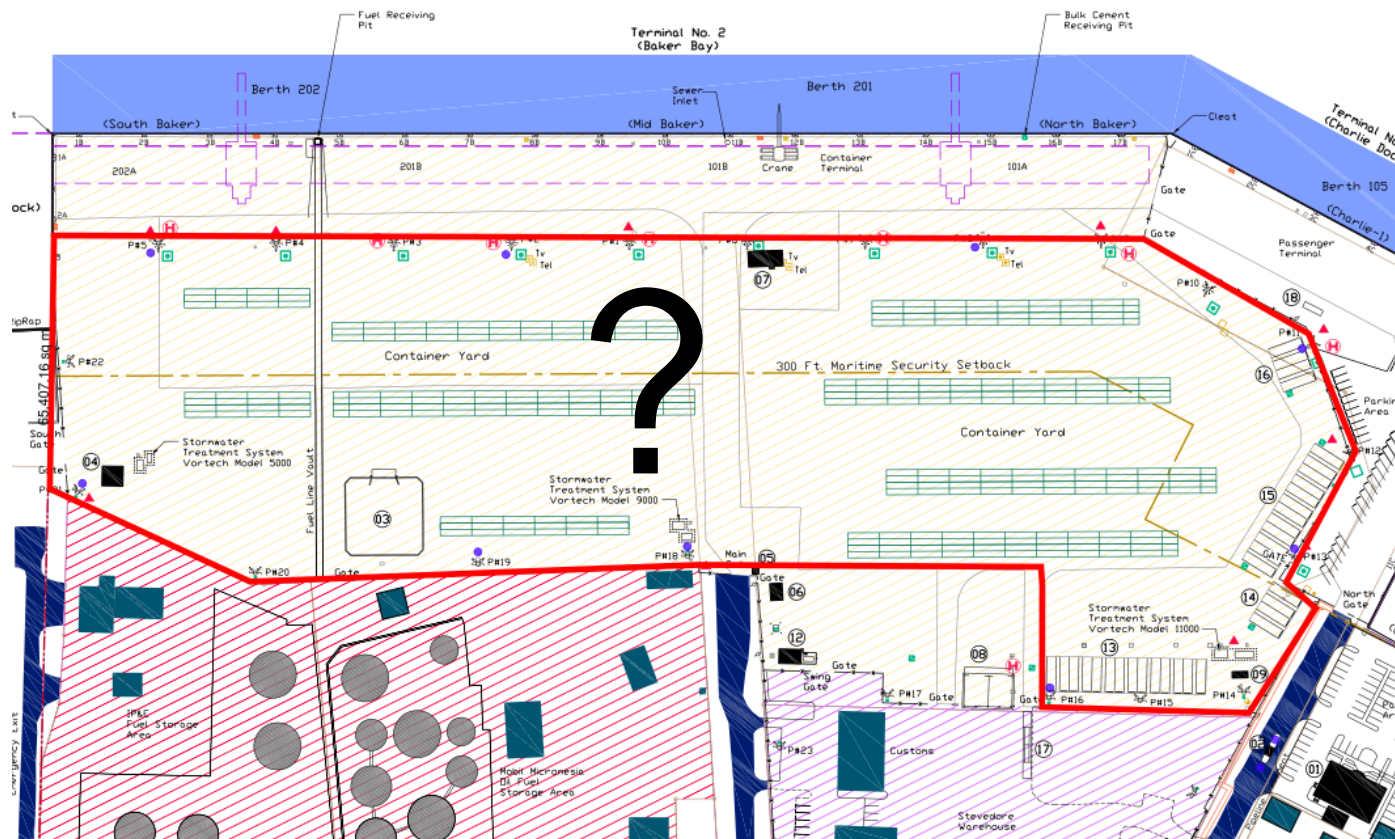


Construction

- Associated growth in containerized volume
- Increased cargo & demands



Port Infrastructure – future needs

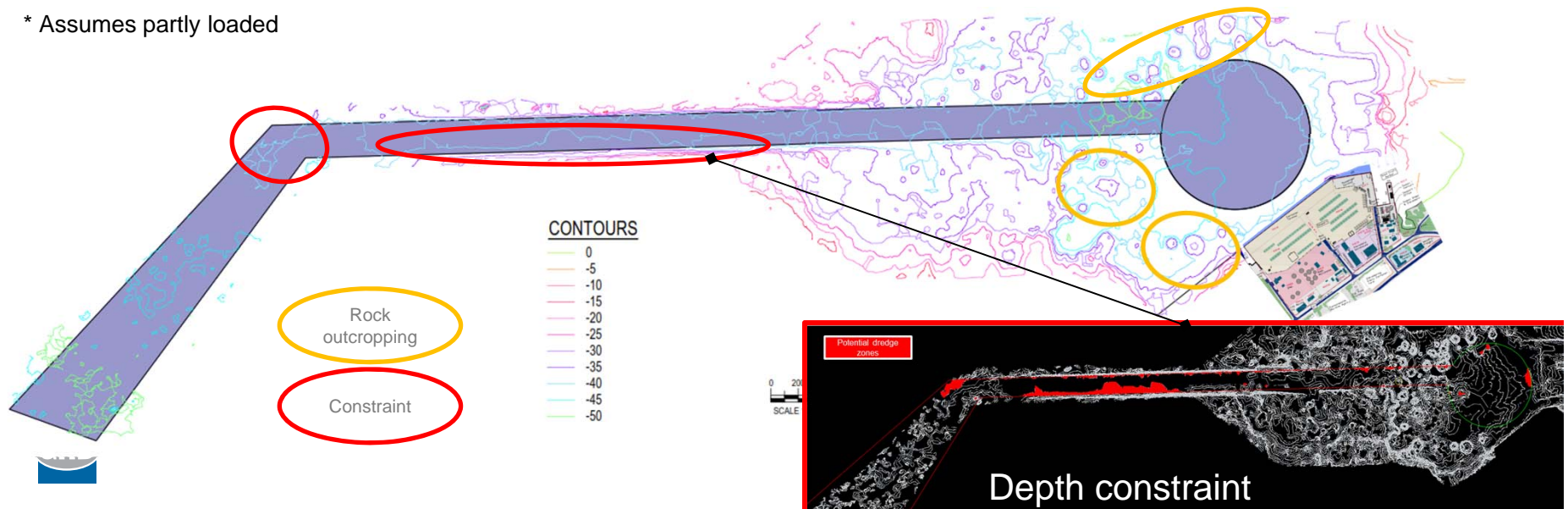


Navigational Infrastructure Assessment

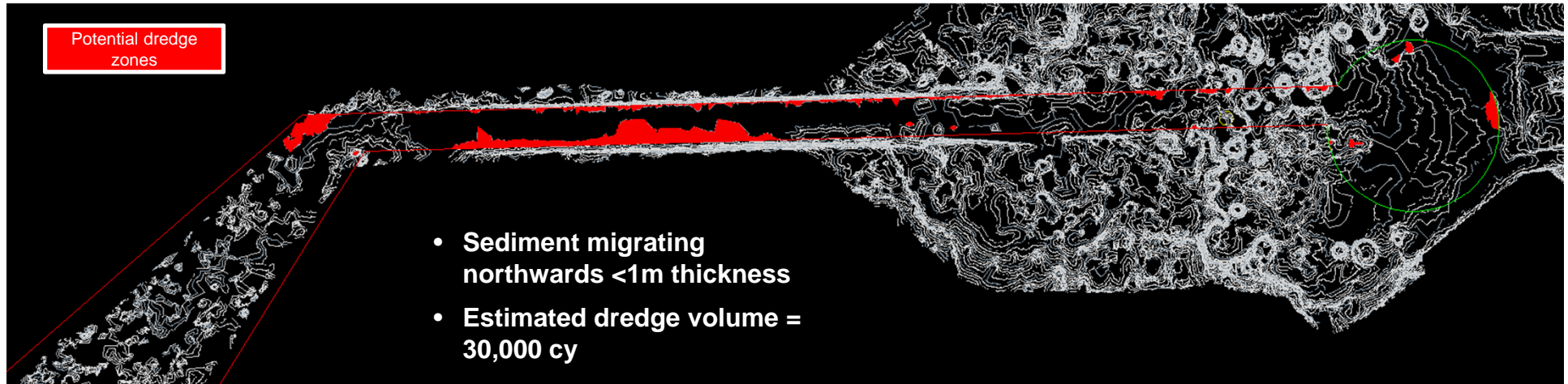
Infrastructure assessment for the **future** design vessels

	Cruise	Container	Oil tanker*	Ro-Pax	Limiting elements
Berth pocket(s)	✓	✓	✓*	✓	*Vessel must be partly loaded
Swing basin	✓	✓*	✓*	✓	Local high spots exist (<-40 ft)
Main channel	?	✓	?*	✓	Width is a restriction in high wind, Minor depth restriction in places
Channel bend	?	✓	✗	✓	Radius of bend for longer vessels

* Assumes partly loaded



Channel Depth Review (-40 ft)



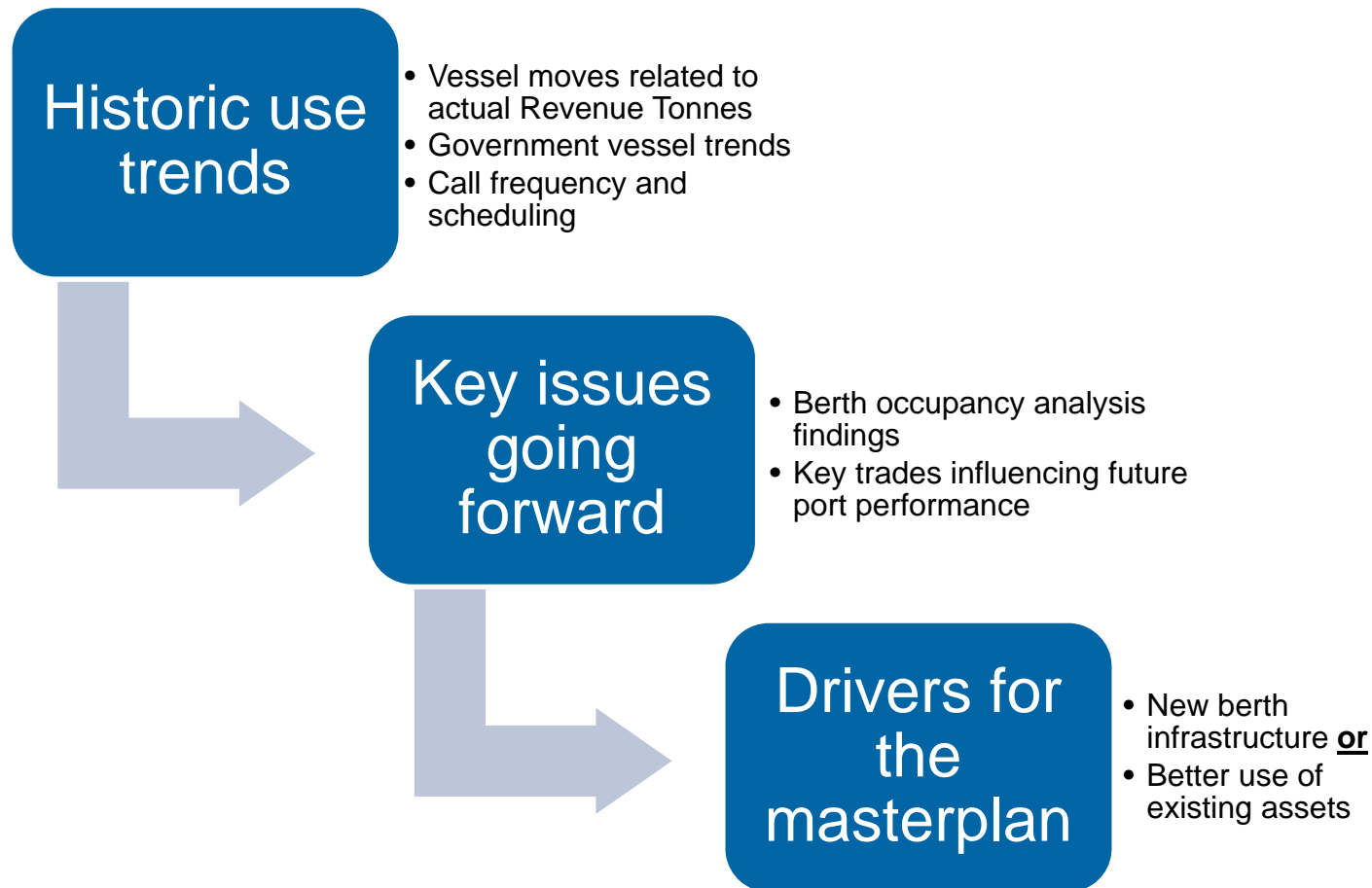
Summary channel deepening scenarios (dredge volume estimates)

Channel depth	Volume (cy)	Volume (m ³)	Comment
- 36 ft	-	-	
- 38 ft	2,700	~2,000	Expected to be a maintenance dredging exercise. (lower cost)
- 40 ft	30,000	23,000	
- 42 ft	300,000	230,000	Entire channel footprint, not required

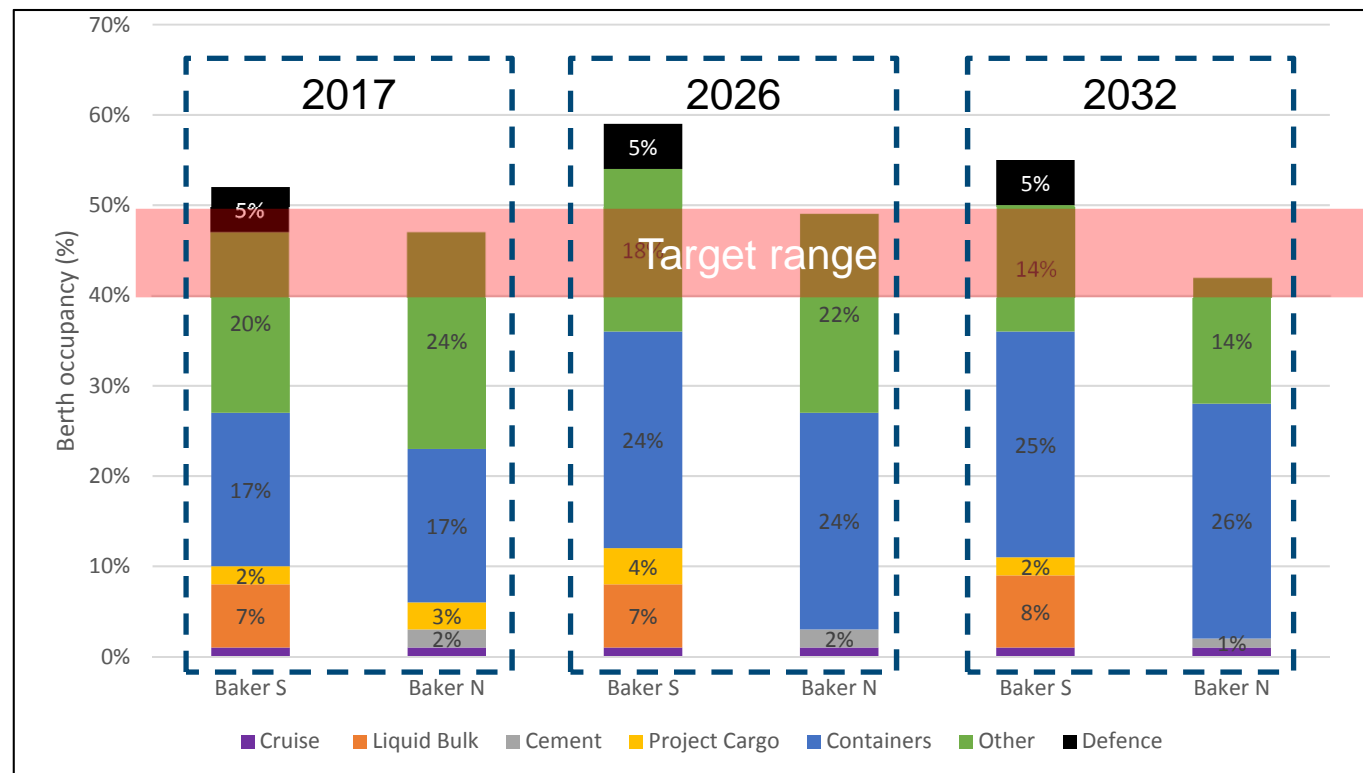
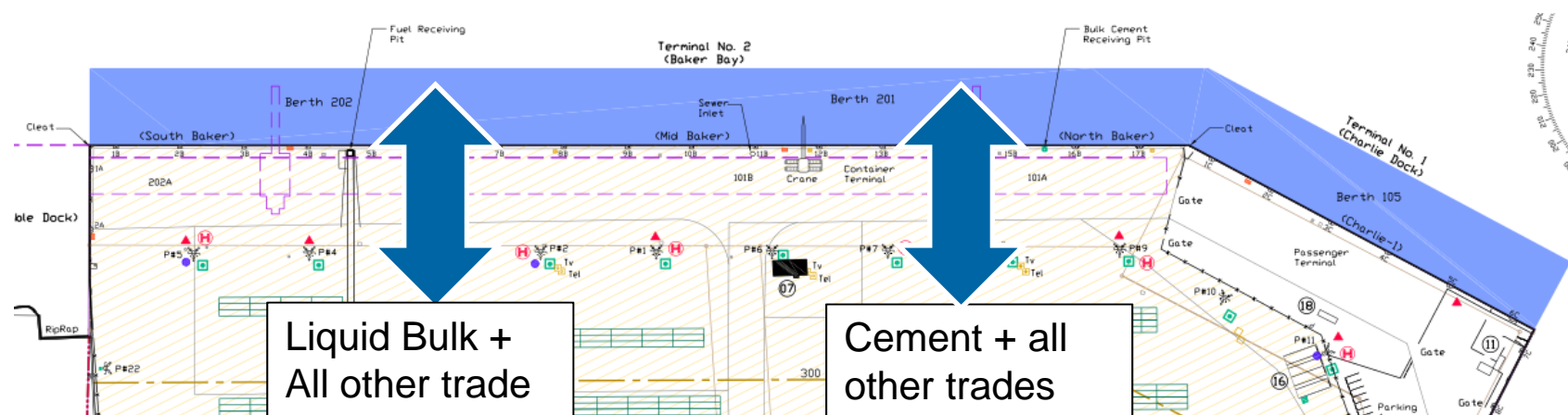


Berth requirements and resulting facility needs

Process:



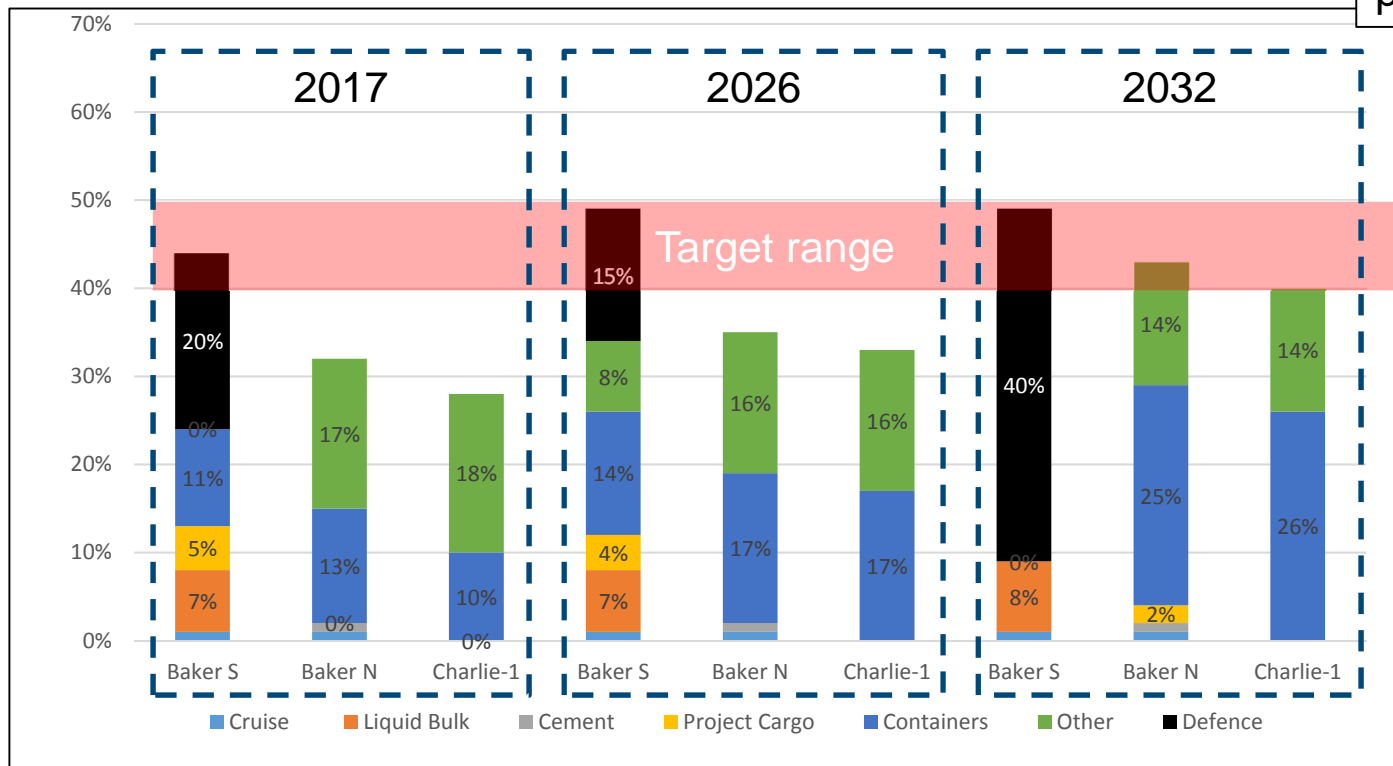
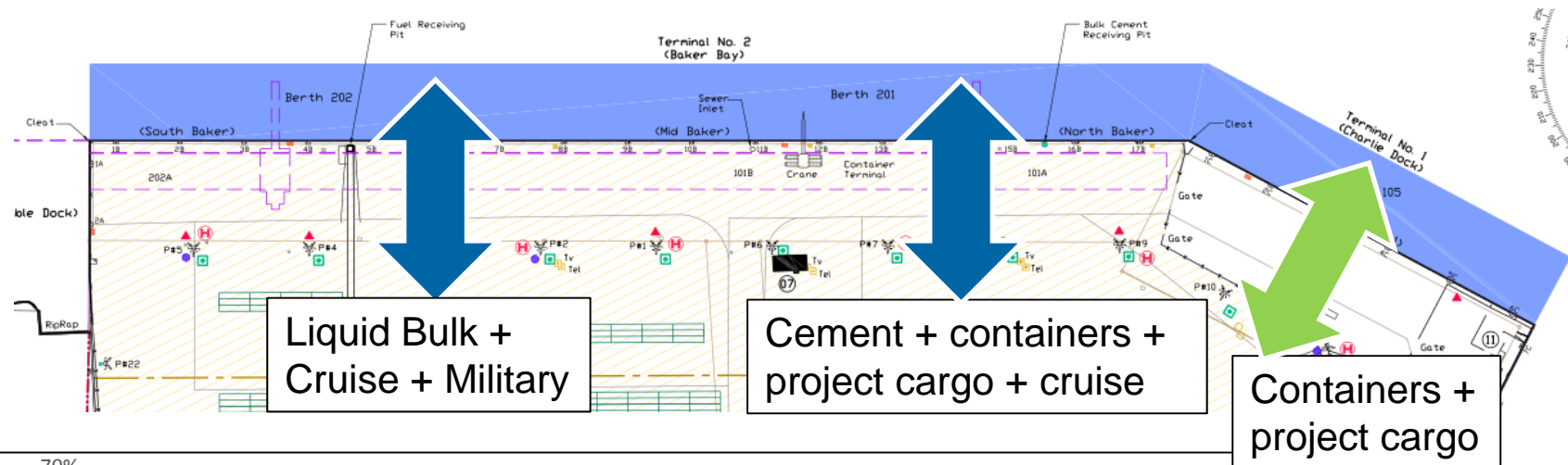
Berthing Plan - 'maintain existing'



Key issues:

- Frequent congestion expected
- Significant impacts on container scheduling
- Limited opportunity for military vessels or more cruise

Berth Allocation Impacts – Opening up Charlie-1



Key issues:

- Acceptable performance
- Ability to manage impacts on container scheduling
- Good opportunity for military vessels & more cruise

Container Infrastructure

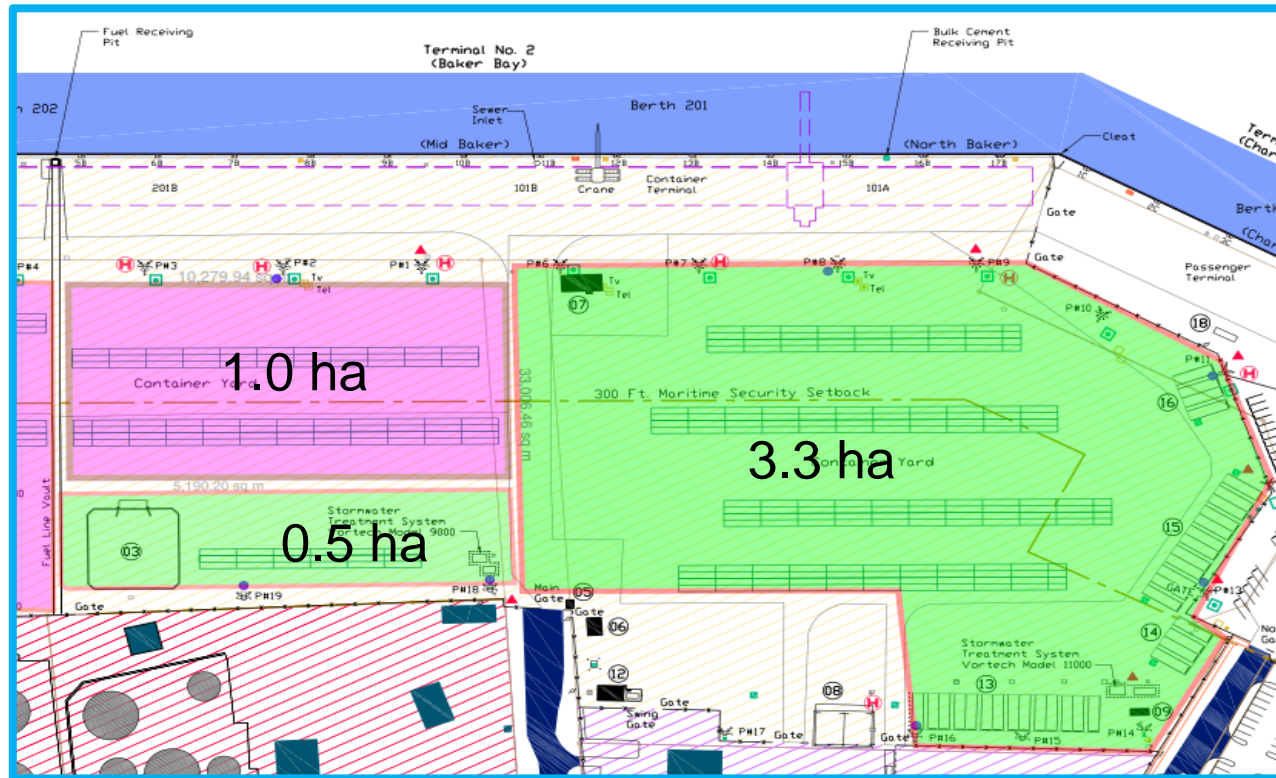




- Yard was originally planned with 1664 'ground slots'
- Currently there are:
 - 574 (non-reefer) slots
 - 34 Reefer slots (68 plugs)
- Space available for expansion.



Containers – Approximate yard storage requirements



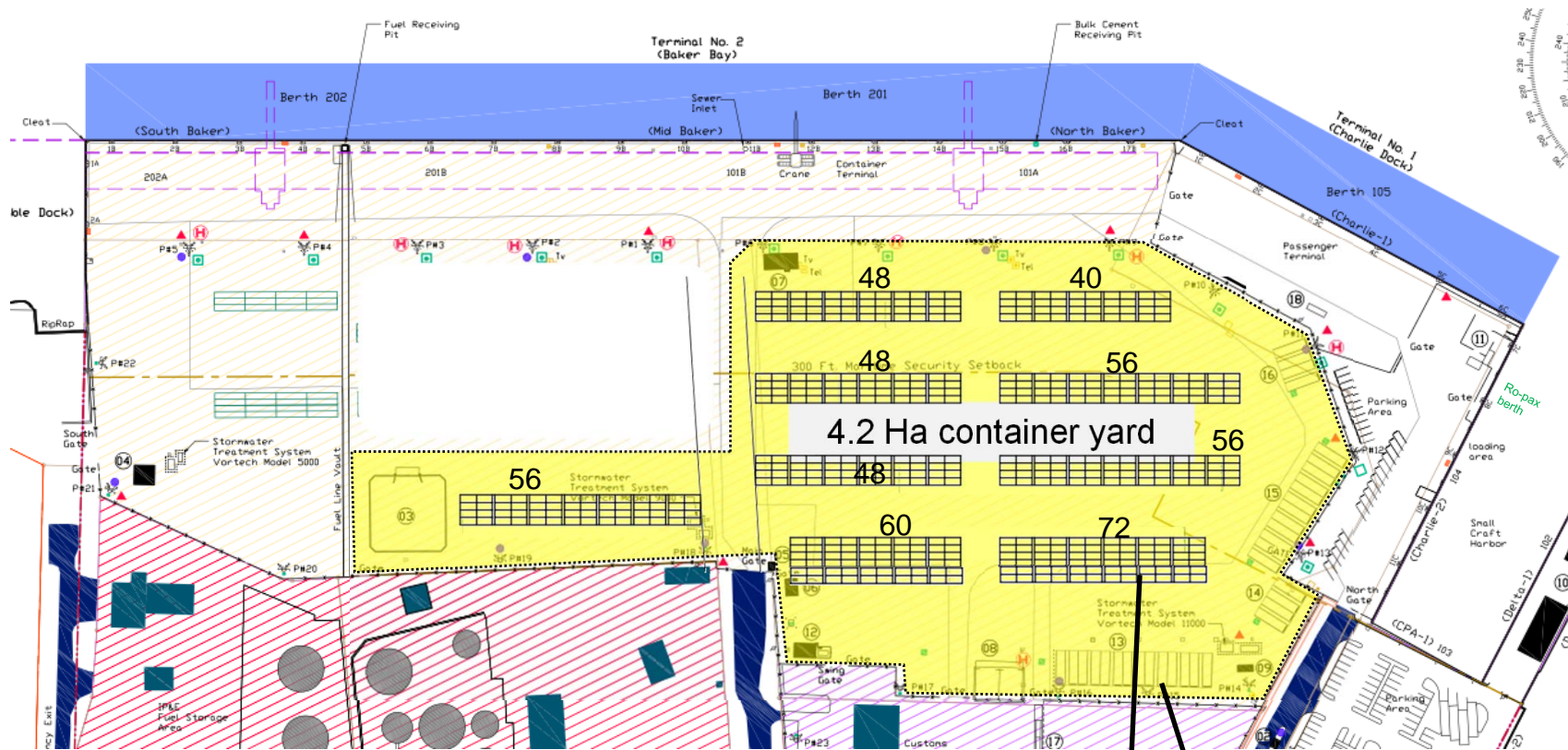
Findings:

- Around 60% of existing yard likely to be sufficient
- Area ~3.5 – 4.0 Ha suggested
- Higher stack heights to be considered
- Existing yard systems can be maintained

Approximate area required (Ha) for Reach Stacker operations (4 wide)

2 high loaded / 3 high MT	3.20	3.74	4.27	7.00
3 high loaded / 4 high MT	2.38	2.78	3.17	4.91

Possible Yard Configuration (what might be required)



Future enhancement :

- Reduce dwell period
- Expand yard as breakbulk storage needs reduce
- Employ Straddle Carriers

Container yard

- ~26k TEU capacity @ 2 high
- ~38k TEU capacity @ 3 high
- 484 TEU ground slots

Reefer slots

- 68 TEU capacity
- 3,766 TEU capacity (10% of future forecast)

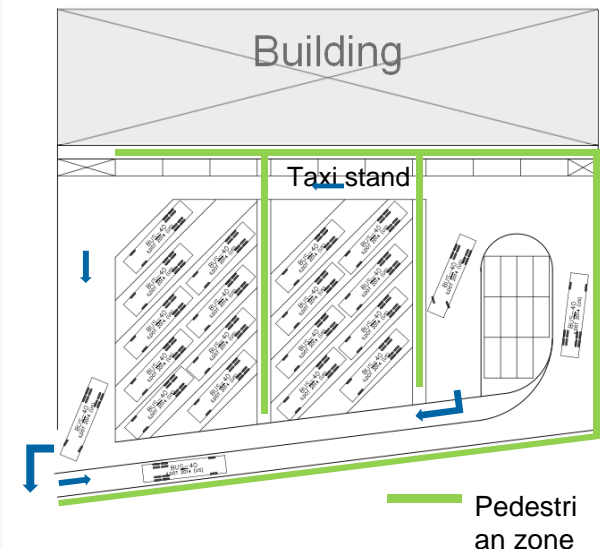
Cruise Infrastructure



Cruise Infrastructure

Key issues and outlook:

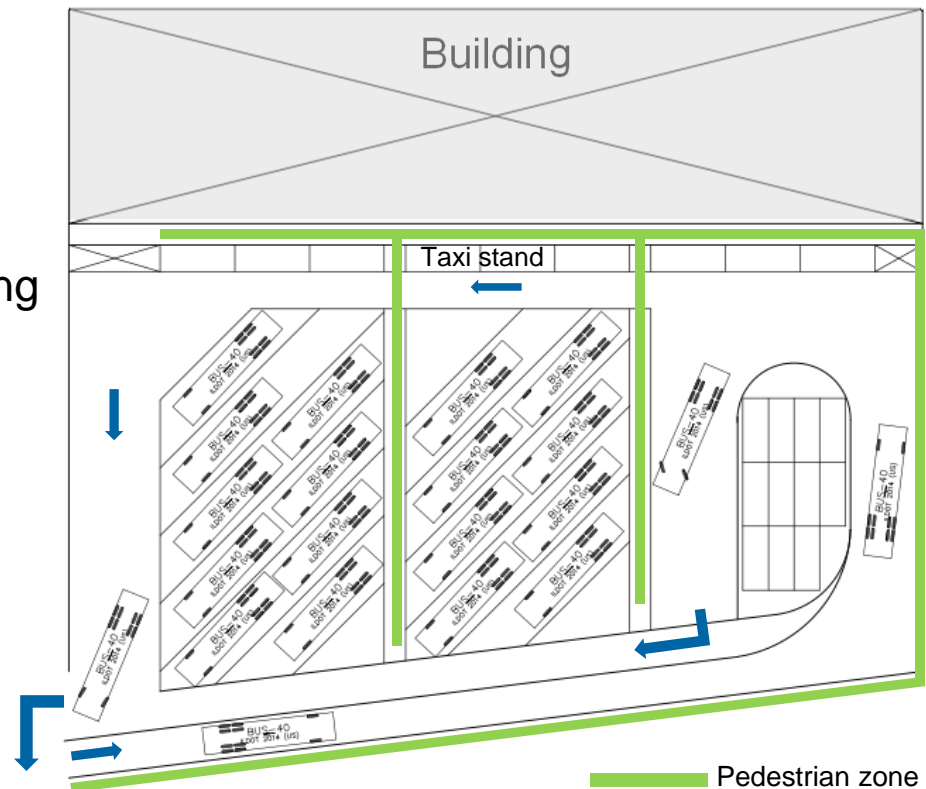
- Saipan is an international 'transit' destination
- Potential growth in 'expedition' cruise services
- Existing infrastructure is constraining:
 - Channel Bend/Depth (limits Vessel size)
 - Passenger receiving facilities
 - High port costs
- Port operations are impacted during cruise visits
 - Berth occupancy
 - Port security requirement



Cruise Infrastructure

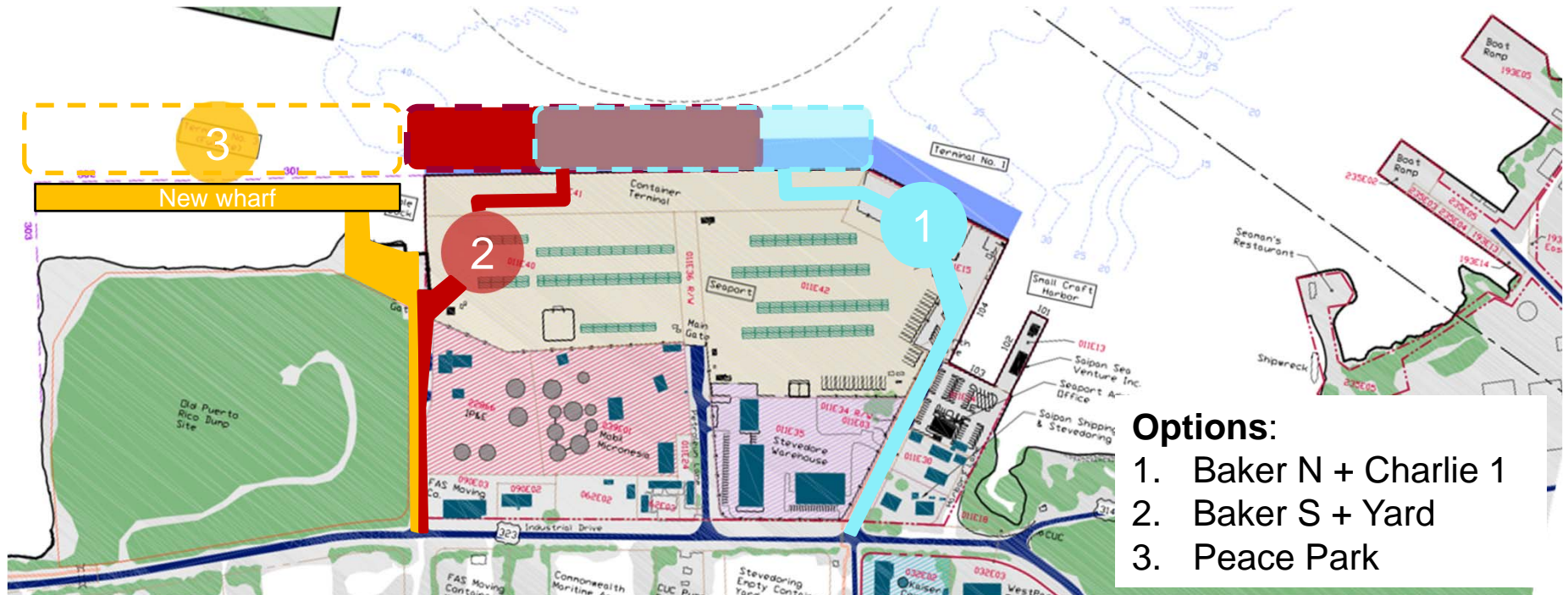
Recommended infrastructure:

- 300m berth + mooring dolphins
- High capacity bollards / fenders
- Flexible use single / two storey building providing:
 - Weather protection
 - Waiting area
 - Customs and Quarantine facilities
 - Offices – agents/CPA etc.
 - Material stores
 - Cargo storage provision
- Designated bus / taxi waiting / drop-off areas
- Staff parking
- Area for welcoming visitors / hosting a local market?



Transport mode	Suggested No.
Tour bus / coach	15 large + 5 medium
Public bus	1 space
Taxi use	9 spaces
Car parking	11 spaces

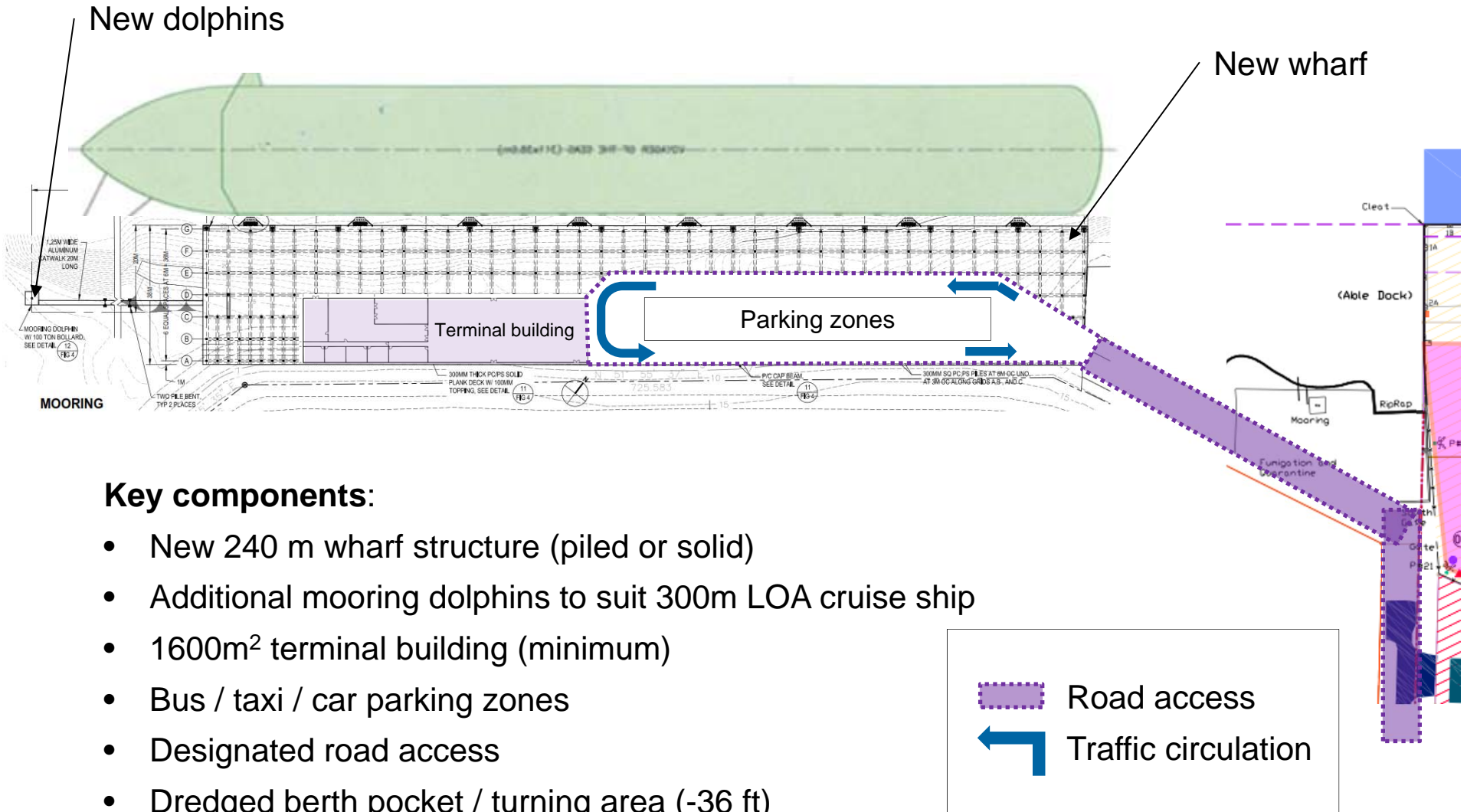
Cruise Infrastructure – siting options



Options:

1. Baker N + Charlie 1
2. Baker S + Yard
3. Peace Park

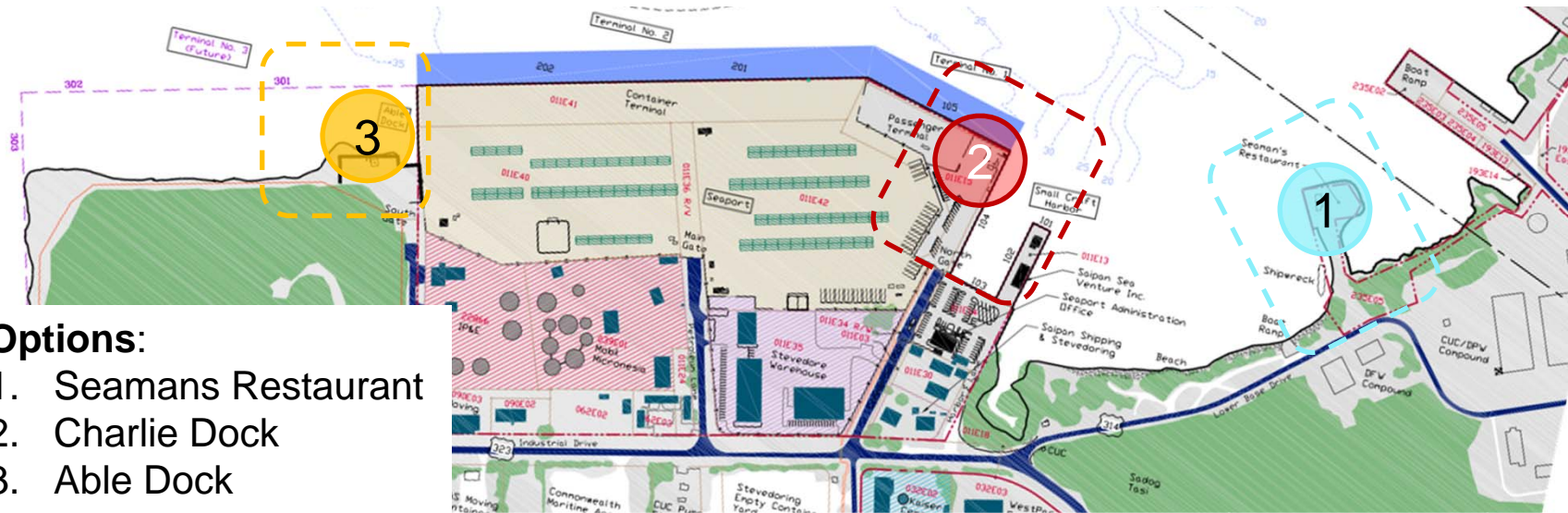
	Option	Access	Utilities	Water depth	Enviro	Impact on port	Complexity / cost	addresses key issues	Overall
key	1 Baker N	CPA property	Yes	No obvious issues	No obvious issues	All berths closed	Expected to be similar Baker S has synergy with Oil Tanker MD needs	Reasonably well	see ro-pax
key	2 Baker S	CPA property	Yes	No obvious issues	No obvious issues	Some disruption (can be mitigated)		Optimally	Preferred
key	3 Peace Park	DD lease + not CPA property	nearby	Dredging required	Some macro-algae risk	Provides new berth	Highest cost & complexity	Excessively	Future



Ro-Pax Ferry infrastructure



Ro-Pax Ferry – Location options

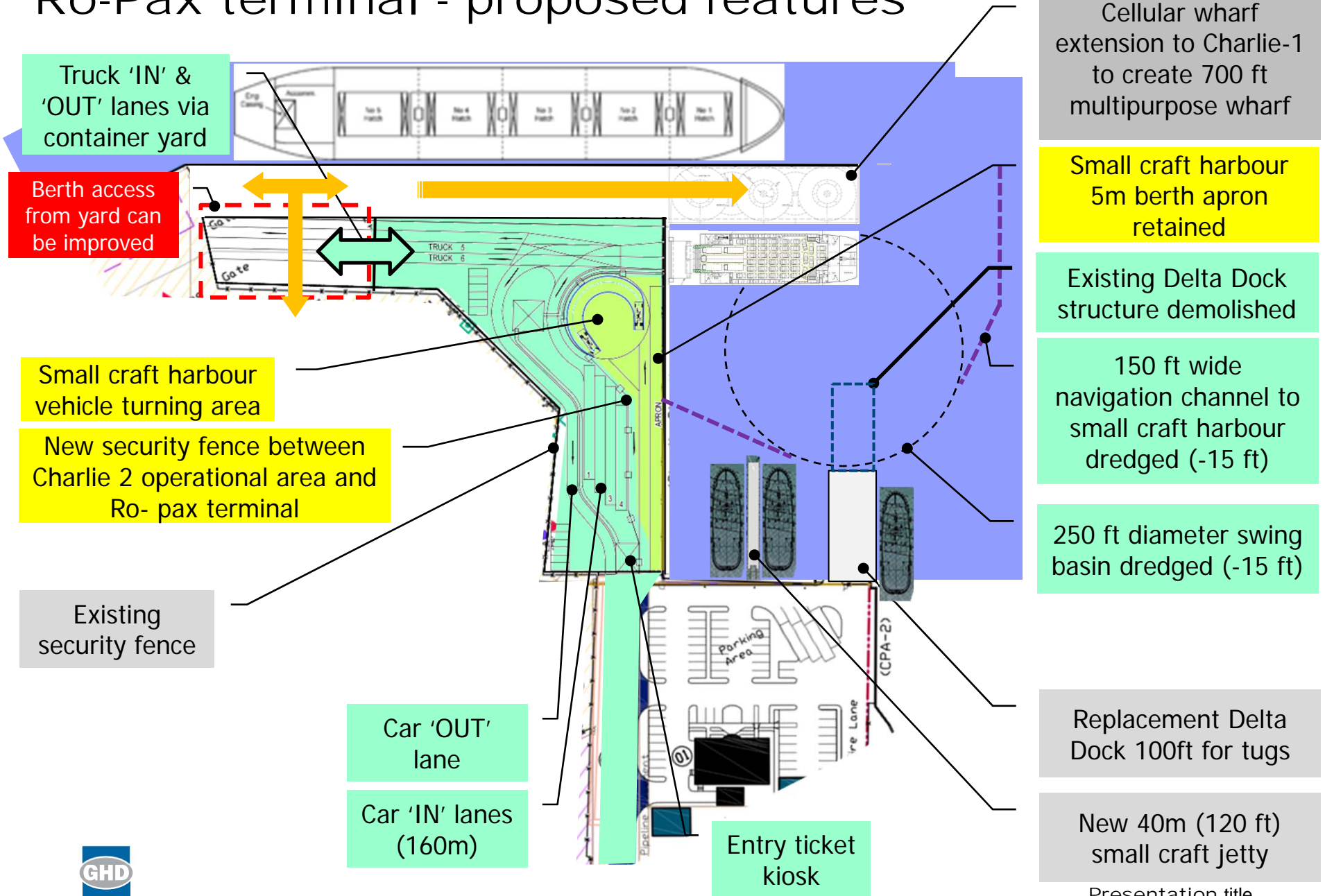


Options:

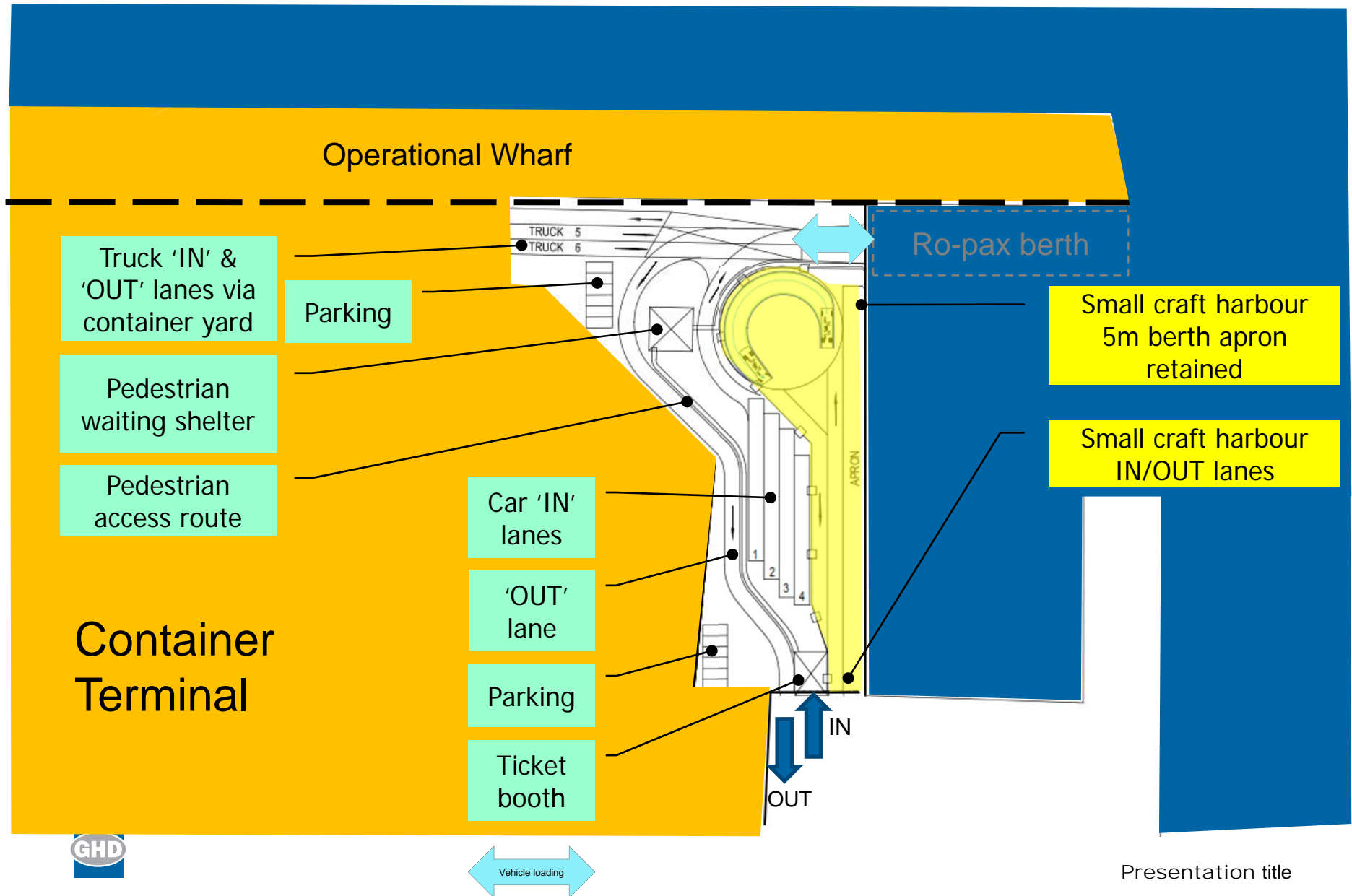
1. Seamans Restaurant
2. Charlie Dock
3. Able Dock

	Option	Footprint adequacy	Access	Water depth	Enviro	Port proximity	Masterplan synergy	Overall
key	1. Seamans Restaurant	Expected to be adequate	CPA	Limiting, + exposed	Macro algae / seagrass in nearshore area	Disconnected	No obvious benefits	least preferred
key	2a. Charlie Dock	Adequate	CPA property	> 8ft exists + exposed. Can be mitigated. Some dredging required.	Development exists within operational port footprint	Enables direct connectivity to container yard	<ul style="list-style-type: none"> Berth extension option exists Does not reduce operational footprint Delta dock condemned 	preferred
	2b. Delta Dock	Restricted landside area				Difficult to provide connectivity		
key	3. Able Dock	DD lease / not CPA property	DD lease / not CPA property	> 8ft but very exposed	Macro algae / seagrass in nearshore area	Connectivity considered feasible	Potentially constrains future development	

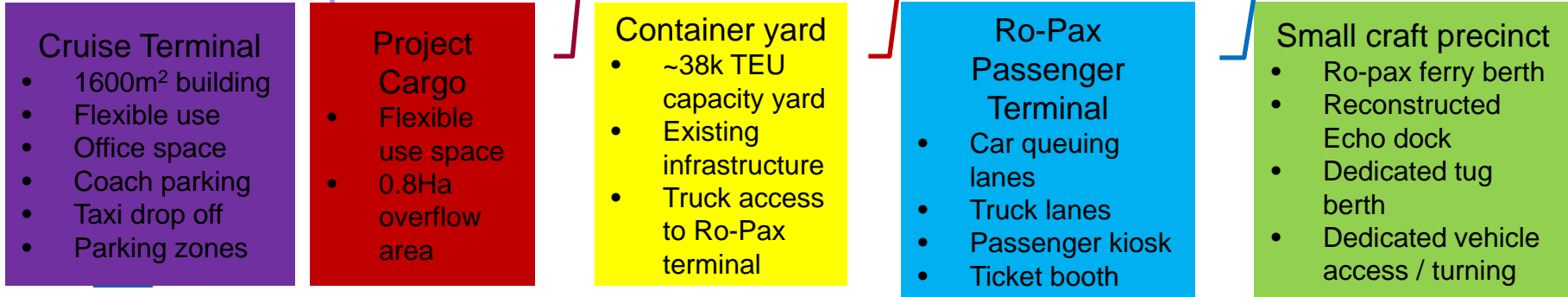
Ro-Pax terminal - proposed features



Proposed Ro-Pax terminal



- Increased operational wharf
 - 3 multipurpose berths
 - 2,130 ft main quay
 - Yard access even if loading fuel or cruise



Small Craft Marina Infrastructure (Concepts)



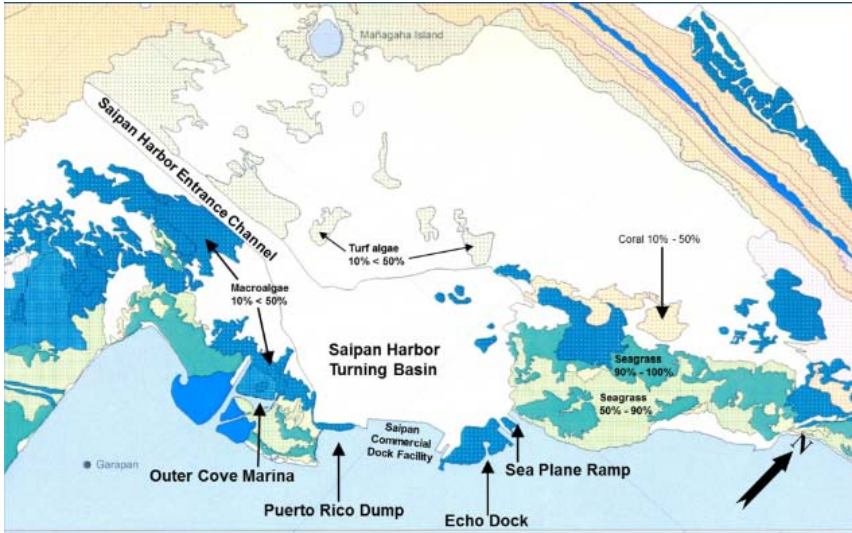
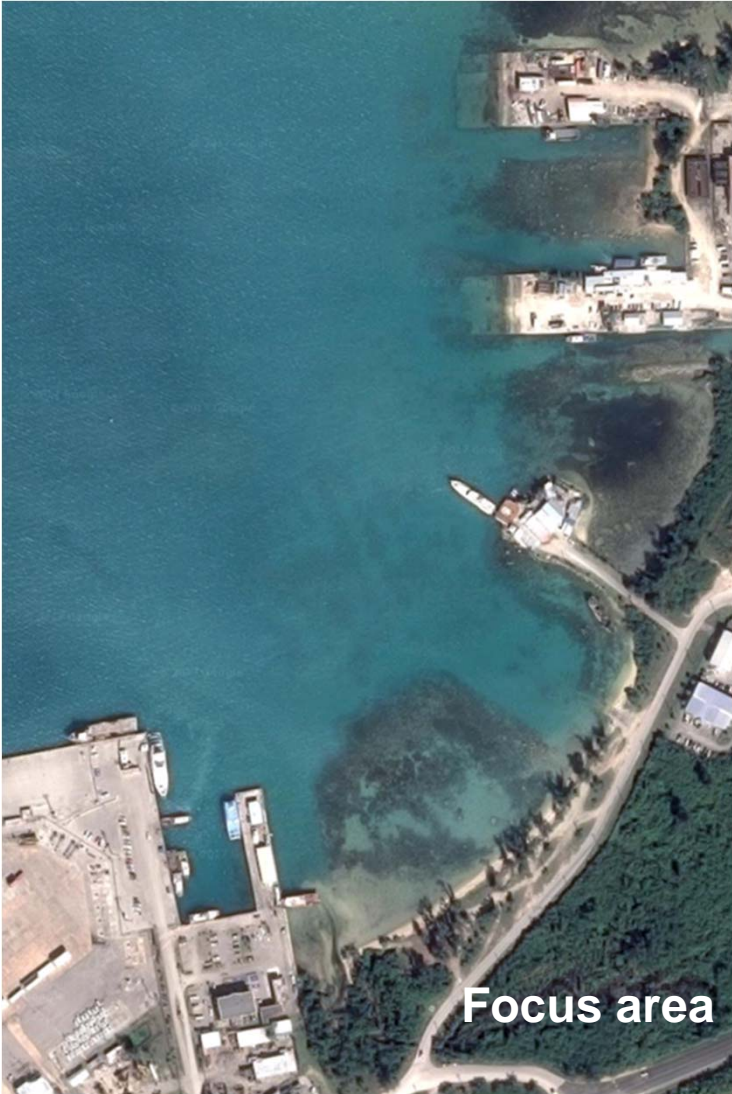
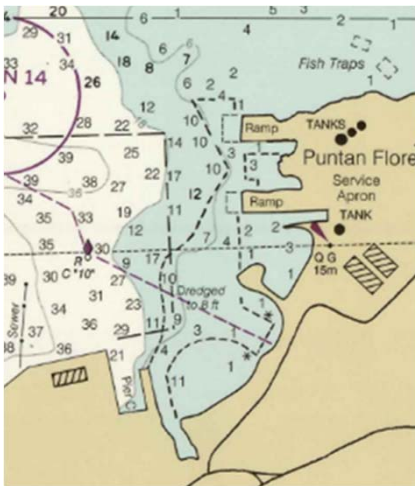


Figure 21. Distribution of various benthic biological habitats identified from a NOAA survey of Tanapag Lagoon. Modified from: *Atlas of the Shallow-Water Benthic Habitats of American Samoa, Guam and the Commonwealth of the Northern Mariana Islands*; NOAA Tech. Memo. NOS NCCOS 8, Frame 31 (February 2005)

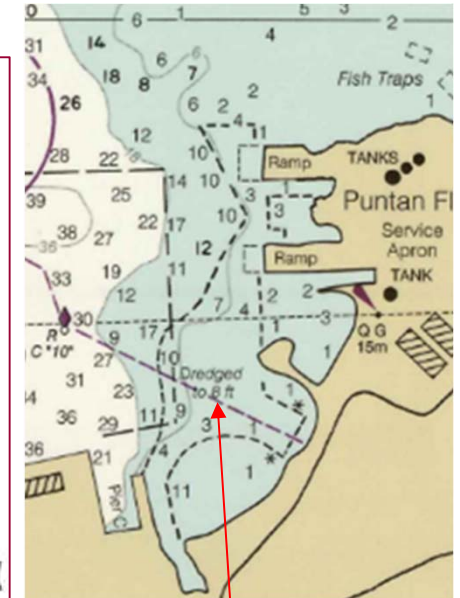
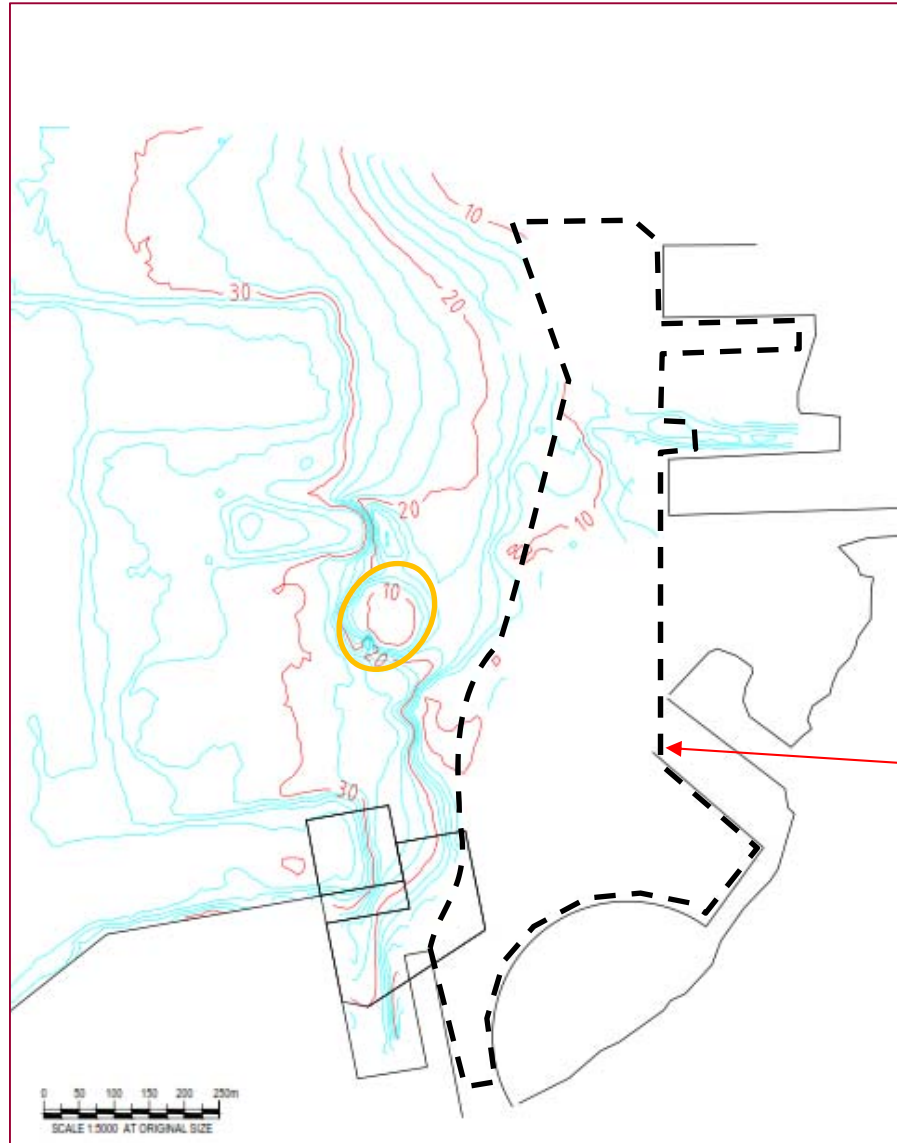


Key planning factors:

- Existing dredged zone (8 ft)
- Benthic habitats (sea grass)
- Land ownership & uses
- Lease arrangements
- Utility infrastructure
- Site access



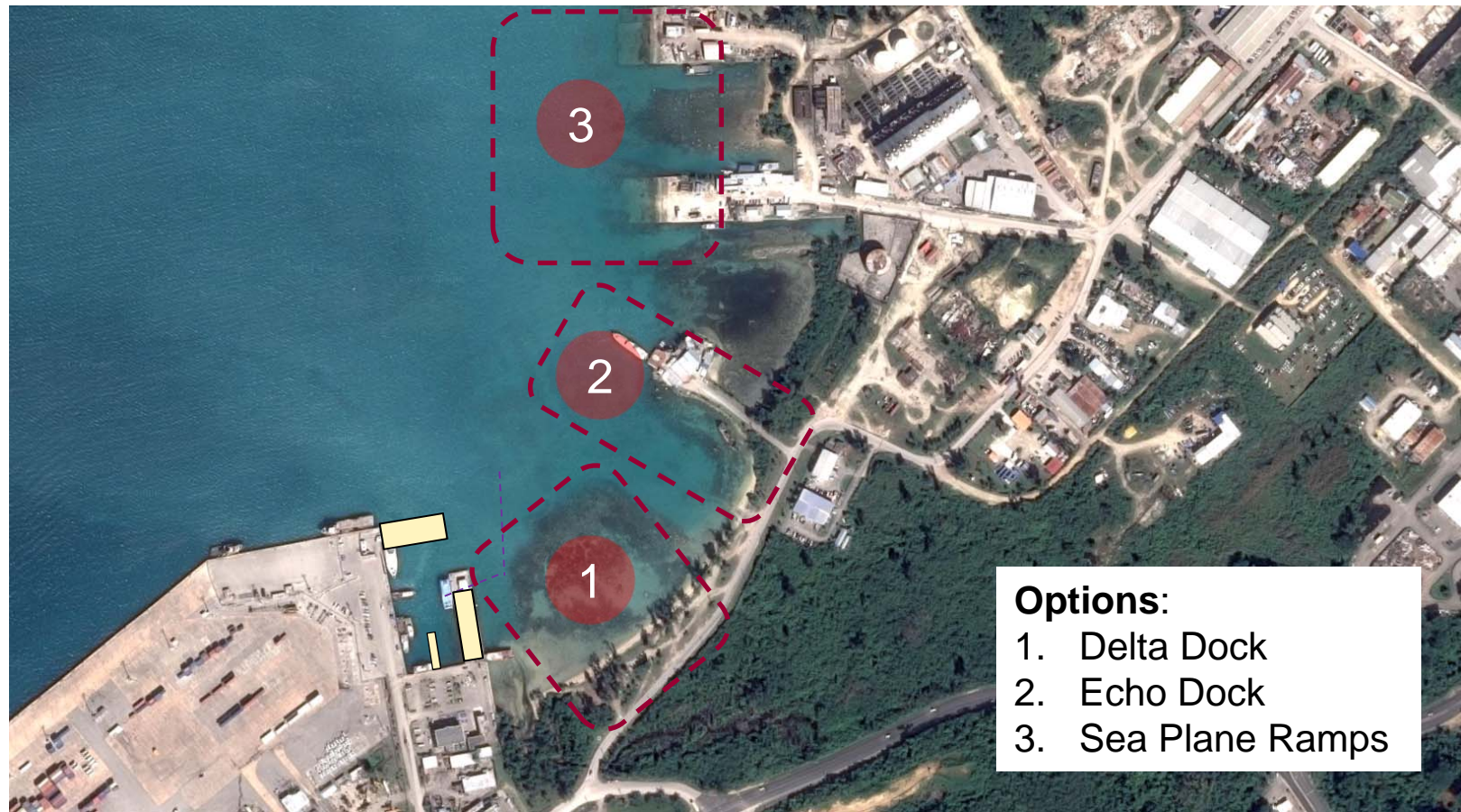
Shallow extents



Approximate
area dredged to
-8ft

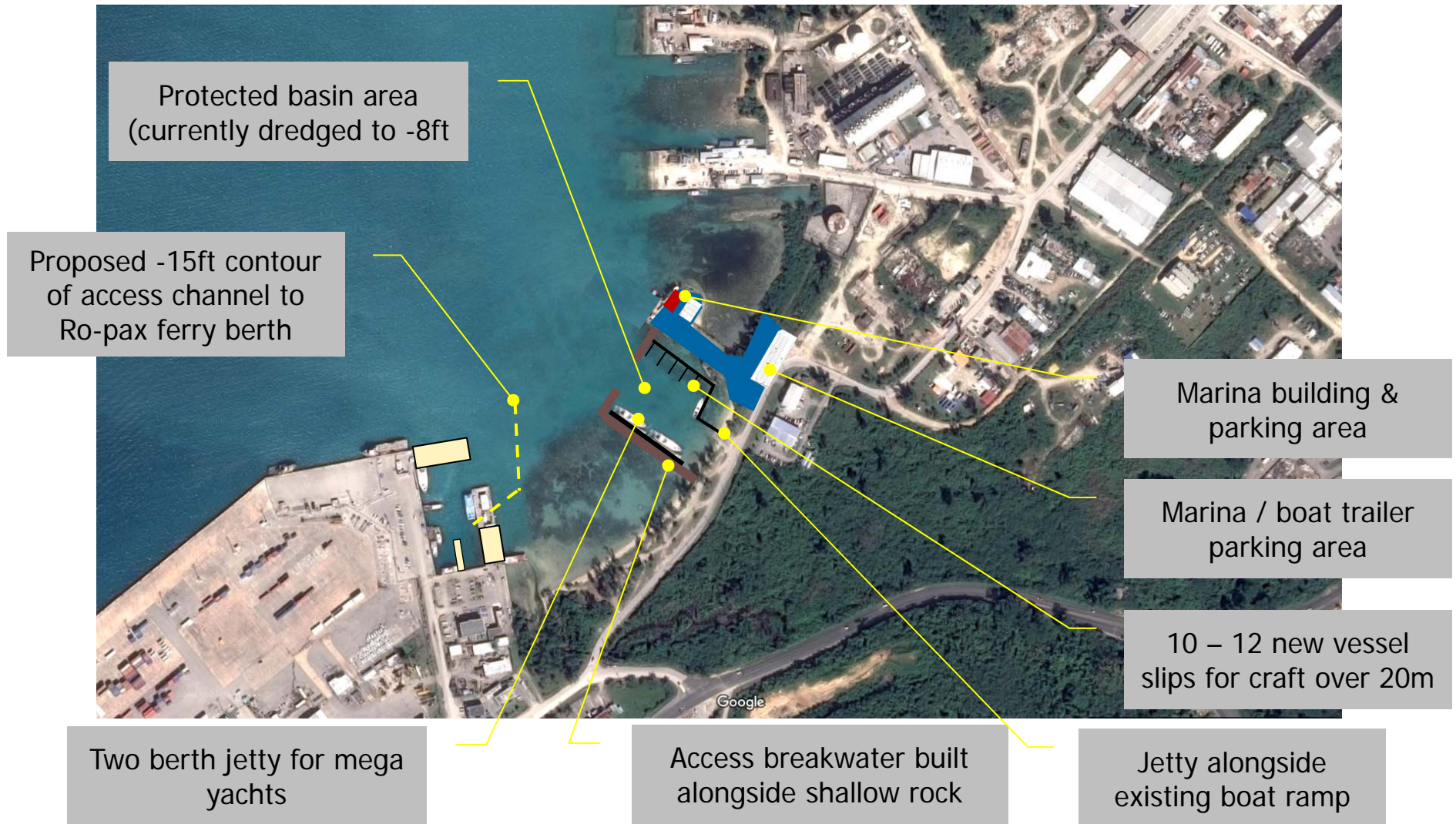
Presentation title

Small craft marina site options

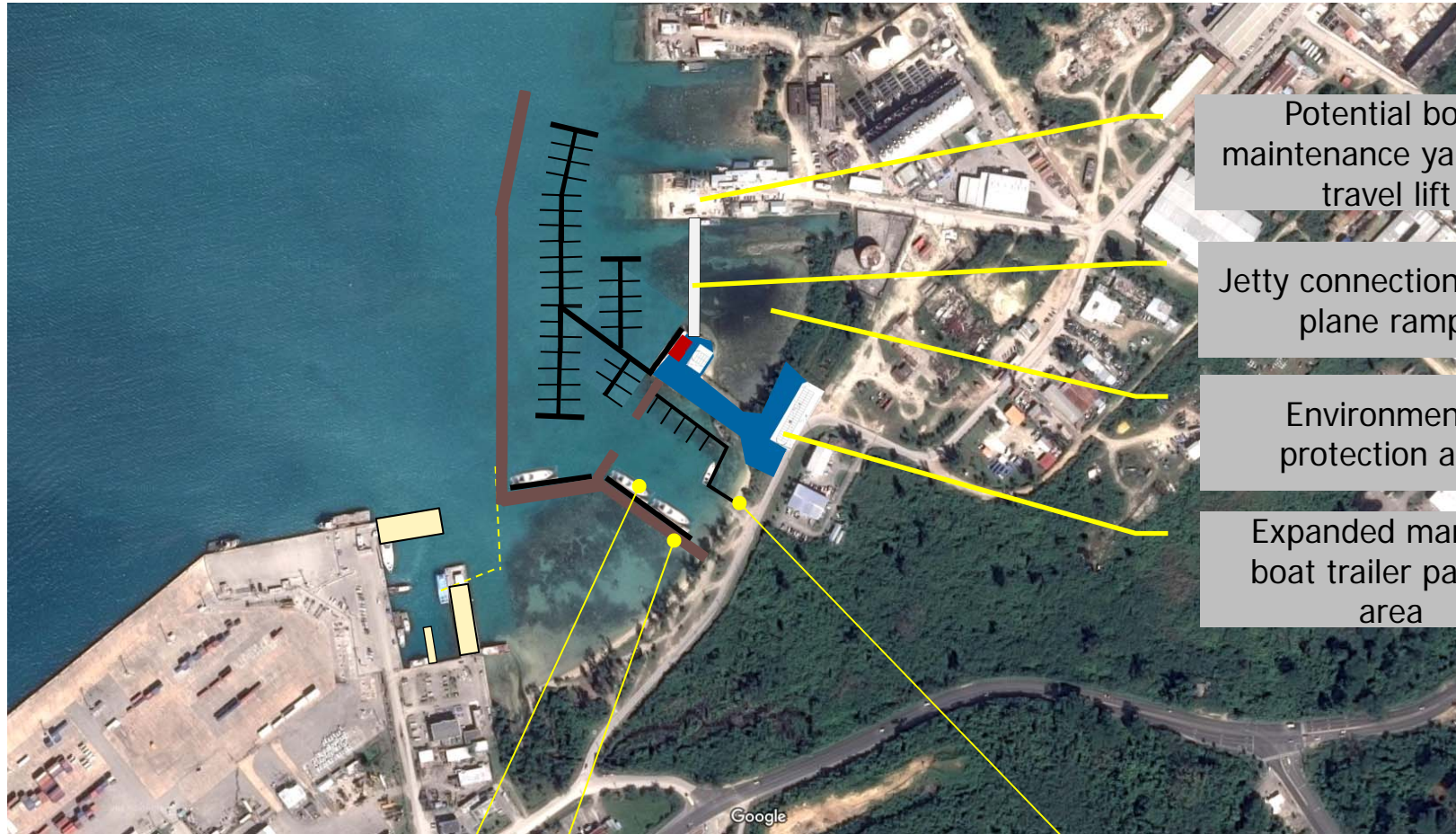


Option	Space / access	Utilities	Water depth	Enviro	Stage 1	Expandability	Overall
1 Delta	No lease	Yes	v. shallow	Macro algae	Moderate	Limited	Protect
2 Echo	Single lease / CPA property	Yes	> 8ft	Macro algae in nearshore area	Easiest	Can be combined together in N-S direction	Stage 1
3 Seaplane	Multiple leases / CPA property	Yes	> 8ft		Significant marine works		Future

Proposed marina concept – 1st stage



Longer term marina development - concept (1)



Two berth jetty for mega yachts

Access breakwater built alongside shallow rock

Jetty alongside existing boat ramp

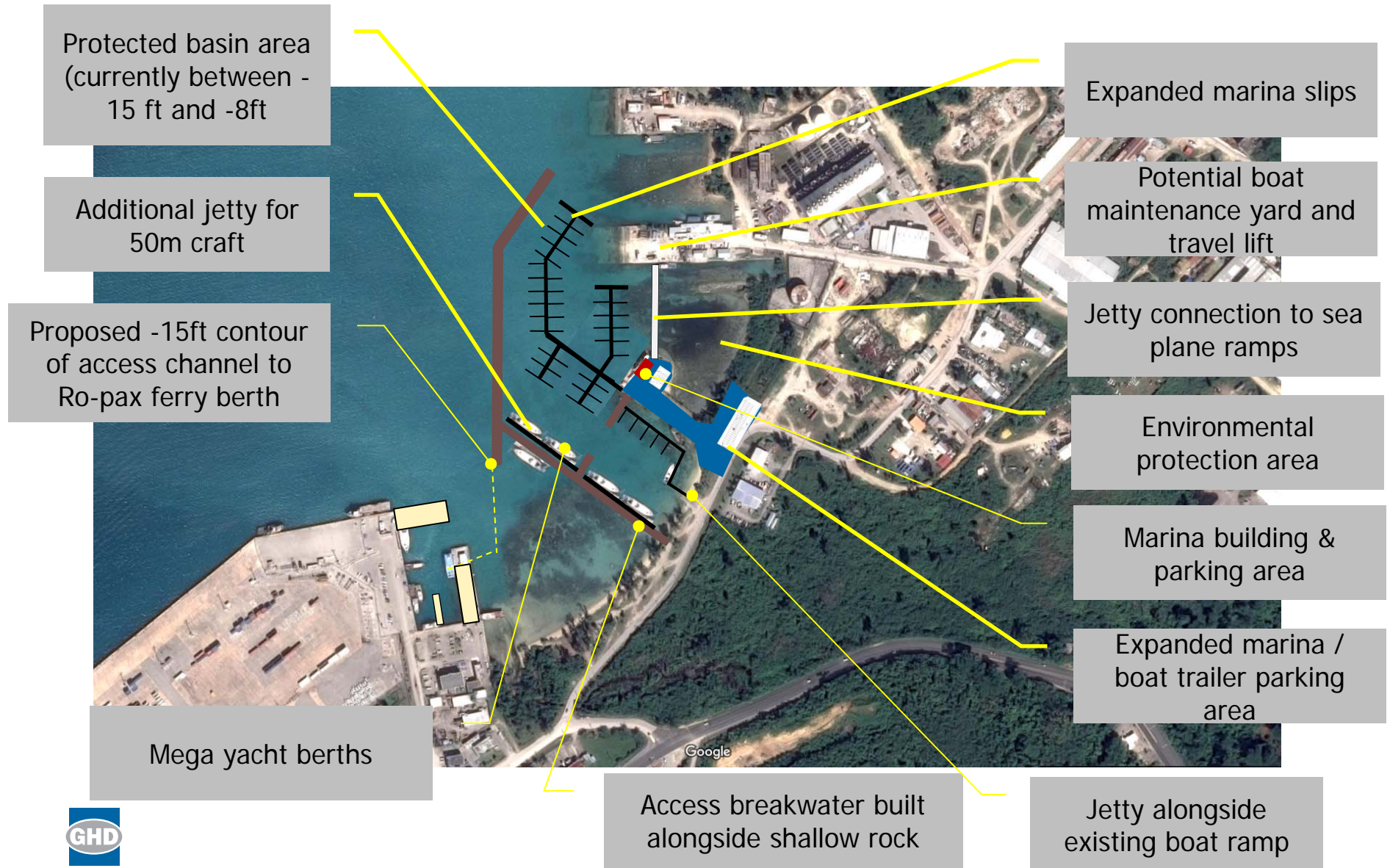
Potential boat maintenance yard and travel lift

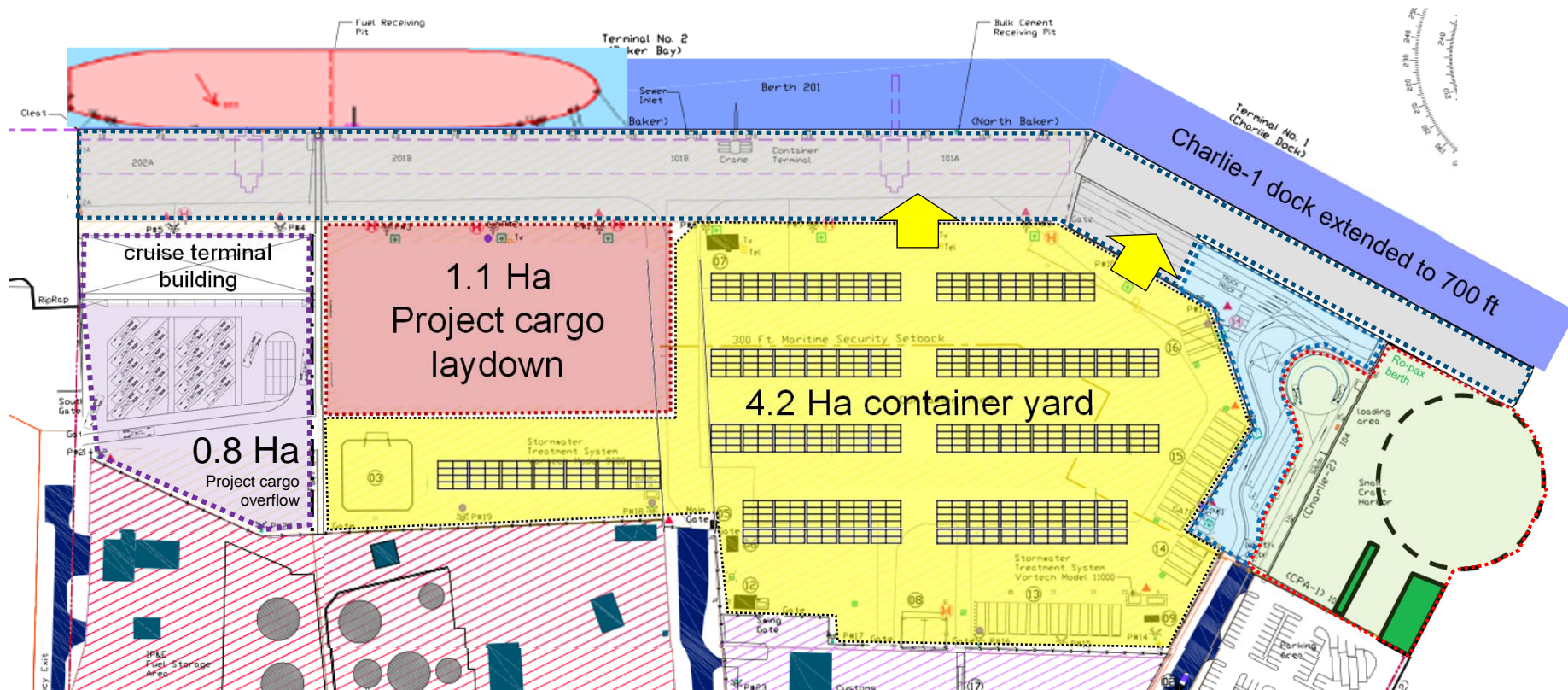
Jetty connection to sea plane ramps

Environmental protection area

Expanded marina / boat trailer parking area

Longer term marina development - concept (2)







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