

Port Authority of the Cayman Islands

Cargo Port Development Project Outline Business Case

Public Outreach Meetings
July 31st and August 1st, 2024



Agenda

- Outline Business Case Objective
- Existing Port and Cargo Distribution Centre
- Long and Short List of Potential Port Sites
- Planning Horizons
- Population and GDP Projections
- Cargo Forecasts by Cargo Type
- Vessel Size Forecasts
- New Port Concept Plans for Medium and Long Term Planning
- Environmental Appraisals
- Transportation Assessments
- Cost Comparisons
- Short Term Upgrade of Existing Port and CDC
- Closing Remarks
- Questions and Comments

International Consultant Team

- **Stantec** : Canadian headquartered global Architectural, Engineering & Environmental Services consultant with 30,000 staff in 400 offices. Top 10 ranked designer of Marine and Port facilities.
- **KPMG** : UK headquartered Big Four Accounting and Financial Services firm with 265,000 staff in 145 locations. Over 400 staff in the Cayman Islands.
- **RHDHV** : Netherlands headquartered Engineering and Environmental consultancy with 6000 staff in 20 locations. Globally recognized port consultant.
- **BCQS** : Cayman Island based real estate and cost estimation professional services firm with 100 staff and 13 locations across the Caribbean.

Objective of the Outline Business Case

Objective of the Outline Business Case Study (OBC) is only to select a preferred location and concept layout for a new Port.

Existing George Town Port and CDC

- Due to conflict with cruise operations, space limitations and traffic congestion, the existing George Town Port and Cargo Distribution Center (CDC) is at or near capacity resulting in significant delays, double handling of cargo and demurrage = unhappy users and higher prices to consumers.
- Most agree the Port and CDC are well run given the severe infrastructure limitations.
- If cruise relocated, and the port expanded, the port would still be constrained and likely restricted to night time cargo retrieval operations due to traffic restrictions/congestion in George Town.
- As a result a new Port located outside George Town should be considered.

Long and Short List of Potential Port Sites

- Through stakeholder discussions and matrix evaluation it was agreed that Sites 1 and 2 (existing port) for SHORT TERM, and sites 3, 8, 9 and 10 for LONG TERM, planning, costing, environmental assessment, financial analysis, etc.

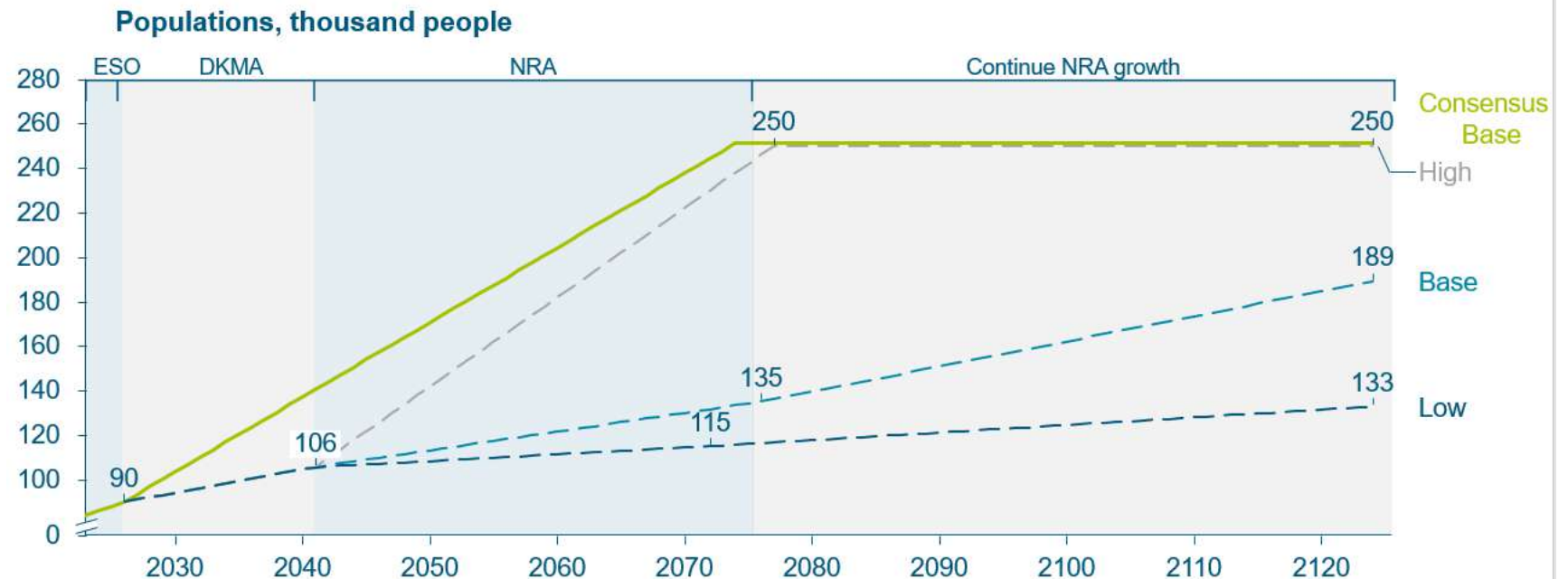


Planning Time Horizons

- A new Port, or major expansion of an existing port, generally requires 10 to 15 years to complete master planning, regulatory approvals, financing, design, tendering and construction.
- LONG TERM Horizon: 2084 Recommended
 - Allows 10 to 15 years to implement new port PLUS 45 to 50 years of operating capacity = 60 year planning horizon.
- SHORT TERM Horizon: 2039 Recommended
 - Short term solution before new terminal opens. Allows 5 years to implement existing port upgrades PLUS 10 years of operating capacity = 15 year planning horizon.
- 100 Year Horizon (2124): No planning but allocate land for expansion beyond 2084.

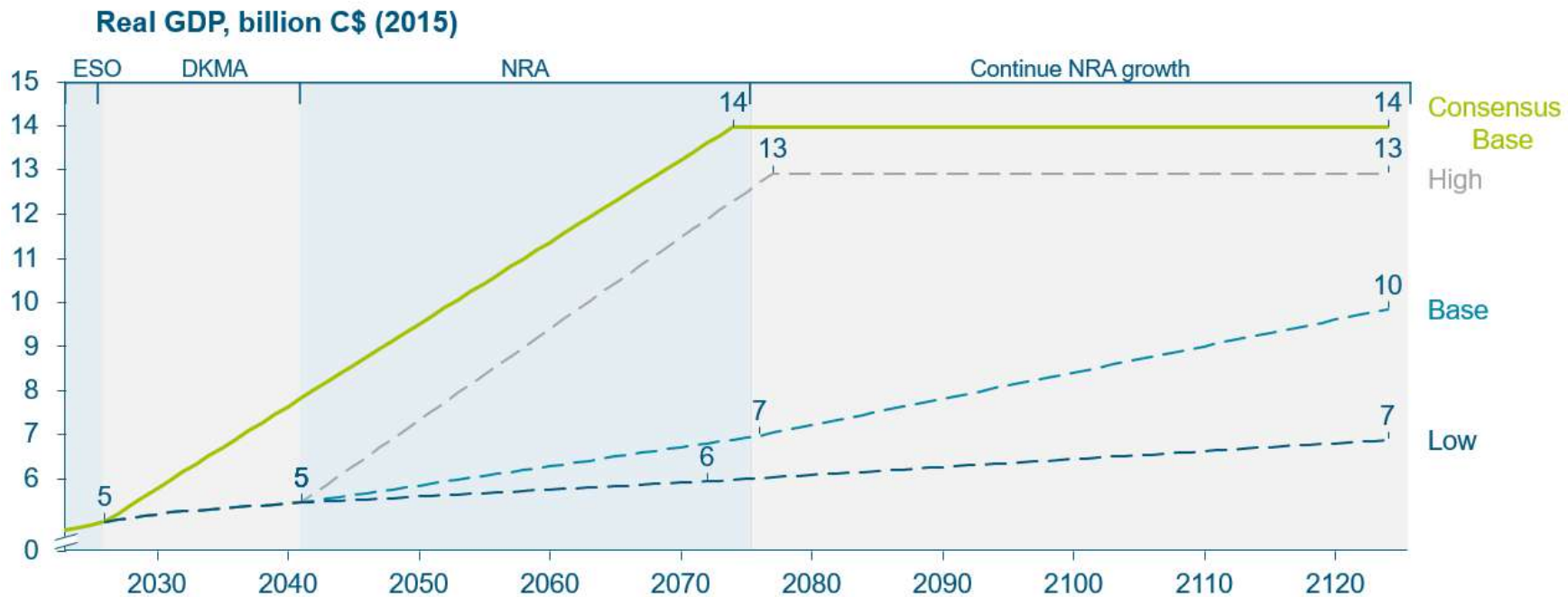
Cargo Projections for 2039 and 2084

- Cargo growth generally corresponds to Population and GDP growth.
- Population forecasts from Economics and Statistics Office 2026 (ESO), Airport Upgrade DKMA Study 2041(DKMA) & National Roads Authority Charette 2074 (NRA).
- DKMA and NRA projections forecast though to be low considering population growth has been ~4% CAGR from 2013 to 2023.
- Adopted NRA 2074 High Case population forecast with straight line growth from 2026 ESO projection to 2074 High Case projection resulting in ~2% CAGR. (Consensus Base Case)



National GDP Forecasts

- GDP/capita is maintained and constant over forecast period.
- Consensus Base Case uses ESO projected 2026 GDP/capita. Others used older GDP/capita figures.



Basis of Cargo Forecasts

- Container forecasts based on national GDP plus CUC LNG imports.
- Break bulk forecasts based on national GDP at current containerization rate.
- Auto forecast based on Population and national GDP growth.
- Cement forecast based on construction GDP growth.
- Aggregate forecast is based on construction GDP growth PLUS construction fill imports once new terminal opens.
- Gasoline forecasts based on Population growth.
- Diesel forecasts based on Population growth with CUC LNG implementation.
- Jet fuel and LPG forecasts based on hotel and restaurant growth GDP.

Cargo Forecasts (Consensus Base Case w/ LNG)

Cargo Type	2013	2023	2039	2059	2084	2124
Containers (1000 TEU)	24.2	37.2	65.0	89.5	102.2	102.2
Autos Ro Ro (1000 units)	2.3	4.4	11.3	17.2	20.3	20.3
Break Bulk (1000 tons)	4.9	7.5	16.1	22.1	25.3	25.3
Cement (1000 tons)	29	58	100	137	157	157
Aggregate (1000 tons)	162	357	540/1446	1647	1940	1940
Diesel (M imp. gallons)	34	34	32	36	40	40
Gas (M imp. gallons)	11	15	19	24	26	26
Jet Fuel (M imp. gallons)	3.4	5.0	6.9	8.2	8.7	8.7
LPG (M imp. gallons)	1.4	2.6	4.0	5.2	6.6	6.6

Vessel Size Forecasts

- We heard consistently from stakeholders that vessel sizes will not increase significantly in the future even as older vessels are replaced with newbuilds.
- Recommend: Current maximum vessel size will be future average vessel size. Future maximum vessel size will be same % larger as current average.
- Recommend: Adopt 1000 TEU container vessel.

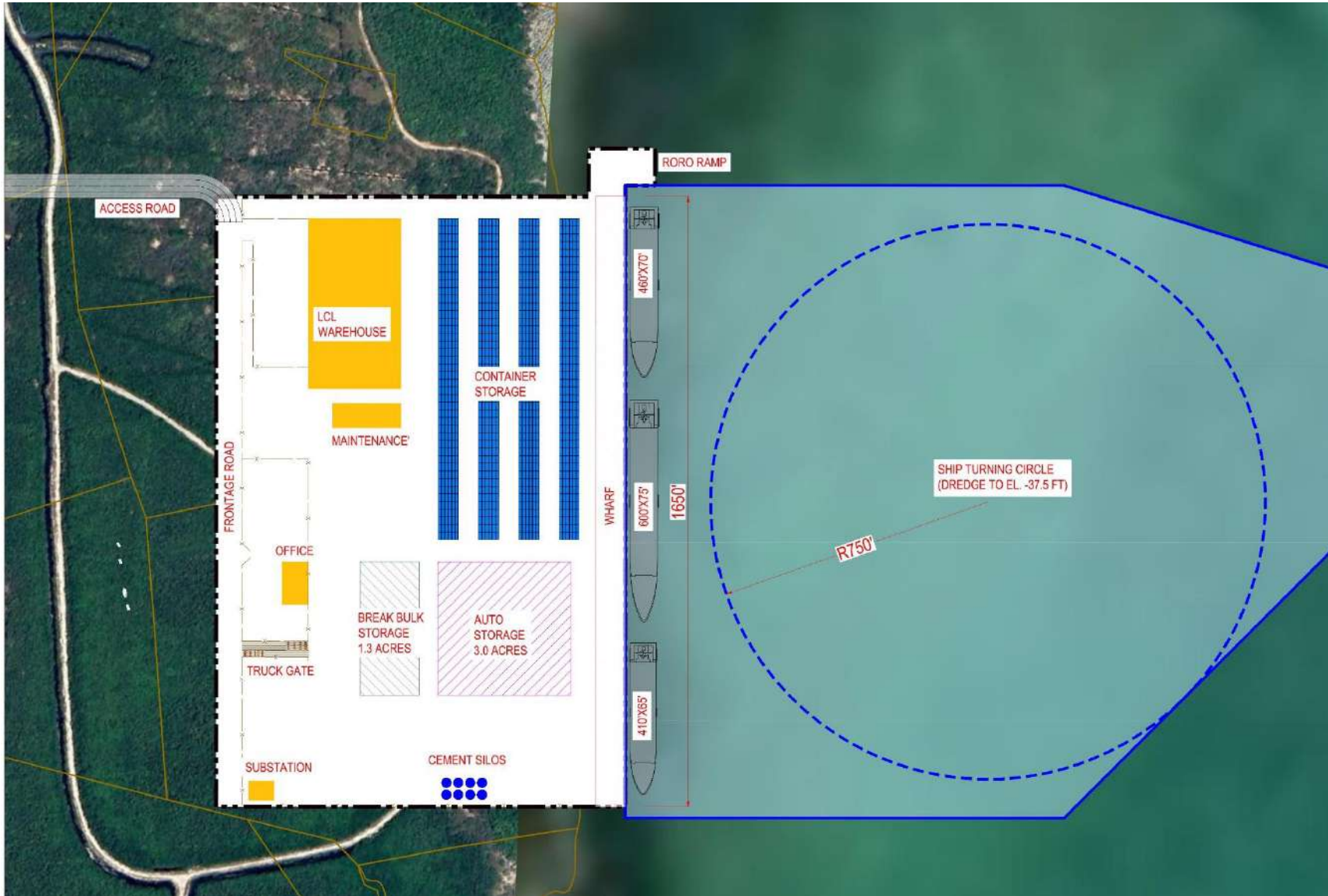
Increased maximum size vessel characteristics

Vessel Types	Current Maximum Size	Assumed Increased Maximum Range	Average Draught (m)	Draught range (m)	Average LOA (m)	LOA Range (m)	Average Breadth (m)	Breadth Range (m)
Containers	700 TEU	800 - 1000 TEU	8.1	5.6 - 9.2	140	125 - 179	22.4	19.6 – 27.0
Breakbulk	9,032 DWT	10,000 – 12,000 DWT	7.0	4.4-9.6	125	100-164	19.7	15.9-35.0
RoRo & Vehicle Carrier	7,748 DWT	7,500-8,000 DWT	6.6	4.3-7.9	150	109-193	23.1	17.0-30.2
Cement & Aggregate Carrier	4,493 DWT	4,500 – 4,800 DWT	6.0	5.5-6.6	96	90-109	15.0	13.6-16.4
Tanker	55,202 DWT	60,000 – 68,000 DWT	12.4	11.2-13.6	215	183-229	34.3	32.2-40.0
Liquified Gas Carrier	10,813 DWT	15,000-18,000 DWT	9.2	8.1-10.2	154	140-165	23.9	21.0-26.2

Concept Plans

- Plans developed based on 2084 Cargo Projections and Vessel Forecasts.
- Aggregates will continue to be offloaded and removed from port immediately.
- Gasoline, Diesel, Jet Fuel and LPG will continue to be imported through the existing Sol, Rubis and Home Gas facilities in George Town.
- Number of berths needed based on maximum berth occupancy of 65% to avoid congestion.
- Length of wharf based on 1 average length container ship (460'), 1 average length aggregate ship (410') and 1 largest ship (600').
- Shipping channel width and turning basin diameter based on largest vessels and design guidelines by World Association of Waterborne Transportation Infrastructure

Common Terminal Layout



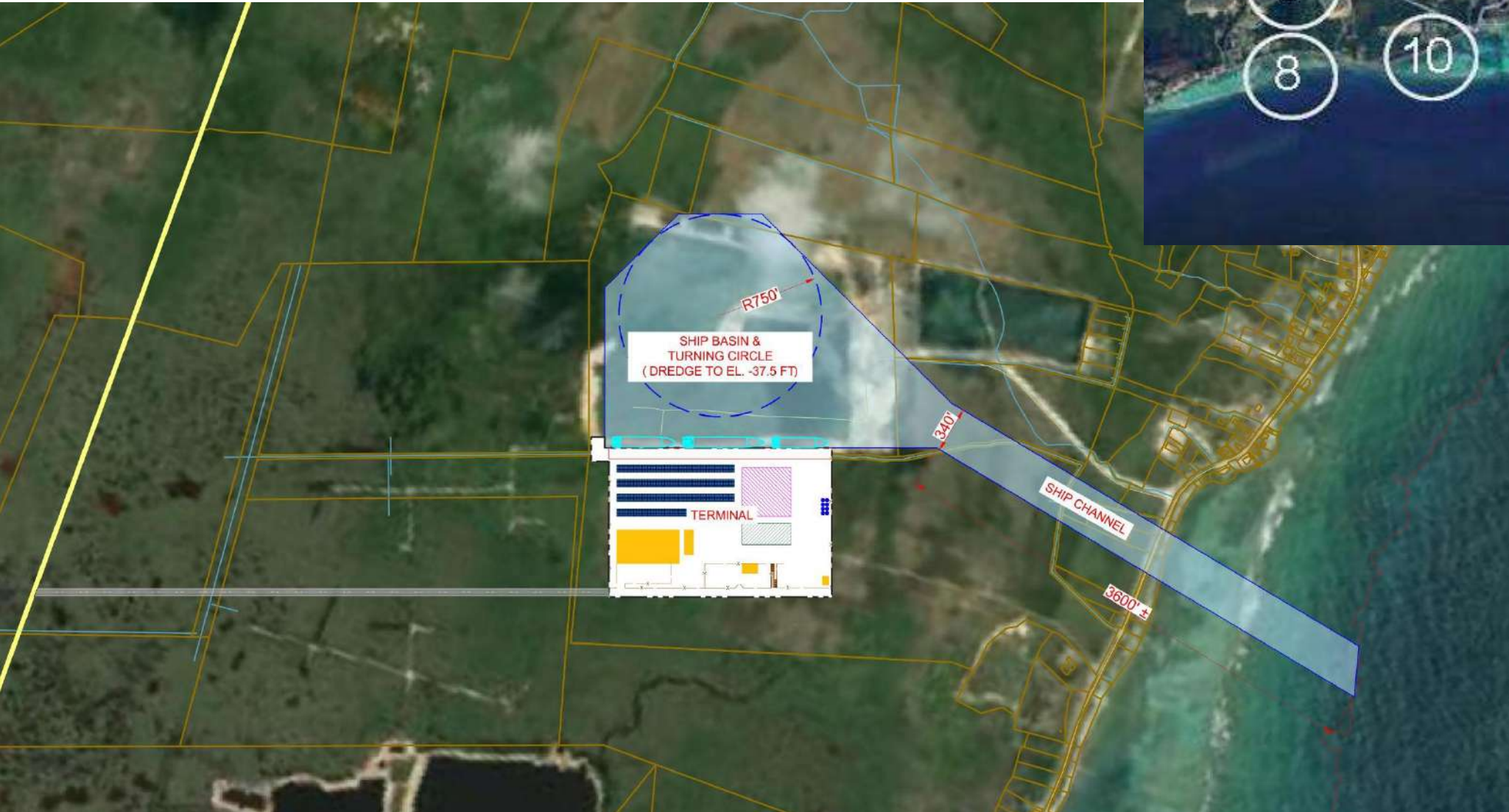
Option 3 Concept Plan



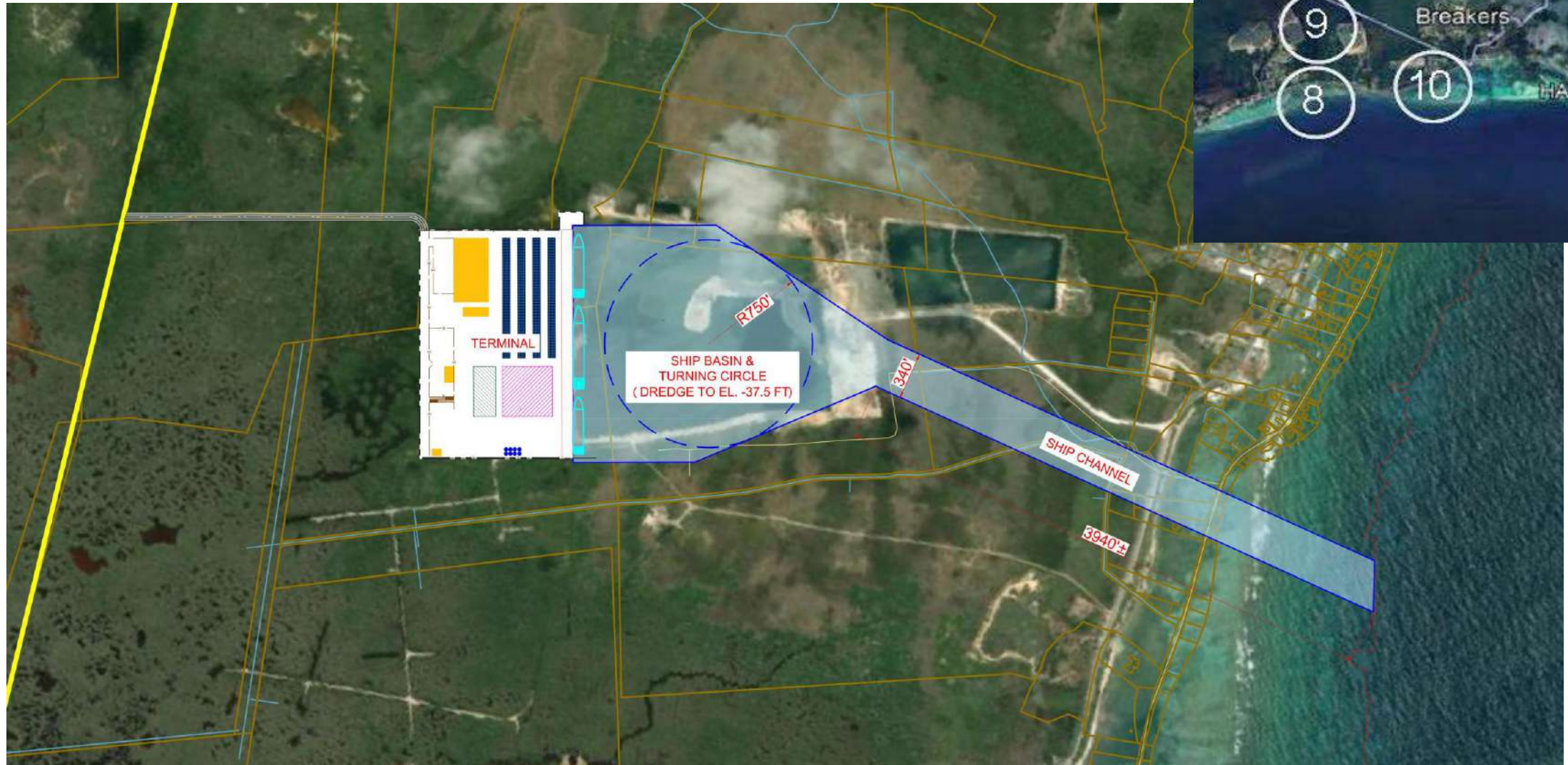
Option 8 Concept Plan



Option 9A Concept Plan



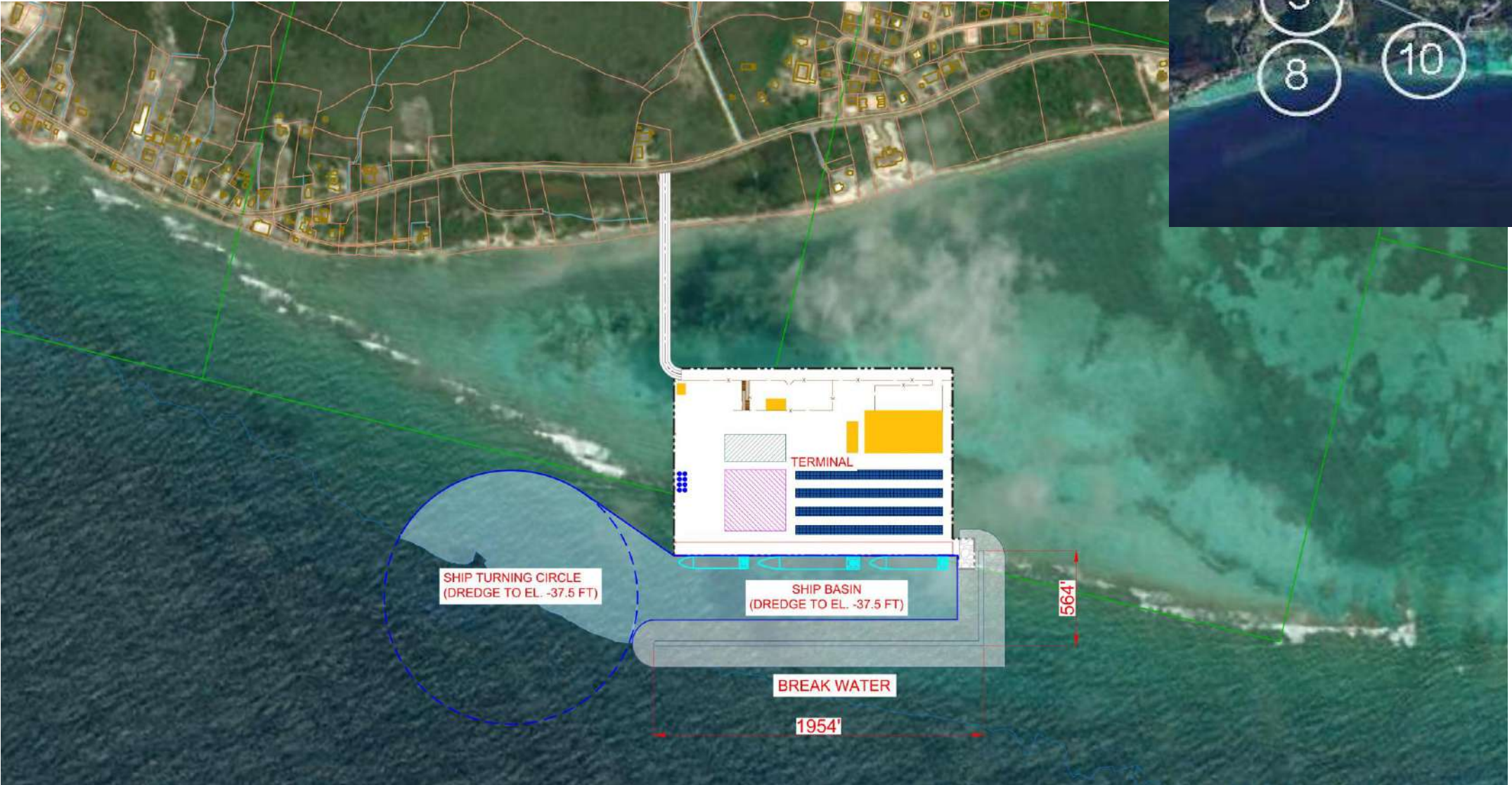
Option 9B Concept Plan



Option 9C Concept Plan



Option 10 Concept Plan



Objective for Public Outreach for Environmental Appraisal



To present the initial environmental work for the proposed cargo port



To outline the options under consideration and the criteria for appraisal with initial outputs



Seek views from the public on the options put forward

Environmental Appraisal of Cargo Port Options - Methodology

Long-list to short-list
for options

Data Review
(numerous sources
of data reviewed
including ecological,
social, heritage)

Study area
definition (2km
radius to cover key
potential effects –
direct and indirect)

Consultation with
key stakeholders

Definition of key
criteria

Relative scoring of
each short-list
option

Environmental Appraisal - Consultation



Initial Meetings held with the following:



Department of Environment



Ministry of Sustainability and Climate Resiliency

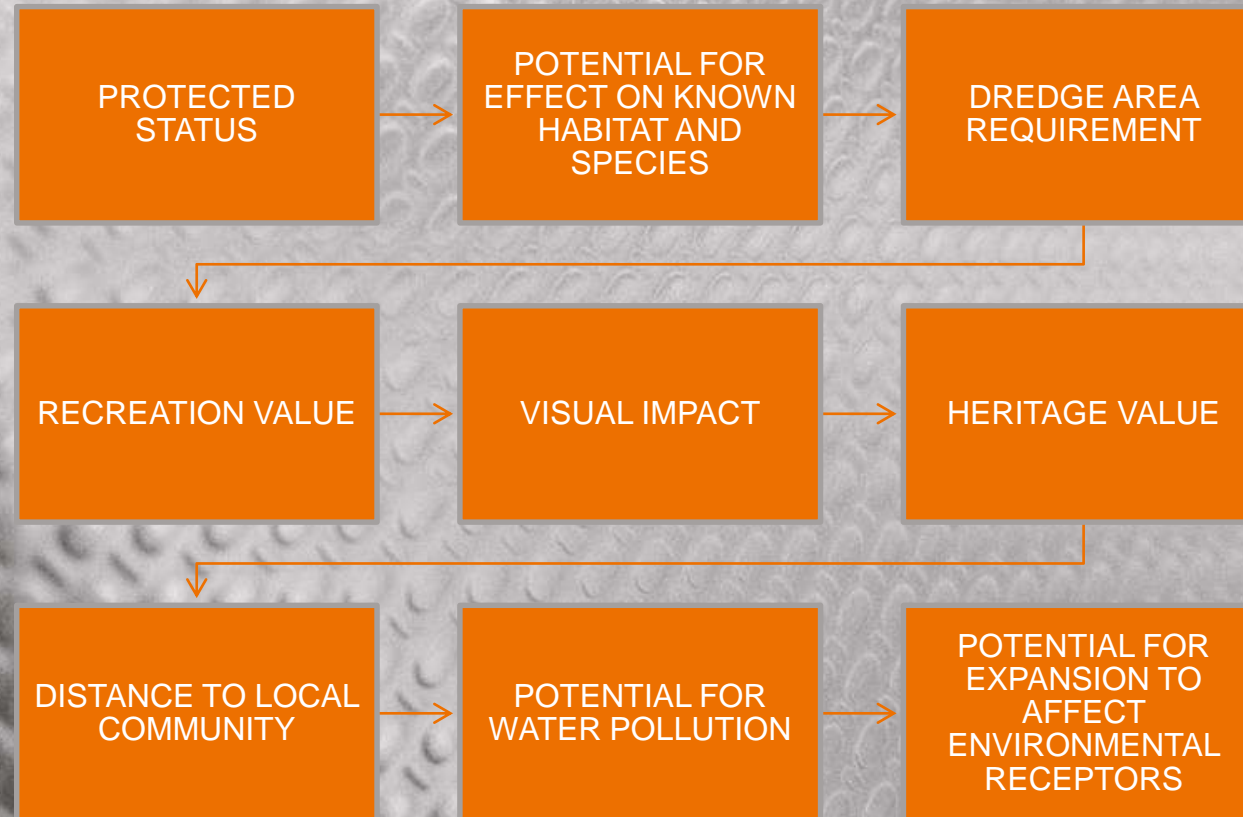


National Trust

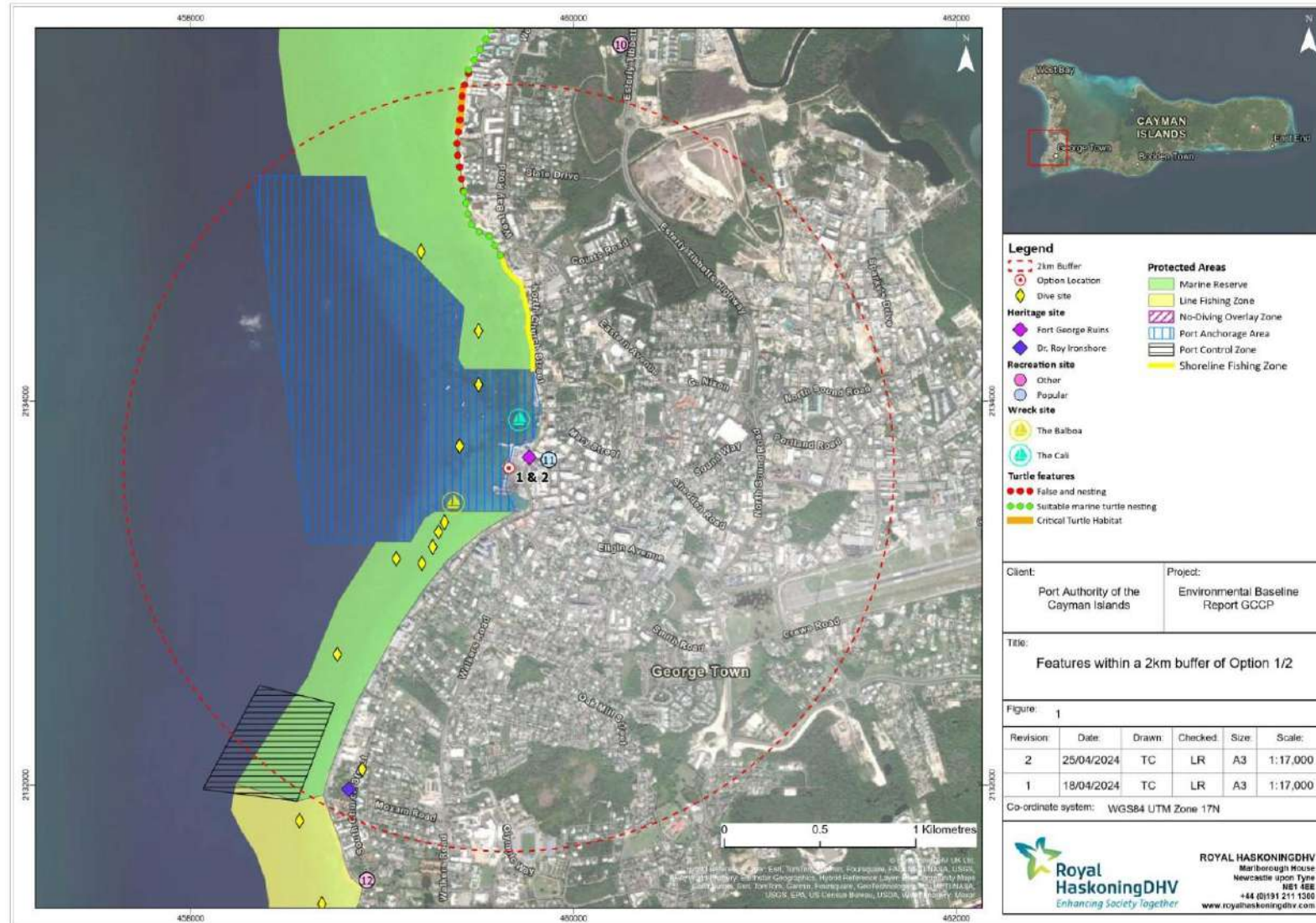


National Museum

Environmental Appraisal - Criteria



Example of Search Area



Environmental Appraisal Matrix

Cargo Port		Option 1		Option 2		Option 3		Option 8		Option 9		Option 10	
		Const	Ops	Const	Ops	Const	Ops	Const	Ops	Const	Ops	Const	Ops
Protected Areas		0	-1	-1	-1	-3	-3	-3	-3	-3	-3	-1	-1
Potential for ecological impact	Species	0	-1	-3	-1	-4	-4	-2	-2	-2	-2	-4	-4
	Habitat	0	-1	-3	-1	-3	-3	-3	-2	-3	-1	-4	-2
Dredged surface area (potential for effect on the environment due to footprint of dredging)		0	0	-2	-1	-4	-4	-3	-2	-2	-1	-3	-2
Recreation value		0	0	-2	0	-4	-4	-1	-1	-1	-1	-2	-2
Heritage value		0	-3	-4	-3	0	0	0	0	0	0	-1	-1
Visual impact		0	-2	-1	-2	-4	-4	-4	-4	-3	-3	-4	-4
Disturbance to local community	New cargo facilities from George Town or change to operational levels	0	-2	-2	-2	-3	-3	-4	-4	-3	-3	-4	-4
	Effect of removal of cargo facilities from George Town	0	0	0	0	0	4	0	4	0	4	0	4
Emissions and potential pollution events		0	-3	-2	-3	-4	-4	-2	-3	-4	-1	-2	-3
Potential for future expansion to affect environmental resources		0	0	0	0	-3	-2	-4	-2	-2	-1	-4	-3
Overall		0	-13	-20	-14	-32	-27	-26	-19	-23	-12	-29	-22
		-6.5		-17		-29.5		-22.5		-17.5		-25.5	

Environmental Appraisal - Way Forward

Ongoing consultation with DoE and NT to confirm the approach used and the criteria

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graph TD; A[Ongoing consultation with DoE and NT to confirm the approach used and the criteria] --> B[Confirm or adjust relative scorings based on above]; B --> C[Select preferred option based on multi-criteria analysis];
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Confirm or adjust relative scorings based on above

Select preferred option based on multi-criteria analysis

Transportation Connection Assessment

- The new Port is expected to generate 1600 Average Daily Trips in 2084 (ADT)
- Option 3: Primary Arterial Route – Esterly Tibbets Highway.

Current	2026 ADT (veh/day)	2036 ADT (veh/day)	2084 ADT (veh/day)
36,600	42,000	53,700	109,600

- Options 8, 9 and 10: Primary Arterial Route – Proposed EW Arterial Extension.

Location	2084 ADT (veh/day)
West of Lookout Road	95,700
East of Lookout Road	85,000

- The new Port adds less than 2% additional traffic to 2084 background ADT.

Order of Magnitude Class 5 Cost Comparison

- Options ranked from least to highest cost.
- Not for budget purposes; comparative purposes only.

Development Option	Order of Magnitude Relative Cost (-20% - +100%)
Option 9B – Breakers Quarries North	Lowest Cost Option - Baseline
Option 9C – Breakers Quarries East	5% higher
Option 9A – Breakers Quarries West	6% higher
Option 3 – North Sound/West Bay	18% higher
Option 10 – Frank Sound Offshore	34% higher
Option 8 – Bodden Bay Offshore	52% higher

Short Term Existing Port/CDC Upgrade



Short Term Existing Port/CDC Upgrade



Closing Remarks

- Existing Port and CDC is at or near capacity.
- Upgrades to the existing Port/CDC to accommodate the SHORT TERM growth of cargo over the next 10 to 15 years is urgently needed until a new Port opens.
- If a new Port is to open in the next 10 to 15 years, project implementation must proceed with urgency. There is a lot to do !
- The sooner the new Port can open, the lower the expenditure needed at the existing Port/CDC.
- Both projects can and should proceed simultaneously.
- Public consultation to continue in early August with OBC completion shortly thereafter. Confirmation of preferred option needed by CIG before proceeding with Master Plan and budget cost estimating.



QUESTIONS AND DISCUSSION