## Cruise Berthing Terminal for Cayman Islands Final EIA Terms of Reference



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# Appendix A. Proposed Cruise Berthing: Cabinet Policy Guidance

## Appendix 1



## Proposed Cruise Berthing Project Steering Group

## **Cabinet Policy Guldance**

The purpose of this document is to outline the broad policy direction that is to be followed by the Steering Group that is charged with the procurement process for the Proposed Cruise Berthing Project.

- 1. It is the Government's policy to further enhance the existing facilities for cruise passengers visiting the Cayman Islands in order to improve the visitor experience when disembarking, mitigate against a threat of losing existing visitors, and increase overall passenger numbers to the Cayman Islands.
- 2. The Proposed Cruise Berthing Facility is to be sited in downtown George Town with a secondary facility at Spotts Landing. The project will not be funded with any conventional funding/borrowing.
- 3. The Cayman Islands Government/Port Authority of the Cayman Islands must retain full ownership of the Port/the property. There will be no commercial development by any third party developer. The opportunity for commercial development is to rest with the Port Authority of the Cayman Islands. Current cruise passenger fees should remain unchanged.
- 4. At this stage, the combined cargo and cruise operations at the single location is to be continued. Also, the development of cruise berthing in the Cayman Islands is to include a provision for cruise tenders.
- There is to be no cap on the maximum number of cruise visitors, at this time. The
  current transportation infrastructure capacity for downtown George Town should be
  considered and a recommendation made based on the anticipated impact of the new
  berthing facility.
- 6. Pursuant to a transparent and accountable procurement process, the target operational date for cruise berthing is as soon as possible.



# Appendix B. Private Stakeholder Consultation: Meeting Minutes

### GT Port - Private Stakeholder Consultation Meeting on the draft Terms of Reference

### for the Environmental Impact Assessment

### for the proposed Cruise Berthing Facility

**Date:** 20 November 2013 **Venue:** Government Administration Building

Start: 9AM End: 1.05PM

Attendees:

Gerry Kirkconnell Kirk Freeport Adrien Briggs Sunset House

David Carmichael CMS

Rod McDowall Red Sails Sports

Ken Hydes CITA

Kathy Jackson Dart Enterprises

Wil Pineau Chamber of Commerce
Barry Bodden Chamber of Commerce

Melissa Ebanks CIDOT

Shaun Ebanks Cayman Land & Sea Co-op

Gene Thompson ACT

Peggy Leshikar-Denton Cayman Islands National Museum

John Macmillan
Heber Arch
Dave Hazle
Robert Hamaty
Steve Broadbelt
Johann Moxam
Shayne Howe
Elmslie Church
Elmslie Church
Tortuga Rum Co. Ltd
Ocean Frontiers Ltd
Chambers of Commerce

Questions answered by: Isobel Stanley of Mott MacDonald (MM), Jim Scott of CIG (CIG) and Gina Ebanks-Petrie of Department of Environment (DoE)

## **Questions and Answers**

### Mr. Adrien Briggs - Sunset House

1. Corals are susceptible to siltation. The sediment study will need to assess and determine where the sediment may go.

### Mr. Robert Hamaty

- 2. Is this the first EIA done on this project?
  - a. DOE: There have been other Terms of Reference completed historically but not taken forward. DRCL completed an EIA but Government doesn't own the data they collected.

MM: Some information used in previous Terms of Reference or EIA has a short 'shelf life' e.g. ecological data and therefore cannot be re-used.

### Mr. Shaun Ebanks

- 3. Project description Government has said not much upland development. There will be lots of people disembarking in a very short time period, therefore lots of foot traffic so upland development needs to be able to accommodate the increased footfall. Current situation is a nightmare. Need to also accommodate those people selling tours i.e. need to be separate them from people looking for taxis or want to go to Seven Mile Beach. Need to minimise confusion. Bus transportation needs to be separated. Need to successfully dispatch people. Glad to see it has been taken on board.
  - **a.** MM: Very important for the appointed EIA consultants to speak to stakeholders especially cruise lines to ensure project description is properly informed. Part of development project needs an Environmental Management Plan (EMP) to be prepared. The EMP outlines how recommendations and mitigation from the EIA are put in place and by whom.

CIG: Government document says no increase in retail on the dock.

### Mr. Robert Hamaty

- 4. Told that cruise lines needed 8 acres of land based development for Oasis/Genesis class of ships.
  - a. MM: Don't know the exact requirements.

CIG: The Strategic Outline Case confirms that the standard is 1.5 acres for each ship.

### Mr. David Carmichael

- 5. What sort of shore defences will there be? What sort of walling to protect George Town?
  - a. MM: Other information will need to be gathered. Project description will develop in parallel with EIA and will be refined. At the end of the EIA, proposed mitigation measures will be used to inform the design.
- 6. David: If there has to be a 25ft high wall, who will say yes or no? Who makes the decision?
  - a. DOE: Decision making for this project will be left to Cabinet. The EIA will help to inform Cabinet if the risks of the project will be outweighed by the benefits. It will then be for Cabinet to decide whether to approve the project.

#### Ms. Melissa Ebanks

- 7. Will radiation be considered in terms of blasting and security mechanisms?
  - a. MM: Not considered at this stage but if it does transpire that there is a radiation probably then the EIA will be amended to consider this.

### Mr. Gene Thompson

- 8. Economic benefits of the project missing from the Terms of Reference, especially the benefits to Caymanians and Cayman. It is very limited. The motivation is to benefit Caymanians.
  - a. MM: EIA stems from the Outline Business Case (OBC) which deals with economic aspects. Information from the OBC and any subsequent information gathered will be used to inform the socio economic section of the EIA.

#### Mr. Herber Arch

- 9. Will Mott MacDonald be retained to ensure that the contractor for the EIA adheres to the Terms of Reference?
  - a. MM: RTP for EIA going out shortly. Mott McDonald could bid for it, but it could also be someone else who is appointed. The successful tenderer will need to adhere to Terms of Reference. The EAB will be reviewing to ensure EIA is in accordance with Terms of Reference.
    - DOE: Yet to be determined how the mitigative actions will be brought forward and by whom. Can't anticipate how it will happen as we don't know the impacts yet.
- 10. Who will manage the EIA Process?
  - a. DOE: Not determined yet.
- 11. Mott McDonald should manage the whole process to ensure that it is carried out in accordance with the Terms of Reference.

a. DOE: Noted

### Mr. Wil Pineau

- 12. End of 2014 EIA to be completed. What will be the timeline for project to move forward, e.g. planning permission, Coastal Works Licence etc.? What happens if people object to the project? Will this project take a similar approach to Balboa [Cruise Terminal Ltd] project?
  - a. DOE: EIA will determine information that the CWL will need to included and will inform decision making. Yes a CWL is required.
- 13. When will it be built?
  - a. CIG: Construction will probably start in first half of 2015. Lots of unknowns at this stage.
- 14. Two polarised groups in the discussion. Don't want lots of money spent on this project.
  - a. DOE: The EIA can be used as a reliable information to inform both groups

### Mr. Hamarti

- 15. Association of Advanced Tourism met 12 years ago. Told that the design had minimized the dredging. The engineering design needs to work closely with EIA outcomes.
  - **a.** DOE: We recognise this, hence the RFP being for EIA and engineering consultancy.

### Mr. Johann Moxam

16. Should seek local investors as local businesses are losing out on cruise ship tours and the cruise lines are increasing the cost of their tours. Any construction company should have a

relationship with cruiselines but power shouldn't be given to cruiselines. Allowing cruise lines to build piers will give too much control to them.

a. DOE: The selected procurement method doesn't preclude local companies from bidding. Rest of concerns need to be brought up with Minister Kirkconnell.

### Mr. Rod McDowall

17. Magnitude and extent of dredging process is massive. Don't know if the public fully appreciates it. The public needs to be educated. A 'Plan B' should be considered if it proves that the berthing will be extremely damaging. Don't want to lose the cruise industry.

### Mr. Heber Arch

18. Pleased that things are being done so thoroughly. Adrien Briggs agreed



## Appendix C. Public Stakeholder Consultation: Register



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# Appendix D. Public Stakeholder Consultation: Meeting Minutes

### GT Port - Public Consultation Meeting on the draft Terms of Reference

### for the Environmental Impact Assessment

### for the proposed Cruise Berthing Facility

**Date:** 20 November, 2013 **Venue:** Mary Miller Hall, Prospect

Start: 7PM End: 9.30PM

Questions answered by: Isobel Stanley of Mott MacDonald (MM), Simon Conway of Price Waterhouse Cooper (PwC), Gina Ebanks-Petrie of Department of Environment (DoE), Minister Kirkconnell – Ministry of Tourism and Minister Panton – Ministry of Environment.

## **Questions and Answers**

### Mr. Austin Harris (Rooster 101):

- 1. Will the EIA outline mitigation measures and associated costs?
  - a. MM: It is not normal to do cost analysis in the EIA. The Client and designer discuss the mitigation measures and then reach a resolution based on impacts and costs.
- 2. ToR deals with sediment mobilisation but the dredging required will bring deep water closer to shore are the impacts of wave energy & overtopping going to also be considered.
  - a. MM: Yes and consultants for each discipline will work together not in isolation.

### **Noel March:**

- 1. Hopes there will be a public education campaign about where sand from SMB comes from and what happens to it.
  - a. MM: Can't represent views of those people who will carry out sediment analysis. It is possible that Government may include further public engagement/release of information throughout the Project/EIA.

### Mr. Burns Connolly

- 1. Dredging to 36ft but Oasis draws 32ft of water. This seems shallow.
- 2. Will go from 12,000 tourists a day to 20,000-30,000, therefore will need major changes to road system in GT. Are you only looking at traffic during construction?
  - a. MM: No, will look at traffic both during construction and operation.

### **Mr. Kent Eldermire**

- 1. Concern re. environmental impact of proposed dredging due to fines and siltation, especially using a Cutter Suction Dredge (CSD) which produces lots of fines. Fines need holding areas to dry out. Don't make a good fill material. Not sure what mitigation can be used to stop the release of fines.
- 2. Borrow pits with no sunlight DOE has a lot of information on this. Once dredged the prop wash will suspend sediment and it will move with the tides. How will fines ever be dealt with?

- **a.** MM: Can't answer until EIA is done. It will be looked at as part of EIA. There are projects that never come to fruition because the environmental impacts are too high. Decision to be made by the Cayman Islands Government following the EIA. They need to decide if mitigation can be put in place.
- 3. He (Kent) has used silt screens and they are very expensive and not always the best option.
- 4. He (Kent) is in support of the cruise berthing but not convinced it needs to go in GT.

#### Mr. Kenneth Ebanks

- 1. Part 2 of the draft TORs talks about alternatives. The analysis seems sketchy.
  - a. MM: "Sketchy" because alternatives are discussed in the EIA, not in the TORs.
- 2. Draft ToRs done for Atlantic Star. How similar are these ToRs to the Atlantic Star version?
  - a. DoE: The Atlantic Star ToR was prepared by CH2MHILL; the MM ToR takes a different approach. Not as task oriented as CH2MHILL's . All of CH2MHILL issues are cover in the MM document, plus some additional items such as Landscape & Visual Impact Assessment which are expanded upon in the MM TOR.

### Mr. John Mackenzie

- 1. Agrees it is important to look at alternatives but the project has been around for 40 years. GT may not be the best location due to Nor'westers, but it has the least environmental impact compared to other options. Least amount of dredging and less than other alternatives.
- 2. Dredging will have environmental impact. The management of mitigation is going to be key in order to allow the project to go through.

#### Mr. Bob Soto

1. Anyone who supports this dock is out of their mind. Red Bay is the best location as the silt will be contained. The reef extends to Pageant beach and protects GT. If the reef is removed the silt will kill coral, Tarpons, Silverslides and Yellowtail. The potential movement of cargo terminal to Atlantic Star site will ruin watersports business in GT (50%). Loss of reefs and wrecks.

### Mr. Shaun Ebanks

- 1. To the Ministers: Project funding. The Cayman Islands' Government is restricted from borrowing from the UK, is it restricted from borrowing from local banks?
  - a. Minister Kirkconnell: Government cannot borrow the money for this project from local banks. The business case confirms that the project needs a PPP partnership. The business case by PwC identified the risks of Government being the owner and funder of the dock. The preferred choice is to find a group to be a partner to guarantee the throughput of the dock, to ensure debt-service can be paid
- 2. Would prefer not to see the cruiselines building the dock. Understands that a better passenger experience is required but local operators need to manage the tours being sold. Locals are not making very much money. If cruise lines build the piers, local operators won't be able to afford to do business as tours have to be sold so cheaply. Need to revamp the local tour product. Ships have raised excursion prices for the last 20 years but local tour operators still can't raise their prices. Need to lobby local investors to help with building the pier.

 a. Minister Kirkconnell: Outline Business Case (OBC) said PACI will retain control of dock and running it. The dock will have no upland development. Retail operations will continue in GT based on supply and Demand. The dock will double the demand.

### Mr. Danny Soto

- 1. Could dock not be extended further into the ocean to decrease the amount of dredging required. If dredging in South Sound then there will be a similar problem. Hurricanes have hit the south coast badly. Not as many hurricanes from the west. Port should get passengers off quicker and if port goes out of GT then it defeats the object of people having longer in GT. Assets are dying in GT because nothing is being done.
  - **a.** Minister Kirkconnell: Depth of questions being asked is great. Government will address GT. PPM elected on platform of redevelopment of GT and the port helps to accomplish this. Will continue port process until a roadblock is met that doesn't allow the project to continue.

### Mr. Gregg Anderson

- 1. In terms of pollution will TORs address a major catastrophe while ships in harbour e.g. a major fire on shore, spillage etc.
  - a. MM: Yes it has to be addressed within the EIA, it is within the cruise and cargo section, not explicit but implied.

### Mr. Austin Harris

- 1. To the Minister: Understand that PPP is required. Introduction of piers will result in an increase in people on the ground and impacts in GT. Who will fund the infrastructure needed for this?
  - a. Minister Kirkconnell: GT project runs parallel with airport RFP. Pedestrianisation of GT can be funded from Government capital and details of this will be announced in a strategic plan to be tabled at the LA.
- 2. What is MM's experience with Port EIAs?
  - a. MM: Not personally done an EIA on a Port project. Has coordinated EIAs worldwide in a range of different industries. The principles that apply in EIAs are similar for all EIA projects and the overall process is the same. The EIA team brings together the relevant expertise required. The MM project team has experience in the Caribbean and on port EIA projects.

### Mr. Stefan Baraud

- 1. Is the layout design in the TOR the design to be used?
  - a. MM: Design is in its infancy. Outline design stemming from OBC. Lots of information has been reviewed to inform the current layout. The design will develop and will be refined based on discussions with the technical team.
- 2. It is important that DoE is involved from the outset. I am an advocate of the project. Concerned re. current orientation. It is the northern-most positioned design that I have seen. People rely on dive industry in this area and the orientation removes dive sites and reefs. Have cruiselines been consulted and has the design been through a simulation?

- a. PwC: Design was used for cost analysis in OBC and to start thinking about environmental impacts. Design changes will come from EIA. The scheme may change as people who build and design piers may not like the current configuration.
- 3. Tour operators etc. are treated badly. Any new design should take on the views of local operators not just cruise lines.
- 4. Next few years will be busy with 9 to 11 cruise ship calls per day. The berthing facility will remove current anchorage areas. Remainder of ships will need to be anchored in virgin territory. Will there be new moorings?
  - a. Minister Kirkconnell: We will have the ability to spread ships in different patterns so they are not all here at the same time.
- 5. We have no control over scheduling it sounds a bit ideal. Is it not advisable to consider mooring options?
  - a. DoE & Minister Panton: The loss of 2 of 4 anchorages has been identified as a
    possible impact. The use of virgin territory/seabed for anchoring is a NO GO area for
    DOE and Ministry of Environment.
- 6. Revetment system –any likelihood that materials will come from Cayman?
  - a. MM: Cannot comment –will need to check if resources of good enough quality are available. Engineers felt that most material would be imported.

### **Mr. Burns Connolly**

- 1. Previous schemes resulted in piers having to be angled to north west to point into the wind.
- 2. Star simulation done for previous scheme. Limitation on wind speed in which they can dock. The design tabled is what will happen.

### **Mr. Kent Eldermire**

- 1. This area is actively used for snorkelling sites (including the Balboa & Cali), amphibious buses, glass bottom boats and pretty reef in the area. Shocked by John Mackenzie comments that GT would be least affected. 4 potential locations could accommodate a berthing facility:
  - i. GT
  - ii. Red Bay
  - iii. Pageant Beach
  - iv. Western side of North Sound-looked at in 1960

Don't know what the impacts in GT would be

a. MM: Designers will need information from a lot of local sources in the Cayman Islands. Anyone with historical information should be consulted to help inform any EIA studies.

### Mr. Damien DaCosta

- 1. Could a floating platform be used to get an idea of perspective of the dock? It could be easily relocated and moored with anchors
  - a. MM: Understands point being made. Engineers will look at the design.

#### Mr. Hartman DaCosta

1. This will destroy GT, if a pier is built in GT. Either keep GT or build a pier. Cruise ships berthing will destroy the place. Money could be better spent elsewhere.

### Mr. Billy Adam

- 1. Don't see full accounting for the project. Where is the Minister of Finance? Infrastructure costs are ignored. Fees are waived continually on large development projects. Bigger not necessarily better. Is ½ million increase in tourists really worth it? Need Minister of Finance to be involved. Need something to come of this. Population has been growing exponentially and Caymanian population getting smaller. Do it for Caymanians.
  - a. Minister Kirkconnell: Minister Archer will be involved in this process. Business case started from the 'do nothing' scenario up to building two piers. The business case says to proceed to the next step. This is what is being done.

### Mr. Cardinall Dacosta

Dredging and removal of reefs means we are doomed. It will destroy us. Hurricanes will
result in GT being washed out. If not GT, what about considering South Sound, which could
provide a year-round safe harbour. Do something about Cayman Brac for visiting boats. Fill
from South Sound could pay for building a dock there. Give Caymanians a chance to invest.

#### Mr. Aidan Ritter

- 1. Why do we need to bring ships closer to shore, you can build a big pier to get to deep water to prevent dredging. I understand cost of piers but costs elsewhere in the world don't seem as high as suggested in the OBC.
- 2. Berthing Licences could be sold to all cruise lines to give them an amount of days they could berth. Wouldn't have to get cruise lines to build piers. This could pay for the facility.
  - a. Minister Kirkconnell: There are 2 main cruiselines stopping in Cayman Carnival 60% of visits and Royal Caribbean 30%; there not many other people to buy licences.

### Mr. Bud Johnson (Atlantis Submarine)

- 1. In the TOR will there be a broader look at tourism in the destination as whole? I am undecided if its good or bad. Need to consider the impact on overall tourism product.
  - a. MM: A tourism strategy is not part of MM's Brief. Only impacts that are directly related to cruise ship berthing will be considered.
    - DoE: As part of the socio-economic assessment in the EIA the wider impact of putting more people at tourism attractions will be considered, but it will not be a broad tourism strategy.

### Mr. John Mackenzie

1. Should look at other sites and should give a broad indication of impacts for other sites in the other potential locations e.g. amount of dredging required. GT has least amount of dredging.

## **South Church Street Resident**

- 1. Hates to see how the waterfront has been destroyed. Our natural resources are being destroyed and need to be preserved.
- 2. Don't want berthing facility. It is already overcrowded when ships are in.
- 3. This opens up the potential for gambling and the potential for casinos.



# Appendix E. Summary of Public Consultation Comments

A variety of views have been expressed through the Questionnaire and consultation process. The key points are summarised below:

Questionnaire comments in agreement with the Proposed Cruise Berthing Facility:

- Increased visitor numbers will have economic benefit to local business' within George Town
- Increased visitor numbers will have economic benefit to taxi and tour operators
- Promotes longer stay on the island thereby using more facilities
- Allows access for less physically able visitors who currently feel tendering is not be possible for safety reasons
- Encourages cruise ship staff to disembark during breaks and use the local facilities
- Provides competitive edge to Cruise tourism industry
- Beneficial to the socio-economics of the island only if the EIA can identify appropriate mitigation for all potential impacts.

Questionnaire comments which are in disagreement with the Proposed Cruise Berthing Facility:

- Concern has been expressed that an increased number of tourists may be detrimental to the natural environment that initially attracted people to the island.
- The cruise industry needs to be better managed.
- Limited economic value as there is a limit to the amount visitors will want to spend or items they can by on a day trip.
- Design life of the project appears to short at 50 years and should be built for a 100 year design life – relevance of assessment of climate change questioned on this basis.
- The location of the cruise ships will be detrimental to water sports and diving businesses close to the harbour.
- Any increase in business is thought to be beneficial only to areas around George Town and not the island as a whole.
- The key environmental concern amongst consultees relates to the generation of silt, in particular the feasibility of being able to manage and mitigate movement of fine particles.
- If silt can't be managed it will have detrimental effects on the coral and other aquatic life.
- Concern over discharge of waste water and impact of cooling systems on water temperature.



- Deeper waters, as a result of dredging, will exacerbate wave generation along the harbour leading to flooding. No reference seen as to provision of any bank protection measures.
- Concern has been raised over the quoted volume of dredging required for the development, the method of dredging proposed along with the clearance provided for Oasis class boats.
- Potential impact to the coastal geomorphology and reduction in sediment movement to other areas such as seven mile beach.
- Concerns reiterated in a number of consultation responses in relation to the generation of traffic (pedestrian and vehicle) in George Town. At present there is already a high level of pedestrian traffic which will be exacerbated by the development.

Questionnaire comments which are neither in agreement nor disagreement with the Proposed Cruise Berthing Facility:

- It has been highlighted that at this ToR stage, there is currently not sufficient information to decide whether or not the Proposed Cruise Berthing Facility should go ahead for either environmental or socio-economic reasons.
- Comments made acknowledging that there will be environmental risks posed by the construction and operation of the development but that they can be mitigated with appropriate and thorough management.
- Creation of a protected marine harbour behind the cruise piers could attract US Coast Guard and Super Yacht Business.

During the consultation process a large number of comments were issued relating to the location of the proposed development. Whilst some acknowledge allowing cruise ships to berth may be beneficial for the island, they are not in agreement with the location of the proposed facility and preference has been given to Red Bay in some instances. The main reasoning behind this is:

- Inability for year round use of facilities; Red Bay allows access at all times apart from hurricane season
- Existing traffic pressures around George Town which would be exacerbated by the proposed development
- Wider economic benefit to the island if located outside of George Town especially taxi and tour operators

### Response to Comments

## Cruise Berthing Terminal for Cayman Islands

Final EIA Terms of Reference



An EIA has to be focused on a specific location to allow a precise assessment. The ToR has been commissioned by CIG for an EIA at George Town Harbour. For reference, the EIA will include a summary of the historic alternative locations that have been considered by the client prior to the EIA.

This ToR document has been revised since the Public Consultation Meeting to ensure socio-economic and environmental concerns highlighted above are included for assessment at the later EIA stage. It is only after the EIA is complete that the impacts of the proposed development can be fully reviewed.



## Appendix F. Transport Assessment Methodology







## Cayman Islands Cruise Berthing Facility

Transport Assessment Methodology

December 2013

PricewaterhouseCoopers



# Cayman Islands Cruise Berthing Facility

**Transport Assessment Methodology** 

December 2013

PricewaterhouseCoopers

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### Cayman Islands Cruise Berthing Facility

Transport Assessment Methodology



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# Cayman Islands Cruise Berthing Facility Transport Assessment Methodology



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### 1 Introduction

This note provides a supplementary Transport Assessment (TA) specification for the environmental effects of movement associated with the planned Cruise Berthing Facility at George Town Harbour, currently only served by tender boats from the liners.

There is the potential for the berthing of four vessels simultaneously, including one Oasis Class vessel, at the new berths, plus two other cruise liners moored at the existing anchorage buoys, as well as additional liners remaining offshore on engine, to discharge a combined potential total of more than 10,000 passengers and crew over a day for local access and onward transportation. This figure is to be confirmed by the consultant.

Future-proofing of facilities is also required to accommodate further changes in ship capacity and potential changes in the highway network and associated access infrastructure serving the area.

The transport and associated environmental assessment will need to address:

- Baseline existing overall operational pedestrian, traffic flow and accident information (i.e. with existing cruise passengers accessing George Town using the tender boats).
- Baseline trip generation from existing cruise liner passengers (with passenger tender boat link to cruise liners) and from existing adjacent commercial port operations.
- Forecast baseline network operation (year of assessment to be confirmed) to take on board planned highway improvements (scenarios to include potential Eastern Avenue south extension).
- Forecast generation from future cruise liner passenger movements (with berthed liners with more than 10,000 disembarking passengers per day).
- Forecast operational impacts of cruise liner passenger movements on landside modes including potential impacts on pedestrian (and levels of comfort), general traffic, bus, taxis and accident rates.
- Forecast potential operational effect on severance, accidents, air quality and noise.
- Forecast potential temporary effects during construction.
- Identification and assessment of mitigation measures temporary (construction) and permanent (operational).
- Residual effects of landside surface access movements.



## 2 Study Workstreams

### Four main workstreams are envisaged:

- Workstream 1: Confirm Baseline & Future Baseline access strategy without change from existing liner operations (i.e. with tender boats).
- Workstream 2: Prepare and calibrate local traffic model to assess baseline, future baseline and potential impact of the new Cruise Berthing Facility. Subject to scoping this is expected to extend from the port eastwards to at least Huldah Avenue as the core model with the buffer area extending beyond this.
- Workstream 3: Develop proposals for a Sustainable Operational Plan for the long term passenger management for the port and local environs (including signage, wayfinding, and potential required intermodal facilities for onward movement to tourist destinations etc). The strategy is to be based upon potential combined loadings of more than 10,000 passengers and crew per day. Pedestrian Flow assessments should consider a desired Pedestrian Comfort Level C (PCL C) or appropriate FRUIN level to be agreed, and traffic assessments should consider impacts where these result in changes in flow of more than 10% or journey time changes increasing by more than 10% with the scheme compared to forecast baseline (i.e. the without scheme scenario).
- Workstream 4: Preparation of summary Transport Assessment and Environmental Impacts (i.e. in accordance with the Institute of Environmental Management and Assessment (IEMA) and other best practice guidance).



## 3 Background Information and Specific Requirements

- 1. The TA should take account of, integrate with, and complement, the proposed implementation of pedestrianised areas in the George Town Waterfront and Downtown areas in line with the Ministry of Tourism and Port Authority Initiatives.
- 2. Future baseline traffic projections will also need to take account of traffic flows with (a) the existing roads configuration and (b) the future baseline situation effects roads proposed in the "2009 Long Term Projection of Road Corridors for Grand Cayman" (http://www.forcayman.com/documents) report and which lie within the Outer Cordon area.
- 3. Cruise ship timetables will be required to identify peak passenger arrival days for co-ordination of surveys if possible. Preliminary data may be obtained from <a href="http://www.cruiseportinsider.com/caymanschedule2014.html?Printlcon.x=36&Printlcon.y=13">http://www.cruiseportinsider.com/caymanschedule2014.html?Printlcon.x=36&Printlcon.y=13</a>. Note that currently some ships occasionally also moor off West Bay and / or Spotts Landing. The transport assessment and resulting environmental effects will need to take account of the docking locations of the ships and whether there is any interaction between these. The assessment should consider two docking scenarios (a) all ships docked at George Town berths and (b) minimum number in dock simultaneously at George Town.
- 4. Confirmation to be obtained of passenger capacity of largest cruise ships to be accommodated at the port and dates / frequency of visits of cruise ships.
- 5. "Ordnance Survey" type base mapping of the area in GIS / Autocad format will be available.
- 6. Baseline traffic and pedestrian surveys will be required over the day in 15 minute intervals by direction over period 7am-7pm. Surveys should assess baseline flows (a) without docked ship and (b) with docked ship. Seasonality will need to be considered. Assessment will thus identify current impact on traffic and pedestrian flows of cruise ship passengers. This should identify current peak cruise ship passenger demand (a) after docking and (b) prior to disembarking.
- 7. Inner Cordon Surveys of pedestrian movements along footways and crossing carriageways will be required on all roads within the area bounded by the junctions listed below. Additionally classified vehicle / cycle turning movements will be required at these junctions and at all junctions within the area bounded by these junctions. This area extends up to approximately 650ft from the port:
  - Mary St / Harbour Drive
  - Mary St / Fort Street
  - Edward St / Dr Roy's Drive
  - Edward St / Main St
  - Edward St / Shedden St
  - Elgin Ave / Goring Ave
  - Goring Ave / Walker's Rd / Smith Rd
  - Walker's Rd / Boilers Rd
  - Boilers Rd / South Church St



- 8. Outer Cordon Classified vehicle / cycle turning movements at all significant junctions and screen line counts at significant roads will be required within the area that lies between the junctions set out above and the following junctions, including at these junctions:
  - South Church St / Memorial Ave
  - Memorial Ave / Walker's Rd
  - Anthony Drive / Smith Rd
  - Elgin Ave / Cricket Square
  - Shedden Rd / Eastern Ave / Sound Way
  - Eastern Ave / Godfrey Nixon Way
  - Eastern Ave / Eclipse Drive / School Rd
  - Eastern Ave / Godfrey Nixon Way / Rock Hole Rd
  - Eastern Ave / Washington Rd
  - Eastern Ave / Bodden Rd
  - Bodden Rd / North Church St
- 9. Traffic signal timings, stop line saturation flows and queue lengths will be required for all traffic signalled junctions.
- 10. Analysis of detailed personal injury road accident data will be required and effect of additional cruise passenger loadings.
- 11. Cruise passenger coach tours, set down / pick up locations, demand and volume data will be required to be collected and facilities and sizing of intermodal transfer required. Facilities should be designed to PCL C and should take into account requirements for Mobility Impaired.
- 12. Scheduled bus services, stop locations, timetables and passenger loadings to be collected.
- 13. Taxi rank set down / pick up movements at the entrance of the Cruise Berthing Facility and at any other rank locations within the Inner Cordon area to be collected.
- 14. Parking and servicing surveys will be required in the Inner Cordon area. These will consist of a survey of the number of occupied and unoccupied spaces in each road and servicing requirements to facilities and businesses within the Inner Cordon area at 15 minutes throughout the day. Access for emergency services will need to be considered.
- 15. Baseline survey of cruise passenger arrival and departure flows per 15 minute period, based on current boat tendering operations. If passenger queues develop then the maximum length of these queues will also be recorded in every 15 minute period.
- 16. Identification and agreement with clients of main trip attractors within the Inner and Outer cordons and beyond and mode of transport to reach them.



### 4 Deliverables

### 4.1 Workstream 1 – Confirm Baseline and Future Baseline Conditions

- Confirm clear objectives and outcomes.
- Obtain information on ship passenger boarding and alighting rates and arrangements for relevant vessels (including any tourist information provided to passengers prior to disembarking).
- Obtain local ferry (if appropriate) and bus service schedules and vehicle capacities.
- Confirm whether any standard signage typography with the Client / Port Authority.
- Baseline transport network information by mode (i.e. pedestrian, traffic, servicing, taxi and representative journey times by each).
- Site observation / inventory.
- Review existing information, reports, data, photos etc. and confirm baseline.
- Determine constraints and opportunities.
- Undertake initial baseline capacity assessment (PCL / FRUIN analysis and highway network performance - see Workstream 2).
- Surveys should be provided at 15 minute intervals.

## **4.2** Workstream 2 – Local Traffic and Passenger Modelling Baseline and Future Baseline

- A number of interacting (pedestrian and traffic) models may be required to enable both the immediate dock yard area and tender boat landing and the attendant passenger holding and circulation areas to be modelled, and traffic model(s) to consider the wider area effects and intermodal facilities.
- Pedestrian modelling to be undertaken using STEPS (or similar approved) pedestrian modelling platform (typically using AutoCAD DXF / DWG in 2D or 3D format to cover main port area and adjacent approaches).
- Baseline models to be developed for disembarking and embarking scenarios.
- Do-something models to be developed for disembarking and embarking under Operational Management arrangements.
- Do-something test for 10,000+ capacity (requires agreed uplift on passenger demands, flows, person type mix etc.).
- Simulations will be required to assess arrivals and departures to cover busiest periods of passenger /pedestrian activity.
- Modelling of interaction with adjacent highways eg using modelling (eg assignment or combined micro simulation VISSIM / VISWALK modelling or similar).
- Core area to be considered as up to 820 feet from port area, and secondary area to encompass need road links (i.e. Eastern Avenue south extension).



### 4.3 Workstream 3 – Strategic Operational Management Plan

- Investigate methods for 'flattening' the forecast peak demand through provision of waiting information and options which make a longer dwell time in the port area a more attractive option.
- Explore options for improving passenger management and information.
- Explore options for integrated real-time information systems and better integration of cruise ship, and intermodal facilities (including bus, taxi, walk etc) operations.
- Consultation with cruise operators and the Port Authority.
- Draft options report containing assessment and recommendations, drawings and costings (plus survey data and model outputs if relevant).
- Final agreed Operational Management Plan to be prepared as draft before stakeholder consultation and then refined taking on board feedback.
- Draft Modelling of interaction with adjacent highways eg using microsimulation VISSIM / VISWALK etc. or similar.
- Assessments to include impacts with and without the potential Eastern Avenue extension.

# 4.4 Workstream 4– Preparation of Summary Transport Assessment and Environmental Impacts

- Summary of impacts on each transport mode including walk.
- Summary effects of traffic flow and travel time on accidents, air quality and noise.

# Cayman Islands Cruise Berthing Facility Transport Assessment Methodology



# 5 Programme

Key programme to deliverables and interim milestone dates to be confirmed.

# Cayman Islands Cruise Berthing Facility Transport Assessment Methodology



# **Appendices**

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## Appendix F1. Pedestrian Comfort Levels

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### PCL



A+ < 3ppmm < 3% Restricted Movement

#### COMFORTABLE FOR ALL AREAS



A 3 to 5 ppmm 13% Restricted Movement



A- 6 to 8 ppmm 22% Restricted Movement

The pedestrian environment is very comfortable at PCLA+ to A- with plenty of space for people to walk at the speed and the route that they choose.

#### PCL B



B+ 9 to 11ppmm 31% Restricted Movement

#### B+ RECOMMENDED MINIMUM FOR ALL AREAS



B 12 to 14ppmm 41% Restricted Movement



B- 15 to 17 ppmm 50% Restricted Movement

PCL B+ is the recommended level of comfort for all area types. This level provides enough space for normal walking speed and some choice in routes taken.

At PCL B and PCL B- normal walking speed is still possible but conflicts are becoming more frequent and, in retail areas,

At PCLB and PCLB- normal walking speed is still possible but conflicts are becoming more frequent and, in retail areas, people start to consider avoiding the area.

### CLC



C+ 18 to 20ppmm 59% Restricted Movemen

C 21 to 23 ppmm 69% Restricted Movement



C- 24 to 26 ppmm 78% Restricted Movement

The pedestrian environment is becoming increasingly uncomfortable, with the majority of people experiencing conflict or closeness with other pedestrians and bi-directional movement becoming difficult.

### PCL D or E

### VERY UNCOMFORTABLE



D 27 to 35ppmm 100% Restricted Movement



E >35 ppmm 100% Restricted Movement

At PCL D walking speeds are restricted and reduced and there are difficulties in bypassing slower pedestrians or moving in reverse flows.

At PCL E people have very little personal space and speed and movement is very restricted. Extreme difficulties are experienced if moving in reverse flows.

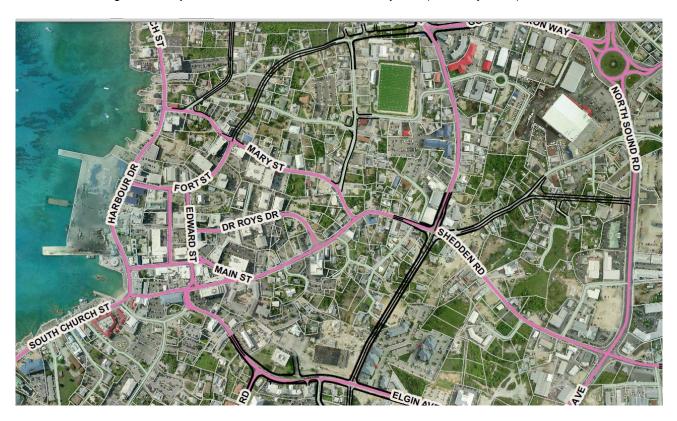
ncomfortable



# Appendix F2. Maps

Source: http://www.forcayman.com/documents

Extract from Long Term Projection of Road Corridors Grand Cayman (February 2009).



Additional mapping is available.



### Appendix F3. Ship Schedules

03 December 2013 17:32

### Cruise Port Schedules

George Town, located on Grand Cayman and the capital of the Cayman Islands, is the second most popular port destination on western Caribbean cruises.

On average, cruise passengers will enjoy 8 hours of time ashore on Grand Cayman.

In 2013, Grand Cayman is slated to host 1,394,000 passengers sailing on 507 ships, down 9% and 13%, respectively, from 2012. For further information, see our Grand Cayman Cruise Ship Schedule - 2013.

In 2014, Grand Cayman is slated to host 1,784,000 passengers sailing on 621 ships, up 28% and 22%, respectively, from 2013. For further information, see our **Grand Cayman Cruise Ship Schedule** - **2014**.

### Cruise Lines Making Port

The following cruise lines will make port in George Town, Grand Cayman in 2013:

CAR Carnival RC Royal Caribbean

X Celebrity Cruises PC Princess Cruises

HAL Holland America NCL NCL

Disney Cruises MSC MSC Cruises

CCL Costa Cruises P&O P & O Cruises

http://www.cruiseportinsider.com/caymanschedule2014.html?Printlcon.x=36&Printlcon.y=13

Crystal Cruises

Oceania Cruises