



# **Loubiere to Grand Bay**

Traffic Management Plan /  
Outline Construction Logistics Plan

February 2022



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# Loubiere to Grand Bay

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# 1 Introduction

This Construction Logistics Plan (CLP) has been prepared by Mott MacDonald on behalf of the Climate Resilience Execution Agency of Dominica (CREAD). This report defines best practice, and appropriate measures and management techniques to be considered for implementation at the site by the Contractor. These will be consistent with their requirements and the needs of the project and its site.

Mott MacDonald have been requested to produce this CLP as set out in condition 4.03 (f) of the amended agreement in place between The Government of the Commonwealth of Dominica (GoCD) And Mott MacDonald Limited dated March 2017. This condition states:

*4.03 Implementation of agreed detailed design changes:*

*Subsequent to proposed design changes being accepted by GoCD / CDB<sup>1</sup> as detailed in Task 4.02a, MML will update the following for the project:*

- f) *A traffic management plan to reflect the agreed design changes. The plan would be limited to a review of the necessary logistics associated with developing a constructible project within the guidelines for traffic control and access. It would include a prescriptive instruction as to where and how the Contractor was to establish the necessary controls.*

The request for a Traffic Management Plan associated with developing a constructable project, has led us to produce a Construction Logistics Plan that will ensure the requirements of this request are met, while also considering best practice measures. This CLP will ensure a reasonable and safe approach is taken to manage the traffic associated with the project during its construction and will be incorporated into the set of contract documents for Contractors to follow.

## 1.1 Construction Logistic Plans

Best practice measures for producing a traffic management plan have been taken from the United Kingdom, specifically, guidance documents produced by Transport for London (TfL). These have been referenced and considered through-out this document.

TfL defines a Construction Logistic Plan (CLP) as “*an important management tool for planners, developers and construction Contractors and focuses on construction supply chains and how their impact on the road network can be reduced*”.

The impact of construction of a development varies depending on its size, timescales of construction and the site’s location. A CLP provides a consistent framework despite these variations to successfully manage construction vehicle activity. The framework requires the following:

- A full assessment of the construction phase;
- Details of the levels of construction traffic generated;
- Routes the traffic will use; and,
- Significant traffic management for the construction phase.

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<sup>1</sup> Caribbean Development Bank (CDB)



The CLP will detail measures and techniques to reduce the impact of the site's construction on the road network. This will include routing vehicles appropriately and promoting sustainable modes of transport, including by water.

## 1.2 Outline Construction Logistic Plans

There are two types of CLP: An Outline CLP and a Detailed CLP. These are summarised as follows:

- Outline CLP that sets out the expected logistics activity during the construction programme.
- Detailed CLP that provides the detail of the logistics activity expected during the construction programme.

This document forms an outline CLP for the Loubiere to Grand Bay Project. This will form the basis of the detailed CLP developed by the Contractor once the required level of information is available. The Contractor is to use this document to plan their work to comply with the requirements as stated in this document.

## 1.3 Objectives of the Outline CLP

This Outline CLP sets out three key aims. These are to:

- Lower emissions;
- Enhance safety, specifically by improving vehicle and road user safety; and,
- Reduce congestion by reducing the number of vehicle trips, especially in peak periods.

To achieve these aims, this Outline CLP will aim to:

- Reduce or eliminate the need for construction travel specifically in peak periods;
- Encourage greater use of sustainable freight modes or vehicles with lower emission levels;
- Encourage construction workers to travel to the site by non-car modes; and,
- Encourage the most efficient use of construction freight vehicles.

## 1.4 Construction Logistic Plan Guidance (TfL) Version 3, July 2017

The Construction Logistic Plan Guidance (TfL) Version 3, July 2017 and its associated toolkit document has been referred to while producing this Outline CLP.

The guidance aims to ensure that high quality Construction Logistic Plans (CLPs) are produced that minimise the impact of construction logistics on the road network, as well as lowering vehicle emissions and noise. It also aims to improve the safety of road users and ensure efficient working practices are in place that aim to reduce volume and frequency of deliveries.

To achieve these aims, a full assessment of all construction phases should be undertaken that include:

- The amount of construction traffic;
- Construction vehicle routes;
- Community impact assessments; and,
- Traffic management measures.

## 1.5 Outline CLP Structure

The scope and structure of an outline CLP is defined within TfL guidance. This document has considered these requirements and included the following chapters of relevance:

- Section 2 – Project details and summary of works;
- Section 3 – Outline Construction Logistics Plan details;
- Section 4 – Management strategies;
- Section 5 – Estimation of vehicle movements;
- Section 6 – Implementation and monitoring of the CLP; and,
- Section 7 – Mitigation and updating the CLP.

## 2 Project Details and summary of works

This section of the outline CLP provides details of the project and its construction. The level of detail shall be expanded upon by the Contractor once appointed. The details provided within this chapter are currently an overview of the expected works to be undertaken. Full details will be developed by the Contractor in their Detailed CLP.

### 2.1 The Project

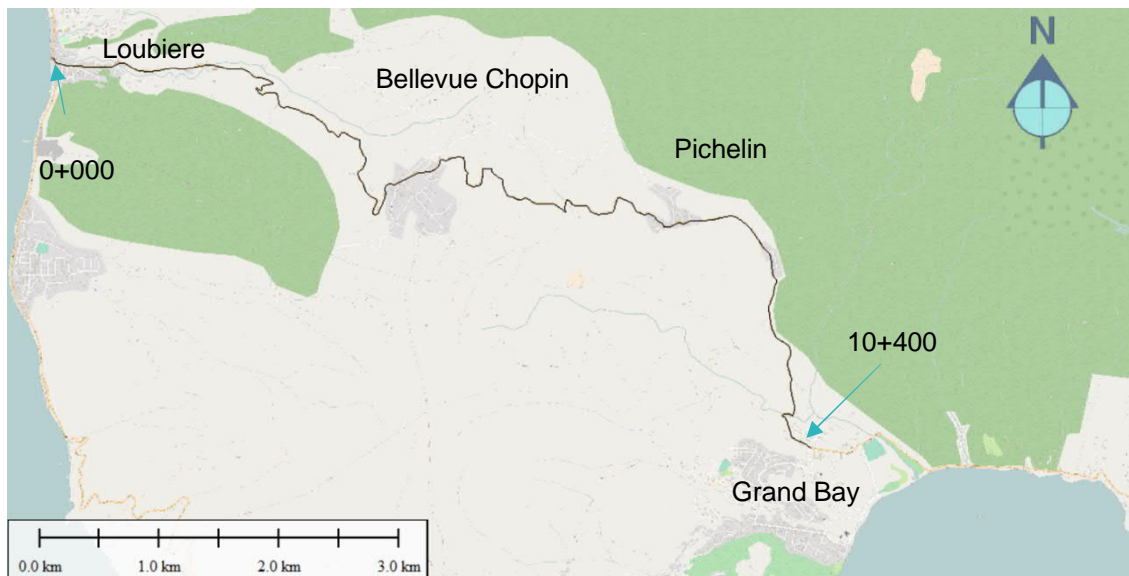
Tropical Storm Erika (TSE) struck the Island of Dominica in August 2015 and led to 30 deaths, making it the deadliest natural disaster in Dominica since Hurricane David in 1979. TSE generated floods and mudslides which damaged key infrastructure and 'set the country back 20 years'. In September 2017 Hurricane Maria (a Category 5 hurricane) made landfall on the island on the 18th of September 2017 and brought catastrophic devastation to the island with a death toll of 65 and destroying housing stock (leaving 50,000 residents displaced), damaging infrastructure, and practically eradicating the vegetation across the island. The island's economy was severely impacted through damaged to the island's agriculture and tourism which are significant drivers of the economy.

Following TSE, the Government of the Commonwealth of Dominica (GOCD) have received financing from the Caribbean Development Bank to fund the development of a gender-responsive climate resilient transport network. To that extent the GOCD, through the Ministry of Public Works and Ports (MoPWP) and Climate Resilience Execution Agency for Dominica (CREAD) have engaged Mott MacDonald Limited (MML) to assist in the preparation of the Rehabilitation of the Loubiere to Bagatelle Road (LBR) project including the preparation of engineering designs and cost estimates through contract No. 54/DMI/LBR/2017/1.

### 2.2 Project Location

Starting in the village of Loubiere, the revised scheme extends from chainage 0+000 to 10+400, through the communities of Bellevue Chopin, Pichelin, ending at Grand Bay. An overview is presented in Figure 1.

**Figure 1 Project location plan**



Source: Mott MacDonald, 2021

## 2.3 Construction programme

The timeframes and processes expected on-site during the construction programme will be specified by the Contractor within the detailed CLP. The Construction programme is to fit with the Contract date as stated within the Contract.

Table 1 outlines an example of phases that could be included within the construction programme.

**Table 1 Infrastructure construction phases programme - TfL guidance example**

Phase no.	Construction Stage	Details of Construction Phase	Start of Phase (Month)	End of Phase (Month)
1	Site establishment, clearance, and alterations	Includes establishing welfare accommodation, clearing the site of debris and existing buildings and alterations to existing infrastructure (e.g. utilities), setting up temporary diversions.		
2	Excavation and foundations	Typically includes removing excavated material from the site, forming of the initial foundation.		
3	Sub-structure	Below ground works include upward construction of foundations		
4	Super-structure	Includes the above ground structural elements of the infrastructure		
6	Fit-out, testing and commission	Includes all mechanical, electrical, and plumbing installation and testing of newly installed systems.		

Source: Construction Logistic Plan Guidance (TfL) Version 3, July 2017

The construction programme (including a detailed phasing plan), along with a table similar to the one illustrated in Table 1, detailing the start and end dates of each phase of the construction programme, will be presented to the Engineer within the detailed CLP prior to works commencing on site.

## 2.4 Volume of materials

The types and volume of materials required during construction shall be taken from the Bills of Quantities by the Contractor. An understanding of the issues around the transportation of these will assist the Contractor in assessing the impact to the project. These will be reassessed by the Contractor should any significant changes be made to the construction processes and then updated in any subsequent CLP.

## 2.5 Details of excavation materials

Vehicle routes, location, and details of suitable barriers to be installed will also be confirmed within the detailed CLP to ensure workers maintain a safe distance from the excavation edge.

Once the Contractor responsible for any excavation is identified, their responsibilities, including for transportation of any excavated materials, will be set out in the detailed CLP.

## 2.6 Details of equipment required

The types and quantities of equipment required to undertake all of the construction works will be determined by the appointed Contractor. This will allow them to make an assessment of the routing of vehicles transporting the relevant equipment and ensure appropriate measures are in place to meet the aims of the CLP.

## 2.7 Number of staff

The numbers of staff required to undertake all of the construction works, listed by phase and activity, will be determined by the appointed Contractor. Measures that could be introduced to manage the transportation of the labour force are considered in Section 4 of this outline CLP, with the confirmed measures set out in the detailed CLP.

## 2.8 Access and parking constraints

Access to the site will be considered as part of the detailed CLP by the appointed Contractor. This should include details of any Vehicle Holding Area (VHA), measures that ensure vehicles adhere to the relevant safety requirements (including vehicle type and size), and an assessment of vehicle parking on-site.

## 2.9 Number of deliveries

The number and timings of deliveries will be confirmed within the detailed CLP once a Contractor is appointed.

Deliveries will occur where possible during non-peak hours which are expected to be between 10:00 and 15:00. All deliveries will be booked into the site in advance to prevent queuing at the VHA and site entrances.

## 2.10 Site operational hours

The hours of operation of site are to be confirmed by the appointed Contractor. However, currently it is expected that the site will be operating between 08:00 and 18:00 from Monday to Friday, as well as between 08:00 and 13:00 on Saturdays. The hours stated within the Contract will take precedence over this.

Due to the expected hours of operation, vehicles could be expected to arrive before 07:00 Monday to Saturday to allow mobilisation. Currently, they will then be expected to leave before 19:00 Monday to Friday and 14:00 Saturday for demobilisation. Amendments to the finalised operational hours will need appropriate approval from the Engineer.

## 2.11 Site layout

The appointed Contractor will confirm the site layout. This is expected to be illustrated within the detailed CLP and show significant expected changes to the site layout between different phases where appropriate.

As the site layout may evolve, the CLP may not always reflect the live layout. Therefore, visitors will be required to discuss the site layout and access arrangements with a traffic marshal, banksman, or site foreman. Their instructions should be followed at all times.

### 2.11.1 Loading and unloading arrangements

The loading and unloading arrangements on-site will be detailed by the appointed Contractor. As stated previously, traffic marshals will assist vehicle movements to access the site, as well as to areas where these activities will be undertaken. All vehicles will be marshalled from the front and all offloading will be completed at the back of the vehicle. This will be enforced by staff on-site.

### 2.11.2 Laydown areas

The location and management of laydown areas on-site will be confirmed once a Contractor has been appointed. This will include laydown areas for any utilities on-site.

### 2.11.3 Storage of plant and material

The arrangements for storage of plant and any materials required during construction will be confirmed by the appointed Contractor. Details will be provided within the detailed CLP. It is expected that the following principles will be followed:

- Where possible, plant and material are to be delivered on a “Just-in-time” basis;
- Plant and materials will be stored and secured within allocated areas by Contractors;
- If appropriate, security teams will be employed to check plant and material each night; and,
- Changes to site layout plans during construction will be assessed and managed appropriately.

**The Contractor is required to get approval from the Physical Planning Division for the pre-determined sites for stockpiling and storage of excavated material.**

### 2.11.4 Offices on-site

Consideration for the provision of offices and site welfare facilities on-site will be considered by the Contractor as part of the detailed CLP. The location of these will be confirmed if they are required.

### 2.11.5 Portable cabins

Consideration for the provision of portable cabins will be considered by the Contractor as part of the detailed CLP. The location of these will be confirmed if they are required.

### 2.11.6 Equipment charging and fuelling areas

Consideration for the provision of charging facilities for battery operated tools and machinery will be considered by the Contractor. The location and management details of charging equipment will be provided if this type of facility is to be provided.

Should refuelling areas be required, designated areas will be identified and positioned as far away as is reasonably practicable from adjacent waterways and live services. Contractors will be responsible for managing this activity and ensuring that the re-filling of the bowser will be carried out by a trained, qualified, and competent person using a compliant tanker.

It should be ensured that suitable spill kits are provided and located around the working areas. Spill nappies will also be provided under and near the bowser itself. These will be inspected regularly and audited by an appointed Health and Safety auditor.

## 2.12 Traffic management

Site management, access and traffic volumes associated with the construction of the project are required to produce a detailed CLP and site-specific traffic management measures. These are expected to be provided by the appointed Contractor for the site. This information will also allow for mitigation of any routing issues, including mitigation relating to vehicle access along sections of one-way single carriageways.

Specific traffic management arrangements will need to be developed based on the Contractors temporary works approach, however a list of typical measures which can be considered are provided within this outline CLP.

## 3 Outline Construction Logistics Plan

### 3.1 Site access

An assessment of the site access arrangements during construction will be considered by the appointed Contractor. These details will be provided within a detailed CLP, and consider the following arrangements by each construction phase:

- Appropriately sized site access gates.
- Vehicle Holding Areas (VHA) access.
- Internal site layouts to ensure all the required vehicles can access and exit the site.
- Potential for a one-way system within the site.
- Turning areas.
- Banksman required to assist vehicle manoeuvres.
- Vehicle routing to and from the site.
- Alternative access routes particularly at vulnerable locations.

Plans will be developed, if appropriate, to illustrate access routes during each phase of construction.

### 3.2 Access for construction staff

The management and access arrangements for construction staff will need to be considered as part of the Detailed CLP.

This will be assessed once a Contractor has been appointed and will consider routes to site, the mode of transport by which they travel (with consideration for sustainable modes of transport), and the volume of staff. This could be addressed and considered as part of a Staff Travel Plan (TP). Further details relating to this are provided in Section 4.8.

### 3.3 Vehicle routing

Vehicle routing to the site will be illustrated and provided as part of the Detailed CLP. This will assess routes for various vehicle types, the restrictions along their routes and time periods for site access. These are discussed in further detail below.

#### 3.3.1 Types of vehicles accessing site

The Contractor will confirm and provide the types of vehicles required to serve the site during construction. This will include details relating to the size, their maximum weights and potentially details relating to their emissions.

Details of any vehicles accessing the site, will be checked as part of any booking and then again upon arrival as specified in Section 4.6.5 and 4.7.1.

#### 3.3.2 Restrictions on routes

The route to the site for all construction vehicles will be assessed as part of the Detailed CLP. This will assess height restrictions, road widths where appropriate and stretches of the route with steep gradients.

Sections along the route with one-way single lane carriageway restrictions will be identified, and appropriate measures to reduce the impact of construction vehicles along these routes will be

imposed by the appointed Contractor. These measures will aim to ensure that there are no road closures or high volumes of traffic.

### **3.3.3 Restrictions for time periods of work and access**

The hours of operation of site are to be confirmed by the appointed Contractor. As stated in section 2.10, currently it is expected that the site will be operating between 08:00 and 18:00 from Monday to Saturday. Any amendments to the finalised operational hours will need appropriate approvals.

Should these proposed working hours be employed, vehicles are expected to arrive before 07:00 on Monday to Saturday and depart before 19:00 Monday to Friday and 14:00 Saturday. This is to allow for mobilisation and demobilisation. Where possible deliveries will occur during non-peak hours, which are expected to occur between 10:00 and 15:00. All deliveries will also be booked in advance via A Delivery Management System (DMS) as specified in Section 4.7.1.

The dates and times of the deliveries will be estimated by the Contractor and provided within the Detailed CLP once the construction programme has been confirmed.

### **3.3.4 Temporary and long-term measures**

As the construction program changes and different tasks are undertaken during each phase, an assessment of any temporary or long-term measures will be undertaken by the Contractor. These will be set out in the Detailed CLP.

### **3.3.5 Swept Path Analysis / Access check**

The Contractor shall assess and confirm the routing of vehicles on-site. The check will aim to demonstrate the maximum sized rigid, and potentially articulated, vehicles that can access the site. It will demonstrate the routes these vehicles will access and egress from the site. This may also need to consider the route to the site due to restrictions along the route to the site between Loubiere and Grand Bay.

## **3.4 HGV and impact on vulnerable road users**

HGV drivers associated with the Site will aim to reduce the number of collisions with vulnerable road users. This will include using additional mirrors to reduce their blind spots, as set out in Section 4.3. Other equipment and signs to warn vulnerable road users of their presence will also be employed, and banksmen will marshal any HGV reversing and making deliveries on site (Section 4.6.5).

## **3.5 Site Management**

The number of staff present on-site and their expected working hours during construction will be specified within the Detailed CLP by the Contractor. These details will be agreed with the local authority. The Contractor will seek the relevant authorities' permission should these details require amendment for special arrangements.

### **3.5.1 Route diversions (including pedestrian routes)**

Any footpaths located along the site's boundary will be appropriately maintained during construction, with hoarding installed to ensure the safety of pedestrians. Any diversions required to local pedestrian routes will be considered as part of the Detailed CLP produced, with appropriate safety measures installed to ensure these routes are maintained.



### 3.5.2 Public transport diversions

There is no government funded public transport provided in Dominica. However, there are a number of privately owned mini-bus services. The impact construction of the project will have on these public transport routes and their bus stops will be considered as part of the Detailed CLP. This will ensure these services remain accessible through-out the project's construction.

## 3.6 Waste management

Waste management will be considered as part of the Detailed CLP. The volume, types and storage of waste generated will be considered at this stage.

### 3.6.1 Types of waste

The types of waste generated by the construction of the scheme will be considered as part of the Detailed CLP. It is expected that separate skips or storage containers will be provided for each waste stream. These will be identifiable by signage on-site and communicated by the Contractor to all staff. Liquid wastes will be stored away from watercourses and on hard-surfaced areas where practicable.

### 3.6.2 Waste minimisation

As a general principle, waste generated will be managed in accordance with the waste hierarchy. This places waste prevention as the preferred option followed by re-use, recycling, and other recovery with land-fill disposal as the last option to minimise the environmental impact of the project's construction.

Deliveries to the site will also have minimal packaging and segregated skips for recycling will be provided. Recycling processes will be managed by the Contractor on-site and monitored appropriately.

### 3.6.3 Designated waste collection routes

All waste carriers and collection companies will be informed of the relevant site procedures, routes to the site and appropriate collection times. Collection of waste materials will be booked in by the Contractor, and they will inform any waste collection of companies of any diversions to their route if they are required to do so. These will be produced and illustrated within the Detailed CLP by the Contractor.

## 3.7 Utilities on-site

Any works associated with utilities on-site or associated with the project will be assessed. Coordination of these works and any changes to access arrangements will be considered as part of the Detailed CLP. The relevant authorities will be consulted as part of any impacts on local utilities.

## 4 Management Strategies

### 4.1 SMART strategies to manage construction

This section sets out management strategies that are to be considered to meet the aims of the CLP to reduce the projects impact during its construction. These will assist in reducing the environmental impact of the project, improve safety and reduce the impact on the transport network.

The measures put forward here aim to be SMART (Specific, Measurable, Agreed, Realistic, Timely) as well as easily interpreted, implemented, and monitored.

The measures provided in this Outline CLP will then be finalised with specific measures set out within the Detailed CLP. Any deviation from committed strategies will be classified by the Contractor as a material breach of their contract and result in them being refused access to the site. It will be the developer's responsibility to ensure the requirements committed to within this section are part of any Contractor contracts.

### 4.2 Impact on sensitive receptors

The impact that construction may have on local communities, land uses, and the environment should be set out and considered as part of the Detailed CLP. Strategies or management of any transport impacts that may affect local residents or land uses should then be proposed.

The routing of all vehicles will consider their impacts upon the local community. This will include local residents, hospitals, and schools. Where these areas cannot be avoided, they will be marked on a plan to inform drivers to take extra care driving in these areas.

### 4.3 Best practice for vehicle drivers'

It will be ensured that all Heavy Goods Vehicle (HGV) drivers hold the appropriate licences for the vehicle they intend to use. HGV drivers associated with the Site will be informed that they are to consider vulnerable road users, including pedestrians, to help reduce the number of road collisions. HGV drivers should also be provided with additional mirrors where appropriate to reduce their blind spots.

### 4.4 Routing

Staff, visitors, and Contractors will be required to access the site via designated routes. HGVs will be required to adhere to specific designated routes. These routes will be illustrated in plans to appropriate scales within the Detailed CLP. Diverted routes in the case of emergencies should also be agreed ahead of construction commencing.

Routes will be communicated to all HGV drivers, and it will be the Contractor's responsibility to ensure that they are fully briefed. Suppliers will also be made aware of the routes to and from the site.

#### 4.4.1 Reduce vehicle emissions

The overall aim of a CLP should be to reduce vehicle emissions and noise (to reduce the environmental impact of construction). The Contractor will be responsible for considering appropriate measures that would reduce vehicle emissions. These could include routing vehicles outside of peak hours or using the shortest routes available.

## 4.5 Community engagement

Engaging with the local community will assist to manage the impact of construction and to develop this CLP further. Therefore, if considered appropriate, opportunities will be sought to create a workshop event with the local community prior to construction. Local residents will be invited and provided details of this event contact details of the project manager. Guidance within the ESMP shall be followed.

## 4.6 Safety at Street Works and Road Works: A Code of Practice (Department for Transport, October 2013)

The “Safety at Street Works and Road Works: A Code of Practice” guidance document will be utilised by the Contractor when developing plans for the site along the entire project route. This document will assist the Contractor as to which signs to erect at and adjacent to the site. The code of practice will also inform the Contractor arrangements for lighting and guarding of street and road works.

### 4.6.1 Public traffic management

To manage local highway arrangements, public traffic and any pedestrian routes the Contractor will put in place relevant hoarding and signage. The “Safety at Street Works and Road Works: A Code of Practice” shall be used by the Contractor to identify the necessary equipment / signage to be installed. These will help maintain the public’s safety, manage local traffic flows and parking. It will also inform the public of the works being undertaken and resulting changes to the highway.

### 4.6.2 Safety Health and Environment (SHE) plan

A Safety Health and Environment (SHE) plan should be put in place prior to construction commencing. This should be monitored and briefed to staff through each phase of construction. These will be set out by the Contractor when further details relating to the project are available and will consider strategies that can be employed by site Contractors and delivery companies.

Any safety issues or near misses should be logged by the Contractor, with briefings undertaken to remind staff on-site of any potential safety concerns. This will also allow the Contractor to monitor any trends efficiently.

Environmental impacts linked to construction logistics and vehicle movements including dust and noise monitoring should also be considered to improve safety on-site.

The plan must state that vehicle operators shall adhere to speed limits.

### 4.6.3 First Aid points

Emergency arrangements will be highlighted on a plan, details of the first aid point as well as the assigned first aiders on-site will be provided to each person attending the site. Staff, visitors, and delivery companies will be informed of these locations during their site induction.

Assigned first aiders will also have their information displayed on the notice boards around site as well. Details of the nearest hospital and its emergency department will also be detailed on-site. The route to this hospital will also be marked out.

### 4.6.4 High visibility clothing

All staff and visitors will be required to wear high visibility clothing when accessing the site. This will help to ensure persons are clearly visible and contribute to maintaining site safety.

#### 4.6.5 Banksmen

As stated earlier in this report, banksmen or traffic marshals will be employed by the Contractor to ensure safe access for vehicles into and out of the site. They will also be responsible for ensuring the management of vehicles on-site, as well as reducing queueing along the highway at any site access.

#### 4.6.6 Appropriate lighting

The Contractor should consider times that make the best use of daylight hours. Should this not be possible, work will either terminate before sundown or appropriate safe work lighting is to be installed.

### 4.7 Control of vehicle muck

A wheel wash facility will be provided on site to clean vehicles and reduce the amount of muck deposited onto the local highway. Contractors will also assess whether a road sweeper will be required to assist in keeping the public highway clean.

#### 4.7.1 Delivery Management System and scheduling

A Delivery Management System (DMS) will be created and employed to manage site operations safely and reduce the impact of construction deliveries. This system will help ensure that no vehicles queue to access the site and that deliveries are managed appropriately. The DMS will adhere to the following principles:

- Delivery requests will take place at least 48-hours in advance;
- Deliveries require the site managers approval;
- Engagement with local stakeholders will take place to minimise the impact of delivery schedules;
- Assist in achieving zero un-planned vehicle deliveries, zero non-compliant vehicles and zero-collisions; and,
- Ensure no delays to deliveries.

#### 4.7.2 Out of peak delivery periods

The Contractor should seek to ensure that deliveries are made outside of peak hours where possible. Deliveries should aim to avoid taking place between 08:00 and 09:00 as well as between 17:00 and 18:00 during weekdays.

This will help reduce the environmental impact of these trips and help minimise the risk of collisions between road users and pedestrians.

#### 4.7.3 Vehicle Holding Areas (VHA)

Locations in the vicinity of the site will be assessed to identify whether there is the potential to provide Vehicle Holding Areas (VHA). These will allow vehicles to wait at a suitable location near the site and restrict queueing at any site accesses.

Potential locations for these will be assessed and considered during the development of the detailed CLP. Should the VHA be used inappropriately, the relevant authorities may suspend its use.

#### 4.7.4 Consolidation centre

A consolidation centre will be considered where appropriate as part of the detailed CLP to identify whether off-site assembly will assist the proposed construction. The use of consolidation centre could reduce the number of deliveries to site as well the following other benefits:

- Reduced environmental impact through a reduction in road miles run;
- Improved safety as a result of fewer vehicle movements;
- Increased security of supply through provision of a 'storage buffer' for long lead items;
- Reduced likelihood of damage or theft to materials as a result of less on-site storage; and,
- Reduced construction and delivery costs through reduced fuel costs.

Should a location for a consolidation centre be identified and considered appropriate for use, the location, the anticipated number of deliveries to and from the centre and the nature of the vehicles involved will be set out in the detailed CLP.

#### 4.7.5 Measures to reduce vehicle movements

To reduce vehicle movements, Contractors will attempt to ensure delivery vehicle loads are at least 65% full. Any consolidation centres could also be used to store long-life goods and allow for "Just-In-Time" vehicle deliveries that reduce the risk of damage to equipment and materials during transportation.

##### 4.7.5.1 Re-use material on-site

The Contractor should consider re-using materials on-site. The benefits of this are:

- Reduction in vehicle movements;
- Reduced costs to construction;
- Reduction environmental impacts of construction; and,
- Reduction in vehicle movements transporting waste materials.

##### 4.7.5.2 Collaborate with other sites

If applicable, the Contractor will consider working with neighbouring sites to reduce and consolidate vehicle movements. This will be considered when the detailed CLP is produced, and should include the following collaborative measures:

- Joint use of consolidation centres and holding areas;
- Shared cleaning and traffic control services;
- Supplier consolidation;
- Driver training programmes;
- Regular communication and community engagement;
- Shared facilities (for example messing and welfare facilities); and,
- Reuse of materials.

##### 4.7.5.3 Procurement of staff, materials, and construction tools

The Contractor will assess the supply of materials, staff, and construction to consider their procurement and reduce the number of construction vehicle movements. This will assist to create economies of scale, improve efficiency, and create environmental benefits.

## 4.8 Staff Travel Plan

The impact of staff traveling to the Site will be mitigated through the employment of a Staff Travel Plan. This will work towards reducing the impact of staff travelling to and from the site, promoting a modal shift of these trips to sustainable modes of transport, public transport, and car sharing. The Travel Plan will also consider the timings of these trips.

Measures to enable and meet the staff travel plan targets should be appropriately considered by the appointed Contractor. Details of best practices for these documents could be obtained from the UK government website, as well as other guidance documents including that produced by TfL.

### 4.8.1 Appointment of Travel Plan Coordinator

A Travel Plan Coordinator (TPC) could be employed by the site Contractor during construction to inform staff of appropriate travel options available to them.

## 4.9 Freight by water

TfL advises that “movement of freight by [...] water can be a cost-effective and efficient method of transporting a range of goods and commodities”. Despite this guidance applying to London, England, the same may be true for Dominica. Therefore, the Contractor should consider transporting goods by water if possible and appropriate, particularly where access to the eastern side of the island is needed, and or shipping of material from the main port facility to the Loubiere area.

### 4.9.1 Hoarding and works signage

The Contractor should install appropriate signage and hoarding to maintain safe pedestrian routes around the site, including any diversions.

## 4.10 Management of abnormal loads

The delivery and management of abnormal loads should be considered by the appointed Contractor as part of the detailed CLP.

## 4.11 Risk assessments

Risk Assessments and Method Statements (RAMS), Start of Shift briefings, and Task Briefing Sheets (TBS) should be produced by the appointed Contractor once a working method has been fully developed.

## 5 Estimation of vehicle movements

The number of construction vehicle trips will be calculated by the appointed Contractor. This will be done using a first principles approach and consider:

- Type of construction;
- Phasing of construction;
- Types of vehicles (including assessing Light Goods Vehicles and HGVs separately);
- Volumes of vehicles;
- Excavation activities;
- Consolidation centres;
- Deliveries of materials;
- Deliveries of plant machinery; and,
- One-off deliveries.

The phasing of the construction schedule could also reduce the impact of construction on the highway network. Consolidation centres could also mitigate the impact on the local highway network particularly in comparison to in-situ construction techniques. The designated location of holding areas and consolidation centres will be confirmed within the detailed CLP by the Contractor.

## 6 Implementation and monitoring of the CLP

The CLP aims to provide a safe environment for the site workforce and the local community throughout projects construction.

### 6.1 Implementation of the CLP

The detailed CLP will finalise the requirements for the project’s construction, and the Contractor will be responsible for its implementation. The Contractor will contractually agree to meet these requirements by employing appropriate systems to manage these.

The CLP will be reviewed and amended as required to reduce the project’s environmental impact.

### 6.2 Monitoring of the CLP

Under the supervision of the Engineer, the Contractor will then be responsible for monitoring the impact of the project’s construction. The Contractor will collect appropriate data to demonstrate the requirements of the Detailed CLP are met.

Monitoring activities that could be undertaken will consider the number of vehicle movements, breaches or complaints, and safety issues. Table 2 sets out examples of construction monitoring activities.

**Table 2 Construction monitoring activities**

Monitoring type	Monitoring activity
Vehicle movements	Total number of vehicle movements by type and size
	Vehicle dwell times on site
	Origin of vehicles arriving at the site
	Destinations of vehicles departing the site
	Delivery/collection accuracy compared to schedule
	Total site trip generation
	Use of alternative transport modes
Breaches and complaints	Community concerns about construction activities
	Vehicle routing
	Unacceptable queuing and parking
	Compliance with safety and environmental standards and programmes
Safety	Anti-idling
	Logistics-related incidents
	Record of associated fatalities and serious injuries
	Methods staff are travelling to site
	Vehicles and operators not meeting safety requirements



The progress of the project's construction could be monitored, including whether the Contractor is compliant with the construction timescales and the terms of their contract.

## 7 Mitigation and updating the CLP

### 7.1 Mitigation

Notwithstanding the application of the initial measures proposed within the detailed CLP, the Contractor should consider appropriate mitigation measures should there be a severe traffic and transport impact resulting from the project's construction. Mitigation measures should then be employed to ensure the targets of the detailed CLP can be attained.

### 7.2 Updating the CLP

The principles in this document will be developed further by the appointed Contractor as the construction methodology progresses. The CLP will then be updated to mitigate construction impacts, including any identified during the project's construction. Any significant changes will be agreed with the relevant authorities.

