ENVIRONMENTAL STATEMENT
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A12.1 ROADS, TRAFFIC AND FOOTPATHS – DETAILED ASSESSMENT

12.1 INTRODUCTION

This Chapter provides and assessment of the effects of the St Helena Airport and its supporting infrastructure on traffic and people using roads and footpaths. The assessment considers both adverse and beneficial effects of the proposed scheme. The assessment is based on the forecasts for traffic generation during construction and operation included in the Traffic Statement prepared by Atkins, 2007, see Appendix 12.2. The relevant sections of the Traffic Statement are also summarised in section 12.4.2 and 12.5.2 below.

Changes in traffic can cause other environmental effects, these are considered in the Noise and Vibration and Air Quality Chapters 6 and 7 in Volume 2 of the ES, and Appendices 6 and 7 respectively. The effects on visual amenity of people using the footpaths is addressed in Chapter 10 Landscape and Visual Amenity in Volume 2 of the ES and in detail in Appendix 10. Effects on the recreational value of footpaths is covered in Chapter 5 Land Use in Volume 2 of the ES.

12.2 METHODS

12.2.1 General Approach

The main aspects of the proposed scheme which could have an impact on people using roads and footpaths on the island during the construction and operation of the works are as follows:

- **New Haul road/permanent access road** linking Rupert's Bay with the proposed airport site on Prosperous Bay Plain.
- **Temporary closure and diversions of some of the post box walks and other footpaths** may be necessary during specific construction activities for safety reasons**.**
- **Permanent diversions of two post box walks and other footpaths** around the edge of the proposed airfield.
- **Increase in traffic during construction** of the proposed scheme in areas such as Jamestown, Deadwood, Rupert's Valley and Bottom Woods.
- **Increase in traffic during operation** of the St Helena Airport and Supporting Infrastructure scheme

Due to the nature of the existing roads and relatively low volumes of existing traffic it has not been possible to follow any specific guidance such as the Design Manual for Roads and Bridges (DRMB) relating to the assessment of effects on roads, traffic and footpaths. The findings are based on qualitative assessment whilst taking into account the traffic flow forecast data for the construction and operation phases of the St Helena Airport scheme. The assessment of effects was carried out in four stages as follows:

1) Identification of existing roads and footpaths through desk study and site visits. Other relevant information was also collected through consultation and surveys.
2) Assessment of the potential effects which could occur temporarily during construction and permanently during operation. Potential effects such as, severance and diversion of roads and footpaths are considered in the assessment.

3) Identification of the mitigation measures which will and have been incorporated into the scheme to reduce any negative impacts.
4) Description of the residual effects, i.e. prediction of the effects which are likely to occur assuming the mitigation measures are implemented.

The assessment of significance has been undertaken using a seven point scale:

- Major, moderate & minor adverse.
- Negligible.
- Major, moderate & minor beneficial.

For the purpose of this assessment the local road network is considered to be of high importance because of the key routes linking communities of Longwood, Deadwood, Rupert's Valley and Jamestown and other smaller communities nearby. Post Box Walks (12.3.3) and other footpaths are also considered to be of high importance for residents and visitors to the island.

12.2.2 Sources of Information

The desk study included consultation with the following organisations:

- Public Works and Services Department (PWSD)
- Director of Tourism
- St Helena Nature Conservation Group
- Agriculture and Natural Resources Department
- Environmental Health Section of the Public Health and Social Services Department
- St Helena National Trust
- Development and Economic Planning Department (DEPD) including the Environment Planning and Development Section of DEPD

12.2.3 National Policies for Roads and Footpaths

An outline of policies in the St Helena Land Development Control Plan (LDCP) is provided in Chapter 4. As stated in that Chapter, nothing done within an ADA can be held to be in contravention of the LDCP. However, the policies have been used to inform the scope of the assessment and the assessment of effects. The following transport policies which are applicable to normal applications for development permission:

- **T.R.1** No new development involving more than 10 bedrooms or 500 square metres of commercial floor space or involving more than 100 visitors a day shall commence unless and until the Agency is satisfied that enforceable provisions have been made to improve vehicle access to and egress from the site, including the provision of off-site highway improvements.
- **T.R.2** Applications for development of the size set out in Policy T.R. 1 above should be accompanied by traffic impact statements illustrating the likely effect of the proposed development on the road network..
- **T.R.3** With the exception of development in the Jamestown Conservation Area, all new development should be accompanied by off-street parking provisions in accordance with the standards in Appendix 5 of the LDCP
- **R.L.8** Subject to other policies in the LDCP, proposals which will enhance facilities for recreational walks will be encouraged.
- **A.D.1** The Agency will generally permit development in accordance with the policies contained within this plan, if the development would:
  - (c) Have a satisfactory means of access for cars and service vehicles and for pedestrians including those with impaired mobility.
  - (d) Not cause or increase danger to road users.
  - (e) Provide parking in accordance with the Agency's standards – see Appendix 5 of the LDCP
  - (i) Maintain or enhance pedestrian routes.

Policies A.4 and A.5 are directly applicable to the Airport and supporting infrastructure development. These policies specify information that must be provided providing regarding transport and access at the airport and are discussed in more detail in the Traffic Statement enclosed in Appendix 12.2:.

12.3 EXISTING ROADS AND FOOTPATHS

12.3.2 The Existing Road Network and Traffic Conditions

Roads on the island are steep and narrow with very tight corners and many hairpin bends. Figure 12.1, Volume 3 shows the existing road network. They are generally wide enough to accommodate a refuse collection vehicle and for cars to pass at low speeds on some sections however passing bays are provided where this cannot be achieved. The road surfacing is tarspray and chip and so a national legal weight restriction of 14 tonnes with a three tonne restriction on minor roads is in force. A speed limit of 30 miles per hour (mph) is also in place on many of the island's roads. In addition there are height and width restrictions at some locations including Longwood Gate (see Figure 12.2, Photograph 12.1 in Volume 3 of the ES) and Jamestown (PWSD, personal communication).

The roads on St Helena are categorised on the basis of the following assumptions (LDCP, 2007):

(a) Main roads – these are the roads which serve the main centres of population, the main industrial/commercial areas and a ring road connecting the main areas of the Island.
(b) Secondary roads – these are the roads which serve the various communities distributed around the Island as well as areas of industry/commerce/agriculture.
(c) Minor roads – all other surfaced roads maintained by the Government.
(d) Unclassified – all non-government roads, shared access roads and dirt tracks etc.

From Rupert's Bay an existing road (Field Road – see Figure 12.2, Photograph 12.2 of Volume 3 of the ES) leads up the western side of the valley and connects with the existing roads to and from Jamestown. This is the only access route to and from Rupert's Bay

and Valley. The existing road alongside Deadwood terminates at the last property and there is no through road. At present the road only carries traffic going to and from the houses alongside this road. There is no existing road from the proposed airport on Prosperous Bay Plain (PBP) linking into the island road network. The existing road network terminates at the Government Garage, Bradleys beyond which, a dirt track not suitable for normal traffic, is occasionally used people accessing PBP.

Traffic counts were undertaken on a single day during November 2005. From these counts, daily flows have been estimated as follows:

Table 12.1 Existing Traffic Flows

Location	Estimated Daily Flows
Longwood Avenue	530 vehicles per day
Side Path, Jamestown	725 vehicles per day
Field Road to Rupert's Bay	145 vehicles per day

Traffic counts were also undertaken by SHG 2006 and the findings are reported in Appendix 12.2. The surveys indicate that traffic volumes are fairly low. Flows could be higher on days when the RMS St Helena is either arriving or departing. No bicycles were observed during the surveys and bicycles are prohibited from using the two main routes to and from Jamestown.

A network of subsidised minibus services runs connecting outside communities with Jamestown. The service frequency of theses minibuses varies across the island but they assist in reducing car usage. Taxis also operate on the island.

Car parking is generally only considered to be a problem in Jamestown. This problem can be acute on main shopping days and when the RMS St. Helena arrives and departs (LDCP, 2007).

12.3.3 Post Box Walks and Other Footpaths

St Helena has developed a network of footpaths known as Post Box Walks, the routes are published by the St Helena Nature Conservation Group. The network includes both inland and coastal walks which take in the spectacular scenery of St Helena. It is not known how many walkers use these trails and how regularly they are used. The St Helena Nature Conservation Group organises guided walks every two weeks throughout the year during which period it covers all the routes at least once per year. In addition to the Post Box Walks there are routes described in various guides that have been published for the island (Ian Mathieson and Laurence Carter, 1990s). Other routes, although not formally mapped or marked are known to be used by members of the community. The routes of known Post Box Walks and other footpaths are shown in Figure 12.1, Volume 3.

The main footpaths within Rupert's Bay, Rupert's Valley, Deadwood, Longwood, Bottom Woods, PBP and Bay and Sharks Valley are described in the paragraphs below. The majority of the footpaths are narrow, crossing fairly steep terrain and are often on scree slopes.

12.3.3.1 Rupert's Valley and Rupert's Bay

There are three main routes for walking within Rupert's Valley. These are:

- Rupert's Bay to Bank's Battery linking with the Pipe Path to Rupert's Hill (Bank's Ridge) and Deadwood Plain and the coastal path towards Sugar Loaf and Sugar Loaf Ridge.
- Jamestown to Rupert's Bay around Munden's Point – path currently closed due to unsafe conditions and risk of rock fall.
- Rupert's Valley to Deadwood – the Boer Road which rises up from the valley floor to the ridgeline of Deadwood.

Fishermen also use the footpaths from Rupert's Bay to Bank's Valley Bay and beyond to reach fishing rocks along the coast.

12.3.3.3 Deadwood Plain, Longwood, Bottom Woods and Sharks Valley

In addition to the footpaths mentioned in section 12.3.3.1 which lead to Rupert's Valley a footpath crosses the Deadwood Plain in a north/south direction. This footpath provides a link to routes to the following landmarks included on the network of Post Box Walks:

- The Barn Post Box Walk.
- Flagstaff Post Box Walk.
- Sugar Loaf Post Box Walk.

Turks Cap Valley footpath also commences in Longwood. Sharks Valley Post Box Walk commences in Level Wood, passes through Sharks Valley and ends on the beach in Stone Top Bay – see Figure 12.2, Photograph 12.3 in Volume 3 of the ES.

12.3.3.4 Prosperous Bay Plain and Prosperous Bay

There are a number of Post Box Walks and other footpaths which cross or are in the immediate vicinity of PBP and Prosperous Bay. These include the routes to the following sites:

- King and Queen Rocks Post Box Walk, which also includes the Signal Station – crosses Prosperous Bay Plain (see Figure 12.2, Photograph 12.4, Volume 3).
- Gill Point Post Box Walk (ornithological interest vantage points for George and Shore Islands) – crosses PBP (see Figure 12.2, Photographs 12.5 and 12.6, Volume 3).
- Prosperous Bay Beach Post Box Walk (through lower Fisher's Valley) – crosses Prosperous Bay Plain (see Figure 12.2, Photograph 12.7, Volume 3).
- Cox's Battery Post Box Walk and Turk's Cap (from Bottom Woods Meteorological Station).

Other walking trails also cross PBP, including the route from Woody Ridge to Dry Gut waterfalls and beyond. There is also a path through upper Fisher's Valley from Longwood Estate which follows an existing track for most of the way. The tracks link with a number of other footpaths.

Prosperous Bay, and the shoreline between the Bay, Dry Gut Bay and Gill Point and the Saddle Point are used by local fishermen to fish from the rocks. The fishermen use the footpaths across PBP and through the guts to reach the shoreline rocks.

12.4 CONSTRUCTION EFFECTS – TEMPORARY

12.4.1 Potential Effects

In the absence of suitable roads connecting the airport site with the proposed wharf at Rupert's Bay, the Contractor will construct a haul road which will become a permanent access road from Rupert's Bay to PBP, via Deadwood and Bottom Woods (see Scheme for Assessment - Chapter 2 in Volume 2 and Figure 2.1 in Volume 3 of the ES). The Contractor's plant and materials will be delivered to the airport site at PBP using this road.

In summary, the temporary, potential effects during construction include:

- Disruption to people using roads as a result of road construction works, temporary road closures, increased traffic and heavy vehicles. Disruption would occur due to increases in traffic during construction, mainly in Rupert's Valley, Deadwood and Bottom Woods. These areas currently experience low volumes of traffic. Parking on roadsides would be restricted. Congestion in Jamestown is forecasted to increase. Section 12.4.2 provides traffic estimates during construction.
- Disruption to people using footpaths during the construction. Temporary closure or diversions of existing roads and footpaths including some of those within the network of Post Box Walks may result in a longer and less attractive route for walkers. Section 12.4.3 discusses the likely temporary diversions and closures of footpaths.
- Temporary closures of unclassified road (dirt tracks) and the issue of construction traffic and general traffic sharing the same routes is discussed in section 12.4.4.

12.4.2 Construction Trip Generation

Materials for construction would be shipped to Rupert's Bay then transported to the various work sites. The possibility of delivering materials at Prosperous Bay was considered, although Rupert's Bay was selected as the preferred option due to better topographic and sea conditions, lesser landscape impact and the wider development benefits.

Daily construction traffic estimates have been calculated by Atkins (see Diagram 12.1). The estimates are for the likely impact on Jamestown, Rupert's Bay and the haul road for the busiest periods of a four and a half year construction programme. This is broken down into a 6 month (26 week) mobilisation period, which includes the construction of the haul road and temporary jetty at Rupert's Bay, and a four year (200 week) period for the construction of the airport. Construction activities that remain within work sites have not been considered as they would have little impact on Jamestown, Rupert's Bay and the haul road due to the activity being self-contained. For example, a significant proportion of the construction activities at the airport site would be self-contained, although vehicles leaving the site have been considered in the analysis.

The haul road is to be used as the main route for construction traffic between Rupert's Bay and the airport site.

12.4.2.1 Jamestown

5,500 vehicular trips are estimated over an assumed 200 week period for construction of the airport, working 6 days a week, with an average of 5 vehicular trips per day. It is likely

that the number of trips could vary between 5-30 per day allowing for peaks in the construction programme.

These trips are generally by site personnel / visitors moving between the airport site and Jamestown for the duration of the works. They also include trips for site staff at the beginning of the contract prior to setting up the camp accommodation. The majority of the trips will be for site personnel collecting provisions, picking up visitors and visiting town for social reasons.

Personnel / visitors travelling between the airport site and Jamestown are likely to leave the haul road near Fox's Garage, Deadwood (see CH7100 – Figure 2.18) (heading south towards Longwood Gate) and make use of the existing road network, as the link between Rupert's Bay and Jamestown is currently poor quality and is not due to be upgraded as part of this project. Managerial and some skilled construction workers are likely to rent accommodation in other parts of St Helena, however, the locations are not known and the amount of traffic generated is likely to be low.

Appropriate signing or other traffic control measures will be put in place to ensure that site personnel / visitors use the haul road between Fox's Garage at Deadwood and Bottom Woods (see CH 9450 – Figure 2.18) so as to avoid travelling through the main residential area of Longwood itself.

12.4.2.2 Rupert's Bay

8,250 vehicular trips are estimated over a 200 week period for construction of the airport, working 6 days a week, with an average of 7 vehicular trips per day. It is likely that the number of trips could vary between 7-20 per day allowing for peaks in the construction programme. These trips are fuel bowsers, flat beds, low beds, lorries and tippers moving between Rupert's Bay and the airport site.

6,000 vehicular trips are estimated over a 16 week period for construction of the temporary jetty at Rupert's Bay, working 6 days a week, with an average of 40 vehicular trips per day. It is likely that the number of trips could vary between 40-80 per day allowing for peaks in the construction programme. These trips are dump trucks bringing material for the construction of the jetty from the quarry.

12.4.2.3 Haul Road

5,820 vehicular trips are estimated over a 26 week period for construction of the haul road, working 6 days a week, with an average of 37 vehicular trips per day. These trips are only linked with the construction of the haul road and no other activity. It is likely that the number of trips could vary between 37-50 per day allowing for peaks in the construction programme. These trips are mainly fuel bowser movements, as well as dump trucks moving material around that cannot be re-used on site.

12.4.2.4 Airport Construction Camp Accommodation Facility – Prosperous Bay Plain/Bradleys Government Garage

18,000 vehicular trips are estimated over a 200 week period for construction of the airport, working 6 days a week, with an average of 15 vehicular trips per day. It is likely that the

number of trips could vary between 15-30 per day allowing for peaks in the construction programme. These trips are site personnel moving between the camp accommodation (see Figure 2.1, Volume 3) and the airport site in either light vehicles or crew buses.

The Contractor may choose to work two shifts per day on critical elements of the earthworks for part of the construction period. With probable 24 hour working and heavy excavation works (including blasting) operations on the airport site, it is likely that the accommodation facility for foreign workers will be located at Government Garage, Bradleys or closer to the airport site several kilometres further along the haul road. Prior to major works commencing and advanced party of workers will arrive and they are likely to use accommodation in elsewhere until the camp at Bradleys Government Garage (or closer to the airport site) is established.

12.4.2.5 Total Trips

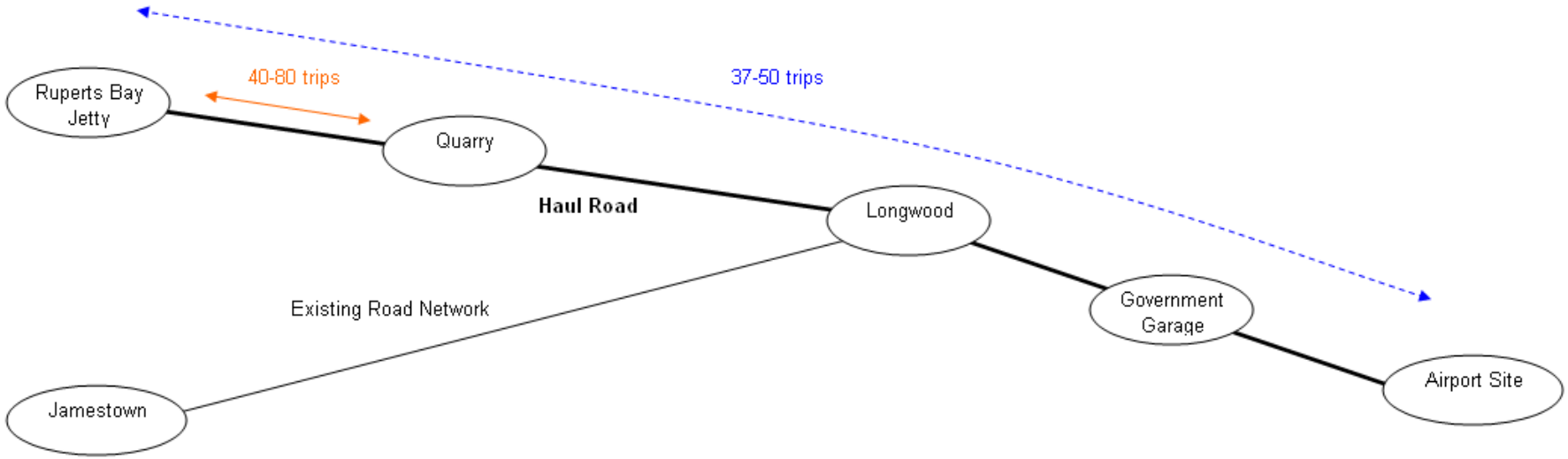
The number of daily construction traffic trips will vary throughout the construction programme.

The volume of daily trips related to the construction of the haul road and temporary jetty is shown in Diagram 12.1 (the arrow between Rupert's Bay and the airport site is dotted to reflect the varying distances that traffic will travel when constructing the haul road). The volume of daily trips related to the construction of the airport once the haul road is complete is shown in Diagram 12.2.

The construction traffic estimates provide cumulative ranges of between 77-130 vehicular trips per day during construction of the haul road and temporary jetty, and between 27-80 vehicular trips per day during construction of the airport once the haul road is complete. This would equal approximately 8-13 and 3-8 vehicular trips per hour respectively, averaged across a 10 hour working day. Given that this construction activity would be focused on different sections of the haul road and that a proportion of these trips would be personnel / visitors using the existing road network, this level of construction vehicle activity is considered to be within acceptable levels. The greatest impact of construction vehicles is likely to be felt by the small number of properties in Rupert's Valley and Deadwood.

Diagram 12.1 – Daily Construction Traffic Trips During Construction of Haul Road and Temporary Jetty (Atkins, 2007)

Diagram 12.2 – Daily Construction Traffic Trips During Construction of Airport Once Haul Road is Complete (Atkins, 2007)



12.4.3 Temporary Road Closures and Diversions

Temporary road closures and diversions may be necessary for short periods at certain times during the works. The location and duration of road closures and diversions is not currently known as it would very much depend on the Contractor's specific working method and programme. However, it is possible that the following diversions and closures would be necessary:

1) **Rupert's Valley**– there may be disruption to people using the existing road in Rupert's Valley whilst the road is being upgraded during construction of the haul and access road. Wherever possible diversions will be provided.
2) **Deadwood, Bottom Woods to Bradleys Government Garage** – similarly to Rupert's Valley there may be disruption to people using the road whilst the road is being upgraded. There would be restriction on parking on roadsides.
3) For safety reason the **Dirt Tracks on Prosperous Bay Plain,** including those coming from Fisher's Valley and Woody Ridge, will terminate at the proposed Contractor's Compound and Temporary Airstrip for the duration of the works i.e. the general public will not be able to access the eastern side of the plain via these vehicle routes for approximately four years.
4) For a short period during the construction of the water supply works in Sharks Valley it may be necessary to close the existing dirt track from **Pink Grove to Sharks Valley.** Likewise temporary closures of the dirt track from **Woody Ridge Flax Mill** to the proposed Break Tanks may be necessary. These temporary closures are likely to be required for a few days or weeks. Diversions will be provided wherever possible.

Measures which will be implemented in order to minimise the disruption to people using these roads is discussed in Section 12.4.6.

12.4.4 Construction Traffic Using Existing Roads

Once the haul road has been constructed it will be used by the Contractor's traffic transporting goods and plant from Rupert's Bay to the airport site, as described in sections 12.4.2. The major part of this traffic will be heavy goods vehicles (HGVs) transporting plant, equipment, sand and cement to build the airport and roads. For the duration of the works, the general public will share the haul road with construction traffic at the following locations:

- Rupert's Bay to Rupert's Valley (upper valley) (approximately CH0 to CH900)
- Deadwood, Bottom Woods to Bradleys Government Garage (approximately CH6000 to CH11000)

Drivers using these sections of road will generally be travelling to and from homes, businesses and agricultural areas. There are also sections of the road which are used by pedestrians, particularly the section of road at Deadwood (approximately CH6000 to CH71000). Mitigation to address the safety of pedestrians and drivers is discussed in Section 12.4.6.

As described in Section 12.4.2 construction traffic would also use the existing roads between Longwood and Jamestown, mainly for collection of deliveries and visits for social purposes. This could lead to increased congestion of the main route into Jamestown. The sections of existing roads most likely to be affected would include the following:

- Between Fox's Garage at Deadwood and Longwood Gate
- Longwood Gate to Hutts Gate around the Devils Punch Bowl
- Hutts Gate through Alarm Forest and Two Gun Saddle and Briars Village
- Side Path to Jamestown centre

The increase in traffic may lead to occasional increases in journey time for drivers travelling on these routes. However, given that the additional trips generated, i.e. between 5 and 30 per day, would be spread throughout the day; and are unlikely to coincide with the peak general traffic movements to and from Jamestown in the morning and later afternoon, the increase in traffic is unlikely to be significant.

12.4.5 Temporary Footpath Diversions and Closures

The proposed St Helena Airport and Supporting Infrastructure will have a direct impact on several footpaths including the following routes:

1) **King & Queen Rocks and Signal Station Post Box Walk** – will be closed for safety reasons during the works on Prosperous Bay Plain until the permanent diversion around the north of the airfield (see section 12.5.5.2 below for more detail) is opened. During specific construction activities at the northern end of the airfield it may be necessary to close the Post Box Walk for short periods.
2) **Gill Point Post Box Walk** – will be closed for safety reasons during the works on Prosperous Bay Plain until the permanent diversion around the south of the airfield (see section 12.5.4 below for more detail) is opened. . During specific construction activities at the southern end of the airfield it may be necessary to close the Post Box Walk for short periods.
3) **Prosperous Bay Beach Post Box Walk -** During specific construction activities at the northern end of the airfield it may be necessary to close the Post Box Walk for short periods for safety reasons.
4) **Routes used by local fishermen to access the fishing grounds along the coastline between Dry Gut (including Gill Point) and the Saddle Point and Porches Gate, close to Prosperous Bay** will be closed for safety reasons during the works on Prosperous Bay Plain until the permanent diversion around the north and southern edge of the airfield (see section 12.5.4 below for more detail) is opened. During specific construction activities at the airfield it may be necessary to close the routes for short periods**.**
5) **Woody Ridge to Dry Gut –** the lower section of this path will be closed for safety reasons during the works in Dry Gut.
6) **Sharks Valley Post Box Walk** - will be closed for safety reasons at various stages during the construction of the water supply works in the valley. The Post Box Walk may be closed for a few weeks over the course of the construction activity in Sharks Valley.
7) **Boer Road and Pipe Path –** whilst the construction of the haul road, BFI and BFI access road is taking place it will be necessary, for safety reasons, to temporarily divert sections of the footpaths which are crossed by the haul road. The construction of the haul road is not expected to take longer than six months.
8) **Banks Battery Path –** a temporary diversion of a short section of the footpath around the Contractors compound areas close to Rupert's Bay may be necessary during the works.

Mitigation to minimise the disruption to walkers using the Post Box Walks and other footpaths is discussed in Section 12.4.6.

12.4.6 Mitigation of Construction Effects

The Conditions of the Contract for the Contractor and the EMP in Volume 5 of the ES set out the requirements the Contractor regarding use of roads and footpaths. The

Contractor will prepare a Traffic Management Plan to be followed during construction, it will include the following:

- **Temporary closures of roads and footpaths are unlikely** as the Contractor must maintain vehicle and pedestrian access at all times on sections of existing roads that form part of the Access Road. However, in the event that temporary road and footpath closures are required to enable construction of the haul/access road, appropriate diversions will be provided to maintain access and safety of all drivers and pedestrians. The local community must be informed in advance of any temporary closures of roads and footpaths;
- Once the haul route can be used, the Contractor will restrict, except for the movement of operatives, all plant movements and materials deliveries on the island to this route. Construction **traffic will not be permitted to access the site via the existing road network to the east of Longwood Gate**, i.e. all drivers must use the haul road and not pass through the main residential area of Longwood.
- **Safe access** will be provided during construction **for residents** accessing the road from their properties.
- The Contractor shall **prevent mud, dirt, debris** or other loose material from the Site being deposited outside the Site on to roads and footpaths.
- In residential areas of Rupert's Valley and Bay, Deadwood and Longwood the Contractor's **hours of working will be restricted** to 07:00 to 18:00 on Monday to Friday and 07:00 to 13:00 on Saturdays. These restrictions also apply to the Contractor's vehicle movements in these areas.
- A **speed limit** of 15mph shall be enforced for construction traffic passing along sections of the access/haul road through residential and commercial areas, including Rupert's Bay, Rupert's valley, Deadwood, Longwood and Bottom Woods and Government Garage.
- **Footways** shall be **provided** along the haul road where the road passes in front of residential and commercial properties such as in Rupert's Valley and Deadwood to facilitate safe access for pedestrians. The Contractor will maintain vehicle and pedestrian access at all times on sections of existing roads that form part of the haul/access road.

Where the haul road passes residential, agricultural, commercial and ecologically sensitive areas the surface will be sealed prior to use for haulage. Table 12.2 indicates the chainages between which the road surface will be sealed:

Table 12.2 Sections of Haul Road to be Sealed

Chainage	Reason
0 metres (m) – 50 m	To protect residents and the coastal amenity area
50 m-600 m	Existing sealed road
600 m – 850 m	To protect residents
5350 m– 6170 m	To protect residents
6170 m – 7100 m	Existing sealed road
7100 m – 8300 m	To protect residents
8300 m – 8750 m	To protect arable land
8750 m – 9450 m	To protect residents
9450 m – 10950 m	Existing sealed road
10950 m – 14048 m	To protect the habitat for endemic invertebrates and wirebirds and indigenous and endemic plants

For chainages refer to Figures 2.17 to 2.19, Volume 3.

The Contractor will maintain the road surface during the construction period. Adequate signing, lighting, safety fencing and other appropriate measures as necessary shall be

used wherever works are in progress on any road or other route to ensure the safety of all groups of people using that road or route.

Although unlikely, where, for any reason, it is necessary to close an access for a temporary period, the Contractor will agree the arrangements with the Engineer in consultation with the relevant Department of SHG and with all of the owners and occupiers of the land affected. Alternative access arrangements shall be provided and these may include limiting the access closure to part of the day.

If Contractor's staff stay in accommodation in Jamestown it is likely that their trips to and from the town will be before and after the peak in traffic flows which currently occur as the Contractor's working hours will generally be between 07.00 and 18.00.

Where footpath closures are required to enable construction of the haul/access road, appropriate diversions would be provided to maintain access and safety of all pedestrians. The Contractor shall provide permanent diversions of the Post Box Walk's, footpaths and other rights of way crossing the Site during construction to maintain access to sites on PBP. Diversions must also provide access to trails which lead to the fishing grounds along the coast between Dry Gut, Gill Point and the Saddle Point, close to Prosperous Bay. Liaison with the SHG including the Director of Tourism, Environmental Co-ordinator and the St Helena Nature Conservation Group must take place in designing temporary diversions.

The Contractor will construct all footpath crossing of the haul road and site access points properly, to a standard to be agreed with the Engineer in consultation with PWSD. Vehicles shall only be allowed to cross footpaths via a properly constructed crossing.

12.4.4 Residual Impacts – Construction

Table 12.3 Residual Impact Table – Construction Phase

Description of Potential Impact	Classification of Potential Impact	Assessment of Significance Without Mitigation	Proposed Mitigation Measures	Residual Impact
Road Network (HGVs, plant and Staff Cars) - The development proposals will result in an increase in Construction Traffic	Direct Temporary Short-medium term	Moderate adverse	Manage traffic during construction, e.g. enforce 15mph speed limit in residential areas and provide footways for pedestrians in residential areas. Limit the working hours and practices of construction staff.	**Moderate adverse** The greatest impact of construction vehicles is likely to be felt by the small number of properties in Rupert's Valley and Deadwood. Jamestown could also be affected by increased trips generated by Contactor's staff.

Description of Potential Impact	Classification of Potential Impact	Assessment of Significance Without Mitigation	Proposed Mitigation Measures	Residual Impact
Temporary diversions and possible temporary closures of roads, post box walks and other footpaths	Direct Temporary Short-medium term	Moderate adverse	Provide suitable diversions to reduce disruption	**Minor adverse**

The greatest impact of construction vehicles is likely to be felt by the small number of properties in Rupert's Valley and Deadwood. Jamestown could also be affected by increased trips generated by Contactor's staff. However, the impact of the construction works would be managed as far as possible with an EMP (see Volume 5 of the ES), which would limit the working hours and practices of construction staff.

12.5 PERMANENT AND OPERATIONAL EFFECTS

12.5.1 Potential Effects

The proposed new access road would result in improved permanent access between Rupert's Valley and Deadwood/Longwood. It would also provide an additional route to and from Rupert's Valley which currently constrained by having Field Road as the sole route in and out of the valley. The access road to the airport would avoid the existing main residential area of Longwood. The road would be 14 kilometre (km) long, 6 m wide with 1 m wide paved shoulders on either side. Footways would be provided in areas where the new road passes through residential areas including Rupert's Valley and Deadwood.

There is potential for disruption to people using roads during the operation of the proposed Airport and Supporting Infrastructure scheme. This would be mainly due to increases in traffic volumes as follows:

- Increases in **traffic associated with the operation of the airport.**
- Increases in **traffic associated with the growth in the number of visitors** to the island as a result of the airport.
- Increase in **demand for parking spaces.**

Section 12.5.2 below describes these effects in more detail.

It would be necessary to permanently divert some of the existing footpaths within the network of Post Box Walks and other routes on PBP. This may result in a longer and less attractive route for walkers. Section 12.5.4 discusses the permanent diversions of footpaths in more detail.

Mitigation to reduce the permanent effects of the proposed scheme is discussed in Section 12.5.5.

12.5.2 Operational Trip Generation

12.5.2.1 Trips

Atkins has undertaken a multi-modal trip generation exercise to quantify the likely volume of daily vehicular movements and trips by public transport and on foot associated with the operation of the airport. Trip estimates have been prepared for five forecast years, namely year 1 (airport opening) and years 5, 15, 25 and 35, to reflect the anticipated increase in the number of aircraft per week from one to ten, in accordance with the air traffic forecasts in Table 12.4. Further details can be found in the Transport Statement in Appendix 2.2.

This information has been prepared by Atkins and the method for calculation is detailed in the 2004 St. Helena Access Feasibility Study. Tourism demand growth is restricted to 0% after year 25 of the start of airport operations. This is the year in which the number of tourists on any one day is projected to have grown to around 1,300 – a number regarded as representing an upper limit on the island's absorption and management capability. Capping policies are supported by the study of similar islands.

A first principles approach has been taken to the operational trip generation. Estimates have been prepared for activities related to the airport directly, as well as the cumulative effect of visiting tourists. With regards to airport activities, daily estimates have been calculated for employees (airport staff and crew), passengers (Saints, tourists and business travellers) and for other activities at the airport (including ground movements, freight flights, charter flights and business jets).

Total trip generation estimates have been prepared for five forecast years, namely year 1 (airport opening) and years 5, 15, 25 and 35, to reflect the anticipated increase in the number of aircraft per week from one to ten, in accordance with the air traffic forecasts in Table 12.4. Average and maximum estimates have been prepared for activities relating to the airport, as most ground movements, freight flights, charter flights and business jets would not occur on the same day. The average figures exclude these activities, whilst the maximum figures include them as a worst case scenario. As the total number of passengers has been based on an aircraft load of 80%, the total number of vehicular movements could be up to 25% higher if all planes are fully occupied (although this is unlikely).

The average and maximum airport trip generation figures provide a range for the likely number of vehicles that would use the access road on a daily basis. However, airport employees and passengers travelling between the airport site and Jamestown (and other destinations around the island) are likely to leave the airport access road at Fox's Garage (heading south towards Longwood Gate) and make use of the existing road network as the link between Rupert's Bay and Jamestown is currently poor quality and is not due to be upgraded as part of this project. Nevertheless, there could be up to 40 trips on the access road between the airport and Rupert's Bay if all ground movements occurred on the same day (most of these trips would be gas oil and aviation fuel deliveries). This situation could occur periodically, but the number of trips on an average day would be much lower.

With regards to the cumulative effect of visiting tourists, daily traffic estimates have been prepared based on an average stay length of one week. Cumulative tourist activity is expected to take place between tourist residences and sites of interest across the island, therefore indirectly related to the development of the airport.

The outputs of the exercise include estimates of daily operational traffic movements and trips by public transport and on foot. Total daily vehicular movements are provided in Table 12.4 below:

Table 12.4 Total Daily Vehicular Movements

	Year				
	1 (opening)	**5**	**15**	**25**	**35**
Average airport trip generation	220	220	230	450	450
Maximum airport trip generation	370	380	400	600	600
Cumulative tourist trip generation	30	110	360	690	730
Average total	250	330	590	1140	1180
Maximum total	400	490	760	1290	1330

In order to provide some context, the number of operational vehicular trips across the island (including the cumulative effect of visiting tourists) averaged across a 12 hour day could range from approximately 20-35 trips an hour in year 1, to approximately 100-115 per hour in year 35. Traffic flows would be likely to peak during the hour before the arrival or departure of an aircraft. Total daily person trips by public transport and on foot are provided in Table 12.5.

Table 12.5 Total Daily Person Trips by Bus / Coach / Walk

	Year				
	1 (opening)	**5**	**15**	**25**	**35**
Airport trip generation	110	140	160	290	290
Cumulative tourist trip generation	10	40	130	250	260
Total	120	180	290	540	550

12.5.2.2 Car Parking and Drop-Off Facilities

The airport is linked to Rupert's Bay and the existing island road network by the proposed access road, at the airport end this road becomes an airport circulation road around a central car parking area. The circulation road has been designed as a conventional one-way system for passenger drop-off and pick-up and coach parking. Short and long stay parking will be provided in the central car park. A total of 85 standard spaces and 3 disabled spaces are proposed for passengers.

It is likely that additional car parking would be required as the volume of air traffic increases. This parking could be provided off-site, perhaps at Bradleys Government Garage, with coach transfers to the airport. However, providing a limited amount of parking would be an effective demand management measure to encourage passengers to travel by public transport.

With regards to cargo facilities, a dedicated manoeuvring area has been provided for lorries to reduce congestion on the circulation road at the southern end of the terminal building.

12.5.2.3 Airside Access Roads

Airside roads are those which facilitate the movement of vehicles around the airport site for maintenance and security reasons. They are also provided to separate vehicles from pedestrians and aircraft, and consist of an access road in front of the terminal building, fire vehicle access road to the apron, perimeter security access tracks, access tracks to lighting and navigational aid installations and other infrastructure.

Airside car parking will be provided for airport employees alongside the combined building. A total of 11 standard airside spaces are proposed, although staff would also be able to park in the main landside car park.

Vehicular accesses are also provided for cargo drop off and pick up, and for the aviation fuel facility. A fuel loading bay has been provided to enable the controlled and safe re-supply of the Aviation Fuel Facility from fuel bowsers delivering from the Bulk Fuel Installation (BFI).

12.5.3 Fuel Transport Handling and Storage for the Airport

As set out above, the existing island fuel facilities will be replaced by a new combined fuel facility serving fuel requirements for the island including the Airport consisting of the BFI at Rupert's Bay and Aviation Fuel Facility (AFF) at the Airport. The Airport will be served by the BFI, which will replace the existing ground fuel facilities.

The AFF will be a smaller installation provided at the Airport for the storage and handling of Aviation Fuel (Jet A-1) for aircraft and Gas Oil for various air-side gas oil engined vehicles associated with the Airport operations and gas oil generators at the Airport.

All these products will be received from ocean-going tankers (provisionally at six monthly intervals) and transferred into specific bulk storage tanks at the BFI by ship-to-shore floating hose and pipeline. Transfer shall be boosted via a beach head pumpset. Aviation Fuel will be delivered from the BFI to the AFF by road tanker (bridger). Aviation Fuel will be transferred from the AFF to aircraft via a below ground hydrant system. The Gas Oil storage tank at the AFF will also be filled from a road tanker delivering from the BFI (such vehicle/vehicles will be similar but not the same vehicle as the road tanker dedicated to transporting Aviation Fuel).

The following road tanker movements between the BFI and the AFF are anticipated:

- **Gas Oil** – 8 trips per week likely to occur over a two-day period.
- **Aviation Fuel** – 10 trips per week likely to occur over a two-day period. This is based on two aircraft rotations per week and would increase proportionately. It is anticipated that a pipeline would be constructed over the island after year 20 of operation, thereby negating the need for road tanker deliveries for Aviation Fuel.

The total combined capacity of the two aviation fuel storage installations (BFI and AFF) will be equivalent to a seven month period of consumption, based on six civil flights and fisheries support flights each week (corresponding to aircraft types Boeing B737-800 and

conventional twin turbo-prop respectively) notwithstanding that this level of consumption is not projected to occur before at least Year 10 (2022).

12.5.4 Footpath Diversions

The proposed St Helena Airport will have a direct impact on several footpaths including the following routes:

1) **King & Queen Rocks and Signal Station Post Box Walk** – will be diverted around the northern edge of the airfield on Prosperous Bay Plain. The route would link up with the existing Prosperous Bay Beach Post Box Walk – see Figure 12.1, Volume 3.
2) **Gill Point Post Box Walk** – will be diverted around the south of the airfield – see Figure 12.1, Volume 3.
3) **Prosperous Bay Beach Post Box Walk -** will be diverted around the northern edge of the airfield – see Figure 12.1, Volume 3.
4) **Routes used by local fishermen to access the fishing grounds along the coastline between Dry Gut (including Gill Point) and the Saddle Point and Porches Gate, close to Prosperous Bay –** as described in Section 12.4.3 above**,** access to these trails will be possible using the diverted paths to the north and south of the airfield – see Figure 12.1, Volume 3.
5) **Woody Ridge to Dry Gut –** it will no longer be possible to walk down Dry Gut as far as the waterfall.
6) **Sharks Valley Post Box Walk** – no permanent effects.
7) **Boer Road and Pipe Path –** short sections of this route will be diverted around the BFI. It will be possible to walk along the access road to the BFI which rejoins the path past the BFI.
8) **Banks Battery Path –** a permanent diversion of this footpath should not be necessary.

The Landscape and Visual Impact Assessment, Chapter 10 and Appendix 10 provides details of the changes to the visual amenity which would potentially occur as a result of the above changes.

Generally, across the island there would be an increase in the use of Post Box Walks and other footpaths as the numbers of visitors to the island increases. This would cause an increase in the wear and tear of the footpaths which would require additional maintenance.

Mitigation to minimise the disruption to walkers using the Post Box Walks and other footpaths is discussed in Section 12.5.5.2.

12.5.5 Mitigation

12.5.5.1 Traffic and Parking

It is estimated that between 27-55 employees would access the airport on daily basis. A car share scheme will be operated at the airport for staff to encourage staff to car share where possible and manage demand for car parking spaces. Given the small number of employees the scheme would simply involve keeping up-to-date records of staff addresses and matching potential car sharers to maximise the efficiency of the car parking provided.

Coach transfers will be provided between the airport and Jamestown to transport passengers and crew thereby reducing the number of vehicles accessing the airport. It has been calculated that four coaches would be required to transfer passengers to Jamestown (and return) for each flight. Tourists are anticipated to form the majority of the

coach passengers, although aircraft crew, business travellers and charter flight passengers are also expected to use coach transfers.

SHG will monitor public transport provision and usage across the island once the airport is complete, particularly in relation to the accessibility of existing and future tourist sites. As part of public transport service planning, SHG will undertake a car parking study in Jamestown in light of the potential cumulative impact of visiting tourists. SHG could consider introducing demand management measures, such as controlled parking zones, to help alleviate car parking congestion.

When travelling to and from the airport, drivers will be encouraged to use the section of new access road between Fox's Garage and Bottom Woods (i.e. between CH 7100 and 9450 on Figure 2.17 in Volume 3 of the ES). Measures to prevent traffic from accessing the airport via the existing road network through the main residential area in Longwood will be put in place.

12.5.5.2 Footpaths

Any diversion of a Post Box Walk or other footpath will pay particular attention to the safety of pedestrians. Liaison with the SHG including the Director of Tourism, Environmental Co-ordinator and the St Helena Nature Conservation Group will take place in designing permanent diversions. The detailed design of a footpath around and through the proposed development must incorporate appropriate mitigation measures that take into account changes to the surrounding natural environment, amenity and the safety of walkers.

In order to manage the possible effects of an increased number of walkers using Post Box Walks and other footpaths in all areas of the island, SHG will implement a scheme to manage the use and maintenance of footpaths. The scheme could include a system for guided walks, restricting numbers of visitors to particularly sensitive areas and a mechanism for funding and implementing maintenance of routes.

12.5.6 Residual Effects – Operation/Permanent

Traffic count data from 2006 provided by SHG for the two main roads leading into Jamestown shows the following patterns. Side Path Road serves the eastern side of the island and is the main road leading into Jamestown from Rupert's Bay, Longwood and Level Wood. A two-way flow of 538 light vehicles was observed over a 12 hour period (6am – 6pm) on a week day, equivalent to 45 vehicles per hour on average. Ladder Hill Road serves the western side of the island and a two way flow of 1,210 light vehicles was observed over a similar 12 hour period, equivalent to 101 vehicles per hour.

The average total daily trips (average airport trip generation plus cumulative tourist trip generation) have been extracted from Table 12.4 and compared with the existing traffic flow into Jamestown via Ladder Hill Road to understand the likely increase in traffic on the island relative to the busiest main road into Jamestown. It should be noted that although these trips are likely to be concentrated in Jamestown, some would be distributed across the island and are unlikely to be concentrated on a single road only.

Table 12.6 Comparison of Existing and Future Daily Vehicle Movements

	Year				
	1 (opening)	**5**	**15**	**25**	**35**
Average Total	250	330	590	1,140	1,180
Percentage of Busiest Traffic Count	20.7%	27.3%	48.8%	94.2%	97.5%

The traffic flows in Table 12.6 indicate that the average total daily trips generated by the airport (including cumulative tourist trips) would represent between 20-100% of the existing two-way flow on Ladder Hill Road across a 12 hour period. Given the air traffic forecasts for the airport and the anticipated level of development across the island, it is expected that the level of travel by car / taxi would increase significantly. It is important to reiterate that although these trips are likely to be concentrated in Jamestown, some would be distributed across the island and are unlikely to be concentrated on a single road only. The comparison above is simply to provide context in terms of how the traffic generated by the airport compares with one of the busiest roads on the island.

The speed limit on St. Helena is 30 mph (48 kph). Based on the UK Highways Agency TA 79/99 Traffic Capacity of Urban Roads section of the Design Manual for Roads and Bridges, it is assumed that the capacity of a typical road in St. Helena would be 750 vehicles per hour one-way or 1,500 vehicles per hour two-way. This can be verified using a first principles approach as follows (Atkins, 2007):

- The average speed on the island is assumed to be 15mph (24 Kilometre per hour (km/h)), which is half the stated speed limit;
- A typical gap of two seconds is common between vehicles on free-flowing roads, although a gap of four seconds is assumed for St. Helena due to the steep and winding nature of the roads;
- This would provide a maximum vehicle density of 30.8 vehicles per kilometre and a maximum vehicle flow of 740 vehicles per hour one-way or 1,480 two-way.

In order to provide some context, the volume of trips related to the airport (including cumulative tourist trips) averaged across a 12 hour period could represent less than 10% of the two-way capacity of a typical road in 2045. In remote parts of the island these trips are not predicted to present a problem, although the impact could be of greater significance in more congested parts of the island, such as Jamestown. Traffic flows are predicted to peak during the hour before the arrival or departure of an aircraft. During these times the volume of trips related to the airport could represent up to 20% of the two-way capacity of a typical road; therefore visitors will be encouraged to access the airport by coach.

Table 12.5 provides the total daily person trips by bus / coach / walk. Since the minibus services that connect all outside communities with Jamestown are currently subsidised, any additional patronage by visitors to St. Helena would increase revenue.

A summary of the effects during construction and following the opening of the airport is provided in Table 12.7 below.

Table 12.7 Residual Impact Table – Permanent/Operation Phase

Description of Potential Impact	Classification of Potential Impact	Assessment of Significance Without Mitigation	Proposed Mitigation Measures	Residual Impact
Road Network (Staff Cars, fuel deliveries and increased traffic resulting from growth in tourism) - The development proposals will result in an increase in traffic congestion and demand for car parking in areas such as Jamestown during operation of the airport.	Direct Permanent Long term	Major adverse	Implement car share scheme for airport staff, provide coach transfers for staff and passengers. SHG will undertake a car parking study in Jamestown in light of the potential cumulative impact of visiting tourists. Consideration will be given to introducing demand management measures, such as controlled parking zones, to help alleviate car parking congestion	**Moderate adverse**
Rupert's Valley – new access road from the valley.	Direct Permanent Long term	Moderate beneficial	None required Although it is proposed to provide footways alongside sections of the road passing through residential and commercial areas	**Moderate beneficial**
Deadwood – through traffic passing the residential properties, albeit at low traffic flows.	Direct Permanent Long term	Major adverse	Provide footways on sections of the road passing through residential and commercial areas.	**Moderate to minor adverse**
Longwood/Bottom Woods – through traffic passing the residential properties, albeit at low traffic flows.	Direct Permanent Long term	Major adverse	Provide footways on sections of the road passing through residential and commercial areas.	**Moderate to minor adverse**
Temporary diversions and possible temporary closures of roads, post box walks and other footpaths.	Direct Temporary	Moderate adverse	Provide suitable diversions to reduce disruption	**Minor adverse**

Description of Potential Impact	Classification of Potential Impact	Assessment of Significance Without Mitigation	Proposed Mitigation Measures	Residual Impact
New direct road from Rupert's Bay to Deadwood/Longwood.	Direct Permanent Long term	Moderate beneficial – on the whole the effects would be beneficial, particularly in provision of improved access to and from Rupert's Valley and Bay. There would however, be adverse impacts where low volumes of through traffic would be passing properties in Deadwood.	None required	**Moderate beneficial**
Diversions of Post Box Walks and other footpaths on PBP.	Direct Permanent Long term	Moderate adverse – diverted footpaths to be provided around the northern and southern edge of the airfield resulting in slightly longer walks over different terrain compared to the existing situation.	No further mitigation possible	**Moderate adverse**
Increase in use of footpaths as the numbers of visitors to the island increases.	Direct Permanent Long term	Moderate adverse – footpaths could suffer increased wear and tear.	Implementation of a scheme to manage the use and maintenance of footpaths.	**Minor adverse**