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St. Helena Government, Department for International Development

St Helena Access

Transport Statement

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ATKINS

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1 INTRODUCTION

BACKGROUND

1.1 St. Helena, an Overseas Territory of the United Kingdom, lies in the tropics in the South Atlantic Ocean. It is home to over 14,000 people, known as “Saints”, only some 4,000 of whom currently reside permanently on the island. The island has no airfield and the only scheduled form of access for passengers and cargo to St. Helena is via the Royal Mail Ship (RMS) St. Helena.

1.2 RMS St. Helena generally makes two round voyages from the UK and South Africa per year along with shuttle sailings between St. Helena, Cape Town, Walvis Bay and Ascension Island. Voyages currently take a minimum of two / three days from Ascension Island, four days from Walvis Bay, five days direct from Cape Town and seven days via Walvis Bay. Travel to and from the island is therefore costly in both time and expense.

1.3 The St. Helena economy is small, declining and heavily reliant on UK aid. The 1998 census enumerated a resident population of 4,971 on the island - a considerable reduction from the comparable figure of 5,500 enumerated by the previous census held in 1987. Information supplied by the Department of Development and Economic Planning shows that the population fell to around 4,100 in the five years following the 1998 Census, so that the population of St. Helena declined by approximately 1,400 people, or 25%, between 1987 and 2003.

1.4 Previous studies have identified the development of the tourist industry as the most likely means of stemming the decline and stimulating new development. The current method of access has failed to generate tourism on a scale that could reverse the trends. The Atkins’ 2004 St. Helena Access Feasibility Study concluded and recommended that the most cost-effective option for developing the tourist industry was to build an airport with a runway supporting the safe operation of the Boeing 737-800 or equivalent Airbus design. This is known as the “Long Runway” access option.

PURPOSE OF THIS DOCUMENT

1.5 This Transport Statement has been prepared in connection with the drafting of the Application for Development Permission, on behalf of St. Helena Government (SHG) and the Department for International Development (DfID).

DOCUMENT STRUCTURE

1.6 The document is set out in the following sections. Section 2 considers the policy framework for the airport. Section 3 describes the existing transport conditions, whilst Section 4 provides details of the airport development and the likely transport impacts. Section 5 concludes with a summary of the proposed transport strategy.

2 POLICY FRAMEWORK

2.1 The St. Helena Land Development Control Plan (LDCP) dated January 2007 sets out SHG's Land Use Planning Policies for St. Helena. Its purpose is to act as a guide to residents and prospective developers as to what type of development will be encouraged or acceptable and where such development can be located. It sets out objective criteria to assist the Land Planning and Development Agency (henceforth referred to as the Agency) and the Planning and Development Appeals Board to make land use decisions in the interests of St. Helena.

2.2 The LDCP identifies the achievement of improved access as one of the island's principal strategic objectives.

NEW ROADS

2.3 Although there are no firm proposals for new roads set out in the LCDP, reference is made to three development scenarios that may require new roads or improvements to existing ones, which are outlined below:

- Significant new developments, including the possible development of large housing sites[1];
- A new airport; and
- Significant tourist attractions.

2.4 The requirement for suitable associated access roads is covered by the transport policies in the LDCP as follows:

- **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 should be accompanied by traffic impact statements illustrating the likely effect of the proposed development on the road network; and
- **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 (parking) standards.

2.5 In addition, Policy A.4 states that proposals for airport construction must be accompanied by a comprehensive plan illustrating vehicle access and service infrastructure provision amongst other things. Similarly, Policy A.5 states that in relation to the airport, details of all off-site infrastructure provision for the airport must be agreed by the Agency before development is commenced.

[1] Nine areas, known as Comprehensive Development Areas (CDAs), have been identified as suitable for the development of approximately 321 houses, including one area that would not be developed unless, or until, an airport has been procured.

2.6 Accordingly, in Section 4 of this Transport Statement, Figure 4.1 provides details of the proposed airport access road and Figure 4.2 provides details of the general arrangement of the airfield.

PUBLIC TRANSPORT

2.7 The LDCP states that public transport has been identified as an important factor to be taken into consideration for new developments for environmental reasons. Contributions from these developments have been identified as a possible means of funding for such services.

2.8 Section 4 of this Transport Statement explains that coach transfers should be provided between the airport and Jamestown to transport passengers and crew thereby reducing the number of vehicles accessing the airport.

PARKING

2.9 Parking standards for all new developments are covered by the Agency's Parking Standards. As airports are not standard developments parking standards are not available for this land use. Parking provision for such developments would therefore need to be decided on an individual basis.

2.10 The LDCP states that the precise number of spaces provided may be open to negotiation if the development is close to a centre of population or where parking facilities are shared with other land uses. It also states that standard car parking spaces should be 4.80m x 2.40m (minimum) and access aisles shall be 6.00m in width (minimum). At buildings open to the public, one larger space of 4.80m x 3.60m shall be provided for every 20 customers / users or part of that number, based on the capacity of the building or facility. These spaces are for wheelchair users and will need to be provided on level ground.

2.11 Figure 4.2 in Section 4 of this Transport Statement, provides details of the general arrangement of the airfield and shows the number of parking spaces proposed. A total of 85 standard spaces and 3 disabled spaces are proposed landside for passengers; a further 11 standard spaces are proposed airside for staff. Section 4 explains that a car share scheme should be operated at the airport for staff to encourage staff to car share where possible and manage demand for car parking spaces.

3 EXISTING CONDITIONS

EXISTING SITE INFORMATION

3.1 Prosperous Bay Plain, situated on the east side of the island, has been identified as the most feasible site for an airport. A map showing the proposed location of the airport is included in the LDCP and is reproduced in Figure 3.1.

3.2 Prosperous Bay Plain is a relatively level area of arid land. It comprises a saucer shaped depression, known as the "central basin" (the bulk of which lies to the west of the proposed airport development, surrounded by a higher-level plateau. This area is used for access to fishing and coastal walks. The central basin has been recognised as having special environmental interest and is home to around 20 animal species found nowhere else in the world. The proposed site at Prosperous Bay Plain will encroach on a site of ecological significance, more details of which are provided in the Environmental Statement.

3.3 There are currently no developments, roads or transport links on the site of the proposed airport, with the nearest road terminating some 1.5km from the proposed runway at Government Garage, approximately 3km east of Longwood. It will therefore be necessary to construct a haul route for construction of the airport and an airport access road once operational. Further details on the haul route and access road are provided in Section 4 of this Transport Statement.

BASELINE TRANSPORT DATA AND INFRASTRUCTURE

Roads

3.4 There are approximately 100 km of roads on St. Helena, much of which is single track with passing places. The following road categories and definitions are identified in the LDCP:

- **Main roads** – those serving the main centres of population, the main industrial and commercial areas, and the ring road connecting the main areas of the Island;
- **Secondary roads** – those serving the various communities distributed around the island as well as areas of industry, commerce and agriculture;
- **Minor roads** – all other surfaced roads maintained by the Government; and
- **Unclassified** – all non-Government roads, shared access roads, dirt tracks, etc.

3.5 The roads on St. Helena are often characterised by steep slopes and sharp bends. A speed limit of 30mph is common across the island, although this speed may not be reached due to the nature of the roads.

3.6 There are no proposals for new roads on St. Helena although reference is made in Section 2 of this Transport Statement to possible new developments, which will require construction of new access roads. The Government's Public Works and Services Department currently concentrates on the maintenance of the existing road network with minor improvements at bends and elsewhere.

3.7 There is very limited traffic data available in St. Helena. Reference is made to traffic volumes on the main roads into Jamestown in Section 4 of this Transport Statement as a means for comparison to the operational trip generation of the airport.

3.8 Information on vehicle licensing from the SHG 2005 Statistical Yearbook shows the following breakdown of vehicles:

Table 3.1 – Percentages of different types of licensed vehicle for Quarter 4, 2005

	Motor Cars	Vans & Pickups	Buses	Lorries	Motorcycles & Scooters	Other
Number	1,192	386	76	73	118	71
Percentage	62.2%	20.1%	4%	3.8%	6.2%	3.7%

3.9 The data in Table 3.1 indicates that motor cars are the most common form of licensed vehicle in St. Helena. There were 1,610 households in St. Helena at the time of the 1998 Census. According to books from the Police Department, there were 1,250 licensed motor cars at the end of 1998, an average motor car ownership figure of 0.78 motor cars per household. With an average number of persons per household at 3.0 in 1998 and the relatively high vehicle operating costs for Saints, car sharing is common place in St. Helena. This reflects the sense of community that exists on the island.

Accident Data

3.10 A summary of traffic accidents is available in the 2005 Statistical Yearbook. Between 2003-2005 the total number of reported traffic accidents was 309. The majority of these accidents (83%) were vehicle damage only, with a further 9% having no damage at all. Only 8% of accidents involved minor injuries and there was only one single accident that involved serious injuries.

Public Transport

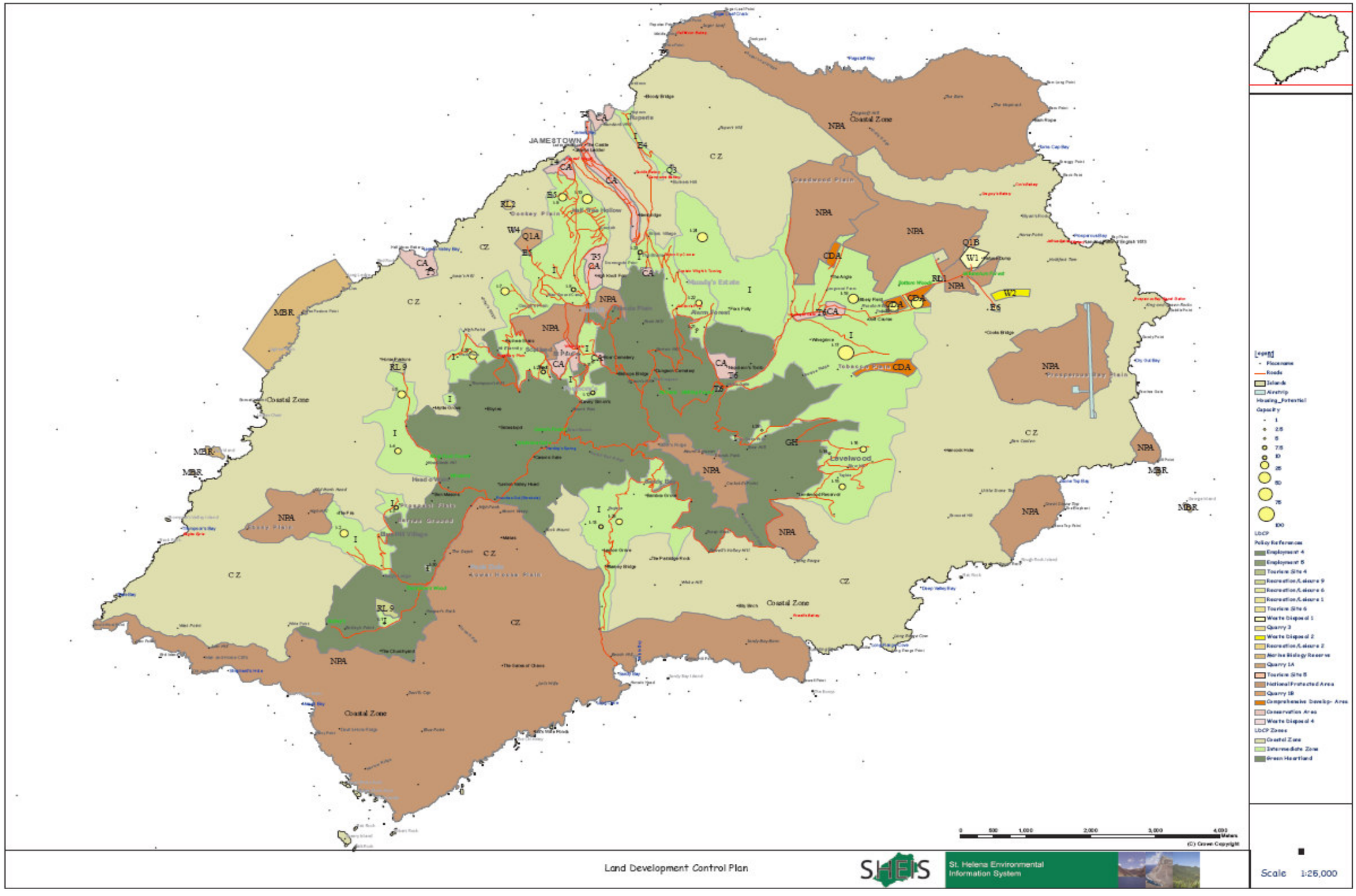
3.11 There is a network of subsidised minibus services that connects all the outside communities with Jamestown. However, the future of this service depends on continued subsidisation. Before the introduction of minibus services, taxis were the only form of public transport, while they are still considered the most flexible option.

Car Parking

3.12 According to the LDCP there has been a rapid increase in car ownership on the island with over 3,000 vehicles now registered. However, Jamestown is the only location where there is a parking problem, which is acute on main shopping days and when the RMS St. Helena arrives and departs. The historic centre of Jamestown acts as its main car park. While it is recognised that vehicles are a necessity for transporting goods and people to the shops, businesses and tourist attractions, the presence of so many vehicles in Grand Parade (Jamestown's historic square) and Main Street is considered to undermine the quality of these spaces. The Seafront, close to the centre, is often used as an overflow car park, but spray from waves frequently drenches the area and is a deterrent to parking there.

3.13 The impact of car parking on Jamestown gives added importance to the recommendation in Section 4 of this Transport Statement, that coach transfers are provided between the airport and Jamestown to transport passengers and crew.

Figure 3.1 – Land Development and Control Plan – Airport Location Map



4 PROPOSED DEVELOPMENT

4.1 This section of the Transport Statement provides details of the airport development, the likely transport impacts and the proposed transport strategy.

Infrastructure

4.2 The infrastructure associated with the development will comprise the following main elements:

- A temporary jetty at Rupert's Bay, which would be removed and replaced by a permanent wharf upon completion of the airport;
- A new Bulk Fuel Installation and associated pipeline to Rupert's Bay (the existing Bulk Fuel Farm at Rupert's Bay will be decommissioned);
- A haul road between Rupert's Bay and the airport, which will be upgraded to a permanent access road towards the end of the airport construction period;
- A quarry site situated in Rupert's Valley near to the haul road; and
- A new airport, consisting of a permanent runway, terminal building, combined building, future fisheries building, aviation fuel facility and extensive support facilities including an off-shore rescue service to be based at Jamestown and a permanent water supply system. A temporary private airstrip may be required during construction until the permanent runway is constructed. A temporary seawater pumping and delivery pipeline may also be required near the airport.

4.3 The methodology, phasing and support facilities such as offices, storage, welfare, along with the type and size of equipment required to construct the development will ultimately depend upon the successful Contractors approach and methodology and as such these details cannot be finalised at this stage. However, an assessment of the likely construction activities and sequencing of works has been made based on the designs prepared to date. This assessment has been used as the base reference for the working methodology and programme quoted in this document and is the basis for the Application for Development Permission.

4.4 It is likely that the Contractors temporary works in Rupert's Bay will be constructed first, followed by the opening of a temporary quarry in Rupert's Valley to enable construction of the wharf and construction of the haul road. Simultaneous enabling works on the airport site will likely follow depending upon accessibility and the type of equipment the Contractor chooses to employ. Once the haul road link is complete the project will progress much more quickly as raw materials and plant can be more rapidly transported to the airport site.

Rupert's Bay

4.5 The early stages of constructing the airport will require the delivery of heavy plant and equipment to St. Helena. The existing jetty at Jamestown is not suitable to support the construction of the airport, with access limited by an historic arch at the entrance to Jamestown and narrow rising road rising out of James valley. A temporary jetty will be constructed in Rupert's Bay to facilitate offloading of plant and materials. Road access to

the temporary jetty could be made by extending the existing road from Shears Quay, part of which may be on reclaimed land.

4.6 The temporary jetty and its access road will be a temporary structure and removed upon completion of the airport. It is possible that material from the temporary wharf will be used in the construction of the permanent wharf.

4.7 The permanent wharf will supersede Jamestown as the commercial port of entry for St. Helena (excluding foot passengers). An access road to connect the quay to the existing road in Rupert's Bay and the airport access road will be provided that incorporates a turning head near the wharf appropriate for the types of vehicles expected to be used for wharf cargo operations. The section of road on the quay shall be a minimum paved width of 8m wide.

Bulk Fuel Installation

4.8 The existing Bulk Fuel Farm at Rupert's Bay is unable to handle aviation fuel (Jet A1) required for the operation of the airport and therefore the development of the airport requires a new facility. Furthermore, there are a number of Health and Safety issues associated with the existing facility and its capacity requires regular supplies by ship. Supplying St. Helena requires a special visit by tankers, which with larger on-island storage capacity would be more cost effective, particularly as the island's demand increases through development.

4.9 The existing Bulk Fuel Farm at Rupert's Bay will be decommissioned following installation for the new Bulk Fuel Installation. The new facility is to be located in Rupert's Valley beyond the power station and quarantine station building and will be accessed from a road connecting directly to the airport haul / access road.

Haul / Access Road

4.10 In order to enable the construction of the airport, a haul road is required to connect Rupert's Bay and the airport site. The haul road, once no longer needed for construction traffic will be upgraded to the permanent access road. It is likely that the access road will be classified as a main road in accordance with the LDCP categories and definitions.

4.11 The haul road will begin at the Rupert's Bay wharf landing site and progress up the valley along existing roads for 650m towards the existing power station. From the power station the road will continue along Rupert's Valley, before climbing to Rupert's Hill and traversing along Banks Ridge. The road will then follow the western edge of Deadwood Plain to Longwood, where it will use a short section of existing road before bypassing the settlement to the north. To the east of Longwood, the road will use the existing road to Government Garage. A contractor's compound could be located at Government Garage or alternatively, closer to the main works on Prosperous Bay Plain. The existing road will be extended south-eastwards to the airport site on Prosperous Bay Plain. The route is shown in Figure 4.1.

4.12 The haul road will link the Wharf and Bulk Fuel Installation at Rupert's Bay, the quarry sites in Rupert's Valley, the contractor's compound at Government Garage and the airport site.

4.13 Where the haul road will use the alignment established by existing roads, these roads will be upgraded for the haul route traffic and then adopted as part of the access road upon final completion. Where existing roads join the access road, the junction form will be priority junctions with appropriate road markings and signage.

4.14 The 14km long access road will generally be designed as 6m wide with 1m wide paved shoulders provided each side. The road will be subject to a 30 mph speed limit (as per all roads on St. Helena), with a maximum grade of 14% (1:7).

4.15 Footways shall be provided along the airport access road where the road passes in front of residential and commercial property such as in Rupert's Bay and Deadwood to facilitate safe access for pedestrians. Where footpath and road closures are required to facilitate construction, appropriate diversions will be provided to maintain access and safety of all transport users.

Quarry

4.16 There are currently two options for the location of the quarry and further assessment will enable the preferred location to be selected. The quarry will enable construction of the temporary jetty and the haul road, in advance of the construction of the airport. The quarry will be accessed from the haul / access road in Rupert's Valley in the vicinity of the Bulk Fuel Installation.

Airport

4.17 Construction of the airport on Prosperous Bay Plain will involve a substantial amount of earthworks to achieve a cut to fill balance within the airport site. Construction of the airport will involve provision of a runway, apron and taxiway, airside facilities (combined building, storage compounds and generators, Aviation Fuel Facility, fire training rig and airside access roads), landside facilities (terminal building and car parking and drop-off facilities), aircraft navigational aids and airfield lighting, security fencing, surface water storage ponds and drainage, sewage treatment plant and foul water drainage.

4.18 With regards to the runway, the development will comprise a strip of 2,250m, including a concrete runway 1,950m long and safety areas, surrounded by an area of levelled and graded ground necessary to the meet the regulatory safety requirements. The passenger terminal will accommodate up to 162 passengers on any one flight.

4.19 Figure 4.2 provides details of the general arrangement of the airfield.

4.20 **Airside Access Roads**: Initial vehicle access to the airport airside is controlled through a Vehicle Check Point (VCP) located off the southern point of the airside circulation road.

4.21 Airside roads will 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 / runway, perimeter security access tracks, access tracks to lighting and navigational aid installations and other infrastructure.

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

4.23 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.

4.24 **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 for registered taxis 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 landside for passengers.

4.25 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.

4.26 **Proposed Flights**: On the year of opening (year 1) the air service will start with one return flight (one 'rotation') per week. Based on the use of the Boeing B737-800 or similar aircraft, this will rise to two rotations per week by about year five, and up to ten rotations per week by about year 30 when the number of visitors will stabilised at around 58,000 per annum. Air traffic forecasts for the airport are provided in

Table 4.1 below.

Table 4.1 – Air Traffic Forecasts

Year	Saints	Visitors	Total	Aircraft per week
1 (opening)	**5530**	**1493**	**7023**	**1**
2	5479	1717	7196	1
3	5590	2490	8080	1
4	5807	3984	9791	1
5	**6088**	**6375**	**12463**	**2**
6	6482	7331	13813	2
7	7192	8431	15623	2
8	7374	9695	17069	2
	7727	11149	18876	2
10	8123	12822	20945	3
11	8583	14745	23328	3
12	9092	16957	26049	3
13	9664	19500	29164	4
14	10257	22426	32683	4
15	**10981**	**25789**	**36770**	**5**
20	15208	41782	56990	7
25	**20189**	**58601**	**78790**	**9**
30	22200	58601	80801	10
35	**23983**	**58601**	**82584**	**10**

4.27 The air service is most likely to be provided initially through one gateway airport on the African mainland and as the number of passengers expands, the number of gateways could be increased. The originating airports for schedule and charter traffic are, in the longer term likely to be: Cape Town, South Africa; Johannesburg, South Africa; Walvis Bay, Namibia; Windhoek, Namibia: Wideawake Airfield, Ascension Island; London Stansted; and London Gatwick.

Construction Trip Generation

4.28 Materials for construction will either be won from site or 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.

4.29 Daily construction traffic estimates have been calculated in terms of 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 prepared by Atkins. 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 will 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 will be self-contained, although vehicles leaving the site have been considered in the analysis.

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

Jamestown

4.31 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.

4.32 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.

4.33 Personnel / visitors travelling between the airport site and Jamestown are likely to leave the haul road west of Longwood Farm (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.

4.34 Appropriate signing or other traffic control measures should be provided to ensure that site personnel / visitors leave the haul road west of Longwood Farm and avoid travelling through Longwood itself.

Rupert's Bay

4.35 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.

4.36 These trips are fuel bowsers, flat beds, low beds, lorries and tippers moving between Rupert's Bay and the airport site.

4.37 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.

4.38 These trips are dump trucks bringing material for the construction of the jetty from the quarry.

Haul Road

4.39 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.

4.40 These trips are mainly fuel bowser movements, as well as dump trucks moving material around that cannot be re-used on site.

Airport Accommodation Facility

4.41 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.

4.42 These trips are site personnel moving between the camp accommodation and the airport site in either light vehicles or crew buses.

4.43 During periods of the construction programme the contractor may choose to work two shifts per day on critical elements of the earthworks. With probable 24 hour working and heavy excavation works (including blasting) operations on the airport site, it is likely that the expatriate camp will be located at Government Garage or closer to the airport site several kilometres further along the haul road. The advance party is likely to use accommodation in and around Jamestown until the camp at Government Garage (or closer to the airport site) is established.

Total Trips

4.44 The number of daily construction traffic trips will vary throughout the construction programme. As the construction of the haul road and temporary jetty at Rupert's Bay will take place before the construction of the airport, the number of trips on the haul road and the existing road network during these construction periods are shown diagrammatically in Figure 4.3 and Figure 4.4. The volume of daily trips related to the construction of the haul road and temporary jetty is shown in Figure 4.3 (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 Figure 4.4.

4.45 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 will equal approximately 8-13 and 3-8 vehicular trips per hour respectively, averaged across a 10 hour working day. Given that this construction activity will be focused on different sections of the haul road and that a proportion of these trips will be personnel / visitors using the existing road network, this level of construction vehicle activity is considered to be acceptable. The greatest impact of construction vehicles is likely to be felt by the small number of properties in Rupert's Valley. However, the impact of the

construction works will be managed as far as possible with a Code of Construction Practice, which will limit the working hours and practices of construction staff.

Figure 4.3 – Daily Construction Traffic Trips During Construction of Haul Road and Temporary Jetty

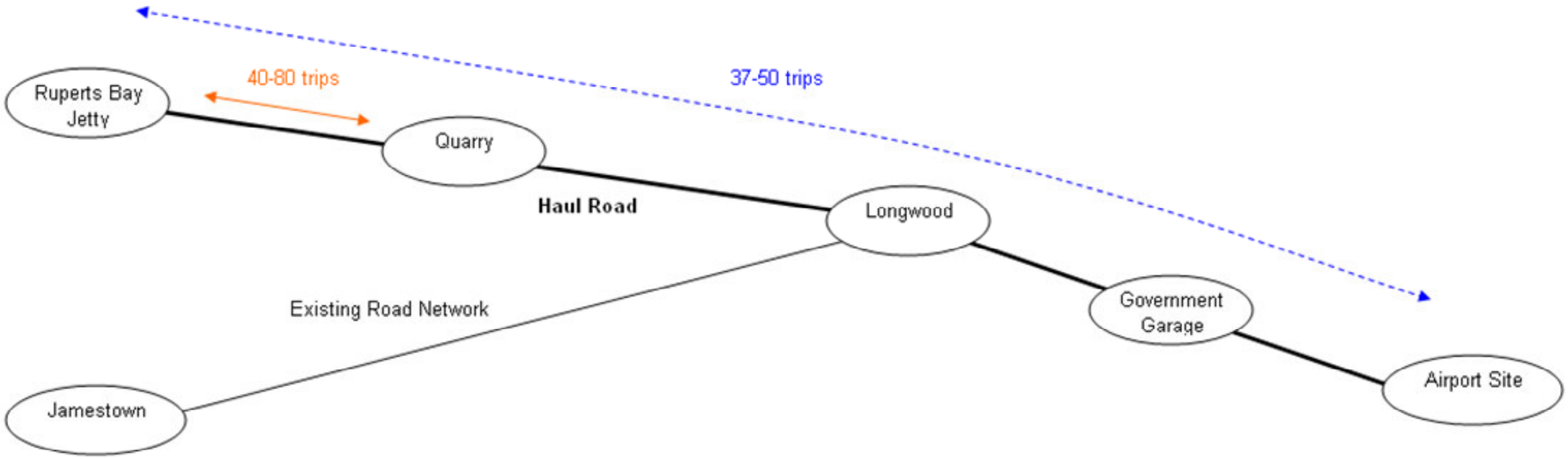
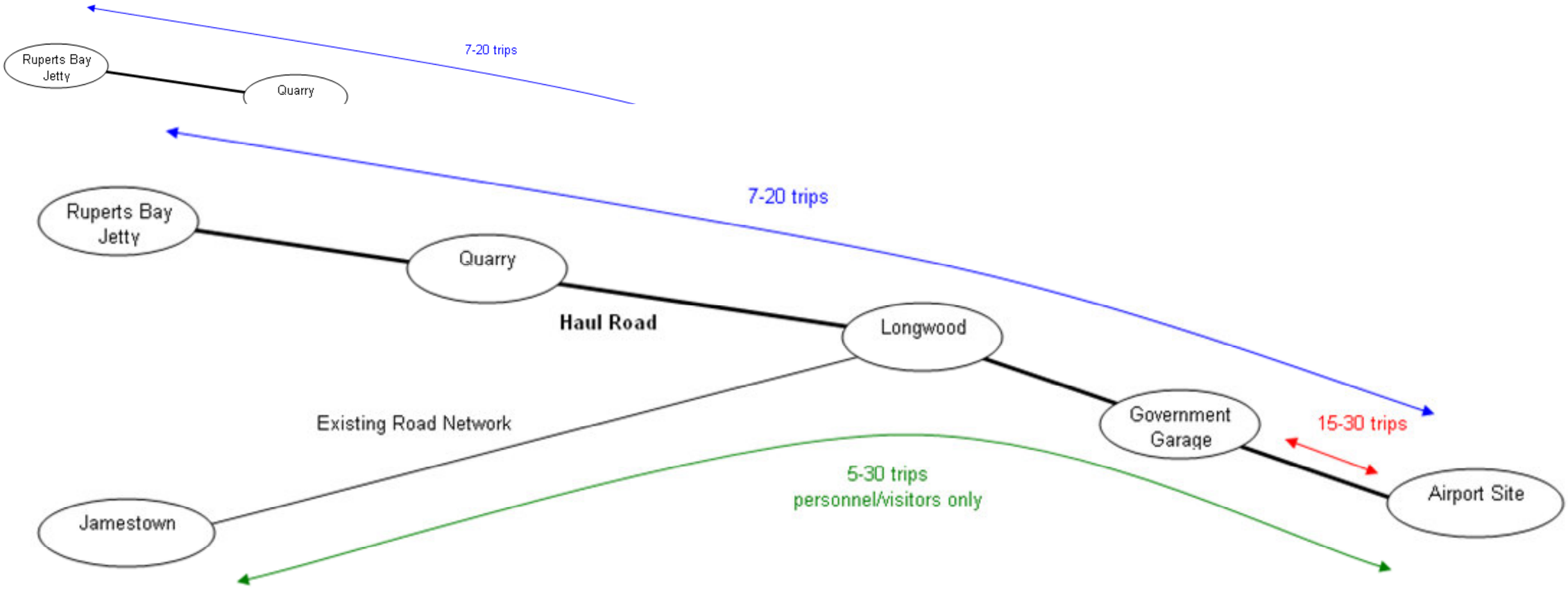


Figure 4.4 – Daily Construction Traffic Trips During Construction of Airport Once Haul Road is Complete



Operational Trip Generation

4.46 A multi-modal trip generation exercise has been undertaken 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 4.1.

4.47 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.

4.48 This section describes the method adopted for the operational trip generation exercise and discusses the outputs in terms of likely transport impacts.

Approach and Assumptions

4.49 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). The main assumptions for each group / activity are provided below.

Employees

4.50 **Airport Staff**: It is estimated that a range of between 27 and 55 employees will access the airport on a daily basis when there are flights. The lower range is based on a minimum number of staff that will be required to operate the airport, whilst the upper range makes provision for additional staff including monthly management meetings and other weekly visits / inspections. The lower range has been used for years 1, 5 and 15 that are anticipated to have one aircraft rotation per day, whilst the upper range has been used for years 25 and 35 that are anticipated to have two aircraft rotations per day.

4.51 It has been assumed that all airport staff will access the airport by car or taxi with average vehicle occupancy of 2.5 persons. A vehicle occupancy range of between 2-3 persons has been adopted to reflect the sense of community that exists on the island, the car ownership level and the relatively high vehicle operating costs for Saints. A| car share scheme should 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 will simply involve keeping up-to-date records of staff addresses and matching potential car sharers to maximise the efficiency of the car parking provided.

4.52 **Crew**: A typical aircraft crew of 12 persons is anticipated assuming the air service operates from UK with en route stops at Ascension Island - St. Helena - Cape Town (then return). It has been assumed that the majority of the crew will transfer to Jamestown by coach, whilst the aircraft engineer will follow later by taxi.

Passengers

4.53 The number of passengers has been based on the number of aircraft per week, ranging from one to ten, which equates to 1-2 aircraft per day. The number of passengers per flight

has been based on an average loading of 80% for a Boeing 737 aircraft with capacity for 162 passengers.

4.54 **Saints**: The Director of Tourism in St. Helena has estimated that 85% of visitors to the island travel by car / taxi and 15% travel by other modes including bus / walk. As the mode share for car / taxi is high, it has been used as a proxy for travel by Saints. Average vehicle occupancy of 2.0 has been assumed to reflect the sense of community that exists on the island, the car ownership level and the relatively high vehicle operating costs for Saints. Lower vehicle occupancy has been used compared to airport staff as regular journeys to work could be effectively planned with other employees. However, the volume of one-way vehicular trips for Saints has been increased by 50% to account for meeters and greeters by friends and family at the airport.

4.55 **Tourists**: It has been assumed that 50% of tourists will transfer from the airport to Jamestown by coach, with the remainder leaving the airport by car / taxi. It has been calculated that four coaches will 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.

4.56 SHG estimates that 25% of visitors are content to stay in Jamestown for the duration of their stay. It has therefore been assumed that 50% of coach riders will remain in Jamestown (this equates to 25% of total visitors). For those travelling onwards from Jamestown, 85% are expected to travel by car / taxi in accordance with the estimate by the Director of Tourism. The remainder are expected to travel by bus / walk. It is expected that some tourists will travel alone, although most tourists will travel in groups of two or more. Therefore, average vehicle occupancy of 2.0 has been assumed. One-way vehicular trips have been doubled to account for hire car delivery as well as meeters and greeters.

4.57 **Business Travellers**: It has been assumed that 50% of business travellers will travel by car / taxi and the remainder will travel by coach. It is expected that most business travellers will travel to Jamestown as this is the main urban centre on the island. Average vehicle occupancy of 1.0 has been assumed to reflect the expectation that most business travellers will travel alone or in small groups. However, one-way vehicular trips have been doubled to account for hire car delivery and meeters and greeters.

Other Activities

4.58 **Ground Movements**: These include sewage tankers, gas oil fuel bowsers, aviation fuel bowsers and traffic movements related to remote site inspection and maintenance.

4.59 **Freight**: Most air cargo will be carried in the hold of the scheduled aircraft. It is assumed that one 4.6 tonne Luton panel van (with a payload of 3,500kg) will be required to transport the cargo for each flight. In addition, between one and three dedicated cargo flights are expected to arrive per year. It is assumed that a series of 4.6 tonne vans will be required to transport the cargo based on a maximum payload of 20 tonnes (20,000kg). It would be desirable for these flights to arrive at different times from other scheduled aircraft.

4.60 **Charter Flights**: It is expected that up to two charter flights per week will arrive at the airport. Passenger figures have been based on 80% loading for a Boeing 737 with capacity

for 162 passengers. It has been assumed that 85% will travel by car / taxi in accordance with the Director of Tourism estimate, with the remainder expected to travel by coach. Average vehicle occupancy of 2.0 has been assumed in accordance with Saints and tourists.

4.61 **Business Jets**: Between one and three business jets per month are expected to arrive at the airport. It is anticipated that the maximum number of passengers will be 19, but it is more likely that the average number will be 10-14 per aircraft. It has been assumed that all business jet passengers will travel by car / taxi with average vehicle occupancy of 2.0.

4.62 For the purposes of this assessment, it has been assumed that the volume of trips generated by the freight, charter flight and business jet elements are the same across all years assessed and do not increase in the future. However, the ground movements are expected to increase to year 20, beyond which they are expected to fall coinciding with the opening of a fuel pipeline to the airport.

Total Trip Generation

4.63 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 4.1. Average and maximum estimates have been prepared for activities relating to the airport, as most ground movements, freight flights, charter flights and business jets will 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).

4.64 The average and maximum airport trip generation figures provide a range for the likely number of vehicles that will 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 west of Longwood Farm (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 will be gas oil and aviation fuel deliveries). This situation could occur periodically, but the number of trips on an average day will be much lower. More details about trip distribution are provided later in this section.

4.65 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 following assumptions have been made for the calculation of cumulative tourist numbers:

- Average daily trips by tourists assumed to be two per day (origin to destination then return);
- 85% assumed to travel by car / taxi (worst case as some might choose to remain in Jamestown for the duration of their stay);
- 15% assumed to travel by bus / coach / walk; and
- Average vehicle occupancy of 2.0.

4.66 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 4.2 below:

Table 4.2 – 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 value	400	490	760	1290	1330

4.67 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 will be likely to peak during the hour before the arrival or departure of an aircraft.

4.68 Total daily person trips by public transport and on foot are provided in Table 4.3 overleaf.

Table 4.3 – 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

Trip Distribution

4.69 Following completion of the airport, the haul road will be upgraded to form the permanent access road to the airport. However, the section of road between Rupert's Bay and Jamestown will not be upgraded as part of this project and it is therefore anticipated that traffic will be discouraged from travelling to Jamestown via Rupert's Bay due to the nature of the road. (An improved link between Jamestown and Rupert's Bay is currently being considered under a separate Infrastructure Plan.) Hence, for the purposes of this assessment, it is assumed that all operational traffic will leave the airport access road west of Longwood Farm (heading south towards Longwood Gate) and make use of the existing road network. However, there will be up to 40 daily trips on the access road between the airport and Rupert's Bay for gas oil and aviation fuel deliveries in particular.

4.70 Further consideration about the origins and destinations of airport staff / visitors is given below to provide additional context in terms of the likely distribution of operational trips across the island.

Staff

4.71 The population distribution of St. Helena has been used to inform the likely origin of staff working at the airport.

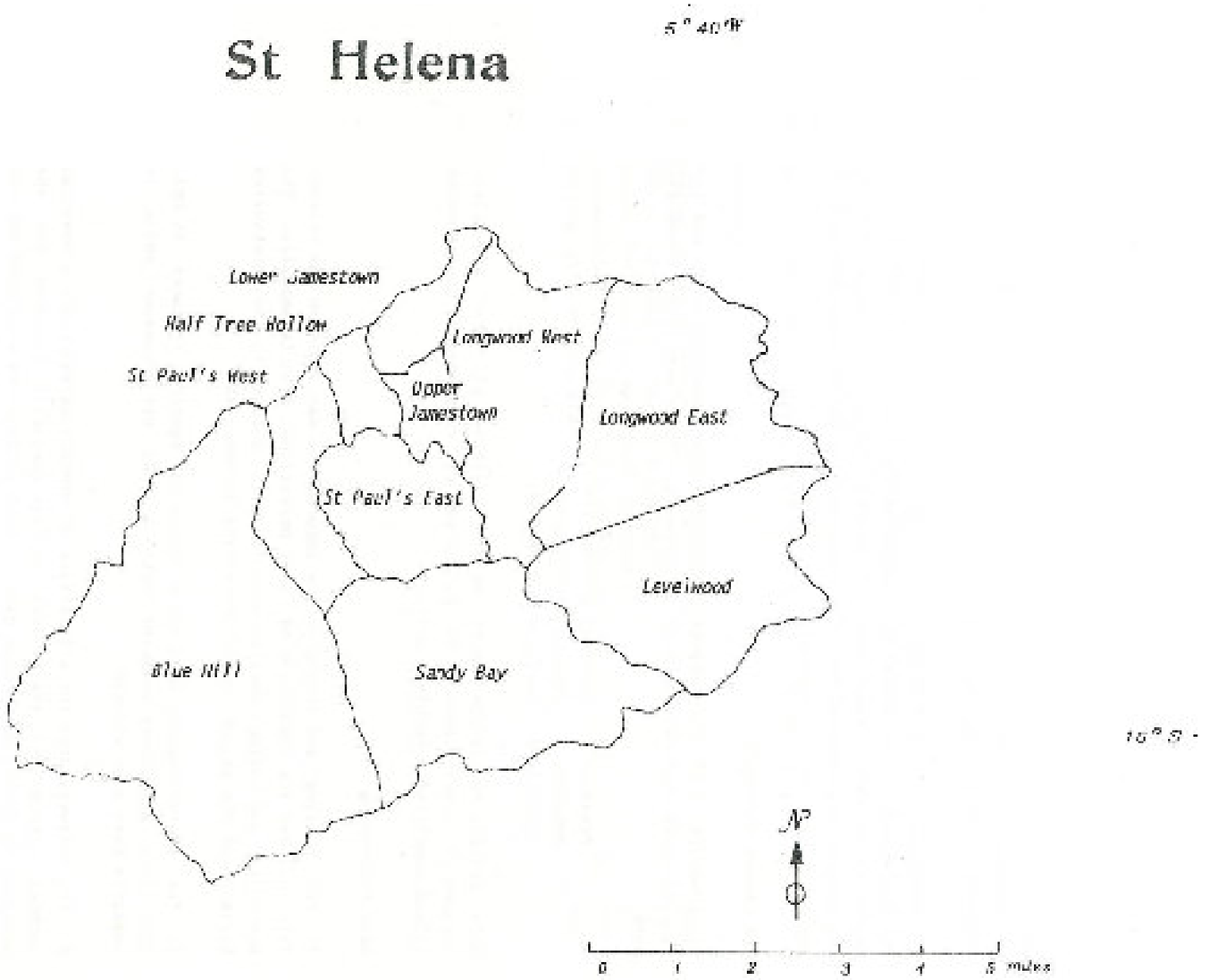
4.72 Table 4.4 shows the population statistics by area for St. Helena from the 1987 Census, while **Error! Reference source not found.** shows the plan of the Census areas.

Table 4.4 – Population Statistics by Area – 1987 Census

	Resident Population			Area (square miles)	Population Density	Percentage Distribution
	Male	Female	Total			
Lower Jamestown	280	294	574	1	574	**10.4%**
Upper Jamestown	350	378	728	0.6	1213	**13.2%**
Half Tree Hollow	510	568	1078	0.6	1797	**19.6%**
St Paul's East	312	333	645	2.6	248	**11.7%**
St Paul's West	168	165	333	2.5	133	**6.1%**
Blue Hill	98	93	191	13.1	15	**3.5%**
Sandy Bay	153	151	304	6.9	44	**5.5%**
Levelwood	199	215	414	6.6	63	**7.5%**
Longwood East	427	434	861	7.9	109	**15.7%**
Longwood West	168	199	367	5.3	69	**6.7%**
Harbour	4	1	5	-	-	**0.1%**
Total	2,669	2,831	5,500	47.1	117	100%

4.73 The maximum number of daily vehicular movements for staff is anticipated to be 44 two-way trips (i.e. 22 arrivals and 22 departures). These are likely to arrive over an hour period in the morning and depart over an hour period in the evening. From the population data contained in Table 4.4, approximately 62% of staff could live in Jamestown or adjacent Census areas, with the remainder travelling from other parts of the island, including St Paul's West, Blue Hill, Sandy Bay, Levelwood and Longwood East.

Figure 4.5 – Plan of St. Helena Census Areas



Visitors

4.74 It is anticipated that there will be a number of key locations and attractions which will provide a draw for tourists as summarised below.

4.75 **Jamestown** including the shops and restaurants on Grand Parade and Main Street, as well as the distinctive architecture.

4.76 **Established Walks and the Three Peaks National Park** which provides panoramic views of the island and historic interest at Halley's Mount.

4.77 **Historic Sites**: A number of historic sites have been identified with potential for development as tourist venues. These include:

- Ladder Hill Fort – located on the cliffs just to the southwest of Jamestown;
- High Knoll Fort – St. Helena's largest fortification a mile south of Jamestown;
- Lemon Valley Fortification – located 3km southwest of Jamestown. This site has no existing vehicular access and will be accessed via a new jetty; and
- Mundens – a complex of cottages between Jamestown and Rupert's Valley.

4.78 **Napoleonic Sites**: The Napoleonic sites represent the most important historic tourist attractions on St. Helena and comprise:

- Briars Pavilion – located close to Briars Village approximately 2.5km southeast of Jamestown;
- Longwood House – located approximately 4km west of the airport near the new access road; and
- Napoleon's Tomb – situated approximately 1.5km to the southwest of Longwood.

4.79 **Activities**: In addition specific sites of interest, there may be the potential to develop other tourist related activities at various locations around the island, such as walking tours, deep sea fishing, golf, scuba diving, water sports, paragliding, hang-gliding and horse riding.

4.80 At this stage it is uncertain how tourist areas will develop across the island. That said it is likely that tourist accommodation will remain focussed in Jamestown and the surrounding area at least during the initial period following the opening of the airport.

Residual Impacts

Roads

4.81 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 Levelwood. 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.

4.82 The average total daily trips (average airport trip generation plus cumulative tourist trip generation) have been extracted from Table 4.2 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 will be distributed across the island and are unlikely to be concentrated on a single road only.

Table 4.5 – 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%

4.83 The traffic flows in Table 4.5 indicate that the average total daily trips generated by the airport (including cumulative tourist trips) will 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 will increase significantly. It is important to reiterate that although these trips are likely to be concentrated in Jamestown, some will 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.

4.84 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:

- The average speed on the island is assumed to be 15mph (24kph), 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.

4.85 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 unlikely to present a problem, although the impact could be of greater significance in more congested parts of the island, such as Jamestown. Traffic flows will be likely 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 it will be important to encourage as many visitors as possible to access the airport by coach.

4.86 It is important to note that the capacity of urban roads is dictated by the capacity of nearby junctions. As quantitative junction assessments are typically covered in full Transport Assessment Report, the road capacity analysis is considered appropriate for this Transport Statement.

4.87 SHG should monitor traffic flows on roads across the island as the number of visitors increases as a result of the airport to ensure that the road network (including junctions) operates safely and effectively.

Public Transport

4.88 Table 4.3 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 will be welcomed to increase revenue. SHG should 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.

Car Parking

4.89 As part of public transport service planning, SHG should undertake a car parking study in Jamestown in light of the potential cumulative impact of visiting tourists. SHG should consider introducing demand management measures, such as controlled parking zones, to help alleviate car parking congestion.

5 SUMMARY OF TRANSPORT STRATEGY

5.1 The various elements of the transport strategy for the airport have been referred to throughout this Transport Statement. They are brought together in this section to provide more detail and for ease of reference.

Haul / Access Road

5.2 In order to enable the construction of the airport, a haul road is required to connect Rupert's Bay and the airport site. The haul road, once no longer needed for construction traffic will be upgraded to the permanent access road. The haul road will run from Rupert's Bay via Bank's Ridge and Deadwood Plain.

5.3 The haul road is to be used as the main route for construction traffic between Rupert's Bay and the airport site. Appropriate signing or other traffic control measures should be provided to ensure that site personnel / visitors leave the haul road west of Longwood Farm and avoid travelling through Longwood itself.

5.4 SHG should monitor traffic flows on roads across the island as the number of visitors increases as a result of the airport to ensure that the road network (including junctions) operates safely and effectively.

Car Parking and Drop-Off Facilities

5.5 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 landside for passengers.

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

5.7 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.

Airside Access Roads

5.8 Airside roads will 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.

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

5.10 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.

Car Share Scheme

5.11 It is estimated that between 27-55 employees will access the airport on daily basis. A car share scheme should 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 will simply involve keeping up-to-date records of staff addresses and matching potential car sharers to maximise the efficiency of the car parking provided.

Public Transport Provision

5.12 SHG should provide coach transfers 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 will 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.

5.13 SHG should 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 should undertake a car parking study in Jamestown in light of the potential cumulative impact of visiting tourists. SHG should consider introducing demand management measures, such as controlled parking zones, to help alleviate car parking congestion.

Code of Construction Practice

5.14 The impact of the construction works should be managed as far as possible with a Code of Construction Practice to limit the working hours and practices of construction staff. Ultimately this will protect the interests of existing residents and businesses on the island.

Pedestrians and Cyclists

5.15 Pedestrians and cyclists are unlikely to be a main mode of travel to the airport; therefore cycle parking is unlikely to be necessary at the airport. However, footways shall be provided along the airport access road where the road passes in front of residential and commercial property such as in Rupert's Bay and Deadwood to facilitate safe access for pedestrians.