A14.0 Traffic

A14.1 Methodology

The assessment of baseline conditions is predominantly reliant on a range of publicly available information. The impact of the COVID-19 pandemic may impact on the transportation of materials and human population to and from the Falkland Islands and, therefore, new traffic surveys to inform the baseline traffic flows may be inconsistent with previous traffic surveys. Where appropriate, historic traffic count data undertaken prior to the COVID-19 pandemic has been used to derive baseline link traffic flows. New traffic surveys have been used to provide an understanding of vehicle types and percentages. Consequently, comparisons with previously documented traffic flow information and consultation with stakeholders has been undertaken to assess the viability of new traffic data. The methodology and data used in the assessment is presented **in Section A14.1** and **A14.2** respectively.

It should also be noted that the assessment presented below assumes that rock required for construction of the proposed scheme will be delivered to stockpile areas from Pony's Pass quarry during the construction phase. It is now understood that PWD will transport the rock armour to the laydown area in advance of construction commencing, and therefore the construction phase impacts reported in **Section A14.3** over-exaggerate the potential impact. Furthermore, it is also understood that the transport of rock from the quarry to the site is likely to be undertaken over a longer period than assessed in **Section A14.3**; the extended programme for transport of rock beyond that assessed below would reduce the daily HGV movements which have been currently assessed (and consequently lower the significance of the construction phase impact on the highway network).

A14.1.1 Methodology used to describe the existing environment

The description of the existing environment with regard to the traffic and transport study area (TTSA) has been informed through a combination of desk-based review and targeted traffic surveys. The TTSA is illustrated in **Figure 14.1**. The scope of the traffic surveys was agreed with F.I.G. Planning and Building Services through the environmental scoping process and is presented in **Section A14.1.1.1**.

A14.1.1.1 Site-specific traffic survey

Manual traffic surveys were undertaken in March 2021. This site-specific information supplements the desk-based review detailed in **Section A14.1.1.2** and has been used to inform the existing traffic flows within the immediate area of the proposed scheme. The surveys were undertaken over three neutral[11] days between 2 and 4 March 2021. The manual counts were undertaken at the locations shown in **Figure 14.2**.

A field survey report is provided as **Ref. 13** with full details of the surveys undertaken and **Section A14.1.4** details the limitations in using traffic surveys undertaken during the COVID-19 pandemic.

A14.1.1.2 Desk-based review of existing information

In addition to the site-specific survey work, publicly available information has been reviewed (**Table 14.1**). In addition to the information sources listed in **Table 14.1**, the desk-based assessment involved review of online mapping, drone scans and site visit data.

[11] Neutral days are periods defined as Tuesday, Wednesday and Thursday during months of March to November while avoiding main local holiday periods, local school holidays and other abnormal traffic periods.

Table 14.1 Information sources reviewed as part of the desk-based traffic and transport assessment

Data	Source	Date	Coverage	Confidence
Traffic counts and baseline information	Sea Lion Phase 1 Development EIS (Premier Oil, 2018)	02/01/2020	Various links within the TTSA	High – based on historic traffic surveys.
Personal injury collision data	Falklands Police	Latest five-year period available,	All links within the TTSA	Medium – based on limited data provided by Falklands Police.
Traffic data	AtLink	2016-2020	Visitor and traffic movements for FIPASS Road	High – based on daily recorded visitor and vehicle data logs.
Traffic data	Stanley Services Limited (SSL)	October 2020	Vehicle movements for FIPASS Road	Medium – Typical weekly vehicle requirements based on historic experience provided by SSL

A14.1.2 Methodology for assessment of potential impacts

This section describes the assessment methodology, including data collation, impacts and impact assessment criteria that have been used in the traffic and transport assessment. The traffic and transport assessment methodology follows the principles set out in **Section A6.0** and adopts the 'project-wide' significance evaluation. These principles have been augmented by traffic and transport specific methodologies (as prescribed in GEART (Institute of Environmental Assessment, 1993)) to inform a significance evaluation.

A14.1.2.1 Scale of assessment

The following rules, taken from GEART, have informed the screening process and thereby defined the extent and scale of this assessment:

- Rule 1: Include highway links where traffic flows are predicted to increase by more than 30% (or where the number of HGVs is predicted to increase by more than 30%).
- Rule 2: Include any other specifically sensitive areas where traffic flows (or HGV component) are predicted to increase by 10% or more.

In justifying these rules GEART examines the science of traffic forecasting and states:

> *"It is generally accepted that accuracies greater than 10% are not achievable. It should also be noted that the day to day variation of traffic on a road is frequently at least some + or -10%. At a basic level, it should therefore be assumed that projected changes in traffic of less than 10% create no discernible environmental impact.*
>
> *…a 30% change in traffic flow represents a reasonable threshold for including a highway link within the assessment."*

Therefore, changes in traffic flows below the GEART rules (thresholds) are assumed to result in no discernible (negligible) environmental effects and have not been assessed further.

The exception to the GEART rules is the consideration of the effects of driver delay and road safety. These effects can be potentially significant when high baseline traffic flows are evident, and a lower change in traffic flow can be potentially significant. Full details of the methodology adopted for these effects are set out below.

N

Link 1

Link 2

Link 3

Link 4

Link 5

Link 6

0 1 2 km

Basemap: © OpenStreetMap (and) contributors, CC-BY-SA.

Key

- Proposed scheme footprint
- Construction phase site layout
- Megabid Disposal Site
- Study area

REV	DATE	DESCRIPTION	BY	CHK	APP
P03	01.12.21	THIRD ISSUE	GC	RE	SR
P02	19.05.21	SECOND ISSUE	JT	RE	SR
P01	03.12.20	FIRST ISSUE	FC	RE	SR

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PROJECT

New Port Facility at the Falkland Islands

TITLE

Traffic and Transport Study Area

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DRAWN	CHECKED	APPROVED
FC	RE	SR
DATE	SCALE	REF.
01.12.21	1:35,000	
FIGURE No.	SUITABILITY	REVISION
14.1	S2	P03

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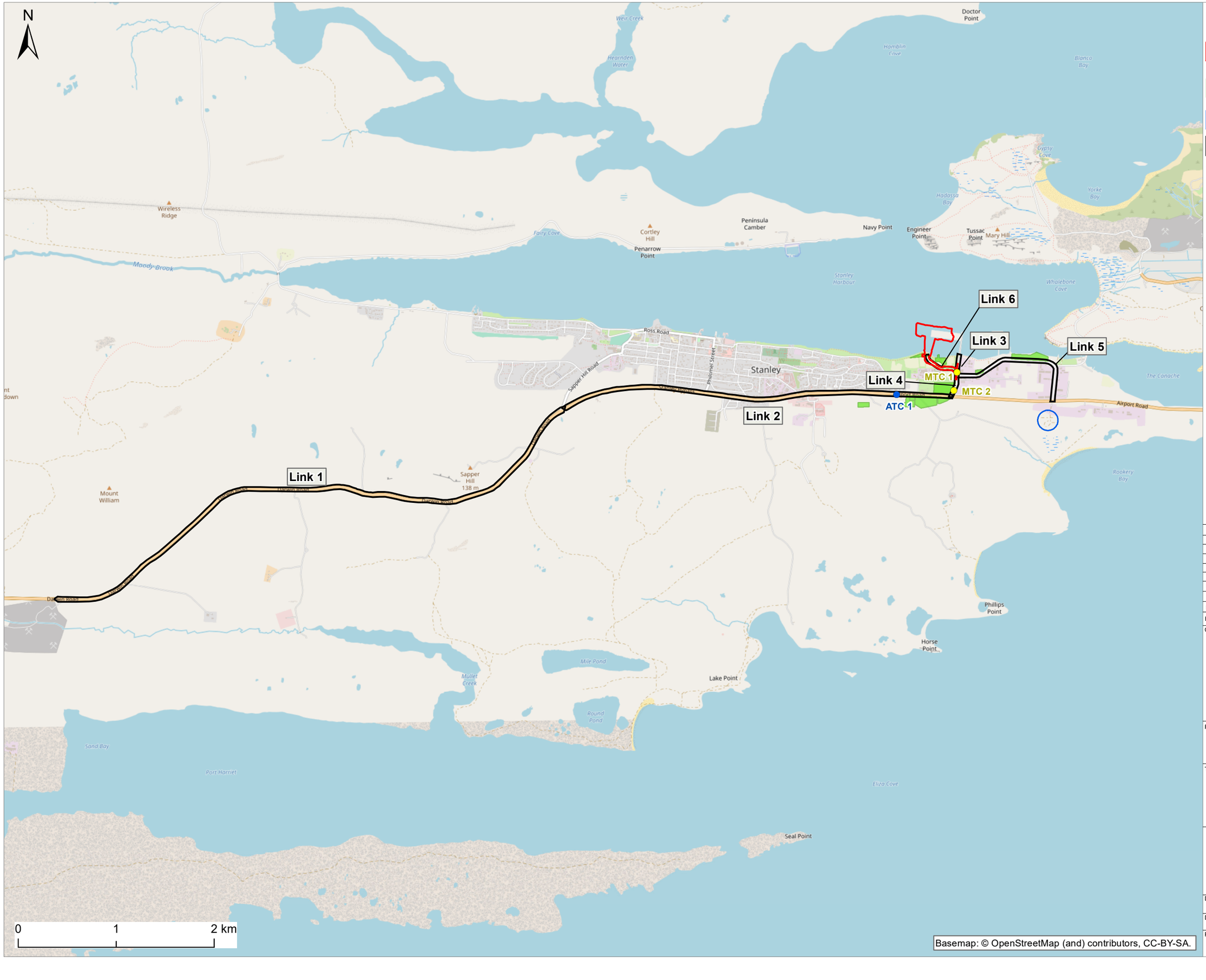

Key

- Proposed scheme footprint
- Construction phase site layout
- Megabid Disposal Site
- Study area

Traffic Survey Locations

- MTC1 – SAERI Survey Field Report (2021)
- MTC2 – SAERI Survey Field Report (2021)
- ATC 1 – F.I.G Automatic Traffic Count (2015) Sourced via Sea Lion Phase 1 Development EIS (2018)

REV	DATE	DESCRIPTION	BY	CHK	APP
P03	01.12.21	THIRD ISSUE	GC	RE	SR
P02	19.05.21	SECOND ISSUE	JT	RE	SR
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PROJECT

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TITLE

Traffic Survey Locations

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DRAWN	CHECKED	APPROVED
FC	RE	SR
DATE	SCALE	REF.
01.12.21	1:35,000	
FIGURE No.	SUITABILITY	REVISION
14.2	S2	P03

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Following initial screening, GEART sets out consideration and, in some cases, thresholds in respect of changes in the volume and composition of traffic to facilitate a subjective judgement of traffic impact and significance.

The following environmental effects have been identified as being susceptible to changes in traffic flow and are appropriate to the local area.

Severance

Severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery. The term is used to describe a complex series of factors that separate people from places and other people. Severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by the road itself. It can also relate to quite minor traffic flows if they impede pedestrian access to essential facilities. Severance effects could equally be applied to residents, motorists, cyclists or pedestrians.

GEART suggests that changes in total traffic flow of 30%, 60% and 90% are considered to be slight, moderate and substantial respectively.

Amenity

Amenity is broadly defined as the relative pleasantness of a journey covering all non-motorised users (NMU), and is considered to be affected by traffic flow, traffic composition and pavement width and separation from traffic. This definition also includes pedestrian fear and intimidation and can be considered to be a much broader category including consideration of the exposure to noise and air pollution, and the overall relationship between pedestrians and traffic.

GEART suggests that a threshold of a doubling of total traffic flow or the HGV component may lead to a negative impact upon amenity.

Road safety

The relevant GEART guidance on road safety is as follows:

> *"Where a development is expected to produce a change in the character of traffic (e.g. HGV movements on rural roads), then data on existing accidents levels may not be sufficient. Professional judgement will be needed to assess the implications of local circumstances, or factors which may elevate or lessen the risk of accidents, e.g. junction conflicts."*

In accordance with the guidance, an examination of the existing collisions within the TTSA has been undertaken to identify any areas with an emerging pattern of collision types (cluster sites). These sites are considered to be sensitive to changes in traffic flows (sensitive receptors) and therefore more detailed analysis is required.

Driver delay – reduction in link capacity and junction delay

GEART recommends the use of proprietary software packages to model junction delay and therefore estimate increased vehicle delays. However, it is noted that vehicle delays are only likely to be significant when the surrounding highway network is at, or close to, capacity.

The Guidance on Transport Assessment (Department for Transport, 2007)[12] (GTA) (which has now been withdrawn) contains thresholds for traffic assessments which have remained industry best practice in the absence of replacement guidance. This guidance has been used to inform the assessment. The GTA thresholds suggest that if the proposed scheme traffic flows through a junction are forecast to be less than 30 two-way vehicle movements per hour, no

further assessment would be required. The assessment therefore seeks to disaggregate the peak hour traffic movements for these junctions to enable a judgement of the potential significance of the driver delay effect.

Other effects – road degradation

The highways section of F.I.G. (PWD) is responsible for the construction and maintenance of the road network and surfaces on the Falkland Islands. A Highways Asset Management Plan (HAMP) (F.I.G., 2015c) categorises the Falkland Island's road network based on strategic importance and maintenance priority. Section 2.3.1 of the HAMP details the Key Performance Indicator's for surface maintenance as follows:

- Category A Roads – 100% of the roads graded twice per year.
- Category B Roads – 90% of the roads graded once per year.
- Category C Roads – 75% of the roads graded once per year.

Increased road usage may impinge upon both the capacity of F.I.G. to conduct repairs and on other road users. The majority of the transportation of materials on the Island will be undertaken on A-class roads which are prioritised for maintenance as a primary national asset. Therefore, disruption / nuisance caused by degradation to roads (which are subject to on-going maintenance and prioritised work schedules) will be minimised through remedial works as soon as weather permits.

It is considered that light vehicles will not significantly add to the wear and tear of the road surface due to the lower axle loads. Thus, any further assessment of road degradation is solely in relation to the increased use of HGVs with higher axle loadings.

A14.1.2.2 Receptor sensitivity

The sensitivity of a road (link) can be defined by the type of user groups who may use it (e.g. elderly people or children). A sensitive area may be a village environment or where pedestrian or cyclist activity may be high, for example in the vicinity of a school. Taking into consideration the nature of the proposed scheme and local amenities within proximity of it, sensitive user groups include but are not limited to:

- existing FIPASS users;
- local pedestrians and cyclists;
- residents of Stanley
- coastal footpath users;
- industrial and agricultural workers; and,
- tangible property – road degradation.

Table 14.2 provides broad definitions of the different sensitivity levels which have been applied to the assessment.

Table 14.2 Example definitions of the different sensitivity levels for a highway link

Sensitivity	Description
High	High concentration of sensitive receptors (e.g. local pedestrians, cyclists, industrial and agricultural workers) and limited separation provided by the highway environment. Defined collision clusters or high collision rates. Links/ junctions with negative spare capacity. Category C roads with 75% of roads graded once per year.

Sensitivity	Description
Medium	A low concentration of sensitive receptors, residential dwellings, pedestrian desire lines, etc. and limited separation from traffic provided by the highway environment. Links/ junctions approaching or at capacity. Category B roads with 90% of roads graded once per year.
Low	Few sensitive receptors and / or highway environment that can accommodate changes in volumes of traffic. Category A Roads with 100% of roads graded twice per year.
Negligible	Links that fall below GEART Rule 1 and 2 screening thresholds.
*High sensitivity links are considered to be 'specifically sensitive areas' for the purposes of GEART Rule 2.	

A14.1.3 Magnitude

Table 14.3 details the assessment framework for magnitude thresholds adapted from GEART. These thresholds are guidance only and provide a starting point by which additional evidence (for example, more detailed traffic analysis and site observations) and professional judgement will inform an analysis of the magnitude of effect.

Table 14.3 Traffic and transport assessment framework

Effect	Magnitude of effect			
	Negligible	Low	Medium	High
Road safety	Informed by a review of personal injury collision records and the forecast increase in traffic.			
Driver delay	Junction/link continues to operate with spare capacity		Junction/link is at or close to capacity	Junction/link is operating over capacity
Amenity	Change in traffic flow (or HGV component) less than a 100%	Greater than 100% increase in traffic (or HGV component) and a review based upon the quantum of vehicles, vehicle speed and pedestrian footfall		
Severance	Changes in total traffic flow of less than 30%	Change in total traffic flows of 30-60%	Change in total traffic flows of 60-90%	Changes in total traffic flows of over 90%
Road degradation	Informed by a review of road construction and the forecast increase in traffic.			

Table 14.4 sets out the assessment matrix adopted for routes that meet the screening criteria (Rule 1 and 2). This combines the assessment of the magnitude of effect, derived from the framework included in **Table 14.3**, with a given sensitivity receptor value (**Table 14.2**) in order to determine the significance of the predicted impact.

Table 14.4 Impact significance matrix

Receptor sensitivity	Magnitude of effect			
	High	Medium	Low	Negligible
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Minor

Receptor sensitivity	Magnitude of effect			
	High	Medium	Low	Negligible
Low	Moderate	Minor	Minor	Negligible
Negligible	Minor	Negligible	Negligible	Negligible

Note that for the purposes of the EIA, major and moderate impacts are deemed to be significant. In addition, whilst minor impacts are not significant in their own right, it is important to distinguish these from other non-significant impacts as they may contribute to significant impacts cumulatively or through interactions.

Baseline conditions

A14.1.4 Road network

The HAMP (Falklands Islands Governement, 2015) produced by F.I.G. categorises the Falkland Island's road network based on strategic importance and maintenance priority. **Appendix 12** shows an extract from the HAMP and **Table 14.5** details the road classifications.

Table 14.5 Road classifications

Category	Description
A road	Primary link road between major population centres Primary link road between major national assets (airport, ferry terminals) Greatest traffic use by volume and weight All roads within Stanley
B road	Distributor roads between all Class C and A roads Major tourist destinations
C road	All other roads outside of Stanley

The road network on the Falkland Islands is of varying quality that ranges between fully capped (asphalt sealed) and uncapped, consisting of a consolidated gravel surface with drainage ditches on both sides. The only asphalted roads are those within Stanley, those within the Mount Pleasant Complex[13] (MPC) and increasing sections year on year of the main road between Stanley and the MPC.

The TTSA has been informed by the most probable routes for traffic taking a hierarchical approach strategy to ensure that traffic is predominantly routed on A roads, for both the movement of materials and personnel during the construction and operational phase of the proposed scheme. The TTSA is divided up into seven separate road sections, known as links, which are defined as sections of road with similar characteristics and traffic flows. The key links are set out below and the TTSA is illustrated in **Figure 14.1.**

[13] The Mount Pleasant Complex is a Royal Air Force Station located 53km southwest of Stanley.

A14.1.4.1 Darwin Road - link 1

Within the TTSA, Darwin Road is classified as an A class road, and begins from the entrance to the Pony's Pass Quarry heading east until its junction with Sapper Hill Road which routes into the western residential areas of Stanley. The road is capped and approximately 8m wide. The road is subject to a 40mph speed limit[14].

A14.1.4.2 Stanley Bypass - link 2

Darwin Road diverges to the north-west at a priority junction on the A class road. From the junction, the A class road continues east (now designated the Stanley Bypass) along the southern edge of Stanley until its junction with the FIPASS Road. The road is a single carriageway A class road with a capped construction of approximately 8m wide. The road is subject to a 40mph speed limit.

A14.1.4.3 FIPASS Road (south) - link 3

The first section of FIPASS Road (south) is a capped, single carriageway road which heads north from its junction with Stanley Bypass/Airport Road to the existing junction with the Stanley Growers Ltd agricultural access track to the west. The road is approximately 280m in length and approximately 8m wide of a capped construction. The road is subject to a 25mph speed limit.

A14.1.4.4 FIPASS Road (north) - link 4

The second section of the FIPASS Road (north) continues north from the Stanley Growers Ltd agricultural access track to the entrance to FIPASS. The road is approximately 136m in length and approximately 8m wide of a capped construction. The road is subject to a 25mph speed limit.

A14.1.4.5 Coastel Road – link 5

From its junction with FIPASS Road, the A class road routes to the east to connect with Boxer Bridge Road and south to re-join Airport Road. The road is approximately 1.4km in length and is of uncapped gravel construction. The road is subject to a 25mph speed limit,

A14.1.4.6 Proposed new access road to the quay – link 6

A new access road is proposed to connect the new quay to the existing highway network. The access road will be subject to a 25mph speed limit. A change in priority has been proposed by creating a junction to the north allowing access to the SAAS and existing FIPASS infrastructure. A pedestrian crossing has also been provided to allow users of the coastal path to safely cross the link road where they interact.

A14.1.5 Baseline traffic flow

Traffic flow data for all links within the study area has been captured from a number of sources, namely:

- Automatic Traffic Count (ATC) commissioned by F.I.G.
- Data provided by the Sea Lion Field Development Phase 1 EIA (Premier Oil, 2018).
- Manual traffic counts (March 2021).

[14] Speed limit information provided by Atlink.

Baseline traffic flow data are summarised in **Table 14.6** which includes the date and type of survey from which the data has been derived and comments of the data confidence in relation to the effect of the COVID-9 pandemic. The survey locations are illustrated in **Figure 14.2.**

Due to the unavailability of suitable survey equipment to undertake new traffic survey data, Link 1 (Darwin Road), and Link 2 (Stanley Bypass) utilised historic ATC survey provided for within the Sea Lion Field Development Phase 1 EIA Premier Oil (2018). The historic survey was undertaken on Airport Road (Chandlery / Market Garden) (Link 5) in 2015. The historic survey was provided to the Sea Lion Development by PWD in October 2016. This survey was then used as a proxy for Links 1 and 2.

Without being able to undertake continuous traffic survey, it was deemed that the historic survey data provided by PWD would be sufficient for links 1 and 2. In transport assessment terms, using lower traffic baseline data is deemed a worst-case scenario, as any additional development traffic added on to a lower baseline would increase the potential impacts on each link.

Table 14.6 Existing annual average daily traffic flows

Link ID	Link description	Total vehicles (24hr AADT)*	Total HGVs (% HGVS) (24hr AADT*)	Data source, type and date	Data confidence
1	Darwin Road	1,755	137 (7.8%)	Premier Oil, ATC, 2018	Historic data, undertaken pre Covid19 pandemic
2	Stanley Bypass	1,755	137 (7.8%)	Premier Oil, ATC, 2018	Historic data, undertaken pre Covid19 pandemic
3	FIPASS Road (north of industrial road junction)	243	94 (39%)**	AtLink and SSL Data, 2020	Historic data recorded via Atlink vehicle logs pre Covid19 pandemic. An AADT over 4.5 years has been used in addition to provided typical SSL traffic flows. HGV % provided by project specific flows.
4	FIPASS Road (south of industrial road junction)	580**	129 (22%)**	Atlink and SSL Data, 2020 Project-specific survey, 2021	Total vehicle AADT derived by utilising pre Covid19 Atlink data and SSL data (as per Link 3) multiplied by a factor derived from project-specific surveys. Factor derived via the increase in traffic from the project-specific survey north of Coastel Road over the traffic project-specific survey south of Coastel Road. (factor of 2.39). HGV % provided by project specific flows.
5	Coastel Road	338	34	Atlink and SSL Data, 2020 Project-specific survey, 2021	Total vehicle AADT derived by utilising pre Covid19 Atlink data via Link 3 flows taken away from Link 4 flows. HGV % provided by project specific flows.

Link ID	Link description	Total vehicles (24hr AADT)*	Total HGVs (% HGVS) (24hr AADT*)	Data source, type and date	Data confidence
6***	Proposed new access road to the quay	0	0%	n/a	N/A
*	Annual Average Daily Traffic				
**	Data derived utilising project-specific manual traffic counts.				
***	Link 7 provided for completeness.				

A14.1.6 Sustainable travel modes

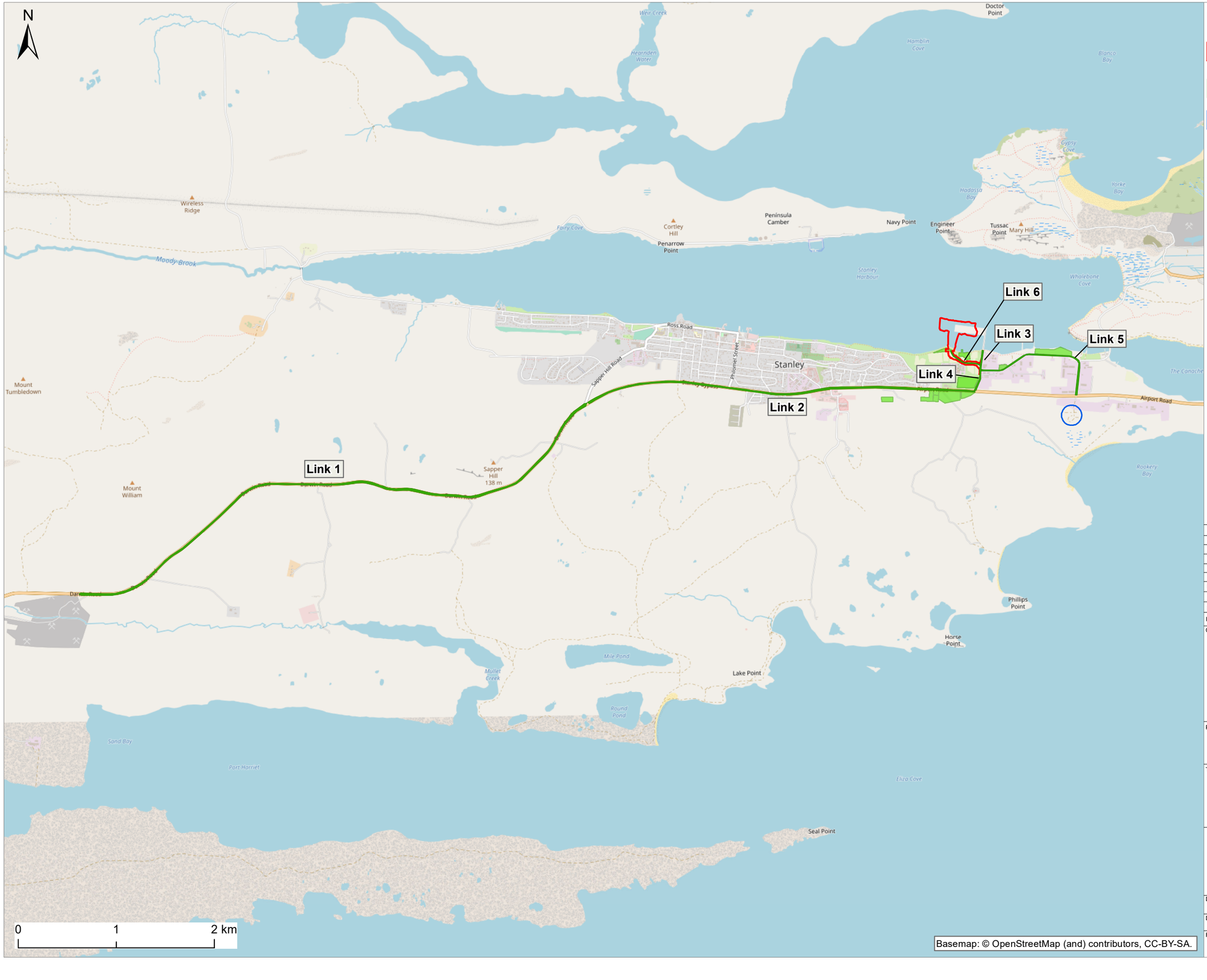
During the manual traffic counts, cyclists, runners, walkers and dog walkers were observed in early morning and evenings using the FIPASS Road (links 3 and 4) to access Coastel Road and the coastal footpath. The coastal footpath is accessed at the Seafarer's Mission near to the entrance of FIPASS and routes west to connect to Ross Road within the residential areas of Stanley. Footway provision outside of the residential areas of Stanley is minimal, with pedestrian movements occurring on the verges or edge of the carriageways

The COVID-19 pandemic will likely have influenced the number of people walking along the coastal footpath. It is understood that ship's crew during non-COVID-19 periods will use the coastal footpath to walk in and out of Stanley.

A14.1.7 Link-based sensitive receptors

A desktop exercise has been undertaken to identify the sensitive receptors in the TTSA utilising the definitions outlined in **Table 14.2**. All seven links within the TTSA area have been assessed and assigned a sensitivity.

Table 14.7 details the routes and the rationale for the applied link sensitivity and **Figure 14.3** illustrates these routes graphically.



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P03	01.12.21	THIRD ISSUE	GC	RE	SR
P02	19.05.21	SECOND ISSUE	JT	RE	SR
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CLIENT

PROJECT

New Port Facility at the Falkland Islands

TITLE

Link Sensitivity

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FIGURE No.	SUITABILITY	REVISION
14.3	S2	P03

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Table 14.7 Link-based sensitive receptors

Link ID	Link description	Link sensitivity	Comments
1	Darwin Road	Low	The link is a capped main A road which connects from the existing Pony's Pass Quarry to the airport. The road can accommodate a high volume of traffic and has limited sensitive receptors. There is no residential development present, resulting in no pedestrian or vehicle access requirements to such development directly from the access road.
2	Stanley Bypass	Low	The link is a capped main A road which connects from the existing Pony's Pass Quarry to the airport. The road can accommodate a high volume of traffic and has limited sensitive receptors. There is minimal residential development present, resulting in minimal pedestrian or vehicle access requirements from the road.
3	FIPASS Road (north)	Low	The link is an existing industrial and agricultural access road leading to FIPASS, SSL fuel depot and SAAS storage yard with minimal sensitive receptors. Evidence of minimal pedestrian movement accessing the coastal footpath located at the Seafarer's Mission.
4	FIPASS Road (south)	Low	The link is an existing industrial and agricultural access road leading to FIPASS, SSL fuel depot and SAAS storage yard with minimal sensitive receptors. Evidence of minimal pedestrian movement to access Coastel Road and onwards into link 3 to access the coastal footpath.
5	Coastel Road	Low	The link is located within an existing light industrial area with minimal sensitive receptors. Evidence of minimal pedestrian movement.
6	Proposed new access road to the quay	Low	New access road to be constructed at the start of construction to facilitate the construction of the causeway and quay. The road will accommodate a high volume of traffic and will have limited sensitive receptors. There will be no residential frontage development present. Notwithstanding, the coastal path will require a Non-Motorised Unit interface for the crossing of the access road.

A14.1.8 Road safety

In order to establish whether there are any inherent safety issues on the highway network, the most recent five years of collision data has been obtained from the Falklands Police (January 2015 to December 2019, pre COVID-19 pandemic).

As shown in **Table 14.8**, a total of five collisions have occurred within the TTSA, all of which were regarded as slight. There were no serious or fatal collisions. Link 7 is excluded from **Table 14.8** on the basis that it is yet to be constructed.

Table 14.8 Summary of collision data

Link ID	Link description	Number of collisions			Summary
		Fatal	Serious	Slight	
1	Darwin Road	0	0	4	Two collisions involved vehicles swerving to avoid livestock in the road. One was due to heavy winds moving vehicle off the road and involved a vehicle driven by an intoxicated driver.
2	Stanley Bypass				
3	FIPASS Road (north)	0	0	0	-
4	FIPASS Road (south)	0	0	0	-
5	Coastel Road	0	0	0	-

Table 14.8 identifies that no collision clusters were identifies on any of the links within the TTSA. It is therefore considered that there are not any inherent safety issues (i.e. cluster sites) in the TTSA. Therefore, from a road safety perspective on the existing road network, the TTSA is considered to be of a very low sensitivity and the addition of traffic as a result of the proposed scheme is unlikely to result in significant impact. As such no further assessment of road safety is presented for the existing road network within the TTSA.

The proposed new access road (link 6) to the quay will be designed in accordance with all relevant highway guidance including the Design Manual for Roads and Bridges. The new access road will be designed with safety as a priority, which will take into account crossing facilities, revised priority junction and compliant visibility splays to design out risk.

A14.1.9 Anticipated trends in baseline conditions – future year traffic flows

As detailed in Premier Oil (2018), F.I.G. considers that road traffic flows have stayed fairly consistent since 2015.

As detailed in **Section A4.4.1**, a Demand Study (**Ref. 2**) has been undertaken to present a justified forecast and projection of future traffic throughput for the proposed scheme for a range of scenario (base case, base case/status quo, pessimistic and optimistic). The study utilised key market sectors and future economic and industry trends.

To match the consistent traffic growths detailed in the Sea Lion Field Development Phase 1 EIA (Premier Oil, 2018), the future year traffic growth (in the absence of the proposed scheme) has been based on the 'base case (status quo)' port throughputs as detailed in the Demand Study and existing FIPASS traffic data provided by AtLink Limited. This has formed the baseline for future construction (2022) and increased operational traffic (2025) assessments detailed in Section **A14.3** and **A14.4** respectively.

A14.2 Potential impacts during construction

This section details the traffic forecasted to be generated as a result of the proposed construction phase and distributes vehicle trips to the highway network to establish a basis for assessing the potential transport impacts.

The realistic worst-case traffic demand has been developed by examining:

- The likely minimum construction programme.
- The earliest commencement date.
- Demand for materials and personnel.
- Likely delivery windows.
- The distribution of traffic.

The assumptions that underpin the worst case scenario are discussed in **Section A14.3.1**.

A summary of the main phases of construction and the current envisaged durations are set out in **Table 4.1.**

The construction programme currently indicates that construction will commence in March 2023. Accordingly, a reference year of 2023 for background traffic has been derived.

To ensure a smooth transition and to provide continued berthing capacity during the construction phase, operations on FIPASS would gradually migrate to the proposed new quay over the two phases of construction. Although the project is to be constructed in a phased manner, the first 190m of quay will be tested, commissioned and handed over to the operator at the end of Phase 1. The quay is proposed to be constructed in full (i.e. the 300m of quay) and handed over to the operators in September 2025.

It is not envisaged that a net increase in operational traffic will occur during the construction period, thus no assessment of a construction / operation hybrid assessment is to be undertaken.

Construction works are envisaged to be undertaken six days per week (nominally) (Monday to Saturday), however there may be a requirement for works to be undertaken on Sundays as well, depending on the progression and sequencing of works.

A14.2.1 Worst-case scenario for assessment

This section establishes the worst-case scenario for each key impact category, forming the basis for the subsequent traffic and transport assessment.

For this section of the EIS, only those design parameters with the potential to influence the level of impact to relevant receptors are identified. Therefore, if the design parameter is not described below in **Table 14.10**, it is not considered to have a material bearing on the outcome of this assessment.

Table 14.10 Worst case parameters for traffic and transport assessment

Impact	Parameter
Earliest start of construction	2023 is the earliest realistic construction start date.
Construction duration	The minimum realistic duration for the quay construction is 29 months (March 2023 to September 2025).
Construction programme peak	Construction of the quay will result in an intensification of material deliveries by HGVs and is programmed to occur throughout the construction programme (refer to **Section A14.3.6**). All construction activities are assumed to overlap for purposes of worst-case assessment.

	As noted in **Section A4.2.3**, traffic movements generated by movement of plant and machinery at the start of the construction phase from Mare Harbour are not predicted to impact the peak traffic flows (and therefore would not be considered part of the worst-case scenario).
Construction timings: typical working week	Assessment based upon a six-day working week (Monday to Saturday) with a 12-hour working day of 7am to 7pm. However, some construction activities would take place over a 16-hour period. No activity on public holidays. Vehicle movements associated with transport of workers and deliveries are condensed over six days rather than seven.
Construction timings: material deliveries	Typically, a 7am to 7pm (12hr) 'delivery window' has been assumed with 11 hours delivery time allocated accounting for breaks in movements associated with workers lunch hour.
Contingency	An appropriate level of contingency reflecting uncertainties in the design (10%) is applied to quarry sourced material quantities. This ensures minor emissions or design changes can be accommodated within the assessed traffic flows.
Construction worker quantum	70 site workers at peak construction to be assessed.
Site worker access	11-seater minibuses and double cab pickups will transfer workers from the worker accommodation to the site offices then onward to their place of work on-site.

A14.2.2 Traffic distribution

A14.2.2.1 HGV distribution

The following section describes the assumptions that have been adopted to inform the distribution of HGVs.

Materials required from the Pony's Pass Quarry for the causeway and quay construction will be delivered to the laydown and stockpile area as shown on **Figure 4.1**. The delivery of rock from the quarry will be undertaken by PWD. This stockpiling approach will allow construction of the programme-sensitive causeway to continue irrespective of quarry maintenance regimes, haul operations or unplanned events.

Material will be loaded by excavator from the stockpile area onto ATDs which will deliver to the required site location (link 6). Further assumptions are provided in **Table 14.11**. **Figure 14.4** depicts the assumptions graphically.

Table 14.11 Distribution assumptions

Material / Activity	From	To	Via
Rock armour, aggregate and fill materials for quay construction	Pony's Pass Quarry (link 1)	Laydown / stockpile area at the proposed power station site (link 2)	n/a
	Laydown / stockpile area at the proposed power station site (link 2)	Site (link 6)	Link 4
Fuel deliveries	Stanley Services Limited Fuel Depot (link 3)	Site (link 6)	n/a

Material / Activity	From	To	Via
FIPASS dismantling	Option 1 (link 6)	Laydown / Stockpile area (link 2)	Link 4
Silt management	Remediation area (link 5)	Silt disposal area (Megabid) (assuming no demand for beneficial re-use of bioremediated surficial silt)	n/a

A14.2.2.2 Site workers distribution

It is proposed that construction personnel would travel to the Falkland Islands and live in the temporary accommodation facilities to be constructed as part of the proposed scheme. The provision of accommodation for site workers ensures that the proposed scheme does not negatively impact on the limited accommodation available to Falkland Islands residents in the local market. Local employment is also to be used for certain construction phase activities where possible.

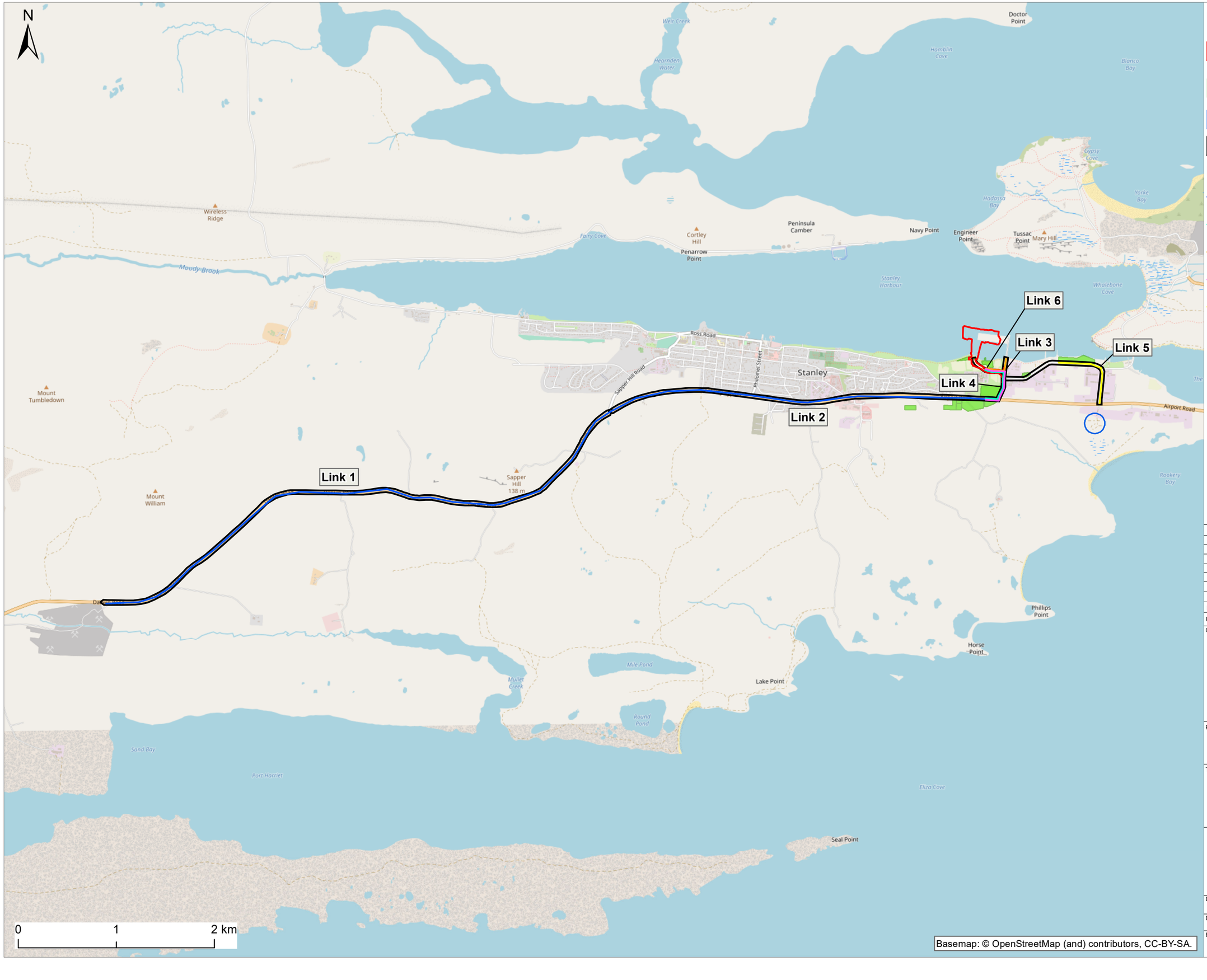
Up to two minibus will be provided to transport staff from the accommodation site to the site office. From the site office, onward travel to the quarry will occur. A further fleet of 12 double cab pickups would be utilised to transfer site workers to the various construction sites/areas throughout the working day. The remainder of staff would walk to their designated work areas from the site office.

A14.2.3 Traffic demand

A14.2.3.1 HGV traffic demand and assignment

Appendix 13 details the derivation of total peak HGV deliveries and movements per day according to construction activity. The expected peak construction periods are likely to occur throughout 2023 and 2024 when the quay construction phases overlap with other activities, as detailed in **Section 14.2**.

Appendix 14 details the assignment of the HGV movements associated with each construction activity to the highway network.



Key

- Proposed scheme footprint
- Construction phase site layout
- Megabid Disposal Site
- Study area

Distribution Assumptions

- Quarry Movements
- Laydown/Stock Pile to Site
- Fuel Deliveries
- Barge Dismantling - Option 1
- Silt Management

REV	DATE	DESCRIPTION	BY	CHK	APP
P01	01.12.21	FIRST ISSUE	GC	RE	SR

CLIENT

bam nuttall

PROJECT

New Port Facility at the Falkland Islands

TITLE

Distribution Assumptions

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A14.2.3.2 Site workers traffic demand and assignment

It is estimated that 70 site workers will be required during construction peaks. Construction works will typically be undertaken six days per week (Monday to Saturday); however, depending on the progression and sequencing of works, there may be a requirement for works to be undertaken on Sundays. Working hours will typically by from 7am – 7pm; however, certain construction phase activities would require an extended window to 11pm.

A14.2.4 Traffic impact screening

With reference to the GEART (Rule 1 and Rule 2), a screening process has been undertaken for the TTSA to identity routes that are likely to have an increase in traffic flows that would require further impact assessment.

Table 14.12 summarises the total daily peak vehicle movements (i.e. arrivals and departures) of all materials, personnel and plant for the peak period. **Table 14.12** also provides a comparison of the peak daily construction flows with the forecast background daily traffic flows for 2022 (assumed worst case start of construction). Cells highlighted blue indicate GEART Rule 1 or Rule 2 screening thresholds have been met.

Table 14.12 Forecast and proposed daily construction traffic flows (2022)

Link	Description	Link sensitivity	2022 background flows (24 hr ADDT)		2022 peak daily construction vehicle movements		Percentage increase	
			All Vehicle	HGVs	All Vehicle	HGVs	All Vehicle	HGVs
1	Darwin Road	Low	1,761	137	374	370	21.2%	268.8%
2	Stanley Bypass	Low	1,761	137	496	488	28.1%	354.7%
3	FIPASS Road (north)	Low	250	97	4	4	1.6%	4.1%
4	FIPASS Road (south)	Low	587	130	126	118	21.5	90.7
5	Coastel Road	Low	341	35	16	2	4.8%	6.3%
6*	Proposed new access road to the quay	Low	n/a	n/a	128	122	n/a	n/a
*	Link 7 – The new access road has been provided for informational purposes only and is not being assessed during construction.							

In accordance with GEART, only those links that show greater than 10% increase in total traffic flows (or HGV component) for sensitive links, or, for all other links, a greater than 30% increase in total traffic or the HGV component are considered when assessing the traffic effect of severance and pedestrian amenity upon receptors.

It is noted from **Table 14.12** that links 1, 2 and 4 are above the GEART screening thresholds and have been taken forward for further assessment.

A14.2.5 Amenity

GEART suggests that a threshold of a doubling of total traffic flow or the HGV component may lead to a negative effect on pedestrian amenity. Link 4 experiences traffic flow increases of less than 100% and thus is considered of

negligible magnitude of effect on a low sensitive receptor resulting in a negligible impact significance. Links 1 and 2experience traffic flows greater than the 100% GEART impact thresholds; these links are, therefore, assessed in further detail.

Table 14.13 presents the impact assessment for each identified link.

Table 14.13 Impact on amenity as a result of construction traffic

Link	Description	2022 HGV background - +flows		HGV flow increase	Assessment	Magnitude of effect	Link sensitivity	Impact significance
		Base	Base + construction					
1	Darwin Road	137	507	268.8%	Receptors would experience a peak flow of 46 HGVs per hour* during the defined hours of construction. The link is a primary A Class road and supports the Camp and Mount Pleasant airport. The majority of route has no footways, indicating minimal pedestrian movements. Based on the above, magnitude is considered medium.	Medium	Low	Minor adverse
2	Stanley Bypass	137	625	354.7%	Receptors would experience a peak flow of 57 HGVs per hour* during the defined hours of construction. The link is a primary A Class road. . The majority of route has no footways, indicating minimal pedestrian movements. Based on the above, magnitude is considered medium.	Medium	Low	Minor adverse
*	Peak hour calculations are based on eleven delivery hours within a 7am to 7pm (12 hour) delivery window.							

With reference to **Table 14.13**, all links are considered to have a **minor adverse** significant impact.

A14.2.5.1 Mitigation and residual impact

Impacts related to amenity were considered to be not significant (in EIA terms), and therefore mitigation measures are not required. The residual impact is of **negligible** to **minor adverse** significance.

A14.2.6 Severance

With reference to **Table 14.13,** it is noted that the forecast daily change in total traffic flow for all highway links is within the 'negligible' magnitude of effect (i.e. less than 30% threshold). Given the links are considered to be of low sensitivity the impact on severity is predicted to be '**negligible**'.

A14.2.6.1 Mitigation and residual impact

No mitigation measures are required. The residual impact would be of **negligible** significance.

A14.2.7 Driver delay

A14.2.7.1 Driver delay (reduction in link capacity due to generated road traffic)

According to the data gathered as part of the Sea Lion Field Development Phase 1 EIA (Premier Oil, 2018), the most frequently used roads in and around Stanley are the Stanley Bypass (link 2). The road is used by the residents of Stanley to access the airport and areas to the east of Stanley and are close to the residential areas west of the proposed scheme.

As indicated by **Table 14.13**, for link 3, 5 and 6 minimal increases in traffic is forecast, with link 6 (Coastel Road) showing the largest increase of 16 daily construction vehicle movements (which would equate to up-to two construction movements per hour). As such, links 3 and 5 are considered to experience a low magnitude of effect.

As indicated by **Table 14.13**, the high levels of HGV construction traffic are forecast on links 1, 2 and 4. This would be generated by stone/aggregate transfer from the Pony's Pass Quarry to the proposed stockpile areas. A further intensification of traffic would occur on link 2 between the proposed stockpile area access and the proposed scheme new access road leading off FIPASS road south (link 4). This intensification of HGVs would be generated as a result of shuttle movements from the batching plant, and onward transfer of quarry materials to the proposed construction areas.

During the construction phase, link 1 (Darwin Road) would experience an increase of approximately 21% in total daily construction traffic flows, equating to an additional 34 HGV movements per hour. Link 2 (Stanley Bypass) would experience an increase of 28% in total daily construction traffic flows equating, to an additional 44 construction HGV movements per hour. Link 4 (FIPASS Road (south)) would experience an increase of 22% in total daily construction HGV flows equating, to an additional 11 construction HGV movements per hour.

Based on the predicted hourly levels of additional construction traffic generated as a result of the proposed scheme, links 1, 2 and 4 are considered to experience a medium magnitude of effect.

Links 1 to 5 are designated as A class roads, designed for the greatest traffic use by volume and weight and are prioritised for maintenance as a primary national asset, thus the sensitivity of the links is considered to be low. It is considered that the highway environment is considered to be free-flowing in traffic and would accommodate increased levels of traffic without detrimental levels of congestion.

Based on the above, an impact of **minor adverse** significance is predicted for links 1, 2 and 4, and **negligible** for links 3 and 5.

A14.2.7.2 Mitigation and residual impact

Impacts related to driver delay (reduction in link capacity due to increase in road traffic) are considered to be not significant in EIA terms, and therefore mitigation measures are not required. The residual impact would be minor adverse significance at worst.

To ensure that the traffic levels are contained within the assessment 'envelope' it is good practice to condition a CTMP which would set out the standards and procedures for managing the impact of HGV traffic during the construction phase to facilitate the safe use of the existing road network.

A14.2.7.3 Driver delay (junction delay/ capacity)

To facilitate the assessment of driver delay (junction delay/capacity), the peak hour traffic demand during construction has been assigned to two junctions which have been identified as potentially being sensitive to driver delay. The junctions would be subject to potentially high levels of construction vehicle turning movements which would potentially negatively impact on journey times. The identified junctions are:

- Junction 1: the junction between Stanley Bypass and the proposed laydown / stockpile area south of Airport Road.
- Junction 2: the existing junction between Airport Road and FIPASS Road.

Due to the limited hourly turning count traffic data that is available, it has been necessary to estimate the quantum of background traffic that would travel through the junctions during the peak hour. Utilising the AADT to Peak Hour Flow (PHF) calculations[15], it has been possible to derive background PHF.

Table 14.14 details the AADT and PHFs for the forecast 2023 background traffic and construction vehicle arrivals at each arm for Junctions 1 and 2.

Table 14.14 Construction traffic flows through sensitive junctions

Junction	Junction arm	2023 AADT flows (arrivals by junction arm)			2023 peak hour flows (arrivals by junction arm)		
		Background	Construction vehicles	% increase	Background	Construction vehicles	% increase
1	Stanley Bypass (west)	880.5	187	21.2%	96.4	17	17.6%
	Power Station access	0	246.5	n/a	0	23	n/a
	Stanley Bypass (east)	880.5	59.5	6.7%	96.4	6	6.2%

[15] Formula of (AADT / 24 hours * main urban factor of 2.63) detailed in Table 7.2 of the 'Transport In The Urban Environment' (The Institution of Highways & Transportation, 1997)

Junction	Junction arm	2023 AADT flows (arrivals by junction arm)			2023 peak hour flows (arrivals by junction arm)		
		Background	Construction vehicles	% increase	Background	Construction vehicles	% increase
2	Stanley bypass (west)	880.5	63	7.2%	96.4	5.7	5.9%
	FIPASS Road	293.5	63	21.5%	32.1	5.8	18.1%
	Airport Road (east)	880.5	0	n/a	96.4	0	n/a

The Design Manual for Roads and Bridges (DMRB)[16] has been utilised to determine the existing sensitivity value of the junctions.

Figure 2.3.1 of the DMRB details that simple priority junctions are able to cater for major road traffic flows for up to 13,000 vehicles per day. The traffic forecast background flows at 1,761 is substantially less than the 13,000 vehicles threshold. Thus, the sensitivity of the junctions is considered low.

As evidenced by **Table 14.14**, the major road arms are expected to experience an increase in vehicle arrivals of between six vehicles (6.2%) and 17 vehicles (17.6%) during the peak hours for Junction 1. For Junction 2, the major road arms would experience an increase of vehicles of 5.7 (5.9%) during the peak hour. It is considered that the increases in traffic flows through Junctions 1 and 2, as detailed in **Table 14.14,** are of a low magnitude of effect. This results in an impact significance of **minor adverse**.

A14.2.7.4 Mitigation and residual impact

No mitigation measures are required and the residual impact is predicted to be of **minor adverse** significance.

If it is evidenced that the traffic demand during construction is disproportionately impacting on driver delay (junction delay/capacity) then the contractor would liaise with F.I.G. to agree and implement a contingency traffic plan which potentially could restrict construction traffic movements during the following scenarios:

- Morning commute (including school drop offs).
- Lunchtime (including school pick up and drop off) .
- Evening commute.
- Arrivals and departures at the airport.

A14.2.7.5 *Impacts related to road degradation*

[16] CD 123 publication 'Geometrically design of at-grade priority and signal controlled junctions' (Highways England, 2020)

As detailed within **Section A14.1.4**, Darwin Road, Stanley Bypass and FIPASS Road (links 1, 2, 3 and 4 respectively) are all fully capped and are more resistant to road degradation (compared to class B and C roads). Thus, wear and tear to the surface is likely to be proportional to the forecast increase in HGV construction traffic in relation to the forecast background traffic flows. These links are considered to be of low sensitivity.

The total daily HGV movements on links 1 and 2 are expected to range from 370 to 488 respectively, which when compared to baseline traffic is considered to be a medium magnitude of effect.

Based on the above, the sensitivity of road degradation is assessed low on links 1 to 5, with the magnitude of effect considered medium resulting in an impact significance of **minor adverse**.

Coastel Road (link 5) is uncapped with no known plans for the surface to be capped in the near future. Currently no special authorisation is needed for vehicles of up to 38.5mt gross loads to use Coastel Road. The Premier Oil ES (Premier Oil, 2018) detailed that some upgrades of the road were undertaken prior to 2015 to ensure load capacity of the central section and to minimise spreading of road material. It was also evidenced that HGVs movements contributed to an increased rate of degradation to the road surface during this period.

Table 14.15 details the indicative construction durations and daily HGV movements in relation to the work activities that are proposed to occur off Coastel Road (link 5). As detailed in **Section A4.12**, light vehicle usage is not deemed to significantly impact on road degradation and has not been included within **Table 14.15**.

Table 14.15 Coastel Road (link 6) construction traffic movements

Activity	Daily HGV construction movements	Indicative timing and duration
Surficial silt management (transport to the megabid landfill site, assuming no demand for fertiliser following remediation)	2	June 2023 to December 2023
Principal contractor's site offices	0	March 2023 to September 2025

As detailed in **Table 14.15**, there is a total of two HGV movements along Coastel Road (link 5) for a period of approximately six months.

It is anticipated that construction vehicle movements may have a detrimental impact upon the road surface. However, the overall impact is likely to be low due to the:

- low quantum of construction traffic predicted to use Coastel Road;
- relatively low existing usage of Coastel Road by other road users;
- location of the road within a light industrial area; and,
- relatively short road length and proximity to PWD plant storage and quarry aggregates making it easily. accessible which minimises logistics if routine repair is required.

Based on the above, the sensitivity of road degradation is considered medium on Coastel Road (link 5), with the magnitude of effect considered to be low. This results in an impact significance of **minor adverse**.

A14.2.7.6 Mitigation and residual impact

Mitigation measures are not required. The residual impact is predicted to be of **minor adverse** significance.

However, the following mitigation measures could be included within a CTMP as standard and would provide the monitoring and enforcement processes to aid mitigation of any degradation of the road network:

- Controls and enforcement for adherence to legal speed and vehicle limits.
- Use of appropriate de-icing chemicals or grit administered by F.I.G. (the contractor would work in liaison with F.I.G. in respect of routes and timing of vehicle movements).
- Driver training and vehicle maintenance (to minimise breaking and wash-boarding of uncapped roads).
- Undertake a road condition survey before the commencement of construction and after the substantial completion of construction works. Any damage to the existing road network as a consequence of the construction activities would be made good to the reasonable satisfaction of F.I.G.

A14.3 Potential impacts during operation

A14.3.1 Trip generation and assignment

This section forecasts the additional traffic generated by the proposed scheme in addition to predicted organic port growth. The additional traffic is distributed and assigned to the highway network to establish a basis for assessing the potential transport impacts.

The assumptions that underpin the worst case operational scenario are discussed in this section.

A14.3.2 Traffic demand

To understand the additional traffic demand associated with the operation of the proposed scheme, a detailed breakdown of the existing port throughput (tonnage) has been undertaken and applied to historic traffic flow data associated with FIPASS.

Appendix 15 details the historic FIPASS data collated from the FIPASS logging system and provides the quantum of visitors and vehicle numbers from July 2016 to December 2019. The following parameters inform the vehicle numbers provided:

- One logged vehicle encompasses an arrival and departure movement.
- Vehicle trips have not been segregated into vehicle classifications; thus the breakdown of HGVs and light vehicles is not known.
- Vehicle trips capture all movements associated with visitors, container movements from FIPASS to the SAAS and from the wider area within the Falkland Islands.

Table 14.16 below, presents a summary of the AADT flows associated with FIPASS.

Table 14.16 Historic AADT for FIPASS

Year	FIPASS AADT flows
2016	190
2017	239
2018	216
2019	176
Historic average AADT (2016 – 2019)	205

Utilising information from the Demand Study (**Ref. 2**)[17] (reproduced in **Appendix 16**), it has been possible to derive growth factors for each future year growth scenario. These growth factors have been summarised in **Table 14.17** below.

Table 14.17 Derived growth factors per future growth scenario

Years	Base case	Optimistic	Pessimistic	Base / status quo
2019 – 2020	0.827	1.044	0.650	0.873
2020 – 2021	1.199	1.248	1.138	1.020
2020 – 2022	1.399	1.495	1.275	1.040
2020 – 2023	1.598	1.743	1.413	1.060
2020 – 2024	1.797	1.991	1.550	1.080
2020 – 2025	1.997	2.239	1.688	1.100
2020 – 2030	2.381	2.742	1.921	1.178

The growth factors within **Table 14.17** have been applied to the 2019 FIPASS daily movements of 176 as evidenced within **Table 14.17**. This has provided the predicted future vehicle movements per future growth scenario up to the year 2030 as detailed in **Table 14.18**.

Table 14.18 Forecast annual average daily traffic flows per future growth scenario

Years	Base case	Optimistic	Pessimistic	Base / status quo
2020	146	184	115	154
2021	175	230	131	157
2022	204	275	146	160
2023	233	321	162	163
2024	262	367	178	166
2025	291	412	194	169
2030	348	505	220	181

As a worst-case for assessment purposes, the base / status quo future growth scenario has been used as the reference baseline movements for the operational assessment year of 2025. These movements have been subtracted from the 2025 optimistic future growth scenario presented in **Table 14.18** and the resultant vehicle movements are shown in **Table 14.19** below.

[17] 'Annex 2. Throughput Figures by Scenario' of the Demand Study (**Ref. 2**)

Table 14.19 Forecast net increase in daily operational movements

Year	Base/ status quo	Optimistic	Net increase of optimistic over base / status quo
2025	166	367	200

To ascertain the split between light vehicles and HGVs of the 200 vehicles to be assessed, an HGV percentage figure of 39% has been taken from the manual surveys undertaken for link 3 (as evidenced in **Section A14.1.5**). This provides the final breakdown of an additional 78 HGVs and 122 light vehicles for operational assessment during the optimistic growth scenario.

There is predicted to be no increase in employee resourcing during the operational phase beyond the existing resourcing at FIPASS. Thus, no additional light vehicle movements have been added to the assessment.

A14.3.3 Traffic distribution

It is likely that all additional vehicles to be assessed would follow similar patterns of vehicle distribution as the current FIPASS facility. Thus, the following assumptions have been used to determine the vehicle assignment, derived from the two manual counts located on FIPASS Road, situated north and south of Coastel Road.

- 36.5% to Coastel Road (link 5).
- 63.5% to the wider study area (link 1).

A14.3.4 Traffic impact screening

In accordance with the GEART (Rule 1 and Rule 2), a screening process has been undertaken for the TTSA to identify routes that are likely to have significant changes in traffic flows and therefore require further impact assessment.

Table 14.20 summarises the assigned daily vehicle movements associated with the proposed scheme during the operational assessment year of 2025 when distributed across the TTSA. **Table 14.20** also provides a comparison of the peak daily operational movements with the forecast background daily traffic flows in 2025 and identifies the screened links for further assessment. Cells highlighted blue indicate GEART Rule 1 or Rule 2 screening thresholds have been met.

Table 14.20 Forecast and proposed daily operational traffic flows (2025)

Link	Description	Link sensitivity	2025 background flows (24 hr ADDT)		2025 daily operational vehicle movements		Percentage increase	
			All vehicles	HGVs	All vehicles	HGVs	All vehicles	HGVs
1	Darwin Road	Low	1,767	138	127	49	7.2%	35.7%
2	Stanley Bypass	Low	1,767	138	127	49	7.2%	35.7%
3	FIPASS Road (north)	Low	84	46	0	0	0.0%	0.0%

Link	Description	Link sensitivity	2025 background flows (24 hr ADDT)		2025 daily operational vehicle movements		Percentage increase	
			All vehicles	HGVs	All vehicles	HGVs	All vehicles	HGVs
4	FIPASS Road (south)	Low	593	131	127	49	21.4%	37.5%
5	Coastel Road	Low	347	35	73	28	21.1%	80.1%
6*	Proposed new access road to the quay	Low	n/a	n/a	367	142	n/a	n/a
*	Link 6 has been provided for informational purposes only and is not being assessed during operation (as the road will be a new link during operation with no existing background flows).							

A14.3.5 Amenity and pedestrian severance

The traffic forecasts detailed in **Table 14.20** indicates GEART thresholds for the assessment of amenity and severance will not be met, therefore the impact is predicted to be of **negligible** significance.

A14.3.5.1 Mitigation and residual impact

No mitigation measures are required for amenity and pedestrian. The residual impact would be of **negligible** significance.

A14.3.6 Driver delay

A14.3.6.1 Driver delay – reduction in link capacity due to generated road traffic

As indicated by **Table 14.20**, link 3 does not show any increase in operational traffic. As such, link 3 is considered to experience a negligible magnitude of effect.

As indicated by **Table 14.20**, levels of operational traffic on links 1, 2, 4 and 5 would follow pre-existing distribution of traffic. Link 1 (Darwin Road) and link 2 (Stanley Bypass) would experience an increase of 7.2% in total daily operational traffic flows equating to an additional 176 vehicle movements per day. Link 4 (FIPASS Road (south)) would experience an increase of 21.4% in total daily construction traffic flows equating to an additional 176 operational vehicle movements per day. Link 5 (Coastel Road) would experience a 21.1% increase of traffic equating to an additional 101 daily vehicles. The above flows are expected to span over a longer portion of the day than presented within the construction assessment due to the 24-hour seven days a week nature of port operations. Thus, a low magnitude of effect on links 1, 2, 4 and 5 is forecast during operation.

All links (1 to 5) are designated as A class roads, designed for the greatest traffic use by volume and weight and are prioritised for maintenance as a primary national asset. The sensitivity of the links is considered low as the highway environment is considered to accommodate changes in volumes of traffic. As a result, an impact of **minor adverse** significance is predicted.

A14.3.6.2 Mitigation and residual impact

Mitigation measures are not required. The residual impact is predicted to be of **minor adverse** significance.

A14.3.6.3 Impacts related to driver delay - junction delay/ capacity

To facilitate the assessment of driver delay (junction delay/capacity), the proposed scheme peak hour traffic demand during operation has been assigned to a single junction (Junction 1: the existing junction between Airport Road and FIPASS Road) has been identified as potentially being sensitive to driver delay during operation activities.

Table 14.21 details the net increase in hourly operational vehicle arrivals at each arm for Junction 1. The total predicted 127 vehicle movements expected to occur at the junction has been divided by a 24 hour operational period, but the resultant flows have been doubled for a peak hour assessment to reflect the sensitivity of peak demand as a worst case scenario. This methodology would cover periods of increased intensification of road traffic, such as when a container ship berths at the proposed quay. The proposed scheme is to continue 24 hour operation, in line with the current operations at FIPASS.

Table 14.21 Operational phase traffic flows through sensitive junctions

Junction	Junction arm	Arrivals by junction arm
		Operation vehicles
1	Stanley Bypass (west)	5.3
	FIPASS Road	5.3
	Airport Road (east)	0
	Total	**10.6**

As detailed in **Table 14.21**, approximately 11 additional vehicle movements are predicted to occur during a peak hour during operation.

The predicted vehicle flows through the junction do not exceed that of the GTA thresholds of 30 two-way vehicle movements per hour (Refer to **Section A14.1.2.1**); consequently, the flows through the junction are considered not significant and no further assessment would be required.

A14.3.6.4 Mitigation and residual impact

Impacts related to junction delay/capacity were considered to be not significant, and therefore mitigation measures are not required.

A14.3.7 Impacts related to road degradation

Darwin Road, Stanley Bypass, FIPASS Road (links 1, 2, 3 and 4 respectively) are all fully capped and thus are more resistant to road degradation. Thus, wear and tear to the surface is likely to be proportional to the forecast net increase in operational HGV traffic in relation to the forecast background traffic flows.

A total of 49 daily HGV movements on links 1, 2 and 4 are forecast with no HGV traffic assigned to link 3. When compared to baseline traffic, the identified increases is considered to be of low magnitude.

Based on the above, the sensitivity of road degradation is assessed low on links 1 to 4, with the magnitude of effect considered low (resulting in an impact of **negligible** significance).

Coastel Road (link 5) is an uncapped road (refer to **Section A14.2.7.5**) and is predicted to experience a net increase of 28 HGVs per day; this is considered to be a low magnitude effect. As detailed in **Section A14.2.7.5**, the sensitivity of the link is considered to be medium. As a result, the impact is predicted to be of **minor adverse** significance.

A14.3.7.1 Mitigation and residual impact

No mitigation measures are required. The residual impact is predicted to be of **minor adverse** significance.