This and the following 135 pages comprise Schedule 18 referred to in the foregoing Contract between the Scottish Ministers and Serco Ltd.

SCHEDULE 18 – PASSENGER, VEHICLES & FREIGHT DEMAND MANAGEMENT DELIVERY PLAN

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Glossary of Terms

Term	Definition
ABKI / KIAB	Route legs Aberdeen-Kirkwall / Kirkwall-Aberdeen
ABLE / LEAB	Route legs Aberdeen-Lerwick / Lerwick-Aberdeen
ANM	Aberdeen and Northern Marts
ANPR	Automatic Number Plate Recognition
APHA	Animal and Plant Health Agency
B&B	Bed and Breakfast
CMAL	Caledonian Maritime Assets Limited – owner of all the fleet vessels
DAFM	Demand Analysis and Forecasting Model
DGSA	Dangerous Goods and Safety Advisor
DMO	Destination Marketing Organisation
FAWC	Farm Animal Welfare Committee
Finishing	When beef animals are fed an energy-dense diet so that they will grow rapidly and add muscle/meat to their frame and optimise fat cover in preparation for slaughter
FM	Facilities Management
HA	Harbour Authority
HGV	Heavy Goods Vehicle
IMDG	International Maritime Dangerous Goods code
ISPS	International Ship and Port Security code
KILE / LEKI	Route legs Kirkwall-Lerwick / Lerwick-Kirkwall
Lairage	The transit location where cattle or sheep may be rested
Lashing / Lashing Points	The securing of freight to the vessel deck by physical fixings / secure fixture points on freight vehicles designed for attaching lashings to.
LC	Livestock Cassette – the purpose-built livestock carrying units
LoLo	Load on / load off freight ferry
LOPs	Local Operating Procedures
Mart	Auction mart (Orkney, Shetland, Aberdeen)
MCA	Maritime and Coastguard Agency
NFUS	National Farmers' Union Scotland
NIFS	Northern Isles Ferry Services
OAM	Orkney Auction Mart
OIC	Orkney Islands Council
PAS	Passenger Announcement System
PMSC	Port Marine Safety Code
RET	Road Equivalent Tariff
RoPax	Roll on/roll off passenger ferry
RoRo	Roll on/roll off freight ferry
SCST / STSC	Route legs Scrabster-Stromness / Stromness-Scrabster
SIC	Shetland Islands Council
SLMG	Shetland Livestock Marketing Group
SMS	Serco Management System

Term	Definition
SPV	Self-propelled vehicles – freight vehicles that travel with the driver
SRUC	Scotland's Rural College
Stevedore	Port operatives who load and unload the vessel and provide shoreside operations, including livestock handling.
Stocking density	The recommended number (head) of livestock that should be carried in an LC based on its carrying/design capacity and to assure animal welfare.
T&Cs	Terms and Conditions of Carriage

A2 Passenger, Vehicle and Freight Demand Management

1. Executive Summary

1.1. Serco's Approach to the delivery of the Passenger, Vehicle and Freight Demand Delivery Plan

The purpose of this Passenger, Vehicle and Freight Demand Delivery Plan is to demonstrate our understanding of the objectives that Serco and Scottish Ministers have set for the operation of the Northern Isles Ferry Service, with respect to Demand Management.

Our proposed Passenger, Vehicle and Freight Demand Delivery Plan provides a comprehensive and robust approach to ensuring an efficient, reliable service for passengers, vehicles, freight (including time-sensitive items), dangerous goods and livestock. We have provided a comprehensive and robust approach and details our systems and procedures. We have outlined our steps for satisfying all statutory requirements and explains how we monitor compliance with this plan.

Our Passenger, Vehicle and Freight Demand Delivery Plan is mindful of Scottish Government's (SG) high level objectives, to be:

- Responsive to local needs and appropriate to the requirements of those using them
- Resilient to social and commercial stresses

This Plan has been structured around the ITT Vol 2 – A2, with a section explaining about the challenges of Demand Management as a whole, relating to technical, logistical and management challenges. We have then covered:

- The three sub-plans individually, which each contain our Approach and methodology, utilising the best practice we have developed over the last six and a half years on which our Proposals have been based
- Our Proposals for the new contract term.

We have set out the proposals which will form part of the agreement between SG and Serco and show where there are areas of continuous improvement which will be targeted throughout the term of the contract. The areas of continuous improvement may require TS, CMAL or third-party approvals, feasibility studies or business cases for them to be delivered, and thus are to be viewed as having the potential to be implemented.

We have not included any costs associated with the delivery of the objectives, but they can be found in the financial model. However, where there is a requirement for additional investment or resource, we have indicated this.

The long-term impact of Brexit will have unknown impacts on domestic tourism, especially if travelling abroad becomes more difficult and Sterling remains depressed against the Euro and other currencies, therefore we have not allowed for this in our analysis.

We have provided suitable evidence to support the delivery of the requirements throughout the plan, however, where this evidence is part of a larger document this has been referenced or provided in full in a supporting appendix.

This Demand Management plan consists of three core components:

- DM1 – Passenger and Vehicles
- DM2 – Freight, including time sensitive freight and dangerous goods

- DM3 – Livestock

For each component we have provided a context and characteristics of the type of traffic, analysis of the data to understand historical demand patterns, an assessment of the factors that can influence how demand is managed and our assessment of what will influence future demand.

We have then provided our projected carryings for the 2019 contract based on this historical analysis and assessment of future influences.

Finally, we have described and proposed an extensive range of strategic, tactical and operational measures to ensure appropriate demand management at each step through the customer journey and operation:

- Data gathering, operational analysis, building of insight, forecasting and service adjustment
- Service planning, including marketing and managing demand in the booking process
- Service delivery, through embarkation, transport and disembarkation

This structured approach will deliver an effective, efficient and optimised service for NorthLink customers with the appropriate degree of flexibility to be responsive to changing demand and resilient to social and commercial stresses.

It will also enable Serco to work with Transport Scotland, CMAL, Orkney Island Council, HITRANS, Shetland Island Council, our customers and their representative stakeholder groups to explore future opportunities for timetable and service development in a proper, evidence-based way.

1.2. Key Improvements

This plan includes the following key improvement:

- Our development of a Demand Analysis and Forecasting Model for the contract to improve our ability to analyse our booking data in graphical form and engage in a richer way with stakeholders, including Transport Scotland, to inform better decision making and planning. This provides an enhanced capability to use market insight to inform more accurate business planning and forecasting, and run medium to long-term scenario planning.

2. Introduction

Our principal objective is to optimise demand and capacity, managing passenger and freight requirements as economically as possible, identifying capacity 'pinch points' and reducing them to a minimum.

Serco's objectives for this Demand Delivery Plan are to:

- Understand and demonstrate the balance of demand and capacity currently on the service, supported by consideration of recent trends
- Deliver the capacity fairly to meet the needs of all customers of the Northern Isles Ferry Services
- Supply capacity that meets the reasonable passenger and freight expectations for Orkney and Shetland markets
- Manage the supply of services to deliver an appropriate balance of capacity and affordability for Transport Scotland
- Identify capacity 'pinch points' on the network and opportunities to 'nudge', grow and accommodate demand

Present a considered view of demand and how this can be accommodated in the new contract

For analysis purposes, Serco has used the data provided to systematically deconstruct the service, by market sector, routes and products, and to establish a baseline demand and capacity position using that analysis of historical carryings data. We have identified the influences on demand and potential responses by market sector based on knowledge and experience gained in the current contract, as well as the tools available to influence and accommodate demand, from which we have then generated our forecasts.

3. Understanding the Requirements

Table 1: Assessment of the Challenges - Demand Management

Passengers & Vehicles	Challenges
Technical	Redacted
Logistical	
Management	
Freight	
Technical	Redacted
Logistical	
Management	

Table 1: Assessment of the Challenges - Demand Management

	Redacted
Livestock	
Technical	
Logistical	
Management	

4. Passengers and Vehicles – DM1

Serco understands the distinctive differences in approach to passengers and vehicles, freight and livestock. We also recognise that these three sectors are not unrelated and discrete. They share a common fleet of vessels for their transport, and the passenger and freight markets (including livestock) have very different drivers of demand and needs from the service. These are set out as separate sections in our Plan.

- Passengers and Vehicles
- Freight, including Time Sensitive and Dangerous Goods
- Livestock

To demonstrate our excellent understanding of the technical, logistical and management challenges, Serco has considered the customer journey for all three sub-sectors in scoping this Passenger, Vehicles and Freight Demand Management Delivery Plan. We recognise that vessel capacity is only one of the many touchpoints of the service. Demand management should encompass the effectiveness of all areas of the customer journey on NorthLink.

4.1. Approach to Passenger and Vehicle Demand

Serco's approach to this plan reflects our comprehension and understanding of the actual operation currently and how demand is assessed, planned for and the service delivered. Serco has, since 2012, maintained a close link between the operational service delivery of the contract and the wider Serco Transport division that includes the delivery of other public transport services which, in Scotland, includes the Caledonian Sleeper overnight rail service. It shares many customer-facing, hospitality and operating characteristics with the overnight NorthLink service. Both operate in highly regulated sectors, have finite capacity and complex customer offerings. Both offer cabin accommodation, attract a mix of customer types and require effective yield management to achieve best value for the subsidy involved, optimising the use of high cost

assets with high operating costs. Redacted

4.1.1. Recognising the operational context

Understanding the operational context is essential to the delivery of a high-quality ferry transport service for all customers, passengers and freight (including livestock).

The challenges are as follows:

Mixed vessel fleet for passengers and freight: Redacted

Aberdeen services connecting Orkney via Kirkwall and impacting on capacity for Shetland: Redacted

Operating in a commercially competitive environment: Redacted

Attractive shipping markets for third-party operators: Redacted

Managing customer expectations: Redacted

4.1.2. Passenger and freight sector characteristics

Serco's Demand Management Delivery Plan recognises the significant differences between passenger and freight (including livestock) markets. This is reflected in our approach to delivery of the service and developing the delivery plan forecasts.

Passenger demand is influenced by price and the decision to travel can be changeable: passengers generally have the freedom to make choices regarding their travel arrangements. They also have the choice to use other modes (to fly), or whether to take their car or to take a range of accommodation options. Visitors have the freedom to visit Orkney or Shetland, or other destinations. Demand can be quickly stimulated or suppressed by marketing activity and pricing levers.

Significant projects, including the Shetland Gas Plant construction project, have driven demand from contractors using the ferry to reach work. As these projects have been completed, the number of workers has decreased. This is a subset of passenger demand that shares similar, less flexible characteristics to freight and commercial demand.

Freight is a derived demand - it only travels when it needs to, and in response to an external commercial driver. There is almost no 'discretionary' freight movement, although there is flexibility around the timings of non-time sensitive movements. Redacted

NorthLink operates as a monopoly on the Aberdeen routes but across the Pentland Firth the competitor operator has used advantageous pricing and customer-specific incentives to lower supply chain and distribution costs for freight customers and has secured the majority market share of freight on the route. Freight pricing and service level levers are slower to take effect than for passengers. However, as seen on the Pentland Firth, the market has the capability to realign supply chains to take advantage of alternative parameters. Loyalty or personal preference rarely over-rides commercial or cost advantage.

As a derived demand, the volumes and revenues available to NorthLink are determined by economic activity elsewhere. Examples are growth or decline in demand for aquaculture or agriculture products, or the supply of materials and supplies to deliver housebuilding, industrial development or public infrastructure works.

4.1.3. Whole-Fleet Timetable Synchronisation

Overall capacity on NorthLink is delivered through published sailing timetables. The configuration and approach to delivery of these timetables differ between passenger and freight vessels.

The passenger vessel timetable is standard throughout year, with minor summer/winter variations. These are published in advance for the full year. Delivery is performance measured by Transport Scotland, with priority placed on high levels of confidence in departure and arrival times. The capacity delivered on the passenger vessels is considered in this plan as baseline capacity.

The freight vessel timetable is responsive to aggregate freight and passenger demand. It is built around five core configurations, designed to reflect historical demand and to complement the passenger vessel timetable, including the provision of relief capacity for continuity of service when the RoPax vessels are in dry dock. They are published in periods through the year.

Although the core configurations are designed to accommodate predicted demand and allow freight customers to plan their operations, it is delivered with greater flexibility than with the passenger vessels. This includes the ability to 'drop in' additional sailings to create additional capacity in response to demand and less stringent adherence to specific departure and arrival times, to enable the service to accommodate the operational variability of freight customers day to day. An example is Redacted

The operational flexibility to ensuring freight is shipped on the day needed is highly valued by freight customers as a complement to the tighter punctuality compliance necessary for the passenger vessels. This flexibility is actively managed by the Redacted in coordination with the Redacted and in close dialogue with freight customers.

The five core timetables are:

- Off peak
- Peak
- Livestock
- Festive
- Dry dock

4.1.4. Serco's NorthLink journey to date for Passengers and Vehicles

Serco's bid to operate NorthLink in 2012 set out to transform the service, improve the customer experience and address a wide range of operational inefficiencies. In doing so we have significantly reduced the year-on-year subsidy.

Among other things, we identified:

Significant excess of capacity on the Pentland Firth: We recast the timetable in line with the parameters allowable by Transport Scotland to better match capacity with real demand. Our timetable provides good connectivity during periods of the year when visitor and leisure demand from islanders require it. Redacted Customers can cross three times per day when there is genuine demand, during holiday periods and the summer season. Lifeline services run at least twice per day all year around. For those who wanted to travel at midday during low season, there is a parallel commercial service available.

A shortage of sleeping accommodation: Building new cabins onto the vessel was not viable. We proposed an innovative new accommodation type, a first for maritime, which gave greater choice for lower cost comfort sleeping options, and we reconfigured the vessel to accommodate these. Our 'pod' seats were installed in 2013 and Redacted The have consistently been in high demand (while also releasing cabin capacity), such that in the 2019 dry dock further investment has been committed to treble the number available on both Hrossey and Hjaltland.

Poor use of the booking and reservation system: Redacted

Tackling these issues, and many more, delivered the tangible improvements Serco set out to achieve in its 2012 bid. We are proud to be judged on our actions and our ability to deliver the plans set out in this bid as we continue our journey of improvement for NorthLink from 2019 onwards.

4.1.5. Analysis and Commentary

Serco understands the demands on the current NorthLink Service.

This review provides a commentary on the demand trends experienced currently, both in terms of carryings and of how customers use the service, which will inform how demand is managed going forward and the proposals in this plan.

Our analysis includes reference to capacity on the services. This is included as a general reference point for the underlying patterns of demand from passengers and does not specify

specific dates or services where demand has exceeded capacity but considers the challenges of managing the trends going forward.

The general allocation of demand must recognise:

- Passengers and passenger vehicles: Primarily travel on the RoPax vessels
- Freight vehicles: Make full use of the combined RoPax and RoRo fleets
- Livestock: Primarily travels on RoRo vessels

This section deals with each of the services: between Scrabster and Stromness (Pentland Firth), using the MV Hamnavoe and then the Aberdeen services to Kirkwall and Lerwick using the MV Hrossey and MV Hjaltland. The freight vessels MV Helliar and MV Hildasay, provide a small amount of passenger and vehicle capacity but for the purposes of this section are considered as supplementary capacity rather than as 'core' provision.

Demand and capacity is affected across three independent, but interrelated aspects of the services:

- Passenger carrying: Each vessel has a finite capacity to carry passengers.
- Vehicle carrying: Each vessel has a finite capacity to accommodate vehicles.
- Passenger sleeping accommodation: Each vessel has a finite level of comfortable sleeping accommodation, which is desirable on the overnight services to/from Aberdeen. Accommodation is defined as either a cabin berth or reclining 'pod' seat. Other seated options on the vessels are not considered in this analysis as being sleeping accommodation, although passengers do use seats, benches or the floor for sleeping on the journey.

We have considered all three aspects of the service. All directly affect the experience and perception of customers in regard to demand management.

4.1.6. Scrabster–Stromness (Pentland Firth)

The Scrabster–Stromness crossing is 90 minutes, with either two or three round trip services per day, depending on season. This seasonal approach, which we introduced in 2012, addresses considerable over-capacity at times of low demand in the year. Market competition exists with Pentland Ferries, who operate a commercial service between Gills Bay and St Margaret's Hope. Pentland Ferries provide up to three return crossings per day and have attracted market share using pricing levers not available to Serco.

Between NorthLink and Pentland Ferries, there are:

- 2,250–2,850 passenger-carrying capacity each way per day across the Pentland Firth. Pentland Ferries' new vessel, expected to enter service early into the next contract, will increase daily passenger carrying capacity by 300 passengers each way,
- 1,600–1,950 vehicle lane metre carrying capacity each way across the Pentland Firth. Pentland Ferries new vessel, expected to enter service early in the next contract, is configured for additional vehicle capacity and will increase daily vehicle carrying capacity by 600 lane meters each way.

Passenger sleeping accommodation is provided on the MV Hamnavoe as a value-added service for customers booked onto the first sailing of the day. This is particularly helpful for island residents living in Orkney's outer islands who are unable to connect-through using inter island ferries on the day of travel.

4.1.6.1. Overall carryings on Scrabster–Stromness Route

Our analysis of the carryings data indicates that through the current contract there Redacted

Redacted

Redacted

Figure 1: Overall passenger and vehicle carryings on Scrabster-Stromness since 2012.

4.1.6.2. Passenger demand: Trends through the current contract

Redacted

Redacted

Figure 2: Seasonality of islander and visitor passenger carryings across Pentland Firth, travelling in vehicle. Northbound and Southbound shown as different lines.

Redacted

Redacted

Figure 3: Islander and visitor passenger carryings across Pentland Firth, travelling as foot passengers.

4.1.6.3. Passenger Demand: Scrabster-Stromness route

Redacted

Redacted

Figure 4:STSCST Passengers v Timetabled Capacity (capacity fluctuations are due to some months having 4 or 5 weeks)

Figure 5 below shows the behavioural patterns of the passenger sub-sectors. Redacted

Redacted

Figure 5: SCSTSC passenger makeup and subsector trends

Redacted

4.1.6.4. Vehicle Demand: Trends through the current contract

The MV Hamnavoe has a vehicle carrying capacity of 350 lane metres on each sailing. This is shared capacity available for use by passenger and commercial vehicles. The impact of freight vehicles is detailed in Section 5.1.3.1 Scrabster-Stromness (Pentland Firth).

We have aggregated both Scrabster–Stromness and Stromness–Scrabster in Figure 6, which shows Redacted

Redacted

Figure 6: Passenger vehicle demand on STSCST v timetabled capacity.

Figure 7 below shows the behavioural patterns of the passenger vehicle sub-sectors. Redacted

Redacted

Figure 7: SCSTSC Passenger vehicle makeup and subsector trends

Figure 8 below expresses the data in terms of when in the week there is demand on the service for each of the low, mid and peak periods. These 'box and whisker' charts capture the range of demand for each weekday in the data and identify Redacted

Redacted

Figure 8: Daily demand patterns in low, mid and peak periods

Within this vehicle carrying data, we have identified Redacted

This is shown in the following Figure 9.

Redacted

Figure 9: SCSTSC Motorhome makeup and subsector trends

The data shows Redacted

4.1.6.5. Scrabster–Stromness: Guest sleeping accommodation

The MV Hamnavoe is equipped with 16 cabins (36 berths), sold as 'B&B' accommodation for guests travelling on the 06:30 sailing from Stromness. We introduced B&B in the existing contract to allow guests to sleep in and take breakfast onboard while the vessel is on passage. Guests' vehicles are loaded the previous night. The service utilises available cabin accommodation that was not capitalised on in the previous contract, and has been well received.

B&B is subject to availability and is not core to the delivery of capacity on the route, so it is not included in this analysis.

4.1.6.6. Scrabster–Stromness: Scope for growth

Redacted

Redacted

4.1.7. Aberdeen Routes

The 'Aberdeen Routes' connect Aberdeen and Lerwick, calling into Kirkwall two or three times per week depending on season. The Aberdeen–Lerwick crossing is 12 hours overnight (14 hours via Kirkwall) and operates one crossing each way, each day throughout the year. The passenger and vehicle service operates as a monopoly ferry service to Lerwick, competing only with the Pentland Firth crossings to Orkney, and air services to Orkney and Shetland.

NorthLink delivers:

- 600 passenger carrying capacity each way per day to/from Aberdeen. On days the vessel calls into Kirkwall, Orkney demand is also accommodated within the 600 passenger carrying capacity.
- 470 vehicle lane metre passenger vehicle carrying capacity each way per day to/from Aberdeen. On days the vessel calls into Kirkwall, Orkney demand is also accommodated within the 470 vehicle lane metres available.
- 396 passenger sleeping accommodation capacity each way per day to/from Aberdeen. On days the vessel calls into Kirkwall, Orkney demand is also accommodated within the 396 passenger sleeping accommodation capacity available. The passage to Orkney from either Aberdeen or Lerwick is undertaken during the evening and from Orkney to either Aberdeen or Lerwick could be considered as being through the night.

Redacted

4.1.7.1. Overall Carryings on Aberdeen–Lerwick Route Leg

Figure 10 provides insight into the Aberdeen-Lerwick route. The data Redacted

Redacted

Figure 10: Passenger and vehicle carryings on Aberdeen-Lerwick since 2012

4.1.7.2. Passenger Demand: Trends through the current contract, Aberdeen–Lerwick

Figure 11 and Figure 12 that follow show the seasonality of passengers traveling by foot and by car. Patronage to/from Shetland is generally balanced between islanders and non-islanders, Redacted

Redacted

Figure 11: ABLE Car-based passenger demand seasonality

Redacted

Figure 12: ABLE Foot passenger demand seasonality

4.1.7.3. Passenger Demand: Aberdeen–Lerwick route

Redacted

Redacted

Figure 13: ABLEAB Passengers v Timetabled Capacity (fluctuates due to 4/5 week months)

Figure 14 below shows the behavioural patterns of the passenger sub-sectors. While the trend in visitors until 2016 requires careful interpretation, Redacted

Redacted

Figure 14: ABLEAB Passenger makeup and subsector trends

4.1.7.4. Overall Carryings on Aberdeen-Kirkwall Route

Figure 15 below provides insight into the Aberdeen-Kirkwall route. This is an integral sector of the longer Aberdeen-Lerwick route. Our analysis distinguishes the volume, while recognising in capacity terms, ABLE and ABKI demand is aggregated, as it is delivered by the same vessel sailing.

The data indicates that through the current contract, demand Redacted

The Aberdeen-Kirkwall leg is delivered between three and four times per week depending on time of year and Redacted

Redacted

Figure 15: Chart (ABKI): Passenger and vehicle carryings on Aberdeen-Lerwick since 2012

4.1.7.5. Passenger Demand: Trends through the current contract, Aberdeen-Kirkwall

Figure 16 and Figure 17 which follow show that Redacted

Redacted

Figure 16: ABKI Car-based passenger demand seasonality

Redacted

Figure 17: ABKI Passenger demand seasonality

4.1.7.6. Passenger Demand: Aberdeen-Kirkwall route

Redacted

Redacted

Figure 18: ABKI Passengers v Timetabled Capacity (fluctuates due to peak/off peak timetable)

The behavioural patterns of the passenger sub-sectors is demonstrated in the following Figure 19, showing Redacted

Redacted

Figure 19: ABKIAB passenger makeup and subsector trends

4.1.7.7. Vehicles: Overall Carryings on Aberdeen Routes

The MV Hrossey and MV Hjaltland has a vehicle carrying capacity of 470 lane metres on each sailing. This is shared capacity available for use by passenger and commercial vehicles. Of the 470m available, 350m is accessible to commercial vehicles, the balance comprises a car-only lower vehicle deck and main vehicle deck space inaccessible to high commercial vehicles.

Our analysis in this section considers only passenger vehicle demand. The aggregated demand of freight and passenger vehicles and dynamic use of RoPax and RoRo vessel deck space is detailed in Section 5.1.3.2 Aberdeen Routes.

Overall carryings of passenger vehicles is shown in Figure 20 below. It demonstrates Redacted Redacted

4.1.7.8. Vehicle Demand: Trends through the current contract, Aberdeen–Lerwick–Aberdeen

The opportunity for passenger vehicle growth to and from Shetland is constrained relative to Orkney due to the lower number of services available. Figure 20 shows that Redacted

Redacted

Figure 20: ABLEAB passenger vehicles V timetabled capacity, all vehicle carryings since 2012, each way.

Figure 21 below expresses the data in terms of when in the week there is demand on the service for each of the low, mid and peak periods. It shows that Redacted

Redacted

Figure 21: Daily demand patterns LEAB

Figure 22 below shows the behavioural patterns of the passenger vehicle sub-sectors. Redacted Redacted Redacted

Figure 22: ABLEAB passenger vehicle makeup and subsector trends

Redacted

4.1.7.9. Vehicle Demand: Trends through the current contract, Aberdeen–Kirkwall–Aberdeen

The opportunity for passenger vehicle growth to and from Orkney on the Aberdeen route is limited because of service infrequency and the overall capacity available on the RoPax vessels, which also accommodate 'through traffic' to and from Shetland, as well as freight traffic. Figure 23 which follows shows that Redacted

Redacted

Figure 23: ABKIAB passenger vehicles V timetabled capacity, all vehicle carryings since 2012, each way

Figure 24 below shows the behavioural patterns of the passenger vehicle sub-sectors, indicating that Redacted

Redacted

Figure 24: ABKIAB passenger vehicle makeup and subsector trends

Figure 25 below expresses the data in terms of when in the week there is demand on the service for each of the low, mid and peak periods. It shows that Redacted

Redacted

Figure 25: Daily demand patterns KIAB

Redacted

4.1.7.10. Passenger sleeping accommodation

Determining the demand or utilisation of passenger sleeping accommodation on a sailing-by-sailing basis has not been possible from the information in the data room. However, we have learned how accommodation is used on a month-by month basis, especially customer demand for products on different routes. In the following Figure 26, Figure 27 and Figure 28 we show three sample months from 2017.

These charts, which include the start (April), peak (July) and end (October) of the holiday season, indicate that Redacted

Redacted

Figure 26: Accommodation sales data – April 2017

Redacted

Figure 27: Accommodation sales data – July 2017

Redacted

Figure 28: Accommodation sales data – October 2017

Pod seats: The 'pod' seat was introduced by Serco as an innovation in the current contract. It is a product offered as a lower priced alternative to a cabin berth but an improvement to a regular seat. Sales data has provided insight into their use, in Figure 29.

These charts show Redacted

Redacted

Figure 29: Pod seat sales

Top: Aberdeen – Lerwick, Lerwick – Aberdeen
Middle: Aberdeen – Kirkwall, Kirkwall – Aberdeen
Bottom: Kirkwall – Lerwick, Lerwick - Kirkwall

4.1.7.11. Aberdeen Routes - Observed scope for growth

The Aberdeen routes are more constrained in their capacity for growth due to the fewer absolute number of sailings. Time and distance between Aberdeen and Lerwick preclude the possibility of adding materially greater capacity without adding significant operational cost or introducing larger vessels. Redacted

Redacted

the RoPax is the only vessel sailing so there is significantly less vehicle deck space to meet the combined needs of passenger vehicles and to accommodate time sensitive aquaculture freight. Redacted

The attractiveness of connection to Aberdeen by Orcadians means that the Aberdeen -Kirkwall route has to carry the combined demand of both island groups. This combined demand means it is the most congested route on the network. There are more limited opportunities to grow volume on this route, especially in the peak periods.

4.1.8. Influencing factors on our forecasts and Demand Management Plan

This section discusses matters that influence how demand is managed for customers and vehicles.

4.1.8.1. Customer behaviours

Managing customer demand is easier with insight into the behaviour of customers and in particular how different customer segments behave differently. Understanding this allows the business to target and message differently to influence how customers act. Usually, pricing or service levers are used to influence customer behaviours to allow a business to optimise its operation but, as with Serco's Caledonian Sleeper business, we can use insight to inform marketing and tactical operational decisions to deliver a service that represents the best compromise for all customers.

Route preference; Customers travelling to and from Shetland have the choice of NorthLink or air services, but those travelling to and from Orkney can fly, use the service between Kirkwall and Aberdeen or the choice of two operators across the Pentland Firth. Personal preference, urgency of travel, travel purpose and ultimate origin or destination will dictate which option or combination of options are used on a return trip.

Passenger choice is more discretionary than for freight, for example. Serco has the ability to incentivise this choice through the service offering and marketing activities that will attract islanders and visitors differently.

Booking lead times; The Northern Isles Ferry Service (NIFS) contract requires the service to be offered on a first come, first served basis. With unconstrained capacity each customer should expect to have their requirements fulfilled and no demand management would be needed. The analysis section identified that vehicle deck and sleeping accommodation is capacity constrained at times of the year so inevitably customers booking closer to the day of travel will have a higher probability of not getting their first-choice option.

Serco introduced 12-month advanced bookings on the Caledonian Sleeper, considerably further ahead than the three-month booking standard in the UK passenger rail industry. This was to enable us to better target demand from the tourist market for customers who plan holidays and make bookings well in advance of travel. Redacted

That data also gave insight on difference in booking horizon between Orkney residents and Shetland residents.

Redacted

Figure 30: Booking behaviours by customer origin

The data shows that Redacted
The ease of using the Pentland Firth, and the opportunity to make day trip choices based on the weather, influences this behaviour. It also shows Redacted
indicative of passing touring trade on the north coast of Scotland and the discretionary option of a return day trip on Scrabster-Stromness route.

The behaviour of Shetland Islanders is indicative of the greater commitment needed to travel – time, distance and cost to reach destinations are more significant barriers Redacted
This longer travel planning horizon aligns with the common Orkney perspective Redacted

Redacted

Accommodation booking preference; There is finite accommodation on the Aberdeen vessels, offered as a range of different products to suit the requirements of different customers. To this mix Serco introduced the 'pod' reclining seat in the current contract as an intermediate and affordable option between a seat and a cabin berth. Take-up of the products over the contract differs between islanders and non-islanders – marked in Grey and Orange respectively in the charts, below.

Redacted

Figure 31: AB-Lerwick-AB route; Number of sales in current contract and accommodation preference by customer type. Grey = Islanders, Orange = Visitors

Redacted

Figure 32: AB-Kirkwall-AB route; Number of sales in current contract and accommodation preference by customer type. Grey = Islanders, Orange = Visitors

Cancelled bookings; the NIFS contract includes the flexibility for customers to cancel their bookings without penalty up to the point of sailing. This is a valuable feature that reflects the lifeline nature of the service, enabling islanders to have confidence that the service can fit around their life-needs. It also allows customers to have flexibility to alter their travel plans to avoid poor weather.

Figure 33 below identifies at an aggregate level the cancellation behaviour of customers. It groups cancellations into three day periods, with the initial column representing bookings that have been cancelled on the same day as booking and up to three days before. While care is needed because the reason for short notice cancellation could be genuine, it demonstrates the fluidity of booked capacity at any moment in time.

Redacted

Figure 33: Booking cancellation lead times, 2016-2018

Bookings that have been made will remove available capacity in the booking and reservation system, and Serco recognises that the flexibility provided by penalty-free cancellations also introduces demand management challenges. Redacted

4.1.9. Drivers of demand and market expectation

Demand is discussed on the basis of Island Group and Industry Sector before considering how this demand is likely to present itself on the network and physically be delivered on a route and vessel basis.

4.1.9.1. Orkney specific demand

Redacted

Growing the visitor market is a priority for Orkney Island Council (OIC). They have invested in Destination Marketing Organisation (DMO) activity through the Orkney.com initiatives and made efforts to put Orkney on the international map by encouraging cruise liner stops. National coverage about the attractiveness of Orkney as a place to visit and live reinforces the potential for growth. Visit Scotland research (Orkney Islands Visitor Survey 2017) identified the positive and growing influence of TV, film and Orkney-focused book publications creating inspiration for visitors to travel to Orkney. To meet this growth, island businesses and especially accommodation providers are investing in more and better facilities.

The popularity of motorhome and caravan holidays seen on west coast ferry services Redacted

Redacted

Figure 34: Carriage of motorhomes on Scrabster-Stromness route in current contract

Scottish Government's own infrastructure investments are delivering improved accessibility to the far north of Scotland. The ongoing upgrade of the A9 trunk road and by 2020, improvements around the Berriedale Braes area and improved accessibility to Aberdeen port via the new Aberdeen Western Peripheral Route will further remove barriers to travelling north by car.

The long-term impact of Brexit will have unknown impacts on domestic tourism, especially if travelling abroad becomes more difficult and Sterling remains depressed against the Euro and other currencies, Redacted

Investment by Pentland Ferries into its new, larger vessel supports our view of an optimistic outlook for Orkney. This new vessel, to be launched in 2019, has the potential to suppress demand on the Scrabster-Stromness route. It is assumed that Redacted

Our proposals in MS1 include investment in technologies and relationships that will build on the market positioning of NorthLink Ferries, to improve our ability to work with Visit Scotland, Orkney.com and island partners to identify and attract new customers.

The relative accessibility of Orkney as compared to Shetland is believed to influence the Redacted

While weather cannot be predicted with any accuracy, climatic changes appear to be bringing more extreme seasons to the UK and increasing the number of extended, warmer weather to Scotland. This will make far north destinations attractive for longer periods of the year, potentially extending the traditional tourist season and the potential for travel to Orkney on the Pentland Firth route.

Redacted of visitor travel occurs between April and October (inclusive) when the weather is warmer and daylight hours at 58.9 degrees north latitude become longer. This is the period during which Orkney has a wide variety of events on annual and bi-annual basis, including agricultural shows and classic car events. The growth of Orkney's tourism sector, which includes the growing number of calls by cruise vessels into Kirkwall, is likely to stimulate an increasingly vibrant summer visitor season.

Redacted

Redacted

4.1.9.2. Shetland specific demand

Redacted

Shetland's primary economic sectors of fishing, aquaculture and North Sea energy are expected to remain dominant and see developments in the areas of North Sea asset decommissioning and continued off-shore investments. The current contract benefitted from a sustained period of passenger demand boosted by large projects and imported labour. Shetland Gas Plant, for example, had as many as two thousand workers on site at peak times.

Although there will be continued investment and development in the main economic sectors, including plans not yet approved to develop a 103-turbine wind farm on Yell, Serco does not see any projects pending that would result in the Redacted

Shetland has invested in developing its visitor market to diversify from its traditional economic base. Shetland's distance from the UK mainland, weather and seasonal daylight hours are more extreme than for Orkney so it attracts a more dedicated type of visitor. But, the raised profile through TV drama "Shetland", particularly, is being used by the islands' Destination Marketing Organisation - Shetland.org to stimulate visitor interest. There are increasingly visitor-focused businesses emerging, promoting wildlife, Northern Lights and similar nature-oriented attractions. Combined, there is potential for visitor demand to grow modestly.

As with Orkney, the data indicates Redacted

Redacted

Figure 35: Carriage of motorhomes on Aberdeen-Lerwick route in current contract

Redacted

4.2. Proposals for Passenger and Vehicle Demand

4.2.1. Details of projected carryings

This section provides Serco's forecasts on projected carryings, based on the analysis and influences discussed in the previous section.

Our forecasting model recognise the constraints of the current timetable and vessel configuration. Redacted

4.2.2. Assumptions

Our projections are based on the following:

Redacted

4.2.2.1. Presentation of data tables and charts

Our projections for passengers, vehicles and cabins are detailed in tables that provide absolute numbers of demand.

We have also presented charts that are outputs from our data analysis and forecasting work.
Redacted

Redacted

Figure 36: Our projected carryings, Pentland Firth, aggregate both directions.

How this demand presents itself onto the service is presented in the charts, below.

Redacted

Figure 37: Year 1 Loading Calendar, Passengers (SCST only)

Redacted

Figure 38: Summary of projections and impact on capacity, Passengers (SCST only)

Redacted

Redacted

Figure 39: Year 1 Loading Calendar, RoPax vehicle deck (STSC only)

Redacted

Figure 40: Summary of projections and impact on capacity, RoPax vehicle deck (STSC only)

Redacted

These charts include our projections for freight on the route.

4.2.4. Aberdeen Routes

4.2.4.1. Aberdeen – Lerwick

Our projections for passengers, vehicles and cabins the Aberdeen-Lerwick route is detailed in the tables, below.

Redacted

Figure 41: Our projected carryings, Aberdeen-Lerwick, aggregate both directions

Coach data is provided as Lane Meters, no coach numbers were provided in the data.

How this demand presents itself onto the service is presented in the charts, below.

Redacted

Figure 42: Year 1 Loading Calendar, Passengers, (ABLE only)

Redacted

Figure 43: Summary of projections and impact on capacity, passengers (ABLE only)

Redacted

Redacted

Figure 44: Year 1 Loading Calendar, RoPax vehicle deck (LEAB only)

Redacted

Figure 45: Summary of projections and impact on capacity, RoPax vehicle deck (LEAB only)

Redacted

Redacted

Figure 46: Year 1 Loading Calendar, Cabin Accommodation (LEAB only)

Redacted

Figure 47: Summary of projections and impact on capacity, Cabin accommodation (LEAB only)

Redacted

4.2.4.2. Aberdeen - Kirkwall

Our projections for passengers, vehicles and cabins the Aberdeen-Kirkwall route is detailed in the figures, below.

Redacted

Redacted

Figure 49: Year 1 Loading Calendar, passengers, (KIAB only)

Redacted

Figure 50: Summary of projections and impact on capacity, passengers, (KIAB only)

Redacted

Redacted

Figure 51: Year 1 Loading Calendar, RoPax vehicle deck, (ABKI only)

Redacted

Figure 52: Summary of projections and impact on capacity, RoPax vehicle deck (ABKI only)

Redacted

Redacted

Figure 53: Year 1 Loading Calendar, Cabin Accommodation (KIAB only)

Redacted

Figure 54: Summary of projections and impact on capacity, Cabin accommodation (KIAB only)

Redacted

4.2.4.3. Kirkwall – Lerwick

Our projections for passengers, vehicles and cabins the Kirkwall-Lerwick route is detailed in Figure 55, below.

Redacted

Redacted

Figure 55: Passengers, vehicles and cabins projections for the Kirkwall-Lerwick route

4.2.5. Effective and Efficient Measures to Ensure Appropriate Demand Management – Passengers and Vehicles

This section outlines the specific proposals Serco will use to ensure appropriate demand management. The overall demand management process is captured in Figure 56 below:

Redacted

Figure 56: Demand management process

This process supports Serco's internal financial forecasting and embeds strong disciplines in how we manage the contract to assure those forecasts are accurate. In summary:

Service delivery generates day to day data in booking, reservation and finance systems. Redacted

Output of this analysis includes performance reporting to Transport Scotland. Redacted

From this we can inform long, medium and short-range forecasts that are generated for business and financial planning purposes.

Within these long, medium and short-range timeframes we Redacted

In the current contract, many of the process and data capture improvements are the result of following this discipline.

Redacted

Redacted

Inputs and outcomes of this process will always be based on the principles of fairness and equality for all customer of NorthLink and our commitment to continuous improvement in customer experience. Being data and insight led, supported by engaged stakeholders underpins the robustness of outputs and, we anticipate, increase confidence in our decisions.

This demand management process informs an effective service delivery, enabling us to consider appropriate activities or interventions to influence both demand and supply at a strategic planning and tactical operational level.

Redacted

Figure 57: Effective service delivery model

Given the challenges of NorthLink and its peaky utilisation profile, high fixed costs and our responsibility to deliver the service cost effectively for Transport Scotland, we recognise the

reasonable expectation for us to be proactive in maximising its potential. As any competent operator should, our role is to be active on both demand creation and supply fulfilment.

4.2.6. Creation and implementation of an advanced Demand Analysis and Forecasting Model

Redacted

It has enabled us to dig deep into the patterns of demand to inform our solutions and engage in scenario planning against different growth factors in accommodation, passenger and vehicle deck demand on all vessels. Graphical outputs from this model are included in this plan to demonstrate historical demand patterns, opportunities and chart our projected volumes. Redacted

Redacted

Figure 58: Example data dashboard output from Demand Analysis and Forecasting Model in bid configuration, to be evolved into contract analysis tool.

We recognise the power of good data and sophisticated analysis to support effective, evidence-based decision making at an operation level when engaging with customers, and at strategic level when reporting KPIs to Transport Scotland or engaging with TS and CMAL, as vessels' owner on future fleet and service developments.

In the first contract year we will invest to develop our bid-focused Demand Analysis and Forecasting Model, to evolve it into a powerful analytical tool. Redacted

we will create a value-adding operational tool to enhance Serco's ability to optimise use of the NorthLink fleet and passenger, accommodation and overall fleet vehicle deck capacity, including Freight and Livestock.

Ongoing investment and evolution through the contract will continuously improve our Business Intelligence (BI) capability to understand the nuances of customer behaviour, ticket sales, product demand and opportunity for maximising the capacity available in the service.

Serco's corporate management process and the TS reporting requirement in schedule 13 require monthly reporting of performance and forecasting updates. Forecasting involves review of historical performance and making judgements about future performance based on applying insight into the underlying trends and market externalities that could increase or decrease demand on the service.

The Demand Analysis and Forecasting Model will be evolved to enable the NIFS contract team to translate more accurately and efficiently, stakeholder and community feedback and market insight into nuanced forecasts for accommodation, vehicle deck and passenger demand at week, month and route level. Redacted

Redacted

Transport Scotland will get considerable value from the insight generated in several area; principally, to inform Ministers about the performance of NorthLink and to support answering Parliamentary Questions and support its own engagement with community stakeholders when developing policy. It will also enable Serco and Transport Scotland to more effectively conduct sensitivity testing of the impact of timetable alterations, any potential future tariff changes and future vessel modifications.

4.2.7. Managing demand by influencing passenger choices

The data shows that the peaks periods will fill themselves but there are growing constraints on accommodation and vehicle deck. There is a need to influence customer choices to manage demand and Redacted

Specifically, we will:

- Implement a new Customer Relationship Management (CRM) system, which is described in Delivery Plan A5-MS1. Redacted

4.2.8. Operational demand management:

The way we manage the operation will have beneficial effect on managing demand. Specifically, we will:

Redacted

Redacted

4.2.9. Creating Insight

Our demand management process relies on having great insight into events that will positively or negatively affect demand on NorthLink. We will create this by:

Redacted

Once a customer is booked and presents themselves at the port, demand management becomes a tactical and operational process to ensure the service is delivered efficiently and the customer experience matches their expectations.

4.2.10. Embarkation of Passengers and Vehicles

The data in Sections 4.2.3 and 4.2.4 identifies that passenger volume for most of the year on most sailings is well below the service capability and that vessels are full on relatively few occasions. The capacity of the port facility to handle throughput demand is rarely a constraint, especially for the volume of foot passengers who will use the reception and waiting areas before boarding.

The safe and efficient flow of passengers though ports will include:

- **Collection of pre-paid booking (or to make a walk up booking);** Passengers will be able to collect their booked tickets at any time during the opening hours of the terminal by presenting a booking reference number generated and notified to them at the point of booking. We will minimise queuing by rostering at least two reception staff at Aberdeen and Lerwick for the hour before sailing.
    - As part of our Smart Ticketing implementation, we will enable the collection of digital tickets from electronic terminals that will also have the capability to print cabin access

cards where a foot passenger has purchased cabin accommodation as part of their booking.

- **Waiting in the departure area**; Passengers will be able to sit in relative comfort and warmth at each of our departure areas. Each location will be staffed and customers will be able to buy food and fresh coffee. The waiting areas will be equipped with screens showing departure information, have Wi-Fi availability and television. Each location will also hold information about the service, including copies of our terms and conditions, and promotional literature from island businesses.
- **Checking-in of luggage**; Passengers will be able to check in luggage for conveyance in the vessel hold. Luggage will be accepted for check-in by security staff during terminal opening hours at Aberdeen, Lerwick and Kiln Corner in Kirkwall. Our staff will issue customers with a luggage tag that corresponds to the one tied to their luggage. Security checks are performed, including spot check and random checks through luggage scanners. The frequency of these scans will be determined by the general security status level informed to the business by Police Scotland. Once checked in, passengers will collect their luggage on arrival at the destination port.
- **Embarkation via a Passenger Access System**; Embarkation to the vessel will involve passing through an initial ticket check before moving to the vessel via covered passenger walkways and having their ticket validated at the point of boarding.
  - When a passenger steps across the threshold onto the vessel, the legal responsibility for the passenger passes from the shore side operation to the vessel, in compliance with regulations set out by the Maritime and Coastguard Agency (MCA). Ticket validation is necessary at this point to create a passenger manifest. This manifest is a complete list of passengers aboard and is required by international maritime law to be provided to the vessel before it can sail.

The safe and efficient flow of vehicles (including passengers) through the ports will include:

- **Collection of pre-paid bookings at vehicle check-in**; Passengers in vehicles will be able to collect their boarding and vehicle tickets from our staff without stepping out from their vehicle. Our vehicle check-in opens two hours before each sailing. Booked tickets are pre-printed before check-in opens, meaning that customers only need confirm their name to collect. Vehicle registration numbers are confirmed visually – a process that for the modest volume of traffic on NorthLink, Redacted

  - Visual checks support a proactive security approach. Our staff will be briefed to watch out for vehicles carrying products that contravene our terms and conditions; firearms, fuel over a certain volume, pressurised gas cylinders etc. Where these are suspected or found, customers will be asked to remove them for the safety of all on board.
- **Allocation of vehicle into marshalling lane**; Redacted

  Customer experience is enhanced by driving straight on, parking and exiting to the passenger decks, without need to wait for different size vehicles to be moved around.
  - When a vehicle crosses the threshold of the vehicle loading ramp, the legal responsibility for the vehicle and its passengers passes from shore side operation to the vessel, in compliance with regulations set out by the MCA.
- **Introduce an express vehicle boarding lane at Stromness**; this will be a chargeable value-add option to allow customer to be boarded onto the vessel such that they are the first to disembark in Scrabster. There is 112 miles of mostly single carriageway road between

Scrabster and Inverness enabling the possibility to 'get ahead' of slower moving traffic provides road safety benefits.

- **Loading of freight vehicles first, then passenger vehicles**; This arrangement reduces confliction with passenger vehicles and improves safety as freight vehicles are secured to the vessel deck. It also allows passengers to experience the minimum dwell time between loading and departure and for passenger vehicles to disembark first.
- **Loading of cycles**; Passengers travelling with cycles will be asked to board as a group and after the main loading of passenger vehicles. This will allow the Chief Officer to reduce the risk of conflict with moving vehicles and to ensure cycles are secured for transit.

At Lerwick and Aberdeen the vehicle marshalling areas are within port areas restricted under International Ship and Port Facility Security (ISPS) code regulations. Consideration is also taken of the requirements of the Port Marine Safety Code. Access to the marshalling area is controlled by combining vehicle check-in with security. Our vehicle check-in opening times will be managed to prevent excessive vehicle queuing outside of the secure marshalling area, while fulfilling our obligations to manage security within the areas of our control under the ISPS code.

4.2.11. Transport of Passengers and Vehicles

Redacted

In the context of demand management for vehicles and accommodation, Serco will enable the full, safe and expedient transport of passengers and vehicles by:

Redacted

Once aboard the vessel, it is the responsibility of the Chief Officer to direct passenger vehicles to their parking spaces, taking account the vessel stability and overall loading of the vehicle deck including the volume of freight being carried. Generally, heavier freight vehicles are secured along the outside vehicle lanes and lighter passenger cars are located down the middle.

- Before departure, all passengers must leave the vehicle deck and it will be secured for the sailing. Customers will not be allowed back onto the vehicle deck until directed to do so by vessel crew on arrival at port.

4.2.12. Disembarkation of Passengers and Vehicles

On arrival at destination ports, customers want to disembark and continue their journey as seamlessly as possible. Demand management in this regard relates to the safe and effective discharge of the vessel and flow through the port.

Legal accountability for passengers' vehicles transfers from the vessel master to the shore operation at the threshold of the vessel – Passenger Access System (PAS) or vehicle loading ramp. The Chief Officer has responsibility for directing the release of passenger vehicles off the vessel in an orderly manner. Foot passengers will disembark once the PAS is safely secured.

Once off the vessel, the disembarkation process will include:

- **Collection of checked-in luggage** by foot passengers; Luggage trolleys that have been moved on the vehicle deck will be towed to the terminal building. Within a covered unloading area our staff will assist customer be reunited with their luggage.
- **Support for onward journeys by foot passengers;** Serco staff will assist with making onward journey connections by taxi or bus directly from the terminal, or with connections to rail and air services. Real time onward transport information will be provided onboard the vessels and in the terminal buildings.
  Redacted

- **Directing vehicles from the terminal;** our staff will direct vehicle traffic through the port and onto the public highway.
  Redacted

Passengers with vehicles wishing to take breakfast aboard the vessel on arrival at Aberdeen and Lerwick will be asked to move their vehicles first. Our marshalling area staff will direct these customers to park their vehicles away from the main vehicle routes through the terminal to prevent blocking of other passenger vehicles and the freight discharging operation that follows. These passengers will be allowed back onto the vessel via the PAS.

4.3. Potential ideas for timetable revisions to be consulted on post mobilisation and for 2020 adoption

In this section we discuss potential timetable revisions based on our analysis and feedback from stakeholders. We will consult with passenger and freight stakeholders on these proposal in the 2020 timetable year. Through 2019 and into 2020 the impact of tariff reduction on the Aberdeen routes will be better understood and the introduction of the new Pentland Ferries vessel and potential implementation of RET will become evident.

We have identified three options for revision across the Pentland Firth:
Redacted

Opportunities to modify the timetable on Aberdeen routes are limited by the overall journey time.
Redacted

Redacted

4.4. Terms and Conditions of Carriage

Our Terms and Conditions of Carriage (T&Cs) are included in full as Appendix A2-1 at the end of this delivery plan. These T&Cs are common for Passengers, Freight and Livestock and include content specific to all three customer types.

Serco comprehensively reviewed and updated the Terms and Conditions of Carriage in 2016 taking expert legal advice to remove redundant content, reflect current regulations and significant simplify the language and presentation for the benefit of customers.

Our T&Cs are available in printed form at terminals and on vessels and are provided in full on the NorthLink Ferries website.

Serco will continue to consider the T&Cs a live document subject to continuous review and potential change in response to:

- Regulatory or legal changes, i.e., by the MCA
- Transport Scotland policy and instruction
- Customer behaviours and actions

5. Freight Demand Management – DM2

5.1. Approach to Freight

Our approach to managing capacity to meet freight demand and the projections and proposals we have detailed in sections 5.2.1 and 5.2.2 is based on having a robust understanding of the expectation that freight customers have from the service and how demand has been managed in the current contract.

To demonstrate our excellent understanding of the technical, logistical and management challenges, we have set out in this section an initial commentary about the unique characteristics of freight movements to the Northern Isles and the demands it places on the services, followed by a review of the carrying data to understand how demand has been managed across the fleet in the current contract.

5.1.1. Characteristics

Freight is defined as being all traffic travelling on commercial business. Freight ranges in scope from small vans of the type used by contractors and utilities companies, through to oversize ‘project’ freight, such as turbines and generators that can be excessively heavy or physically large, travelling on specialist trailers. Within this very broad definition is a wide variety of vehicle types, including agricultural equipment, new cars moving to retail dealerships and bulk bagged fish feed moving on high-capacity wheeled loading units. Most common is the movement of HGV road trailers without their tractor unit – so called ‘drop trailers’.

Although there is a considerable volume of freight on NorthLink ferries, the haulier market is dominated by four large operators. These operators provide the door-to-door logistics services for the majority of goods suppliers with freight requirements moving to and from Orkney and Shetland. On any one day, each operator will be placing demand on the service to move up to Redact trailers, and often more. The four operators are:

Redacted

Redacted

In addition, NorthLink has a responsibility to enable many other smaller freight customers to undertake their business, whether moving their own goods or goods for third parties. Fairness and neutrality are therefore important where demand management is necessary.

NorthLink has a height delineation at six metres, above which the vehicle is a commercial vehicle and cannot be classed as a passenger vehicle, but under six metres it could be a commercial vehicle or a passenger vehicle. Vehicles under six metres travelling on commercial purposes – typically identified by being branded and booked under corporate accounts – are charged as commercial vehicles.

This differentiation has relevance in relation to how overall freight demand is managed, as commercial vehicles travelling with drivers, (identified in the Information Room as Self-Propelled Vehicles (SPV)), Redacted

Management of freight demand ideally needs to predict the commercial needs of regular freight customers before their actual demand is known, in particular hauliers who need regular space on sailings on an ongoing basis. This enables their customers (the suppliers and producers whose products are being conveyed on a haulier's trailer) to be able to plan, operate, invest and compete in their markets for maximum economic advantage to the islands' economy and jobs.

Time sensitive freight is defined as 'traffic' where economic value of the shipped product is lost if shipment is delayed; seafood is the prime example. Shetland's Stewart Building Transport Group, who represents the interests of the seafood industry sector, suffer tangible product value loss if a booked sailing cannot be fulfilled and is unable to sail until the next sailing 24 hours later. The contractual terms that buyers of fresh seafood and shellfish products for the food supply chain place on their suppliers is also highly relevant. For example, a trailer load of product could be rejected at the suppliers cost if delivery to the mainland food supply chain is excessively late. As the ferry is an integral part of this extended supply chain, availability and delivery of NorthLink capacity directly impacts the islands' economy due to the competitive position of important businesses.

Not all freight is time sensitive – there remains a significant volume of 'everyday' movements of aggregates, cement, waste, shop-retail and trade products, parcels and general freight, where the goods themselves are not at risk of product degradation. But the cost-efficient supply of these goods is also dependent on the ability for hauliers to operate efficiently by keeping their assets moving to and from the islands with minimum idle time.

Where the time sensitivity and value of goods being moved to Orkney are low, thus more sensitive to total haulage costs, hauliers have configured their operations around a weekly turnaround and the discounted Sunday freight vessel sailing from Aberdeen–Kirkwall. Operationally, this focuses demand on that particular RoRo sailing, as well as the freight handling and trailer parking area at Aberdeen for 'free' trailer parking several days before shipment.

Finally, freight can be moved on either RoPax or RoRo vessels. Redacted

Some goods are incompatible with shipment in the enclosed loading deck of the RoPax, particularly certain classes of Dangerous Goods. These need to be booked onto the open-weather deck of the freight RoRo. The following table lists the classes of Dangerous Goods as referenced in the International Maritime Dangerous Goods (IMDG) code, which sets out the loading parameters

and separation requirements for shipment. Managing all these diverse needs fairly and equitably is a core requirement of effective demand management for freight. The classes of dangerous goods are shown in Figure 59 below.

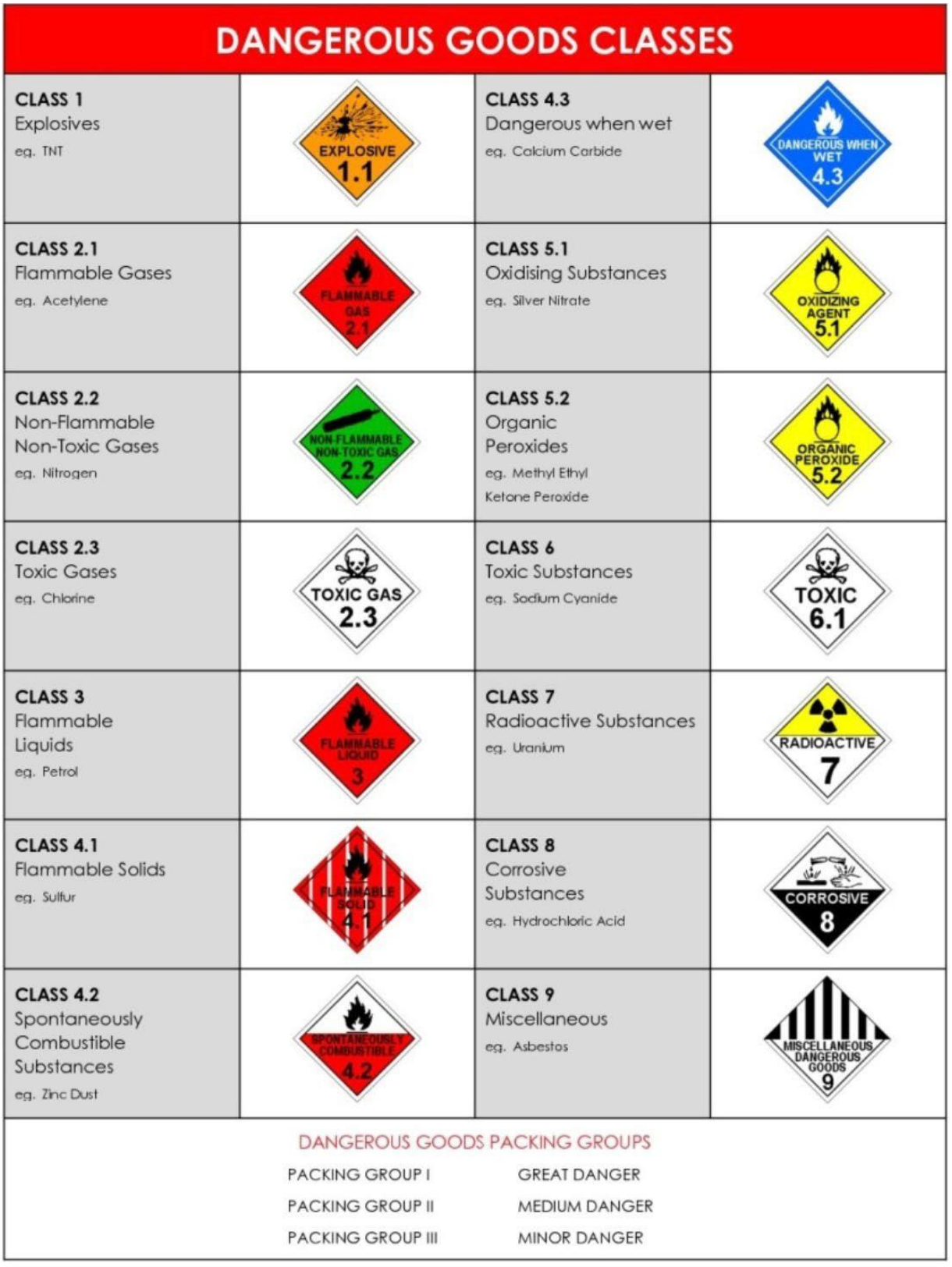

Figure 59: Classes of dangerous goods – International Maritime Dangerous Goods Code.

5.1.2. Serco's NorthLink journey to date

Serco's bid for Northern Isles Ferry Services in 2012 had an objective for freight to transform the service, improve flexibility and responsiveness to freight customer demands, and address significant operational inefficiencies that existed before, which included sailings with very poor levels of utilisation and a very high cost of delivery. Among other things, we identified the following:

What Serco inherited in 2012	The actions Serco took
The regular freight vessel timetable provided considerably greater capacity than there was demand, leading to significant and excessive environmental emissions for the level of freight carried and a cost of delivery to Transport Scotland far greater than necessary.	Serco recast the freight timetable to better match capacity with demand. We implemented more effective seasonal timetables and reduced the number of sailings, while ensuring that services and capacity was provided on day and route-legs where there was supply chain demand. Serco also introduced flexibility in deployment, having a dynamic ability to drop-in sailings to the timetable at short notice if demand required it.
There was poor use of the booking and reservation system. There was no ability to capture or understand what freight was being carried, other than who the customer was and what category of vehicle was booked.	Redacted
Freight represents over 50% of the service revenues, yet there was no specific focus on it.	
Customers were looking for innovation in the shipment of bulk products	
Freight operated in a supply-side environment that included commercial competition, where the shipping competitor was also a significant customer of the service.	

What Serco inherited in 2012	The actions Serco took
Delivery of the freight vessel service was independent of the passenger vessel service.	Redacted
The previous business focus was on passenger services and passenger vessels. Freight was something that happened unseen to much of the business.	
There was customer resistance to their loads being shipped on the freight vessels due to performance and reliability disadvantages.	

Tackling these issues, and many more, delivered the tangible improvements Serco set out to achieve in our 2012 bid submission, and demonstrates our commitment and ability to deliver the plans set out in this proposal, as we continue our journey of improvement for NIFS from 2019 onwards.

5.1.3. Analysis and Commentary

This section provides a review of the carrying data provided to bidders that enables us to develop a better understanding of the trends on each route and to inform our projected carryings into the new contract. This analysis includes reference to capacity on the services; this is included as a general reference point for the underlying patterns of demand from freight and its interplay between different vessels and other users of capacity. It does not serve to pick out specific dates or services where demand has exceeded capacity.

The general allocation of demand must recognise:

- Passenger vehicles: Primarily travel on the RoPax vessels
- Freight vehicles: Make full use of the combined RoPax and RoRo fleets
- Livestock: Primarily travels on RoRo vessels

5.1.3.1. Scrabster–Stromness (Pentland Firth)

The service offer from NorthLink is in direct competition with Pentland Ferries on this route. The general advantage of using the Pentland Firth crossing is the high frequency of service compared to accessing Orkney via Aberdeen–Kirkwall, which suits the types of freight that

demand daily frequency, including supermarket traffic, mail and parcels, and chilled and fresh products. During the peak there are three crossings per day, in low season there are two. In mid-season, midday services are added at times of anticipated passenger demand, including bank holidays and school holidays.

Redacted

Redacted

Figure 60: Scrabster–Stromness carrying trends for freight, time sensitive freight and dangerous goods by direction on Pentland Firth route, Jan16 – Dec18.

Redacted

Redacted

Figure 61: Aggregated carrying trends for freight, time sensitive freight and dangerous goods by direction on Pentland Firth route, Jan16 – Dec18.

The average split of freight types on the Pentland Firth route is shown in Figure 62.

Redacted

Figure 62: Average split of General Freight, Time Sensitive and Dangerous Goods on the Pentland Firth

Redacted

5.1.3.2. Aberdeen Routes

Redacted

- Freight capacity is provided by both RoPax and RoRo vessels
- Redacted

  depending on demand on any given service.
  - Redacted

Redacted

Aberdeen – Lerwick - Aberdeen

Figure 63 presents carryings at an aggregated monthly volume. Redacted

Redacted

Figure 63: Carrying trends on Aberdeen–Lerwick route, Jan 16–Dec 18.

Redacted

Figure 64 presents southbound carryings from Shetland, with RoRo carryings shown top, and RoPax carryings, below.

Redacted

Redacted

Redacted

Figure 64: Carrying trends on Lerwick–Aberdeen route, Jan 16–Dec 18.

Redacted

The average split of freight types on the Aberdeen-Lerwick route is shown in Figure 65.

Redacted

Figure 65: Average split of General Freight, Time Sensitive and Dangerous Goods on Shetland Routes

Redacted

Aberdeen–Kirkwall–Aberdeen

Figure 66 presents northbound carryings from Orkney, with RoRo carryings shown top, and RoPax carryings, below.

Redacted

Redacted

Redacted

Figure 66: Carrying trends on Aberdeen–Kirkwall route, Jan 16–Dec18.

Redacted

Figure 67 presents southbound carryings from Orkney, with RoRo carryings shown top, and RoPax carryings, below.

Redacted

Redacted

Redacted

Figure 67: Carrying trends on Kirkwall–Aberdeen route, Jan 16– Dec 18.

Redacted

The average split of freight types on the Aberdeen-Kirkwall route is shown in Figure 68.

Redacted

Figure 68: Average split of General Freight, Time Sensitive and Dangerous Goods on Orkney Routes

Redacted

Aggregated Volume on the 'via Kirkwall'

Redacted

Redacted

Figure 69: Carryings combined on the RoPax vessel Aberdeen–Kirkwall route, Jan 16–Dec 18.

Redacted

Kirkwall–Lerwick–Kirkwall

Figure 70 present northbound carryings from Orkney to Shetland, with RoRo carryings shown top, and RoPax carryings, below.

Redacted

Redacted

Redacted

Figure 70: Carrying trends on Kirkwall–Lerwick route, Jan 16–Dec 18.

Redacted

Figure 71 present Southbound carryings from Shetland to Orkney, with RoRo carryings shown top, and RoPax carryings, below.

Redacted

Redacted

Figure 71: Carrying trends on Lerwick –Kirkwall route, Jan 16–Dec 18.

Redacted

The average split of freight types on the Kirkwall-Lerwick route is shown in Figure 72.

Redacted

Figure 72: Average split of General Freight, Time Sensitive and Dangerous Goods on Interisland Routes

Redacted

5.1.3.3. Influencing Factors on our forecasts and Demand Management Plan

This section discusses matters that influence how demand is managed for freight.

Customer behaviours

Redacted

Redacted

Redacted

Serco addresses these commercial drivers and tensions while delivering value for Transport Scotland. We have demonstrated in the current contract the effectiveness of proactive and engaged relationships with freight customers and their extended supply chains.

5.1.3.4. Drivers of demand and market expectations

The drivers of demand are discussed at general commodity level and then by island group and industry sector. In general, freight demand is driven by factors external to the NIFS contract. Common sectors are:

- **General freight**, including regular office, wholesale, industrial, trade, high street retail and domestic consumables.

Demand relates to the overall island population and economic prosperity. This traffic will increase a little in summer to reflect tourist consumption and demonstrate small uplifts pre-holidays, Easter and Christmas. Redacted

- **Supermarket retail**, including chilled, fresh, frozen and ambient goods.

Demand largely relates to Redacted consumption on the islands, so goes up in summer with higher visitor numbers, and peaks around popular family holiday times, Christmas and bank holidays. Redacted

Chilled and fresh supermarket retail is defined as ‘time sensitive’.

- Redacted

Demand relates to the overall islander population and economic prosperity. Redacted

Overall impact on freight volume is modest and hauliers can take advantage of using high-capacity vehicles for much of this small consignment-sized cargo.

- Redacted

Redacted

- Redacted

Demand relates to the overall island population and economic prosperity. Redacted

- Redacted

Demand relates to the general economic performance of the islands and any specific investments that require specialist contractors or is delivered through technical and knowledge specialisms, rather than through heavy construction. This is a sector that has grown in response to the increasingly service-oriented and specialist-dependent nature of project delivery. Most of this freight is driver-accompanied and similar in many ways to passenger vehicles. Use of the RoRo freight vessels is limited by their passenger carrying capacity.

- Redacted

Demand relates to the island population and general economic prosperity. Redacted

- **Empty trailer movements.**

Unless there is a perfect balance of compatible freight moving to and from a location, there is always a degree of empty vehicle movements. This is a cost to hauliers and they work hard to reduce it. The volume of empty vehicle movements depends on the directional demand of cargo; it is not feasible to wait to ship goods until a return load is secured to match it. Some traffic, especially in specialist trailers or that carry products dedicated to them to avoid product contamination, will always return empty for reloading. The effective use of trailer assets could dictate that it is commercially more viable to keep vehicles in circulation, including empty returns, than add additional trailer assets into the supply chain.

Each of these sectors is an important contributor to the overall functioning of the island communities and its own demand profile. There is dependency on NorthLink to manage the service such that the businesses in each sector are treated fairly in regard to securing capacity, so they can operate successfully and cost efficiently.

Orkney-specific demand

Redacted

Shetland-specific demand

Redacted

- Redacted

Redacted

5.2. Proposals for Freight

5.2.1. Details of projected carryings

This section provides Serco's forecasts on projected carryings, based on the analysis and influences discussed in the previous section.

5.2.1.1. Assumptions

Our projections are based on the following assumptions:

- The whole vessel fleet is available for the carriage of freight, RoPax and RoRo
- Redacted

- Projections ignore any potential future impact of Transport Scotland's Freight Fares Review – we cannot predict what the effect will be
- There will be a new vessel operated by Pentland Ferries. The MV Alfred is larger than the MV Pentalina, with greater potential for volume abstraction. This is a known change in competitive landscape, but its impact is not yet known.
- We cannot divert from the published tariff. There is no scope for commercial pricing incentives, but there are creative ways to ship against the existing pricing model (bulk bags)
- Redacted

- There is no fundamental change to vessel fleet in number, design or service speed

- Freight vessel timetables have greater flexibility around absolute departure time and arrival time
- Freight vessel timetables have greater flexibility around absolute number of sailings provided, subject to aggregate passenger and freight demand at any period in the year
- Redacted

5.2.1.2. Presentation of data tables and charts

Our projections for freight are detailed in tables that detail our projection of lane metre demand. They are provided for each direction and given in Lane Metres, split by:

- Commercial Vehicles – defined as Self Propelled Vehicles (SPV) freight traffic
- Trailers sailing without tractor unit – defined in 'Drop' trailers and all their derivatives, including empty, wide and premium
- Unaccompanied Cars – defined as non-passenger car traffic in the carryings data
- Other Freight – defined as the balance of freight traffic not captured in other categories

We have also presented charts that are outputs from our data analysis and forecasting work. These outputs graphically represent the impact of our projections on the service capacity on day-by-day basis. They are provided in detail for the initial year and in summary for each of the contract years.

5.2.1.3. Pentland Firth

Our projections for freight on the Pentland Firth are detailed in the figures, below.

Redacted

Figure 73: Projected carryings (Lane Metres) – Scrabster-Stromness-Scrabster

Our charts presented in section 4.2.3 include freight carrying between Scrabster and Stromness.

Redacted

5.2.1.4. Aberdeen Routes

Aberdeen – Lerwick

Our projections for freight on the Aberdeen-Lerwick route is detailed in the figures, below.

Redacted

Figure 74: Projected carryings (Lane Metres) – Aberdeen-Lerwick-Aberdeen

How this demand presents itself onto the service is shown in the charts below. These charts show the overall capacity of the fleet on any given day including both RoPax and RoRo vessels where both are sailing. It also calculates the capacity based on Orkney demand on the sailings that call into Kirkwall. The effect of this is muted because the timetable is configured such that when a RoPax or RoRo calls into Kirkwall, the vessel sailing in parallel is sailing direct between Shetland and Aberdeen.

Because freight demand can be met by both vessel types, this provides a better consolidated view of capacity for freight customers. It is recognised that some freight customers, especially those Redacted have preference for using the RoPax vessels.

Redacted

Figure 75: Year 1 Loading Calendar, (LEAB only), Consolidated vehicle deck capacity across both RoPax and RoRo (includes Livestock volume).

Redacted

Redacted

Redacted

Figure 76: Summary of projections and impact on capacity (LEAB only), consolidated vehicle deck capacity across both RoPax and RoRo (includes Livestock volume)

Redacted

Aberdeen – Kirkwall

Our projections for freight on the Aberdeen-Kirkwall route is detailed in the figures, below.

Redacted

Figure 77: Projected carryings (Lane Metres) – Aberdeen-Kirkwall-Aberdeen

How this demand presents itself onto the service is presented in the charts, below. These charts show the overall capacity of the fleet on any given day including both RoPax and RoRo vessels where both are sailing. It also calculates the capacity based on Shetland demand on the sailings that are continuing on services between Aberdeen and Lerwick.

Because freight demand can be met by both vessel types, this provides a better consolidated view of capacity for freight customers.

Redacted

Figure 78: Year 1 Loading Calendar, (ABKI only), Consolidated vehicle deck capacity across both RoPax and RoRo (includes Livestock volume).

Redacted

Redacted

Redacted

Figure 79: Summary of projections and impact on capacity (ABKI only), consolidated vehicle deck capacity across both RoPax and RoRo (includes Livestock volume)

Redacted

Kirkwall - Lerwick

Our projections for freight on the Aberdeen-Kirkwall route is detailed in the figures, below

Redacted

Figure 80: Projected carryings (Lane Metres) – Kirkwall-Lerwick -Kirkwall

Redacted

Figure 81: Year 1 Loading Calendar, (KILE only), Consolidated vehicle deck capacity across both RoPax and RoRo (includes Livestock volume).

Redacted

Redacted

Redacted

Figure 82: Summary of projections and impact on capacity (KILE only), consolidated vehicle deck capacity across both RoPax and RoRo (includes Livestock volume)

Redacted

5.2.2. Effective and efficient measures to ensure appropriate demand management - Freight

We introduced the demand management wheel in section 4.2.5.

Redacted

Figure 83: Demand management wheel

Redacted

Serco is a partner and enabler for competitive haulier and industrial business sectors, and we must maintain a neutrality with all customers so as not to distort the market. Being transparent, open and clear in our decision making is therefore important.

We will be data and insight led, supported by meaningful dialogue with engaged stakeholders to forecast, influence, plan and mitigate demand challenges as we identify them for our customers to receive the best service. We will also be consistent in how we deal with customers by following documented Local Operating Procedures (LOPs) that form part of the overall Serco Management System (SMS). This will underpin a robustness of outputs and, we anticipate, increase confidence in our decisions.

Our demand management process will support effective service delivery by informing how we consider appropriate activities to influence demand and supply. We will be able to shape our strategic outlook and determine effective tactical choices.

A particularly important strategic supply side issue is Serco's approach to vessel maintenance. Good demand management and delivering customer trust is contingent on having high confidence in the availability of the vessels to perform the service in the first place.

Our maintenance approach (described in A1 V3) is based on rigorous monitoring of the vessels, having a responsive supply chain in place and investing properly and preventatively to assure extremely high resilience so as to minimise the risk of service disruption due to vessel failure. The consequences of these events go well beyond failing a contract KPI but are material to the business interests of our customers and have economic impacts on the islands' economies.

Redacted

Figure 84: Effective Service Delivery model - Freight

Information is critical to our approach and we have introduced our principle initiative, the **Demand Analysis and Forecasting Model** in section 4.2.6.

The Demand Management Tool will include the ability to interrogate and analyse the utilisation of all five vessels for freight, Redacted

Data, Relationships and Insight

Redacted will continue to lead on opportunities to invest in refinements to the booking and reservation system, forward capacity planning processes to capture better data, refine our decision-making capability and communicate more effectively with our freight customers and their extended supply chains.

Redacted is much more involved than a simple administrative booking function; it is heavily relationship-based. A dedicated senior manager, the Redacted will be supported by a team whose primary focus is to ensure freight needs are understood and met effectively.

NorthLink is a common, integral link within many independent extended supply chains. Each has many different components and their own flexibilities and constraints. Our relationship approach enables us to have excellent insight into the drivers of demand in these chains and to engage in expectation management, i.e. the building of mutual understanding and education about what the service is able to deliver within the constraints of the fleet, and the operational flexibilities that Serco has in the context of demand from all customers.

In regard to Dangerous Goods, carriage by road and sea is regulated through established legislation and industry protocols. Our obligation as a ferry operator is to adhere to these regulations, as determined by the International Maritime Dangerous Goods (IMDG) code and set out in our shipping note documentation and Terms and Conditions of Carriage. Redacted

Managing demand by influencing freight customer choices

Serco will work closely with freight customers and optimise the use of available capacity within the constraints of the current fleet, work as a partner to meet the reasonable demands of as many customers as possible. This is achieved by:

- Redacted

The NorthLink haulier customer is the supplier to the consignor of the freight being carried. The consignor will push for maximum value and flexibility from the haulier. While being responsive to this need for flexibility, Serco will be aware of the potential for exceptional events to become the norm.

Redacted

5.2.2.1. Planning of Freight (including Time Sensitive and Dangerous Goods)

We interpret planning to include short- and long-term planning horizons for preparation of day-to-day freight shipments.

Serco will continue to offer advanced block booking for forward capacity on each of the NorthLink legs. Redacted

In respect of the RoPax vessels, this forward demand will be monitored in parallel with forward bookings for passenger vehicles.

Redacted

It is imperative that NorthLink does not distort the competitive haulier market by giving one operator a competitive advantage in accessing the RoPax capacity. It is the end customer cargo that should attract the benefit, not a specific haulier.

edacted

Serco will continuously keep options to resolve this timetable challenge under review, but the timetable is currently considered optimal to meet all demand through the week from both islands and all freight customers. This 'pinch point' is only fully resolvable by introducing an additional vessel. Redacted

The freight timetable, proposed by Serco in the 2012 bid, and refined in the current contract, is specifically configured to have a responsive capability to react to demand with additional services to increase capacity.

Freight bookings are made in compliance with the International Maritime Dangerous Goods (IMDG) code. Shipping note documentation must be submitted with each freight unit booked, and dangerous goods declarations submitted by email or fax a minimum of 24 hours prior to departure. This documentation identifies what type, volume and class of dangerous or hazardous goods are being shipped. Clear instruction is included in Section 11(d) of our Terms and Conditions (included as Appendix A2-1 at the end of this Delivery Plan). There is sufficient capacity in the NorthLink vessel fleet to enable dangerous goods to be carried in compliance with the code, especially in regard to separation of loads on the vessels or requirement for them to be shipped in an open environment.

Serco will retain the use of a premium tariff for freight booked within three days of sailing. In terms of demand management, this disincentivises freight customers from presenting volume at very short notice.

5.2.2.2. Loading of Freight (including Time Sensitive and Dangerous Goods)

The allocation of freight being loaded to RoPax or RoRo vessels each day will be through Serco's freight management team, working in coordination with our stevedoring partners who deliver frontline services in the ports. Our measures to assure appropriate demand management through the loading process will include:

- Redacted

Trailers to be shipped must be fitted with marine fixings to enable them to be secured to the vessel deck. Redacted

Other than for time sensitive freight, the decision to ship on RoPax or RoRo vessels will be made on the day of shipment, based on the overall volume of freight presented and whether it has to travel on the RoRo vessel, i.e. if the goods have to be shipped on an open weather deck due to their hazardous class restriction specified in the IMDG code.

Redacted

Factors that influence this decision will include:

- Redacted

If time sensitive goods have to be loaded onto the freight vessel, or there are goods that do not strictly qualify but the customer highlights a desire to meet a tight onward connection, the load planning process will ensure this freight is loaded such that it is among the first trailers to be offloaded at the destination.

Load planning onto the vessels by the Chief Officer will also consider the adjacency of freight to each other to minimise the risk of freight vehicles touching each other in transit. Alth ough all freight is secured to the vessel deck, wheeled freight can rock side to side in heavy weather and result in trailer damage. This will be mitigated by adopting wider spacing of freight trailers in the vessel.

Physical loading of vessels will commence as early as can be practically done with a view to sailing early (on the RoRo vessels) once all expected freight is loaded. The advantage of this to customers is an earlier arrival at the destination and the opportunity for the vessel to either plot its passage around expected poor weather and heavy sea conditions, or to throttle back the vessel to improve fuel efficiency.

Moving freight trailers to and from the vessels uses specialist equipment, the port tractor, or 'tugmaster'. In the current contract, Serco has overseen a complete replacement of the fleet that is used across all five ports. This equipment is critical to the efficient loading of vessels, where breakdown can significantly slow the loading and unloading of vessels, impacting customers' ability to collect loads Redacted

On the Aberdeen routes the implication of missing a sailing is a 24-hour wait until the next opportunity to ship. Serco will maintain a real-time dialogue through the day with customers and will exercise common sense and discretion in delaying a freight vessel departure if a customer advises that booked freight is delayed en-route to the port. Road congestion, accidents or unforeseen events in the supply chain that delay a vehicle's departure to port are inevitable from time to time.

Redacted

The Aberdeen RoPax and RoRo services are timetabled to stop at Kirkwall to offload freight for Orkney and reload Orkney freight for transit onwards to either Lerwick or Aberdeen. Redacted

In regard to the RoPax vessels, the time taken to off-load and reload freight vehicles impacts the customer experience for passengers waiting to load their vehicles at Orkney. Given this stop happens very late in the evening, efficient freight off-loading and reloading will also benefit passengers who are asleep onboard by reducing the amount time needed for movements and freight handling on the vehicle deck that can be heard in some passenger cabins.

5.2.2.3. Transit of Freight (including Time Sensitive and Dangerous Goods)

The responsibility for freight transfers from shore to vessel as the freight is loaded. It will be the Redacted responsibility to ensure trailers and freight vehicles are safely stowed and

secured to the vessel deck and in compliance with Redacted

- Since taking responsibility for the operation of the RoRo freight vessels, Serco has invested significantly in raising the standards of the equipment, fixings and tools used to secure loads on those vessels to the standards of the RoPax fleet.

- Safety at sea is paramount and NorthLink operates in challenging sea conditions, particularly during the winter. Redacted

Shipping notes and cargo declarations, including weight and hazardous class, will be detailed on the vessel's cargo manifest and be carried in compliance with the Stowage and Segregation rules in the IMDG code and in relation to the Document of Compliance of the vessels.

The decision to sail is ultimately that of the Vessel Master, who will maintain a dialogue with Redacted in monitoring weather and sea conditions anticipated on passage. The importance of making the crossing, rather than cancelling a service will be reflected in any decision to adjust the departure time earlier or later than scheduled. Redacted Redacted

Serco will seek to provide journey time consistency as far as the vessel and weather conditions will allow on passage, recognising the high value freight customers place on predictability and reliability. Our vessels' crews on both RoPax and RoRo are experienced on their vessels and have excellent knowledge of sea state at various points between the NorthLink ports. Our Masters are encouraged to use this knowledge to plot the course of each sailing to minimise potential for cargo damage and avoid weather disruption, thus enabling greater certainty of arrival times.

Throughout the course of the passage, our vessel crew will monitor the cargo, checking the security of lashings to assure load safety through the journey.

5.2.2.4. Unloading of Freight (including Time Sensitive and Dangerous Goods)

Freight customers expect the timely discharge of their trailers into the freight marshalling areas and to be 'cleared' for collection. The effective journey time of the service for freight customers is from the time they drop a vehicle into the port for loading to when it is available for collection for onward transport. Efficient unloading and shore-side freight handling is therefore critical to their overall end-to-end supply chain journey time.

Redacted

Legal responsibility for freight aboard the vessel hands over from the Vessel Master to the shore-side operation as it crosses the linkspan, whereupon our stevedoring partners assume responsibility until customer collection.

Loading of freight will have taken account of the urgency of onward delivery, as notified by the freight customer; this freight will be positioned such that it will be unloaded first. Supply chains operate in real-time however, so if a customer advises that a specific load on the vessel has become urgent since loading, we will make every effort to offload it ahead of others and process it through to collection.

Unloading will include visual checks for any damage sustained in transit, either to the customers' equipment or if loads have shifted within the vehicle. Our Terms and Conditions are clear that it is the customer's responsibility to ensure loads are securely stowed in the vehicle as 'shifted loads' can present a handling risk to staff at the point of unloading and potentially slow down the unloading process.

Redacted

Once freight trailers are parked in the freight marshalling area, customers will be able to collect them Redacted

5.2.2.5. Potential timetable and service options to be consulted on post-mobilisation for adoption in 2020 or beyond

This section considers potential service revisions in the contract. Developing and proposing significant change is unwise in the short period of tendering, because it does not allow adequate time to properly consult with all stakeholders and evaluate the impact.

The transformational changes being demanded by freight stakeholders to overcome capacity and service challenges relate to significant projects, including additions to or replacement of the existing fleet. Thus, Serco will engage with Transport Scotland and CMAL in bringing forward these more strategic changes.

Serco welcomes the flexibility that Transport Scotland has enabled in the new contract to enable it to be responsive to changing freight customer needs. We will be a pro-active partner to assure that NorthLink continues to support the economic prosperity of Orkney and Shetland.

We will explore with freight stakeholders and Transport Scotland:

- Redacted

- Redacted

5.2.2.6. Legacy and future solutions

Analysis of historical data and our projections for potential growth indicate that capacity to meet freight demand will continue to be under pressure, Redacted

We identify several options to materially increase absolute capacity in the service in section 6.5, including:

- Redacted

Redacted

5.2.2.7. Terms and Conditions of Carriage

Our Terms and Conditions of Carriage (T&Cs) are included in full as Appendix A2-1 at the end of this delivery plan. These T&Cs are common for Passengers, Freight and Livestock and include content specific to all three customer types.

6. Livestock – DM3

6.1. Approach – Livestock

Our approach to managing Livestock demand for and the projections and proposals we have detailed in sections 6.2.1 and 6.2.3 is based on having a robust understanding of the expectation that livestock customers have from the service and how demand has been managed in the current contract.

To demonstrate our excellent understanding of the technical, logistical and management challenges, we have set out in this section an initial commentary about the unique characteristics of livestock movements from the Northern Isles and the demands it places on the services, followed by a review of the carrying data to understand how demand has been managed across the fleet in the current contract.

6.1.1. Characteristics

Movement of livestock is a highly specialised activity of critical importance to the economic prosperity of Shetland and Orkney. There is an inherent fragility to the agricultural sector and a dependency on the ferry operator to assure ongoing viability of their businesses, so they remain competitive in their markets.

Although the livestock is owned by a wide range of individual farmers, the customers of NorthLink are less numerous because sales through the mart often includes the cost of shipment on the ferry and onward transport by road vehicle to the ultimate destination, as part of the livestock sale process. Significant consignors of livestock movements are:

- **Abattoirs** – buying stock for slaughter, on behalf of major food retail supply chains. Examples are, ScotBeef (Marks&Spencer), ABP Food Group (Lidl) and Macintosh Donald (Tesco).
- **The auction marts** – Orkney Auction Mart (OAM), Aberdeen and Northern Marts (ANM) and Shetland Livestock Marketing Group (SLMG)
- **Private buyers** – most of the sheep volume

Core to the function of the livestock sector is the relationship between farmers, the auction marts, the buyers shown above and the mainland markets for livestock. The livestock economy, principally cattle on Orkney and sheep on Shetland, revolves around the auction marts.

The freight vessel timetable is built around livestock being sold through the OAM on Monday, a day when major livestock buyers attend sales at OAM. Livestock sold on Monday is shipped onwards – to arrive for collection in Aberdeen on Tuesday morning. The tradition of shared logistics solutions means that livestock sales on Shetland tend toward the middle of the week, for shipment towards the end of the week.

The movement of livestock from the islands and onto better grazing on the mainland over autumn and winter leads to an annual seasonal peak of demand in September/October; the 'Livestock Season'.

The livestock service has the following characteristics:

- Livestock is moved in Scottish Government-owned livestock cassettes (LCs). These are bespoke animal transport units designed to allow livestock to travel in an environment that minimises stress and includes food, water, effluent capture and bedding. So equipped, the movement is considered as 'rest time' from the perspective of legislation.
- Movement of livestock is subject to The Welfare of Animals (Transport) (Scotland) Regulations 2006. NorthLink must have Animal Transporter Authorisation, issued by the Animal and Plant Health Agency (APHA). The LCs require container approval certification, also issued by APHA.
- The livestock shipment service includes portside lairage, a dedicated fleet of 47 LCs, vessels modified to provide continuous water supply, livestock tracking and administrative processing to assure food chain integrity and animal welfare. The LCs are contract assets that move between the ports, but not beyond them. Delivery to and from the lairage is provided by customer-organised road transport.
- When livestock is carried on the freight vessels, it is only carried in the body of the vessel, which has a capacity for 37 LCs. For animal welfare reasons, livestock is ever carried on the upper exposed vessel 'weather deck'.
- LCs are moved when full, and after cleaning and preparation, empty. Repositioning of empty LCs back to the port where they are next needed is equally critical to meeting demand, especially in livestock season.
- The ferries are part of an extended and integrated supply chain that begins at the farms and ends on the mainland. The whole movement happens within the restrictions of The Welfare of Animals (Transport) (Scotland) Regulations 2006.
- In addition to cattle and sheep, the NorthLink livestock service is available for the movement of other animals including horses, ponies and pigs. These are usually moved for private customers and NorthLink has a number of smaller six-metre LCs and horsebox trailers available for this purpose.

The farming sector operates on very long lead times – the nurture of livestock for market consumption begins 12+ months ahead. It values year on year consistency, stability and planned evolution of a known and understood service offering.

6.1.2. Serco's NorthLink journey to date

Serco's bid for NorthLink in 2012 recognised the sensitivities and nervousness to change of the agricultural sector. In the current contract we have consistently worked with livestock customers to incrementally improve the service levels. Specifically, we have:

- Redacted

- Redacted

6.1.3. Analysis and Commentary

This section describes the analysis that Serco has undertaken on which the livestock aspect of this Demand Management Plan is based. We are obligated to operate the published timetables provided by Transport Scotland (TS) and must apply the published tariff. We have provided a commentary on the current demand and capacity situation as a tool to inform this Passenger, Vehicle and Freight Demand Management Plan. It informs where Serco is likely to work with, and make recommendations to, Transport Scotland through the process set out in section 2.9 of Volume 2 of the Invitation to Tender.

We have covered the service on the Aberdeen routes only. The dedicated livestock service operates only between Lerwick, Kirkwall and Aberdeen. Any livestock movements using the Scrabster-Stromness service is either by livestock float and captured as commercial freight traffic, or is by private vehicle, i.e. horsebox or towed trailer.

6.1.3.1. Aberdeen Routes

We have plotted the carrying data for livestock through the current contract, finding quite different patterns of demand between Shetland and Orkney. These differences reflect the different breeding and trading patterns in the agricultural sector between sheep and cattle.

The following charts showing livestock movements between Aberdeen and Lerwick, (Figure 85), are based on the movement of LCs, rather than the number of animals shipped as LCs are reflective of the actual use of vessel capacity. Redacted

Agriculture and livestock production is seasonally affected by weather that can have significant lag effects on demand. Redacted

Redacted

Figure 85: Carrying trends for livestock direction on Aberdeen-Lerwick route, Jul12 – Dec18 2018 full contract).

(Top = Northbound, Bottom = Southbound)

These next charts showing livestock movements between Aberdeen and Kirkwall (Figure 86) clearly show that demand patterns for cattle movement from Orkney Redacted
As with Shetland, cattle breeding is influenced by climate, season by season, with significant lag effect flowing through to demand. Redacted

Redacted

Figure 86: Carrying trends for livestock direction on Aberdeen-Kirkwall route, Jul12 – Dec18 (full contract)

The above charts demonstrate Redacted

shown in Figure 87 below (Livestock – Kirkwall-Lerwick) relate to repositioning of LCs around the network. These movements also include the regular maintenance and repair activities which are done in Lerwick.

Redacted

Figure 87: Carrying trends for livestock direction on Kirkwall-Lerwick route, Jul12 – Dec18 (full contract)

6.1.3.2. Influencing Factors on our forecasts and demand management plan

In this section we provide commentary on the livestock market sector and customer touchpoints that can influence how demand is managed.

Customer behaviours

Demand on the NorthLink service is influenced by the behaviours of individual farmers, including their response to external and trading conditions. The choices and actions of the livestock sector impact how the service needs to respond. Significant factors are:

- Redacted

- Redacted

Contractual requirements

The NorthLink contract is necessarily constrained in terms of pure commercial freedoms to flex the customer proposition, stimulate or suppress demand dynamically.

- Tariff structure is defined, which is a constraint to price-based demand management
- Service schedule is defined, which limits the ability for overall capacity management

There are very good reasons for these requirements, but it should be recognised that they remove the primary and most effective demand management tools.

6.1.3.3. Drivers of demand and market expectations

The drivers of future demand are best discussed on the basis of island group, before considering how this demand is likely to present itself on the network and physically be delivered on a route and vessel basis.

Orkney specific demand

Redacted

Published data

(Table 2) indicates a relatively stable livestock economy. Redacted

Table 2: Livesto k imports and exports. Source: Orkne Economic Review, 2017

	2011	2012	2013	2014	2015	2016	2017
Total Cattle on Orkney	84,756	85,285	82,860	82,730	82,300	79,488	77,925
Cattle Shipments	20,659	25,601	24,428	23,683	24,917	24,322	24,193
Total Sheep on Orkney	122,151	120,448	120,367	116,131	116,348	117,514	120,486
Sheep Shipments	41,332	44,332	53,300	48,823	52,390	50,011	48,418

Redacted

Redacted

Between 2012 and 2018, a consortium of local butchers operating as Orkney Meat Processors Ltd made use of an Orkney Island Council (OIC) abattoir facility to provide an alternative to livestock shipment to the mainland for slaughter. The facility proved unsustainable, but OIC and the livestock sector continue to explore the potential to reintroduce more suitably-sized facilities.

Redacted

Shetland specific demand

Livestock movements to and from Shetland are considerable, although often overshadowed by the high volume of freight in other sectors. The primary movements relate to sheep, a commodity identified above as having greater risk from external market factors related to tariffs, quotas and any unintended consequences of Brexit. The impact of these issues cannot be forecast and is not included in our projections but is the subject of significant ongoing analysis within the agricultural community.

Sheep farming is generally a lower-value activity than for cattle so has greater exposure to the fluctuating prices of inputs like feed and fertilisers. Both commodities that need shipping to Shetland, making the market particularly vulnerable.

These are not new challenges though, so while these are ever present risks, the existing volume of sheep exports that have been reasonably stable in recent years are likely to remain stable until and unless the livestock sector has some structural shock – as shown in Table 3.

Table 3: Livestock imports and exports. Source: Shetland in Statistics 2017

	2015		2016		2017	
	Imported	Exported	Imported	Exported	Imported	Exported
Horses	56	165	50	129	47	151
Cows	130	1540	64	1149	100	1262
Sheep	611	88,179	659	85,917	748	89,124
Pigs	12	0	31	0	46	5

From a demand management perspective, the stocking density of sheep means that for every 1,000 sheep moved, just Redacted additional LC movements are needed. In relation to the table above, between 2016 and 2017 the relative demand on LCs was just Redact additional shipments between the years. Although this needs to be also matched with empty movements for repositioning the LCs, this level of variability is well within the flexibility of the service.

6.2. Proposals – Livestock

Our proposals discuss our projections for livestock and measures to ensure appropriate demand management throughout the contract.

6.2.1. Details of projected carryings

This section provides Serco's view on projected carryings based on the analysis and influences discussed. We have not included projected carryings for Scrabster – Stromness route for the reasons stated in section 6.1.3.

6.2.1.1. Assumptions

Redacted

6.2.1.2. Presentation of data tables

Our projections for livestock is detailed in a table which shows the volume of Lane Metres to and from each of Orkney and Shetland. This includes loaded and empty LC movements around the network.

Livestock demand is not presented in loading calendar form as it is captured within the tables presented for Freight.

6.2.2. Aberdeen Routes

Our projections for livestock on the Aberdeen and interisland routes is detailed in Figure 88 below.

Redacted

Figure 88: Projected carryings (Lane Metres) – All routes

Redacted

6.2.3. Effective and Efficient Measures to Ensure Appropriate Demand Management - Livestock

We introduced the demand management wheel earlier in section 4.2.5.

Redacted

Figure 89: Demand Management Wheel

6.2.3.1. Demand management process

Redacted

Serco are a partner and enabler for a competitive livestock sector and we must maintain a neutrality with all customers that does not distort the market. Being transparent, open and clear in our decision making is therefore important.

Redacted

Since 2017 when maintenance of the freight vessels transferred to Serco, Redacted

Redacted

Figure 90: Effective Service Delivery model - Livestock

Information is critical to our approach and we have introduced our principle initiative, the **Demand Analysis and Forecasting Model** in section 4.2.6.

Redacted

6.2.3.2. Data, relationships and insight

Our demand management process relies on having great insight into the livestock and wider agricultural sector on both islands. We will create this by:

Redacted

6.2.3.3. Managing demand by Influencing livestock customer choices

The highly seasonal nature of livestock demand means that capacity is built into the timetable to accommodate expected peaks. The primary activity therefore relates to:

- Redacted

Redacted

Although the freight vessel timetable is configured to accommodate additional sailings to accommodate 'surge' demand and Serco will run them, there is additional cost on the service to do this in terms of fuel consumption and berthing dues. Managing expectation around when and why additional services are introduced is an important part of our customer dialogue.

It is our responsibility to ensure we work with customers to optimise the capacity available in the published timetable before introducing additional sailings. Redacted

Through the majority of the year, movement of livestock is easily accommodated on the Freight vessels on routine services and there is sufficient LCs to accommodate this.

6.2.4. Planning for Livestock Movements

We interpret planning to include short- and long-term planning horizons for preparation of day to day livestock shipments and becoming operationally ready for seasonal peaks.

6.2.4.1. Livestock Cassettes

The 47 NorthLink LCs are used exclusively on the network and consistently through the year. The LCs are built to enable livestock to travel in 'rested' status, thus enabling extended transit times to be possible within The Welfare of Animals (Transport) (Scotland) Regulations 2006. LCs are equipped to allow livestock to rest, to have bedding, feed, water, lighting and adequate fresh air flow, to allow animal separation including a 'hospital pen' area to isolate sick livestock and to contain effluent within a capture tank in the base of the unit. Keeping the LCs in excellent operational condition is imperative for livestock welfare.

Redacted

6.2.4.2. Lairage

Livestock handling and sorting at the portside is done in a lairage. These facilities, at Aberdeen, Kirkwall (Hatston) and Lerwick, are equipped to hold and channel livestock into specific LCs for shipping on the vessel and to prepare live animal shipping documentation. Serco currently has an open-door policy for all welfare officials. This will be maintained.

The lairages are leased from the harbour authorities but maintained by Serco. Redacted

We will work with Aberdeen Harbour Board, Orkney Island Council Marine Services and Lerwick Port Authority to assure the ongoing fitness for purpose of the facilities themselves.

The lairage facilities are equipped with feed, fresh water, bedding, pens and effluent arrangements. Redacted

6.2.4.3. Vessels

The MV Helliar and MV Hildasay are equipped with a fresh water supply system that connects a high-volume water tank to the LCs. This infrastructure ensures that livestock are able to drink fresh water while on the vessel. Redacted

The motion of the vessel at sea can unsettle livestock and cause stress. Redacted

6.2.4.4. Regulation, training and certification

Serco will maintain an open-door policy for livestock welfare officials from Government Agencies, local authorities and veterinarians. We consider this to be critical validation of the service quality to assure full transparency and give confidence to all in the livestock supply chain.

Redacted

We will continue to share our loading and shipping plans with Local Authority Animal Welfare Officers and enable scrutiny of our certification with regard to LCs, Animal Transporter Authorisation and staff competency before the peak livestock season commences.

6.2.4.5. Peak livestock season timetable

Livestock movements peak through a six- to eight-week period of September October. In this period additional capacity is scheduled into the timetable between Kirkwall and Aberdeen to provide an enhanced number of services during the early part of the week.

Although a standard 'livestock timetable' is established, Redacted

In 2018, the confluence of a long hot summer boosting visitor numbers into September, peak livestock season and a high volume of aquaculture freight was forecast by NorthLink to challenge the capacity of the total fleet for a short period. NorthLink worked with Transport Scotland to secure an additional vessel for a three-week period to accommodate this unusual multi-peak of demand.

6.2.4.6. Customer bookings and reservations

Short-term planning will ensure demand is met by an adequate supply of service. This has to be in the context of availability of LCs and the timetable service pattern agreed with stakeholders.

Redacted

Livestock customers need the certainty of capacity in advance of knowing exactly how much livestock is to be shipped. Redacted

Repositioning of empty LCs outside of peak season will be accommodated when operationally convenient, but during peak livestock season it is as critical as moving loaded LCs to ensuring capacity is available where it is needed.

Redacted

Redacted

During the livestock season, we will maintain timetable flexibility, Redacted

Redacted

6.2.5. Loading of Livestock

Livestock is generally shipped southbound, off the islands to mainland markets. Redacted

Efficient transit through the lairage is necessary to enable sailings to depart punctually, so we will encourage the early arrival of livestock into the lairage to give time to get livestock settled. Because the LCs are spaces appropriate for livestock 'rest time', Redacted
Each livestock shipment is captured in an Animal Transport Manifest. This is notified to port and vessel staff by email and to Local Authority Animal Welfare Officers, providing 100% traceability of livestock movements and the ability to choose to step in.

Livestock passing through the lairage will be available for vet checks, animal control and movement control checks. Animals identified as unfit for shipment will be isolated and the customer notified. Each shipment will be accompanied by a detailed Animal Transport Certificate that captures the time of loading and instruction for onward transport at the destination port.

Live animal shipments will be allocated onto the Freight vessel sailings, unless in exceptional circumstances, to avoid the conflict of animal noise and smell in transit and passenger experience. In addition to livestock welfare, load planning onto the vessel has to consider that LCs contain hay and straw – classed as hazardous under the International Maritime Dangerous Goods (IMDG) code. Livestock also generate flammable gas, so the loading plan for the vessel will consider issues of ventilation and segregation from other hazardous loads aboard and Redacted
Redacted

Loading LCs onto the vessel is done by port tractor, or 'tugmaster'. This standard port equipment is also used for handling freight trailers onto vessels. We have overseen a full renewal of this equipment in the current contract so there is no capacity issue related to handling equipment up to a full vessel.

6.2.6. Transit of Livestock

Once aboard, LCs are plugged into the vessel fresh water supply. The LCs are secured to the vessel deck by cargo lashings. At the transfer of responsibility from the previous freight vessel owner/operator to Serco in 2017, we have systematically invested in bringing the lashing equipment on the freight vessels up to the standards of the RoPax vessels to enhance both load security (and therefore minimise potential for equipment damage in transit), livestock welfare and speed of loading and unloading operation turnaround times by using better, faster tools.

On board, welfare responsibility for livestock will transfer to the vessel crew. They are trained on the same basis as the shore side livestock handlers and maintain a regular visual inspection throughout passage. Should livestock welfare become an issue on passage, vessel crew will contact the shoreside team as part of the process to isolate affected animals and manage the situation until arrival in port. Authorised persons onboard have authority to ultimately take humane actions following consultation with a vet and the vessel has the proper equipment to do so.

Livestock welfare on passage is of paramount importance and an expectation of customers. Load and route planning will take account of weather patterns expected and the crew's experienced understanding of routing the vessel in heavier weather to avoid the worst impacts on the vessels.

The decision to sail is ultimately the decision of the vessel master. Serco will consult with the vessel crew, stevedores and livestock customers at times of poor weather when sea conditions sometimes result in unacceptable stress to livestock while on passage. Redacted

Delivering the connection will be considered more important than timetable adherence at times of delay. We will use best endeavours to sail as soon as possible and plan for loading early if it allows us to avoid poor sea conditions.Redacted

Redacted The vessels can each hold 37 loaded LCs and outside peak livestock times the background volumes being moved are modest. Livestock season does coincide with demand peaks in salmon movements from Shetland, although these are generally allocated on to the RoPax vessels as they are a time sensitive traffic. Capacity does become more challenged when passenger vehicle demand during late summer also has to be accommodated and a greater volume of Shetland seafood has to be moved onto the freight vessels. Although this is for a relatively short period, this is when all sectors and all vessels need to be considered in capacity planning.

Serco's freight vessels can carry 12 people. Redacted This may include government agency or local authority officials or representatives from end customers (i.e, retail buyers) validating their supply chain integrity.

The repositioning of empty LCs is as important as the movement of loaded ones, especially during the livestock season when equipment is in demand to keep stock moving. The time table is designed around the need for this repositioning to move LC capacity between Orkney and Shetland.

6.2.7. Unloading of Livestock

Livestock operations at the destination port involve:

- Redacted

Any one of these activities not done properly will leave Serco exposed to regulatory sanction, potential livestock welfare concerns and operational disruption.

Redacted

At the point where the LCs are discharged from the vessel, legal responsibility hands over from the vessel to the shoreside operation. When livestock is transferred from Lairage to awaiting onward transport, responsibility hands over from Serco to the customer.

Serco's lairage operation in Aberdeen will continue to be managed by the highly experienced and specialist staff of stevedoring contractor, Redacted

6.2.8. Potential timetable improvements to be consulted on post mobilisation and for 2020 adoption

The current freight vessel timetable delivers capacity for livestock at times of the week and periods of the year when it is needed. We believe the flexibilities currently built into the freight vessel timetable, particularly the ability to drop in additional services at relatively short notice in response to market demand, is suited to the needs of the market.

In the event that a third freight vessel introduced to accommodate the aggregate demand of passenger vehicles, freight and livestock, Serco would consult livestock stakeholders on the following changes:

- Redacted

6.2.9. Terms and Conditions of Carriage

Our Terms and Conditions of Carriage (T&Cs) are included in full as Appendix A2-1 at the end of this delivery plan. These T&Cs are common for Passengers, Freight and Livestock and include content specific to all three customer types.

6.3. Summary of Proposals for Demand Management

Table 4: Proposals for Demand Management

Proposals	Timing and duration	Responsibility	Stakeholders involved	Assumptions/ dependencies	Method for measuring results
Demand Analysis and Forecasting Model	Redacted				
Express Vehicle Boarding Lane, Stromness					

6.4. Fleet Relief

6.4.1. Pentland Firth

Planned maintenance of the MV Hamnavoe will be scheduled in the first quarter of the year. To provide continuity of service we will follow a structured process to identify and deploy alternative capacity:

- Liaise with Transport Scotland, Calmac Ferries and CMAL to identify if a Calmac vessel with suitable ship-shore compatibility is available. This solution was possible in 2016 and the MV Isle of Lewis was used following successful berthing trials. It is recognised that the Calmac Ferries fleet has limited spare capacity until the new CMAL 801 and 802 vessels enter service and removing a vessel is likely to have a detrimental impact on service levels for another Scottish Island community.
- Engage with the commercial vessel charter market to identify the potential for a 3rd party vessel with suitable ship-shore compatibility to cover the route. Alternative vessels in the market suited to the route are known to be limited and subject to market conditions and vessel availability at the time.
- Deploy either of the MV Hildasay or MV Helliar to provide capacity for freight and some capacity for passengers. This solution has been proven to work and offers the greatest long-term certainty of being possible.

6.4.2. Aberdeen Routes

Planned maintenance of the freight vessels will be scheduled in the first quarter of the year when the overall volume of freight and passenger vehicle traffic is traditionally at its lowest. One freight vessel will be taken out of service at a time. Through this period, the capacity available on the RoPax vessels and remaining freight vessel is sufficient to carry all freight demand. We will consult with freight stakeholders on the exact dates planned and proactively work with them to support the rescheduling of movements through the week to minimise impact on their businesses.

Planned maintenance of the RoPax vessels will be scheduled in the first quarter of the year when overall volume of freight and passenger vehicle traffic is traditionally at its lowest. One RoPax will be taken out of service at a time. Through this period, the capacity available on both freight vessels and remaining RoPax is sufficient to carry all freight demand. We will consult with freight stakeholders, especially those in the aquaculture sector, on the exact dates planned, and proactively work with them to support the rescheduling of movements through the week to minimise impact on their businesses.

6.5. Legacy and future solutions

Analysis of historical data and our projections for potential growth indicate that capacity to meet passenger and vehicle needs will continue to be under pressure, particularly for sleeping accommodation and vehicle deck space on the RoPax vessels.

We have identified several options to materially increase absolute capacity in the service.

Redacted

Within the network, only Aberdeen Harbour is a practical barrier to larger vessels; Hatston and Lerwick are not limited. Serco has identified potential to alter the operational solution at Aberdeen that would:

- Redacted

Serco has identified the potential to:

- Redacted

Full analysis of these options will involve Transport Scotland, CMAL, Aberdeen Harbour Board, MCA and Class and is beyond the scope of the ITT. However, Serco recognises the challenges ahead and the need to think creatively about solutions to meet customer needs and that are affordable to Scottish Government. We will lead feasibility studies to explore the options.

Appendix A2-1

Terms and Conditions of Carriage

CONDITIONS OF CARRIAGE NORTHLINK FERRIES

As from 1 October 2016

YOUR ATTENTION IS DRAWN TO THESE CONDITIONS WHICH YOU SHOULD READ PRIOR TO MAKING A RESERVATION OR ENTERING INTO ANY CONTRACT WITH NORTHLINK FERRIES

Notices:

- These Conditions of Carriage ("the Conditions") of Serco Ltd operating as NorthLink Ferries ("NorthLink Ferries") are incorporated within and form part of any and all contracts of carriage entered into with NorthLink Ferries.
- A number of policies, including those referred to in the Conditions are available on the NorthLink Ferries website at www.northlinkferries.co.uk. Passengers should ensure they are familiar will all policies which are relevant for their reservation.
- The liability of NorthLink Ferries for the carriage of Passengers, Luggage and vehicles is restricted and in certain circumstances excluded. Passengers are directed to sections 12 – 15 of the Conditions in particular.
- The liability of NorthLink Ferries for the carriage of Goods, Unaccompanied Vehicles and livestock is restricted and in certain circumstances excluded. Shippers are directed to sections 16 – 17 of the Conditions in particular.
- Those making reservation for a group of Passengers are directed to the terms of section 5 in particular.
- You are advised to consider the need for and purchase insurance as appropriate taking into account these Conditions.
- Any policy or other NorthLink Ferries document referred to in these Conditions are available on the NorthLink Ferries website and in accessible formats by request.

1. Definitions

In these Conditions:-

(a) "the Athens Convention" means the Convention relating to the Carriage of Passengers and their Luggage by Sea adopted at Athens in 1974 as modified and re-enacted, or Regulation (EC) No 392/2009 of the European Parliament of the Council of 23 April 2009 on the Liability of Carriers of Passengers by Sea in the Event of Accidents, whichever is applicable to the particular contract of carriage with NorthLink Ferries. The Athens Convention provides a liability regime for passenger ships with regard to passengers and their luggage. There are financial limits of liability for carriers in respect of claims brought by passengers.

(b) "Commercial Vehicle" means, when accompanied by a driver: (i) buses, lorries, vans, commercial trailers and any other vehicles typically used for the carriage of goods or with the carriage of fare paying customers; and (ii) any other vehicle taken onto a Vessel for or in connection with any trade or business.

(c) "Customer Service Centre" means the team at NorthLink Ferries dedicated to reservations and other customer queries. They can be contacted by telephone on 0845 6000 449 or 01856 885500, by email to info@northlinkferries.co.uk or by post to NorthLink Ferries, Ferry Road, Stromness, Orkney, KW16 3BH, United Kingdom.

(d) “Customer Services Department” means the team at NorthLink Ferries dedicated to handling customer care issues including (but not limited to) claims relating to the Athens Convention, the Hague Visby Rules and the Passenger Rights Regulations. They can be contacted by telephone on 0845 6000 449 or 01856 885500, by email to customerservicesdepartment@northlinkferries.co.uk or by post to Customer Services Department, NorthLink Ferries, Ferry Road, Stromness, Orkney, KW16 3BH, United Kingdom.

(e) “Goods” means any articles, items and substances except Luggage, Commercial Vehicles, Unaccompanied Vehicles, other vehicles or livestock;

(f) ”the Hague Visby Rules” means the Rules contained in the International Convention for Unification of Certain Rules relating to Bills of Lading signed at Brussels on 25th August 1924, as amended by the Protocol to amend the said Convention signed at Brussels on 23rd February 1968. The Hague Visby Rules impose duties upon the carriers of goods by sea relating to the care of those goods, and in return allow those carriers to limit their liability in respect of any loss or damage to the goods.

(g) “Luggage” means any articles, items, pet animals or vehicles (excluding Commercial Vehicles) accompanied by a Passenger and carried by NorthLink Ferries under a contract of carriage, excluding:-

- any Commercial Vehicle;
- any item of Goods and/or Unaccompanied Vehicle (whether or not a Commercial Vehicle) carried under a consignment note issued by NorthLink Ferries; and/or
- livestock.

(h) “Owner” means the person who holds himself out to be the person for whom the relevant contract for the carriage of Luggage, Goods, Commercial Vehicles, Unaccompanied Vehicles or livestock is made with NorthLink Ferries and shall include any employee, representative, agent, contractors or sub-contractors of any such person.

(i) “Passenger” means any person travelling on a Vessel whether or not a boarding pass is issued to that person and any person who is entitled to use the Services without charge.;

(j) “The Passenger Rights Regulation” means EU Regulation No 1177/2010 of the European Parliament and of the Council of 24 November 2010 concerning the rights of passengers when travelling by sea and inland waterways and amending Regulation (EC) No 2006/2004, which came into force on 18 December 2012, and applies to passengers travelling on NorthLink Ferries’ Vessels. It establishes the right of such passengers to information and assistance in cases of cancelled or delayed departures and lays down the right, in certain circumstances, to re-routing or reimbursement in the event of cancelled or delayed departures or compensation in the event of delay in arrival.

(k) “Services” means the services offered by NorthLink Ferries in providing the carriage by sea of Passengers, Luggage, Commercial Vehicles and other vehicles, and the shipment and carriage of any Goods, Unaccompanied Vehicles or livestock in return for payment

(l) “Shipper” means a shipper of Luggage, Goods, vehicles and/or livestock on any Vessel;

(m) “Unaccompanied Vehicle” means any vehicle or trailer which is unaccompanied by a person and is carried under a consignment note by NorthLink Ferries.

(n) ”Vessel” means any ship, vessel or ferry owned by, chartered to or hired or used by NorthLink Ferries in respect of the Services.

2. Application of these Conditions of Carriage

(a) All contracts entered into with NorthLink Ferries in relation to the Services shall be subject to these Conditions.

(b) These Conditions shall apply from the time of entering into a contract with NorthLink Ferries, and at all times during the Services, including all loading and unloading operations and all other periods when Passengers, Luggage, Commercial Vehicles, Goods, Unaccompanied Vehicles or livestock remain on any vessel or other property owned or operated by NorthLink Ferries.

(c) NorthLink Ferries will issue a boarding pass or consignment note in respect of the Services. If any goods, vehicles or livestock are carried without a boarding pass or a consignment note being issued, these Conditions shall apply in respect of the Services in any event.

(d) No variation of these Conditions shall be of any effect unless duly authorised in writing on behalf of NorthLink Ferries.

(e) If any provision of these Conditions shall to any extent be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not be in any way affected or impaired and each of the provisions of these Conditions shall be valid, legal and enforceable to the fullest extent permitted by law.

3. Governing Law

These Conditions and any contracts of carriage entered into by Passengers and Shippers with NorthLink Ferries shall be governed by the law of Scotland (including, but not limited to, any

international convention, protocol, code or order incorporated into the law in force in Scotland) and the Scottish courts shall have exclusive jurisdiction in respect of any dispute arising from these Conditions or any such contracts of carriage.

4. Ticketing and Boarding Conditions

All reservations made and boarding passes issued by NorthLink Ferries are subject to the following provisions, and also to such restrictions and changes as may from time to time be published by NorthLink Ferries (which are available on the NorthLink Ferries website).

(a) Prices – Rates shall be available on the NorthLink Ferries website.

(b) Reservations:

NorthLink Ferries shall not take reservations for any Services without prior payment for those Services. The issue of a quotation is not a guarantee of future availability.

Only one reservation per vehicle per direction per day shall be accepted.

NorthLink Ferries reserves the right to charge an administration fee prior to changing any reservation.

Where a booking is made for a return journey and there is a failure to check-in for the outward sailing, the booking in respect of the return sailing shall be cancelled.

(c) Booking confirmation number: NorthLink Ferries does not issue tickets. Passengers will be issued with a unique booking confirmation number upon booking. This must be presented at check-in in return for a boarding pass.

(d) Non-transferability: Bookings made and boarding passes issued are not transferable.

(e) Presentation of boarding pass: All Passengers must be in possession of a valid boarding pass at the time of boarding which they shall exhibit if so requested.

(f) Latest Check-in Time: The deadlines for checking-in for Passengers, vehicles and Commercial Vehicles are published by NorthLink Ferries from time to time in respect of each route. Failure to check-in timeously may lead to the Passenger and/or vehicle being refused carriage.

(g) Proof of Identity: NorthLink Ferries shall be entitled in its absolute discretion to refuse to carry any Passenger unable to produce satisfactory photographic proof of his or her identity.

(h) Refusal of carriage: NorthLink Ferries shall be entitled in its absolute discretion to refuse to carry any Passenger notwithstanding that such Passenger is in receipt of a valid boarding pass.

(i) Cancellation charges: Bookings may be cancelled by contacting the Customer Service Centre. The following cancellation charges will apply:

- 5% of total booking value if cancelled more than 6 weeks prior to sailing
- 20% of total booking value if cancelled 6 weeks or less prior tosailing
- 50% of total booking value if cancelled 2 weeks or less prior tosailing
- 100% of total booking value if not cancelled prior to the opening of check-in.

(j) Lost/Mislaid Boarding passes: NorthLink Ferries is under no obligation to replace lost boarding passes or make any reimbursement to Passengers in respect of lost boarding passes or of any sum which may be charged in consequence of the Passenger's failure to produce a valid boarding pass when required.

(k) Sleeping Berths: Passengers holding sleeping berth reservations may be required to vacate cabin accommodation prior to arrival at the destination. NorthLink Ferries will advise upon boarding.

(l) Travelling with Children: Children under the age of 16 years must be accompanied by an adult. For the consideration of fellow passengers, it is not permitted to book children below the age of 4 years into shared cabins or sleeping 'pods'.

(m) Travelling with Pets/Unaccompanied Pets: With the exception of support dogs, animals must not be taken into internal public areas of the vessel including cabins. Kennel facilities are available onboard, which should be booked in advance and are subject to availability. Passengers are responsible for providing a bowl, blanket and any other items required for their pet. Unaccompanied pets may be left in the kennel facilities, where they will remain for the duration of the journey. Further details including the rules relating to embarkation/disembarkation with pets and access to the kennel facility during sailing are contained within the Travelling with Pets policy which is available on the NorthLink Ferries website.

(n) Validation of non-commercial tarriff: NorthLink Ferries reserves the right to conduct an inspection of vehicles booked on domestic or reduced commercial rates for the purposes of validating that tariff.

5. Group bookings

(a) Where a single booking is made in respect of a number of Passengers travelling in a group, the person who made the booking warrants that he has authority to and does contract with NorthLink Ferries as agent for and on behalf of all the Passengers in the group travelling on that booking. All such Passengers shall thus have contracted with NorthLink Ferries subject to these Conditions.

(b) Where a booking is made by a third party in the course of a business or other commercial activity, the person who made the booking shall indemnify NorthLink Ferries in respect of any loss or damage sustained by NorthLink Ferries through any deliberate or negligent act or omissions of any Passenger travelling on that booking.

(c) Any person making a booking for a group of Passengers or any person making a booking for a third party must provide the name and contact details of the individual Passengers travelling in the group to NorthLink Ferries when requested to do so at any time.

6. Disabled Passengers

(a) NorthLink Ferries recognise that accessibility is an issue for a wide range of Passengers with disabilities and provides assistance on the majority of its Vessels for disabled Passengers and those with reduced mobility.

(b) The Accessibility Policy for the carriage of disabled Passengers and those with reduced mobility is available on the NorthLink Ferries website.

(c) Should Passengers require additional assistance, it is requested that notice is given to NorthLink Ferries during the booking process and that notice is again given when checking in.

(d) Any discounts which NorthLink Ferries may from time to time allow will only be given on presentation of such documentation as NorthLink Ferries may require.

(e) Any policies or other NorthLink Ferries documentation referred to in these conditions will be provided in accessible formats upon request.

7. Variations with regard to sailing

(a) NorthLink Ferries carries Passengers in accordance with the provisions of the Passenger Rights Regulation. In the event of a delay in departure of or cancellation of a sailing NorthLink Ferries shall provide information and assistance and advise of the right, in certain circumstances, to re-routing or reimbursement in terms of the Passenger Rights Regulations. The obligations of NorthLink Ferries to Passengers shall be limited to those to which it is subject under The Passenger Rights Regulation.

(b) Although NorthLink Ferries will make every reasonable effort to carry Passengers and their Luggage or ship any Goods, vehicle or livestock in the first available Vessel or on a particular day or on a particular route or at a specific time, NorthLink Ferries shall be under no obligation to do so.

(c) Vessels may require to sail on any day or at any other time not specified in any advertisement, timetable or notice.

(d) Vessels may require to call at various ports in any order on either the outward or the return journey; and/or call at, or off, or may stay at, any intermediate port, whether on or off the customary route, for any reasonable purpose and whether or not such calling is mentioned in any advertisement, sailing schedule or notice.

(e) In matters beyond the control of NorthLink Ferries, including but not limited to weather or sea conditions which risks the safe operation of the Vessel, strikes, the congestion or closure of ports, perils of the sea, defects in or break down of machinery or the Vessel, absence of full facilities for loading, unloading or delivery, NorthLink Ferries shall have the right at any time before or after the commencement of the voyage to cancel, abandon or suspend the voyage, alter, vary or depart from the proposed or advertised or agreed or customary route, delay or detain the Vessel, disembark, and forward, land or store or otherwise account for (as appropriate), Luggage, Goods, vehicles and livestock at any port or place.

(f) NorthLink Ferries or the master of the Vessel shall have the liberty, acting reasonably, to comply with any orders, directions or advice given by any government or other authority or by any persons having the right to do so under the terms of any insurance taken out by NorthLink Ferries. Compliance with any such orders, directions or advice shall not prejudice NorthLink Ferries' entitlement to receive or retain fares and freight for the affected Services.

8. Carriage of luggage and goods

(a) Passengers are permitted only to carry hand-luggage required for their voyage onto the Vessel. Passengers are required to leave large items in either their vehicle or in storage on the luggage trolleys for loading onto the Vessel during the voyage. Such luggage trolleys or any

other similar equipment used for the carriage of luggage must not be moved by Passengers without the permission of NorthLink Ferries staff.

(b) The maximum weight of Luggage which is permitted to be stored on the luggage trolleys is 30kg per Passenger. Irregular sized items or those in excess of 30kg will be carried only at the discretion of NorthLink Ferries and may be subject to an additional charge. Notice of the intention to carry such items must be notified to the Customer Service Centre at the time of booking.

(c) NorthLink Ferries shall be entitled in its absolute discretion, to refuse to carry any vehicle or luggage and/or to receive or ship any item of goods, vehicle and/or livestock notwithstanding that it may previously have agreed to carry, receive or ship the same.

(d) Whilst NorthLink Ferries permits the carriage of vehicles with roof-racks, roof boxes or bicycle racks, operational reasons may require that drivers remove them prior to embarkation and for the duration of the carriage if requested to do so by NorthLink Ferries. The maximum permitted height of a vehicle, inclusive of any roof box, roof boxes or bicycle racks is 2.4metres.

(e) All Commercial Vehicles or trailers over 6 metres long and/or over 3.5 metric tonnes in weight presented for shipment must be fitted with suitable lashing points in compliance with the Department of Transport's Code of Practice for the Storage and Securing of Vehicles and ISO 9367. Lashing Guidelines are available on the NorthLink Ferries website. If lashing points are found to be defective or unsuitable the trailer and/or Commercial Vehicle may be refused shipment at the absolute discretion of NorthLink Ferries. There shall be no requirement for NorthLink Ferries to reimburse the freight paid nor any other costs incurred resulting from the refusal to ship.

(f) NorthLink Ferries provides a service for the carriage of bulk bags. The Shipper may be required to be responsible for the loading, stowage and discharge of bulk bags under the direction of NorthLink Ferries. The Shipper is responsible for the provision of dunnage.

(g) Freight bookings should be made by contacting The Customer Service Centre. Details of the maximum operating parameters of NorthLink Ferries' equipment, vessels and shore side facilities are available on the NorthLink Ferries website.

(h) NorthLink Ferries is under no obligation to send any notice of its receipt of any Goods, Luggage, vehicle or livestock for the purpose of carriage, and is under no obligation to send any notice of the arrival of any Goods, Luggage, vehicle or livestock subsequent to carriage.

9. Health and Safety

(a) Passengers are required to pay attention to and comply with all safety and security regulations, announcements or notices made ashore or on board any Vessel by or on behalf of NorthLink Ferries. Passengers must take care for their own safety whilst on board any Vessel, taking account of sea and environmental conditions.

(b) All reasonable safety instructions given by or on behalf of NorthLink Ferries must be complied with by all Passengers and Shippers. NorthLink Ferries shall be entitled to question any Passenger, or Shipper and undertake searches of Passengers, Goods, Luggage and vehicles carried or to be carried on their Vessels to ensure the safety and welfare generally of its Vessels, Passengers, crew and cargo.

(c) Passengers are not permitted on the vehicle decks of Vessels while at sea unless signage and crew on board direct otherwise. Vehicle occupants must leave their vehicles as soon as they are parked on board. Passengers shall not be allowed access to any vehicle after loading except in the presence of a ship's Officer or member of the Vessel's crew.

10. Alcohol consumption and smoking

(a) Passengers who are deemed by NorthLink Ferries in its absolute discretion to be under the influence of drink or drugs or otherwise and are deemed to pose a risk of disturbance or of harm to themselves or to others shall not be permitted to board a Vessel or may be removed from vessel. NorthLink Ferries shall not be required to reimburse the Passenger the cost of the booking nor any other costs incurred by the Passenger resulting from the refusal to board or removal from a vessel.

(b) Certain NorthLink Ferries vessels sell alcohol. In its absolute discretion, NorthLink Ferries may refuse to sell alcohol to any Passenger.

(c) Smoking, including the use of e-cigarettes, is prohibited on all areas of the Vessels other than those external areas designated as permitted smoking areas.

11. Carriage of Dangerous Goods and Substances, Firearms and Fuel

(a) NorthLink Ferries' Prohibited Items Policy contains a non-exhaustive list of items which are not permitted to be taken on-board any Vessel, and is available on the NorthLink Ferries website

(b) All Regulations applicable to the shipment of dangerous goods and substances on board the Vessels must be strictly adhered to by Passengers and the Shippers of such goods and substances. Dangerous goods or substances as classified in these Conditions or in any of the Dangerous Substances in Harbour Areas Regulations 1987, the Merchant Shipping (Dangerous or Noxious Liquid Substances in Bulk) Regulations 1996 and/or the Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997, and other substances as specified in the International Maritime Dangerous Goods Code or any other legislation or publication issued of a similar nature relating to the carriage of dangerous goods by sea must not be shipped or otherwise loaded on the Vessels unless prior permission from NorthLink Ferries has been given.

(c) Without prejudice to the classification of substances referred to in the Regulations and Codes above, the following items are classified under these Conditions as being or comprising dangerous goods and substances:- firearms (whether loaded or unloaded); explosives; non-flammable compressed liquefied or dissolved gas; toxic gas; flammable gas; flammable liquid; flammable solids; spontaneously combustible substances; substances which in contact with water are liable to become spontaneously combustible or to give off a flammable gas; oxidising substances; organic peroxides; toxic substances; infectious substances, radioactive substances and corrosive substances

(d) Passengers and Shippers of dangerous goods and substances must complete NorthLink Ferries' Dangerous Goods Declaration and Packing Certificate. This document must be submitted to the Customer Service Centre by email or by fax a minimum of 24 hours prior to departure. A copy must also be submitted to NorthLink Ferries at check-in.

(e) NorthLink Ferries' Firearms and Ammunition Policies contain the procedures which must be complied with for the carriage of firearms and ammunition, this is available on the NorthLink Ferries website.

(f) Firearms must be declared at the time of booking with the Customer Service Centre and again at check-in. They must be supported by an appropriate firearms licence which must be made available for inspection.

(g) Passengers may be required to surrender any firearms and ammunition prior to embarkation for carriage on the vessel.

(h) All vehicles carrying petrol or fuel oil in their main fuel tank shall be fitted with means whereby the fuel supply shall be shut off either (i) in the case of gravity feed by closing the valve or (ii) in the case of a pump feed by stopping the engine. No fuel tank shall be filled to such a

degree as will allow any spillage during loading or unloading or throughout the voyage when the motion of the Vessel must be taken into account.

(i) Air cylinders or other containers of compressed gas such as are used as diving equipment must remain in the Passenger's vehicle or within NorthLink Ferries' specialist dive containers which can be reserved at the time of booking and are subject to availability. The Dive Equipment Policy is available on the NorthLink Ferries' website. Shippers of such diving equipment must complete NorthLink Ferries' Dangerous Goods Declaration and Packing Certificate – For Divers. This document must be submitted to the Customer Service Centre by email or by fax a minimum of 24 hours prior to departure. A copy must also be submitted at check-in.

(j) All gas cylinders in boats, caravans and in other vehicles where the gas is used solely in connection with its operation or business shall be declared by to the Vessel's officer in charge of loading and the following conditions shall apply:-

- the maximum number of cylinders carried shall be 3, except in the case of small expendable cartridges hermetically sealed and packed in an outer container, when up to 12 may be carried;
- all cylinders shall be adequately secured against movement of the ship;
- the supply shall be shut off at the cylinders during the entire voyage;
- leaking and inadequately secured or connected cylinders should not be offered for shipment; and
- no pierced expendable cartridge shall be carried in any vehicle and any such cartridge shall be safely disposed of prior to shipment of the vehicle.

(k) Any breach of these Conditions relating to the carriage of dangerous goods and substances, shall entitle NorthLink Ferries at its absolute discretion to refuse shipment and to take such other reasonable action as may be deemed necessary to ensure the safety of its Vessels, Passengers, crew and cargo. The Passenger or Shipper who is in breach shall be liable for any loss, injury or damage arising out of or connected with such breach and all payments made to NorthLink Ferries for the intended shipment and carriage such as are frustrated by such breach shall be forfeited and may credited by NorthLink Ferries towards the amount of such loss, damage and/or injury.

12. Liability to NorthLink Ferries

(a) All Passengers and Shippers shall be liable to NorthLink Ferries for any damage occasioned by them to a Vessel and its fittings, furnishings and equipment or any other property of NorthLink Ferries or property of third parties carried by NorthLink Ferries through his negligence or wilful act or omission or breach of these Conditions. Passengers and Shippers shall indemnify NorthLink Ferries, its employees and agents in respect of all losses and liabilities incurred through such negligence, wilful act or omission or breach.

(b) Passengers are responsible for ensuring they are fit to travel. Passengers who are pregnant or have a pre-diagnosed health condition or an injury are advised to seek medical advice before travelling.

(c) In the event that medical treatment or emergency assistance is provided or ordered by NorthLink Ferries or anyone on its behalf, the Passenger for whom the treatment or assistance was obtained shall indemnify NorthLink Ferries for any costs incurred in respect of such treatment or assistance.

(d) Without prejudice to clause 12(e), NorthLink Ferries shall be entitled at its absolute discretion to recover storage charges at such rates as it considers fit from the Owner of any Goods, Luggage, vehicle or animal left in the custody of NorthLink Ferries in excess of a period

commencing four hours before the relevant advertised sailing time and ending two hours after the arrival of the vessel at the port of discharge.

(e) NorthLink Ferries shall be entitled to hold any Goods, Luggage, vehicles and livestock until all the charges and costs in respect of them are paid, and until all other amounts due to NorthLink Ferries in respect of any matter whatsoever from the Owner of said Luggage, Goods, vehicles and livestock are paid.

(f) NorthLink Ferries shall be entitled to sell such Goods, Luggage, vehicles and livestock upon reasonable notice at such time and in such manner as it may decide, to satisfy any such amounts remaining owed.

13. Exclusions and limitations of liability

Notwithstanding the terms of these Conditions, NorthLink Ferries shall be entitled to the maximum protection afforded by law in force in Scotland and applicable to the liability of or any assessment of damages recoverable from carriers such as NorthLink Ferries. Any exemption from or limitation of liability afforded to NorthLink Ferries whether under these Conditions or under the Athens Convention or otherwise under the law of Scotland shall extend to its employees and agents acting within the course and scope of their respective employment/agency.

14. Exclusions of liability

(a) NorthLink Ferries shall not be liable for any loss or damage arising from a defect in or failure of any of the Services where such defect or failure is caused by:-

- the fault of a Passenger;
- the fault of a third party (that is, a party other than an employee or agent of NorthLink Ferries acting within the course and scope of his respective employment/agency);
- unusual and unforeseeable circumstances beyond the control of NorthLink Ferries; or
- any of the events set out in Section 7 of these Conditions.

(b) NorthLink Ferries shall not be liable under any circumstances for any loss of profits, loss of business and/or any other indirect or consequential loss or damage howsoever caused, even if caused by negligence on the part of NorthLink Ferries, its servants, employees or agents or its contractors or their sub-contractors.

(c) NorthLink Ferries shall have no liability whatsoever for loss of or damage to any Luggage, Commercial Vehicles, Goods, Unaccompanied Vehicles or livestock prior to embarkation or subsequent to discharge except in circumstances where there is proved to have been negligence on the part of NorthLink Ferries.

(d) NorthLink Ferries shall take all reasonable steps to provide an electricity supply to refrigerated trailers during their carriage on Vessels but shall not be liable for any loss or damage of any kind whatsoever caused by the non-provision or inadequacy or interruption or failure of any such supply, or the failure to keep goods at any stipulated temperature, save where such non-provision, inadequacy, interruption or failure is proved to be as a direct result of negligence on the part of NorthLink Ferries or its employees in which case any such claim must be notified to the Customer Services Department by telephone during office hours or by email or fax within two hours of discharge of the refrigerated trailer from the Vessel failing which NorthLink Ferries shall have no liability whatsoever.

15. Limitation of liability – Passengers, their Luggage and their vehicles

(a) Passengers, their Luggage and their vehicles are carried by NorthLink Ferries in accordance with the provisions of the Athens Convention, except insofar as it purports to determine the applicable jurisdiction for the determination of disputes. The Athens Convention shall apply in

every situation involving the death of or personal injury to a Passenger or the loss of or damage to Luggage occurring on board a Vessel.

(b) The following provisions of the Athens Convention are specifically brought to customers' attention:

- The liability of NorthLink Ferries in respect of death or personal injury and for the loss of or damage to Luggage shall not exceed an amount equal to the limits under the Athens Convention.
- Any liability of NorthLink Ferries in respect of loss of or damage to Luggage under the Athens Convention shall be subject to a deductible, to be applied at the discretion of NorthLink Ferries.
    - In certain circumstances defined in the Athens Convention, the liability of NorthLink Ferries is excluded.
- The Athens Convention presumes that Luggage has been delivered undamaged unless written notice is given to NorthLink Ferries (a) in the case of apparent damage, before or at the time of disembarkation or redelivery or (b) in the case of damage which is not apparent or of loss, within 15 days from the date of disembarkation or redelivery, or from the time when such redelivery should have taken place.
- Any action for damages arising out of the death of or personal injury to a Passenger and/or for the loss of or damage to Luggage shall be time-barred after a period of 2 years, as calculated in accordance with the Athens Convention.
- NorthLink Ferries shall not be liable for the loss of or damage to valuables as defined in the Athens Convention, unless such valuables have been deposited for safe keeping by agreement in writing by a duly authorised individual, in which case NorthLink Ferries shall be liable up to the limits specified in the Athens Convention or up to such higher limits as specifically agreed in writing between the parties.

(c) The application of the Athens Convention to these Conditions shall not be construed so as to restrict or remove the right of NorthLink Ferries to any limitation of or exemption from liability afforded to it by any applicable statute, convention or similar.

16. Limitation and exclusions of liability – freight

(a) All Goods, Commercial Vehicles and Unaccompanied Vehicles are carried by NorthLink Ferries in accordance with the provisions of the Hague Visby Rules relating to the limitation of liability which shall apply in every situation involving the loss of or damage to Goods carried or to be carried by NorthLink Ferries.

(b) Any finding of or the exclusion of liability of NorthLink Ferries for any loss or damage to Goods, Commercial Vehicles and Unaccompanied Vehicles shall be determined by application of the Hague Visby Rules.

(c) The liability of NorthLink Ferries in respect of damage to Goods, Commercial Vehicles and Unaccompanied Vehicles shall not exceed an amount equal to the limits under the Hague Visby Rules.

(d) Article III Rule 8 of the Hague Visby Rules shall not apply. Should provisions in these Conditions restrict the liability of NorthLink Ferries to an extent greater than provisions of the Hague Visby Rules, the provisions in these Conditions shall prevail.

17. Limitation and exclusions of liability – livestock and other animals

(a) Livestock must not be moved, collected or otherwise removed from the Vessel or any vehicle, trailer or Commercial Vehicle upon which livestock is carried without the consent of the NorthLink Ferries.

(b) The responsibility for the wellbeing and restraint of all livestock rests solely with the Shipper of the livestock prior to the livestock entering and after exiting the lairage property.

(c) NorthLink Ferries shall not be liable for injury, illness, loss or death of any animal whatsoever, howsoever or wheresoever arising or occurring, even if arising or occurring as a result of negligence on the part of NorthLink Ferries, its servants, employees, agents, contractors and/or their sub-contractors.

(d) NorthLink Ferries shall have no liability for the cost of bedding or feeding livestock, incurred as a result of any Vessel not sailing or not arriving at the time advertised, even if the Vessel not sailing and/or arriving at an advertised time is due to negligence on the part of NorthLink Ferries or its servants, employees, agents, contractors and/or their sub-contractors.

(e) NorthLink Ferries shall have no liability of any kind whatsoever for the cost of bedding and/or feeding livestock that are refused carriage on any service, including as a result of the late arrival of that livestock at the load port.

(f) NorthLink Ferries shall not be accountable for the number of livestock stated on any consignment note (such number being taken on the representation of the livestock Owner or Shipper) nor for the correct selection of livestock on landing.

(g) NorthLink Ferries may direct Shippers of Livestock to take such steps as are necessary in order to comply with its obligations under The Welfare of Animals (Transport) (Scotland) Regulations 2006.

(h) NorthLink Ferries may at its absolute discretion require Shippers of livestock to ensure that livestock transported on the Vessels is accompanied by at least one person who has specific training or equivalent practical experience qualifying him to handle and transport vertebrate animals and to administer appropriate care to such animals.

(i) NorthLink Ferries shall be entitled at its absolute discretion to instruct a veterinarian to assess and/or provide treatment to livestock or any other animal carried or to be carried on its Vessels. The owner or Shipper of the livestock or other animals in question shall indemnify NorthLink Ferries in respect of all costs incurred in providing that assessment or treatment, together with any associated costs incurred to the veterinarian or others.

18. Making a claim

(a) Any claim should be made in writing by email or post to the Customer Services Department.

(b) Any claim which is not subject to the time limit provisions of the Athens Convention, the Hague Visby Rules or the Passenger Rights Regulation or any other shorter specified time limit in these Conditions must be notified in writing, as above, to the Customer Services Department within 28 days of disembarkation or of the date when the claimant first had or ought to have had knowledge of the material facts giving rise to the claim, whichever date is the later.

(c) Any court or other applicable proceedings against NorthLink Ferries must be served within two years of disembarkation or of the date when the claimant first had or had to have had knowledge of the material facts giving rise to the claim, whichever date is the later.

(d) Unless the time limits in this Clause 18 are complied with NorthLink Ferries shall be under no liability whatsoever and the right to bring any claim shall be barred by the passage of time.

NOTICE OF ALL OF WHICH IS HEREBY GIVEN

Serco Ltd, operating as NorthLink Ferries

16 Bartley Wood Business Park, Bartley Way, Hook, Hampshire, RG27 9UY