Skye-Harris/Uists
Ferry Services Development

Final Report

to

HITRANS

with

and

February 2010

CONTENTS

EXECUTIVE SUMMARY

INTRODUCTION

Reference Economic Consultants, in conjunction with STSI and Arch Henderson, were commissioned by HITRANS to review the ferry services that operate between Skye and Harris and between Skye and Uist.

The research was undertaken between November 2009 and January 2010. It comprised:

- Development of an evidence base on the socio-economic characteristics of the islands and existing transport provision.
- Consultations with a range of organisations, including community councils, transport operators and infrastructure providers.
- Desk-based analysis.

OPTIONS

Three options for development of ferry services were appraised at a high level. These were:

- A: Dedicated vessels for each of the Harris and Uist services.
- B: A new landfall on Skye to re Uig.
- C: Improved passenger facilities at Uig.

OPTION A: DEDICATED VESSELS FOR EACH OF THE HARRIS AND UIST SERVICES

Having dedicated vessels rather than a shared vessel for the routes would offer a number of benefits. Sailing frequency would be doubled compared to existing provision. Consistent daily timetables could be offered with the first sailing of the day made from the islands. All sailings in the winter would be direct rather than some being operated via the other island (e.g. Skye to Harris via North Uist).

Importantly, the increased number of sailings would offer the capacity to accommodate growing demand that would otherwise be frustrated by a continued one ship operation. Further, the enhanced timetable would, in itself, attract additional traffic onto the routes. There would be potential economic benefits through, in particular, more efficient freight transport and development of the tourism day trip and short-break markets in the islands.

A second vessel, if a new build, would have a capital cost of £25-£30 million. The operation of two vessels rather than one would lead to an increase of over £3 million per year in net operating cost. There could also be additional capital costs for enlarging onshore facilities if demand was to increase significantly.

Times of arrival and departure at Uig for the two vessels would need to be staggered as the port only has one linkspan. This could present challenges to the integration of the ferry and bus timetables at Uig; and also in terms of the timings of the last sailings from Skye.

The appraisal suggests that Option A appears worthy of further, detailed research. This would be in terms of the scale of the additional traffic and economic benefits that could be achieved compared to the increased costs of a two vessel service.

OPTION B: A NEW LANDFALL ON SKYE TO REPLACE UIG

Four alternative landfalls were considered: Dunvegan; Loch Bay; Loch Pooltiel; and Kilmaluig. Only Dunvegan was considered in any detail. This is because the other landfalls would:

- Have very high capital costs-between £33 million and £43 million, depending on the port selected. These costs include development of a ferry terminal and investment in road infrastructure.
- Increase sailing distances to either Tarbert or Lochmaddy.
- Increase road journey times on Skye.
- Be unlikely to provide greater reliability than Uig.

There appear to be no particular benefits in using Dunvegan rather than Uig in terms of:

- Sailing frequency and scheduling.
- Ferry fare levels.
- Crossing times.
- Overall end-to-end journey times.

The analysis also suggests that Dunvegan is unlikely to offer greater service reliability than Uig. This is in a context where data on cancelled and diverted sailings indicate that Uig is no worse than other, similar ferry terminals for reliability.

The capital cost of establishing a ferry terminal at Dunvegan is estimated at £21 million. This would offer the ability to design passenger facilities that better meet user needs than the existing facilities at Uig. However, improved facilities could be provided at Uig itself-as per Option C.

The appraisal suggests that Option B should be discounted for the purposes of further transport planning.

OPTION C: IMPROVED PASSENGER FACILITIES AT UIG

The improved passenger facilities and their estimated capital costs comprise:

- Covered walkway: £0.9 million.
- Passenger gangway: £0.75 million.
- New waiting room: £1.5 million.

The appraisal suggests that Option C appears worthy of further consideration. This could include determining whether passengers would prefer investment in enhancements to the ferry timetable rather than onshore facilities.

1 INTRODUCTION

This is the final report of a study which has reviewed ferry services between Skye and:

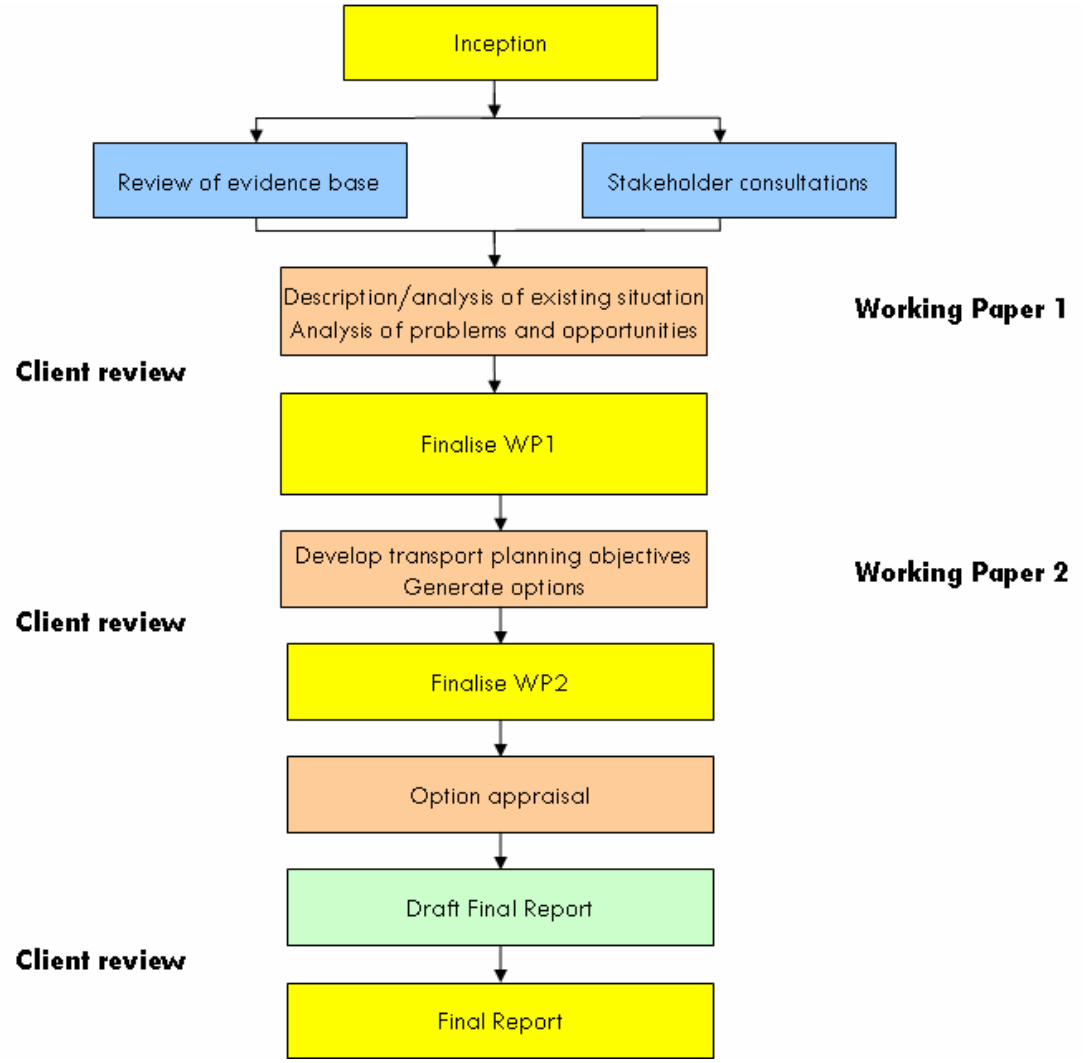
- Harris.
- Uist.

The research was undertaken on behalf of HITRANS between November 2009 and January 2010.

1.1 METHOD

1.1.1 Overview

The study method is summarised in the diagram below.



1.1.2 Working Paper 1

As the diagram shows, that the initial work in the study had two strands. First, a review of the evidence base for the islands concerned and their transport services. This encompassed a range of data and other information covering:

- Population and economy.
- Existing transport provision, including both ferry and air services.
- Pier facilities.
- Traffic volumes on the ferry and air services.
- A profile of traffic using the ferry services.
- Connections between the ferry services and other forms of public transport.

The evidence base was supplemented with the findings from consultations with 16 stakeholders. The consultations covered the existing situation, opportunities and problems, transport planning objectives and potential options for service development.

The consultees are listed at **Table 1.1**.

TABLE 1.1: CONSULTEES

Community Councils	
Benbecula	Lochboisdale
Berneray	North Harris
Bornish	North Uist
Eriskay	Scalpay
Laxdale	South Harris
Public Transport Operators/Infrastructure Providers	
CalMac	Highland Council
CMAL	Scottish Citylink
Comhairle nan Eilean Siar	
Other	
VisitScotland	

We also contacted with two of the main hauliers that use the ferry routes. However, neither wished to be consulted.

The two strands of the research were brought together in Working Paper 1. This:

- Described and analysed the existing situation in terms of the relevant communities and their transport services.
- Provided an analysis of opportunities and problems. This is shown at **Chapter 2** of this report.

1.1.3 Working Paper 2

Following receipt of client comments on Working Paper 1, Working Paper 2 was produced. This set out:

- Transport planning objectives.
- Options for transport interventions to potentially achieve the transport planning objectives.
- The proposed approach to the analysis and appraisal of options.

Following receipt of client comments on Working Paper 2 the option analysis and appraisal was undertaken.

1.2 STRUCTURE OF THE REPORT

Chapter 2 Presents a summary analysis of problems and opportunities.
Chapter 3 Describes the basis of the options appraised in the study and the approach to the analysis and appraisal of options.
Chapter 4 Contains the analysis undertaken to support the option appraisals.
Chapter 5 Presents the option appraisals.

As agreed at the outset of the study, we have not provided any specific recommendations. Rather, the appraisal findings shown at **Chapter 5** are used to highlight the strengths, weaknesses and issues for each of the options.

Working Papers 1 and 2 are separate documents. They contain considerable detailed analysis which underpins the research presented in this report.

2 ANALYSIS OF OPPORTUNITIES AND PROBLEMS

2.1 INTRODUCTION

This Chapter sets out our analysis of opportunities and problems. The analysis, contained in Working Paper 1, was based on the review of the existing situation and findings from the stakeholder consultations.

2.2 OPPORTUNITIES

2.2.1 Sectoral Opportunities

There is an opportunity to build on the two islands' sectoral strengths/potential strengths. These are tourism (particularly for Harris) and food & drink associated with local primary sector production (particularly for the Uists).

2.2.2 Geography of the Area

The relative proximity of Skye to the Outer Hebrides offers the potential for increased sailing frequency. Further, the geography of Skye offers potential landfalls that would provide shorter crossing distances than at present-particularly to/from the Uists.

2.3 PROBLEMS

2.3.1 Socio-Economic

Population Decline

The population of both areas continues to decline. Within this, there are falling numbers in the 20-44 age group which is key in terms of economic activity and rearing children.

Low Levels of Value Added and Income

There is a relative concentration of activity in low value added sectors and in employment that is unlikely to be particularly well paid.

2.3.2 Ferry Services: Generic

Shared Vessel

There appears to be demand for early morning departures from both Tarbert and Lochmaddy on most, if not all, days. This demand cannot be met if there is only one vessel to cover both routes.

There could also be a future problem if demand continues to grow even reasonably strongly. Given the already long sailing days, there is a limit to the additional sailings that could be operated by a single vessel. This is particularly the case in the summer.

Any additional sailings would largely be at unsocial hours. As such they are unlikely to attract much custom. Thus potential demand could continue to be frustrated.

If the shared vessel policy continues the other means of increasing capacity would be deployment of a larger vessel. However, there are clear constraints on how much larger a vessel could operate from the ports.

Poorly Regarded Passenger Facilities at Uig

There appears to be dissatisfaction with the general passenger facilities at Uig. This is particularly regarding the lack of a covered walkway between the waiting room and the vessel berthing area.

Long Journey Times

The fact that few journeys have an ultimate origin or destination in Skye means that many trips have long total journey times. Trips to Inverness take over 5 hours and those to Glasgow over 7 hours.

The issue is compounded by what is perceived to be a poor quality of drive offered by the A87. This is both on Skye and between Kyle of Lochalsh and Invergarry during some times in the winter.

Perceived Unreliability of Uig

Some perceive that Uig is unreliable as a landfall, leading to sailings being cancelled or having to return to either Tarbert or Lochmaddy without landing on Skye.

However, this is not the view from all of those consulted nor from the residents household surveys. Further, operational data indicate that few sailings are affected, although recognising the inconvenience and costs to passengers when this does occur. Yet the perception of unreliability continues to be held by some stakeholders and users.

Poorly Regarded Integration With Other Transport Modes

The residents surveys suggest that a sub-group of the communities are dissatisfied with integration. However there is no information from the surveys as to the specific aspects that are causing dissatisfaction. They could, in fact, include passenger facilities at Uig.

Our consultations suggest there are two main issues. These are, first, the lack of a direct bus service between Uig and Inverness, leading to extended journey times. Second, the lack of suitable waiting facilities for passengers changing bus at Invergarry.

2.3.3 Ferry Services: Harris

Unmet Demand Due To Six Day Service

The residents surveys indicate that a majority of households are not opposed to the introduction of Sunday sailings. Thus there appears to be demand from some residents for travel on Sundays.

Further, it appears that emerging capacity constraints are on the days adjacent to Sunday-notably Friday and Saturday. The ability to deal with any growing capacity constraints on Uig-Tarbert would be strengthened by the introduction of Sunday sailings.

Dissatisfaction With The Winter Timetable

The household surveys suggest some dissatisfaction with the winter timetable, although this did not come through clearly in our own consultations. Less sailings operate in winter than in summer, although the difference is only two fewer return sailings.

It may be that dissatisfaction with the winter schedule relates less to frequency than to other factors. In particular, timings and that some sailings are via Lochmaddy which extends the total sailing time between Uig and Tarbert.

3 OPTIONS AND APPROACH TO APPRAISAL

3.1 INTRODUCTION

This Chapter:

- Presents the transport planning objectives.
- Presents the options that have been appraised.
- Describes the approach adopted for analysis and appraisal of the options.

3.2 TRANSPORT PLANNING OBJECTIVES

The transport planning objectives are shown below. Following STAG guidelines, these were based on the opportunities and problems shown at **Chapter 2** and identification of relevant policy directives. The basis of the transport planning objectives is explained in Working Paper 2.

The **overall** objective is to:

"enhance ferry access to support the development of existing key economic sectors and new economic activities and to support efforts to reverse population decline"

The **detailed transport planning objectives** are to:

- Provide consistent and suitable times of ferry arrival and departure.
- Increase sailing frequency.
- Ensure adequate vessel capacity.
- Reduce overall journey times to key destinations.
- Reduce travel costs.
- Ensure sufficiently reliable ferry services.
- Provide a Skye landfall that meets user needs in terms of passenger facilities.

The transport planning objectives do not address all of the problems shown at **Chapter 2**. Some of these exist independently of the ferry service itself. These are:

- In particular, the perceived poor quality of drive offered on parts of the A87.
- The lack of a direct bus service between Uig and Inverness.
- The quality of bus interchange facilities at Invergarry.

These issues are important to some users. They are ones which HITRANS may wish to pursue independently of the work covered by this study.

3.3 OPTIONS

Options were designed which relate to the transport planning objectives set out at **3.2.** The options are shown at **Table 3.1.**

TABLE 3.1: OPTIONS	
A	Dedicated vessels for each of the Harris and Uist services
B	New landfall on Skye
C	Improved passenger facilities at Uig

3.4 APPROACH TO ANALYSIS AND APPRAISAL

3.4.1 Analysis

As agreed with HITRANS, assessment of the options followed STAG pre-appraisal procedures. However, a number of elements were analysed in greater detail than is the normally the case, as follows.

1

Greater detail on economic effects and impacts.

2

Where relevant, indicative, high level financial values were produced for:

- Vessel capital costs.
- Vessel operating costs.
- Potential demand and revenues.

The analysis also covered:

- Indicative capital costs for new/upgraded harbour facilities, including investment in road infrastructure.
- Operational feasibility of options, in terms of vessel types, required port infrastructure, etc.

All costs and revenues are intended simply to give the order of magnitude of proposals. They are considered adequate for a pre-appraisal study. If any of the options considered in this report is to be developed further a more detailed study will be required to refine the costs and revenues.

3

There was also consideration of timetabling of new services to allow sufficient analysis of changes to frequency and arrival and departure times.

3.4.2 Appraisal

Based on the analysis that was undertaken, each of the options was appraised in terms of:

- Contribution to achieving the **transport planning objectives**. This was on a scale of 0-3.
- Performance against the 5 **STAG criteria** of Environment, Safety, Economy, Integration and Accessibility and Social Inclusion. This was across a range between -3 and 3. This reflects that some of the options could have a negative impact on one or more of the criteria.
- As per STAG guidance, a qualitative assessment of **operational feasibility**, **cost to government** and **likely public acceptability**.

As agreed with HITRANS, the approach identified strengths, weaknesses and issues for each of the options, rather than the provision of specific recommendations.

4 ANALYSIS OF OPTIONS

4.1 OPTION A: DEDICATED VESSELS FOR EACH OF THE HARRIS AND UIST SERVICES

4.1.1 Description

At present, the Tarbert and Lochmaddy routes share one vessel. Under Option A the Uig-Tarbert and Uig-Lochmaddy services would each have their own vessel. They would be based in the island ports with the first sailing of each day starting from the island.

4.1.2 Timetables

Uig-Tarbert

Existing

The existing summer and winter schedules on the Uig-Tarbert service are shown at **Tables 4.1** and **4.2.**

TABLE 4.1: UIG-TARBERT: EXISTING SUMMER TIMETABLE: 2010

	Uig-Depart	Tarbert-Arrive	Tarbert-Depart	Uig-Arrive
Monday	0530A	07:10A	07:30	09:10
	14:00	15:40	16:00	17:40
Tuesday	09:40	11:20	11:50	13:30
	18:00	19:40		
Wednesday			07:30	09:10
	14:00	15:40	16:00	17:40
Thursday	09:40	11:20	11:50	13:30
	18:00	19:40		
Friday			07:30	09:10
	14:00	15:40	16:00	17:40
Saturday	09:40	11:20	11:50	13:30
	18:00	19:40	20:00B	21:40B

Notes: A: Operates from 17 May to 6 September. B: Operates from 15 May to 4 September

TABLE 4.2: UIG-TARBERT: EXISTING WINTER TIMETABLE: 2009-10

	Uig-Depart	Tarbert-Arrive	Tarbert-Depart	Uig-Arrive
Mon/Wed/Fri			07:30	09:10
	14:00	15:40	16:00	17:40
Tuesday	09:40A	13:30A	13:50	15:30
	15:50	17:30		
Thursday	15:00	16:40		
Saturday	09:40A	13:30A	13:50	15:30
	15:50	17:30		

Note: A: Operates via Lochmaddy

With Dedicated Vessel

Table 4.3 shows a possible timetable for Uig-Tarbert using a dedicated vessel.

TABLE 4.3: UIG-TARBERT: POSSIBLE TIMETABLE USING A DEDICATED VESSEL				
	Uig-Depart	**Tarbert-Arrive**	**Tarbert-Depart**	**Uig-Arrive**
Monday-Saturday			07:00	08:40
	09:00	10:40	11:00	12:40
	13:00	14:40	15:00	16:40
	17:00	18:40		
Sunday			09:00	10:40
	11:00	12:40	13:00	14:40
	15:00	16:40		

Compared to existing provision the timetable with a dedicated vessel would offer:

- A much higher frequency. There would be three sailings per day Monday-Saturday all year round compared to generally 1½ rotations per day in summer and, on occasion, fewer sailings than this in the winter.
- If desired, two return sailings on Sunday without reducing the frequency of the present Sunday service on Uig-Lochmaddy.
- A consistent schedule on six days of the week, with an early departure from Tarbert each day.
- All sailings being direct to/from Skye rather than some winter sailings being via Lochmaddy.

For the purposes of this exercise it has been assumed that a two vessel operation would be in place all year round. In practice, between January and March the second could be used to provide dry-dock cover elsewhere in the CalMac network. During this period the existing winter schedules on the Tarbert and Lochmaddy services (shown at **Tables 4.2** and **4.5**) could be operated.

The departure from Uig (Monday-Saturday) at 1700 is, arguably, somewhat early. To accommodate a later departure the schedule could be adjusted by re-scheduling the last two sailings of the day as follows:

- Depart Tarbert 1625 (rather than 1500) and arrive Uig 1805.
- Depart Uig 1825 (rather than 1700) and arrive Tarbert 2005.

The timings reflect the need to schedule sailings to avoid a clash with those to/from Lochmaddy given that there is only one linkspan at Uig.

The operational implications of this are discussed at **4.1.3**.

Uig-Lochmaddy

Existing

The existing summer and winter schedules on the Uig-Tarbert service are shown at **Tables 4.4** and **4.5.**

TABLE 4.4: UIG-LOCHMADDY: EXISTING SUMMER TIMETABLE: 2010				
	Uig-Depart	**Lochmaddy-Arrive**	**Lochmaddy-Depart**	**Uig-Arrive**
Monday			05:30A	09:10A
	09:40	11:25	11:50	13:35
	18:00	19:45		
Tuesday			07:30	09:15
	14:00	15:45	16:00	17:45
Wednesday	09:40	11:25	11:50	13:35
	19:00	20:45		
Thursday			07:30	09:15
	14:00	15:45	16:00	17:45
Friday	09:40	11:25	11:50	13:35
	18:00	19:45		
Saturday			07:30	09:15
	14:00	15:45	16:00	17:45
	18:00B	21:45B		
Sunday	09:15C	11:00C	11:15	13:00
	14:15	16:00	16:15C	18:00C

Notes: A: Operates until 10 May and from September 13 and goes via Tarbert. B: Operates until May 10 & from September 11 and goes via Tarbert. C: Operates from 16 May to 5 September

TABLE 4.5: UIG-LOCHMADDY: EXISTING WINTER TIMETABLE: 2009-10				
	Uig-Depart	**Lochmaddy-Arrive**	**Lochmaddy-Depart**	**Uig-Arrive**
Mon/Wed/Fri	09:40	11:25	11:50	13:35
	18:00	19:45		
Tuesday			07:30	09:15
	09:40	11:25	11:45A	15:30A
Thursday			07:30	09:15
	09:40	11:25	12:00	13:45
Saturday			07:30	09:15
	09:40	11:25	11:45A	15:30A
Sunday			11:15	13:00
	14:15	16:00		

Note: A: Operates via Tarbert

With Dedicated Vessel

Table 4.6 shows a possible timetable for Uig-Lochmaddy using a dedicated vessel.

TABLE 4.6: UIG-LOCHMADDY: POSSIBLE TIMETABLE USING A DEDICATED VESSEL				
	Uig-Depart	**Lochmaddy-Arrive**	**Lochmaddy-Depart**	**Uig-Arrive**
Monday-Saturday			07:30	09:15
	09:35	11:20	11:40	13:25
	13:45	15:30	15.50	17:35
	17:55	19:40		
Sunday			09:30	11:15
	11:35	13:20	13:40	15:25
	15:45	17:30		

The impacts on the schedule would be similar to those described earlier for Uig-Tarbert, specifically:

- A much higher frequency on every day of the week and all year round.
- A consistent schedule on six days of the week, with an early departure from Lochmaddy each day.
- All sailings being direct to/from Skye rather than some winter sailings being via Tarbert.

4.1.3 Operational Issues

The Berth at Uig

There is only one linkspan at Uig. This means that the schedules have to be integrated to the extent that the ships do not arrive in Uig at the same time. While both islands might want a departure at 0730 this is not possible. We have assumed a turnaround time of 20 minutes in each port and permitted a gap between departures and arrivals of 15 minutes.

The constraint of only one berth in Uig can be seen in the adjustments needed to the Tarbert schedule if the last sailing (Monday-Saturday) from Uig is to be later than 1700, as discussed at **4.1.2.**

Operating Day

Legislation defines the hours of work and rest which must be observed weekly and daily by a ship's crew.[1] The minimum rest period in any seven days is 77 hours; this permits a maximum work period of 91 hours.

The current operating day ranges from 9 hours and 45 minutes to 14 hours and 25 minutes in summer; and from 6 hours and 0 minutes to 13 hours and 25 minutes in winter. To comply with the legislation extra crew are employed to ensure that all crew members can take their statutory rest period each day. This could also be done in the case of a two-ship operation.

[1] The regulations covering hours of work and rest are described in Working Paper 1

In calculating the working hours on each route in the case of the new two ship schedule it is assumed that the crew start work 45 minutes before the first departure and finish 30 minutes after the last arrival. This is necessary to permit systems to be started and shut down and all daily checks to be completed.

Table 4.7 shows the weekly crew operating hours that would apply under the new timetables.

TABLE 4.7: WEEKLY CREW OPERATING HOURS WITH TWO SHIPS	
Route	**Total Hours Per Week**
Uig-Tarbert	86 hours and 25 minutes
Uig-Tarbert (with later last sailing)	94 hours and 55 minutes
Uig-Lochmaddy	89 hours and 45 minutes

One activity for which no explicit provision has been made is safety drills which must be conducted regularly. The regular weekly drills would last about 60 minutes. There is sufficient time available within the permitted working hours to complete these on Uig-Tarbert and (just) on Uig-Lochmaddy.

However, it would not be possible for Uig-Tarbert if the operating day was extended to permit a last sailing from Uig later than 1700 (as discussed earlier). Operating that schedule would require either additional crew to be deployed or, possibly, not operating Sunday sailings.

Speed of The Second Vessel

In drafting the possible schedules for a two ship service shown at **4.1.2** we have assumed that one of the ships would be the existing vessel (MV Hebrides). The second vessel was assumed to be a new build vessel of similar design and size to MV Hebrides. The capital cost of this is estimated to be between £25 million and £30 million. The design, procurement and building of the vessel would take a number of years.

If the objective in designing a new second ship was to secure an additional single trip or round trip within the standard operating day then the operating speed would have to increase very significantly beyond that of the MV Hebrides which has a service speed of 16.5 knots. It is felt that there would be issues around the ability of a vessel of this speed to operate on the routes in terms of:

- Service reliability.
- Size-which is likely to exceed that capable of being accommodated at the three ports.

4.1.4 Bus Connections

As shown at Working Paper 1, the timetables of bus services connecting Uig with Glasgow, Inverness and Portree are quite well integrated with the current ferry arrivals and departures. The operation of a dedicated ship on each route on broadly similar timetables combined with the availability of only one berth at Uig means that it is difficult to replicate the current level of inter-connections between bus and ferry.

This is illustrated for bus connections on Skye at **Table 4.8.**

TABLE 4.8: EXISTING BUS TIMES (MON-SAT) AND FERRY TIMES UNDER TWO VESSEL OPERATION		
Bus Departures From Uig		
Bus Departs Uig	**Ferry Arrives-from Tarbert**	**Ferry Arrives-from Lochmaddy**
09:30	08:40	09:15
14:45	12:40	13:25
18:00 (Portree only)	16:40	17:35
Bus Arrivals at Uig		
Bus Arrives at Uig	**Ferry Departs-for Tarbert**	**Ferry Departs-for Lochmaddy**
09:15 (from Portree)	09:00	09:35
13:50	13:00	13:45
17:45	17:00	17:55

Note: Bus times are for each of Glasgow, Inverness and Portree unless otherwise shown

The main points to note are that:

- The Lochmaddy ferry times generally fit well with the bus times, as they are similar to the sailing times under the existing two vessel operation.
- The Tarbert times are less well connected. They either involve an extended wait time for connecting with bus departures from Uig or they mean the ferry departing for Tarbert before the bus arrives at Uig.
- Additional bus services would have to be provided in the winter to connect with the evening sailings. This is because these sailings would now operate on six days per week rather than Monday, Wednesday and Friday only. However, this would simply involve extending the existing service from Glasgow on to Portree.

Overall, there would no longer be a close fit between the ferry timetables and the bus times. A fundamental issue is that the ferry times have to be staggered between the two routes to make use of the one linkspan at Uig.

Discussions could be held with Scottish Citylink regarding possible changes to bus services in the light of any ferry timetable changes. However, the ability to change the bus times would be limited. This is because the existing times reflect not only ferry connections at Uig. They are also determined by:

- Driver hours regulations.
- Changes of driver en route.
- The need to connect with other services at en route-particularly to/from Inverness as there are no direct bus services between Uig and Inverness.

There would be similar issues in terms of maintaining bus connections at Tarbert and Lochmaddy. In particular, the increased sailing frequency would require more bus services to be provided.

4.1.5 Demand and Revenue Model: One Ship Operation

Estimates of annual growth in demand in 2009 are shown at **Table 4.9**.

TABLE 4.9: ESTIMATED ANNUAL TRAFFIC GROWTH IN 2009

Traffic Type	Tarbert	Lochmaddy
Passengers	+22%	+15%
Cars	+26%	+24%
Coaches	+12%	+19%
CVs	-8%	-5%

As noted in Working Paper 1, following the introduction of RET in 2008, demand has grown strongly on the Uig routes, with capacity coming under pressure. This is not only in the summer months when residents reported having to book 3-4 weeks in advance, but also on the 0730 sailing out of Lochmaddy all year round. It is understood that freight has declined on the routes reflecting, in part, diversion of traffic to the Lochboisdale and Stornoway services.

If the Uig routes are already facing capacity issues then the question arises about how much more growth can be accommodated on the existing single vessel service. A simple model has been built to show the likely development in demand for ferry services between Uig and Tarbert and Lochmaddy assuming one ship is shared between the two routes. As a starting point, it assumes that there are no capacity constraints. Actual carryings data for 2008 are used as well as estimates for 2009 based on the growth rates shown at **Table 4.9**.

The core assumptions are as follows:

- Visitor numbers on the routes will grow by 2.5% per annum between 2009 and 2014. This will be also reflected in growth rates for coach traffic.
- Island residents' travel will grow by 10% per annum between 2009 and 2014. It is assumed that this is an ongoing effect of RET fares. It also reflects relatively low pre-2008 trip making by residents in Harris and the Uists.
- CV traffic will grow by 1.5% per annum between 2009 and 2014.
- The ship used throughout is the MV Hebrides.

Given the differential growth rates for resident and visitor traffic an assessment was made of the split in demand between residents and visitors. This was based on the evidence base developed earlier in the study.

The assumed splits in passenger traffic are as follows:

- Tarbert service: visitors 62%, residents 38%.
- Lochmaddy service: visitors 41%, residents 59%.

4.1.6 Implications For Capacity Under One Ship Operation

Table 4.10 shows actual demand in 2008, that projected in 2009 and 2014 on both routes for all types of traffic. This reflects the growth assumptions discussed at **4.1.5**.

TABLE 4.10: ANNUAL DEMAND: ACTUAL AND PROJECTED (UNCONSTRAINED): ONE SHIP OPERATION

Tarbert Service				
Year	**Passengers**	**Cars**	**Coaches**	**CVs**
2008	82,229	28,858	211	1,560
2009	100,636	36,420	236	1,433
2014	131,625	48,217	268	1,544
Lochmaddy Service				
Year	**Passengers**	**Cars**	**Coaches**	**CVs**
2008	78,953	28,251	134	5,363
2009	90,822	35,093	160	5,086
2014	115,692	44,856	181	5,479

The figures from 2009 onwards assumes no capacity constraints on the ship. This allows calculation of the theoretical capacity utilisation.

The key issue is whether a single ship can handle the likely increase in demand. It is clear that in the summer peak months of July and August it cannot, as shown at **Table 4.11**.

TABLE 4.11: CAPACITY UTILISATION JULY AND AUGUST: ONE SHIP OPERATION

	Uig-Lochmaddy		Uig-Tarbert	
Year	**Passengers**	**Vehicles**	**Passengers**	**Vehicles**
2008	21%	78%	28%	71%
2009	23%	84%	34%	88%
2014	28%	100%	43%	106%

In order to calculate vehicle deckspace utilisation the working assumption was made that use cannot be made of MV Hebrides' mezzanine deck in July and August. This is for the following reasons:

- It restricts the ability of the ship to carry both coaches and CVs. This is particularly important for the Lochmaddy service given the number of CVs that are carried.
- Using the mezzanine deck slows down the ship turnaround, which at 20 minutes is tight.
- It takes time to switch from operating "with mezzanine deck" to "without mezzanine deck".

It is assumed that 88% is the maximum achievable capacity, on the basis that some sailings will always have limited appeal because of their timing while others are universally popular. A load factor of 100% is impossible to achieve in the context of a ferry service where demand fluctuates.

Table 4.11 shows a 2009 car deck load factor of 88% on Uig-Tarbert. This is extremely high. It implies that traffic is being turned away in the peak.

The impact of the capacity utilisation analysis is shown at **Table 4.12** in terms of frustrated demand for travel on the Uig services with a one ship operation.

TABLE 4.12: ESTIMATED TRAFFIC VOLUMES FRUSTRATED BY LACK OF CAPACITY: ONE SHIP OPERATION

Lochmaddy Service				
Year	**Passengers**	**Cars**	**Coaches**	**CVs**
2010	201	177	0	0
2011	1,216	562	0	0
2012	2,375	970	0	6
2013	3,603	1,402	0	12
2014	4,908	1,861	0	18
Tarbert Service				
Year	**Passengers**	**Cars**	**Coaches**	**CVs**
2010	1,027	798	0	0
2011	2,522	1,268	0	0
2012	4,106	1,766	2	0
2013	5,785	2,294	4	1
2014	7,569	2,855	6	2

It is estimated that by 2014 around 4,900 passengers and 1,900 cars would not be able to use the Lochmaddy service due to capacity constraints. The figures for Tarbert would be approximately 7,600 passengers and 2,900 cars.

It should be noted that this assessment is somewhat conservative, since trade is already being lost in the summer due to lack of capacity at weekends. However, we have no means of quantifying the extent of this existing frustrated demand.

In addition, the simple model constructed suggests that there would be no frustrated demand outside July and August. In reality there may be some such demand on particular sailings on particular days-e.g. at Easter and during the October holidays. However, we do not have sufficiently detailed carryings data for existing sailings that would allow an assessment of the likely frustrated demand at these times.

4.1.7 Implications for Revenues Under One Ship Operation

The loss of revenues as a result the loss of frustrated demand to the routes is shown at **Table 4.13**.

TABLE 4.13: ANNUAL LOSS OF REVENUE (£) AS A RESULT OF FRUSTRATED DEMAND: ONE SHIP OPERATION

Year	Lochmaddy	Tarbert	Total
2010	5,069	23,451	**28,520**
2011	19,015	41,852	**60,867**
2012	34,741	61,385	**96,126**
2013	51,526	82,158	**133,684**
2014	69,340	104,259	**173,599**

As frustrated demand grows over the years then so will the revenues lost to the routes. By 2014 this is forecast to result in a revenue loss of approximately £174,000.

The total impact on CalMac's revenues will, in fact, be less than the figures shown above. This is on the assumption that some of the frustrated demand for the Tarbert and Lochmaddy services will travel on the Lochboisdale and Stornoway services in order to make a trip to/from the Outer Hebrides.

4.1.8 Potential Impact of Enhanced Timetables Under Two Vessel Operation

Growth Scenarios

As shown at **4.1.2** a dedicated vessel on each route would provide an enhanced timetable, most notably through increased sailing frequency. However, the preceding analysis has simply assumed that underlying demand would be unchanged. Thus the positive impact of a two vessel operation would be through an ability to convey traffic that would otherwise be lost to the routes due to insufficient capacity. It makes no allowance for traffic that could be stimulated on the routes due to the enhanced timetables.

It is not possible to make any definitive judgement on the level of traffic stimulation without detailed market research. Rather, we have developed a number of scenarios whereby higher rates of total growth are achieved than those shown at **4.1.5**. The scenarios are shown at **Table 4.14**.

TABLE 4.14: SCENARIOS FOR DEMAND STIMULATION UNDER TWO SHIP OPERATION: ANNUAL GROWTH RATES FROM 2009

Scenario	Number of Vessels	Visitors	Residents	CVs
Base Case	*1*	*2.5%*	*10%*	*1.5%*
A	2	10%	15%	2%
B	2	10%	10%	2%

Scenarios A and B effectively assume an "enhanced service effect". This means that the improved timetables result in traffic growth above the underlying growth with one ship and the existing timetable (which is termed the "Base Case" at **Table 4.14**).

Thus the additional traffic under Scenarios A and B, compared to the Base Case, is a combination of:

- Underlying growth that would otherwise be frustrated by the lack of capacity under the Base Case; **and**
- Traffic attracted to the routes as a result of the enhanced timetables. Some of this traffic could be diverted from the existing Oban-Lochboisdale and Ullapool-Stornoway ferry services.

Impact on Traffic Volumes

Table 4.15 shows the forecast 2014 annual traffic volumes, combined across the two routes, that would be generated under Scenarios A and B. These are compared to traffic levels in the Base Case.

TABLE 4.15: FORECAST ANNUAL TRAFFIC: 2014				
Scenario	**Passengers**	**Cars**	**Coaches**	**CVs**
Base Case	*234,841*	*88,356*	*442*	*7,002*
A	359,403	133,661	797	7,198
B	308,344	115,171	638	7,198

Traffic levels are highest under Scenario A. The estimated additional traffic above the Base Case is around 125,000 passengers and 45,000 cars.

However, realising these increases would require a very significant expansion of the market. The growth rates for this Scenario (shown at **Table 4.14**) imply a doubling of residents' trips and a 61% increase in visitor traffic over a five year period.

Impact on Revenues

Table 4.16 shows the annual revenues generated in 2014 under each of the three scenarios. These are based on the traffic levels shown at **Table 4.15** and the existing fare levels on the services.

TABLE 4.16: FORECAST ANNUAL REVENUE: 2014	
Scenario	**Annual Revenue (£)**
Base Case	*3,934,251*
A	5,649,441
B	4,955,016

In 2014, Scenario A would generate around £1.7 million greater annual revenue than the Base Case. The difference between Scenario B and the Base Case is smaller; around £1.0 million. This reflects its less optimistic growth assumptions.

4.1.9 Route Performance

One Ship Operation

Current and estimated revenues and costs for the one ship operation are shown at **Table 4.17**, over. The financial analysis is at a high level. Accordingly, the numbers exclude any finance costs for the provision of the ship (depreciation, interest, etc), overhead costs or port charges. Management and central overheads would also be significant.

A key point to note is that over the period to 2014 the Uig services see a gradual reduction in losses. This improvement is due to growth in trade, particularly outside the peak summer months.

TABLE 4.17: FINANCIAL PERFORMANCE (£): ONE SHIP OPERATION							
	2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Total Revenues	**2,830,931**	**3,278,181**	**3,393,080**	**3,514,429**	**3,644,077**	**3,783,661**	**3,934,251**
Costs							
Bunkers	1,551,500	1,551,500	1,551,500	1,551,500	1,551,500	1,551,500	1,551,500
Crew costs	2,204,000	2,204,000	2,204,000	2,204,000	2,204,000	2,204,000	2,204,000
Vessel operating costs	600,000	600,000	600,000	600,000	600,000	600,000	600,000
Insurance and P&I	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Total Costs	**4,455,500**	**4,455,500**	**4,455,500**	**4,455,500**	**4,455,500**	**4,455,500**	**4,455,500**
Outturn	**-1,624,569**	**-1,177,319**	**-1,062,420**	**-941,071**	**-811,423**	**-671,839**	**-521,249**

Two Vessel Operation

The forecast financial outturn in 2014 is shown at **Table 4.18**. Again, this is a high level analysis. The results shown excludes the cost of provision of the ships' capital and financial costs, management, overheads and port charge

TABLE 4.18: FINANCIAL PERFORMANCE (£): TWO VESSEL OPERATION: 2014		
	Scenario A	**Scenario B**
Total Revenues	**5,649,441**	**4,955,016**
Costs		
Bunkers	3,103,000	3,103,000
Crew costs	4,408,000	4,408,000
Vessel operating costs	1,200,000	1,200,000
Insurance and P&I	200,000	200,000
Total Costs	**8,911,000**	**8,911,000**
Outturn	**-3,261,559**	**-3,955,984**

The introduction of a second ship, unless it produced a very dramatic increase in revenues, would result in a considerably worse the above result. The annual loss ranges between £3.2 million and £4.0 million, even with the very optimistic growth assumptions that have been adopted.

This compares to the forecast of a loss of around £0.5 million for a continued single vessel operation, as shown at **Table 4.17**. This reflects that a two vessel operation would double operating costs but, even with very strong growth, would increase revenues by less than 50% (as shown at **Table 4.16**).

There are two further points of note. First, the annual operating loss for a two vessel operation could be reduced by up to £1 million if the second ship was taken off the routes between January and March and used elsewhere as a relief vessel.

Second, the figures at **Table 4.18** exclude the ships' capital and financial costs. Assuming a capital cost of £27.5 million for a new build second vessel (**see 4.1.3**) and a working life of 25 years, depreciation would be £1.1 million per annum and interest charges approximately £0.7m per annum. On this basis the finance charges for the second ship would increase losses under a two vessel operation by £1.8m per annum.

4.2 OPTION B: NEW LANDFALL ON SKYE

4.2.1 Description

A new landfall on Skye would be provided for the Harris and Uist services.

4.2.2 Potential Skye Landfalls

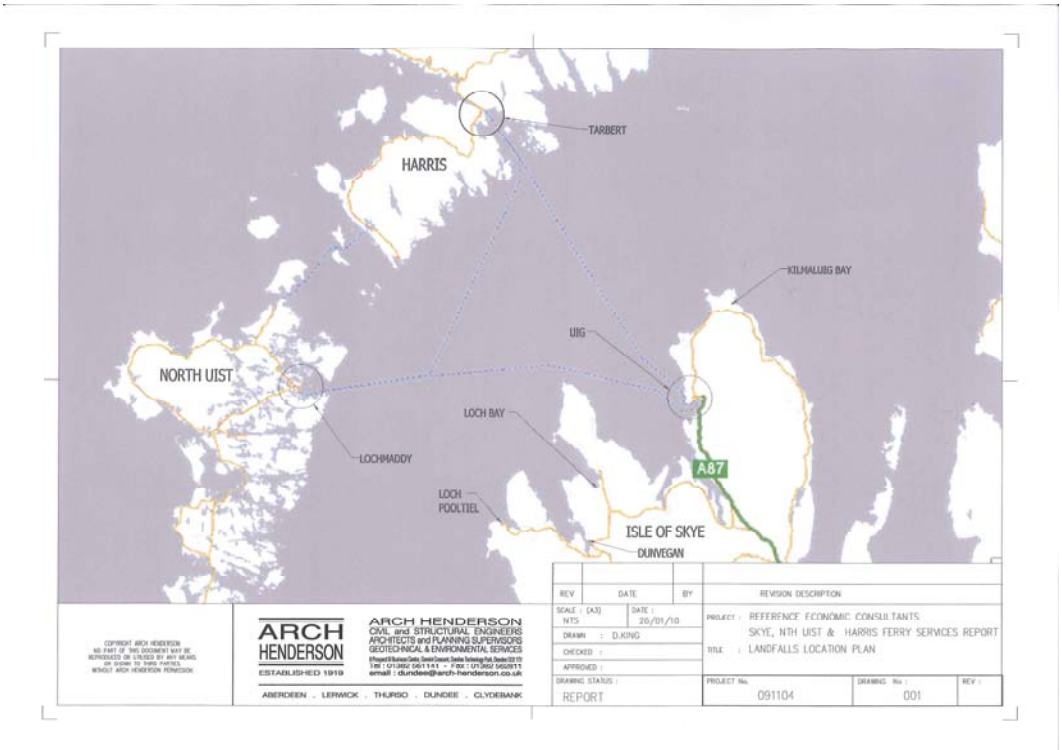
Introduction

The following potential Skye landfalls have been considered:

- Dunvegan.
- Kilmaluig Bay.
- Loch Pooltiel.

These landfalls were selected based on a review of potential sites and also those that have previously been suggested by third parties.

Their locations are shown below.



Sailing Distances

Sailing distances are as follows. From **Tarbert**:

- Dunvegan: 28 nm.
- Kilmaluig Bay: 21 nm.
- Loch Pooltiel: 28 nm.

These compare to a distance of 24nm between Tarbert and Uig.

From **Lochmaddy**:

- Dunvegan: 22 nm.
- Kilmaluig Bay: 30 nm.
- Loch Pooltiel: 16.5 nm.

These compare to a distance of 26nm between Lochmaddy and Uig.

Road Distances

Their **road distances** from Portree are as follows:

- Dunvegan: 21 miles.
- Kilmaluig Bay: 26 miles.
- Loch Pooltiel: 29 miles.

These compare to a road distance of 15 miles between Uig and Portree.

Dunvegan

The village of Dunvegan is at the head of Loch Dunvegan which is a deep indentation on the north west coast of Skye.

A pier already exists in Loch Dunvegan at the village. It is likely any ro-ro facility would be sited in the same vicinity or slightly to seaward where there is reasonable hinterland for development. This is a sheltered location and it is unlikely that a breakwater would be required. Manoeuvring space for the ferry is considered adequate and is comparable with that at Tarbert. An entire port facility would have to be developed.

The main road to Dunvegan is the A850 from the A87 at the village of Borve. This is a modern two lane road which is well able to carry the ferry traffic and it is not envisaged that any upgrading would be required.

Highland Council are of the view that local roads within the village of Dunvegan are narrower than the recommended width for heavy vehicles and would not be suitable for such vehicles. However, the probable site for a ferry terminal is around half a mile north and traffic would not be required to pass through the village. There are some narrow points on this road in sensitive areas-in the short distance from where the A850 continues beyond the turn off to Dunvegan village. However, it should be possible to carry out appropriate widening and possible realignment to providing adequate width.

The total cost of establishing a facility in this location this would be of the order of **£21 million,** comprising:

- Ferry terminal: £20 million.
- Realignment of A850: £1 million.

The above ferry terminal costs (and those shown for other potential landfalls covered below) include: berthing structure; ro-ro linkspan; passenger handling facilities; terminal building; marshalling area; and general facilities.

A variant on the above would be **Loch Bay** which is an inlet of Loch Dunvegan to the north of Dunvegan village. It is considered unlikely that a breakwater would have to be incorporated in the structure.

The total cost of establishing a facility in this location this would be of the order of **£33 million,** comprising:

- Ferry terminal: £25 million.
- Access road (of approximately 5 miles): £8 million.

The road distance between Loch Bay and Portree is around 26 miles. The sailing distances from Loch Bay are as follows:

- To Tarbert: 26nm.
- To Lochmaddy: 20.5nm.

Kilmaluig Bay

Kilmaluig Bay is on the east side of the Trotternish Peninsula about one mile south of the north most point of Skye.

It is sheltered from all prevailing winds from south through west to north but is exposed to all winds from south east through east to north east. Despite this level of shelter from the west it is noted in *Sailing Directions* that it is subject to strong downdraughts from the surrounding hills during westerly gales. It should be noted that the route from Kilmaluig to the Outer Hebrides involves passing to the north of Skye. This is an area of significant tidal streams giving rough weather in certain conditions.

Further study would be required to choose the optimum location for a ro-ro terminal. It is almost certain that a breakwater would be required to give adequate shelter but this would be incorporated into the pier structure by making it solid. This would give protection against wave action only but not the effects of wind on the vessel which occasionally cause difficulty at Uig.

Kilmaluig is accessed by the A855 from Uig which is around 11 miles distant. This road is single track with passing places and would require substantial upgrading.

The total cost of establishing a facility in this location this would be of the order of **£43 million,** comprising:

- Ferry terminal: £25 million.
- Upgrading of A855: £18 million.

Loch Pooltiel

Loch Pooltiel lies to the west of Loch Dunvegan on the north west coast of Skye.

The loch is open to from just north of west through north west to north. It is described in small boat *Sailing Directions* as suitable only as an anchorage in settled weather. If any ro-ro facility was constructed it would probably be located in the vicinity of an existing small pier on the south shore of the loch near the village of Lower Milovaig.

It is almost certain that a breakwater would be required to give adequate shelter but this would be incorporated into the pier structure by making it solid. This would give protection against wave action only but not the effects of wind on the vessel which occasionally cause difficulty at Uig.

Access to Lower Milovaig is by the B884 from Dunvegan. This road, which is 10¼ miles long, is a single track road with passing places and would require reconstruction to handle ferry traffic.

The total cost of establishing a facility in this location this would be of the order of **£42 million**, comprising:

- Ferry terminal: £25 million.
- Upgrading of B884: £17 million.

Uig-Alternative Pier

We also considered the possibility of providing a new ro-ro facility at Uig. This would be in a more sheltered location inside the existing pier, taking advantage of the existing pier to provide shelter. However, we have concluded that there is insufficient space to allow a new pier to be constructed while leaving an area suitable for use by fishing and other vessels.

Conclusion

Following discussions with HITRANS a decision was made not to investigate services to either Kilmaluig Bay or Loch Pooltiel in any further detail. This reflects the **combination** of the following factors:

1

In particular, the very high estimated construction costs-over £40 million in each case.

2

Increases in sailing distances compared to those for Uig. In the case of Kilmaluig Bay, the distance to Tarbert would decrease by 4nm but that to Lochmaddy would increase by the same amount. For Loch Pooltiel, the crossing distance to Lochmaddy would decrease significantly-by approaching 10nm, offering a reduced crossing time and, possibly, increased frequency-but that to Tarbert would increase by 4nm.

Thus in both cases crossing times would increase to one of the Outer Hebrides ports.

3

Road distances from Kilmaluig Bay and Loch Pooltiel to Portree would increase by over 10 miles compared to the landfall at Uig.

4

These locations (and also Dunvegan) are unlikely to provide any significant benefit in terms of improved service reliability compared to existing operations out of Uig.

Service reliability is affected by conditions at the berth and conditions in the Minch. The latter has a significant impact on reliability and this will not affect the reliability of any of the landfalls. It may be that Kilmaluig Bay would be affected since sea conditions around the north end of Skye are affected by local strong tidal currents and could be worse than elsewhere. This is, however, something that would have to be tested by practical trials.

As far as the alternative landfalls are concerned it is unlikely that any would offer greater service reliability than Uig-although it must be added that there are no long term records to verify this. There are, however, long term records for Uig from which it appears that Uig is no worse than other, similar ferry terminals for reliability.

However, some consideration is given as to the impacts of using Dunvegan as a new landfall. This is covered at **4.2.3**.

There has, however, been no further consideration of Loch Bay. Its cost would be £12 million higher than at Dunvegan. Further the crossing distances to Lochmaddy and Tarbert would be no more than 2nm shorter than those at Dunvegan. Thus Loch Bay would appear to offer no significant advantages over Dunvegan while having a considerably higher capital cost.

4.2.3 Dunvegan-Lochmaddy/Tarbert Service

Table 4.19 compares nautical distances and crossing times to/from Dunvegan to those to/from Uig. The crossing times reflect the service speed of MV Hebrides (that is, 16.5 knots).

TABLE 4.19: NAUTICAL DISTANCES AND CROSSING TIMES: UIG AND DUNVEGAN COMPARED

To/From Tarbert		
	Distance (nautical miles)	**Journey Time**
Dunvegan	28	1 hour 50 minutes
Uig	*24*	*1 hour 40 minutes*
To/From Lochmaddy		
Dunvegan	22	1 hour 35 minutes
Uig	*26*	*1 hour 45 minutes*

The Table shows that sailing from Dunvegan rather than Uig would increase the crossing time to Tarbert by 10 minutes and reduce that to Lochmaddy by 10 minutes. The gain in time in the case of the Lochmaddy route is, therefore, slight. It is insufficient to permit the operation of an additional sailing within the same operating day and thus does not allow frequency to be increased.

Therefore, the schedule with a single vessel out of Dunvegan would be almost identical to that presently operated from Uig. The only changes would be to the crossing times as noted above.

Comparative road distances and times between Uig and Dunvegan and Skye Bridge are shown at **Table 4.20**. Skye Bridge has been selected as the vast majority of trip ends for journeys on the Tarbert and Lochmaddy services are beyond Skye itself.

TABLE 4.20: ROAD DISTANCES AND CAR JOURNEY TIMES: UIG AND DUNVEGAN TO SKYE BRIDGE COMPARED

Route	Road Distance (miles)	Journey Time
Dunvegan (via A863)	47	1 hour 17 minutes
Dunvegan (via Portree)	55	1 hour 26 minutes
Uig	49	1 hour 6 minutes

Source: AA Route Planner

Irrespective of the route taken to/from Dunvegan, the journey time to/from Uig is faster. Thus Dunvegan offers no advantage over Uig in terms of road journey times.

RET fares apply on the Uig-Tarbert/Lochmaddy routes. It is assumed that they would also apply on a route to/from Dunvegan. The impact on passenger, car and CV fares is shown at **Table 4.21**.

TABLE 4.21: COMPARISON OF SINGLE RET FARES (£) ON DUNVEGAN AND UIG SERVICES

Tarbert Service			
	Passenger	**Car**	**CV (15m)**
Dunvegan	5.10	23.60	103.70
Uig	5.05	22.90	98.30
Change	*+0.05*	*+0.70*	*+5.40*
Lochmaddy Service			
	Passenger	**Car**	**CV (15m)**
Dunvegan	4.60	20.60	90.20
Uig	5.05	22.90	98.30
Change	*-0.45*	*-2.30*	*-8.10*

Relative to those to Uig, fares on Tarbert-Dunvegan should increase while those on Lochmaddy-Dunvegan should fall. The changes are generally slight, both in absolute and percentage terms, although higher for CVs than for passenger and car traffic.

If demand was not affected by the fare changes then the Dunvegan service would result in be a slight reduction (under 5%) in revenues compared to those on the Uig service.

4.3 OPTION C: IMPROVED PASSENGER FACILITIES AT UIG

4.3.1 Description

Investment in onshore facilities would be made to improve the passenger experience at Uig.

4.3.2 Analysis

Consideration has been given to the feasibility and broad cost of providing the following:

- Covered passenger walkway along the pier.
- Adjustable covered passenger gangway to allow easy access to the vessel at all states of the tide.
- A new waiting room in the same area as the present CMAL-owned one.

A covered passenger walkway could be constructed. The design would be one which is 2.6 metres wide with powder coated galvanised steel frames, safety glass sides and polycarbonate curved roof fixed all directly to the existing concrete deck. Doors would be provided at each end with intermediate access/fire/panic doors along its length. Lighting would be provided throughout the walkway and there would be narrow shelf seating to one side for the last 15 metres. A similar walkway is shown below.

Highland Council have indicated that a covered walkway would reduce the working area of the pier and that if it was to be provided it would be desirable if it was on a cantilevered platform off the side of the pier. Clearly, such a platform could not be on the working side of the pier. It would be impractical to place it on the non-working side as this has a wave wall some 2 metres high. However, we are of the view that there is adequate width for a walkway. Therefore, we have not made any allowance for such an extension in the costing shown below.

4.3.3 Estimated Costs

The total cost of these three investments is estimated as **£3.15 million,** comprising:

- Covered walkway: £900,000 (fully installed).
- Passenger gangway: £750,000.
- New waiting room: £1,500,000. The actual amount would depend on the complexity of the building and the facilities provided.

5 OPTION APPRAISAL

5.1 INTRODUCTION

This Chapter presents our appraisal of each of the options. It does so on the basis set out at **Chapter 3** and drawing on the detailed analysis contained **in Chapter 4**. Each of the three options is assessed in terms of its:

- Contribution to achieving the transport planning objectives shown at **Chapter 3**.
- Performance against the 5 STAG criteria.
- Operational feasibility, cost to government and likely public acceptability.

The Chapter concludes with a summary of the strengths, weaknesses and issues for each of the options.

5.2 OPTION A: DEDICATED VESSELS FOR EACH OF THE HARRIS AND UIST SERVICES

5.2.1 Contribution to Achieving Transport Planning Objectives

Table 5.1 shows the contribution of this option to achieving the identified transport planning objectives.

TABLE 5.1: OPTION A: CONTRIBUTION TO ACHIEVING TRANSPORT PLANNING OBJECTIVES

Option	Score
Consistent and suitable times of ferry arrival and departure	3
Increase sailing frequency	3
Provide adequate vessel capacity	3
Reduce overall journey times	0
Reduce travel costs	0
Provide sufficiently reliable ferry services	0
Skye landfall with passenger facilities that meet user needs	0

There would be a significant contribution to achieving **consistent and suitable times of ferry arrival and departure**. There would be an identical timetable for both ports Monday-Saturday all year round. While the Sunday sailing times would differ from those on the other six days of the week, the Sunday schedule would, in itself, be the same all year round.

The timetable would also provide the first sailing from the islands each day and at times suited to the relatively long overall trips made by both residents and visitors. There may be some issues about a departure from Uig to Tarbert no later than 1700. However, as discussed at **Chapter 4** there may be means of providing a later sailing while staying within the limits of crew working hours if this was felt to be a significant issue.

There would also be a significant contribution to the objective of **increasing sailing frequency.** Both routes would see a frequency of 20 return sailings per week throughout the year. This compares to the current frequency of:

- Tarbert: 10 return sailings per week in summer, 8 in winter.
- Lochmaddy: 11 return sailings per week in summer, 10 in winter.

The frequency would also permit day trips in both directions on six days of the week and to Skye on Sundays. Under the present timetable there are very few days when day trips can be made to the Outer Hebrides from Uig.

Option A would also **provide adequate vessel capacity** to accommodate the potential demand that would otherwise be frustrated using a one ship operation.

There is only very limited potential to **reduce overall journey times**. As discussed at **Chapter 4**, any significant reductions in direct crossing times appear, on the basis of the high level analysis, to be difficult to achieve. This reflects the limitations imposed on vessel beam and length by the existing port infrastructure and the likelihood of poor service reliability if catamarans or similar were introduced on the crossings between north Skye and the Outer Hebrides.

However, total journey times for a small number some journeys would be reduced. This is because under the present winter timetable a small number of sailings are indirect: with traffic to/from Lochmaddy and to/from Tarbert travelling via the other island port.

Under Option A all sailings would be direct between Uig and the island ports. The result would be a reduction of 2 hours travel time compared with the existing indirect service. However, the overall impact would be quite slight. This is because:

- The indirect sailings account for only a small proportion of total sailings (around one in five during the winter timetable only).
- We understand that the volumes of traffic on these indirect sailings are quite limited because of the extended journey times.

On the other hand overall journey times could *increase* for those using the bus to connect with sailings at the three ports. This would be if the changes to the ferry timetables led to a reduction in integration with the bus services at the three ferry terminals. However, as noted at **Chapter 4** only a very small proportion of passengers makes use of the bus services.

The effects of the removal of indirect sailings and the possible extended wait times for bus connections are, in effect, assumed to cancel one another out. Hence the score of "0" shown for "reduce overall journey times" at **Table 5.1**.

The ferry fares would be unchanged under this option as would road distances. Hence there would be no impacts that would serve to **reduce travel costs**.

There would also be no impact on **ferry service reliability**. We would expect there to be only occasional delays as a result of the use of one linkspan by two vessels at Uig. This is in a context where the present Uig services appear to be reasonably reliable: although as discussed in Working Paper 1 this may not be the perception of all stakeholders.

This option is not designed to contribute to achieving a **Skye landfall with passenger facilities that meet user needs.** However, it does not preclude combining Option A with Option C to also achieve this transport planning objective.

5.2.2 Performance Against STAG Criteria

Table 5.2 provides scores for the performance of this option against the five STAG criteria.

TABLE 5.2: OPTION A: PERFORMANCE AGAINST STAG CRITERIA	
Criterion	**Score**
Environment	-1/-2
Safety	0
Economy	+3
Integration	-1
Accessibility and Social Inclusion	+3

There would be a negative impact on the **environment** under this option due to the additional road traffic that would be conveyed on the services. As shown in Working Paper 1 a large majority of users (well over 80%) use private vehicles rather than public transport. This proportion is unlikely to decrease under this option. It may, in fact, increase slightly if the integration of the ferry and bus timetables decreases.

A range is shown for this criterion's score at **Table 5.2**. This is because of uncertainty over the level of additional ferry traffic under this Option.

This option would be neutral in terms of **safety**.

There will be a significant positive impact in terms of **economy**. In terms of *Transport Economic Efficiency* (TEE) Option A will not affect service reliability or journey quality. The impact would be through a reduction in *scheduling costs*.

The more frequent service will reduce the waiting time between ferry departures. At present these typically range between 8-9 hours and up to 24 hours in winter (e.g. between 0940 Uig-Lochmaddy on winter Tuesdays and 0940 Uig-Lochmaddy sailings on winter Wednesdays). In contrast, under the two vessel operation the waiting times will be around 4 hours between many sailings with a maximum waiting time of 16 hours (e.g. between 1500 ex Tarbert sailing on Monday and 0700 ex Tarbert sailing on Tuesday).

Further, as noted at **5.2.1** there will be also be a reduction in total journey times for those presently travelling on indirect sailings during the winter timetable. However, as noted earlier the scale of this impact would be slight.

The main *Economic Activity and Locational Impacts* (EALI) will be through, first, earlier departure times for freight traffic on a six day per week basis. This will be more important for the Uists given the much higher CV volumes on the Lochmaddy service.

The early departures will be of particular importance to seafood exports much of which need to connect with onward freight services out of central Scotland in the late afternoon. Working Paper 1 noted the importance of food & drink associated with local primary sector production on both island areas and for the Uists in particular.

Second, improved access should help to grow the tourism market. This is important to both areas but to Harris in particular. The schedule will also allow the development of a day trip market from Skye, as day trips are generally not possible to Harris or the Uists under the present schedules. Option A will exploit the relatively large tourism market on Skye and also offer the potential to develop two centre holidays covering Skye and the Outer Hebrides.

The EALI impacts are of importance given the economic and demographic challenges facing Harris and the Uists. As noted in Working Paper 1 these are:

- Small population levels and economies. This explains the importance of external transport links in supporting economic development.
- Significant and continuing long term population decline. The improved access offered under Option A would increase the attractiveness of the islands as a place to live.
- Apparently low income levels and particularly so in Harris, part of which relates to a lack of full-time employment opportunities.

It is possible that transport **integration** will be reduced due to a decrease in connectivity between the ferry and bus services under Option A. The factors underlying this are discussed at **Chapter 4**.

The total share of the travel market affected by this would, however, be limited. The vast majority of ferry traffic is travelling using private vehicles rather than via the bus services. Nevertheless the impacts are likely to fall on particular groups-notably older people and also younger people without access to a private vehicle (including visitors).

There would be a significant positive impact on **accessibility and social inclusion. Accessibility** would be significantly improved by the higher frequency of sailings-and notably during the winter. To the extent that these sailings facilitate access to services not available in Harris or the Uists then there would be a positive impact. Survey evidence (cited In Working Paper 1) shows that on the present Uig-Tarbert ferry service Personal Business is a particular significant trip purpose for island residents, accounting for one in four trips.

In terms of **social inclusion**, the existing ferry services are important for maintaining links between the two islands and other communities. As noted in Working Paper 1, survey evidence shows the proportions of trips made for Visiting Friends & Relatives (VFR) purposes on the present services as quite significant. For example, VFR accounts for 26% of residents' trips on the Lochmaddy service and 26% of visitors' trips on Uig-Tarbert.

5.2.3 Operational Feasibility, Cost to Government and Likely Public Acceptability

Key points regarding these aspects are summarised at **Table 5.3**, over.

TABLE 5.3: OPTION A: OPERATIONAL FEASIBILITY, COST TO GOVERNMENT AND PUBLIC ACCEPTABILITY	
Category	**Key Points**
Operational feasibility	There are no significant issues regarding operational feasibility. There may be occasional delays as a result of the use of one linkspan by two vessels at Uig
Cost to government	• If a new build vessel was used as the second ship the capital cost would be £25-£30 million • Over the medium term a two ship operation could incur an annual operating deficit over £3 million greater than that with a continued one ship operation • If demand was to expand significantly then there may be a need to invest in larger onshore facilities-e.g. marshalling areas-to accommodate the increased traffic volumes
Likely public acceptability	We would expect that the option would generally be regarded as positive. This is due to the increased frequency, consistent timetabling and early morning departures from both Harris and the Uists. In addition the two ship operation would lead to less frustrated demand on the Uig services assuming traffic levels continue to grow. However, there would adverse reaction to any decrease in the integration between bus and ferry services, and also possibly to a last departure from Uig to Tarbert no later than 1700 if that was timetabled. Further, there would be an adverse reaction from some Harris residents if Sunday sailings were introduced

5.3 B: NEW LANDFALL ON SKYE (DUNVEGAN)

5.3.1 Contribution to Achieving Transport Planning Objectives

Table 5.4 shows the contribution of this option to achieving the identified transport planning objectives.

TABLE 5.4: OPTION B: CONTRIBUTION TO ACHIEVING TRANSPORT PLANNING OBJECTIVES

Option	Score
Consistent and suitable times of ferry arrival and departure	0
Increase sailing frequency	0
Provide adequate vessel capacity	0
Reduce overall journey times	0
Reduce travel costs	1
Provide sufficiently reliable ferry services	0
Skye landfall with passenger facilities that meet user needs	3

Option B would be neutral in terms of the transport planning objectives of **consistent and suitable times of ferry arrival and departure** and **increase sailing frequency**. This is because, as shown at **Chapter 4**, the schedule using one vessel at Dunvegan would be very similar to that presently provided using Uig.

Similarly, there would be no impacts in terms of **provide adequate vessel capacity**. While Dunvegan could in theory accommodate larger vessels than the present facility at Uig, they could only be slightly larger than the existing vessel (MV Hebrides) if they were to also use the ports of Lochmaddy and Tarbert.

Table 5.5 shows the impacts of using Dunvegan rather than Uig in terms of travel time and ferry fares. This is based on the analysis at **4.2.3.**

TABLE 5.5: CHANGE IN TRAVEL TIMES AND FERRY FARES THROUGH USE OF DUNVEGAN RATHER THAN UIG

Travel to/from Tarbert		
Factor	**Car & 2 passengers**	**CV**
Ferry crossing time	+10 minutes	+10 minutes
Road journey time on Skye	+11-20 minutes	+11-20 minutes
Ferry fare	+£0.80	+£5.40
Travel to/From Lochmaddy		
Factor	**Car & 2 passengers**	**CV**
Ferry crossing time	-10 minutes	-10 minutes
Road journey time on Skye	+11-20 minutes	+11-20 minutes
Ferry fare	-£3.20	-£8.10

This suggests there would, in fact, be a *negative* impact on **overall travel times**. Times to/from Tarbert would increase-both on the ferry and by road between Dunvegan and Portree. Further, total times to/from Lochmaddy would increase slightly. This is because the reduced ferry crossing time would be offset by increased road journey times between Dunvegan and Portree.

In terms of **reduce travel costs** the impact would vary between the two routes. Ferry fares would increase for Uig-Tarbert. In contrast, the ferry fares on Lochmaddy would decrease compared to those currently charged for the Uig service.

The level of decrease for Lochmaddy fares is greater than the increase in Tarbert fares. Therefore a slight positive impact is recorded at **Table 5.4**.

There would be no impacts in terms of **provide sufficiently reliable ferry services**. The evidence gathered through the study suggests that it is unlikely that Dunvegan would offer greater service reliability than Uig. This is in a context where it appears that Uig is no worse than other, similar ferry terminals in terms of reliability.

There would be a significant contribution to a **Skye landfall with passenger facilities that meet user needs**. This assumes that a new build terminal at Dunvegan would provide a much better passenger experience than that presently provided at Uig.

5.3.2 Performance Against STAG Criteria

Table 5.6 provides scores for the performance of this option against the five STAG criteria.

TABLE 5.6: OPTION B: PERFORMANCE AGAINST STAG CRITERIA

Criterion	Score
Environment	0
Safety	0
Economy	0
Integration	0
Accessibility and Social Inclusion	0

Option B would be neutral in terms of **environment.** It is not expected that there any notable increase in the level of ferry traffic through Dunvegan as opposed to Uig.

This option would be neutral in terms of **safety**.

Option B is also shown as neutral in terms of the **economy** criterion. Regarding TEE, as shown at **Table 5.5** there would be for:

- Tarbert traffic: a negative impact on overall travel times and on ferry fares.
- Lochmaddy traffic: a neutral or negative impact on overall travel times but a positive impact in terms of lower ferry fares.

The option would be neutral in terms of EALI effects given that the schedules and traffic volumes for Dunvegan would be very similar to those at Uig.

Taking all these factors into account suggests a slightly negative impact on economy. However, this option would also improve the overall quality of passenger journey by providing better facilities than those currently available at Uig. This quality improvement is identified in STAG as a TEE benefit. Hence its inclusion under the economy criterion rather than **integration**.

The negative impact on overall travel times/fares and the positive impact on journey quality would be of a similar scale. Hence they are assumed to cancel one another out and a score of "0" for economy is shown at **Table 5.6**.

There would be no impact in terms of transport **integration**. Dunvegan is only six miles further from Portree than is Uig. Therefore, it should be possible to replicate existing Uig bus service provision at the new port.

There would no impacts on **accessibility and social inclusion**. Again, this reflects that the ferry schedules and traffic volumes for Dunvegan would be very similar to those at Uig.

5.3.3 Operational Feasibility, Cost to Government and Likely Public Acceptability

Key points regarding these aspects are summarised at **Table 5.7**, over.

TABLE 5.7: OPTION B: OPERATIONAL FEASIBILITY, COST TO GOVERNMENT AND PUBLIC ACCEPTABILITY	
Category	**Key Points**
Operational feasibility	High level analysis suggests that Dunvegan could be used as a landfall for the ferry services, although it would require detailed feasibility work to confirm that this is the case
Cost to government	• £21 million capital costs to develop the new facility and provide road enhancements around Dunvegan village • It is not expected that the financial performance of the route would be significantly different from that of the Uig service-unless there was a significant difference in the level of port charges at Dunvegan compared to those Uig
Likely public acceptability	This option would face opposition in some quarters because of the negative economic impacts on north Skye from closure of the ferry terminal at Uig. There may also be some resistance from Harris residents and businesses due to the slightly longer crossing time and slight increase in ferry fares. In contrast this option would be welcomed by those that perceive that Uig is an unreliable port. It would also be supported by those of the view that there would be more extensive visitor facilities (including accommodation) at Dunvegan than at Uig. The slight reduction in crossing times and ferry fares would be welcomed by residents and businesses served by the Lochmaddy route

5.4 C: IMPROVED PASSENGER FACILITIES AT UIG

5.4.1 Contribution to Achieving Transport Planning Objectives

Table 5.8 shows the contribution of this option to achieving the identified transport planning objectives.

TABLE 5.8: OPTION C: CONTRIBUTION TO ACHIEVING TRANSPORT PLANNING OBJECTIVES

Option	Score
Consistent and suitable times of ferry arrival and departure	0
Increase sailing frequency	0
Provide adequate vessel capacity	0
Reduce overall journey times	0
Reduce travel costs	0
Provide sufficiently reliable ferry services	0
Skye landfall with passenger facilities that meet user needs	3

Option C consists solely of improvements to passenger facilities at Uig. Therefore, its only contribution is to the transport planning objective of a **Skye landfall with passenger facilities that meet user needs**. The maximum score of 3 is shown. This is because the proposed new facilities (covered walkway, gangway and waiting room) were identified by stakeholders as the key ones that are required.

5.4.2 Performance Against STAG Criteria

Table 5.9 provides scores for the performance of this option against the five STAG criteria.

TABLE 5.9: OPTION C: PERFORMANCE AGAINST STAG CRITERIA

Criterion	Score
Environment	0
Safety	0
Economy	+1
Integration	0
Accessibility and Social Inclusion	0

The only impact is in terms of **economy**. This is through improving the overall quality of passenger journey. This quality improvement is identified in STAG as a TEE benefit. Hence its inclusion under the economy criterion rather than **integration**. We have given a score of 1 because while important in itself it is only one type of TEE benefit. Further:

- We would expect it to be less significant than the reduction in scheduling costs under Option A.
- It is unlikely to have any significant EALI impact by, for example, stimulating additional travel on the ferry services.

5.4.3 Operational Feasibility, Cost to Government and Likely Public Acceptability

Key points regarding these aspects are summarised at **Table 5.10**.

TABLE 5.10: OPTION C: OPERATIONAL FEASIBILITY, COST TO GOVERNMENT AND PUBLIC ACCEPTABILITY	
Category	**Key Points**
Operational feasibility	There appears to be adequate width on the pier for a covered walkway to be provided
Cost to government	Up to £3.15 million of capital cost, depending on the number of new facilities provided
Likely public acceptability	These facilities-and notably the covered walkway-would be welcomed by passengers

5.5 SUMMARY

5.5.1 Option A: Dedicated Vessels for Each of The Harris and Uist Services

This option would offer significant potential benefits to users in terms of additional frequencies and improved timetabling, with the potential for significant economic benefits for Harris and the Uists. However, there are likely to be considerable costs involved: both in acquiring a second vessel and also in terms of increased annual operating deficit. In addition, further consideration is required of the integration of ferry and bus services and the timings of last sailings from Uig.

The high level analysis undertaken suggests that Option A appears worthy of further, detailed research. This would be in terms of the scale of the additional traffic and the economic benefits that could be achieved compared to the increased costs of a two vessel service.

5.5.2 Option B: New Landfall on Skye

In terms of reasonable capital costs and crossing distances to both Tarbert and Lochmaddy, Dunvegan appears to be preferable to the other locations considered for a new Skye landfall. However, there would be significant capital costs to establish a new facility at Dunvegan, while it appears to offer no significant advantages over Uig in terms of:

- Service reliability.
- Improved timetables and sailing frequency, or reduced crossing times.
- Generation of additional demand.
- Overall end-to-end journey times.

This option would offer better passenger facilities than those presently provided at Uig. However, this issue could be addressed by investment at Uig itself-as per Option C.

The high level analysis undertaken suggests that Option B should be discounted for the purposes of further transport planning.

5.5.3 Option C: Improved Passenger Facilities At Uig

Additional/improved facilities at Uig would definitely be welcomed by passengers. As such, Option C appears worthy of further consideration. This could include determining whether passengers would prefer investment in enhancements to the ferry timetable rather than onshore facilities.