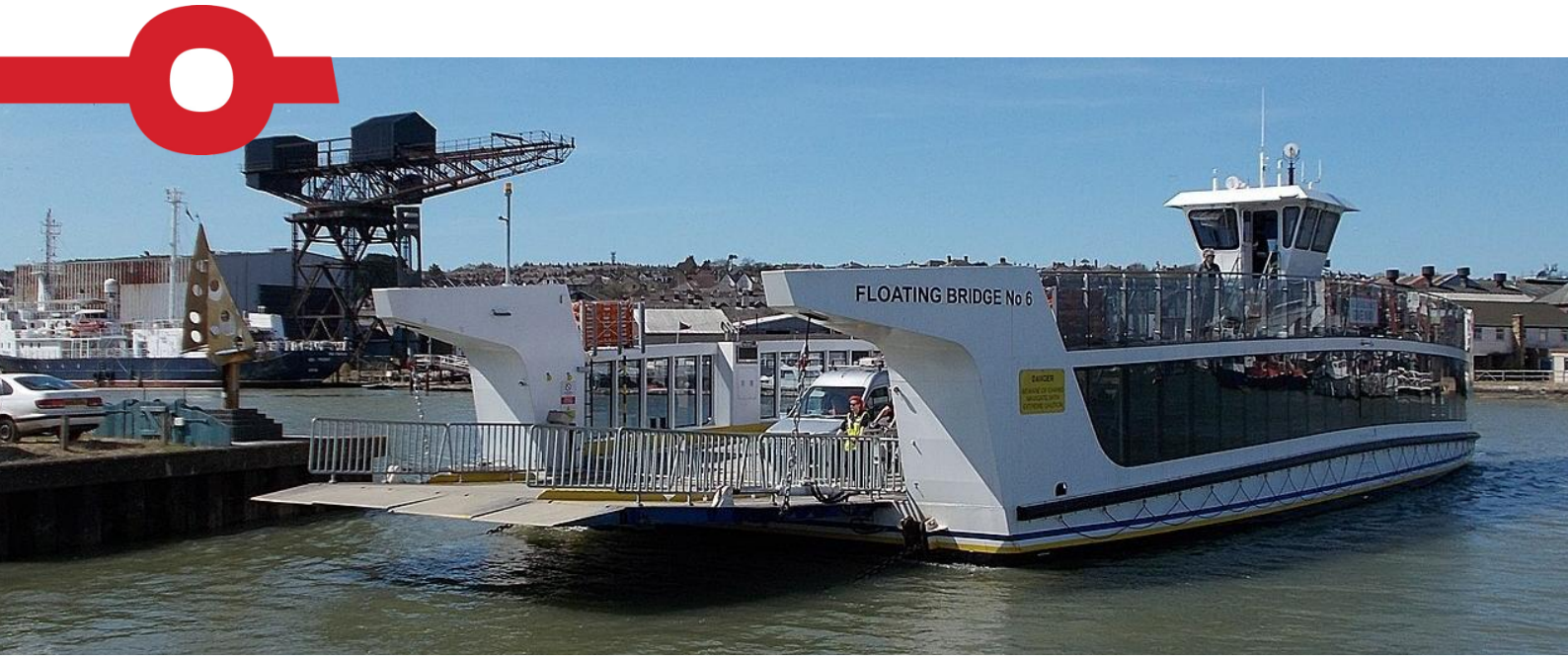
OPTIONS ASSESSMENT REPORT



SYSTRA

MEDINA CROSSING STRATEGY OUTLINE BUSINESS CASE

OPTIONS ASSESSMENT REPORT

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1. INTRODUCTION

1.1 Overview

1.1.1 SYSTRA Ltd has been commissioned by the Isle of Wight Council as lead adviser to undertake an options assessment and subsequent economic appraisal to identify the recommended option for the future of the **Cowes Floating Bridge** operation over the River Medina.

1.1.2 This process is being undertaken to identify options that will address the current operational issues with the current floating bridge (Floating Bridge 6 or FB6), as well as meeting long-term transport needs.

1.1.3 The process is following the DfT's Transport Appraisal Guidance[1] (TAG) which recommends a three-stage process of appraisal:

- Stage 1 – Option Development
- Stage 2 – Further Appraisal
- Stage 3 – Implementation, Monitoring and Evaluation.

1.1.4 This **Options Assessment Report (OAR)** report documents Stage 1 of the process i.e. option development as shown in Figure 1. This includes describing:

- the **need for intervention**
- the generation of a **long list of options** for the scheme
- the assessment of the long list against to produce a **short list** of options for more detailed appraisal
- the appraisal of the short-listed options to identify a **preferred option** for the scheme.

1.1.5 Stage 2 (Further Appraisal) will be covered in the subsequent **Outline Business Case (OBC).**

[1] Transport Analysis Guidance - The Transport Appraisal Process, DfT, 2018

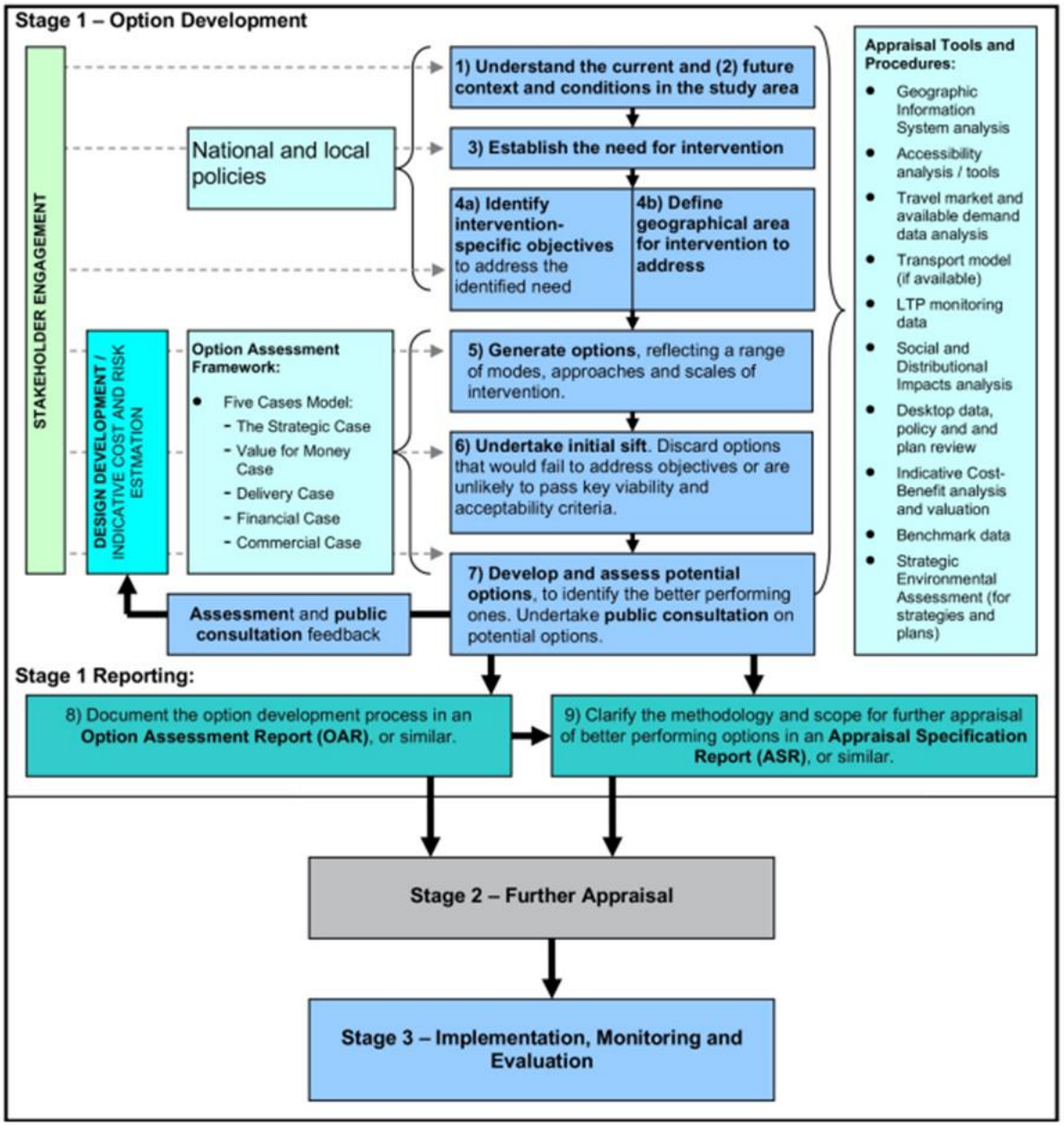


Figure 1. Summary of Stage 1 – Option Development

1.1.6 The appraisal process to develop this OAR has been undertaken using the tools and processes recommended in TAG and has also been informed through engagement with stakeholders.

1.2 Scheme background

1.2.1 The Cowes Floating Bridge is a chain ferry that carries vehicles, bikes, and foot passengers across the River Medina between Cowes and East Cowes (Figure 2). The floating bridge is the only means of crossing the River Medina between the towns north of Newport and saves a ten-mile round trip by road via Newport. The service is owned and operated by the Isle of Wight Council.

Figure 2. Cowes Floating Bridge[2]

1.2.2 The floating bridge has been in operation since 1859. There have been nine different vessels since operations began with the current ferry (FB6) entering service in 2017.

1.3 Document structure

1.3.1 This document has been structured around the Stage 1 steps identified in the DfT's Transport Appraisal Process guidance.

1.3.2 Table 1identifies in which section of this OAR document the Stage 1 steps are covered.

Table 1. Stage 1 – Option development steps

STEP(S)	DESCRIPTION	OAR SECTION
1	Understanding the current situation	Section 2
2	Understanding the future situation	Section 3
3	Establishing the need for intervention	Section 4
4a	Identifying objectives	Section 5
4b	Defining the geographical area of impact	Section 6
5	Generating options	Section 7
6	Undertake initial sift	Section 8
7	Development and assessment of potential options	Section 9

[2] Source: Isle of Wight Floating Bridge

2. STEP 1: UNDERSTANDING THE CURRENT SITUATION

2.1 Introduction

2.1.1 Step 1 sets out an understanding of the current situation in the study area in terms of:

- current transport and other policies
- current travel demand and levels of service
- current opportunities and constraints.

2.2 Current transport and other policies

2.2.1 The provision of a crossing for vehicles, cyclists, and pedestrians over the River Medina between Cowes and East Cowes is closely aligned with key national, regional, and local transport and related policies and strategies including:

- **National**
  - National Planning Policy Framework
  - The Plan for Drivers
  - Net Zero Strategy: Build Back Greener
  - Gear Change
  - Cycling and Walking Investment Strategy 2
- **Regional**
  - Local Transport Plan 4
  - Climate Change Strategy and Action Plan 2020-2025
  - Hampshire 2050, Vision for the Future
  - Economic Strategy for Hampshire
- **Local**
  - Local Transport Plan 3 Island Transport Plan 2011-2038
  - Island Plan Core Strategy
  - Cowes, Northwood and Gurnard Local Cycling and Walking Investment Plan
  - Isle of Wight Climate and Environment Strategy.

2.2.2 Further detail on these policies and strategies and how the scheme is aligned are set out in Table 2.

Table 2. Relevant national, regional, and local policies

LEVEL	POLICY/ STRATEGY	ORGANISATION & DATE	DESCRIPTION	ALIGNMENT WITH SCHEME
National	National Planning Policy Framework	Ministry for Housing Communities and Local Government, 2024	Sets out the government's revised approach to planning for England that incorporates a "vision-led" approach to transport planning, enabling the development of sustainable infrastructure in the long-term.	Scheme would promote sustainable travel through enhancing local connectivity and enhancing transport infrastructure for the long-term.
National	The Plan for Drivers	Department for Transport, 2023	Sets out the government's strategy to 'rebalance' previous transport policy towards being less punitive to drivers, aiming to create smoother journeys for drivers.	Scheme would facilitate local connectivity for drivers through enhanced convenience and experience.
National	Net Zero Strategy: Build Back Greener	Department for Business, Energy and Industrial Strategy, 2021	Sets out policies for decarbonising all sectors of the UK economy to meet the UK's net-zero target by 2050.	Scheme would encourage sustainable travel modes through infrastructure improvements.
National	Gear Change	Department for Transport, 2020	Sets out the government's strategy to increase walking and cycling, with a vision for active modes to make up half of all journeys in towns and cities by 2030.	Scheme would provide connectivity for sustainable modes of travel.
National	Cycling and Walking Investment Strategy 2	Department for Transport, 2022	Sets out the governments ambition make cycling and walking a natural choice for shorter journeys, or as part of longer journeys by 2040.	Scheme would provide connectivity for sustainable modes of travel.

LEVEL	POLICY/ STRATEGY	ORGANISATION & DATE	DESCRIPTION	ALIGNMENT WITH SCHEME
Regional	Local Transport Plan 4	Hampshire County Council, 2024	Sets out the council's aim to develop a transport strategy that enhances sustainability, the economy and reduces severance for active travel modes.	Scheme would provide connectivity for sustainable modes of travel and promote economic growth in Cowes and East Cowes.
Regional	Climate Change Strategy and Action Plan	Hampshire County Council, 2020	Sets out the council's vision for tackling the climate emergency by empowering action on addressing climate change.	Scheme would promote sustainable travel by active modes especially for short journeys and reduce longer car trips via Newport helping to tackle climate change.
Regional	Hampshire 2050 – Vision for the Future	Hampshire County Council, 2023	Sets out the council's vision for adapting to change across several themes, specifically, a changing climate in which the council aims to ensure that "Hampshire's economy, environment, and society continue to thrive and prosper".	Scheme would provide vital infrastructure that supports the area's economic, social, and environmental sustainability.
Regional	Economic Strategy for Hampshire	Hampshire County Council, 2025	Sets out the economic vision to drive prosperity in the area, importantly recognising the role of transport in connecting businesses and improving employment opportunities	Scheme would provide vital connectivity in the local transport network, helping to connect to areas of employment and drive economic growth.
Local	Local Transport Plan 3 – Island Transport Plan 2011-2038	Isle of Wight Council, 2011	Sets out the island's transport plan to develop a transport network that delivers on improved accessibility, accommodates to active modes, and enhances the local environment.	Scheme would enhance accessibility for both active and private transport modes and contribute to local environmental sustainability.

LEVEL	POLICY/ STRATEGY	ORGANISATION & DATE	DESCRIPTION	ALIGNMENT WITH SCHEME
Local	Island Plan Core Strategy	Isle of Wight Council, 2012	Sets out the council's policies across several sectors and how they are to be successfully delivered. Specifically, the plan details its aim of delivering an accessible transport system that encourage the uptake of sustainable modes for shorter trips.	Scheme would promote sustainable travel through enhanced accessibility, connectivity, and convenience.
Local	Cowes, Northwood and Gurnard LCWIP	Isle of Wight Council, 2022	Sets out the council's strategic plan to improve its active mode provision by enhancing local walking routes and developing new cycling routes, each aligning with key design principles of delivering a coherent, comfortable, and attractive network.	Scheme would provide connectivity for sustainable modes of travel.
Local	Isle of Wight Climate and Environment Strategy	Isle of Wight Council, 2021	Sets out the council's vision to achieve their climate target of meeting net zero in emissions across the area by 2040. Actions within the transport sector include developing multi-user routes and encouraging behavioural change.	Scheme would promote sustainable travel by active modes especially for short journeys and reduce longer car trips via Newport helping to tackle climate change.

2.3 Current travel demand and levels of service

2.3.1 Figure 3 shows the floating bridge annual vehicle and foot passenger demand since 2018 (the first full year FB6 was in service). This shows demand falling significantly in 2020 (55% and 41% reduction for vehicle and foot passengers respectively compared to 2019) due to the Covid-19 lockdown restrictions. Whilst demand has increased since 2020, it has yet to recover to pre-Covid levels; this is attributed in part to operational issues (discussed in more detail in section 4) and the change in behavioural working patterns post COVID e.g. working from home.

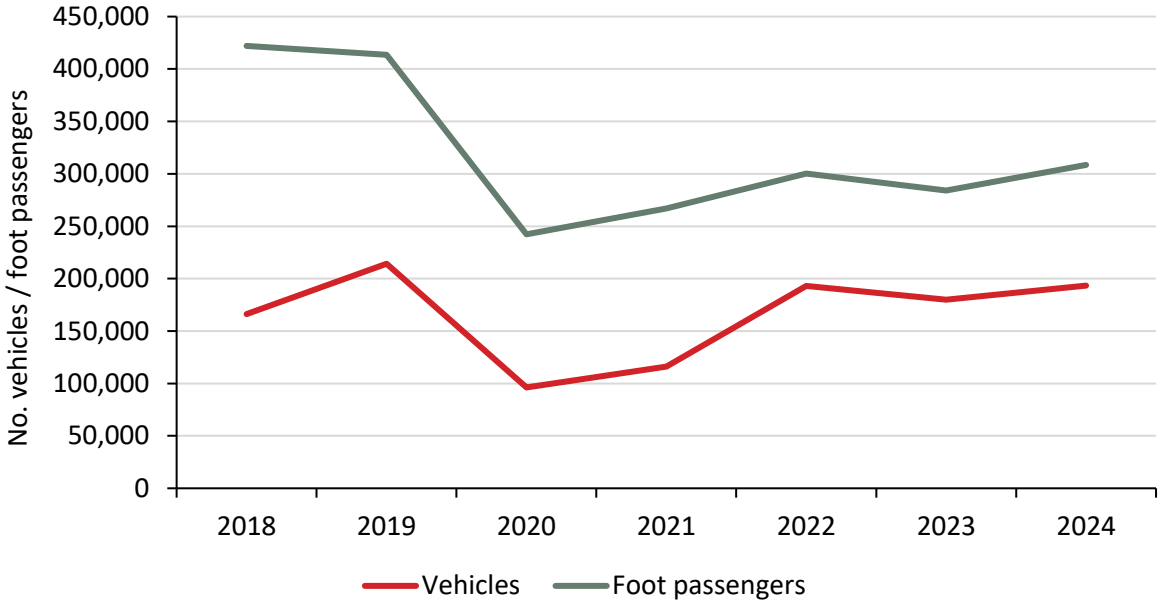


Figure 3. Cowes Floating Bridge annual vehicle and foot passenger demand (2018 to 2024)[3]

2.3.2 The floating bridge is scheduled to operate 7 days a week, all year round. Crossings operate from 05:00 to 00:30 Monday to Saturday, and from 06:30 to 00:30 on Sunday. FB6 currently operates on average 3.15 trips per hour, completing a full round trip every 19 minutes and 19 seconds.

2.3.3 In the absence of the crossing, vehicles travelling between Cowes and East Cowes need to take the A3020 and A3054/A3021 via Newport. This is a 10-mile (28 minute) round trip. As shown in Figure 4, this contributes to already high levels of congestion along the A-road network in the local area with the average delay in the centres of Cowes, East Cowes and Newport more than 90 seconds per vehicle mile.

[3] Source: Isle of Wight Floating Bridge

Figure 4. Average delay levels across the major road network (2024)[4]

2.4 Current opportunities and constraints

Opportunities

2.4.1 Any future scheme could seek to increase the crossing capacity e.g. increased crossing frequency, larger vessel. This would support the movement of vehicles and people and help boost economic growth in Cowes and East Cowes, and support new developments and opportunities including:

- **Kingston Wharf (East Cowes):** Plans to regenerate the former aggregate wharf into a modern marine industrial park have recently been approved. The site would include new mooring pontoons, 11 workshops and a 100-tonne boat crane.
- **Cycling and walking investment:** The Council has allocated capital to complete the Newport - East Cowes cycle route, providing for the delivery of the remaining section between Island Harbour, at Newport, and East Cowes. Completion of this would enable cycle access to the new IW College site at Whippingham, and would create a new circular route in the Medina Valley area, using the floating bridge as a key part of the circular route. In addition, Natural England are commencing work on the on-Island sections of the English Coastal Path, which include works at Cowes and East Cowes and potentially

[4] Source: Local A Roads Speed and Delay, DfT

the Medina Valley, improving the accessibility of the area for local residents and visitors to the Island.

Constraints

2.4.2 Constraints that will need to be considered at the long list and subsequent options assessment stage include:

- **Physical constraints** including:
  - minimising impact on existing development in Cowes and East Cowes and on planned developments as set out in 2.4.1
  - strong river and tidal currents on the River Medina between Cowes and East Cowes
  - maintenance of harbour activities and safe passage of maritime traffic on the River Medina.
- **Environmental constraints** with a need to minimise carbon emissions generated by the scheme to align with the commitment to net zero as set out in the Isle of Wight Climate and Environment Strategy (see Table 2).
- **Financial constraints** with any scheme needing to be financed by the Isle of Wight Council with likely no central Government funding.
- **Legal and institutional constraints** including:
  - land ownership issues (if land take required)
  - statutory provision for:
    - a River Medina crossing under the Cowes Ferry Act 1901 and the Cowes Ferry Order 1915.
    - Cowes Harbour under the Cowes Harbour Acts and Orders 1897 to 2012, including the Harbours, Docks and Piers Clauses Act 1847 as incorporated.

3. STEP 2: UNDERSTANDING THE FUTURE SITUATION

3.1 Introduction

3.1.1 Step 2 provides an understanding of how the current situation in the study area may evolve in the future. This includes an understanding of:

- future land-uses and policies
- future changes to the transport system
- future travel demand and levels of service.

3.2 Future land-uses and policies

3.2.1 As noted in section 2.4, there are new residential and commercial developments planned in Cowes and East Cowes which will contribute to an increase in population, households and employment levels.

3.2.2 As shown in Table 3, the population of Cowes and East Cowes are expected to grow by 2.4% and 2.8% respectively over the next 30 years. There will be similar levels of growth in the number of jobs in these areas. This local growth will likely increase demand for the floating bridge.

Table 3. Percentage change in population, households and employment by area from 2025[5]

YEAR	2035	2045	2055
Cowes			
Population	-0.1%	1.1%	2.4%
Households	3.6%	7.2%	11.5%
Employment (no. jobs)	2.7%	3.4%	2.2%
East Cowes			
Population	0.4%	1.4%	2.8%
Households	3.6%	7.2%	11.5%
Employment (no. jobs)	2.5%	3.1%	1.9%
Newport			
Population	-0.1%	0.9%	1.9%
Households	3.6%	7.3%	11.5%
Employment (no. jobs)	2.9%	3.6%	2.4%

[5] Source: TEMPRO (Trip End Model PROgram) – provides planning data projections

YEAR	2035	2045	2055
Isle of Wight			
Population	**0.7%**	**2.1%**	**3.5%**
Households	**3.5%**	**7.1%**	**11.4%**
Employment (no. jobs)	**2.9%**	**3.5%**	**2.3%**

3.3 Future changes to the transport system

3.3.1 There are no planned major transport schemes e.g. highway improvements in the vicinity of the floating bridge that would materially impact demand for the crossing in the future.

3.4 Future travel demand and levels of service

3.4.1 Growth in vehicular demand for the crossing has been estimated from the Solent Sub-Regional Transport Model (SRTM)[6]. This shows growth of nearly 15% compared to current (2025) levels by 2040. This is based on forecast growth in vehicles whose optimal route based on their origin and destination would involve using the existing floating bridge (this is represented in the SRTM as a specific link).

Table 4. Projected growth in Medina Crossing vehicular demand from 2025

YEAR	2035	2045	2055
Growth in vehicular demand cf. 2025	4.9%	9.7%	14.6%

[6] The Solent SRTM is a multi-modal transport model covering highway and public transport. The model base year demand has been validated using observed travel patterns, travel times and traffic flows. The model allows testing of the impacts and benefits of land-use and transport interventions. It covers four local authority areas (Isle of Wight Council, Portsmouth City Council, Southampton City Council and Hampshire County Council).

5. STEP 3: ESTABLISHING THE NEED FOR INTERVENTION

5.1 Introduction

5.1.1 Step 3 identifies the local transport-related problems that establish the need for intervention. This includes:

- current transport-related problems and underlying causes
- future transport-related problems.

5.2 Current transport-related problems and underlying causes

5.2.1 As set out in section 2.3, demand for the floating bridge has not recovered to pre-Covid levels. Whilst this may be in part due to changing travel demand and behaviour post-Covid e.g. greater levels of home-working. Earlier in 2025 the Isle of Wight Bus and Rail Users Group reported that bus usage has recovered to pre-pandemic levels, with leisure passengers higher than in 2019, but commuter usage still below pre-Covid levels.

5.2.2 The decline in demand for the Floating Bridge is also likely to be attributed to a range of operational issues that FB6 has suffered since it entered service in 2017 which resulted in an increasing number of service suspensions (Table 5). However, the situation has improved recently with the full days equivalent out of service falling significantly from a peak of 212 in 2021 to 28 in 2024. Factors that have contributed to the poor reliability include **mechanical issues with FB6** including the hydraulics system, guidewheels and IT and electrical systems.

Table 5. FB6 service reliability – 2017 to 2024[7]

METRIC	2017	2018	2019	2020	2021	2022	2023	2024
Full days equivalent out of service	124	22	30	115	212	7	59	28
% scheduled days of operation out of service	47.2	6.0	8.2	31.4	32.9	1.9	16.2	7.7
No. service suspensions	6	19	21	16	24	14	12	15

5.2.3 A further issue with FB6 that could have impacted demand is that it **operates a lower crossing frequency than FB5, albeit with greater capacity for cars and other vehicles:** FB6 currently operates between 3 and 4 round trips per hour, with an average of 3.15, compared to between 4 and 5 for FB5. The original business case for FB6 was developed on the assumption that FB6 would be able to achieve 5 round trips per hour. The lower crossing frequency has resulted in local criticism that FB6 is 'slower' than FB6 (although the actual speed of the vessel is the same).

[7] Source: Isle of Wight Floating Bridge

5.2.4 Additionally, the operating costs for FB6 are higher than for FB5 which is largely due to **chain clearance issues which require the use of a push boat during spring tides.**

5.2.5 Each of these factors are discussed in turn below.

Impact on reliability due to mechanical issues

5.2.6 FB6 originally suffered from several technical issues including:

- **Hydraulics system:** problems with the hydraulic system resulted in the floating bridge being out of service on multiple occasions between 2019 and 2021. These were attributed to the system being poorly designed and built with non-marine parts. These issues have now been addressed through: removal and modification of the prows; redesign of the ram system to prevent strain owing to the angle of operation; and installation of an advanced filtration system together with regular testing, maintenance and oil sampling.
- **Guidewheels:** works on the guidewheels accounted for 8 service suspensions in 2018 alone. This was due to the original guidewheels being a different design to those on FB5; they were cast and used a different bearing design. They were not able withstand the constant wear of the chain passing through them and deteriorated quickly. All 24 guidewheels have now been replaced with steel units without any joints or fixings as well as reverting back to the previous vessel's (FB5) original bearing and carrier design and material. As a result, in contrast to the original cast guidewheels, the replacement wheels have now been in service for 3 years and show minimal signs of wear and tear.
- **IT programming infrastructure and electrical system:** There were issues with original programming and electrical system on FB6 which culminated in loss of all touchscreen functionality in July 2023. The FB6 IT system has now been fully re-configured.

The mechanical issues set out above have now been resolved and are not expected to significantly impact the future operational performance of FB6.

Lower crossing frequency

5.2.7 There are several factors behind the lower crossing frequency. Some of these are specifically related to FB6:

- **Increased capacity of FB6 compared to FB5:** FB6 provides a greater capacity for cars, other vehicles, and pedestrians, with the capacity increasing from 12 cars for FB5 (at the end of its operational life in 2016) to 20 cars for FB6 per crossing. This results in increasing overall loading times for vehicles for each crossing. For pedestrians, the operator has noted that the opportunity to use the upper deck to view the river while crossing can result in slow unloading of pedestrians who have to disembark before cars, as noted below.
- **Braking system:** FB6 has a hydraulic braking system which incurs an 8 second delay at end of the crossing.

5.2.8 Other factors are due to external factors and regulation rather than due to FB6 itself.

- **Segregated loading and unloading:** until March 2015, foot passengers and vehicles were able to board and disembark simultaneously with no physical segregation. However, following a Maritime and Coastguard Agency (MCA) inspection, segregated loading and unloading was introduced with immediate effect on FB5 and this has continued with FB6. This has increased the time taken for loading and unloading of foot passengers and vehicles.
- **Requirement for 10 second warning beacon:** The floating bridge is required to flash a warning beacon for 10 seconds before crossing as stipulated by the Cowes Harbour Commission (CHC) General Directions.
- **River traffic:** The CHC has mandated that the floating bridge must give way and hold on one of the banks of the River Medina for another vessel requesting unimpeded passage. This can result in a delay of up to 10 minutes per vessel. This has been in place since 2013.

5.2.9 All of these factors above have contributed over time to an increase the total time taken for loading/unloading and the crossing time and therefore a reduction in the crossing frequency.

5.2.10 Apart from the increased capacity and braking system, the causes of the reduced crossing frequences are all external factors rather than being directly related to FB6 itself and would likely have reduced the crossing frequency of FB5 had it still been in service. Despite this, they have contributed to the negative perceptions locally of FB6 that it is a 'slower' service than FB5 as well as being less reliable.

5.2.11 It is noted that FB6 is capable of operating 5 round trips per hour, as anticipated in the business case; this was demonstrated in 2019 in the morning peak period (although this was at a time when demand levels were relatively low providing for rapid loading and unloading of vehicles and pedestrians).

Whilst many of the root causes of the lower crossing frequency are unrelated to FB6, consideration should be given to solutions that could help address the issue in parallel to the options assessment, in particular the issue of segregated loading and unloading.

Chain clearance issues

5.2.12 On a fast-flowing spring tide, FB6 cannot currently maintain its required chain depth of the actual tide height plus 1.5m which has been mandated by CHC to meet their statutory duty to maintain 'open port' status. This is because despite FB6 being 100 tonnes heavier than its predecessor (FB5), the chains were not changed to a larger specification and therefore could not hold the ferry in place to maintain the depths. To address this issue, a counter-force is required. Since 2018 this has been achieved using a push boat to push the ferry upstream and square to the slipway (Figure 5).

Figure 5. Use of push boat against FB6 (Source: Isle of Wight Council)

5.2.13 The requirement for the push boat has increased the operational costs of the floating bridge: the cost to the Council for the current six-year contract for the provision of the push boat is £548k (~£90k per annum).

A key requirement for the recommended option for the future of the Cowes Floating Bridge operation over the River Medina is for a reduction in operational costs by removing the need for the push boat.

5.3 Future transport-related problems

5.3.1 As set out in section 3.4, growth in vehicles travelling between Cowes and East Cowes is expected to grow by 2040. This will put increasing demand on FB6 and an unreliable FB6 operation will result in an increases in demand for car movements between East and West Cowes travelling between the towns via Newport. This will exacerbate the current congestion on one of the busiest parts of the Island's road network around Newport. It may also limit growth in housing and employment and negatively impact the area's long-term vitality.

5.4 Summary of need for intervention

Whilst the mechanical issues impacting reliability have largely been resolved and the factors that have reduced the crossing frequency are predominantly external rather than related to FB6 itself, the chain clearance issue remains. This has resulted in unsustainable additional costs for the Council due to the need for the push boat.

This issue justifies the need for intervention and a review of crossing solutions that could resolve this. As well as addressing this short-term issue, any solution must be capable of meeting the transport and wider economic needs of the local community in the long-term.

In parallel to the options assessment process, consideration should also be given to solutions to address the lower crossing frequency of FB6, in particular the issue of segregated loading and unloading.

6. STEP 4A: IDENTIFYING OBJECTIVES

6.1 Introduction

6.1.1 Step 4a identifies a clear set of intervention-specific objectives to address the problems identified in Step 3 and which are aligned with the local, regional, and national policies outlined in Step 1.

6.2 Proposed objectives

6.2.1 The proposed objectives set out below address the short-term reliability and cost issues associated with the current FB6 operation as well as meeting the transport and wider economic needs in the long-term:

- **Connectivity:** Maintain direct pedestrian and vehicular access between the two town centres of East Cowes and Cowes, and cross-river access upstream for commercial and private vessels to ensure the area's long-term vitality and competitiveness in a global tourism market.
- **Reliability:** Provide efficient operational reliability.
- **Cost-effectiveness:** Provide a cost-effective solution with a reduction in current operational costs.
- **Congestion:** Minimise congestion on the local road network, particularly where this negatively impacts the economic potential of town centres and major routes to Newport.
- **Affordability:** Ensure affordable fares for all users.
- **Support development:** Support future growth and demand for housing and businesses according to the Council's Island Plan.
- **Sustainability:** Enhance environmental sustainability, through shortening vehicle journeys, providing a pedestrian crossing, operational energy requirements and carbon emissions.

6.2.2 Objectives will be made SMART (Specific-Measurable-Achievable-Relevant-Time bound) at the OBC stage.

7. STEP 4B: DEFINING GEOGRAPHICAL AREA OF IMPACT

7.1 Introduction

7.1.1 Step 4b defines the geographical area of impact to be addressed by the intervention.

7.1.2 The geographical area of impact of the scheme is important in determining the geographical scope of the options to be considered, and in determining the study area for the subsequent transport and environmental assessments.

7.1.3 Specifically, the area of impact is determined by:

- the scope of the travel market and key origins and destinations
- the extent of current and future transport problems and underlying drivers.

7.2 Area of impact

7.2.1 The geographical area of impact has been defined as the Cowes, East Cowes and Newport wards as shown in Figure 6.

Figure 6. Geographical area of impact

7.2.2 The inclusion of the Cowes and East Cowes wards in the area of impact reflects the floating bridge's main purpose to provide connectivity for vehicles and pedestrians between the two towns. The predominantly local nature of vehicular trips on the floating bridge has been demonstrated by examining traffic flows from the Solent SRTM. This shows that nearly all vehicle trips using the floating bridge start and end in the Cowes and East Cowes area. The remaining trips are using the floating bridge before or after using the Red Funnel ferry service

to the mainland. Figure 7 shows the AM peak hour eastbound trips as an example with vehicle trips represented by the green lines.

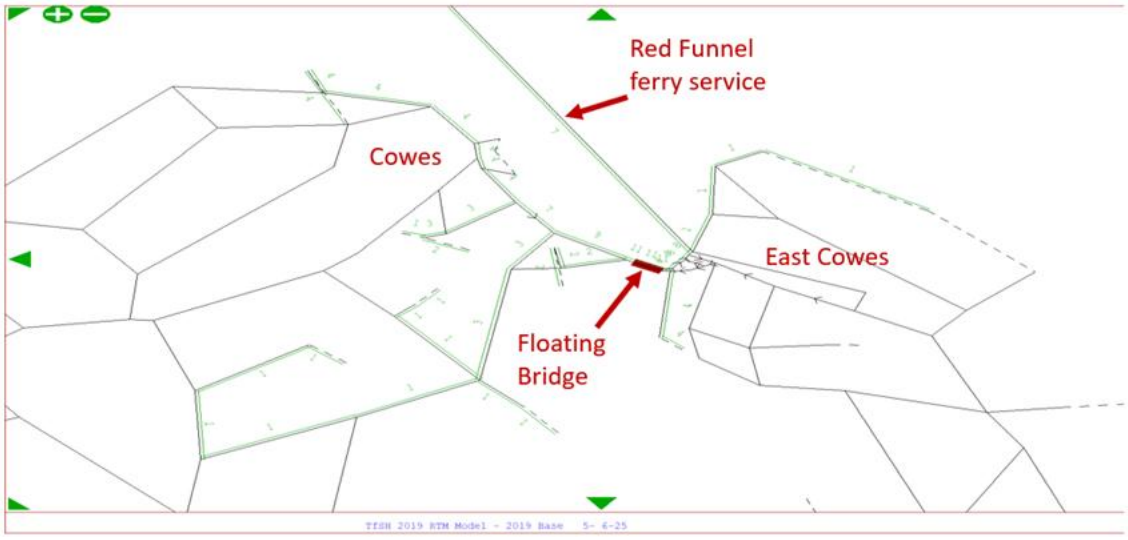


Figure 7. 2019 AM peak hour eastbound floating bridge trips (Source: Solent SRTM)

7.2.3 The inclusion of the Newport area also recognises that without the floating bridge, the only way to cross the River Medina between Cowes and East Cowes is by taking a ten-mile trip via Newport (A3020 and A3054/A3021); the absence of the crossing would therefore likely lead to a significant increase in congestion on the local road network between Cowes, Newport and East Cowes.

8. STEP 5: GENERATING OPTIONS

8.1 Introduction

8.1.1 The purpose of Step 5 is to generate a long list of options that would likely achieve the objectives identified in Step 4a. As set out in TAG, the process of generating options should be unconstrained and consider all possible solutions including different modes and infrastructure without any assertion about a preferred solution.

8.1.2 This section details the approach undertaken to generate options and a description of the options agreed for the long list.

8.2 Options generation approach

8.2.1 A range of sources and ideas have been used to generate the long list including:

- options considered in the business case for the replacement of FB5 (as this was undertaken ten years ago there is value in reconsidering these to reflect changing attitudes, passenger behaviour and costs)
- proposals from specialist maritime infrastructure advisers, Beckett Rankine
- brainstorming session with the Council and advisers
- site visit by Council and advisers to the floating bridge in Cowes to observe current operations and conditions.

8.3 Long list of options

8.3.1 Table 6presents the initial long list of options. This is followed by a more detailed description of each option.

8.3.2 For completeness, the long list includes the continued use of FB6 as a base or **'do minimum'** option. This would assume a level of maintenance such that current service levels and operational performance are broadly maintained and continued use of the push boat. The short-listed **'do something'** options identified in Step 6 will be appraised against the **'do minimum'** option in Step 7.

Table 6. Long list of options

NO.	CATEGORY	DESCRIPTION
0	Base case / Do-minimum	**Continued use of FB6**
1	New floating bridge and associated infrastructure	**Replacement of FB6 with a new vessel (FB7)**
2	Modification of existing floating bridge vessel	**Adding flush thrusters to FB6**
3a	Modification of existing floating bridge infrastructure	**Adding additional control chains**
3b		**Installation of lead-in piles or dolphins**
4	Cowes harbour works	**Tidal flow reduction**

NO.	CATEGORY	DESCRIPTION
5a	Alternative vessel type	**Replacement of FB6 with a non-guided vehicle ferry**
5b		**Replacement of FB6 with a pedestrian and cycle only ferry (no vehicle provision)**
6a	Alternative crossing infrastructure	**Fixed road bridge**
6b		**Tunnel**
6c		**Swinging floating bridge**
6d		**Transporter bridge**
7	No crossing	**No crossing provision**

Option 1: Replacement of current floating bridge (FB6) with a new vessel (FB7)

8.3.3 The new vessel would require modification to the existing design to ensure that the design challenges are met. This would likely include adding additional thrusters and changes to the vessel profile to reduce drag forces. The harbour infrastructure would also need to be modified e.g. redesigned slipways.

Option 2: Adding flush thrusters to existing vessel (FB6)

8.3.4 Additional bow thrusters added to the existing vessel would provide the lateral force required to overcome the tide-induced lateral vessel deflection and likely remove the need for the push boat. The design of the thrusters would require careful consideration, but they could be electric, diesel, or hydraulic (Figure 8). Inclusion of flush thrusters could potentially change the classification of the crossing.

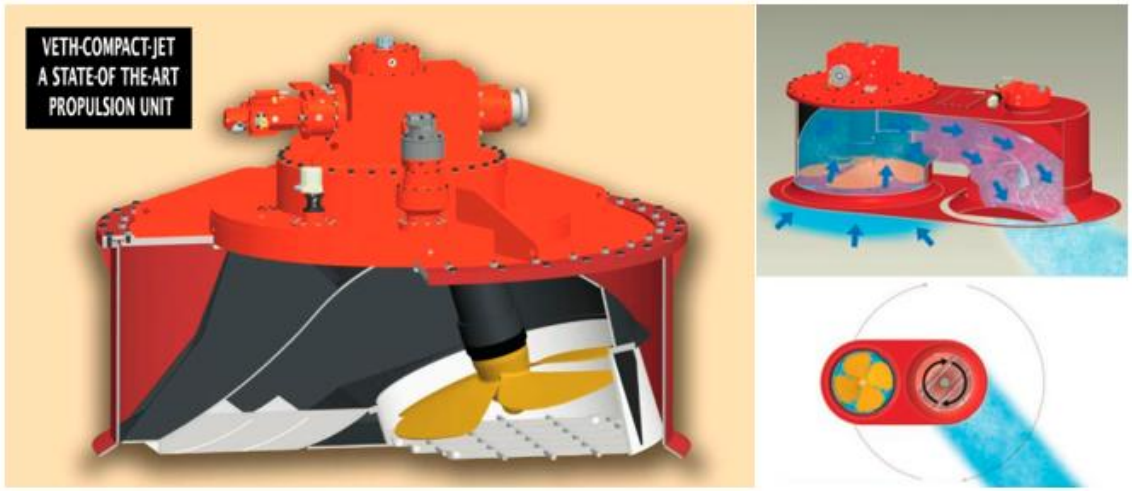


Figure 8. Flush thrusters

8.3.5 A preliminary design indicating where the flush thrusters could be located on FB6 is provided in Appendix A.

Option 3a: Adding additional control chains

8.3.6 Adding additional control chains / more mechanical process. Extra piles would be required on both the east and west sides of the river. Care would be necessary to ensure that these piles do not impact the navigational channel. Winch systems would also be installed to reduce the workload required of operators.

8.3.7 A preliminary design showing the potential location of the new chains and piles is provided in Appendix A.

Option 3b: Installation of lead-in piles or dolphins

8.3.8 The installation of lead-in piles or dolphins would assist in guiding the vessel into the slipway (Figure 9). Care would be necessary to ensure that these piles do not impact the navigational channel. The piles would have roller fenders attached to help guide the vessel into place.

Figure 9. Lead-in piles example

8.3.9 A preliminary design showing the potential location of the piles is provided in Appendix A.

Option 4: Tidal flow reduction

8.3.10 Dredging the river would cause a tidal flow reduction. The dredge slopes would ensure that the existing bed level at the river edge is maintained to prevent additional loading on the river walls. It is not determined what level of flow reduction could be achieved.

8.3.11 The depth of the river bed at the floating bridge location is provided in Appendix A.

Option 5a: Replacement of FB6 with a non-guided vehicle ferry

8.3.12 A non-guided vessel would reduce the navigational restriction of the chain height. Careful consideration would be required to determine the powering and positioning.

Option 5b: Replacement of FB6 with a pedestrian and cycle only ferry (no vehicles)

8.3.13 A pedestrian and cycle only ferry (Figure 10) would allow for a smaller vessel, reducing the vessel loading. Careful consideration would be required to determine the powering and positioning.

Figure 10. Pedestrian and cycle only ferry example – Uber Thames Clipper

Option 6a: Fixed road bridge

8.3.14 A fixed road bridge from one side of the River Medina to the other in Cowes or other upstream locations could be constructed to replace the floating bridge. It would need to be a lifting bridge to provide clearance for river traffic.

Option 6b: Tunnel

8.3.15 A tunnel under the River Medina between Cowes and East Cowes could be constructed to replace the floating bridge. To get the depth required, it would be necessary to start the approach roads well away from the river. Any tunnel option would therefore need to be south of Cowes to minimise impact on settlements.

Option 6c: Swinging floating bridge

8.3.16 A swinging floating bridge capable of turning 90 degrees to allow passage of river traffic (Figure 11) could be constructed to replace the floating bridge. The bridge would need to be located to the south of the existing floating bridge. The floating bridge would rotate to open for river traffic and close to allow car traffic to cross. Linkspan ramps would be added to the land on either side of the river to account for the tidal height variation. Land acquisition would likely be required to allow for a redirected road network.

Figure 11. Swinging floating bridge example – Agia Mavra, Greece

8.3.17 A preliminary design showing the potential location of the bridge is provided in Appendix A.

Option 6d: Transporter bridge

8.3.18 A transporter bridge could be constructed to replace the floating bridge. This is a movable bridge that carries a pedestrians and vehicles via gondola suspended by cables from a trolley running across the top of the span on a track (Figure 12).

Figure 12. Transporter bridge example – Teesside

8.3.19 The bridge would need to be located to the south of the existing floating bridge. Land acquisition would likely be required to allow for a redirected road network.

8.3.20 A preliminary design showing the potential location of the bridge is provided in Appendix A.

Option 7: No crossing

8.3.21 With no crossing provision, the existing chain ferry and all passenger and vessel crossing would be removed. Travel between Cowes and East Cowes would therefore only be possible via Newport.

9. STEP 6: OPTIONS SIFTING

9.1 Introduction

9.1.1 Step 6 details the options sifting undertaken against the long list of options presented in Step 5 to identify any options which do not represent viable solutions, and which should be excluded from any further assessment.

9.1.2 The process involves discarding options that would not:

- meet the scheme objectives
- be aligned with national, regional, and local policies, programmes, strategies, and/or wider government priorities
- pass key viability and acceptability criteria (or represent significant risk) in that they would be unlikely to be:
  - deliverable in either an economic, environmental, geographical, or social context
  - technically sound
  - financially affordable
  - acceptable to stakeholders and the public.

9.1.3 The sifting has been undertaken in two stages:

1. Initial sifting where unaffordable options have been discarded
2. Further sifting using the DfT's **Early Assessment and Sifting Tool (EAST),** a decision-making support tool that summarises and presents evidence on options in a clear and consistent format

9.2 Initial sifting

9.2.1 The initial sift has involved discarding the options that would not pass the **affordability** criterion based on indicative high-level capital cost estimates for each option. This recognises the limited funding available from the Council for the scheme and that any significant additional funding from central government is unlikely.

9.2.2 Indicative high-level capital cost estimates for each of the long list options in step 5 are shown in Table 7.

Table 7. Long list options capital cost estimates

OPTION	CAPTIAL COST ESTIMATE £M	RATIONALE
1: Replacement of FB6 with a new vessel (FB7)	£5m – £10m	Based on outturn delivery cost of £5.9m for FB6 (as per 2018 updated business case) adjusted for inflation[8].
2: Adding flush thrusters to existing vessel (FB6)	£1m – £5m	Provisional cost estimate based on similar schemes.
3a: Adding additional control chains / more mechanical process	£1m – £5m	Provisional cost estimate based on similar schemes.
3b: Installation of lead-in piles or dolphins	£1m – £5m	Provisional cost estimate based on similar schemes.
4: Tidal flow reduction	< £1m	Provisional cost estimate based on similar schemes.
5a: Replacement of FB6 with a non-guided vehicle ferry	£10m – £20m	Provisional cost estimate based on similar schemes.
5b: Replacement of FB6 with a pedestrian and cycle only ferry (no vehicle provision)	< £5m	Provisional cost estimate based on similar schemes.
6a: Fixed road bridge	£50m – £100m	Cost estimates for a fixed bridge were prepared for the FB6 business case in 2015 which put the total cost of bridge construction, new road links and land acquisition to be between

[8] TAG Databook, DfT, 2025

OPTION	CAPTIAL COST ESTIMATE £M	RATIONALE
		£33m and £44m. Adjusting for inflation would put the mid-point of this range over £50m in current prices.
6b: Tunnel	> £100m	The Hindhead tunnel in Surrey is 1,829m in length and cost a total of £371m in 2011. The cost of constructing a tunnel on a line to the south of Cowes and avoiding recent developments as much as possible would entail a new road of approximately 2.3km of which approximately 900m would be in a tunnel. Using the Hindhead tunnel as a benchmark, the tunnel section alone would cost significantly over £100m in current prices.
6c: Swinging floating bridge	£10m - £25m	Based on benchmarking against similar schemes including Agia Mavra (excludes highways modification costs).
6d: Transporter bridge	£10m - £25m	Based on benchmarking against similar schemes including Tees and Newport (excludes highways modification costs).
7: No crossing	< £1m	Based on estimated decommissioning and harbour infrastructure costs.

9.2.3 Whilst there is not a budget 'cap' at this stage, it is appropriate to immediately discard those options for which the capital cost is estimated to be greater than £25m on the basis this would clearly be well in excess of the funding available. Based on Table 7, this results in the following options being discarded at this stage:

- **6a – Fixed road bridge**
- **6b – Tunnel.**

9.3 Further sifting – EAST

9.3.1 EAST[9] provides an early view of the performance of options without the need for detailed evidence and modelling. It allows unpromising options to be discarded and identify feasible options that are taken forward for further development and assessment.

9.3.2 EAST uses a range of criteria to assess the options. The criteria categorised in line with the different dimensions of the business case i.e. strategic, economic, financial, commercial, and managerial. Bespoke additions and/or modifications to EAST criteria are permitted to ensure the assessment is tailored to the scheme objectives and local context.

9.3.3 The EAST criteria selected for the Medina crossing options assessment are set out in Table 8 together with the issues and evidence that have been considered when scoring each option against the criteria. The agreed critical assessment criteria (denoted by a *) are: **achievement of objectives; carbon emissions; affordability; implementation timescales; deliverability; and legal/planning issues.** Performance against these key criteria will be considered in the event there are no clear preferred options following the EAST process.

9.3.4 Each of the remaining options following the initial sift has been assessed against the criteria by scoring it on a scale of 1 to 5. No weightings have been applied. The scores are summarised in Table 9 - 14. More detailed scoring sheets including the rationale for the scores are provided in Appendix B.

[9] EAST Guidance, DfT

Table 8. EAST criteria

CATEGORY	CRITERION	ISSUES / EVIDENCE TO CONSIDER
Strategic	Fit with scheme and wider transport and government objectives*	▪ Extent to which option aims to meet the specific transport, network, or cross-cutting objectives ▪ Extent to which option is aligned with local policy, legal and environmental requirements
	Scale of impact	▪ Extent to which option alleviates identified problem(s)
	Degree of consensus over outcomes	▪ Level of consultation with relevant stakeholders
Economic	Connectivity	▪ Impact on journey times and cost
	Reliability	▪ Impact on the day-to-day variability in journey times or average minutes lateness ▪ Impact on the number of incidents
	Support local growth and development	▪ Whether there will be economic impacts in addition to transport user benefits e.g. employment growth ▪ Contribution to the Council's priority as set out in the Corporate Plan of growing the economy and tourism
	Carbon emissions*	▪ Change in vehicle km ▪ Contribution to the Council's net zero target
	Social and distributional impacts	▪ Impact of the option across different social groups and spatial areas

CATEGORY	CRITERION	ISSUES / EVIDENCE TO CONSIDER
	Local environment	▪ Impact on air quality, noise, the natural environment, heritage, landscape, streetscape, and urban environment
	Wellbeing	▪ Impact on physical activity, accidents, crime, accessibility, and severance
	Expected value for money (VfM) category	▪ Consideration of the benefits and costs in monetary terms and non-monetised impacts
Financial	Affordability*	▪ Affordability of option in context of available budget and relevant budget period
	Capital cost	▪ Capital cost (£m) including all the costs involved in setting up the option and getting it up and running
	Revenue costs	▪ Scale of running costs i.e. operational and maintenance costs
	Overall cost risk	▪ Level of risk in capital cost estimate
Commercial	Flexibility of option	▪ Extent to which option can be scaled up or down depending on funding available ▪ Ease with which option could be stopped once in operation, or before operations start ▪ Ease with which option could adapt to changing circumstances
	Source of fundings	▪ How capital and running costs will be financed and certainty of funding
	Income generated	▪ Whether any income will be generated by scheme ▪ Estimate of income generated
Managerial	Implementation timescales*	▪ Timescales from inception to delivery
	Public acceptability	▪ Expected public acceptability of option

CATEGORY	CRITERION	ISSUES / EVIDENCE TO CONSIDER
		▪ Extent of stakeholder engagement to date
	Practical feasibility*	▪ Practicality and effectiveness of option ▪ Whether a proven solution
	Legal / planning issues*	▪ Governance and legal feasibility ▪ Statutory powers ▪ Planning implications
	Quality of supporting evidence	▪ How well-developed supporting evidence is
	Risks and uncertainties	▪ Implementation risks ▪ Interdependencies with other sources of risk and expected impact ▪ Risk management and mitigation

Table 9. EAST summary scores – Strategic

Option	Strategic		
	Fit with scheme and wider transport and government objectives	Scale of Impact	Degree of consensus over outcomes
1: Replacement of FB6 with a new vessel (FB7)	4	4	4
2: Adding flush thrusters to existing vessel (FB6)	4	4	3
3a: Adding additional control chains / more mechanical process	4	2	3
3b: Installation of lead-in piles or dolphins	4	2	3
4: Tidal flow reduction	4	2	3
5a: Replacement of FB6 with a non-guided vehicle ferry	4	4	4
5b: Replacement of FB6 with a pedestrian and cycle only ferry (no vehicle provision)	2	2	4
6c: Swinging floating bridge	3	4	4
6d: Transporter bridge	3	4	4
7: No crossing	1	1	4

Table 10. EAST summary scores – Economic

Option	Economic							
	Economic growth			Carbon emissions	Socio-distributional impacts	Local environment	Wellbeing	Expected VfM category
	Connectivity	Reliability	Support local growth and development					
1: Replacement of FB6 with a new vessel (FB7)	4	3	4	3	4	4	4	3
2: Adding flush thrusters to existing vessel (FB6)	4	4	4	4	4	4	4	5
3a: Adding additional control chains / more mechanical process	4	4	4	4	4	4	4	4
3b: Installation of lead-in piles or dolphins	4	4	4	4	4	4	4	4
4: Tidal flow reduction	4	4	4	4	4	4	4	4
5a: Replacement of FB6 with a non-guided vehicle ferry	4	3	4	3	4	4	4	3
5b: Replacement of FB6 with a pedestrian and cycle only ferry (no vehicle provision)	2	3	2	1	2	3	3	4
6c: Swinging floating bridge	3	4	4	2	4	2	3	2
6d: Transporter bridge	3	4	4	2	4	2	3	2
7: No crossing	1	2	1	1	1	3	1	1

Table 11. EAST summary scores – Financial

	Financial			
Option	**Affordability**	**Capital cost (£m)**	**Revenue costs**	**Overall cost risk**
1: Replacement of FB6 with a new vessel (FB7)	3	£5-10m	4	3
2: Adding flush thrusters to existing vessel (FB6)	4	£1-5m	4	4
3a: Adding additional control chains / more mechanical process	5	<£1m	3	4
3b: Installation of lead-in piles or dolphins	4	£1-5m	3	4
4: Tidal flow reduction	5	<£1m	3	4
5a: Replacement of FB6 with a non-guided vehicle ferry	2	£10-20m	4	3
5b: Replacement of FB6 with a pedestrian and cycle only ferry (no vehicle provision)	4	£1-5m	4	3
6c: Swinging floating bridge	1	>£20m	4	1
6d: Transporter bridge	1	>£20m	4	1
7: No crossing	5	<£1m	5	5

Table 12. EAST summary scores – Commercial

Option	Commercial		
	Flexibility of option	Where is the funding coming from?	Any income generated (Y/N)?
1: Replacement of FB6 with a new vessel (FB7)	3	IoW Council or potential to access grant funding (if available) or public sector financing through the Public Works Loan Board.	Y
2: Adding flush thrusters to existing vessel (FB6)	4		Y
3a: Adding additional control chains / more mechanical process	4		Y
3b: Installation of lead-in piles or dolphins	4		Y
4: Tidal flow reduction	4		Y
5a: Replacement of FB6 with a non-guided vehicle ferry	3		Y
5b: Replacement of FB6 with a pedestrian and cycle only ferry (no vehicle provision)	3		Y
6c: Swinging floating bridge	1		Y
6d: Transporter bridge	1		Y
7: No crossing	5		N

Table 13. EAST summary scores – Managerial

Option	Managerial					
	Implementation timetable		Public acceptability	Practical feasibility	Quality of supporting evidence	Legal and Planning issues
1: Replacement of FB6 with a new vessel (FB7)	3	2-5 years	4	5	4	4
2: Adding flush thrusters to existing vessel (FB6)	4	1-2 years	3	5	3	5
3a: Adding additional control chains / more mechanical process	5	< 1 year	3	2	3	3
3b: Installation of lead-in piles or dolphins	4	1-2 years	3	2	3	2
4: Tidal flow reduction	4	1-2 years	3	2	3	3
5a: Replacement of FB6 with a non-guided vehicle ferry	2	5-10 years	4	3	4	4
5b: Replacement of FB6 with a pedestrian and cycle only ferry (no vehicle provision)	3	2-5 years	2	3	4	3
6c: Swinging floating bridge	1	10 + years	2	1	3	1
6d: Transporter bridge	1	10 + years	2	1	3	2
7: No crossing	5	< 1 year	1	1	2	4

Table 14. EAST summary scores – Totals

Option	Strategic	Economic	Commercial	Financial	Managerial	Total
1: Replacement of FB6 with a new vessel (FB7)	12	29	3	10	20	74
2: Adding flush thrusters to existing vessel (FB6)	11	33	4	12	20	80
3a: Adding additional control chains / more mechanical process	9	32	4	12	16	73
3b: Installation of lead-in piles or dolphins	9	32	4	11	14	70
4: Tidal flow reduction	9	32	4	12	15	72
5a: Replacement of FB6 with a non-guided vehicle ferry	12	29	3	9	17	70
5b: Replacement of FB6 with a pedestrian and cycle only ferry	8	20	3	11	15	57
6c: Swinging floating bridge	11	24	1	6	8	50
6d: Transporter bridge	11	24	1	6	9	51
7: No crossing	6	11	5	15	13	50

9.4 Short list recommendations

9.4.1 Based on the EAST scores shown in Table 14, option 2 (adding flush thrusters to existing vessel) is the highest scoring followed by option 1 (replacement of FB6 with a new vessel).

9.4.2 The options that would involve the modification of the existing floating bridge infrastructure (3a: adding additional control chains) and Cowes harbour works (4: tidal flow reduction) are the next best-performing options. The potential issue with each of these options at this stage is that they may not be sufficiently effective as a standalone option to fully address the chain clearance issue. These however would represent cheaper solutions than adding flush thrusters (option 2) and significantly cheaper than a new vessel (option 1).

9.4.3 In the interest of securing best value for money for taxpayers, it is therefore recommended that options 2, 3a and 4 are combined into a phased package option 'modify the existing vessel and/or the operational environment'. This would involve either a combination of the individual options or one of the options on its own. The precise composition and phasing order of this option would be determined through further analysis to determine effectiveness and potentially 'real world' testing. It is possible a logical phasing could involve for example trialling the additional chains initially (the cheapest option). Should these prove not to be fully effective in addressing the chain clearance issue, hydrodynamic modelling could be then carried out to establish whether tidal flow reduction would adequately reduce the flow without unacceptable adverse effects. Should the combination of additional chains and tidal flow reduction still not be sufficient, flush thrusters could be added to the vessel. However, any course of recommended action would be based on further analysis, and therefore may differ from the indicative example set out above.

9.4.4 The EAST score for the package option would be at least that of option 2 as the estimated maximum cost of this option would still be in the region £1m to £5m.

9.4.5 The remaining options 3b, 5a, 5b, 6c, 6d and 7 are not recommended for shortlisting with the main reasons for this set out in Table 15.

9.4.6 The two recommended shortlisted options are therefore:

- **Option 1 – Replacement of FB6 with a new vessel (FB7)**
- **Phased Package Option – Modify existing vessel and/or the operational environment via the following options in combination or standalone:**
  - Option 2: Adding flush thrusters to existing vessel
  - Option 3a: Adding additional control chains
  - Option 4: Tidal flow reduction.

Table 15. Short list recommendations

OPTION(S)	EAST SCORE (OUT OF 100)	RANK	SHORTLIST RECOMMENDATION	MAIN FACTORS FOR RECOMMENDATION
1: Replacement of FB6 with a new vessel (FB7)	74	2	✓ Single option	✓ High confidence option would address existing challenges including chain clearance issue. This assumes modification in design e.g. additional thrusters and changes to vessel profile to reduce drag forces. ✓ Estimated cost range (£5m to £10m) ✓ Shorter implementation timescales (2 to 5 years) ✓ Minimal disruption to floating bridge operation and no land take required
2: Adding flush thrusters to existing vessel (FB6) 3a: Adding additional control chains / more mechanical process 4: Tidal flow reduction	80 (based on score for option 2 as a standalone solution)	1	✓ Phased package option	✓ High confidence combination of additional control chains and/or tidal flow reduction and/or flush thrusters would be effective at resolving chain clearance issue. ✓ Estimated cost range (£1m to £5m) ✓ Shorter implementation timescales (1 to 2 years) ✓ Minimal disruption to floating bridge operation and no land take required
3b: Installation of lead-in piles or dolphins	70	3=	× Not shortlisted	× Vessel deflection unlikely to be resolved through installation of lead-in piles therefore would not be sufficient to fully address the chain clearance issue × Presents navigational challenges for other vessels in the river.

OPTION(S)	EAST SCORE (OUT OF 100)	RANK	SHORTLIST RECOMMENDATION	MAIN FACTORS FOR RECOMMENDATION
5a: Replacement of FB6 with a non-guided vehicle ferry	70	3=	× Not shortlisted	× Unaffordable cost (£10m to £20m) × Longer implementation timescales (5 to 10 years) × May have many of the same issues as the existing chain ferry
5b: Replacement of FB6 with a pedestrian and cycle only ferry (no vehicle provision)	57	5	× Not shortlisted	× Reduced connectivity between Cowes and East Cowes × Additional highway congestion through Cowes and Newport × Legal consideration of reasonableness of ceasing vehicle crossing
6c: Swinging floating bridge	50	7=	× Not shortlisted	× Unaffordable cost (> £20m) × Longer implementation timescales (> 10 years) × Statutory instrument would be required to authorise the interference with the public right of navigation × Land take and compulsory purchase may be required × May create additional local congestion
6d: Transporter bridge	51	6	× Not shortlisted	× Unaffordable cost (> £20m) × Longer implementation timescales (> 10 years) × Statutory instrument would be required to authorise the interference with the public right of navigation × Land take and compulsory purchase may be required × May create additional local congestion
7: No crossing	50	7=	× Not shortlisted	× Total loss of connectivity between Cowes and East Cowes × Limit local economic growth and future development × Additional highway congestion through Cowes and Newport

OPTION(S)	EAST SCORE (OUT OF 100)	RANK	SHORTLIST RECOMMENDATION	MAIN FACTORS FOR RECOMMENDATION
				× Legal consideration of reasonableness of removing crossing provision

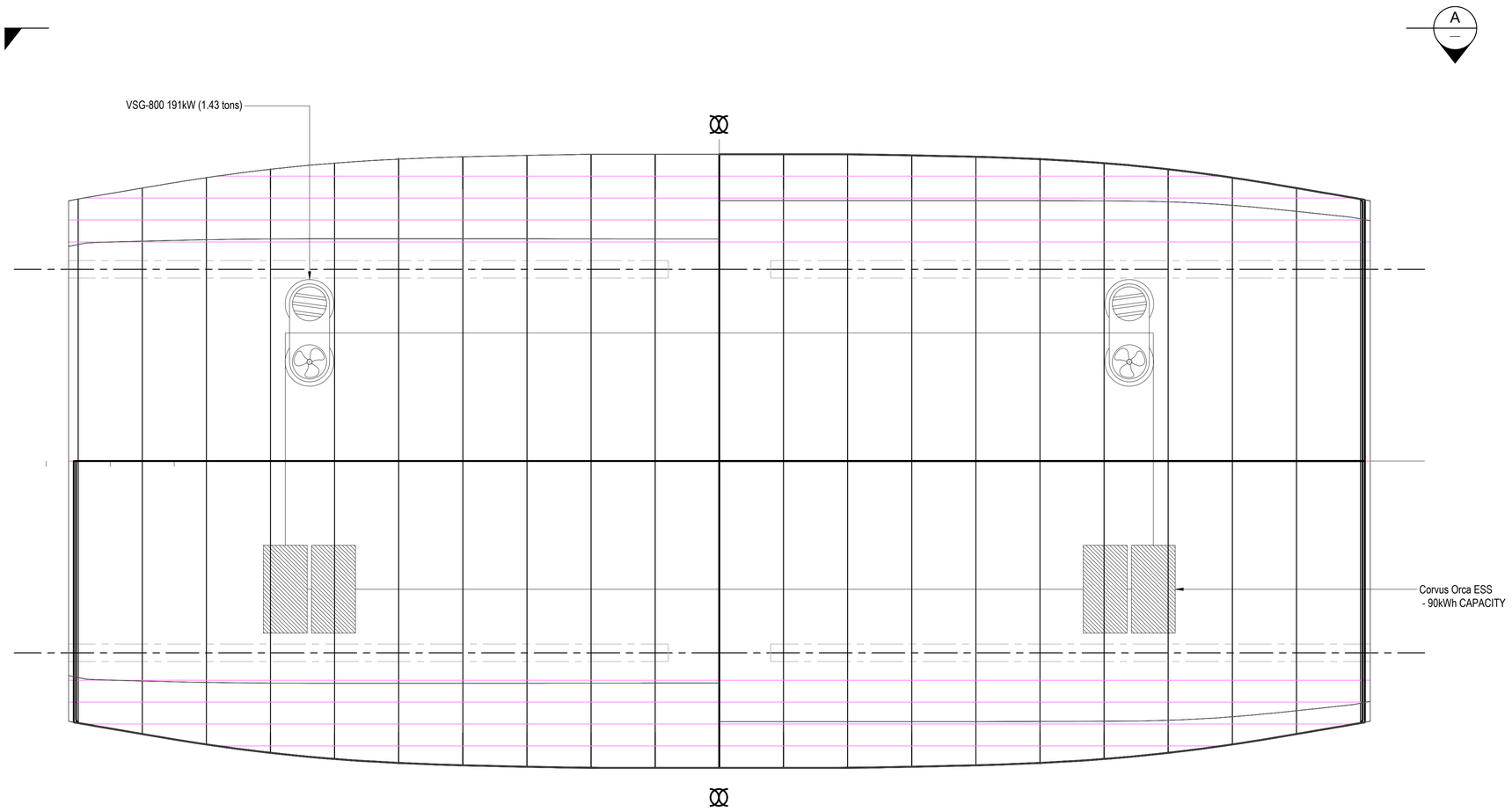
9.4.7 It is noted that if in the future a pedestrian water taxi is introduced to operate over the crossing it may be possible to explore options for a vehicle-only crossing. This would not need to revisit this detailed process but could be considered as and when it became available. This would help address the issue of segregated loading and unloading (which would not be resolved by a new vessel).

10. STEP 7: DEVELOPMENT AND ASSESSMENT OF POTENTIAL OPTIONS

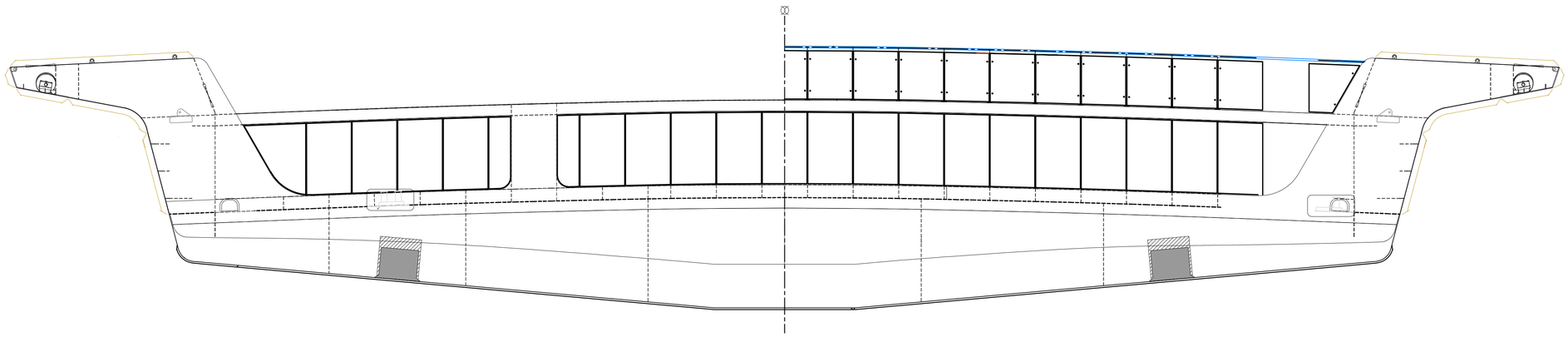
10.1 Introduction

10.1.1 To be completed at the next stage.

APPENDIX A: OPTIONS SKETCHES



CHAIN FERRY - DECK LAYOUT



SECTION A

NOTES :

1. ALL ELEVATIONS ARE IN METRES AND ARE TO CHART DATUM.
2. ALL DIMENSIONS ARE IN METRES U.N.O.
3. OFFICIAL ISSUES OF THIS DRAWING ARE IN PAPER OR PDF FORMAT ONLY. DWG FORMAT FILES ARE FOR REFERENCE ONLY.

TIDE DATA

MHWS	+4.2mCD
MHWN	+3.5mCD
MLWN	+1.8mCD
MLWS	+0.8mCD

4. TIDE DATA HAS BEEN TAKEN FROM THE COWES HARBOR WEBSITE.
5. THE WATER DEPTH LEVELS HAVE BEEN TAKEN PROVIDED BY THE IOW COUNCIL
6. THIS DRAWING IS FOR THE SOLE USE OF THE NAMED CLIENT FOR THE PURPOSE SHOWN.
7. ALL DESIGN IS PRESENTED FOR FEASIBILITY / CONCEPT ONLY
8. ALL EXISTING DIMENSIONS HAVE BEEN ESTIMATED FROM AVAILABLE INFORMATION AND ARE TO BE CONFIRMED ON SITE PRIOR TO DETAILED DESIGN.

DESIGN ASSUMPTIONS

FROM 3RS REPORT - HYDRODYNAMIC ASSESSMENT
MAX HYDRO SIDE FORCE ~30kN (~3tons)
MAX AERO SIDEFORCE ~37kN (~3.7tons)

MAX 6 HOURS OF EBB TIDE CONDITIONS (2 TIDES A DAY x 3 HOUR PERIODS BETWEEN MID EBB AND LOW WATER). ASSUME 25% RUNNING DURING THIS TIME. ASSUME 2 THRUSTERS USED IN NORMAL OPERATION, ASSUME AVERAGE OF 50% POWER

TOTAL BATTERY CAPACITY = ~350 kWh CAPACITY

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CLIENT

Isle of Wight Council

REV	DATE	DRN	CHK	APP	DESCRIPTION
P01	06.06.25	MHT	MHT	TKHB	ISSUED_FOR_INFORMATION

REVISION

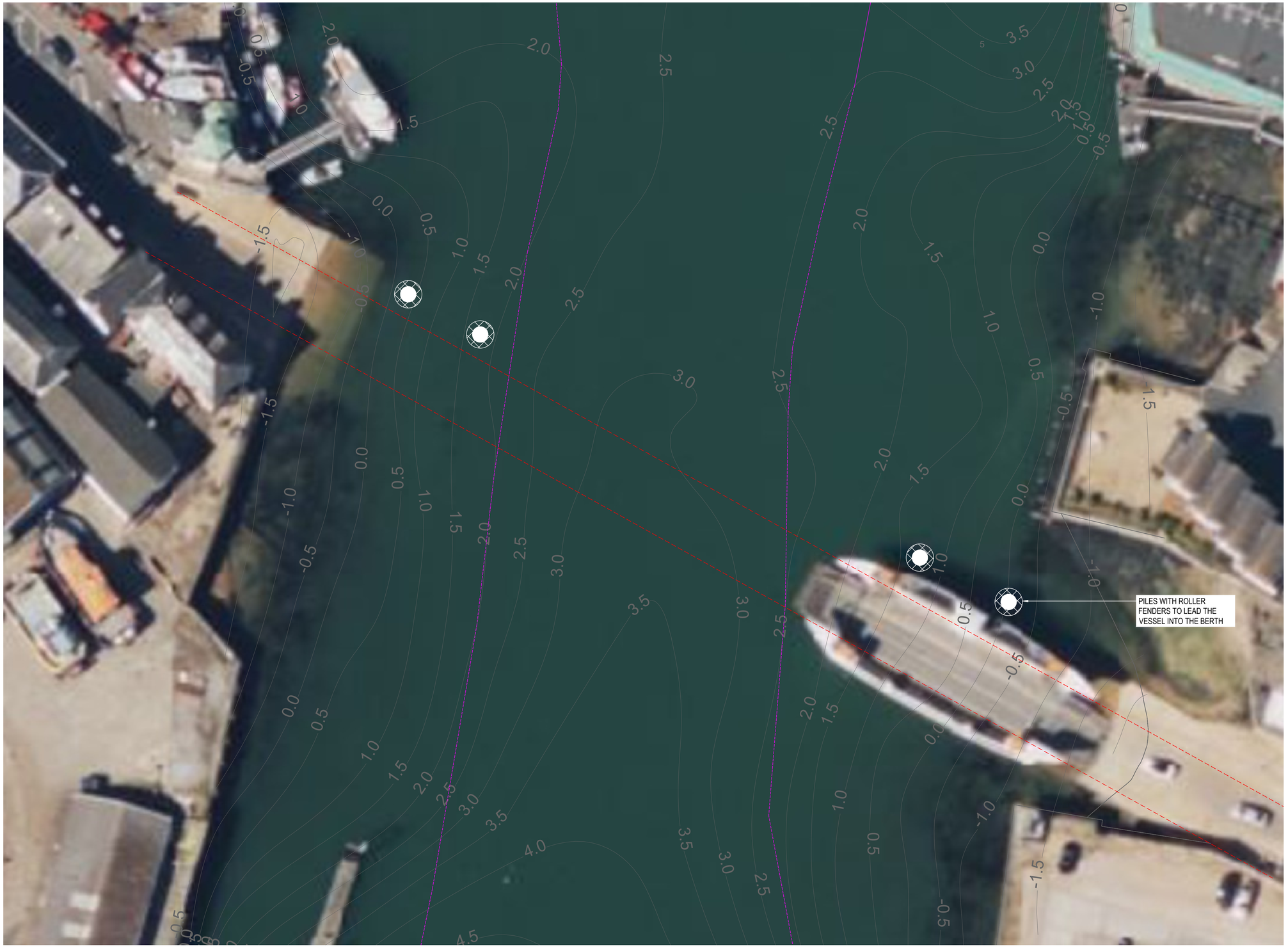
SYSTRA

BECKETT RANKINE
Maritime Consulting Engineers

TITLE

MEDINA_CROSSING
LONG-LIST_OPTIONS
OPTION_2
FLUSH_THRUSTERS

PROJECT DRAWING No.	SCALE	S. CODE	REV
2514-BRL-01-XX-SK-C-0001	AS_NOTED	S2	P01



GENERAL ARRANGEMENT
(SCALE 1:500)

NOTES :

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TIDE DATA

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LEGEND

- NAVIGATION CHANNEL
- CHAIN FERRY CHAINS
- 3.0 CONTOURS

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CLIENT

Isle of Wight Council

REV	DATE	DRN	CHK	APP	DESCRIPTION
P01	06.06.25	MHT	MHT	TKHB	ISSUED_FOR_INFORMATION

REVISION

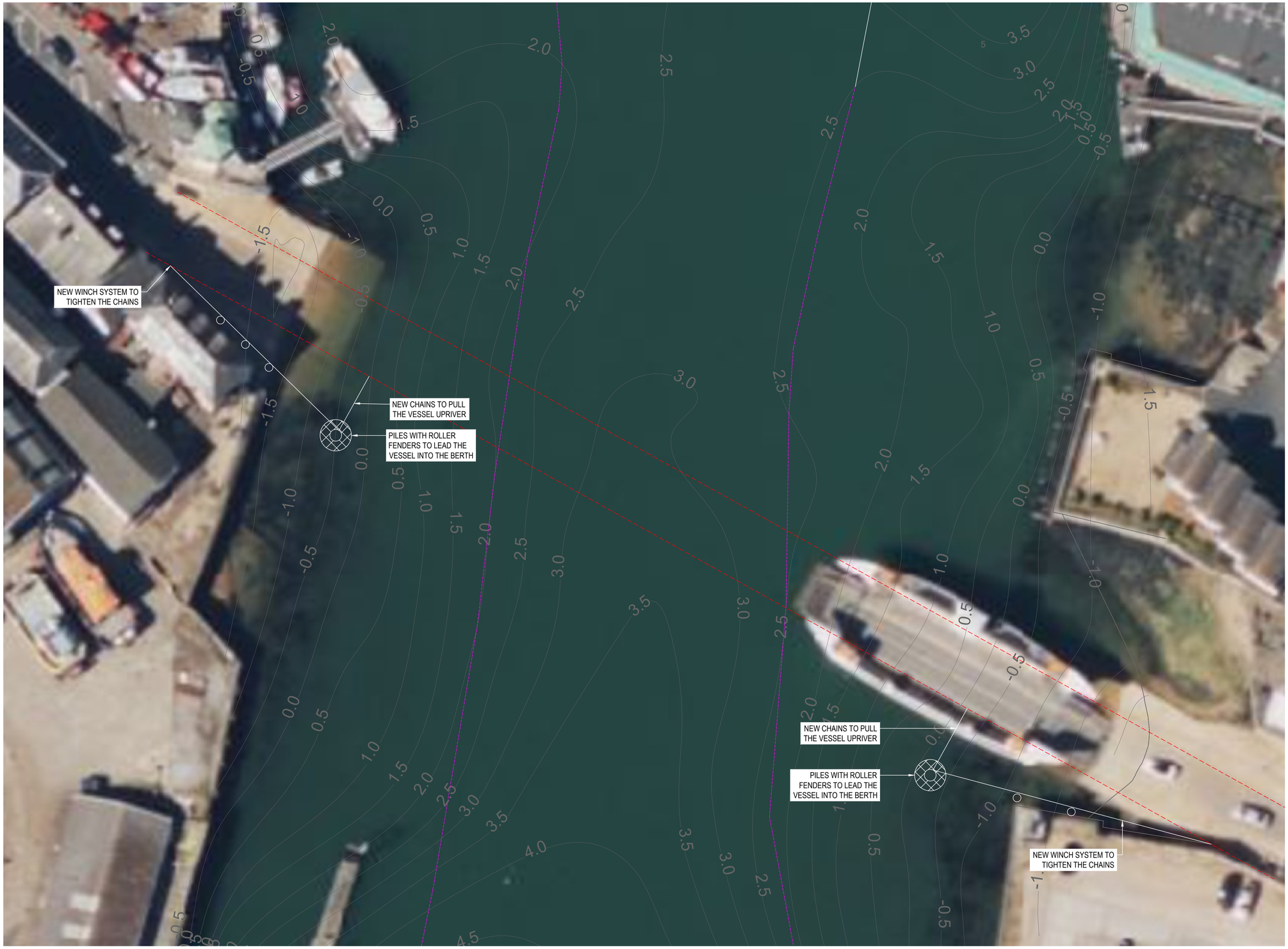
SYSTRA

BECKETT RANKINE
Maritime Consulting Engineers

TITLE

MEDINA_CROSSING
LONG-LIST_OPTIONS
OPTION_3B
LEAD-IN_PILES

PROJECT DRAWING No.	SCALE	S. CODE	REV
2514-BRL-01-XX-SK-C-0002	AS_NOTED	S2	P01



GENERAL ARRANGEMENT
(SCALE 1:500)

NOTES :

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2. ALL DIMENSIONS ARE IN METRES U.N.O.
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TIDE DATA

MHWS	+4.2mCD
MHWN	+3.5mCD
MLWN	+1.8mCD
MLWS	+0.8mCD

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LEGEND

- NAVIGATION CHANNEL
- CHAIN FERRY CHAINS
- 3.0 CONTOURS

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CLIENT

Isle of Wight Council

REV	DATE	DRN	CHK	APP	DESCRIPTION
P01	06.06.25	MHT	MHT	TKHB	ISSUED_FOR_INFORMATION

REVISION

SYSTRA

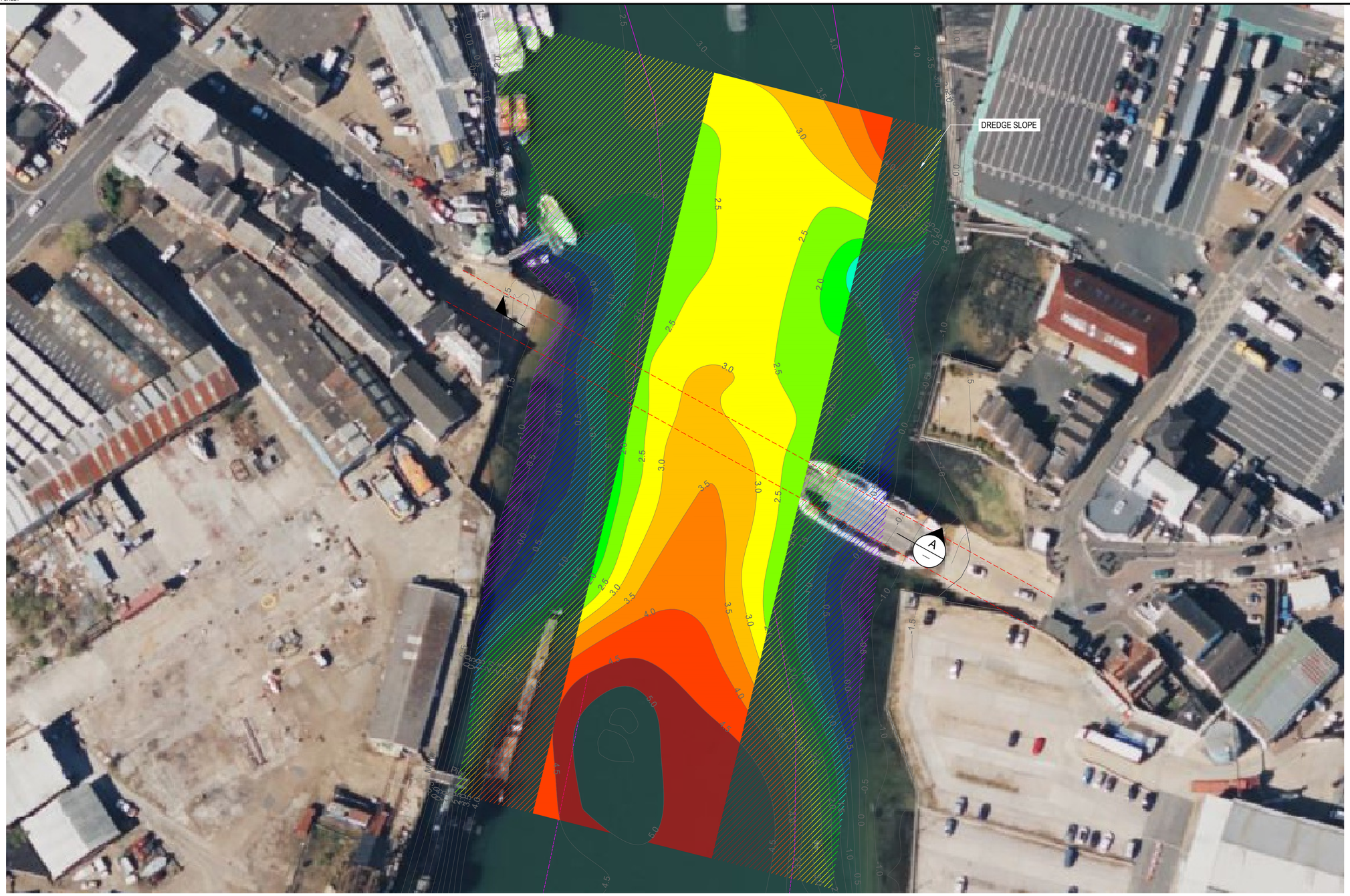
BECKETT RANKINE
Maritime Consulting Engineers

TITLE

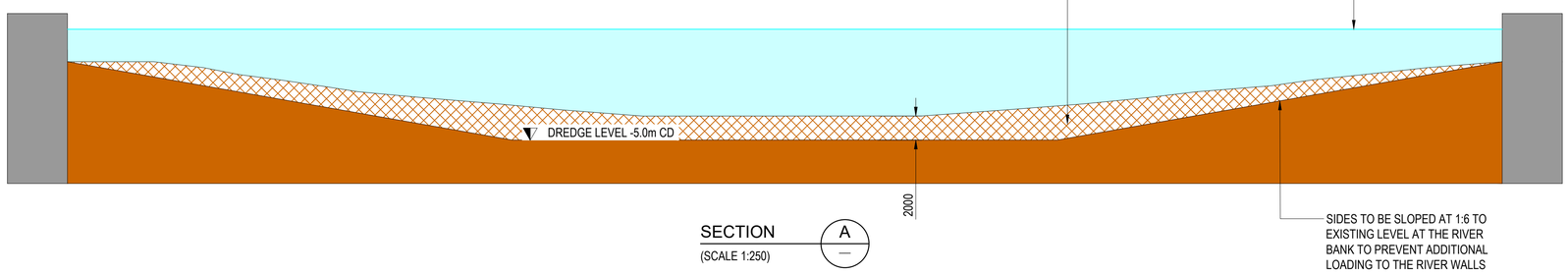
MEDINA_CROSSING
LONG-LIST_OPTIONS
OPTION_3B
ADDITIONAL_CHAINS

PROJECT DRAWING No.	SCALE	S. CODE	REV
2514-BRL-01-XX-SK-C-0003	AS_NOTED	S2	P01

ORIGINAL SIZE : A1 SHEET



GENERAL ARRANGEMENT
(SCALE 1:500)



SECTION A
(SCALE 1:250)

NOTES :

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TIDE DATA

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MHWN	+3.5mCD
MLWN	+1.8mCD
MLWS	+0.8mCD

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DREDGE DEPTH = -5.0m CD
DREDGE VOLUME ≈ 45,000m^3

LEGEND

- NAVIGATION CHANNEL
- CHAIN FERRY CHAINS
- 3.0 CONTOURS

BED LEVEL (mCD)

- -5.0
- -4.5
- -4.0
- -3.5
- -3.0
- -2.5
- -2.0
- -1.5
- -1.0
- -0.5
- 0.0
- 0.5

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REV	DATE	DRN	CHK	APP	DESCRIPTION
P01	06.06.25	MHT	MHT	TKHB	ISSUED_FOR_INFORMATION

REVISION

SYSTRA

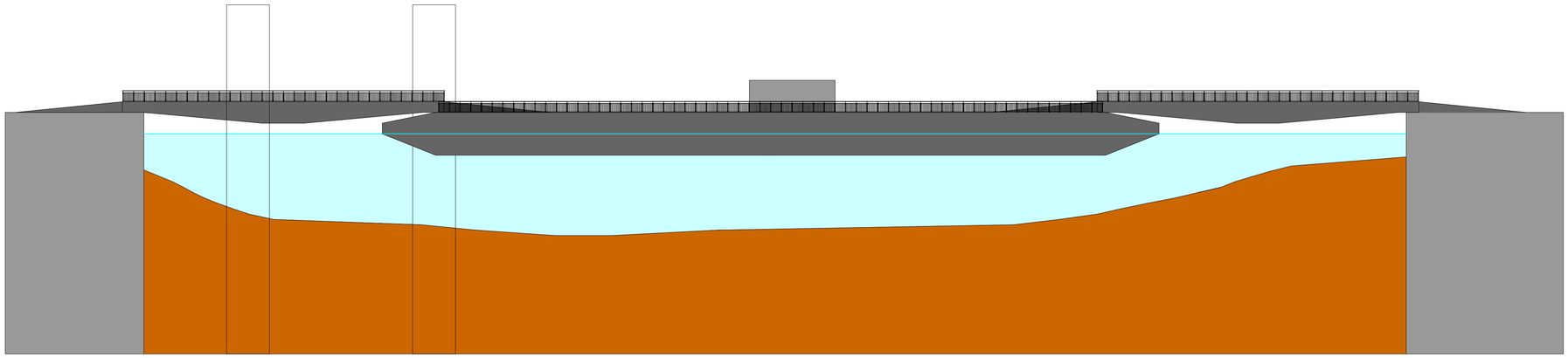
BECKETT RANKINE
Maritime Consulting Engineers

TITLE

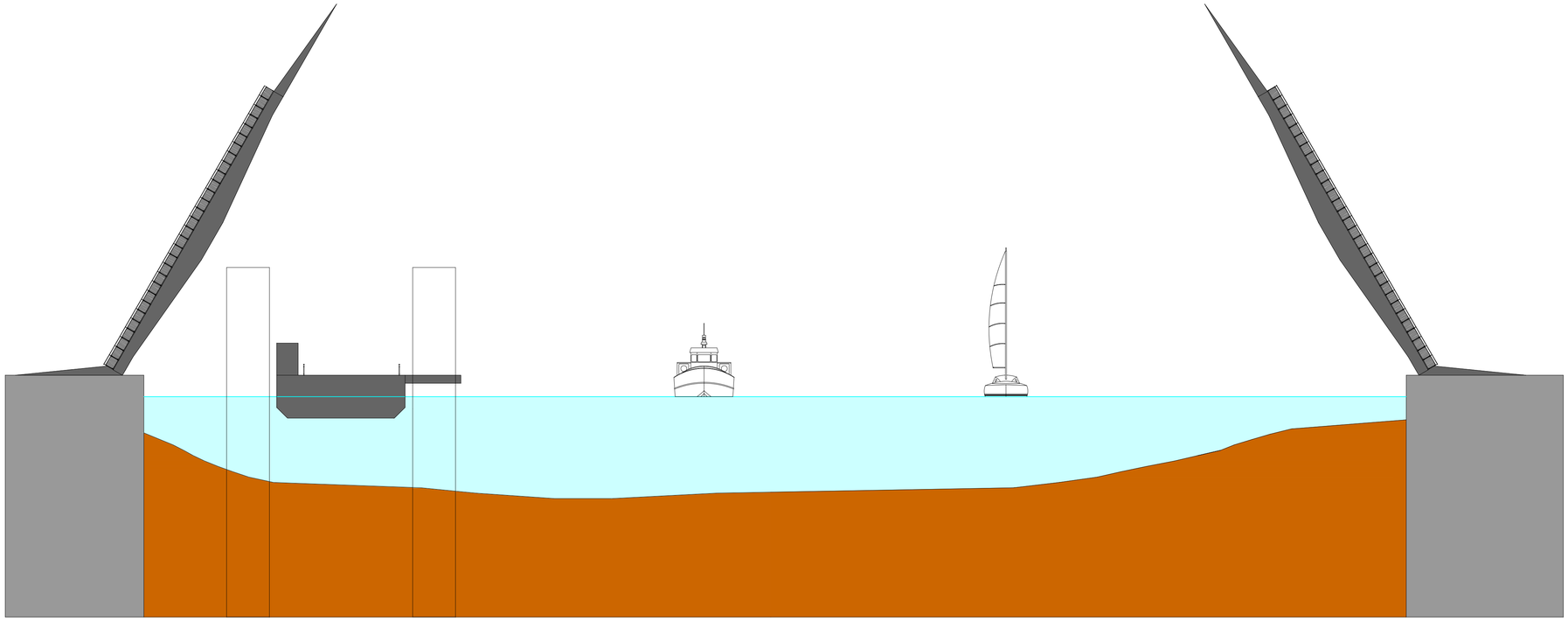
MEDINA_CROSSING LONG-LIST_OPTIONS OPTION_4A DREDGING

PROJECT DRAWING No.	SCALE	S. CODE	REV
2514-BRL-01-XX-SK-C-0003	AS_NOTED	S2	P01

C:\USERS\MARKTHOMAS\BECKETT RANKINE LIMITED\2514 - MEDINA CROSSING - SYSTRA - DOCUMENTS\01 - PHASE A\01 DRAWINGS\05 SK\2514-BRL-01-XX-SK-C-0004 04 DREDGING.DWG



FLOATING BRIDGE - CLOSED
(SCALE 1:250)



FLOATING BRIDGE - OPEN
(SCALE 1:250)

NOTES :

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TIDE DATA	
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MHWN	+3.5mCD
MLWN	+1.8mCD
MLWS	+0.8mCD

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REV	DATE	DRN	CHK	APP	DESCRIPTION
P01	06.06.25	MHT	MHT	TKHB	ISSUED_FOR_INFORMATION

REVISION

SYSTRA

BECKETT RANKINE
Maritime Consulting Engineers

TITLE

MEDINA_CROSSING
LONG-LIST_OPTIONS
OPTION_6C
SWINGING_FLOATING_BRIDGE_ELEVATION

PROJECT DRAWING No.	SCALE	S. CODE	REV
2514-BRL-01-XX-SK-C-0005	AS_NOTED	S2	P01

FLOATING BRIDGE

(SCALE 1:500)

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MLWS	+0.8mCD

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LEGEND

- NAVIGATION CHANNEL
- CHAIN FERRY CHAINS
- 3.0 CONTOURS

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REV	DATE	DRN	CHK	APP	DESCRIPTION
P01	16.16.25	MHT	MHT	TKHB	ISSUED_FOR_INFORMATION

REVISION

SYSTRA

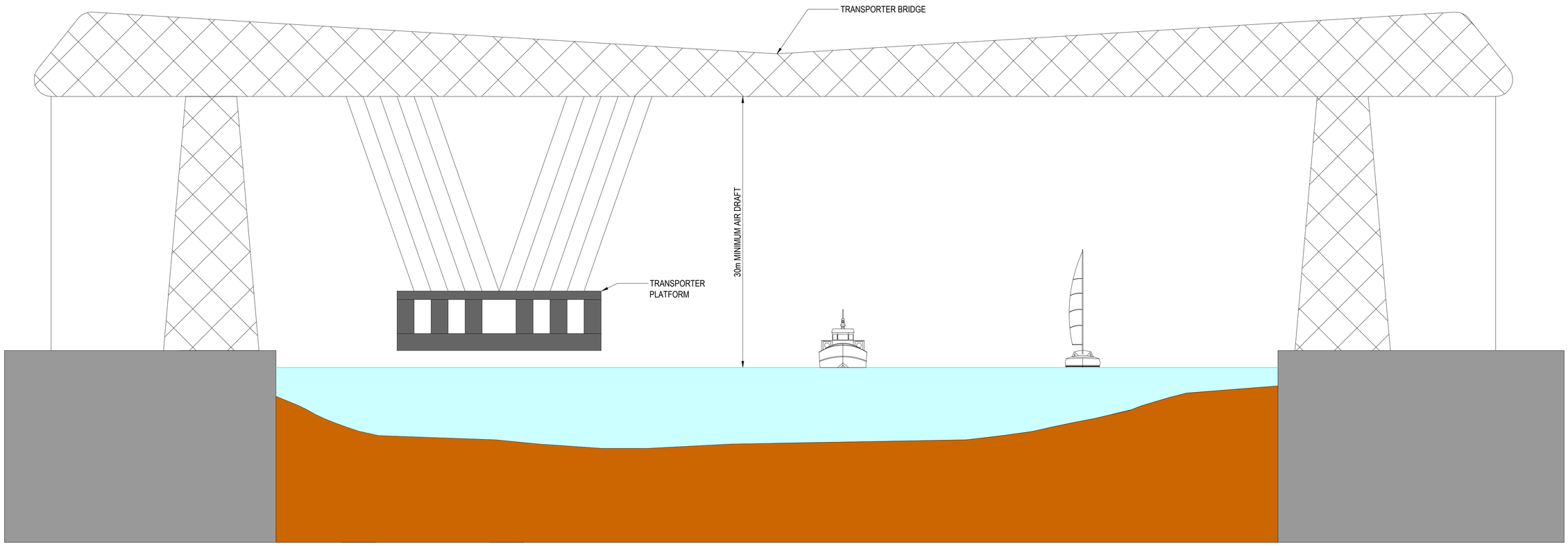
BECKETT RANKINE
Maritime Consulting Engineers

TITLE

MEDINA_CROSSING
LONG-LIST_OPTIONS
OPTION_6C
SWINGING_FLOATING_BRIDGE_PLAN

PROJECT DRAWING No.	SCALE	S. CODE	REV
2514-BRL-01-XX-SK-C-0006	AS_NOTED	S2	P01

ORIGINAL SIZE : A1 SHEET



TRANSPORTER BRIDGE
(SCALE 1:250)

NOTES :

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   TIDE DATA
   MHWS +4.2mCD
   MHWN +3.5mCD
   MLWN +1.8mCD
   MLWS +0.8mCD

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P01	16.16.25	MHT	MHT	TKHB	ISSUED_FOR_INFORMATION

REVISION

SYSTRA

BECKETT RANKINE
Maritime Consulting Engineers

TITLE

MEDINA_CROSSING
LONG-LIST_OPTIONS
OPTION_6D
TRANSPORTER_BRIDGE_PLAN

PROJECT DRAWING No.	SCALE	S. CODE	REV
2514-BRL-01-XX-SK-C-0007	AS_NOTED	S2	P01

TRANSPORTER BRIDGE
(SCALE 1:500)

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LEGEND

- NAVIGATION CHANNEL
- CHAIN FERRY CHAINS
- 3.0 CONTOURS

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REV	DATE	DRN	CHK	APP	DESCRIPTION
P01	06.06.25	MHT	MHT	TKHB	ISSUED_FOR_INFORMATION

REVISION

SYSTRA

BECKETT RANKINE
Maritime Consulting Engineers

TITLE

MEDINA_CROSSING
LONG-LIST_OPTIONS
OPTION_6D
TRANSPORTER_BRIDGE_PLAN

PROJECT DRAWING No.	SCALE	S. CODE	REV
2514-BRL-01-XX-SK-C-0008	AS_NOTED	S2	P01

APPENDIX B: EAST SUMMARY SHEETS

Option no. and name:	1: Replacement of FB6 with a new vessel (FB7)	
Description	The replacement vessel would have to be redesigned to address the current operational issues. This would include reducing the vessel's lateral drag profile and potentially adding additional bow thrusters. The harbour infrastructure would also need to be modified e.g. redesigned slipways.	
Strategic		
Scale of impact	4	Expected to largely alleviate existing problems through vessel redesign although may not fully resolve all issues associated with FB6.
Fit with wider transport objectives	4	Generally good fit with scheme objectives including maintaining connectivity and capacity for all modes.
Degree of concensus over outcomes	4	Broad agreement on outcomes.
Economic		
Connectivity	4	Journey time and cost likely to be same as existing floating bridge.
Reliability	3	Potential short-term risk of increase in incidents associated with new vessel.
Support local growth	4	Likely to enable local economic growth and support growth in housing and commerical development by maintaining connectivity and capacity for all modes.
Carbon emissions	3	Expected to be broadly neutral compared to FB6 but increased emissions associated with vessel construction.
Socio-distributional impacts	4	Likely to be no significant variation of impacts on different social groups and spatial areas compared to current floating bridge.
Local enviroment	4	Likely to have no significant adverse impacts on air quality, noise, landscape and natural environment compared to current floating bridge.
Wellbeing	4	Likely to have no significant adverse impacts on wellbeing compared to current floating bridge.
Expected VfM category	3	Likely Low value for money due to higher cost of vessel.
Managerial		
Implementation timetable	3	2-5 years
Public acceptability	4	Likely to be acceptable to public but possible concerns over higher costs and potential concern fares will increase to pay.
Practicial feasibility	5	Proven to be effective (assuming design addresses current issues); minimal disruption
Quality of supporting documents	4	Good level of supporting evidence based on examples of other chain ferries implemented elsewhere (including FB5).
Key risks and uncertainties		A new floating bridge will not necessarily solve the issues that have been well documented with commissioning FB6.
Legal and planning issues	4	Already precedent for replacing floating bridge. Allowance made for marine licence being required for minor modifications to existing supporting infrastructure
Financial		
Affordability	3	
Capital cost (£m)	£5-10m	
Revenue cost (£m)	4	
Cost profile		
Overall cost risk	3	Medium cost risk
Commercial		
Flexibility of option	3	Medium
Where is the funding coming from?		IoW Council or potential to access grant funding (if available) or public sector financing through the Public Works Loan Board.
Any income generated (£m)	Y	£500k to £1m
Total	**74**	

Option no. and name:	2: Adding flush thrusters to FB6	
Description	Adding flush thruster would remove the requirement for the push boat assistance during high tide. There are various types on the market which could provide fixed or variable directional thrust (see Figure 1). This would potentially change the classification of the crossing.	
Strategic		
Scale of impact	4	Expected to largely alleviate existing problems associated with FB6 although spatial arrangement and power requirements will need careful assesement to ensure sufficient thrust can be provided.
Fit with wider transport objectives	4	Generally good fit with scheme objectives including maintaining connectivity and capacity for all modes.
Degree of concensus over outcomes	3	Broad agreement on outcomes but further analysis on effectiveness of solution necessary.
Economic		
Connectivity	4	Journey time and cost likely to be same as existing floating bridge.
Reliability	4	Likely to be minimal impact on current levels of operational performance or variability in journey times.
Support local growth	4	Likely to enable local economic growth and support growth in housing and commerical development by maintaining connectivity and capacity for all modes.
Carbon emissions	4	Expected to be broadly neutral compared to FB6.
Socio-distributional impacts	4	Likely to be no significant variation of impacts on different social groups and spatial areas compared to current floating bridge.
Local enviroment	4	Likely to have no significant adverse impacts on air quality, noise, landscape and natural environment compared to current floating bridge.
Wellbeing	4	Likely to have no significant adverse impacts on wellbeing compared to current floating bridge.
Expected VfM category	5	Likely High value for money due to lower cost of option which would also lower the operational costs due to no requirement for push boat.
Managerial		
Implementation timetable	4	1-2 years
Public acceptability	3	May face some public opposition over concerns solution will not be sufficiently effective.
Practicial feasibility	5	High confidence of effectiveness; minimal disruption
Quality of supporting documents	3	Reasonable level of supporting evidence based on expert analysis but further analysis and testing required.
Key risks and uncertainties		The spatial arrangement and power requirements will need careful assesement to ensure sufficient thrust can be provided.
Legal and planning issues	5	Floating bridge is already in situ and no planning permission or marine licence required to install thrusters.
Financial		
Affordability	4	
Capital cost (£m)	£1-5m	
Revenue cost (£m)	4	
Cost profile		
Overall cost risk	4	Low cost risk
Commercial		
Flexibility of option	4	High
Where is the funding coming from?		IoW Council or potential to access grant funding (if available) or public sector financing through the Public Works Loan Board.
Any income generated (£m)	Y	£500k to £1m
Total	**80**	

Option no. and name:	3a: Adding additional control chains	
Description	Additional chains could be added to pull the vessel upriver at lower tidal states. These could be added on both the east and west sides. If possible, a winch could be added to assist with pulling the chains upriver. There is more space for a winch on the East Cowes side.	
Strategic		
Scale of impact	2	Likely modest overall impact addressing problems associated with FB6 but unlikely to fully solve the issue without also implementing a different option.
Fit with wider transport objectives	4	Generally good fit with scheme objectives including maintaining connectivity and capacity for all modes.
Degree of concensus over outcomes	3	Broad agreement on outcomes but further analysis on effectiveness of solution necessary.
Economic		
Connectivity	4	Journey time and cost likely to be same as existing floating bridge.
Reliability	4	Likely to be minimal impact on current levels of operational performance or variability in journey times.
Support local growth	4	Likely to enable local economic growth and support growth in housing and commerical development by maintaining connectivity and capacity for all modes.
Carbon emissions	4	Expected to be broadly neutral compared to FB6.
Socio-distributional impacts	4	Likely to be no significant variation of impacts on different social groups and spatial areas compared to current floating bridge.
Local enviroment	4	Likely to have no significant adverse impacts on air quality, noise, landscape and natural environment compared to current floating bridge.
Wellbeing	4	Likely to have no significant adverse impacts on wellbeing compared to current floating bridge.
Expected VfM category	4	Likely Medium value for money due to lower cost of option but may still incur cost of push boat.
Managerial		
Implementation timetable	5	< 1 year
Public acceptability	3	May face some public opposition over concerns solution will not be sufficiently effective.
Practicial feasibility	2	May be insufficient alone to fully resolve issues
Quality of supporting documents	3	Reasonable level of supporting evidence based on expert analysis but further analysis and testing required.
Key risks and uncertainties		Additional control chains can assist with reducing the chain deflection downriver. However, it is unlikely to fully solve the issue without also implementing a different option.
Legal and planning issues	3	Marine licence required. Currently unclear whether extra control chains would resolve the issue of mid stream chain height. If not, then there are likely to be objections to the application.
Financial		
Affordability	5	
Capital cost (£m)	< £1m	
Revenue cost (£m)	3	
Cost profile		
Overall cost risk	4	Low cost risk
Commercial		
Flexibility of option	4	High
Where is the funding coming from?		IoW Council or potential to access grant funding (if available) or public sector financing through the Public Works Loan Board.
Any income generated (£m)	Y	£500k to £1m
Total	**73**	

Option name/no.	3b: Installation of lead-in piles or dolphins	
Description	Lead-in piles or dolphins could be installed on the downriver side to help guide the vessel into the slipway. These would guide the ferry and provide lateral support. The piles would need to be placed at various water depths to account for the variation in tidal height. It would also be necessary to ensure the piles do not impact the navigational channel. As a result, the piles or dolphins would be more effective at high water.	
Strategic		
Scale of impact	2	Likely modest overall impact addressing problems associated with FB6 but unlikely to fully solve the issue without also implementing a different option.
Fit with wider transport objectives	4	Generally good fit with scheme objectives including maintaining connectivity and capacity for all modes.
Degree of concensus over outcomes	3	Broad agreement on outcomes but further analysis on effectiveness of solution necessary.
Economic		
Connectivity	4	Journey time and cost likely to be same as existing floating bridge.
Reliability	4	Likely to be minimal impact on current levels of operational performance or variability in journey times.
Support local growth	4	Likely to enable local economic growth and support growth in housing and commerical development by maintaining connectivity and capacity for all modes.
Carbon emissions	4	Expected to be broadly neutral compared to FB6.
Socio-distributional impacts	4	Likely to be no significant variation of impacts on different social groups and spatial areas compared to current floating bridge.
Local enviroment	4	Likely to have no significant adverse impacts on air quality, noise, landscape and natural environment compared to current floating bridge.
Wellbeing	4	Likely to have no significant adverse impacts on wellbeing compared to current floating bridge.
Expected VfM category	4	Likely Medium value for money due to lower cost of option but may still incur cost of push boat.
Managerial		
Implementation timetable	4	1-2 years
Public acceptability	3	May face some public opposition over concerns solution will not be sufficiently effective.
Practicial feasibility	2	May be insufficient alone to fully resolve issues
Quality of supporting documents	3	Reasonable level of supporting evidence based on expert analysis but further analysis and testing required.
Key risks and uncertainties		Adding lead-in piles can help guide the vessel into place. However, the vessel deflection is unlikely to be solved fully without implementing a different option.
Legal and planning issues	2	Marine licence required. Currently unclear whether the lead-in piles / dolphins would need to be situated in the proximity of the navigation channel. If so, then there are likely to be objections to the application and this would also raise safety concerns.
Financial		
Affordability	4	
Capital cost (£m)	£1-5m	
Revenue cost (£m)	3	
Cost profile		
Overall cost risk	4	Low cost risk
Commercial		
Flexibility of option	4	High
Where is the funding coming from?		IoW Council or potential to access grant funding (if available) or public sector financing through the Public Works Loan Board.
Any income generated (£m)	Y	£500k to £1m
Total	**70**	

Option name/no.	4: Tidal flow reduction	
Description	Dredging the river around the chain ferry could reduce the river's tidal flow rate. The ferry currently crosses a narrow and shallow part of the river. By increasing the water depth, the river's volume in the ferry's area could be increased, reducing the flow velocity.	
Strategic		
Scale of impact	2	Likely modest overall impact addressing problems associated with FB6 but unlikely to fully solve the issue without also implementing a different option.
Fit with wider transport objectives	4	Generally good fit with scheme objectives including maintaining connectivity and capacity for all modes.
Degree of concensus over outcomes	3	Broad agreement on outcomes but further analysis on effectiveness of solution necessary.
Economic		
Connectivity	4	Journey time and cost likely to be same as existing floating bridge.
Reliability	4	Likely to be minimal impact on current levels of operational performance or variability in journey times.
Support local growth	4	Likely to enable local economic growth and support growth in housing and commerical development by maintaining connectivity and capacity for all modes.
Carbon emissions	4	Expected to be broadly neutral compared to FB6.
Socio-distributional impacts	4	Likely to be no significant variation of impacts on different social groups and spatial areas compared to current floating bridge.
Local enviroment	4	Likely to have no significant adverse impacts on air quality, noise, landscape and natural environment compared to current floating bridge.
Wellbeing	4	Likely to have no significant adverse impacts on wellbeing compared to current floating bridge.
Expected VfM category	4	Likely Medium value for money due to lower cost of option but may still incur cost of push boat.
Managerial		
Implementation timetable	4	1-2 years
Public acceptability	3	May face some public opposition over concerns solution will not be sufficiently effective.
Practicial feasibility	2	May be insufficient alone to address issues. The river bed is understood to be hard material, which could make dredging more difficult.
Quality of supporting documents	3	Reasonable level of supporting evidence based on expert analysis but further analysis and testing required.
Key risks and uncertainties		Dredging the river will reduce the tidal flow. However, CFD modelling will be required to determine the effectiveness.
Legal and planning issues	3	Marine licence would be required for a capital dredge project (circa 45,000 m3) in vicinity of current floating bridge. Assuming there is no contaminated sediment, and the modelling shows the planned dredge would be effective / not have unintended effects then licence likely to be granted. If not score would decrease.
Financial		
Affordability	5	
Capital cost (£m)	<£1m	
Revenue cost (£m)	3	
Cost profile		
Overall cost risk	4	Low cost risk
Commercial		
Flexibility of option	4	High
Where is the funding coming from?		IoW Council or potential to access grant funding (if available) or public sector financing through the Public Works Loan Board.
Any income generated (£m)	Y	£500k to £1m
Total	**72**	

Option name/no.	5a: Replacement of FB6 with a non-guided vehicle ferry	
Description	A conventional non-guided vessel could be installed to replace the chain ferry.	
Strategic		
Scale of impact	4	Expected to largely alleviate existing problems although risk a non-guided vessel would have many of the issues of a chain ferry.
Fit with wider transport objectives	4	Generally good fit with scheme objectives including maintaining connectivity and capacity for all modes.
Degree of concensus over outcomes	4	Broad agreement on outcomes.
Economic		
Connectivity	4	Journey time and cost likely to be same as existing floating bridge.
Reliability	3	Potential short-term risk of increase in incidents associated with new vessel.
Support local growth	4	Likely to enable local economic growth and support growth in housing and commerical development by maintaining connectivity and capacity for all modes.
Carbon emissions	3	Expected to be broadly neutral compared to FB6 but increased emissions associated with vessel construction.
Socio-distributional impacts	4	Likely to be no significant variation of impacts on different social groups and spatial areas compared to current floating bridge.
Local enviroment	4	Likely to have no significant adverse impacts on air quality, noise, landscape and natural environment compared to current floating bridge.
Wellbeing	4	Likely to have no significant adverse impacts on wellbeing compared to current floating bridge.
Expected VfM category	3	Likely Low value for money due to higher cost of vessel.
Managerial		
Implementation timetable	2	5-10 years
Public acceptability	4	Likely to be acceptable to public but possible concerns over higher costs and potential concern fares will increase to pay.
Practicial feasibility	3	No guarantee unguided vessel would address chain ferry issues.
Quality of supporting documents	4	Good level of supporting evidence based on examples of similar vessels implemented elsewhere.
Key risks and uncertainties		A non-guided vessel will have many of the issues of a new chain ferry.
Legal and planning issues	4	Allowance made for marine licence being required for minor modifications to existing supporting infrastructure. Score would decrease if navigational risk associated with alterations / more substantial works required. Planning permission may then also be required.
Financial		
Affordability	2	
Capital cost (£m)	£10-20m	
Revenue cost (£m)	4	
Cost profile		
Overall cost risk	3	Medium cost risk
Commercial		
Flexibility of option	3	Medium
Where is the funding coming from?		IoW Council or potential to access grant funding (if available) or public sector financing through the Public Works Loan Board.
Any income generated (£m)	Y	£500k to £1m
Total	**70**	

Option name/no.	5b: Replacement of FB6 with a pedestrian and cycle only ferry (no vehicle provision)	
Description	Provision of a pedestrian and cycle-only ferry similar to the current launch service in operation whilst the floating bridge is not running e.g. during refit. May require modifications to landing stages. There would therefore be no vehicular crossing provision over the River Medina in Cowes. This would likely change the classification of the crossing.	
Strategic		
Scale of impact	2	Expected to largely alleviate existing problems associated with FB6 but would create undesirable consequences through increase in congestion, car km and congestion.
Fit with wider transport objectives	2	Poor fit with scheme objectives – removing connectivity for vehicles would generate additional congestion, car km and carbon emissions.
Degree of concensus over outcomes	4	Broad agreement on outcomes.
Economic		
Connectivity	2	Journey time and cost likely to be same as existing floating bridge for pedestrians and cyclists but journey time would be significantly longer for vehicles (although no fare to pay).
Reliability	3	Potential short-term risk of increase in incidents associated with new vessel.
Support local growth	2	Likely to limit local economic growth and growth in housing and commerical development by removing vehicle provision.
Carbon emissions	1	Would generate significant additional carbon emissions through increase in car km.
Socio-distributional impacts	2	Would have a negative impact on car drivers and on the Newport community due to the increase in congestion.
Local enviroment	3	Likely to have adverse impact on local air quality due to increase in car km between Cowes, Newport and East Cowes.
Wellbeing	3	Likely to have adverse impact on ability of people to enjoy access to a range of goods, services etc by removing vehicle crossing between Cowes and East Cowes.
Expected VfM category	4	Likely Medium value for money due to lower cost of option but will create disbenefits (increased congestion and emissions).
Managerial		
Implementation timetable	3	2-5 years
Public acceptability	2	Likely to face public opposition due to withdrawal of ferry service for vehicles.
Practicial feasibility	3	Would create disruption through removal of vehicle provision
Quality of supporting documents	4	Good level of supporting evidence based on examples of similar vessels implemented elsewhere.
Key risks and uncertainties		There would be a significant economic and social impact of having no vehicle provision.
Legal and planning issues	3	Allowance made for marine licence being required for minor modifications to existing supporting infrastructure. Score would decrease if navigational risk associated with alterations / more substantial works required. Planning permission may then also be required. Further legal consideration of reasonableness etc. of ceasing vehicle crossing would be required. This score could decrease depending on outcome.
Financial		
Affordability	4	
Capital cost (£m)	£1-5m	
Revenue cost (£m)	4	
Cost profile		
Overall cost risk	3	Medium cost risk
Commercial		
Flexibility of option	3	Medium
Where is the funding coming from?		IoW Council or potential to access grant funding (if available) or public sector financing through the Public Works Loan Board.
Any income generated (£m)	Y	~ £250k
Total	**57**	

Option name/no.	6c: Swinging floating bridge	
Description	Pontoon bridge capable of turning 90 degrees to allow passage of river traffic.	
Strategic		
Scale of impact	4	Expected to largely alleviate existing problems but could be undesirable consequences e.g. additional local congestion.
Fit with wider transport objectives	3	Medium fit with scheme objectives. Location south of current floating bridge is likely to reduce connectivity between town centres and create additional local congestion. Tolls may be necessary to pay for construction which may be less affordable than existing fares.
Degree of concensus over outcomes	4	Broad agreement on outcomes.
Economic		
Connectivity	3	Journey time likely to be same as existing floating bridge but cost could be higher due to tolls to pay for construction.
Reliability	4	Potential short-term risk of increase in incidents associated with new infrastructure.
Support local growth	4	Likely to enable local economic growth and support growth in housing and commerical development by maintaining connectivity and capacity for all modes.
Carbon emissions	2	Likely to generate additional carbon emissions - likely less attractive to foot passengers which may encourage car trips.
Socio-distributional impacts	4	Likely to be no significant variation of impacts on different social groups and spatial areas compared to current floating bridge.
Local enviroment	2	Likely to have significant impact on local urban environment and landscape. Impacts of construction will also be felt by community over several years.
Wellbeing	3	Likely to have adverse impact on pedestrian movement, physical activity and accessibility between Cowes and East Cowes as bridge likely located to south of town centres and users would need to walk the entire route.
Expected VfM category	2	Likely poor value for money due to significant cost
Managerial		
Implementation timetable	1	10 + years
Public acceptability	2	Likely to face public opposition due to high cost, long construction period and withdrawal of ferry service.
Practicial feasibility	1	Would create significant disruption through land take
Quality of supporting documents	3	Reasonable level of supporting evidence based on examples of similar bridges implemented elsewhere but full modelling would be required to understand impacts.
Key risks and uncertainties		A modified road network would be required, potentially with land purchase.
Legal and planning issues	1	Statutory instrument would be required to authorise the interference with the public right of navigation. Consenting risk and timescales likely to be circa 3 years. Compulsory purchase may be required.
Financial		
Affordability	1	
Capital cost (£m)	<£20m	
Revenue cost (£m)	4	
Cost profile		
Overall cost risk	1	Very high cost risk
Commercial		
Flexibility of option	1	Very low
Where is the funding coming from?		IoW Council or potential to access grant funding (if available) or public sector financing through the Public Works Loan Board.
Any income generated (£m)	Y	£500k to £1m
Total	**50**	

Option name/no.	6d: Transporter bridge	
Description	Movable bridge that would carry a pedestrian/vehicle gondola suspended by cables from a trolley running across the top of the span on a track.	
Strategic		
Scale of impact	4	Expected to largely alleviate existing problems but could be undesirable consequences e.g. additional local congestion.
Fit with wider transport objectives	3	Medium fit with scheme objectives. Location south of current floating bridge is likely to reduce connectivity between town centres and create additional local congestion. Tolls may be necessary to pay for construction which may be less affordable than existing fares.
Degree of concensus over outcomes	4	Broad agreement on outcomes.
Economic		
Connectivity	3	Journey time likely to be same as existing floating bridge but cost could be higher due to tolls to pay for construction.
Reliability	4	Potential short-term risk of increase in incidents associated with new infrastructure.
Support local growth	4	Likely to enable local economic growth and support growth in housing and commerical development by maintaining connectivity and capacity for all modes.
Carbon Emissions	2	Likely to generate additional carbon emissions - likely less attractive to foot passengers which may encourage car trips.
Socio-distributional impacts	4	Likely to be no significant variation of impacts on different social groups and spatial areas compared to current floating bridge.
Local enviroment	2	Likely to have significant impact on local urban environment and landscape. Impacts of construction will also be felt by community over several years.
Wellbeing	3	Likely to have adverse impact on pedestrian movement, physical activity and accessibility between Cowes and East Cowes as bridge likely located to south of town centres.
Expected VfM Category	2	Likely poor value for money due to significant cost
Managerial		
Implementation timetable	1	10 + years
Public Acceptability	2	Likely to face public opposition due to high cost, long construction period and withdrawal of ferry service.
Practicial feasibility	1	Would create significant disruption through land take
Quality of supporting documents	3	Reasonable level of supporting evidence based on examples of similar bridges implemented elsewhere but full modelling would be required to understand impacts.
Key Risks and Uncertainties		A modified road network will be required, potentially with land purchase.
Legal and Planning issues	2	Statutory instrument may be required. Compulsory purchase may be required. Consenting risk and timescales likely to be circa 3 years. No interference with public right of navigation.
Financial		
Affordability	1	
Capital Cost (£m)	<£20m	
Revenue Cost (£m)	4	
Cost profile		
Overall Cost risk	1	Very high cost risk
Commercial		
Flexibility of option	1	Very low
Where is the funding coming from?		IoW Council or potential to access grant funding (if available) or public sector financing through the Public Works Loan Board.
Any income generated (£m)	Y	£500k to £1m
Total	**51**	

Option name/no.	7: No crossing provision	
Description	No crossing provision over the River Medina in Cowes.	
Strategic		
Scale of impact	1	Would have many undesierable consequences with respect to increase in congestion, car km and congestion.
Fit with wider transport objectives	1	Very poor fit across all objectives. Would remove connectivity between Cowes and East Cowes and significantly increase congestion, car km and emissions.
Degree of concensus over outcomes	4	Broad agreement on outcomes.
Economic		
Connectivity	1	Journey time significantly longer for all modes. Foot passengers may have to pay more due to more expensive bus fares.
Reliability	2	Increase in road congestion through Cowes and Newport likely to have significant impact on variability in journey times.
Support local growth	1	Removing connectivity likely to severely limit local economic growth and growth in housing and commerical development.
Carbon Emissions	1	Would generate significant additional carbon emissions through increase in car km.
Socio-distributional impacts	1	Would have a signifcant negative impact on all users, particularly those that may be unable to afford public transport fares for alternative routes over the river. Would create severance between Cowes and East Cowes.
Local enviroment	3	Likely to have adverse impact on local air quality due to increase in car km between Cowes, Newport and East Cowes.
Wellbeing	1	Likely to have signficant adverse impact on pedestrian movement, physical activity and accessibility between Cowes and East Cowes. Could increase sense of social exclusion for those without a car.
Expected VfM Category	1	Likely very poor value for money due to disbenefits (increased emissions and congestion) this would create, despite minmial cost.
Managerial		
Implementation timetable	5	< 1 year
Public Acceptability	1	Likely to face strong public opposition due to severance this would create between Cowes and East Cowes, impact on local economy and increase in congestion.
Practicial feasibility	1	Would create significant disruption through Cowes and Newport
Quality of supporting documents	2	Poor level of supporting evidence - full modelling would be required to understand traffic impacts of withdrawing crossing provision.
Key Risks and Uncertainties		Significant economic and social impact with removing exisiting connectivity.
Legal and Planning issues	4	Further legal consideration of reasonableness etc. would be required. This score could decrease depending on outcome.
Financial		
Affordability	5	
Capital Cost (£m)	< £1m	
Revenue Cost (£m)	5	
Cost profile		
Overall Cost risk	5	Very low cost risk
Commercial		
Flexibility of option	5	Very high
Where is the funding coming from?		IoW Council or potential to access grant funding (if available) or public sector financing through the Public Works Loan Board.
Any income generated (£m)	N	0
Total	**50**	

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