Stantec

FASTLINE FASLANE: DETAILED OPTIONS APPRAISAL

STAG Appraisal

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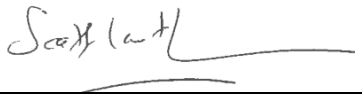
Reviewed by: 

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1 Introduction

This report comprises of a ***Detailed Options Appraisal,*** the final stage in the STAG[1] process, with the purpose of undertaking more detailed appraisal of potential transport interventions for improving connectivity to HMNB Clyde, more colloquially known as Faslane. In 2019 a ***Case for Change*** report was completed, setting out the need for a sustainable transport solution to improve connectivity to the Base with the aim of tackling the overwhelming car-Based mode share that the Base experiences.

Whilst normal practice in the STAG appraisal process is to proceed from *Case for Change* to the *Preliminary Options Appraisal stage*, with a limited number of viable options identified and funding for the study tied to the Local Rail Development Fund (LRDF)[2], it was determined to produce a single STAG options appraisal report.

This report revisits, reviews, and renews the identified problems and opportunities, Transport Planning Objectives (TPOs) and the identified transport options from the *Case for Change*. Upon conclusion of this exercise, the report then undertakes a proportionate detailed options appraisal, appraising each of the shortlisted options in greater detail against the STAG criteria, developing an understanding of the cost to government of any option(s) and highlighting any key risks or uncertainties which may impact the delivery of any option(s).

1.1 STAG Guidance Refresh

As noted above, the Case for Change was prepared in 2019, which at the time was undertaken in accordance with the STAG guidance as published in June 2008. In January 2022, Transport Scotland published a "STAG Managers' Guide", which refreshed the 2008 guidance to reflect the evolving policy environment, most notably the National Transport Strategy 2 (NTS2) and the provisions of the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019. Whilst the STAG philosophy and approach remained largely unchanged, there were several functional changes, including a redefinition of the appraisal criteria. It should though be noted that a corresponding update to the STAG Technical Database was not made at this stage.

At this time, Transport Scotland advised that any projects which commenced under the 'old STAG' should be completed using this version of the guidance. However, given the passage of time since the Case for Change was completed and bedding in of new policies and approaches, there is considerable merit in the Detailed Options Appraisal reflecting the updated guidance and this approach has, therefore, been adopted for this study.

1.2 Study Background and Context

HMNB Clyde is one of three operating Bases for the Royal Navy in the UK, alongside HMNB Davenport and HMNB Portsmouth. The Base is the Royal Navy's main presence (headquarters) in Scotland and is best known as the home for the UK's strategic nuclear deterrent, in the form of Vanguard nuclear submarines armed with Trident missiles.

The Base is one of the largest in western Europe, encompassing two square miles, employing over 7,000 staff[3], and providing on-site accommodation for over 3,500 MoD military personnel. In addition to the main Base at Faslane, the Royal Navy Armaments Depot (RNAD) at Coulport, eight miles to

[1] https://www.transport.gov.scot/publication/scottish-transport-appraisal-guidance-managers-guide/
[2] https://www.transport.gov.scot/public-transport/rail/rail-policy-and-strategy/local-rail-development-fund/
[3] Consisting of MoD personnel, civilians and contractors

the west of Faslane, is responsible for the storage, processing, maintenance, and issue of key elements of the UK's Trident Deterrent Missile System and the ammunitioning of all submarine embarked weapons. A considerable number of personnel are also stationed at RNAD Coulport[4].

In 2016 it was announced that HMNB Clyde was to become the Royal Navy's Submarine Centre of Specialisation, which will lead to all UK submarine activity being Based out of Faslane. This operational change has placed conservative estimates of around a 20% increase in staff allocated to Faslane, with personnel reassigned from HMNB Davenport and HMNB Portsmouth. This will also likely trigger a complementary growth in the number of contractors either on site, or in proximity to the Base to provide maintenance, parts, and other specialised services.

To support this transition and accommodate the growth in personnel and contractors on-site, the Ministry of Defence indicated that it was to invest heavily in the infrastructure of the Base over the next two decades to the tune of £1.3 billion. This is expected to be spent on constructing new, and maintaining existing, facilities on the Base to support the Dreadnought class submarines that will replace the current Vanguard class boats. However, whilst this growth brings much opportunity to the area, it could further exacerbate current challenges.

- **Land shortage** – despite the size of HMNB Clyde, land behind the wire is at a premium. Surrounded on three sides by high security fencing and water on the remaining side, there is a lack of opportunity to expand the footprint of the Base further than is already planned[5].
- **Accommodation** - 1,025 additional cabins are due to be constructed on site to increase accommodation to 4,525 beds, however, this still falls short of what is required. Both civilians and contractors are not permitted to stay on Base.
- **Long-term placements** – with all submarine activity now homed at HMNB Clyde, military personnel will now be Based at Faslane for a significant period of their career. As such, these personnel are likely to relocate permanently to the area, and where appropriate bring their families with them. Likewise, contractors are likely to be stationed permanently in the area to be employed at the Base.
- **Low housing stock** – whilst the number of staff stationed at Faslane will increase, there is no complementary increase in housing stock in the local area. Argyll and Bute have indicated that they are experiencing a housing shortage and have limited suitable land options in the vicinity of the Base to provide new housing. With military personnel mainly constrained to living within 50 miles or 90 minutes travel time of the Base, this puts pressure on being able to find suitable accommodation, especially those with families, as they will need to consider wider links to opportunities for family members (health, education, employment, social opportunities).
- **Shift Start Times** – the 0800 shift start time does not provide enough opportunity to travel to the Base by public transport, with the local bus network from Helensburgh departing hourly at 0700 and 0800. This results in staff either being 45 minutes too early for their shift or 16 minutes too late.
- **Difficulty filling Posts** – A number of contractors on Base have indicated challenges in filling posts due to a lack of transport options available to potential staff members beyond the running of a private car. The current network restricts access to the wider labour market.
- **Car Mode Share** – Based on the lack of suitable alternative travel options, the Base currently experiences an 83% car mode share.
- **Parking** – with a limited number of spaces provided on-site, there is evidence of illegal parking on Base, which is punishable with a ban, however, this then leads to similar behaviours in and around the surrounding areas.
- **ATS Service** - the MoD have entered into a contract with one of the contractors on site to provide a Base bespoke bus service (Assisted Travel Scheme [ATS]), which charges a flat monthly fee

[4] Exact numbers cannot be divulged for security reasons but are in the hundreds.
[5] Work is currently ongoing to produce a Horizon Plan to 2070

(£85). However, the cost and frequency of these services, in addition to the geographic scope limits the ability of the ATS to challenge the car driving behaviours witnessed.

With the planned construction works over the next couple of decades, combined with a wider increase in staff at HMNB Clyde, it is entirely likely that these problems will continue to persist or exacerbated unless a suitable intervention is identified. Overall, while the anticipated growth and subsequent opportunities demonstrate a positive outcome for the Base, the local area and economy, the most challenging aspect facing this growth is sustainable transport connectivity to the Base for all staff.

As such, this detailed options appraisal will look to assess a range of possible options to provide decision-makers with the information required to make an informed decision in how best to address the transport related issues that the Base faces. Whilst this document may assist decision-makers in identifying a preferred option, it does not guarantee its eventual delivery, but does proffer a commitment to explore this option further as part of an Outline Business Case (OBC).

1.3 Report Structure

The remainder of this report will be structured as follows:

- **Chapter 2** – provides the context of HMNB Clyde, summarising the day-to-day behaviours of the Base and its unique characteristics.
- **Chapter 3** – revisits the Case for Change, set out any changes experienced since the Case for Change was completed, and review the problems, TPOs and options identified at that time to determine their continued validity.
- **Chapter 4** – options will be further developed in this chapter to a level in which they can be appropriately appraised.
- **Chapter 5** –appraises each of the options against the TPOs and STAG criteria.
- **Chapter 6** – the cost to government of each of the options is discussed.
- **Chapter 7** – the risk and uncertainty of any option will be assessed including identifying appropriate mitigation measures.
- **Chapter 8** – sets out the monitoring and evaluation plan and benefits blueprint.
- **Chapter 9** – summarises the outcomes of the study and details the next steps.

1.4 Study Sensitivities

At the outset of this document, it is important to note the sensitive nature of the role, purpose, and operation of HMNB Clyde. Due to its nationally significant importance and to protect the integrity of the Base and its staff, it is important to bring to recognise that certain elements of information, data and disclosure of practices cannot be shared, and thus cannot be included within this document.

To that end, while not available at this stage, with appropriate security clearance and agreement with the MoD, certain data may be made available to assist any eventual step towards the development of an Outline Business Case in support of delivering a preferred option.

2 HMNB Clyde

2.1 Background

HMNB Clyde was originally constructed during World War II as part of the British war effort to build naval Bases in more secure areas to protect against air raids. The site was selected due to its unique geographic and topographical characteristics. Surrounding hills afforded a level of protection against planes overhead, whilst the deep-sea loch facilitated the deployment of vessels and submarines. Due to its strategic location, it provided a critical Base for the Royal Navy operations in the North Atlantic throughout WWII.

At the end of WWII Faslane remained an important Naval Base, with its importance growing significantly during the Cold War years, with its strategic location proving advantageous for both docking and deploying the UKs submarine fleet into the North Atlantic and North Sea. By the 1960s, Faslane had expanded in both footprint and significance to become the main Base in the UK for homing the nuclear-powered submarine fleet as part of the Polaris program. Further growth was experienced throughout the 1980s and 1990s as the Base organically expanded to accommodate the new Vanguard-class submarines, which carry the Trident nuclear missiles and replaced the now ageing Polaris-class submarines.

Today, HMNB Clyde is not only the largest military establishment in Scotland, but also the largest single-site employer. In addition to being the home of the Vanguard-class submarines, it is also the operating Base for the hunter-killer Astute-class attack submarines, specialist submarine training centre, naval schools, and a Submarine Escape and Rescue facility. Further construction work is either currently underway or planned to accommodate, maintain, and deploy the new generation of nuclear submarines, the Dreadnought-class, which will replace the Vanguard-class in the early 2030s.

2.2 Present Day Operation

The Base remains a bustling hub of activity, where day-to-day operations demand a substantial workforce. Currently, more than 7,000 employees contribute to the Base's operations, and projections suggest that by 2032, approximately 8,500 staff will be employed there. This thriving community has even drawn comparisons to a 'town' status, making it the third largest in Argyll and Bute, behind Helensburgh and Oban.

2.2.1 STAFF

The Base provides employment opportunities for military personnel, civilians, and contractors, each performing various tasks and functions.

2.2.1.1 Military Personnel

Military personnel account for the largest proportion of staff employed by the Base on paper, however, on any given day, this may swing in favour of civilians and contractors Based on military exercises or deployments. Since the COVID19 pandemic, the requirement for staff to be on Base on a daily basis has been relaxed, with those who can, able to adopt a hybrid working pattern. Additionally, as military personnel, there is no requirement to clock-in/out at specific times on-Base, therefore, there is an element of flexibility in terms of arriving and departing the Base.

2.2.1.2 Civilians

A significant number of civilians are also employed by the Base undertaking auxiliary and administrative roles to support the operation and functioning of the Base. This can include office-

Based work, cleaners, cooks, and maintenance staff. There are also several office-Based jobs located off-Base in the surrounding area, mainly Helensburgh, which on occasion can require travel back and forth between these offices and the Base. Most civilian staff start work at 9am.

2.2.1.3 Contractors

Numerous organisations are employed by the MoD to provide engineering, maintenance, weapons, and operational support at both HMNB Clyde and RNAD Coulport. These contractors are required onsite daily, with less opportunities to work remotely due to the nature of their duties. Unlike MoD staff, contractors have set shift times with the main day shift starting at 8am and finishing between 4-4.30pm. There is also an evening / night shift, however, staff levels are significantly lower than those on Base during the day.

2.2.2 ACCOMMODATION

Currently there is provision for 3,500 beds on the Base, with plans to increase this number by a further 1,025. These cabins are strictly for military personnel only, with no civilian or contractor staff permitted to stay on Base. Whilst no rules exist to assign these cabins to personnel, it is generally accepted that these cabins are mainly used by those who retain a home residence elsewhere in the UK, with those who live within 50 miles or 90 minutes travel time choosing to live at home. On this basis, a significant number of personnel live within a certain catchment area of the Base, referred to as the upper Clyde triangle. This covers the Rosneath peninsula, north-side of the Clyde from Helensburgh to Glasgow, including Balloch and Alexandria, and south-side of the Clyde from Gourock to Renfrew. This level of 'resident' population means the Base has a population equivalent to modest sized town. Those Based at Faslane are free to travel out with the Base, so the Base does generate outbound as well as inbound travel.

2.2.3 TRAVEL BEHAVIOURS

Whilst the location of HMNB Clyde provides many advantages for the deployment of submarines, it does pose several challenges for staff. The expected increase in personnel travelling to/from HMNB Clyde has the potential to impact on the existing road network significantly without any action to encourage a modal shift.

2.2.3.1 Mode Share

A 2018 gate survey indicated that the Base experiences a car-based mode share of 83%. Analysis of more recent 2023 BT Mobile phone data, has this number closer to 90%.

2.2.3.2 Arrival / Departure times

According to information provided by the Base, during the morning peak hours, staff arrivals typically occur between 0615 and 0745, with a peak between 0715 and 0745. In the afternoon, peak departures usually fall between 1600 and 1700. Due to a high proportion of staff commuting by car and the tight arrival schedules, queues can form on the local road network outside both the north and south gates. These queues can be significantly exacerbated during heightened security periods.

To alleviate the issue of queues, both the north and south gates now operate as entry-only points between 0700 and 0800, while a third gate is designated for exits. Although this measure has partially mitigated the impact of queuing, the problem persists, and queues remain evident.

2.2.3.3 Parking

Parking constraints at the Base have become a pressing issue. Although staff receive parking passes, these merely grant permission for their vehicles to be on Base; they do not guarantee an actual parking spot. Consequently, nuisance parking has become a common occurrence across the Base. Violators receive warnings, and a three-strike system is in place. Repeat offenders face temporary car bans from the Base.

Efforts have been made to alleviate the situation by eliminating specific allocated parking areas. However, the shortage of spaces persists, with parking beat surveys revealing full capacity before 1000.

2.2.3.4 Local Public Transport Network

The 316 bus service is the only local bus service that operates between Helensburgh, HMNB Clyde, Garelochhead and the Rosneath Peninsula / Coulport. Two different operators provide a 316 service, covering the same route but operating alternative timetables, departing Helensburgh Railway Station on the hour. Neither operator accepts the other's tickets, therefore, if a passenger was to purchase a return ticket in the morning, they will need to wait on that operator's 316 service in the evening to complete the return leg. As the network currently operates, only one 316 service provides a viable connection for those traveling by rail in the AM peak. Those arriving at 0644 can use the 0700 316 bus to arrive at Faslane for 0716.

2.2.3.5 Bespoke Buses

The MoD has a contract in place with Mitie to provide bespoke coach services between the Base and areas of high concentrations of staff. This is called the Assisted Travel Scheme (ATS) and was originally designed to provide connections between the Base and the specialised skills of those traditionally working in the shipyards along the Clyde. Some 12 routes in total are operated, with eight providing connections to HMNB Clyde and four to Coulport. These services operate on a subscription basis with a monthly flat fee charged (£85) regardless of the route travelled. 595 staff members are currently subscribed to the scheme. These services only operate once in the morning and once in evening to provide a return journey and are predominately used by non-military personnel.

In addition to the ATS services, Mitie also provide two other services. The 'Married Quarters' bus provides a link five times a day between the married quarters in Helensburgh and Rhu to the Base. This bus is free to use by married military personnel. The second service is an airport service, providing on average four services a day, Sunday to Friday, between the Base and Glasgow Airport. These services provide reliable links for staff who retain a main residence elsewhere in the UK and travel home on the weekends.

2.2.3.6 Travel Allowances

All military personnel are afforded a travel allowance. Two schemes are available, *Get You Home*, which is applicable to all staff who live beyond 50 miles and capped at 450 miles, and *Home to Duty* which provides a daily allowance to those who live in private residences within the 50 mile or 90-minute travel boundary. For those taking advantage of the Home to Duty allowance, there is a requirement to pay for the first three miles if living in MoD accommodation or nine miles if living in a private home. Each mile then travelled is recompensed at a set rate for car, public transport and cycling[6].

[6] https://discovermybenefits.mod.gov.uk/raf/travel/

Civilian and contractor staff do not qualify for any type of travel allowance.

2.2.3.7 Visitors

On average the Base receives 2,500 visitors a month. These tend to consist of military personnel travelling to the Base from other military establishments throughout the UK. Although no data has been collected on how they travel to the Base, anecdotal information has indicated that a proportion use the airport shuttle buses, while the vast majority will use a car, either private or hired.

2.2.3.8 HMNB Clyde – RNAD Coulport Interaction

Regular travel between HMNB Clyde and RNAD Coulport is relatively infrequent, except for staff members residing in Base cabins. There is no direct transport link between the Bases, with the only exception being if there is a need to transfer sailors to embark/disembark from a vessel. If any personnel do need to travel between the Bases, there are a range of pool vehicles available to do so.

2.3 Summary

Whilst some time has passed since the Case for Change was undertaken, including the COVID19 pandemic, there has not been any substantial change in the day-to-day operation of HMNB Clyde. However, the transport problems identified as part of the Case for Change will be reassessed in the next section to determine their continued validity in the study.

3 Case for Change

3.1 Case for Change – Present

Since the Case for Change was completed in early 2020, reflecting a 2019 Baseline position, society has endured and emerged from the COVID19 Pandemic. The pandemic has changed the way in which many in society live and work, with those able to, choosing to favour a more hybrid style of working. This is also true of staff assigned to Faslane, although this is obviously restricted to those in civilian or auxiliary support roles, where this work can be undertaken at home and not necessarily required to take place on Base. This only affects a relatively small number of staff, and so has had a marginal impact on travel behaviours. However, this will be explored further below.

3.2 Revisiting the Case for Change

3.2.1 TRANSPORT PROBLEMS

The Case for Change highlighted 14 transport-related issues that affected travel to HMNB Clyde to some degree. The preliminary phase of this study involves re-examining these issues to determine if they continue to persist within the network and, consequently, if they are still relevant for evaluating potential solutions.

The 14 transport related problems identified are:

Table 3-1: Transport Problems (Case for Change, Stantec 2019)

	Theme	Problem
1	Active Travel	Active travel is not an attractive option, even for those living nearby
2	Public Transport Connectivity	Employees cannot realistically access the Base using scheduled public transport for the current shift start time
3	Public Transport Connectivity	Lack of alternatives for someone who misses the ATS bus
4	Public Transport Connectivity	Bespoke buses limited to those who live near the stops served by ATS bus. People are unlikely to rely on connecting public transport due to the consequences of missing the ATS bus
5	Public Transport Journey Times	Long/variable bus/train wait times at Helensburgh Central station
6	Public Transport Journey Times	Long journey time on ATS bus, compared to the car
7	Public Transport Journey Time Reliability	Unreliable journey time on ATS bus (1)
8	Public Transport Capacity	Lack of capacity on the ATS bus affects availability of this service
9	Mixed Mode Travel	Very limited opportunities for mixed mode travel
10	Travel Cost	High cost to travel to the Base
11	Parking	Parking capacity on site presents problems
12	Parking	Hassle parking on site results in the need to car share – people think this is a hassle coordinating start and end times
13	Journey Time Reliability	Car-Based commuting times to and from the Base are unreliable
14	Base Operations	Takes a long time to get into the Base itself

3.2.1.1 Are these transport problems still a problem?

Taking each of the problems in turn, previous sources of data / evidence have been revisited, and where appropriate refreshed to determine any change.

Problem 1: Active travel is not an attractive option, even for those living nearby

The Case for Change highlighted the inadequacies in both the availability and quality of cycling infrastructure leading to the Base from Helensburgh and Garelochhead, as well as on the Base itself. Concurrently, Argyll and Bute Council had initiated a study to examine ways to enhance cycling conditions and to create a dedicated active travel pathway connecting Helensburgh and Garelochhead[7]. Since the presentation of the Case for Change, this active travel initiative has advanced to the initial stages of RIBA Stage 3, and the route development has been divided into two segments. The first segment will concentrate on creating a pathway from Helensburgh to the Base, while the second will aim to establish a connection between the Base and Garelochhead.

Additional discussions with HMNB Clyde representatives have revealed that there are plans to incorporate improved active travel infrastructure within the secure areas of the Base. These

[7] https://www.argyll-bute.gov.uk/news/2023/jun/new-proposals-link-helensburgh-and-garelochhead

enhancements are to be integrated into the broader redevelopment plans scheduled for the Base in the upcoming twenty years.

On the basis that work is already underway under the stewardship of Argyll & Bute Council to address this problem with the active travel network, this option is **discounted from further consideration** as part of this study.

Problem 2: Employees cannot realistically access the Base using scheduled public transport for the current shift start time

This problem is still prevalent within the transport network. There has been no change in both the demand side (shift start/end 0800/1600) and transport supply-side. Only one viable public transport option exists for staff, which requires rail travel to Helensburgh Central, transfer to the 316 bus service and arriving at the Base 45 minutes before shift start time. The tables below provide an overview of travel choices for staff by public transport aligned against shift start/end times.

Table 3-2: Public Transport Options

Arrival to Base						
Operator	Arrival Time	Origin	Wait Time (Minutes)	Bus Departure Time	Operator	Base Arrival Time
ScotRail	**0644**	**Airdrie**	**16**	**0700**	**Garelochhead**	**0716**
ScotRail	0713	Dalmuir	47	0800	Wilsons' of Rhu	0816
ScotRail	0743	Bathgate	17	0800	Wilsons' of Rhu	0816
FirstBus	0747	Dumbarton	13	0800	Wilsons' of Rhu	0816
Departure from Base						
Base Departure Time	Bus Departure Time	Operator	Wait Time (Minutes)	Departure Time	Operator	Destination
1600	1603	Wilsons' of Rhu	4	1623	ScotRail	Edinburgh
1600	1603	Wilsons' of Rhu	19	1638	FirstBus	Glasgow
1600	1631	Garelochhead	6	1653	ScotRail	Edinburgh
1600	1631	Garelochhead	26	1713	FirstBus	Glasgow

To build on this evidence, further analysis was undertaken using the Q4 2023 public transport timetable information, which was integrated into Stantec's bespoke connectivity software to both analyse and visualise connectivity to the Base by public transport. With an 0800 shift start time the crux of the issue, a travel window was analysed between 0530-0800.

Considering direct connections only by public transport to HMNB Clyde, only 1% (6,120) of all households in the SPT region can access the Base for the 0800 start time. Visualising this data indicates that this connectivity is predicated on the 316 bus service operated by Garelochhead Coaches, as represented below, and limited to those households on the Rosneath Peninsula and

areas within Helensburgh.

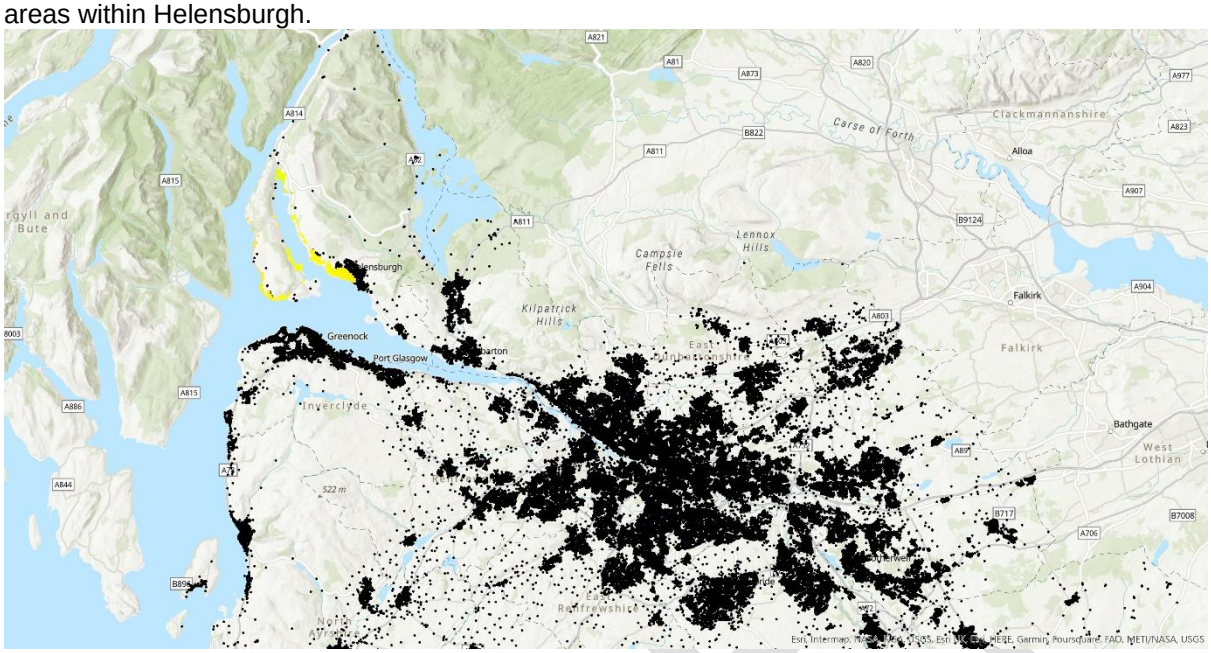

Figure 3-1: Direct Public Transport Connectivity to HMNB Clyde (0530-0800)

Increasing the number of interchanges[8] permitted to two, thus allowing for an interchange in Helensburgh between rail or bus to the 316, plus an initial interchange at the origin end of the journey, increases the number of households in the SPT region capable of reaching HMNB Clyde for 0800 to 12% (134,612 households).

Increasing the number of interchanges highlights connectivity along the rail line from Helensburgh to areas in the east end of Glasgow, Gourock to the south and Balloch, Alexandria and the Vale. This indicates a requirement for many to use a mode to interchange to rail and then a subsequent interchange to the local 316 bus service. For example;

- Residents of Balloch, may use a bus service to Dalreoch and then interchange to rail, before interchanging a second time to the 316 bus service.
- For residents of Gourock it is possible that they can use the Gourock-Kilcreggan Ferry and then interchange to the 316 service.

The map below visualises the extent of connectivity when considering two interchanges.

[8] Transfer between public transport modes (i.e., bus to rail = 1 transfer)

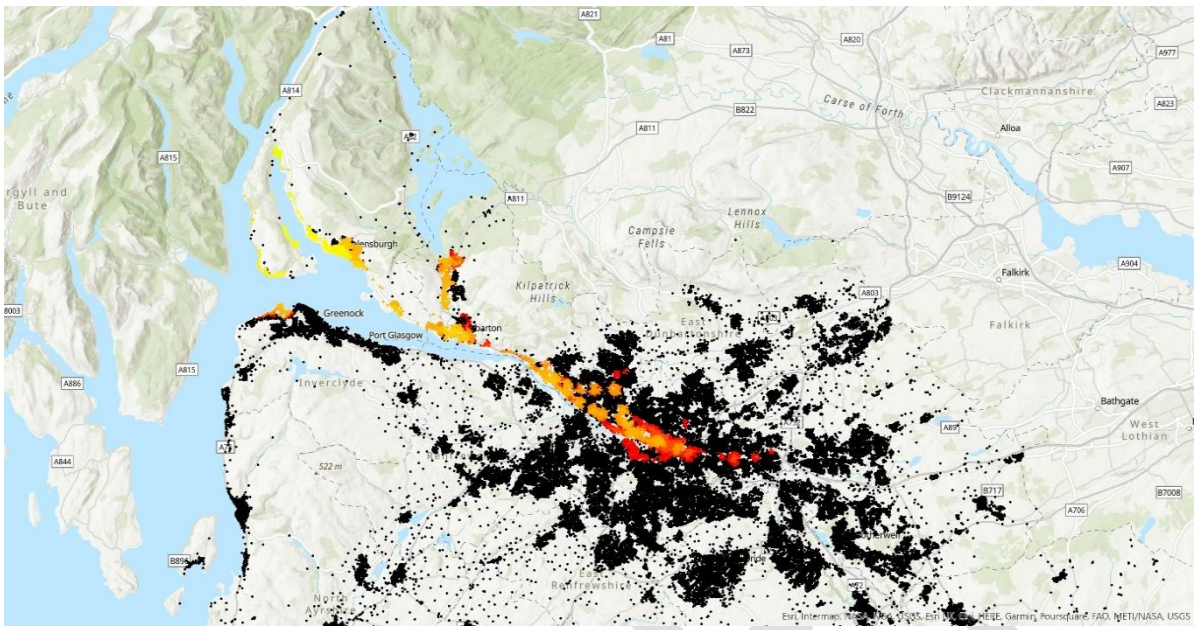

Figure 3-2: Public Transport to HMNB Clyde, two interchanges (0530-0800)

Connectivity to the Base by public transport is entirely dependent on the 316 bus service. This not only limits the potential for current employees to reach the Base by public transport, but also constrains access to the labour market for the Base to fill positions for those who do not own a private vehicle.

With limited public transport options available to staff, and with only one viable public transport option determining the extent of connectivity, **this problem still exists and, therefore, <u>should be considered further</u> as part of this study.**

Problem 3: Lack of alternatives for someone who misses the ATS Bus

As mentioned in Problem 2, there is a lack of public transport options for staff needing to reach the Base in time for a shift starting at 0800, affecting even those who currently rely on the ATS service. Six of the ATS routes originate from locations south of the river Clyde, which restricts the possible alternatives to the Gourock-Kilcreggan Ferry for individuals in Gourock / Greenock / Port Glasgow, and to train services for those near Glasgow. The other six routes cater to areas ranging from Dumbarton and Balloch to the Rosneath Peninsula, and staff who miss these coaches may have the possibility of using another form of public transport. To verify the existence of possible alternatives, an analysis was conducted on each of the 12 ATS routes to pinpoint possible substitute connections within the public transport network. The findings of this analysis are summarised in the table below[9].

[9] Start points are stated at the settlement level to protect the identification of actual departure bus stops.

Table 3-3: Alternatives to ATS Service

ATS Route Number	Start Point	Departure Time	Alternative route?	Alternative route
01	Garelochhead	0708	Yes	316 bus service departing at 07:17
04	Bonhill	0705	No	
05	Renton	0715	No	
06	Bellsmyre	0705	No	
07	Carmyle	0634	No	
08	High Blantyre	0600	No	
09	Gourock	0620	Yes	Gourock-Dunoon Ferry departing at 0641, transferring onto the 316 bus service at 0656
10	Beith	0530	No	
30	Gourock	0633	Yes	Gourock-Dunoon Ferry departing at 0641, transferring onto the 316 bus service at 0656
31	Greenock	0624	No	
32	Clydebank	0630	No	
33	Balloch	0652	No	

The analysis reveals the absence of practical alternatives for employees who miss their designated ATS bus. Those with a possible substitute face the necessity of transferring between ferry and bus services, making their journey heavily dependent on the ferry schedule. Further examination of the bus stops serving the ATS routes was conducted to ascertain if any other public transport modes could provide connections onwards. Although 12% of households have access to a train station within a walkable distance from an ATS bus stop, there are no train services stopping at these stations early enough to facilitate a connection to the Base for an 0800 start time. Should passengers choose to commence their journey from these train stations, they would likely reach Helensburgh between 0815 and 0918, which would then require them to wait for the next available local 316 bus service, which operates hourly.

On the evidence noted above, this problem still exists for all ATS users, and therefore **should still be considered within this study.**

Problem 4: Bespoke buses limited to those who live near the stops served by ATS bus. People are unlikely to rely on connecting public transport due to the consequences of missing the ATS bus.

This issue is rooted in the challenge described in Problem 3. Given that each ATS route is served by a single bus, there is no chance to take a later one, thus eliminating the option of catching a subsequent bus if the first is missed. Consequently, it is improbable that staff would consider using an alternative mode of transport to connect with the ATS service, bearing in mind the potential for delays or cancellations of either the connecting service or the ATS bus itself. Additionally, the early departure times of the ATS buses complicate the task of finding connecting services that arrive in time to make the transfer onto the ATS route. For instance, with the ATS services departing from Gourock, no local services facilitate a connection to the point of departure. The schedules also do not allow for passengers to get to a later stop along the route to board the ATS bus.

As a result, the practical reach and potential user Base for these ATS services are essentially confined to those within walking distance of stops. The table below illustrates the number of households that are within a walkable distance to the bus stops covered by each ATS route.

Table 3-4: ATS Stop Catchments (Walking)

ATS Route Number	Route	Households within 400m Walk	Households within 600m Walk	Households within 800m Walk
1	Garelochhead	665	957	1,202
10	Beith	5,909	11,669	20,209
30	Gourock	4,688	8,974	14,821
31	Greenock	4,927	9,699	14,000
32	Clydebank	6,943	14,170	21,378
33	Balloch	3,916	7,630	10,999
4	Bonhill	3,291	5,341	6,864
5	Renton	2,095	4,043	4,863
6	Bellsmyre	2,367	5,034	7,319
7	Carmyle	4,847	11,548	21,953
8	High Blantyre	4,470	12,323	24,873
9	Gourock	5,609	13,072	22,606
Total		**49,727**	**104,460**	**171,087**

On the evidence noted above, this problem still exists for attracting further patronage of the ATS service, and therefore **should still be considered within this study.**

Problem 5: Long/variable bus/train wait times at Helensburgh Central Station

Table 3-2 demonstrates that wait times between buses, and between buses and trains, can vary considerably throughout the morning. The local 316 bus service, which departs from Helensburgh Railway Station hourly, does not align closely with the arrival times of trains or the FirstBus 1B service, potentially leaving passengers with wait times ranging from 13 to 47 minutes after arriving in Helensburgh.

Similarly, at the end of the workday, employees leaving HMNB Clyde encounter different waiting periods based on how quickly they can leave the Base. Should they miss the 1603 bus—which leaves just three minutes after their shift ends, they would face a 31-minute wait for the next local 316 bus, followed by an additional 6-minute wait at Helensburgh for their train connection.

Discussions with the local operators of the 316 bus service have revealed that they are cognisant of the need for better coordination between their schedules, the Gourock-Kilcreggan Ferry, and the train services at Helensburgh. Both operators acknowledged that their timetables have remained unchanged for a considerable period due to inertia, which suggests a disconnect in integration with the train services, especially since the train schedules have undergone recent updates.

A lack of timetable integration still exists within the public transport network and on this basis, this problem **should still be considered within this study.**

Problem 6: Long journey times on ATS bus, compared to the car

To understand the comparison between ATS and car-based journey times, each route was mapped as best as possible based on the timetable information provided. With no visual representation of the routes, a best-guess estimate was created based on the timetables and intermediate stop names. These service routes were then replicated using best-fit routeing within Google's Distance Matrix API. The comparison in travel times between each mode is captured in the table below, however, it should

be noted that the ATS services will include a pickup time associated with each stop, which has not been replicated within the car-based journey times[10].

Table 3-5: ATS vs Car journey times

ATS Route Number	Start Point	Departure Time	Arrive Time	ATS Journey Time (Minutes)	Car Journey Time (Minutes)
01	Garelochhead	0708	0800	52	35[11]
04	Bonhill	0705	0800	55	35
05	Renton	0715	0800	45	35
06	Bellsmyre	0705	0755	50	40
07	Carmyle	0634	0755	81	70
08	High Blantyre	0600	0755	115	100
09	Gourock	0620	0750	90	75
10	Beith	0530	0750	140	130
30	Gourock	0633	0755	82	80
31	Greenock	0624	0750	86	75
32	Clydebank	0630	0755	85	65
33	Balloch	0652	0755	63	50

The table provided clearly shows that traveling by car is, on average, 10 minutes faster than using the ATS service at comparable times. The convenience of choosing one's own route and departure time with a car makes it a more appealing option. Additionally, it's important to keep in mind that the estimated journey times for cars are based on a worst-case scenario that takes into account traffic congestion and historical travel patterns. It's possible that on certain days or at different times, the actual driving times may be shorter than those indicated in the table.

Another point to consider is the directness of the journey. The ATS service, in its effort to accommodate as many passengers as possible, may take more circuitous or extended routes. In contrast, travelling by car provides the advantage of a more direct route from home to the Base.

On the evidence noted above, this problem remains, and therefore **should still be considered within this study.**

Problem 7: Unreliable journey time on ATS Bus

This problem was raised through engagement with staff via a staff survey in 2019, and further information has been sought as part of this study to validate this problem further. However, to provide a data-based perspective of journey time reliability, INRIX data[12] was examined. As mentioned above, the exact route of the ATS services has not been shared, however, working with the scheduled timetable stops, an estimated route for each was digitised within INRIX to extract journey time information across 2023 covering all weekdays. This process extracts all travel times witnessed across the year along these routes, thus highlights a level of reliability in travel times. The table below, presents the lower (5th percentile), median (50th percentile) and upper (95th percentile) travel times that were extracted for each route.

[10] Google Distance-Matrix API 2024 – same departure time as ATS bus
[11] Service circulates Rosneath Peninsula via Coulport and car drive time reflects this route
[12] Under licence from Transport Scotland

Table 3-6: Journey Time Reliability, INRIX 2023

ATS Route Number	Start Point	Number of Pick-ups	ATS Journey Time (Minutes)	Lower Bounds	Median Time	Upper Bounds	Level of variance
01	Garelochhead	7	52	32	34	39	7%
04	Bonhill	12	55	25	28	35	10%
05	Renton	7	45	23	26	33	10%
06	Bellsmyre	10	50	25	30	38	13%
07	Carmyle	13	81	85	97	117	32%
08	High Blantyre	13	115	57	68	92	35%
09	Gourock	10	90	90	98	116	26%
10	Beith	17	140	68	76	112	44%
30	Gourock	19	82	69	77	99	30%
31	Greenock	17	86	72	80	101	29%
32	Clydebank	19	85	58	65	84	26%
33	Balloch	15	63	53	59	72	19%

The data clearly indicates that specific routes are more vulnerable to unreliable journey times than others. For example, route 10 from Beith can experience a 44% level of variance between the quickest and longest journey times on this route across the year. This could be potentially amplified when travelling by coach, where routes are more prescribed in order to serve particular stops, and any delay in picking up staff, could have a knock-on effect on the service downstream as other traffic builds up.

Renewed engagement with the Base has indicated that most services are deemed reliable in that they can complete their journeys within the scheduled timetable, however, these timetables have timings built in to recognise the effects of traffic building up on the network. It was also noted that on occasions, these services can be as early as 15/20 minutes when compared to timetable, and thus these findings could be a nod towards this inbuilt contingency time within the timetable.

Although no ATS journey time data has been provided as part of this study, on the basis of the analysis of the INRIX data, in conjunction with the anecdotal information provided by the Base, this problem **should still be considered within this study.**

Problem 8: Lack of capacity on the ATS bus affects availability of this service

While not a problem experienced by all ATS routes, it does impact a vast majority. From data recently received from the MoD, 595 people are currently subscribed to the ATS offering. Each route is operated by one 49-seater coach, and as such, capacity issues do exist on certain routes as illustrated below.

Table 3-7: ATS Capacity Utilisation

ATS Route Number	Start Point	Number of Pick-ups	Number of passengers	Capacity of coach	Capacity utilisation
01	Garelochhead	7	4	49	8%
04	Bonhill	12	53	49	108%
05	Renton	7	34	49	69%
06	Bellsmyre	10	37	49	78%
07	Carmyle	13	48	49	98%
08	High Blantyre	13	55	49	112%
09	Gourock	10	76	49	155%
10	Beith	17	53	49	108%
30	Gourock	19	51	49	104%
31	Greenock	17	48	49	98%
32	Clydebank	19	50	49	102%
33	Balloch	15	46	49	94%

As can be viewed in the table above, 50% of ATS services are already oversubscribed, whilst a further three a close to reaching 100% utilisation. Only three services have a slightly lower level of utilisation, and these are in areas in either close proximity to the Base or have more than one ATS service operating in the area. Discussions with the MoD have indicated that waiting lists do exist for several of these services and that there is interest in expanding the geographic coverage of the ATS to fulfil other suppressed demand.

On the information presented above it is evident that this problem is still wholly relevant and therefore **should still be considered within this study.**

Problem 9: Very limited opportunities for mixed mode travel

As presented through the various problems outlined above, there are very limited opportunities for mixed mode travel to HMNB Clyde for an 0800 shift start time. Limited integration between local buses and rail, limits options to just one viable public transport option for those living within walking access to the rail line between Airdrie and Helensburgh. There are no opportunities for park and ride, while active travel is an option for some, there a limited options to park and bike in close proximity to the Base.

On the evidence noted above, this problem still exists, and therefore **should still be considered within this study.**

Problem 10: High cost to travel to the Base

The Case for Change (Section 6.11 Travel Cost Comparison) acknowledged the various costs faced by staff working at HMNB Clyde. The burden of cost is dependent on whether staff are MoD military personnel or civilian / contractor. As discussed in Chapter 2, MoD personnel are entitled to a travel allowance which subsidises their costs. Certain criteria must be met to receive these benefits:

- **Cycling** – MoD staff receive 15p per mile cycled. They also have access to the Cycle to Work scheme, which assists in the purchase of a bike.
- **Public Transport** – Season tickets are fully funded for MoD staff if the journey is within 90 minutes of travel, used at least three times a week and work at least 18 days in the month.
- **Car** – There are two levels of allowance;

    - If living in public accommodation (MoD accommodation), the first three miles are self-funded and then there is an allowance of 25p per mile up to a maximum of 50 miles, plus an additional 3p per passenger per mile.
    - If living in private accommodation (own home), the first nine miles are self-funded and then there is an allowance of 25p per mile up to a maximum of 50 miles, plus 3p per passenger per mile.
- A liftshare scheme enables people to sign up to share car journeys.

MoD staff members are eligible for a travel allowance, but the requirement that they must complete their public transport journey within 90 minutes confines their housing options primarily to areas along the Helensburgh-Glasgow rail line, tied to specific train timings. This limitation on public transport choices detracts from its appeal and, as indicated by the staff survey conducted for the Case for Change, it encourages a preference for traveling by car. Another factor to consider is the minimum number of travel days required each month to justify the expense of a season ticket, which may not be met by seafaring personnel due to their prolonged periods at sea.

Contractors at the Base are permitted to use the ATS service, just like MoD staff. Since the Case for Change, the price of a monthly ATS pass has risen by £10, now costing £85, irrespective of travel frequency/ distance. Unlike MoD staff, contractors do not receive any travel allowances, and the commissioning organisation regards the ATS as a reasonably priced alternative to public transport. However, when comparing to the expenses of car travel, the ATS service tends to be cost-effective only for journeys originating beyond Dumbarton to the east or south of the Clyde. With the Base's recent adoption of hybrid working arrangements for those not required on-site daily, the ATS's cost benefit may diminish since the expense of commuting by car every other day could become more economical than the constant monthly ATS fare.

On the evidence noted above, this problem still exists, and therefore **should still be considered within this study.**

Problem 11: Parking capacity on site presents problems

The Case for Change identified a lack of parking capacity at the Base to meet the daily influx of vehicles. There are officially 3,266 parking spaces, but a 2018 parking survey revealed that demand outstripped supply by 48 spots on the day of the survey. It's important to note that this figure represents a snapshot of a single day's parking situation. The Base Warrant Officer has noted frequent parking out with official bays and the regular issuance of parking tickets, suggesting that this is an ongoing issue. On average, the parking utilisation across the Base was reported to be at 102%, markedly surpassing the Institute of Highway Transportation (IHT) guidance, which indicates that peak occupancy rates above 85% are a cause for concern and warrant intervention.

Projections made at the time of the study estimated a shortfall of 2,242 parking spaces by 2032 to accommodate expected growth. An appraisal of parking options concluded that creating an additional 895 spaces would suffice to meet the projected future demand, considering working patterns and the share of different transportation modes used by staff. Among the solutions evaluated, a multi-storey car park initially emerged as a viable solution. However, this option has been ruled out since then. With continued anticipated growth and an expansion of on-site accommodations, parking remains an unresolved issue that will persist into the future.

On the evidence noted above, this problem still exists, and therefore **should still be considered within this study**. Significantly the option to increase parking supply on the Base has been ruled out.

Problem 12: Hassle parking on site results in the need to car share – people think this is a hassle coordinating start and end times

No new information has been provided since the Case for Change to evidence this problem. Anecdotally, it has been noted that most vehicles to the Base are single occupancy.

With no precise information / data at this stage to either support or discount this problem, it is recommended that it **should still be considered within this study.**

Problem 13: Car Based commuting times to and from the Base are unreliable

Analysis of traffic count data and general traffic trends have pointed towards traffic being back to similar levels as pre-pandemic, and in some cases growing. This could have impacts for the road network, primarily journey times and journey time reliability. INRIX analysis was undertaken to analyse journey times by car through the Helensburgh and Lomond area, focussing on those routes most appropriate for accessing HMNB Clyde. Two corridors were defined:

- **Corridor 1:** leaves the A82 at the junction with the A814 and continues along the A814 to HMNB Clyde.
- **Corridor 2:** routes along the A82 from Clydebank, skirts the shore of Loch Lomond and, using the A817 Haul Road, approaches HMNB Clyde from the east.

Journey times were extracted for the month of September 2023, covering both directions on each route and segmented into 15-minute intervals. The charts below highlight the maximum, median and minimum journey times along both routes across the month. Generally, the more unpredictability in journey times across the day infers implications for those travelling to work as journey times can vary and affect their arrival at the workplace.

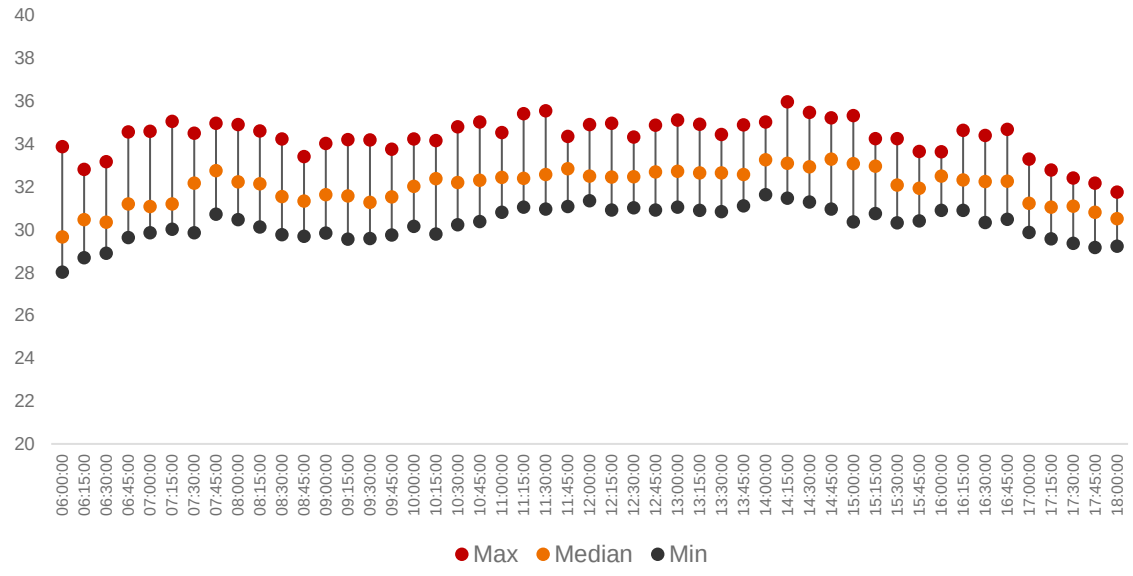

Figure 3-3: A82/A814 Northbound 2023 (INRIX)

In comparison to 2019, the 2023 A814 northbound journey times along the corridor have increased by approximately 1 minute across the day and show similar levels of variations. Focussing on the arrival time peak at the Base, interesting observations can be made in the differences between 2019 and 2023. In 2019, a small peak in variability occurred between 0645 and 0730, with levels decreasing around 0900. In 2023, the morning variability has widened, occurring both earlier and later. Similar

variations can be seen throughout the morning data. Significantly larger variations can be observed between 0600 and 0715.

The figures below present the south bound travel times.

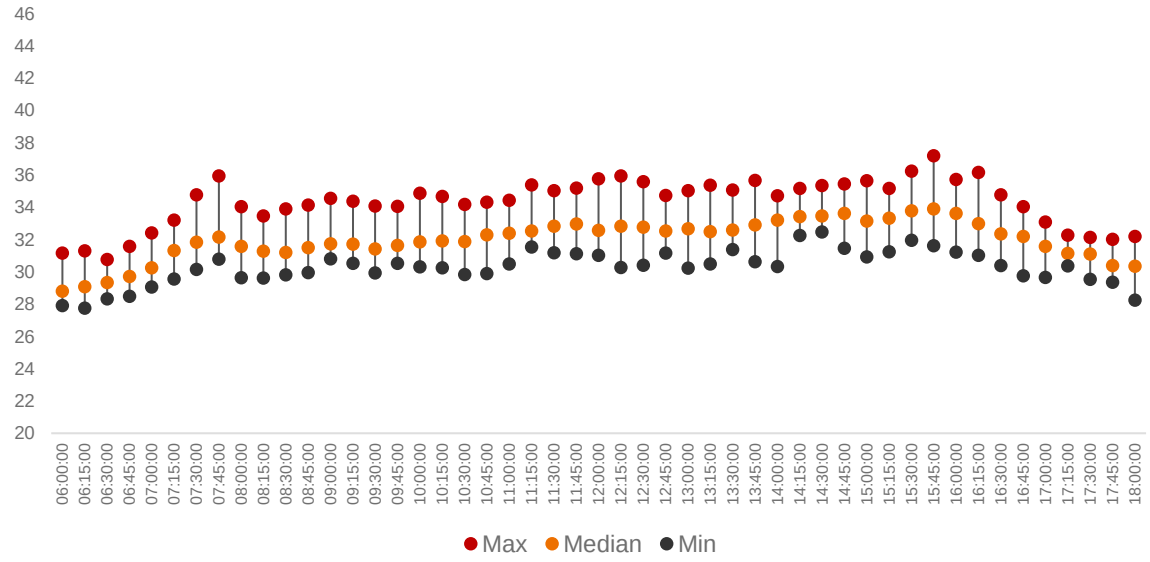

Figure 3-4: A82/A814 Southbound 2023 (INRIX)

Between 2019 and 2023, the median A814 southbound journey times along this corridor have remained relatively stable. The overall median has increased by 0.7 minutes during this period. However, the variability has decreased. In 2019, there was significant variability between 1445 and 1700, likely corresponding to staff departing the Base. In contrast, in 2023, the variability remains lower, with only a slight increase around 1600.

The charts below consider corridor two using the Haul Road.

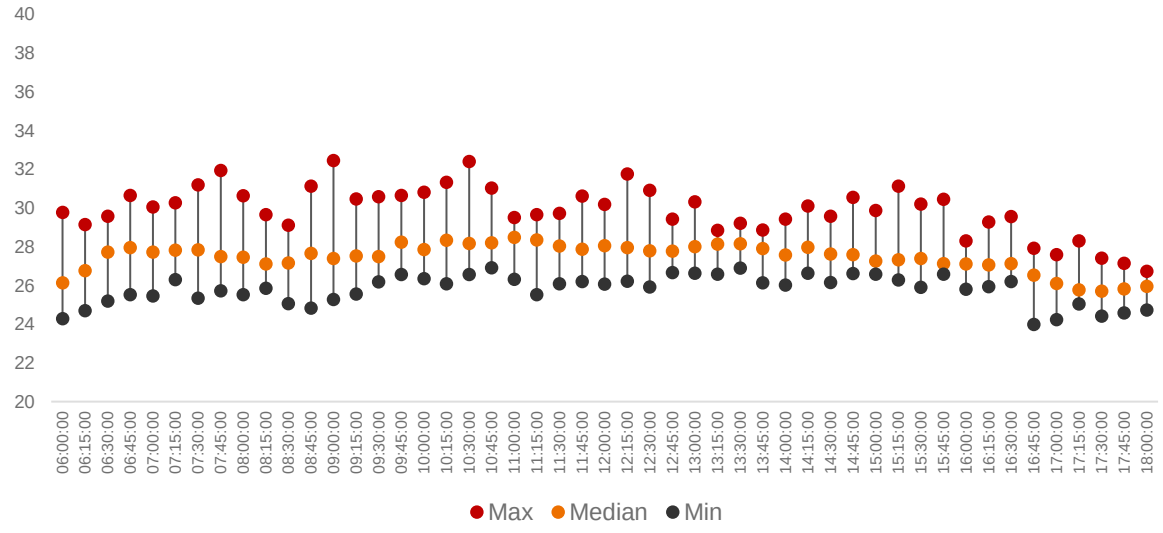

Figure 3-5: A82/A817 Northbound 2023 (INRIX)

Between 2019 and 2023, the A82 & A817 northbound route consistently offers quicker travel times to the Base compared to traveling along the A814, with a difference of approximately five minutes. During this period, the median journey time remained relatively stable: 27.7 minutes in 2019 and 27.6 minutes in 2023. Notably, the variation in journey time has slightly decreased. In 2023, there is a period of reasonable variation between 0600 and 1030, possibly due to arrivals at the Base. In 2019, the morning peak in variation occurred between 0615 and 0700, resembling a similar pattern observed in the other northbound route to the Base—a widening window of morning variation in journey times.

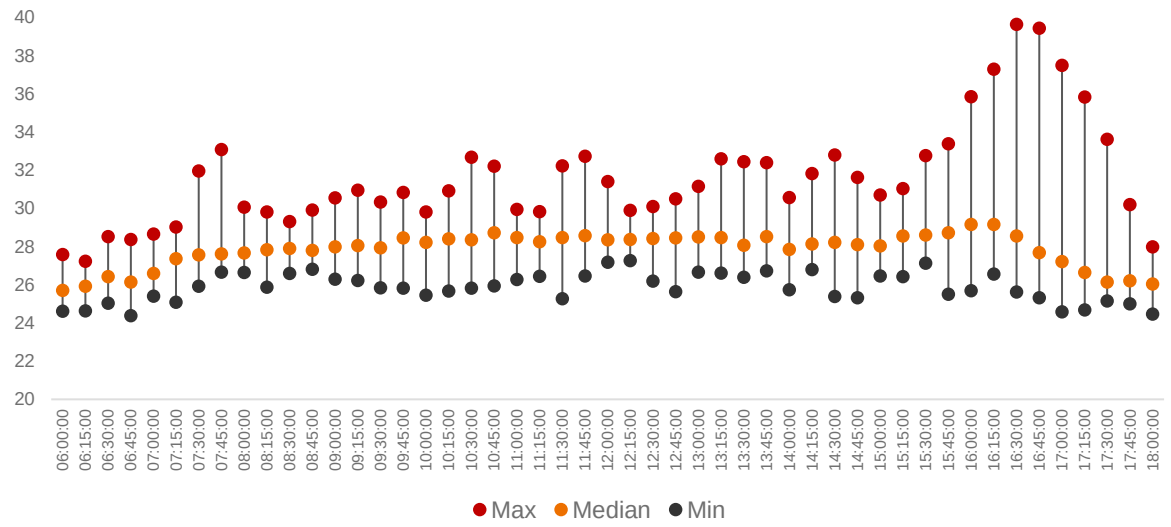

Figure 3-6: A82/A817 Southbound 2023 (INRIX)

The A82 and A817 southbound route generally offers shorter travel times in the southbound direction compared to the A814 southbound. In 2023, the median journey time on this route was 28.1 minutes, while the median on the A814 was 32.2 minutes. Both in 2019 and 2023, there are large variations in journey times during the afternoon / evening, reaching up to approximately 15 minutes. In 2019, these variations occurred between 1445 and 1645, whilst in 2023, the variations shifted slightly later, between 1545 and 1730, extending the peak variation window by about an hour. Despite these variations, the median journey time in 2019 was 28.4 minutes, indicating that there hasn't been a significant change in average journey times on this route over the years.

On the analysis set out above, it is clear that journey time variation, thus reliability, is still an issue on the road network. As this problem still exists it **should still be considered within this study.**

Problem 14: Takes a long time to get into the Base itself

As part of the Case for Change evidence was provided from queue surveys undertaken in 2018, which demonstrated that security checks of vehicles at both the north and south gate leads to a build-up of traffic on the approach roads. This is exacerbated by most staff arriving in close quarters to each other, leading to occasions where queues can extend back along the A814.

To rectify this, changes have been made in recent years whereby both gates are entry only between 0700-0800, with a third gate used for exits. While this has managed to mitigate against instances of extreme queues, it has not eradicated the problem. Consultation with the Base and with local bus operators has suggested that queues do still exist, although not to the extent as in previous years.

Despite efforts to mitigate this problem, it is still evident on the network and has been raised by both staff at the Base and by local bus operators. As such, this problem still exists and **should still be considered within this study.**

3.2.1.2 Transport Problems Summary

Having revisited each of the problems the following conclusions can be drawn:

Table 3-8: Transport Problems Summary

	Theme	Problem	Still a Problem?
1	Active Travel	Active travel is not an attractive option, even for those living nearby	No
2	Public Transport Connectivity	Employees cannot realistically access the Base using scheduled public transport for the current shift start time	Yes
3	Public Transport Connectivity	Lack of alternatives for someone who misses the ATS bus	Yes
4	Public Transport Connectivity	Bespoke buses limited to those who live near the stops served by ATS bus. People are unlikely to rely on connecting public transport due to the consequences of missing the ATS bus	Yes
5	Public Transport Journey Times	Long/variable bus/train wait times at Helensburgh Central station	Yes
6	Public Transport Journey Times	Long journey time on ATS bus, compared to the car	Yes
7	Public Transport Journey Time Reliability	Unreliable journey time on ATS bus (1)	Yes
8	Public Transport Capacity	Lack of capacity on the ATS bus affects availability of this service	Yes
9	Mixed Mode Travel	Very limited opportunities for mixed mode travel	Yes
10	Travel Cost	High cost to travel to the Base	Yes
11	Parking	Parking capacity on site presents problems	Yes
12	Parking	Hassle parking on site results in the need to car share – people think this is a hassle coordinating start and end times	Yes
13	Journey Time Reliability	Car-Based commuting times to and from the Base are unreliable	Yes
14	Base Operations	Takes a long time to get into the Base itself	Yes

It is evident that 13 of the 14 transport problems still exist within the transport network and are therefore, still valid for consideration in the revisiting of Transport Planning Objectives (TPOs) and subsequent options.

3.2.2 TRANSPORT PLANNING OBJECTIVES (TPOS)

Six TPOs were identified within the Case for Change as follows:

- **TPO1:** Improve the availability and quality of active travel connections to the Base from neighbouring settlements and transport hubs.
- **TPO2:** Widen scheduled public transport connectivity from across west central Scotland to / from HMNB Clyde including shift start and end times.
- **TPO3:** Reduce car-based travel to / from HMNB Clyde.
- **TPO4:** Improve the reliability of journey times by all modes to the Base.
- **TPO5:** Reduce commuting times for those who use public transport or ATS bus services to access the Base.

- **TPO6:** Reduce the cost of commuting to the Base for all of, or targeted elements of the workforce.

Following the completion of the Case for Change, Transport Scotland provided advice regarding the TPOs, considering the recent shifts in methodology for establishing TPOs as part of the updated STAG. After reflecting on the feedback and re-evaluating the study within the context of evolving policy frameworks, a number of adjustments have been implemented to the TPOs. The following section will address each TPO individually and elaborate on the respective modifications where relevant.

Table 3-9: Transport Planning Objectives Revision

TPO	Comments	Revised TPO
TPO1: Improve the availability and quality of active travel connections to the Base from neighbouring settlements and transport hubs.	On the basis that changes to the active travel network are already underway both on the Base and by Argyll and Bute Council along the A814, it has been decided to **remove this TPO from the study**.	
TPO2: Widen scheduled public transport connectivity from across west central Scotland to / from HMNB Clyde including shift start and end times.	This TPO is still relevant based on the transport problems that still exist. Upon reflection of the changes to the policy landscape and STAG refresh, this **TPO has been revised**.	**TPO1:** Increase the number of employed adults who can access the Base at a suitable time for shift start / finish using scheduled public transport.
TPO3: Reduce car-based travel to / from HMNB Clyde.	As the Base still suffers from a high car mode share and in light of Scottish Government targets to reduce vehicle kms, this TPO is still relevant. This **TPO has therefore been retained and revised**.	**TPO2:** Reduce car kilometres associated with travel to and from HMNB Clyde.
TPO4: Improve the reliability of journey times by all modes to the Base.	This TPO is still relevant, however, as there are limited opportunities to impact travel times of private vehicle, this **TPO has, therefore, been refined** to focus on public transport and specifically for the core catchment area of the Base.	**TPO3:** Improve the reliability of public transport journey times to the Base for all within the key Dumbarton / Balloch / Alexandria labour market catchment.
TPO5: Reduce commuting times for those who use public transport or ATS bus services to access the Base.	It is recommended that this **TPO is removed from further consideration** as it can be considered as part of the new TPO1 above.	
TPO6: Reduce the cost of commuting to the Base for all of, or targeted elements of the workforce.	Having reconsidered this TPO, it is recommended that it is **discounted from further consideration**. Military personnel receive a travel allowance, while all other staff qualify for the discounted ATS service. It is unlikely that the any options will have the ability to deliver lower transport costs than available to staff currently.	

The TPOs for the study have now been reduced from the initial six that emerged from the Case for Change to three TPOs, these being:

- **TPO1:** Increase the number of employed adults who can access the Base at a suitable time for shift start / finish using scheduled public transport.
- **TPO2:** Reduce car kilometres associated with travel to and from HMNB Clyde.
- **TPO3:** Improve the reliability of public transport journey times to the Base for all within the key Dumbarton / Balloch / Alexandria labour market catchment.

3.2.2.1 SMART TPOs

TPOs are usually refined as the appraisal progresses and more information becomes available. However, by the Detailed Options Appraisal stage, these TPOs should be finalised and where appropriate, include a target which captures the nature and scale of the change sought. Underlining these TPOs is the SMART concept, whereby a SMART objective will be:

- **S**pecific – will say in precise terms what is sought and where.
- **M**easurable – will set out the metrics that will be used as an indicator of success.
- **A**chievable – there is general agreement that the objective can be reached.
- **R**ealistic – the objective is a sensible indicator or proxy for the change which is sought.
- **T**ime bound – the objective will be associated with an agreed timeframe.

In establishing SMART objectives, the underlying data that will be used to measure the success of the proposed objectives will form the start of the Monitoring and Evaluation Plan.

The below establishes how each of the three TPOs noted above will become SMART and thus used to inform how successful any subsequent option is, in helping to achieve these TPOs.

- ***TPO1:*** *Increase the number of employed adults who can access the Base at a suitable time for shift start / finish using scheduled public transport.*
    - **Specific** – A percentage increase can be added to make this TPO more specific. Whist more contemporary data is not available, a 2018 gate count provided a snapshot of daily mode shares. Combining pedestrians (assumed local bus users, due to distance) and ATS users, 17% of journeys were made by public transport. Options should look to introduce new options for public transport use which can ambitiously increase this mode share. This should look to at least provide a sustainable alternative to private car for at least 50% of staff, and so would require a 33% increase in those who can access the Base at a suitable time for shift start / end times.
    - **Measurable** – This target can be measured through continued gate counts to determine mode share daily. This can be used to inform a contemporary baseline from which this ambitious target can be monitored. Daily counts will also identify any days where there may be a variation in public transport patronage which could indicate other issues on the network.
    - **Achievable** – This TPO is achievable as there is a distinct lack of options available to staff currently to compete this action. Therefore, by introducing a new option within the transport network to facilitate the ability to reach the Base by PT in the AM Peak, would have a significant impact on the mode share.
    - **Realistic** – This TPO is a sensible indicator towards achieving a much lower car mode share and encourage an uptake in more sustainable transport options.
    - **Time bound** – An initial assessment of mode share against this target should be set for the end of the growth horizon for the Base, 2032. This provides an eight-year timeframe in which to implement a new option(s) and start to tackle the car mode share and associated problems.
- ***TPO2:*** *Reduce car kilometres associated with travel to and from HMNB Clyde.*
    - **Specific** – A percentage reduction can be added to this TPO to make this more specific. This can be aligned to the national 20% reduction target by 2030 set by the Scottish Government.
    - **Measurable** – This could be measured using staff surveys. These surveys could be undertaken annually, recording home address, frequency of travel, mode of travel to the Base, which can then be used to determine annual vehicle kilometres travelled by mode.

- **Achievable** – This TPO could be achieved due to a lack of alternative options currently for many staff members. Introducing new options which could encourage travel by sustainable modes could facilitate a reduction in vehicle kms by private vehicle in favour of sustainable travel kms.
- **Realistic** - This TPO is a sensible indicator towards achieving a much lower car mode share, and subsequently reduced vehicle kilometres.
- **Time bound** – An initial assessment of vehicle kilometres against this target should be set for the end of the growth horizon for the Base, 2032. This provides an eight-year timeframe in which to implement a new option(s) and start to tackle the car mode share and associated kilometres.

- ***TPO3:*** *Improve the reliability of public transport journey times to the Base for all within the key Dumbarton / Balloch / Alexandria labour market catchment.*
  - **Specific** – This TPO is already specific as it is looking to tackle a specific issue for a particular catchment area.
  - **Measurable** – This can be measured by monitoring public transport timetables, wait times at key interchange hubs and passenger satisfaction levels.
  - **Achievable** – This TPO is achievable. Various mechanisms exist to manage public transport journey times, such as via the bus commissioner. Additionally, a new public transport option could be designed to deliver a reliable public transport option for staff residing in these catchment areas.
  - **Realistic** – This TPO is a sensible indicator for monitoring change on the public transport network and service performance.
  - **Time bound** – As with the other TPOs, this TPO could again be measured against the 2032 growth horizon period, demonstrating whether services have become reliable and provide an attractive alternative option to the private car.

3.2.2.2 Study TPOs

The final TPOs for this study are as follows:

- ***TPO1:*** *Increase the number of employed adults who can access the Base at a suitable time for shift start / finish using scheduled public transport by 33 percentage points by 2032.*
- ***TPO2:*** *Reduce car kilometres associated with travel to and from HMNB Clyde by 20% by 2032.*
- ***TPO3:*** *Improve the reliability of public transport journey times to the Base for all within the key Dumbarton / Balloch / Alexandria labour market catchment by 2032.*

3.2.3 TRANSPORT OPTIONS

The Case for Change identified 13 transport options to assist in achieving the original TPOs and address the transport problems faced by staff at HMNB Clyde. These are:

Option 1: *High quality cycle route between Helensburgh Central and HMNB Clyde*

Option 2: *Helensburgh Central Bespoke Shuttle Bus service*

Option 3: *Geographical expansion of ATS*

Option 4: *Intensification of ATS (Frequency)*

Option 5: *Rail – new station at Faslane and service options*

Option 6: *Rail – improved alignment with Helensburgh train arrivals and AM shift start times*

Option 7: *Rail – intensification of services during shift change over times*

Option 8: *Ferry link from Gourock to HMNB Clyde*

Option 9: *Parking charges at HMNB Clyde*

Option 10: *Reduced parking provision on site*

Option 11: *Increased parking provision – on site*

Option 12: *Increased parking provision – off-site but within walking distance*

Option 13: *Increased parking provision – off-site bus P&R*

In light of the revision to both the transport problems and TPOs, a revisit of each of these options was required to assess whether they remain appropriate for continued consideration. Taking each of these options in turn:

Table 3-10: Transport Options

Option	Commentary	Decision
Option 1: High quality cycle route between Helensburgh Central and HMNB Clyde	In isolation this option is unlikely to deliver a significant step-change as a vast majority of staff live out with an acceptable cycle commute distance. Additionally, as Argyll & Bute Council have already commenced work on introducing a new upgraded cycle way between Helensburgh and Garelochhead, there is no longer a need to consider this option.	Remove from further consideration.
Option 2: Helensburgh Central Bespoke Shuttle Bus service	At this stage there is no unequivocal evidence as to why this option should be dismissed as it could positively contribute to the TPOs.	Retain for further consideration.
Option 3: Geographical expansion of ATS	As the ATS services do demonstrate various problems with their operation, this option would help mitigate some of these issues.	Retain for further consideration.
Option 4: Intensification of ATS (Frequency)	As above, option should be considered further as part of the study.	Retain for further consideration.
Option 5: Rail – new station at Faslane and service options	This option is still feasible and would contribute positively to the objectives.	Retain for further consideration.
Option 6: Rail – improved alignment with Helensburgh train arrivals and AM shift start times	This option is still feasible and would contribute positively to the objectives.	Retain for further consideration.
Option 7: Rail – intensification of services during shift change over times	This option is still feasible and would contribute positively to the objectives.	Retain for further consideration.
Option 8: Ferry link from Gourock to HMNB Clyde	This option has now been dismissed due to operational problems and security concerns. The feasibility of delivering has significantly decreased and thus is sifted from the process.	Remove from further consideration.

Option 9: Parking charges at HMNB Clyde	In isolation, this option is unlikely to deliver the desired effect on behaviours. Additionally, without alternative provision of parking, this could lead to nuisance parking off-site and may lead to loss of personnel or reduce recruitment attractiveness.	Remove from further consideration.
Option 10: Reduced parking provision on site	In isolation, this option is unlikely to deliver the desired effect on behaviours. Additionally, without alternative provision of parking, this could lead to nuisance parking off-site and may lead to loss of personnel or reduce recruitment attractiveness.	Remove from further consideration.
Option 11: Increased parking provision – on site	This option has been ruled out by Base leadership.	Remove from further consideration.
Option 12: Increased parking provision – off-site but within walking distance	Whilst this may alleviate some parking problems within the Base, it would not materially reduce car kms associated with travel to and from the Base. Additionally, there is no obvious site within walking distance of the Base given both proximity and land availability.	Remove from further consideration.
Option 13: Increased parking provision – off-site bus P&R	Whilst this may alleviate some parking problems within the Base, it would not materially reduce car kms associated with travel to and from the Base. Additionally, no obvious site has been identified and with limited land availability within a reasonable distance of the Base this option is unfeasible.	Remove from further consideration.

Adopting the above recommendations, the number of options has reduced from 13 to 6 - options 2,3,4,5,6 and 7. Several of these options share a common mode option theme and the problems they seek to address and can be more distinctly categorised as:

- ATS Service Improvement Options (Options 3 and 4)
- Local Bus Service Options (Option 2)
- Rail Options (Options 5,6 and 7)

These options will form the basis of the remainder of the appraisal process.

4 Option Development

4.1 Finalised Options

This section discusses the remaining transport options in more detail, developing them to a level of detail appropriate for appraisal.

4.2 ATS Options

4.2.1 OVERVIEW

Since the Case for Change was published, there have been developments concerning the Assisted Travel Scheme (ATS), which is a contracted service between the MoD and typically one of the contractors working on the Base. Recently, the service contract was renewed, with Mitie taking over the provision of these services from Babcock. The current agreement is set to expire in two years, with an option to extend for an additional two years. The MoD has signalled their intention to likely exercise this extension option. After this period, they will evaluate potential revisions to the way the ATS is operated.

In light of this, opportunities to implement changes to the ATS within the next four years are limited. Nevertheless, the shortlisted options that have been identified possess value and should be included in the planning stages for any future ATS service contract specifications. These future specifications should consider incorporating Option 3 – the geographical expansion of the ATS, and Option 4 – the intensification of the ATS in terms of increased service frequency.

While the financial accounts of HMNB Clyde are publicly available, it's challenging to extract the precise cost of the ATS contract from the overall reported travel allowance or reward balance. This makes it tough to ascertain the current cost to run these services and estimate the potential future expenses for implementing both Option 3 and Option 4 within a new contract between the MoD and a contractor.

It's also crucial to recognise that these ATS enhancements should not be viewed in isolation from other proposed options. In fact, the combined implementation of additional options could enhance the viability of expanding or intensifying the ATS. Other options under consideration could facilitate a shift of staff to these alternative transport modes on the north side of the Clyde, which might then allow for the reallocation of ATS resources to the south side, thereby increasing service frequencies and potentially expanding the geographic reach to currently unserved areas like Bishopton, Paisley, and Renfrew.

Due to the limited details available on the current ATS contract specifications, it is not possible to further develop Options 3 and 4 at this juncture, including specifics such as the potential number of additional buses required, levels of latent demand, and the feasibility of delivering these services. These details will need to be clearly outlined in the next contract specifications, and should be informed by current data which, at this stage, has not been made available for review.

4.3 Local Bus Options

4.3.1 OVERVIEW

As previously mentioned, the existing local bus network falls short in providing the necessary connections for staff living outside the Base in the nearby areas, or for those opting to commute via train. An examination of the current bus schedules shows that the afternoon and evening service is

sufficient, offering connections for staff whose shifts end between 1600 and 1700. However, it is the morning service that presents a significant limitation. In response to this challenge, five potential local bus solutions have been proposed, which could offer employees a direct route to the Base.

These potential solutions could be (i) integrated into the schedules of existing local bus services, (ii) established as additional services, (iii) run commercially, (iv) subsidised or (v) they could be specifically commissioned by HMNB Clyde. Data from 2023 BT Mobile phone usage has informed the understanding of where Base staff are travelling from, pinpointing the main residential concentrations. This data has been instrumental in designing the proposed bus service routes to maximise their appeal to staff and encourage ridership. At the heart of the proposed timetable and route configurations is the goal of ensuring seamless connections with incoming train services at Helensburgh and Garelochhead stations, as well as facilitating timely arrivals at HMNB Clyde to conveniently align with the commencement of shifts.

Each of the options that follow have their basis within the current 316 and 315 services and would generally look to utilise existing infrastructure where appropriate. However, a couple of the options would require new / additional bus stops to be added to the network.

4.3.2 ADDITIONAL INFRASTRUCTURE

The main change would be the introduction of a new bus stop, just south of the entrance to the north gate at HMNB Clyde. The reason being that several consultees have indicated that a bus stop at this location would be more attractive to both passengers and operators. In delivering this new bus stop, several sub-options that follow, would incorporate a switch back using the roundabout directly opposite the north gate to negate a return to Garelochhead to turn and resume service. A couple of additional bus stops may also be required as part of options, and these are indicated within the sub-option text.

4.3.3 LOCAL BUS OPTION 1 - GARELOCHHEAD / HELENSBURGH CIRCULAR

Figure 4-1: Local Bus Option 1 - Garelochhead / Helensburgh Circular

Option one proposes a bus service starting from Garelochhead at 0650, with stops outside HMNB Clyde, Shandon, Rhu, and then a loop through Helensburgh, focusing on the Churchill area. The service would run to Hermitage Academy, using the roundabout at Morrisons to circle back towards Helensburgh. This leg of the journey aims to serve residents in the eastern part of Helensburgh, those in the new housing development, and the community of Craigendoran. Continuing the route, the bus would reach Helensburgh Railway Station at 0722, timed to coincide with the arrival of the 0713 train and to provide a connection for those looking to catch the 0725 train departure towards Glasgow and Edinburgh.

Following this, the bus would mirror the existing 316 service's route back towards Garelochhead, arriving at the HMNB Clyde stop at 0739. It would then carry on to Garelochhead to align with the 0730 train arrival at Garelochhead Railway Station. The service would then return on a similar path, making a stop at HMNB Clyde at 0744 before completing the loop back to Helensburgh Railway Station by 0800. Instead of retracing the earlier part of the route, it would follow the 316's path back to the station. A visual representation of the full route and a preliminary timetable can be found in

Appendix A. To facilitate this service, new bus stops would be required at Rhu Rd Higher / Suffolk Street and on Golfhill Drive.

4.3.4 LOCAL BUS OPTION 2 – GARELOCHHEAD / HELENSBURGH CHURCHILL CIRCULAR

Figure 4-2: Local Bus Option 2 - Garelochhead / Helensburgh / Churchill Circular

Option 2 would combine the current 316 Helensburgh - Garelochhead service and 315 Helensburgh – Churchill service to provide an early morning service. The bus would leave Horton Place (Churchill) at 0713, arriving at Helensburgh Railway Station at 0722, HMNB Clyde at 0739, Garelochhead 0741, HMNB Clyde 0744 and Helensburgh Railway Station at 0800. Again, this service would provide integration opportunities with rail services at both Helensburgh and Garelochhead, in addition to providing connections to HMNB Clyde for shift start times. An illustration of the route follows with a draft timetable provided in **Appendix A**.

4.3.5 LOCAL BUS OPTION 3 – GARELOCHHEAD / CARDROSS CIRCULAR

Figure 4-3: Local Bus Option 3 - Garelochhead / Helensburgh / Cardross

Option 3 mirrors the route of the existing 316 service between Helensburgh and Garelochhead, but with an added extension to Cardross. This extension would create new travel opportunities for residents in the eastern part of Helensburgh, Craigendoran, and Cardross, allowing them to access both Helensburgh and HMNB Clyde. It would also offer an alternative means of transportation for Cardross residents who currently rely solely on train services until the commencement of the FirstBus 1B service.

The proposed itinerary would see the bus departing from Garelochhead at 0639, reaching HMNB Clyde at 0641, then arriving at Helensburgh Railway Station at 0700, continuing to Cardross for a 0711 arrival, and returning to Helensburgh Railway Station at 0725. It would then proceed to HMNB Clyde for a 0742 arrival, before completing the loop back to Helensburgh Railway Station by 0800. On its return journey to Helensburgh Railway Station, the service would not pass through Garelochhead but would instead turn around at the roundabout outside the north gate, heading straight back to Helensburgh. An illustration of the route follows with a draft timetable provided in **Appendix A**.

4.3.6 LOCAL BUS OPTION 4 – CARDROSS / HELENSBURGH CHURCHILL / HMNB CLYDE

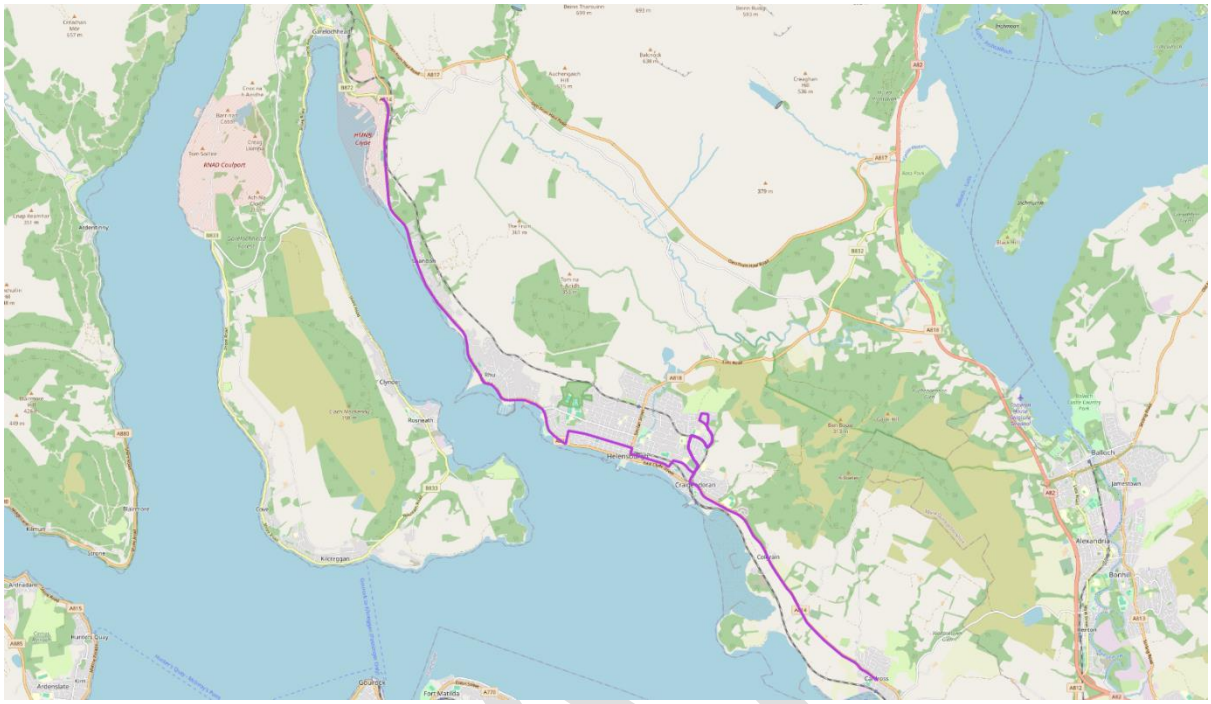

Figure 4-4: Local Bus Option 4 - Cardross / Helensburgh / HMNB Clyde

Option 4 merges the routes outlined in Options 2 and 3 but omits the segment that goes to Garelochhead. This service would commence in Cardross at 0700, then proceed through the Churchill area, reaching Helensburgh Railway Station at 0727. From there, it would follow the route used by the 316 service, arriving at HMNB Clyde at 0744. Afterward, the bus would use the roundabout to turn around and head back towards Helensburgh, arriving at the railway station again

at 0800. A visual representation of this proposed route and a preliminary timetable are available in **Appendix A**.

4.3.7 LOCAL BUS OPTION 5 – HELENSBURGH STATION / HMNB CLYDE

Figure 4-5: Local Bus Option 5 - Helensburgh Railway Station / HMNB Clyde

The last proposed option is a truncated variant of the existing 316 service, specifically scheduled to facilitate connections from the arriving 0713 train service to HMNB Clyde, allowing ample time for staff to reach the Base before their shifts begin. This service would leave Helensburgh Railway Station at 0730, arrive at HMNB Clyde at 0747, and then proceed to Garelochhead, reaching Station Road at 0749. An illustration of the route follows with a draft timetable provided in **Appendix A**.

4.3.8 LOCAL BUS OPTION COSTS

To understand potential costs for operating each of the sub-options outlined above, a bespoke Stantec bus operations model was deployed. This model uses industry standard costs to calculate an hourly rate, representing operational costs, such as driver time, fuel, vehicle wear and tear etc. In a rural location such as the context of this study, an additional 20% contingency has been added to account for perceived higher operating costs of operating bus services in these areas (longer distances and lower patronage). The final figure derived for the calculations is £30 per hour operated. The table below highlights the additional parameters used to define each sub-option, in addition to presenting the total estimated annual cost of operating each sub-option.

It is important to note however, that these costs represent the addition of one timetable departure to one of the current operators' timetables, thus assumes wider costs are captured within the overall operating costs of the service (drivers are already employed, no new vehicles required etc). This is important to consider as if both operators do not find these options viable or able to accommodate them into the current timetable, then these costs could escalate significantly. It would either require a reworking of the operators' service to accommodate one of the options, or a new operator would need

to enter the market. This is an important aspect that will need further engagement and development as part of any subsequent OBC.

Table 4-1: Local Bus Option Costs

Option	Total Time[13]	Operating Days	Operating Weeks	Operational Cost (£/ph)	Annual Operating Cost
Local Bus Option 1 - Garelochhead / Helensburgh Circular	1 hour 10 minutes	5	52	£30	£9,100
Local Bus Option 2 - Garelochhead / Helensburgh / Churchill Circular	47 minutes	5	52	£30	£8,450
Local Bus Option 3 - Garelochhead / Helensburgh / Cardross	1 hour 21 minutes	5	52	£30	£10,530
Local Bus Option 4 - Cardross / Helensburgh / HMNB Clyde	1 hour	5	52	£30	£11,050
Local Bus Option 5 - Helensburgh Railway Station / HMNB Clyde	19 minutes	5	52	£30	£4,550

Again, the costs presented in the table above, reflect those estimated for operating each sub-option **once per day across the entire year as part of an existing bus service**. Only one additional service has been considered at this stage as this provides redundancy in the network where no services currently operate, thus plugging a potential supply-side gap.

4.4 Rail Option

4.4.1 OVERVIEW

HITRANS and Argyll and Bute Council commissioned a report into the potential for delivering a railway station in the vicinity of HMNB Clyde, which would then allow the Base to be served by rail, providing an attractive alternative to private car. This initial piece of work identified a shortlist of potential station sites, which then acted as the catalyst for a more considered investigation to be undertaken in the form of a station location feasibility study and a rail service option development report.

4.4.2 RAILWAY STATION

After reviewing the initial Station Site selection report, Douglas Binns Limited was commissioned with investigating the “North Gate” option further to produce an Outline Feasibility Study. The infrastructure design features to be included within this feasibility study were:

- A new single platform station suitable for a typical seven car train.
- A car park / turning head suitable for maintenance access and drop off only.
- Pedestrian access to the public road and into the Base.

The Douglas Binns Limited report is included in **Appendix B**, and what follows summarises the key points from the feasibility study to inform the further development of the rail option.

[13] This includes any vehicle positioning time (i.e., bus travelling to start position from depot) and run time of the service.

4.4.2.1 Site Location

The proposed station would be located 7 miles and 58 chains along the West Highland line, immediately south of an overbridge marked on the site plan within the report. The key infrastructure characteristics of this site include:

- **Platform Placement:** The platform would be positioned to the west of the railway line. There's a possibility of slightly shifting it further south to reduce access lengths, but this decision would need to consider track alignment and topography constraints.
- **Signalling:** The railway in this area is signalled by Radio Electronic Token Block (RETB), which means there are no signals in proximity that would impact the station location.
- **Token Length:** The proposed station would fall within the Helensburgh to Garelochhead token length.
- **Access Road:** The road leading to the station is planned to be formed from the existing Glen Fruin Road, located to the south of the station.
    - Distances:
        - Approximately 250 meters from the central point of the platform to Glen Fruin Road.
        - An additional 400 meters from Glen Fruin Road to the outer gate of the Base.
- **Land Characteristics:** The land in the proposed station area slopes from east to west and the station ground level is approximately 16 meters higher than the A814 road directly below.
- **Ownership:** The land is believed to be owned by the Ministry of Defence (MoD), although it may potentially involve different departments. Confirmation is needed regarding whether the land is currently tenanted.

4.4.2.2 Engineering Requirements

4.4.2.2.1 Station

Track Alignment

The proposed station location has a 1:92 gradient, sloping upward in the southerly direction. The track alignment is predominantly straight, with the southern end of the platform positioned on a right-hand transition curve. These parameters appear suitable for a platform, pending confirmation through survey and design. The track consists of jointed flat-bottom rail supported by concrete sleepers. An existing overbridge north of the platform will remain unaffected. Beneath the railway, there are culverts, a water pipe, and cables, which intersect with the proposed platform and access road to the south. A slightly more southerly platform location would reduce travel distances to the public road and HMNB Clyde, but it would also place the platform closer to the curve.

Platform Arrangement

A proposed single platform, spanning 166 meters, aims to accommodate a seven-car train. The platform's minimum width is set at 2.5 meters, with all platform equipment extending beyond this width. Considering passenger numbers from the previous report, it's likely that the width may need adjustment. Design options include traditional front wall and backfill, along with alternative platform designs. Given the site's downhill location, track drainage is a critical factor in platform design. Modular platform solutions, either set back from the track or lifted in, should be explored. Adherence to "Design Standards for Accessible Railway Stations Version 04" is essential. Waiting shelters, including an enclosed shelter at the access point and open-sided shelters on the platform, are recommended. Seating is necessary, and a new dedicated power supply will be required for the

station and car park. Additionally, a customer information system connected to ScotRail's customer assistance team should be provided.

4.4.2.2.2 Car Park and access to HMNB Clyde

The proposed pedestrian access to the station will connect HMNB Clyde via a paved footpath leading to Glen Fruin Road. Ramps will facilitate descent to the existing A814 pavement. A foot crossing across the A814, away from the North Gate roundabout, is necessary. Coordination with Argyll and Bute Council will determine the optimal crossing location, considering peak traffic flow. The footpath's ramped section will adhere to gradient guidelines. Additionally, an upcoming cycleway along the east side of A814 will impact footpath planning. Vehicular access, likely a single-track road with passing areas, will span approximately 150 meters between the platform and Glen Fruin Road, running alongside the access path. A small car park, primarily for maintenance vehicles, may also serve as an HMNB Clyde personnel drop-off point. Minimising access road costs may involve choosing between unbound or bound road materials. Adequate lighting, including extension of existing A814 lighting, is essential for the car park, footpath, and access road.

The proposed station's drainage outfall from the car park and access road can potentially connect with existing road drainage systems or outfall to waterways, subject to approval from the Scottish Environment Protection Agency (SEPA). Culverting of two watercourses is planned. De-vegetation, including mature trees, is necessary. Considering the Base's proximity, an entry control system for the access road will be explored, balancing security and accessibility. Although a footbridge option was briefly considered, it has not been prioritised due to complexity, cost, and security requirements. The access footways and road will adhere to relevant guidelines, likely using blacktop material.

4.4.2.2.3 Power Supply

There will be a requirement for power supplies for the station and its access. There are sub-station(s) within the Base that may be able to be used or a new supply from the Distribution Network Operator could be investigated. The existing street lighting power supply may also be extended if suitable, although this may be already fed from the Base.

4.4.2.3 Environmental Issues

The proposed station project necessitates engagement with Argyll and Bute Council, the local planning authority. Two critical aspects must be addressed: the requirement for an environmental impact assessment (EIA) and obtaining planning permission. The planning authority will provide guidance on these matters.

An EIA screening letter will likely be submitted to the planning authority. The authority will review this to determine if a full EIA is necessary. If planning permission is not covered by permitted development, a separate application may be required.

The MoD mandates a Sustainability Appraisal, assessing environmental impacts from various perspectives. The project team submits this for review by the Defence Infrastructure Organisation.

A desktop review using Groundsure Location Intelligence highlights listed buildings, scheduled monuments, and ancient woodlands in the vicinity. Verification is needed to confirm whether these features fall within the project's impact zone.

Ecological, archaeological, and visual impact surveys are essential. Specialist advice will determine the applicable surveys. A desk-based overview of geological, geotechnical, and services information reveals no significant concerns. However, a detailed ground investigation, services assessment, and topographical survey are required.

The proposed station location reveals buried services marked by pipe and cable indicators. Due to the MoD property's context, an unexploded ordnance study will begin with a desk-based survey, potentially followed by on-site investigations. The project aims to enhance environmental sustainability by incorporating solar lighting and recycled road materials.

4.4.2.4 Security

There are several security issues to be addressed during construction and operation of the proposed station. These include:

- Construction teams are likely to all require BPSS clearance.
- CCTV will be required for both the station and access road, linked to the control centre in the Base, as well as the ScotRail control centre.
- Consideration is required into whether the vehicle access will require to be securely gated, allowing only maintenance and Base personnel to access the station. This would compromise access to mobility impaired passengers wishing to be picked up or dropped off at the station.

4.4.2.5 Costs

In January 2024, HITRANS engaged SLC Rail to assess the costs associated with constructing a station that fits the previously described specifications at the chosen site. Using base rates from the fourth quarter of 2023 and projecting a construction start date around the second quarter of 2025, SLC Rail estimated the cost for the station to be £12 million, incorporating a risk contingency set at 60% (**Appendix C**).

4.4.3 RAIL SERVICE OPTIONS

In March 2022, SYSTRA was commissioned by HITRANS to undertake initial timetabling work to explore the feasibility of operating a commuter service for the staff of HMNB Clyde. A technical note (**Appendix D**) was produced which provides a view on the feasibility of timetabling a service to operate from Dalmuir to Garelochhead, plus associated Empty Coaching Stock (ECS) movements as well as a review of the additional opportunities that the service generates.

In undertaking this assignment, several assumptions were made on the resourcing and operation of a potential service as described below.

4.4.3.1 Service Design Assumptions

4.4.3.1.1 Rolling Stock

The proposed service is assumed to be operated by a ScotRail Class 156. The electrification of the Glasgow to East Kilbride and Barrhead routes will free up several Class 156s, creating capacity within the fleet to run this service.

However, there's a need to ensure that the Radio Electronic Token Block (RETB) equipped members of the fleet have sufficient capacity to operate the additional service. This is due to the use of RETB signalling between Craigendoran Junction and Garelochhead. Currently, only 16 members of the fleet are equipped with RETB equipment, which may necessitate an increase in the number of equipped Class 156s.

4.4.3.1.2 Depot and Stabling

SYSTRA's initial proposed plan involved the train starting and ending its day at Eastfield Holding Sidings (HS), located north of Glasgow Queen Street. This approach mirrors the strategy used for

resourcing trains on the West Highland Line, where services originating from Glasgow are stabled and fuelled at Eastfield.

To cycle the train back to Corkerhill Depot in the south of Glasgow, existing Empty Coaching Stock (ECS) movements connecting Eastfield and Corkerhill would be utilised. These movements are specifically designed for transferring Class 156s for West Highland Line services.

Between morning and afternoon services, the ideal scenario is for the train to return to Eastfield HS. However, due to minor changes in the North Clyde Electrics timetable, alternative options have been considered. One such option involves stabling the diesel train at Yoker Carriage Sidings (CS) during the day. Although not the preferred choice, this arrangement would eliminate the need for cleaning or refuelling, making it theoretically feasible. Additionally, two other alternative options for utilising the train during the day were explored in further detail.

4.4.3.1.3 Train Crew

The proposed Faslane Commuter Service would be operated by train crews based at Glasgow Queen Street. These crews are the sole ScotRail teams in the Glasgow area who are trained on the West Highland Line. They are well-acquainted with the route between Glasgow Queen Street and Garelochhead via Maryhill, Westerton, and Singer.

However, there is uncertainty regarding crew familiarity with the alternative route via Clydebank, which would be necessary for operating the train into Yoker Carriage Sidings (CS). Additionally, the line between Westerton and Springburn via Partick and Glasgow Queen Street Low Level is crucial for Empty Coaching Stock (ECS) movements.

To ensure successful development of the service, early engagement is essential. This will help ensure that an adequate number of train crews are familiar with the intricacies of the West Highland Line, as only specific links at Glasgow Queen Street currently possess this familiarity.

4.4.3.1.4 Timetable

The May 2022 timetable was used as the baseline timetable upon which any options have been designed.

4.4.3.2 Option Development

Whilst initially focused on determining the feasibility of delivering a service between Dalmuir and Garelochhead, the exercise further uncovered and identified alternative service provision, thus providing three potential options overall.

4.4.3.3 Option 1 – Dalmuir / Garelochhead

Morning Service

A path was identified in the morning that would allow a passenger service to operate throughout from Glasgow Queen Street to Garelochhead. Capacity also exists for an associated ECS movement from Eastfield HS to Glasgow Queen Street to resource the service. Importantly, this service can be implemented without necessitating any adjustments to other services in the area.

For the return journey from Garelochhead, there are two options:

- The first option involves the train returning in passenger service to Glasgow before proceeding to Eastfield HS.

- The second option sees the train operating in passenger service to Dumbarton. In Dumbarton, it can either form a series of shuttle services or return as Empty Coaching Stock (ECS) to Yoker Carriage Sidings (CS).

The timings between Garelochhead and Dumbarton Central are consistent for both services. Notably, the train must wait at Garelochhead until 0749 to allow the 1Y20 0521 Oban – Glasgow Queen Street service to pass Garelochhead at 0730 and then clear the Garelochhead – Helensburgh Upper token section. This arrangement facilitates two passenger departures from Garelochhead toward Glasgow within a 20-minute window. Few options exist for further increasing this interval, as departing later than 0749 would require waiting for the 6S01 Bicester MoD – Glen Douglas MoD freight service to pass at 0833.

The first option considered, involves the train returning to Eastfield HS, and necessitates routing via Dalmuir, Westerton, Glasgow Queen Street Low Level, and Springburn. This unconventional routing arises due to the lack of suitable paths for the more conventional route via Knightswood Junction, Maryhill, and Glasgow Queen Street High Level. If needed, the train could remain in passenger service as far as Springburn. The feasibility of this service heavily relies on the precise timing of North Clyde Electric Services. The service adheres to minimum (yet compliant) headways between Hyndland and Bellgrove. In light of this, SYSTRA proposed the second option: diverting the train to stable at Yoker Carriage Sidings (CS) during the day.

The operation of a second commuter service to Garelochhead was also explored, however, it was found that it could not provide a second arrival at Garelochhead until 0850, and was therefore, discounted.

Afternoon Service

An afternoon service between Dalmuir and Garelochhead was established, along with the corresponding return working. The necessary movements for resourcing this service have been meticulously planned from both Eastfield HS and Yoker CS. If the train is stabled at Eastfield HS, it becomes feasible for the train to operate in passenger service continuously from Glasgow Queen Street High Level to Garelochhead.

The return working for the proposed service is more intricate, with the key points being:

- The service would operate in passenger service between Garelochhead and Dalmuir.
- From Dalmuir, the train would then run as Empty Coaching Stock (ECS) to Eastfield HS via the following route: Westerton – Maryhill - Cowlairs West Junction - Sighthill West Junction - Reversal in Springburn station

Unfortunately, it is not feasible to return the train in passenger service to Glasgow. This is due to pathing problems resulting in an extended journey time between Dalmuir and Westerton, and a lack of suitable paths between Cowlairs West Junction and Glasgow Queen Street.

The only service requiring retiming to accommodate the proposed Dalmuir-Garelochhead service is an ECS from Dalmuir to Dalmuir via the Dalmuir Reversing Siding (5L24), which must arrive at Dalmuir station four minutes later. The proposed service is complemented by the 1Y26 1441 Oban – Glasgow Queen Street, departing Garelochhead at 1649. Exploring a service into Glasgow via the low-level lines was considered but not possible due to conflicts with services starting from Helensburgh and traveling along the low-level lines, as well as services from Milngavie via Anniesland.

Key Point: **The assessment found that it was possible to operate a morning service between Glasgow Queen Street and Garelochhead, however, in the evening, the train could only operate as far as Dalmuir due to a lack of available train paths.**

4.4.3.4 Option 2 – Dumbarton-Garelochhead + All Day Shuttle

To enhance the utilisation of a rail-based option, SYSTRA explored the possibility of an off-peak shuttle service between Dumbarton and Garelochhead. The value of this service would be further improved if the Faslane station were completed. This completion would better serve the increased number of staff living on-site (as proposed), generating off-peak demand for the service.

Running services to and from Glasgow presents operational challenges due to complexities in finding train paths within the busy North Clyde network and identifying suitable paths between Cowlairs West Junction and Glasgow Queen Street.

Instead, operating a shuttle between Dumbarton Central and Garelochhead is a more viable option. Dumbarton Central, with its currently unused third platform, is accessible from both the Up and Down lines. Additionally, it offers a consistent service into Glasgow, providing an easy and frequent connection for passengers travelling further. This is also true of both bus and rail services interfacing with Dumbarton from Balloch, Alexandria and the Vale, again widening the potential catchment.

A further incentive is the lack of AM connectivity by bus currently between Dumbarton and the Base in the AM, with the FirstBus 1B service starting after shift start time and only providing connectivity as far as Helensburgh.

A timetable graph was created, highlighting existing services between Oban and Dalmuir. Upon analysing the broader timetable, it became evident that running a shuttle service between Garelochhead and Dumbarton throughout the day was feasible. Additionally, three more shuttle services could be added, with one extending beyond Garelochhead to Arrochar and Tarbet.

The benefits of this approach are:

- The number of passenger trains using Garelochhead and Helensburgh Upper between 0700 and 1900 would increase from 10 to 20.
- Improved connectivity to Glasgow, albeit via interchange at Dumbarton.
- Avoidance of the busy North Clyde electric routes during the day, reducing pressure on the congested network and minimising performance risks.
- The first additional northbound train arrives in Garelochhead before 0900.

It is notable that there is no regular pattern for how the current freight and passenger services are planned between Crianlarich and Craigendoran Jn, this is especially noticeable between 1000 and 1400. This makes it extremely difficult to plan the shuttle to operate to a regular pattern, with extended dwells necessary throughout the day's workings.

4.4.3.5 Option 3 – Extension to Oban

Instead of the train returning from Garelochhead after the morning commuter service, it could continue all the way to Oban, arriving at 0945. To facilitate this change, the 0520 Glasgow to Oban service was modified to start from Dalmally, providing a school service from Dalmally to Oban.

This adjustment required planning a new working from Oban to Dalmally and stabling a second train overnight at Oban. The rationale behind this change is that the current 0520 Glasgow – Oban service primarily serves Dalmally – Oban school traffic and provides a train to resource the 0857 Oban –

Glasgow, enabling an early morning Oban – Glasgow service. However, the early departure from Glasgow makes the train generally unattractive to Oban-bound passengers.

To address this, a new service departing Glasgow Queen Street at 2001 and arriving in Oban at 2306 has been planned. This provides a later departure from Glasgow toward Oban compared to the current 1823 departure. The challenge lies in finding a return path for the train arriving at Oban at 0945. A path is needed to allow the train to return to Glasgow in time to operate the 1511 Glasgow – Garelochhead commuter train.

Unfortunately, the only available path around 1030 is blocked south of Crianlarich by the 6E45 Fort William – North Blyth Alcan freight service. An alternative would be to resource a second train to operate the afternoon Faslane service, but this may incur additional costs or require finding an available unit to slot into the morning Faslane workings.

Given the need for a an RETB equipped Class 156 meeting this requirement may be challenging from the limited pool of available trains. Unless either the freight path moves, or availability of an additional unit can be confirmed **it is not recommended that this option is pursued**.

4.4.3.6 Costs

Using a range of operating cost metrics SYSTRA estimated the costs of operating the options. These estimated costs include:

- Rolling stock leasing costs.
- Train crew (driver and conductor).
- Rolling stock maintenance.
- Fuel costs.
- Variable track access charges.

Leasing costs and train crew costs represent the most substantial costs as these are largely fixed and as such there is relatively little variation in the costs between the different options.

The estimated costs for the three options considered above are as follows:

- **Option 1** – AM & PM Commuter service with train returning to Eastfield during the day - ***£410,248***
- **Option 2** – AM & PM Commuter service with train returning to Yoker during the day - ***£388,334***
- **Option 3** – AM & PM Commuter service plus off-peak Dumbarton – Garelochhead shuttle - ***£604,295***

A sensitivity in these operating costs is the calculation of train crew costs. For Option 1 and 2 the time in service is low and is split between morning and afternoon operations. SYSTRA made an assumption that one additional full-time crew would be required for Option 1 and 2 and two crews would be required for Option 3.

4.4.3.7 Summary

Based on the information presented above and recommendations presented by SYSTRA, **Option 2**, is the option that appears most feasible. However, on the basis that it is difficult to properly schedule off-peak shuttle services due to complicated timetable patterns, only the AM and PM Commuter service between Dumbarton and Garelochhead has been considered, with the train stabling at Yoker during the day.

4.5 Option Summary

It is important to note that the three options in consideration are not mutually exclusive and could each play a role in making any of the other options more viable. For example, delivery of the rail option could be complemented by feeding this service by an ATS route(s). Similarly, the delivery of the local bus option, could provide a means by which funding for the local ATS services is distributed elsewhere to provide increased frequency or coverage.

5 STAG Appraisal

5.1 STAG Criteria

The table below sets out the five STAG criteria and their associated sub-criteria. These have been used to guide a proportionate appraisal of each of the potential options. It should be noted that, as all information is not available for each option at this stage, the options will be appraised as appropriate against each individual sub-criterion, with specific points of relevance drawn out.

Table 5-1: STAG Criteria and Sub-criterion

STAG Criteria	Sub-criteria
Environment	Biodiversity and habitats Geology and soils Land-use (including agriculture and forestry) Water, drainage and flooding Air quality Historic environment Landscape Noise and vibration
Climate Change	Greenhouse gas emissions Vulnerability to the effects of climate change Potential to adapt to the effects of climate change
Health, Safety & Wellbeing	Accidents Security Health outcomes Access to health and wellbeing infrastructure Visual amenity
Economy	Transport Economic Efficiency (TEE), which covers the benefits ordinarily captured by standard cost-benefit analysis – including traffic volumes, journey times, driver frustration or travel time reliability Wider Economic Impacts (WEIs), which refer to any economic impacts which are additional to transport user benefits.
Equality and Accessibility	Public transport network coverage Active travel network coverage Comparative access by people group Comparative access by geographic location Affordability

5.2 Feasibility, Affordability and Public Acceptability Criteria

The table below outlines the *Feasibility, Affordability* and *Public Acceptability* criteria as defined by STAG and applied to the appraisal of the options.

Table 5-2: STAG Feasibility, Affordability and Public Acceptability Criteria

Criteria	Description
Feasibility	The feasibility of construction or implementation and operation (if relevant) of an option and the status of its technology (e.g., proven, prototype, in development, etc.) as well as any cost, timescale or deliverability risks associated with the construction or operation of the option, including consideration of the need for any departure from design standards that may be required.
Affordability	The scale of the financing burden on the promoting authority and other possible funding organisations and the risks associated with these. The level of risk associated with an option's ongoing operating or maintenance costs and its likely operating revenues (if applicable).
Public Acceptability	An assessment of the likely public response to an option. It should be noted that options have not been subject to a public consultation exercise.

5.3 Scoring

The STAG seven-point scoring scale, as illustrated in the table below, has been used to assess the relevant scale of the impacts against both the STAG criteria and the Transport Planning Objectives.

Table 5-3: STAG Scoring

Impact	Description	Score
Major Positive	These are benefits or positive impacts which, depending on the scale of benefit or severity of impact, the practitioner feels should be a principal consideration when assessing an option's eligibility for funding.	✓✓✓
Moderate Positive	The option is anticipated to have only a moderate benefit or positive impact. Moderate benefits and impacts are those which taken in isolation may not determine an option's eligibility for funding but taken together do so.	✓✓
Minor Positive	The option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is funded or otherwise.	✓
No benefit or impact	The option is anticipated to have no or negligible benefit or negative impact.	○
Minor Negative	The option is anticipated to have only a small cost or negative impact. Small costs/negative impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is funded or otherwise.	x
Moderate Negative	The option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option's eligibility for funding but taken together could do so.	xx
Major Negative	These are costs or negative impacts which, depending on the scale of cost or severity of impact, the practitioner should take into consideration when assessing an option's eligibility for funding.	xxx

A descriptive appraisal against the other criteria will also be undertaken, with key points summarised where relevant within the text covering each option.

5.4 Option Appraisal

The appraisal of the options will focus on the main concept of each option, as each subsequent option is a variation of this hierarchical option. Where relevant, specific notes will be made on any variation of the sub-options, where impacts may be greatly felt.

5.4.1 ASSISTED TRAVEL SCHEME (ATS) OPTIONS

As discussed in Chapter 4, the core aspect of this option is to increase both the geographic coverage of the existing ATS service and the frequency of higher demand routes. This option seeks to encourage staff to switch from using their private vehicle to the ATS service, thereby reducing the number of single occupancy vehicles on the local road network. Additionally, by expanding the geographic coverage, it is hoped that the ATS service would provide connectivity to the Base by public transport in areas where this is currently not an option.

The table below appraises the ATS option against the various STAG criteria, Transport Planning Objectives and National Transport Strategy 2 (NTS2) outcomes.

Option 1: Assisted Travel Scheme (ATS), including: ▪ Geographical expansion of the ATS ▪ Intensification of the ATS (frequency).							
STAG Criteria							
Environment	**Climate Change**	**Health, Safety and Wellbeing**	**Economy**	**Equality and Accessibility**	**Feasibility**	**Affordability**	**Public Acceptability**
○	✓	✓	✓	✓✓	✓	✓	✓✓
Transport Planning Objectives							
TPO1: Increase the number of employed adults who can access the Base at a suitable time for shift start / finish using scheduled public transport by 33 percentage points by 2032.							✓✓✓
TPO2: Reduce car kilometres associated with travel to and from HMNB Clyde by 20% by 2032.							✓✓
TPO3: Improve the reliability of public transport journey times to the Base for all within the key Dumbarton / Balloch / Alexandria labour market catchment by 2032.							✓✓
Equalities							
Public Sector Equality Duty							○
Fairer Scotland Duty							○
Child Rights and Wellbeing Duty							○
As this option is solely for the use of staff employed at the Base, there would be no impact to wider society. Expanding the coverage of the ATS service would provide a more equitable opportunity for staff to access public transport to access HMNB Clyde and thus reduce the need to own and maintain a private vehicle.							
Policy							
National Transport Strategy 2							
Reduces inequalities							✓✓
Takes climate action							✓✓
Helps deliver inclusive economic growth							✓✓
Improves our health and wellbeing							✓✓
Hierarchies							
Sustainable Investment Hierarchy							✓✓✓
Sustainable Travel Hierarchy							✓✓✓

The main points emerging from the appraisal of this option against the Transport Planning Objectives and STAG criteria are as follows:

TPOs

- This option would align strongly with the **TPOs** sought to be achieved.
- **TPO1:** By broadening the geographic reach of the ATS service, greater opportunities exist for staff to transition from using their own private vehicles to using the ATS service. The ATS services are planned to reach HMNB Clyde prior to 0800, thereby ensuring that staff can arrive at the Base in time for the start of their shift. Additionally, the expansion of the ATS's geographic coverage will enhance the commuting options for prospective employees, enabling them to reach the Base, especially for those who may not currently have such options available.
- **TPO2:** Similarly increasing both the coverage and frequency of the ATS services, would make these services more attractive to staff at the Base and potentially encourage a modal shift away from private vehicle towards more sustainable public transport options.
- **TPO3:** The reliability of journey times for staff living within the key catchment areas could also be improved by providing scheduled ATS services that arrive and depart on time, and if successful in achieving modal shift, will help remove a number of vehicles off the network.

Environment Criteria

- **Biodiversity and Habitats** – this option is likely to have no net impact or benefit on this sub-criterion. The option would look to make use of existing road and bus infrastructure and therefore, should witness no material influence on biodiversity or habitats. - ◯
- **Geology and Soils** – Again, there will be no net impact or benefit against this sub-criterion as this option does not include any new construction works. - ◯
- **Land Use (including Agriculture and Forestry)** - this option may have a minor positive impact to this sub-criterion as if it encourages modal shift onto the ATS services, then there might be a reduced requirement in future for redeveloping of land for parking around the Base if current mode share trends continue or increase. - ✓
- **Water, Drainage, and Flooding** – this option would have no net impact or benefit on this sub-criterion. - ◯
- **Air Quality** – this option could have both a minor positive and minor negative impact on this sub-criterion. Shifting more staff members from private cars to the ATS coaches can reduce air pollution by decreasing emissions per passenger mile travelled, leading to improved air quality. However, the coaches would need to be environmentally friendly (low emission) otherwise they could contribute to local air pollution if the fleet consists of older diesel vehicles. - ×/✓
- **Historic Environment** – no net impact or benefit. - ◯
- **Landscape** – no net impact or benefit is expected against this sub-criterion as the routes would look to use established infrastructure and this would not have any impact on the visual quality of any landscape. - ◯
- **Noise and Vibration** – Increased bus / coach traffic could lead to higher levels of noise and vibration in some areas, affecting residents and wildlife, however, most modern bus / coaches are designed to be quieter and produce less vibration. If this option is successful in achieving a modal shift from private vehicle, then there could potentially be less noise associated with traffic in the local area. However, overall, no net impact or benefit is expected against this sub-criterion. - ◯

Climate Change Criteria

- **Greenhouse Gas Emissions** – Introducing new and enhanced ATS services could potentially reduce greenhouse gas emissions by encouraging more staff members to opt for the ATS instead of private cars. Buses, especially if they run on cleaner fuels or are electric, emit fewer

greenhouse gases per passenger-mile compared to typical private vehicles. Additionally, the ATS could lead to a decrease in traffic congestion, which can further reduce emissions from idling vehicles. Minor positive. - ✓

- **Vulnerability to the Effects of Climate Change** – By reducing the reliance on cars, the ATS can contribute to decreased vulnerability to the effects of climate change by mitigating factors such as air pollution, urban heat islands, and traffic-related infrastructure damage caused by extreme weather events. Minor positive. - ✓
- **Potential to Adapt to the Effects of Climate Change** – This option would look to utilise existing infrastructure, and therefore, would have dependence on this infrastructure to mitigate against events such as flood water. It would have no net impact or benefit on this sub-criterion. - ◯

Health, Safety and Wellbeing Criteria

- **Accidents** – Introducing new and enhanced ATS services could potentially reduce the number of accidents on the roads by encouraging more staff to use the services instead of driving private vehicles. With reduced cars on the roads, there is also less opportunity for conflicts between car and active travel users. Additionally, the ATS drivers are well trained and are subject to strict safety regulations, which can contribute to safer road conditions. Minor positive. - ✓
- **Security** – No net impact or benefit on this sub-criterion as these services are restricted to staff only, with a boarding security check undertaken to access the services. It would have no net impact or benefit on this sub-criterion. - ◯
- **Health Outcomes** – By expanding the ATS services, various health outcomes can be recorded such as reduced air pollution and promoting physical activity. Encouraging more staff to use the ATS instead of driving, can contribute to improved air quality and decreased exposure to harmful pollutants. Additionally, physical activity will be increased with passengers walking to and from bus stops, making additional walking journeys to bus stops which would previously not have been made. Furthermore, by travelling by ATS, staff may benefit from reduced driver stress and frustration, improving mental health and wellbeing. Minor positive. - ✓
- **Access to Health and Wellbeing Infrastructure** – this option is not expected to have any impact on this sub-criterion as the ATS services are limited to travel between home and Base only. It would have no net impact or benefit on this sub-criterion. - ◯
- **Visual Amenity** – It would have no net impact or benefit on this sub-criterion as the ATS services would look to use existing infrastructure. - ◯

Economy Criteria

- **Transport Economic Efficiency (TEE)** - introducing additional ATS services can potentially reduce traffic volumes by providing an attractive alternative to private car use for staff. This can lead to smoother traffic flows, reduced congestion, and shorter commute times for both ATS users and remaining car users. A well designed ATS service can also help improve journey times for passengers, particularly during peak shift start / end times. By offering reliable and frequent ATS services, the ATS option can reduce user frustration associated with unpredictable travel times, leading to increased satisfaction among staff members and other commuters in the area who would benefit from reduced traffic on local roads. There may be a slight impact to the economy through reduced fuel tax and farebox revenue if there was a modal switch from private car / public transport to the ATS services. Minor positive. - ✓
- **Wider Economic Impacts (WEIs)** - introducing new ATS services and expanding the geographic operating area could open up opportunities for employment / job creation, by connecting the labour market with the Base. The ATS service also helps support existing businesses operating within the Base as it provides them with opportunities to further increase their operational remit within the Base, providing new jobs and also providing further employment opportunities for the coach company who are sub-contracted to run the ATS services. Minor positive. - ✓

Equality and Accessibility Criteria

- **Public Transport Network Coverage** – Introducing new ATS services can improve public transport network coverage by extending routes to areas previously underserved or unserved. This expansion increases access to the Base for those wishing to travel by public transport but currently can't. However, these benefits would only be felt by staff of the Base due to the restricted nature of the services. Minor positive. - ✓
- **Active Travel Network Coverage** – there is no expectation of active travel improvements being made as part of this option, and thus would rely on passengers making use of existing infrastructure to connect into the ATS services. It would, therefore, have no net impact or benefit on this sub-criterion. - ◯
- **Comparative Access by People Group** – These ATS services are restricted to staff members only and so this option would only bring benefits to those employed by the Base. The coaches would be required to provide low-floor access and prioritise seating for those with disabilities. Minor positive. - ✓
- **Comparative Access by Geographic Location** – this option would enhance comparative access by geographic location by providing new public transport services in areas with limited travel options to the Base beyond the use of private car. It is important to note that it would be a difficult task to design an ATS service which provides universal access across all employees due to the geographic spread of employees beyond the immediate core catchment area. Minor positive. - ✓
- **Affordability** – the ATS service provides a competitively priced alternative to public transport and private car use. The flat rate £85 per month is competitive for those living out with a certain geographic area. Particularly for those living on the south side of the river Clyde. However, the £85 fare may prove more expensive when compared to local public transport provision for those living between the peninsula and Dumbarton. Overall, the ATS is specifically designed to be a discounted travel alternative for staff. Minor positive. - ✓

Feasibility, Affordability and Public Acceptability

- **Feasibility** – As the ATS service is already operational, this option would be feasible. However, it would require consideration of operational costs such as additional coaches, drivers, fuel costs, administration of the service and management of the services. It would also require a consideration of a bottom-up design to ensure services are designed to maximise the catchment and attractiveness of the ATS service. Minor positive. - ✓
- **Affordability** – the ATS is already a contracted service between the MoD and contractors on the Base. The cost of this contract is not publicly available; however, the burden of cost is likely to sit with the MoD and therefore, would already be budgeted for. Once the new contract is up for tender, the MoD could set a specification, which contractors could competitively tender for. Minor positive. - ✓
- **Public Acceptability** – it is anticipated that this option would be well received by staff on the Base as it would help relieve the oversubscription of some services, introduce new options to others and increase the reliability of the ATS to existing users. Moderate positive. - ✓✓

5.4.2 LOCAL BUS SERVICES

As set out in Chapter 4, this option includes consideration of various local route options to improve connectivity between Helensburgh and HMNB Clyde. The aim of these options is to both reduce the interchange times between bus / rail to the local 316 service and to provide more attractive arrival times at the Base for staff.

The table below appraises the local bus option against the various STAG criteria, Transport Planning Objectives and National Transport Strategy 2 (NTS2) outcomes.

Option 2: Local Bus Services, including: ▪ Local Bus Option 1 - Garelochhead / Helensburgh Circular ▪ Local Bus Option 2 - Garelochhead / Helensburgh / Churchill Circular ▪ Local Bus Option 3 - Garelochhead / Helensburgh / Cardross ▪ Local Bus Option 4 - Cardross / Helensburgh / HMNB Clyde ▪ Local Bus Option 5 - Helensburgh Railway Station / HMNB Clyde							
STAG Criteria							
Environment	**Climate Change**	**Health, Safety and Wellbeing**	**Economy**	**Equality and Accessibility**	**Feasibility**	**Affordability**	**Public Acceptability**
○	✓	✓✓	✓	✓✓	✓	✓	✓✓
Transport Planning Objectives							
TPO1: Increase the number of employed adults who can access the Base at a suitable time for shift start / finish using scheduled public transport by 33 percentage points by 2032.							✓✓✓
TPO2: Reduce car kilometres associated with travel to and from HMNB Clyde by 20% by 2032.							✓✓
TPO3: Improve the reliability of public transport journey times to the Base for all within the key Dumbarton / Balloch / Alexandria labour market catchment by 2032.							✓
Equalities							
Public Sector Equality Duty							✓
Fairer Scotland Duty							✓✓
Child Rights and Wellbeing Duty							✓
Increased availability, frequency and capacity of bus services in the local area would be beneficial for many people with protected characteristics and groups in each of the equalities frameworks as they would have enhanced accessibility.							
Policy							
National Transport Strategy 2							
Reduces inequalities							✓✓
Takes climate action							✓✓
Helps deliver inclusive economic growth							✓✓
Improves our health and wellbeing							✓✓
Hierarchies							
Sustainable Investment Hierarchy							✓✓
Sustainable Travel Hierarchy							✓✓

The main points emerging from the appraisal of this option against the Transport Planning Objectives and STAG criteria are as follows:

TPOs

- This core option and the various sub-options would perform well against the TPOs set for this project.

- **TPO1:** The existing 316 service offers a connection to HMNB Clyde for residents in the heart of Helensburgh, but its early arrival of 45 minutes before the start of a shift may not appeal to many. Moreover, the service requires a 15-minute wait time when switching from the train to the 316 bus, extending the duration of journeys that may already be long. However, this alternative could be more favourable as it covers a wider geographical area within the main staff catchment area through several (new) sub-routes. It is also scheduled to minimise waiting times at Helensburgh Railway Station.
- **TPO2:** A significant number of car passes are allocated to staff who reside in the Helensburgh catchment area of the Base. This results in a high number of short everyday trips between the town and the Base. This option would perform strongly against this TPO by offering an attractive alternative to taking the car, with improved scheduling of arrival times at the Base.
- **TPO3:** By introducing a new bespoke scheduled service between Helensburgh and HMNB Clyde, staff can take comfort in knowing that a reliable and appropriately timed service is available to them to access the Base. If the option proves to be attractive, it could witness an increase in public transport mode share thus reducing cars on the local network, making journey times more reliable. Additionally, with better timed interchange between rail and bus, staff choosing to travel by rail to Helensburgh can benefit from a reduced wait time and more attractive arrival time at the Base.

Environment Criteria

- **Biodiversity and Habitats** – this option is likely to have no net impact or benefit on this sub-criterion. The option would look to make use of existing road and bus infrastructure and therefore, should witness no material influence on biodiversity or habitats. - ◯
- **Geology and Soils** – Again, there will be no net impact or benefit against this sub-criterion as this option does not include any new construction works. - ◯
- **Land Use (including Agriculture and Forestry)** - this option may have a minor positive impact to this sub-criterion as if it encourages modal shift onto the local bus services, then there might be a reduced requirement in future for redeveloping of land for parking around the Base if current mode share trends continue or increase. - ✓
- **Water, Drainage, and Flooding** – this option would have no net impact or benefit on this sub-criterion. - ◯
- **Air Quality** – this option could have both a minor positive and minor negative impact on this sub-criterion. Shifting more staff members and local residents of Helensburgh from private cars to the local bus services can reduce air pollution by decreasing emissions per passenger mile travelled, leading to improved air quality. However, the buses would need to be environmentally friendly (low emission) otherwise they could contribute to local air pollution if the fleet consists of older diesel vehicles. - ×/✓
- **Historic Environment** – no net impact or benefit. - ◯
- **Landscape** – no net impact or benefit is expected against this sub-criterion as the routes would look to use established infrastructure and this would not have any impact on the visual quality of any landscape. - ◯
- **Noise and Vibration** – Increased bus / coach traffic could lead to higher levels of noise and vibration in some areas, affecting residents and wildlife, however, most modern bus / coaches are designed to be quieter and produce less vibration. If this option is successful in achieving a modal shift from private vehicle, then there could potentially be less noise associated with traffic in the local area. However, overall, no net impact or benefit is expected against this sub-criterion. - ◯

Climate Change Criteria

- **Greenhouse Gas Emissions** – Introducing new local bus services could potentially reduce greenhouse gas emissions by encouraging more staff members and local residents to opt for the bus instead of private cars. Buses, especially if they run on cleaner fuels or are electric, emit

fewer greenhouse gases per passenger-mile compared to typical private vehicles. Additionally, the local bus services could lead to a decrease in traffic congestion, which can further reduce emissions from idling vehicles. Minor positive. - ✓

- **Vulnerability to the Effects of Climate Change** – minor positive. By reducing the reliance on cars, the local bus can contribute to decreased vulnerability to the effects of climate change by mitigating factors such as air pollution, urban heat islands, and traffic-related infrastructure damage caused by extreme weather events. - ✓
- **Potential to Adapt to the Effects of Climate Change** – This option would look to utilise existing infrastructure, and therefore, would have dependence on this infrastructure to mitigate against events such as flood water. It would have no net impact or benefit on this sub-criterion. - ◯

Health, Safety and Wellbeing Criteria

- **Accidents** – Introducing new local services could potentially reduce the number of accidents on the roads by encouraging more staff and local residents to use the bus instead of driving private vehicles. With reduced cars on the roads, there is also less opportunity for conflicts between car and active travel users. Minor positive. - ✓
- **Security** – The local bus services are fitted with onboard CCTV, which can provide a level of comfort to some. Minor positive. - ✓
- **Health Outcomes** – By introducing new early morning services, various health outcomes can be recorded such as reduced air pollution and promoting physical activity. Encouraging more staff and Helensburgh residents to use the bus instead of driving, can contribute to improved air quality and decreased exposure to harmful pollutants. Additionally, physical activity will be increased with passengers walking to and from bus stops, making additional walking journeys to bus stops which would previously not have been made. Furthermore, by travelling by bus, staff may benefit from reduced driver stress and frustration, improving mental health and wellbeing. Minor positive. - ✓
- **Access to Health and Wellbeing Infrastructure** – this option could have a minor benefit as it can offer improved integration between bus and rail, whilst also introducing a new early morning service which can connect residents into more strategic services for onward travel to health, education and social destinations. Minor positive. - ✓
- **Visual Amenity** – It would have no net impact or benefit on this sub-criterion as the bus services would look to use existing infrastructure. - ◯

Economy Criteria

- **Transport Economic Efficiency (TEE)** - introducing additional bus services can potentially reduce traffic volumes by providing an attractive alternative to private car use for staff and Helensburgh residents. This can lead to smoother traffic flows, reduced congestion, and shorter commute times for both bus users and remaining car users. A well-designed bus service can also help improve journey times for passengers, particularly during peak shift start / end times and interchange with rail. By offering a new reliable and, in some sub-options, frequent bus services, the local bus option can reduce user frustration associated with unpredictable travel times, leading to increased satisfaction among staff members and other commuters in the area who would benefit from reduced traffic on local roads. There may be a slight impact to the economy through reduced fuel tax if there was a modal switch from private car to the bus services, however, this could be potentially offset by increased farebox revenue. Minor positive. - ✓
- **Wider Economic Impacts (WEIs)** - introducing new early morning bus services and expanding the geographic operating area of the 316 could open up opportunities for employment / job creation, by connecting the labour market with the Base and other employment opportunities further afield in Glasgow. The bus service also helps support existing businesses by providing access for both workers and customers. Minor positive. - ✓

Equality and Accessibility Criteria

- **Public Transport Network Coverage** – Introducing new local services can improve public transport network coverage by extending routes to areas previously underserved or unserved. This expansion increases access to the Base for those wishing to travel by public transport but currently can't, whilst also connecting other areas of Helensburgh with the Railway Station and local amenities. Minor positive. - ✓
- **Active Travel Network Coverage** – there is no expectation of active travel improvements being made as part of this option, and thus would rely on passengers making use of existing infrastructure to connect into the local bus services. It would, therefore, have no net impact or benefit on this sub-criterion. - ◯
- **Comparative Access by People Group** – The local buses would be required to provide low-floor access and prioritise seating for those with disabilities. Minor positive. - ✓
- **Comparative Access by Geographic Location** – this option would enhance comparative access by geographic location by providing new public transport services in areas with limited travel options to the Base beyond the use of private car. A few of the sub-options would also serve locations in Helensburgh, currently not served by any local services and so would provide new connectivity in these areas. This option would also reduce the need for residents of Helensburgh having to walk further to access the bus services in Helensburgh lower and similarly walking back up hill home. Minor positive. - ✓
- **Affordability** – the local bus service has a sliding scale fare system based on distance travelled. They also accept the SPT Zonecard and concessionary travel cards. As these options have a focus on the immediate local network, respective fares are not expected to vary beyond the current published fare tables. Minor positive. - ✓

Feasibility, Affordability and Public Acceptability

- **Feasibility** – the options have been designed on the central 316 local bus service which currently operates. Each of the options would look to add either one or two additional returns into the current timetable, where scope currently exists to do so. However, this is based on the timetable of one operator who does not currently operate any services prior to 0800. Therefore, it is more feasible for this operator than perhaps the other, who would need to dispatch an additional vehicle in order to operate any of the options. Additionally, one option would require two new bus stops to be added to the network. Minor positive. - ✓
- **Affordability** – At this stage there is no clarification on who would be responsible for paying the operational costs of any of these options, and therefore, any contingencies on affordability of potential funding agents. However, based on the operational costs calculated within Chapter 4, this option appears to be particularly low cost, and could potentially be subsidised (pump primed) in the first instance to prime patronage. Minor positive. - ✓
- **Public Acceptability** – it is anticipated that this option would be well received by staff and local residents as it would improve local connectivity, interchange between bus and rail and provide opportunities to connect into early morning rail services. Moderate positive. - ✓✓

5.4.3 RAIL OPTION

As discussed earlier in this report, this option would look to deliver a new railway station in proximity to the north gate of HMNB Clyde, served by an AM peak and PM peak commuter service. The service would start and end at Dumbarton, providing a reliable rail service for the communities along the rail line to the Base, in addition to providing interchange opportunities for those living in the Balloch / Alexandria area, who can switch to this commuter service to the Base.

The table below appraises the rail option against the various STAG criteria, Transport Planning Objectives and National Transport Strategy 2 (NTS2) outcomes.

Option 3: Rail Option: ▪ Option 2 – AM & PM Commuter service with train returning to Yoker during the day							
STAG Criteria							
Environment	**Climate Change**	**Health, Safety and Wellbeing**	**Economy**	**Equality and Accessibility**	**Feasibility**	**Affordability**	**Public Acceptability**
✗/✓	✓	✓✓	✓✓	✓✓	✓	✓	✓✓
Transport Planning Objectives							
TPO1: Increase the number of employed adults who can access the Base at a suitable time for shift start / finish using scheduled public transport by 33 percentage points by 2032.							✓✓
TPO2: Reduce car kilometres associated with travel to and from HMNB Clyde by 20% by 2032.							✓✓
TPO3: Improve the reliability of public transport journey times to the Base for all within the key Dumbarton / Balloch / Alexandria labour market catchment by 2032.							✓✓
Equalities							
Public Sector Equality Duty							✓
Fairer Scotland Duty							✓✓
Child Rights and Wellbeing Duty							✓
Increased availability, frequency and capacity of rail services between Garelochhead and Dumbarton would be beneficial for many people with protected characteristics and groups in each of the equalities frameworks as they would have enhanced accessibility.							
Policy							
National Transport Strategy 2							
Reduces inequalities							✓✓
Takes climate action							✓✓
Helps deliver inclusive economic growth							✓
Improves our health and wellbeing							✓
Hierarchies							
Sustainable Investment Hierarchy							✓✓
Sustainable Travel Hierarchy							✓✓

TPOs

- This option would perform particularly strongly against each of the three study TPOs.
- **TPO1:** this option would increase the opportunity to travel to HMNB Clyde by public transport by offering a reliable commuter service between Dumbarton and the Base, calling at intermediate stops. This affords a great opportunity to increase the potential labour catchment of the Base by public transport, particularly by offering a direct connection that arrives before 0800.
- **TPO2:** an attractive rail service could also attract staff to make a switch to more sustainable travel modes rather than the private car, reducing the number of vehicles on the local network. Additionally, the rail option would provide improved connectivity for the residents of Helensburgh to connect into other destinations along the rail line, thus reducing the need to undertake a car journey.

- **TPO3:** The rail line to Helensburgh has been known to be quite unreliable, however, much of these issues can be attributed to rail traffic in and around the Glasgow network. With this option both starting and terminating at Dumbarton, there is greater opportunity to improve journey time reliability with less interference from other rail traffic.

Environment Criteria

- **Biodiversity and Habitats –** the site of the potential station would require the removal of vegetation to provide both the station infrastructure and the access road. This could lead to both habitat loss and fragmentation. Construction activities and increased human presence in the area may also disturb local wildlife populations. Moderate negative - ××
- **Geology and Soils –** proper planning and construction techniques can minimise disturbances to geological features and soil integrity. The site is not known to hold any valuable geological features or soil, however, a full EIA scoping note would be required if this option were to proceed. No net impact or benefit on this sub-criterion. - ◯
- **Land Use (including Agriculture and Forestry)** – There is a requirement to remove some mature trees as part of the construction of the Railway Station and the access road. Minor negative - ×
- **Water, Drainage, and Flooding** - properly designed railway station infrastructure can incorporate stormwater management systems that reduce runoff and mitigate flooding risks. Additionally, by promoting public transportation, the railway station may help reduce the number of individual car trips, thus decreasing pollution runoff into water bodies. The proposed station's drainage outfall from the car park and access road can potentially connect with existing road drainage systems or outfall to waterways, subject to approval from the Scottish Environment Protection Agency (SEPA). Culverting of two watercourses is planned. No net impact or benefit on this sub-criterion. - ◯
- **Air Quality** - Encouraging the use of rail over individual car travel can lead to decreased emissions of air pollutants, contributing to improved air quality in the surrounding area. Construction activities associated with building the Railway Station and increased vehicle traffic during operation could temporarily worsen air quality in the vicinity. Minor positive. - ✓
- **Historic Environment** - No net impact or benefit on this sub-criterion. - ◯
- **Landscape** - A well-designed railway station and associated landscaping could enhance the visual amenity of the area, improving the overall landscape quality. The location of the station is in a forested area, and with a sympathetic design, could be hidden by existing vegetation. Minor positive. - ✓
- **Noise and Vibration** -Modern rail infrastructure is typically designed to minimise noise and vibration impacts on surrounding areas. Strategic placement of noise barriers and soundproofing measures can mitigate disturbances to nearby residents. As trains already operate on this section of track, by adding a new service, it would not necessarily introduce new noise and vibration. No net impact or benefit on this sub-criterion. - ◯

Climate Change Criteria

- **Greenhouse Gas Emissions** - Rail transportation is generally more energy-efficient and produces lower greenhouse gas emissions per passenger-mile compared to individual car travel. By providing an alternative to driving, the new railway station can help reduce overall emissions in the area, contributing to efforts to mitigate climate change. Construction activities associated with building the railway station and associated infrastructure, as well as increased energy consumption during operation, could result in short-term increases in greenhouse gas emissions. However, these emissions are typically outweighed by the long-term emissions reductions achieved through reduced car travel. Minor positive. - ✓
- **Vulnerability to the Effects of Climate Change** - Investing in sustainable transport infrastructure, such as rail, can enhance resilience to the effects of climate change by reducing

reliance on carbon-intensive modes of transportation. Additionally, rail infrastructure is often designed to withstand extreme weather events better than roadways, contributing to overall transportation resilience. However, if the rail infrastructure is not adequately maintained or upgraded to withstand changing climate conditions, it could become more vulnerable over time. Minor positive. - ✓

- **Potential to Adapt to the Effects of Climate Change -** Rail can offer a flexible and adaptable mode of travel, allowing for adjustments in service frequency, route planning, and infrastructure upgrades to accommodate changing climate conditions. Additionally, the new railway station can serve as a hub for multimodal transportation options, facilitating resilience and adaptation strategies. However, if the railway station and associated infrastructure are not designed with climate change in mind, they may become more vulnerable to extreme weather events or changing environmental conditions. Lack of investment in adaptation measures could limit the station's ability to withstand future climate impacts. Minor positive. - ✓

Health, Safety and Wellbeing Criteria

- **Accidents -** Rail is generally considered safer than individual car travel. Introducing a new railway station can potentially reduce the number of accidents on the roads by encouraging more people to use public transportation instead of driving, thereby reducing traffic congestion and the likelihood of collisions. However, if the railway station is not properly designed or maintained, it could pose safety hazards such as platform gaps, tripping hazards, or inadequate lighting, which may increase the risk of accidents for passengers and pedestrians. Minor positive. - ✓
- **Security -** Well-lit and monitored railway stations, along with the presence of security personnel and surveillance systems, can contribute to improved security for passengers and surrounding areas. Additionally, a customer information system connected to ScotRail's customer assistance team should be provided. There is a potential safety concern around protesters potentially targeting rail services used by staff at HMNB Clyde as a means of political statement against nuclear weapons. It will be important to monitor track access along the length of the line. Minor positive. - ✓
- **Health Outcomes** - Introducing a new railway station can have positive health outcomes by promoting physical activity through walking or cycling to access the station and reducing exposure to air pollution compared to car travel. Additionally, improved access to rail can enhance healthcare access and lead to better health outcomes for individuals. Minor positive. - ✓
- **Access to Health and Wellbeing Infrastructure** - A new railway station can improve access to health and wellbeing infrastructure by providing convenient transportation options to healthcare facilities, recreational areas, and community centres. This increased accessibility can contribute to overall wellbeing and quality of life for individuals. Minor positive. - ✓
- **Visual Amenity -** Well-designed railway stations with aesthetically pleasing architecture and landscaping can enhance the visual amenity of the surrounding area, contributing to a sense of place and community pride. The MoD could also adopt the station, with volunteers maintaining the station platform and plantings. The station is also located in a wooded area, and thus may not be visible from the road. Minor positive. - ✓

Economy Criteria

- **Transport Economic Efficiency (TEE)[14]** -
    - **Traffic Volumes:** A new railway station can help reduce traffic congestion by encouraging commuters to use public transport instead of individual cars. This reduction in traffic volumes can lead to smoother traffic flow and shorter commute times for both rail passengers and remaining car users.

[14] Initial quantification of benefits is reported in Chapter 6

  - **Journey Times:** A well-placed railway station and conveniently times service can improve journey times by providing faster and more reliable transport options, especially for longer distances (from Dumbarton) or congested routes.
  - **Farebox Revenue:** A new rail service and station could see an increase in farebox revenue as a result of increased patronage through modal shift from private car.
  - Moderate positive. - ✓✓

- **Wider Economic Impacts (WEIs) -**
  - **Supporting Existing Businesses:** Enhanced accessibility provided by the new railway station can benefit existing businesses by increasing the reach of the Base to the labour market helping to fill vacancies, especially for contractors on site. Future planned development work over the next 20 years could provide a number of employment opportunities which the station could help fill.
  - **Land Development:** A new railway station can stimulate land development by increasing the attractiveness and value of surrounding areas. Developers may be more inclined to invest in commercial or residential projects along the line, leading to increased property values, delivery of new housing and economic activity.
  - Minor positive. - ✓

Equality and Accessibility Criteria

- **Public Transport Network Coverage -** Introducing a new railway station expands the coverage of the public transport network, providing access to transport for individuals who may have been previously underserved or unserved. It enhances connectivity within the network, allowing more people to access various destinations efficiently, in addition to accessing HMNB Clyde. Moderate positive. - ✓✓
- **Active Travel Network Coverage -** A new railway station may complement active travel networks by providing connections to walking and cycling routes such as the new cycleway between Helensburgh and Garelochhead, thus promoting multimodal transportation options. This integration encourages healthier and more sustainable travel choices for individuals. Minor positive. - ✓
- **Comparative Access by People Group -** Introducing a new railway station with accessible features such as ramps and designated seating areas can improve access for people with disabilities, the elderly, and other marginalised groups. It ensures equitable access to transport services for all individuals, regardless of their physical abilities. Minor positive. - ✓
- **Comparative Access by Geographic Location -** A new railway station expands access to transport options for individuals residing in areas that were previously underserved or remote. It reduces travel distances and time to reach essential destinations, enhancing mobility and connectivity across different geographic locations. However, it should be noted that those most likely to benefit from this option are those living on the north side of the river Clyde. Minor positive. - ✓
- **Affordability -** Introducing a new railway station with affordable fare structures and integrated ticketing systems (SPT Zonecard) can improve affordability and accessibility for staff and local residents / families with limited financial resources. It ensures that public transport remains accessible to all members of the community, regardless of their income level. Cognisance will need to be taken of the new fares, as if they are higher than local bus fares / cost of driving (e.g., parking fees), it may make rail unattractive. Minor positive. - ✓

Feasibility, Affordability and Public Acceptability

- **Feasibility** – The feasibility studies for both the station and servicing the station indicated a number of challenges which although are not show-stoppers, do highlight that there may be difficult hurdles to overcome. At this stage the option remains feasible. Minor positive - ✓

- **Affordability** – As with the bus option, it is currently unknown who would be responsible for funding the construction of the station, ongoing operational costs of the station and the servicing of the station by rail. The costs outlined in Section 4 of this report indicate that there would be an upfront capital cost of £12m to build the station, which is a substantial amount. Ongoing costs whilst not prohibitive are likely to be more expensive than both the ATS and bus options. Overall, however, it is not thought that the total cost would preclude this option from further consideration. Minor positive - ✓
- **Public Acceptability** – it is anticipated that this option would be well received by staff and local residents as it would improve local connectivity, interchange between bus and rail and provide opportunities to connect into early morning rail services towards Glasgow from Dumbarton. Major positive. - ✓✓✓

6 Cost to Government

6.1 Overview

It is necessary within STAG to detail the net cost of the options under consideration so that they can be compared with the total benefits of the option (quantitative and qualitative), allowing for an overall value for money assessment to be made.

Cost to government refers to all costs incurred by the public sector as a whole net of any revenues – this incorporates:

- **Investment / capital costs:** All infrastructure and other capital costs incurred by the public sector which are additional to those incurred in the present day / Do Minimum scenario.
- **Operating and maintenance costs:** Annual recurring costs incurred by the public sector in operating and maintaining the options considered. In a rail context, rolling stock is treated as an operating cost as it is typically leased.
- **Grant / subsidy payments:** Should the private sector not cover the investment and operating costs; a grant or subsidy may be required to ensure delivery of an option. This is a cost to the public sector.
- **Revenues:** User charges (fares in this context), which represent monetary transfers from the users to the government.
- **Taxation impacts:** Options which promote public transport can lead to reductions in indirect tax receipts by reducing fuel duty (and, at the margin, Vehicle Excise Duty).

In the context of this STAG appraisal the public sector is represented as either Scottish, or UK Government and the MoD. It is unclear at present however, how any of the above options would be funded and as such there could potentially be other sources of funding / contributors to the project, which may offset / supplement any public sector investment required.

Due to the uncertainty over the costs and revenue associated with both the ATS Option and Local Bus Option, **this chapter will instead focus solely on the rail option**. The ATS costs are currently unavailable due to commercial confidentiality, whilst the local bus services while also being commercially confidential, also likely sit with the operators in the first instance to determine the financial / business viability of introducing any of the options. Thus, with financial figures only available for rail, this has been the focus, with the consideration of both the ATS and local bus services subject to further development as part of any subsequent business case, which should include further detailed engagement with all parties.

Below the cost estimates for the rail option have been outlined in addition to a value for money assessment, comparing benefits and costs over a 60-year appraisal period with an opening year of 2025.

6.2 Capital Costs

6.2.1 COST ESTIMATES

At the STAG stage, capital cost estimates are generally very high-level and have a significant degree of uncertainty attached to them. However, as HITRANS commissioned SLC Rail to undertake a railway station costing exercise relatively recently, and based on their knowledge and recent experience, the costs presented provide a good level of detail and consideration. As such these costs have been used to inform this exercise.

6.2.2 OPTIMISIM BIAS

There is a demonstrated, systematic tendency for project appraisers to be overly optimistic – this is known as Optimism Bias (OB), where costs and timescales are often under-estimated and benefits over-estimated. In order to account for this in appraisal, the H.M. Treasury Green Book, and in this case the STAG Technical Database, provides a set of factors by which costs should be scaled-up at different stages of the business case.

The OB for rail schemes at this stage of development is 64%, however, SLC has reduced this to 60% through a risk assessment and recent market involvement / intelligence from a recent project.

6.2.3 CAPITAL COSTS

The table below summarises the estimated capital cost of building a new station to serve HMNB Clyde in proximity to the north gate.

Table 6-1: Estimated Capital Costs (SLC Rail) (£m, all costs rounded to the nearest £000k, 2024 prices)

Estimate Breakdown	Cost (£)
Direct Construction Works	*£3.5*
Indirect Construction Works	*£1.5*
Design, PM and Other Project Costs	*£2.2*
Risk (OB) Allowance (60%)	*£4.3*
Inflation Cost	*£0.4*
Final Cost Estimate	**£12.0**

6.3 Operating and Maintenance Costs

Rail servicing costs have been extracted from the SYSTRA technical note, which are informed by their specialised rail operations team and recent market knowledge.

The costs associated with operating and maintenance, include:

- Rolling stock leasing costs.
- Train crew (driver and conductor).
- Rolling stock maintenance.
- Fuel costs.
- Variable track access charges.

As part of this exercise, it is assumed that rolling stock can be found within the existing ScotRail fleet and that no concession has been made to include new rolling stock costs.

The table below summarises the annual operating and maintenance costs associated with Option 2, rounded to the nearest £000k.

Table 6-2: Annual Operating and maintenance costs (2022 prices, £m, all costs rounded to nearest £100k)

	Option 2: Faslane Station AM & PM Commuter service with train returning to Yoker during the day
Operating and Maintenance costs	£0.4

6.4 Present Value of Costs (PVC)

The Present Value of Costs (PVC) was calculated in 2010 prices based on parameters from the Department for Transport (DfT) Transport Appraisal Guidance (TAG) Databook[15]. Scheme costs, as outlined above, were converted to net present values (NPV) for the 60-year appraisal period as follows:

- Capital costs were assigned a one year spend profile, thus 100% of the cost attributed to 2025.
- Inflation was included in the 2025 infrastructure costs prepared by SLC Rail from tender period to mid-point of construction period using BCIS General Buildings inflation forecast for construction and 3% per annum for PM and Design teams fees.
- Operating and maintenance costs were assumed to increase in line with RPI+1% up to 2044 and then in line with GDP for the remainder of the 60-year appraisal period.
- Costs were deflated to 2010 prices using the TAG Databook deflator series.
- Costs were discounted to 2010 from a current year of 2025 using discount factors from the TAG Databook (3.5% per annum until 30 years after opening, then 3% for the remainder of the 60-year appraisal period).
- Capital, and operating and maintenance costs were converted to market prices using the standard adjustment factor (19%).

The table below summarises the resulting PVC of Option 2, round to the nearest £000k.

Table 6-3: Present Value of Costs (discounted to 2010, in 2010 market prices, £M)

	Option 2: Faslane Station AM & PM Commuter service with train returning to Yoker during the day
Capital	£5.9m
Operating and Maintenance	£7.4m
Total	**£13.3m**

6.5 Estimated Rail Demand

In the absence of an appropriate transport model to evaluate the attractiveness of the rail option and determine patronage levels, a logit model was developed. Logit models are designed to predict the likelihood of an event's occurrence, using a set of independent variables. As part of this task, a model was prepared to estimate the potential demand for the railway option, thereby facilitating the estimation of user benefits and cost-benefit analysis. The subsequent section outlines the preparation and implementation of the logit model. It should be noted that the logit model provides an approximate estimation of potential demand for the rail option and that more detailed modelling would be required at Outline Business Case stage.

6.5.1 LOGIT MODEL

The following inputs were identified and applied to create the various variables within the model:

- **Demand Data:**

[15] TAG databook version 1.22 November 2023

- Baseline data was extracted from the HMNB Clyde gate counts undertaken in 2018. This provided AM Peak people trips split into the number arriving in car and those arriving as PT[16].
- 2023 BT Mobile Phone data was used to estimate the distribution pattern of road and rail trips, which is used to determine employee origins and thus potential demand. (For example, BT road data indicated 907 people arriving in the AM peak by car. Gate data indicated 2,200 people. Therefore, the 907 people from the BT data was growthed to 2,200.)
- Forecast demand has been set at 2018 levels, assuming that there is a finite number of jobs available at HMNB Clyde with no change in associated car / PT trips.
- There has been no inclusion / consideration of wider network demand impacts for the rail option.
- PM demand was created by mirroring the AM gate counts distributed by the PM Peak BT data.

- **Travel Times:**
  - Car journey times were calculated for each BT datazone to HMNB Clyde in the AM and from HMNB Clyde in the PM peak using Google Distance Matrix API to extract the in-traffic travel times for each movement.
  - PT travel times were determined using Stantec's bespoke connectivity analysis software. Q1 2024 Public transport timetables were included within the analysis, in addition to the ATS timetable. A PT Do-Minimum represented the current public transport offering. A PT Do-Something scenario was prepared by adding in Option 2 to the Do-Minimum. Timetable times from the SYSTRA note were used for the rail option timings.
  - Within the PT model one transfer was included (i.e., rail to bus, bus to bus, rail to rail).
- **Cost Data:**
  - Car operating costs were calculated using parameters from the DfT Transport Analysis Guidance (TAG) Databook, specifically fuel cost parameters within Table A1.3.13.
  - Public transport fare costs were estimated using the SPT ZoneCard as the fare mechanism. The new zone system includes seven zones. A weekly ZoneCard cost was extracted for two, three and four zones of travel. 2019 prices were inflated to 2024 levels and divided by 8.5 (journeys per weekly ticket) to estimate average journey fare costs. The appropriate fare was then allocated to each origin.

A simplified overview of the methodology for the Logit Model is provided below:

- **Scenario development:**
  - Using the demand data prepared above, two scenarios were designed to determine the potential attractiveness of the rail option – Car vs PT Do-Something and PT Do-Minimum vs PT Do-Something.
  - Weekday total journeys were the sum of the AM (to work) and PM (from work) peak journeys.
  - The weekday demand data was annualised based on 252 working days per annum.
  - Weekday average journey times and costs were calculated based on the average of the AM and PM peaks.

[16] PT numbers consist of those arriving by ATS and those on foot, based on the assumption that they travelled by local bus to the bus stops at both the north and south gates.

- The model included the following variables – Car demand, PT demand, travel time by each mode, and cost of the journey by each mode.

- **Generalised Time:**
  - To compare the scenarios and determine the attractiveness of the rail option, the car operating costs and PT fares were converted into generalised time using TAG Databook Values of Time.
- **Potential Demand:**
  - The difference in generalised time was calculated between each scenario (Car vs PT Do-Something and PT Do-Minimum vs PT Do-Something).
  - Where PT generalised times were the same in the Do-Minimum and Do-Something scenarios (i.e. the rail option does not affect that journey movement) it was assumed that users would not switch to the new service.
  - Demand was estimated using a logit function which was normalised to include all movements that accounted for at least 1% of the total attractiveness (demand) of the rail option.
  - Applying this methodology, the model identifies those who are likely to switch from existing modes to the new rail option.
- **User Benefits:**
  - Time benefits were monetised using TAG commuting values of time.
  - With car, the model indicated that the rail option does not provide a travel time benefit for any location and, therefore, user benefits were zero. However, some demand was predicted, reflective of those who may switch as a result of convenience (i.e., no longer having the inconvenience of driving in traffic, queuing at security, finding a parking space etc).
  - For PT trips, the predicted time benefit was applied to new service users to calculate monetised user journey time benefits.

6.6 Value for Money

A benefit cost ratio (BCR) was derived for Option 2, and it should be noted that:

- Benefits and costs were assessed over a 60-year appraisal period with an assumed opening year of 2026. Benefits and costs were discounted and converted to 2010 prices using TAG Databook parameters.
- The Option 2 costs and benefits were compared to provide an indicative net present value (NPV) and benefit cost ratio (BCR).
- For the purposes of the cost-benefit analysis, the forecast operating surplus / deficit was included in the Present Value of Cost (PVC), i.e., treated as a reduction / increase in the Cost to Government.
- It should be noted that new service revenue and/or abstraction of bus revenue for both the local bus services and ATS has not been quantified at this stage and should be considered as part of a more detailed Outline Business Case.

The following table presents the cost-benefit analysis, based on the scheme costs described above and the scheme benefits.

Table 6-4: Cost Benefit Analysis (discounted to 2010, in 2010 market prices, £m)

	Option 2: Faslane Station AM & PM Commuter service with train returning to Yoker during the day
PVB	2.6
PVC	13.3

NPV	-10.7
BCR	**0.19**

Based on the analysis it is evident that this rail option has a negative NPV and a BCR less than one. This would indicate that on the above assumptions the rail option's costs outweigh it benefits.

However, in considering the above outcomes it is also important to consider the following factors which have **not been included** and could potentially impact on the value of the option:

- Future growth in personnel at HMNB Clyde has not been included within the forecasts. Conservative numbers point towards a 20% increase by 2032, however, no profile has been provided.
- Analysis has only included the AM and PM commuter service between Dumbarton and Garelochhead, however, it is possible that existing West Highland Line services could also stop at a new HMNB Clyde Railway station generating additional revenue and benefits.
- No patronage of wider Helensburgh and Lomond residents has been included within the calculations. It is possible that this service in the direction of Dumbarton may be attractive to some residents of Garelochhead and Helensburgh Upper in particular.
- SYSTRA's note identified the potential for an AM path from Glasgow Queen Street, however, if one could also be found in the PM, this would **significantly increase** the attractiveness of the service, increase demand, and derive greater all-round benefits. This would also materially widen the labour market catchment to the site encouraging new trips to the base as people take advantage of the new opportunity.
- There is an opportunity for HMNB Clyde to introduce parking policies aimed at encouraging a shift to sustainable transport, such as the reduction in spaces or allocation based on a distance-based parameter / availability of public transport services. This would increase the attractiveness of and demand for the rail option.
- If a rail option were to be delivered, then there is the potential for removing overlapping ATS services, which could see these ATS users switch to rail.
- There is also the option of wider changes to the ATS services, which could act as feeder services into the rail option.
- There are plans to provide 1,025 additional cabins on the Base, which could abstract potential patronage, although anecdotal evidence has pointed towards most residents of these cabins retaining a main residence elsewhere in the UK out with a reasonable commuting distance.
- SPT ZoneCard was used as a proxy ticket for calculating public transport travel costs. However, there is a risk that these fares are not reflective of the anticipated new fares when the new ZoneCard launches this summer, and could therefore, be lower or higher than published. This could reduce the attractiveness of the rail option.
- It has been assumed that the rail option would be broadly revenue neutral across all public transport on the basis that there may be abstraction between ATS and local services and the rail option.
- It should be noted that the cost-benefit metrics do not include all the potential socio-economic benefits of the rail option and, therefore, should not be considered in isolation.

Overall, there would be a requirement for more detailed modelling and financial analysis as part of the development of an OBC to fully understand the implications on demand, revenue, and value for money of any option.

7 Risk and Uncertainty

7.1 Overview

Whilst a STAG appraisal draws conclusions based on the data available, it is early in the business case process and thus there remains considerable risk inherent in the options. The appraisal is therefore the stage in the process where risks must first be identified and scored, providing the basis for subsequent Quantified Cost Risk Analysis (QCRA) and Quantified Schedule Risk Analysis (QSRA) at Outline and / or Full / Final Business Case stages.

Uncertainty refers to both: (i) known risks of which there is a lack of complete knowledge (i.e., 'known unknowns' such as the extent to which the 20% car kilometre reduction target will influence travel behaviour); and (ii) factors or situations that have not previously been experienced and cannot be considered due to lack of evidence (i.e., 'unknown unknowns' as for example COVID-19 would have been before the pandemic). Uncertainty in STAG is generally focused on the former as, by definition, the latter are much harder to define and predict.

7.2 Risks and Risk Management

Risk management is a structured approach to identifying, assessing and controlling risks that emerge during the course of the option(s) lifecycle. This supports better decision making by developing a more thorough understanding of the inherent risks of option(s) and their likely impact. Risk management involves:

- Identifying possible risks in advance and assessing their likelihood of occurring, scale of impact and overall significance
- Identifying and putting in place potential mechanisms to mitigate each risk
- Ongoing monitoring and review to identify potential new risks, close risks which have been mitigated and manage risks that remain open

This section therefore outlines the key risks associated with the shortlisted options identified as part of this appraisal. Risks and opportunities are assessed using two criteria:

- Significance: What would be the impact and severity if the risk materialised?
- Likelihood: How likely is the opportunity to occur within the period stated?

To produce a risk score, a risk is first judged for its significance (extreme, high, medium, low or negligible) and for its likelihood (almost certain, likely, possible, unlikely or rare) and scored from 1 to 5, where 1 is negligible / rare and 5 is extreme / almost certain. The maximum score for a risk is 25 – i.e., an extreme significance and almost certain likelihood. The table below, developed by Liverpool John Moores University, indicates the status of risks coded in terms of a 'traffic lights system'. A score of above 12 is regarded as needing full risk management.

Significance							
	Extreme	5	M	M	H	H	H
	High	4	L	M	M	H	H
	Medium	3	L	L	M	M	H
	Low	2	L	L	L	M	M
	Negligible	1	L	L	L	L	L
			1	2	3	4	**5**
			Rare	Unlikely	Possible	Likely	Almost Certain
	Likelihood						

It should be noted that at this stage, all scoring is by its nature subjective. Risk assessment is not an exact science and best estimates, and frequent reviews are required to make such appraisals robust. If the project progresses to OBC and a preferred option becomes manifest, Quantified Risk Assessment should be undertaken to understand the likelihood and significance of each individual risk to cost (QCRA) and programme (QSRA).

The table below provides an assessment of the project risks in terms of their significance, likelihood, potential mitigation measures and residual risk.

Table 7-1: Options Risk Assessment

Type	Risk	Likelihood	Significance	Risk Score	Mitigation	Residual Likelihood	Residual Significance	Residual Risk Score
ATS Option								
Contract	The current contract has two years + two optional years remaining. This may restrict any potential option from being considered for four years.	5	5	**25**	Early option design and route development to ensure new contract reflects need and can start immediately once the current contract ends.	3	5	**15**
Financial	Unclear what the current cost of the ATS system is and budget to inform option design.	4	5	**20**	Early engagement between MoD and contractors to define a scope and level of service for the ATS system, to enable early market engagement and budget identification.	3	3	**9**
Financial	MoD may choose to stop the ATS service to make cost savings.	3	5	**15**	With a break clause due in two years, it will be important to make an early decision on the future of the ATS scheme and identify whether alternative solutions are required.	3	3	**9**
Financial	Cost of ATS to the user remains expensive beyond car use, or certain distance from Base.	3	4	**12**	As part of any future contract specification, consider other potential fare models for the ATS system beyond the current flat fare approach.	2	3	**6**
Financial	Fare model only allows for monthly passes to be purchased which limits the attractiveness for those travelling less frequently or at sea.	4	4	**16**	As part of any future contract specification, consider other potential fare models for the ATS system beyond the current flat fare approach.	2	3	**6**
Financial	New SPT Zonecard may make public transport	4	5	**20**	As part of any future contract specification,	2	3	**6**

Type	Risk	Likelihood	Significance	Risk Score	Mitigation	Residual Likelihood	Residual Significance	Residual Risk Score
	more attractive against the ATS option.				consider other potential fare models for the ATS system beyond the current flat fare approach.			
Demand	Demand continues to be low on certain routes, increasing the cost to MoD for operating routes. Risks continued delivery of route, and could therefore, reduce influence in attracting new staff.	3	4	**12**	Early work as part of contract specification to consider all routes and potential new routes. New demand modelling to determine revision of ATS network, replacing existing legacy model.	2	3	**6**
Car Parking on Base	New spaces or further changes to parking policy on Base may encourage more car use.	3	3	**9**	Review horizon plan to 2070 strategy to determine any potential increase or changes to parking provision on the Base as part of future development works.	2	3	**6**
Local Bus Option(s)								
Operational	The local operators may not have capacity / staff to introduce the new service into the timetable.	3	5	**15**	Early discussions with both local operators to determine feasibility of running bus option(s) as part of their current timetable. Offer service timetabling discussions and support.	2	3	**6**
Operational	There is a shortage of bus drivers in the industry just now which could make it difficult to deliver this option(s).	3	4	**12**	Engage with local operators to determine extent of issue. Provide support to fund new driver training. Offer local driver support from the Base.	3	3	**9**
Operational	There may be a need for an additional vehicle in	3	3	**9**	Provide financial support to the local bus service for an	2	3	**6**

Type	Risk	Likelihood	Significance	Risk Score	Mitigation	Residual Likelihood	Residual Significance	Residual Risk Score
	order to deliver any of the option(s) which could involve significant costs.				agreed number of years to help cover ongoing costs until the service covers initial outlay. Explore possible government funding / subsidies for low emission / alternative fuel vehicles.			
Demand	There is a risk demand levels may be lower than expected.	3	3	**9**	Scenario testing to understand the impact of changes in demand on scheme economics at OBC stage. This should include potential parking restrictions / pass removal by the Base, and stoppage of the Married Quarters Bus.	3	5	**15**
Demand	Potential for demand for new services to be impacted / restricted by the provision of Base Married Quarters bus.	4	4	**16**	Scenario testing to understand the impact of changes in demand on scheme economics at OBC stage. This should include potential parking restrictions / pass removal by the Base, and stoppage of the Married Quarters Bus.	3	5	**15**
Demand	Limited appeal beyond immediate local area (Helensburgh and Garelochhead).	3	3	**9**	Work with local stakeholders to raise awareness and promote the new services. Work with ScotRail to promote the interchange link to make the process of travelling to the area by sustainable transport more attractive.	2	3	6

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Type	Risk	Likelihood	Significance	Risk Score	Mitigation	Residual Likelihood	Residual Significance	Residual Risk Score
Financial	There could be higher than expected costs to operate the additional bus services due to local factors (rural).	4	4	**16**	Agreement to approach funding the service in the financial section of the OBC. More detailed modelling required to determine market for service, cost analysis and demand and revenue forecasting at OBC would assist in providing greater cost certainty.	5	3	**15**
Financial	The service does not cover its operating costs.	5	4	20	Agreement to approach funding the service in the financial section of the OBC. More detailed modelling required to determine market for service, cost analysis and demand and revenue forecasting at OBC would assist in providing greater cost certainty.	5	3	**15**
Financial	There could be lower than expected revenues if passengers board using a SPT Zonecard or NEC Concessionary card.	3	3	**9**	Engagement with SPT and local operators to explore potential financial reimbursement of new Zonecard revenue allocation. Further detailed demand modelling determining passenger splits and likely revenues.	2	3	6
Financial	Unexpected changes in fuel prices.	2	4	**8**	Ongoing monitoring of fuel prices. Sensitivity analysis as part of future financial modelling in the OBC to determine impact of fuel changes on cost and revenue.	2	3	**6**

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Type	Risk	Likelihood	Significance	Risk Score	Mitigation	Residual Likelihood	Residual Significance	Residual Risk Score
Regulatory	Changes in transport or environmental regulations which may affect operations – for example new emission targets.	3	3	**9**	Recent announcement by Scottish Government to remove initial 2030 targets, indicates wider issues with meeting targets. Potential for new targets to be established or new dates to be earmarked. Continued discussion with Transport Scotland to be aware of future changes to the policy landscape.	2	2	**4**
Regulatory	Changes in bus service provision through Transport (Scotland) Act – potential for franchising.	4	4	**16**	Engagement with SPT to promote the importance of the bus service in the region and offer to work collaboratively with SPT for any future scoping of service provision in the area to ensure it meets the needs of the local residents and employees of the Base.	3	3	**9**
Tickets	Both local operators still do not accept each other's tickets.	3	3	**9**	Engage with both operators and SPT to work collaboratively to install a solution which accepts each operators' tickets and ensures appropriate revenue reimbursement.	2	3	**6**
Car Parking on Base	New spaces or further changes to parking policy on Base may encourage more car use.	3	3	**9**	Review horizon plan to 2070 strategy to determine any potential increase or changes to parking provision on the Base as part of future development works.	2	3	**6**

Type	Risk	Likelihood	Significance	Risk Score	Mitigation	Residual Likelihood	Residual Significance	Residual Risk Score
Bas bus stops	Current Base bus stops are unattractive (infrastructure).	3	3	**9**	Work with local bus operators to identify potential new site for a Base bus stop which is closer to both the north and south gates.	2	2	**4**
Rail Option								
Financial	Construction cost inflation, a particular risk at present given persistent inflationary pressures and the long timescale for delivery.	4	5	**20**	Early progress to OBC to resolve outstanding questions and agree a design and delivery route so that it can be tendered.	4	4	**16**
Financial	The costs set out in this appraisal are relatively high level. Whilst there is a level on contingency to address this, a much greater degree of cost certainty will be required as the business case progresses, otherwise cost escalation is a major risk.	5	5	**25**	Progressing the study through the business case process is the most obvious and indeed a required mitigation measure. There would however be some value in undertaking Early Contractor Involvement (ECI) as an experienced contractor may be able to offer alternative solutions for the works and identify design and cost efficiencies.	3	5	**15**
Financial	At present it is unclear who will be responsible for financing the construction of a railway station and therefore, funding may not be available.	4	5	**20**	Early progress to OBC to resolve outstanding questions and agree a financial investment route and ownership for aspects of the option (station / service / crewing costs / rolling stock)	3	5	**15**
Financial	At present it is unclear who will be responsible	4	5	**20**	Early progress to OBC to resolve outstanding	3	5	**15**

Type	Risk	Likelihood	Significance	Risk Score	Mitigation	Residual Likelihood	Residual Significance	Residual Risk Score
	for funding the service and therefore, funding may not be available.				questions and agree a financial investment route and ownership for aspects of the option (station / service / crewing costs / rolling stock)			
Financial	The service does not cover its operating costs.	5	4	**20**	Agreement to approach funding the service in the financial section of the OBC. More detailed modelling required to determine market for service, cost analysis and demand and revenue forecasting at OBC would assist in providing greater cost certainty.	5	3	**15**
Planning and Consents	Uncertainty over who owns the land that the preferred station site sits.	3	5	**20**	Early engagement within MoD and Argyll & Bute Council to determine land ownership and early engagement with said landowners.	2	2	**4**
Planning and Consents	Uncertainty over future plans / design for cycle route under consideration by Argyll and Bute Council and impact to provision of walkway to station.	3	3	**9**	Early engagement with Argyll and Bute Council to ensure designs can incorporate new additional footways to and from the station without compromising new active travel route.	2	2	**4**
Planning and Consents	There is a risk of uncovering unexploded ordnance.	3	5	**15**	Undertake early review and survey to determine presence of ordnance. Establish or enact appropriate procedures (MoD led).	2	2	**4**

Type	Risk	Likelihood	Significance	Risk Score	Mitigation	Residual Likelihood	Residual Significance	Residual Risk Score
Power	Uncertainty of power supply in the area, may require linkage into Base.	3	3	**9**	Early progression to OBC and undertaking of more detailed design including Ground Investigations (GI) and utilities check.	2	2	**4**
Operational	ScotRail indicated that there is no spare units / rolling stock available to serve the route.	5	5	**25**	Construction would not take place for several years so there is a long-term planning window. However, an early decision to progress with the scheme would allow for future rolling stock requirements to be factored into the forthcoming replacement programme.	2	5	**10**
Operational	There may be issues with crewing as all crew with familiarity of the WHL are Based out of GQS and therefore there would be a requirement for them to get to Dumbarton.	4	5	**20**	Early engagement with ScotRail as part of the OBC to determine crewing models / resources and training. Develop understanding of crew to be Based out of Dumbarton.	3	3	**9**
Operational	Currently, only 16 members of the fleet are equipped with RETB equipment, which may necessitate an increase in the number of equipped Class 156s.	5	5	**25**	Construction would not take place for several years so there is a long-term planning window. However, an early decision to progress with the scheme would allow for future rolling stock requirements to be factored into the forthcoming replacement programme.	2	5	**10**

Type	Risk	Likelihood	Significance	Risk Score	Mitigation	Residual Likelihood	Residual Significance	Residual Risk Score
Operational	Servicing assumptions have been made Based on the 2022 timetable, which may change by the time this option proceeds. There is a risk that current paths on the network no longer exist.	4	5	**15**	Early engagement with Network Rail and ScotRail to explore potential future timetable changes, line upgrades, signal infrastructure changes and freight paths to understand whether identified paths remain.	3	4	**12**
Operational	At present it is unclear who will be responsible for the ongoing maintenance / upkeep and servicing of the railway station and therefore, funding may not be available	3	5	**15**	Early progress to OBC to resolve outstanding questions and agree a financial investment route and ownership for aspects of the option (station / service / crewing costs / rolling stock)	3	5	**15**
Demand	Demand is lower than forecast.	4	5	**20**	Scenario testing to understand the impact of changes in demand on scheme economics at OBC stage. This should include potential bus feeder services to Dumbarton from Balloch / Alexandria and parking restrictions / pass removal by the Base, stoppage of the Married Quarters Bus.	3	5	15
Demand	There is potential that the rail service could abstract demand from both the local bus services and / or the ATS services.	4	5	**20**	This is an issue that cannot be easily mitigated, but a comprehensive understanding of the level of abstraction would need to be developed through more detailed modelling in the OBC.	3	5	**15**

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Type	Risk	Likelihood	Significance	Risk Score	Mitigation	Residual Likelihood	Residual Significance	Residual Risk Score
Security	There are ongoing security concerns over the station as it could be targeted by protesters.	3	3	**9**	Explore potential safety and security measures to police the station if / when required. Increase security presence during train arrival and departure times.	2	3	**6**

7.3 Uncertainty

In addition to the project risks outlined in the table above, there is further uncertainty regarding:

- The future trajectory of car use and general travel demand, given the commitment of Scottish Government to reduce car kilometres by 20% by 2030.
- The future provision of bus services within the SPT Region is uncertain as SPT explore the powers available to them under the Transport (Scotland) Act 2019.
- Future development of the Base. Work is currently underway to horizon plan to 2070, but as these plans have not been finalised there is uncertainty on how the Base will look and function in the future.
- There is a lot of political uncertainty in Scotland at present, however in the future, any potential independence of Scotland from the rest of the UK, could impact the function and operation of the Base at Faslane. It is realistic that services, staff and function of HMNB Clyde would transition to another Base in the UK, reducing potential demand in the area.
- At present, there is no allocated budget to support the progression of any of the options through to delivery and construction, nor funding to develop an OBC. Funding is therefore a key uncertainty.

8 Benefits Blueprint and Monitoring and Evaluation

8.1 Overview

The final step in the process is the development of a benefits blueprint and a monitoring and evaluation (M&E) framework, which could be used as the basis for retrospectively assessing the value for money and effectiveness of the investment made.

8.2 Benefits Blueprint

STAG and business case guidance more generally requires the preparation of a 'benefits blueprint', effectively a statement of the type of benefit, to whom it will accrue and how it will be recorded.

The benefits that can be expected to emerge from providing the options considered within this appraisal can be considered in two ways:

- **Improved transport outcomes:** *These are the direct transport outcomes and changes in travel behaviour and use of the transport network brought about by the investment, e.g., new trips generated, change in trip destination etc.*
- **Societal impacts:** *The corresponding societal impacts generated by each outcome, for example, increased employment and visitor numbers etc.*

8.2.1 TRANSPORT OUTCOMES

The transport outcomes that will emerge will depend on the option ultimately adopted. However, it is anticipated that each of the options would deliver the following:

Table 8-1: Transport Outcomes

ATS Option	Local Bus Option	Rail Option
▪ Increased / new patronage on ATS services, especially in previously underserved areas. ▪ Modal switch from car to ATS for journeys to / from HMNB Clyde. ▪ Reduced road traffic volumes leading to reduced opportunity for conflict between modes / accidents. ▪ Reduced road traffic leading to improvements in journey time reliability in the local area, especially around the North Gate. ▪ Reduced road traffic volumes leading to lower contributions of road traffic to emission levels.	▪ Increased / new patronage on 316 service within Helensburgh. ▪ Reduced wait times at Helensburgh Railway Station and 316 bus. ▪ New trips for local residents for a variety of purposes locally and / or connecting into early morning rail services. ▪ Modal switch from car to local bus for travel to/from HMNB Clyde. ▪ Reduced road traffic volumes leading to reduced opportunity for conflict between modes / accidents. ▪ Reduced road traffic leading to improvements in journey time reliability in	▪ Increased / new rail patronage at existing local stations – Dumbarton, Dalreoch, Cardross, Helensburgh Upper, Garelochhead. ▪ New trips for local residents for a variety of purposes including commuting towards Glasgow, education, personal business, leisure and tourism. ▪ New access to opportunities for staff living on the Base on days off / evenings. ▪ Modal switch from car to rail for travel-to-work, travel-to-Base, education, essential services and

▪ Potential for reduced patronage on public transport – rail, local 316 bus. ▪ Reduced need for parking provision on Base, leading to redevelopment of space.	the local area, especially around the North Gate. ▪ Reduced road traffic volumes leading to lower contributions of road traffic to emission levels. ▪ Reduced need for parking provision on Base, leading to redevelopment of space. ▪ Potential reduction in patronage on ATS services.	leisure, and inbound journeys to the Base. ▪ Reduced road traffic volumes leading to reduced opportunity for conflict between modes / accidents. ▪ Reduced road traffic leading to improvements in journey time reliability in the local area, especially around the North Gate. ▪ Reduced road traffic volumes leading to lower contributions of road traffic to emission levels. ▪ Reduced need for parking provision on Base, leading to redevelopment of space. ▪ Potential reduction in bus patronage on local 316 services. ▪ Potential reduction in bus patronage on ATS services.

8.2.2 SOCIETAL IMPACTS

Societal impacts are the ultimate benefits that the investment is seeking to deliver, supporting local, regional, and national policy. These societal impacts / benefits are summarised in the table below and are split by benefit category (i.e., type), beneficiary (i.e., to whom it will be of value) and class (i.e., how the benefit will be measured).

Table 8-2: Societal impacts - benefit blueprint

Option	Benefit	Category	Beneficiary	Class
Rail Option	Increased employment through better connecting labour and jobs at the Base.	Wider societal benefit	HMNB Clyde, and wider catchment area.	Quantifiable subject to data (number of posts filled, growth targets met).
ATS Option	Improved productivity through increasing the effective size of the labour force and improved matching of skills to jobs.	Wider societal benefit	HMNB Clyde, wider catchment area, particularly Inverclyde.	Qualitative
All Options	Increased levels of agglomeration	Wider societal benefit	HMNB Clyde, wider Helensburgh and Lomond Community.	Monetisable, subject to data.
All Options	Reduced CO^2 Emissions.	Wider societal benefit	Helensburgh and Lomond Community, Argyll and Bute	Monetisable subject to data.

			Council and Scotland overall.	
All Options	Improved air quality in Helensburgh, Rhu and Faslane.	Wider societal benefit	Helensburgh and Lomond Community.	Monetisable subject to data.
All Options	Reduced negative community impacts, e.g., improved public realm, reduced noise and vibration etc.	Wider societal benefit	Helensburgh and Lomond Community.	Qualitative
All Options	Reduction in transport inequalities.	Wider societal benefit	Helensburgh and Lomond Community.	Qualitative
Local Bus Option	Improved access to health, education and social opportunities through wider access to bus on onward connections.	Wider societal benefit	Helensburgh and Lomond Community.	Qualitative

It should be noted that to inform the extent of these benefits, there may be a need for a significant programme of robust data collection. Whilst HMNB Clyde do capture a lot of this data from a business perspective, to inform on wider Helensburgh and Lomond benefits, robust data will be required.

8.3 Monitoring and Evaluation

8.3.1 OVERVIEW

The purpose of monitoring and evaluation is to determine the success of an intervention to achieve project objectives and forms an essential part of the project lifecycle, demonstrating what has been achieved with public resources and providing evidence and learning points for future decision-making and investment. this process is split into two steps:

- ***Monitoring*** – is essentially the process of collating data and interpretation of the findings on the performance of the intervention.
- ***Evaluation*** – is generally reserved for the post implementation of the intervention to identify whether the intervention is or has performed as originally intended

A Monitoring and Evaluation Plan (M+E) should be developed ahead of the introduction of any intervention and includes for the provision of how the outcomes of the intervention will be monitored and evaluated throughout the lifecycle of the intervention.

8.3.2 MONITORING AND EVALUATION PLAN

The M+E Plan should set out how and when the metrics for any of the options will be captured and measured.

8.3.2.1 Monitoring Plan

Monitoring performance allows a measurement of whether a project has been successfully implemented or not. At this early stage, it would not be appropriate to set out a detailed monitoring plan, and that this is considered in much greater detail as part of the development of an OBC. The

plan would then more robustly reflect the preferred option at that time, which can then be further updated as the process continues to FBC.

Whilst not developing a detailed plan at this stage, it is important that the plan reflects the transport objectives sought for the study and therefore suggested metrics to include within the development of the plan include:

- **TPO1:** Increase the number of employed adults who can access the Base at a suitable time for shift start / finish using scheduled public transport.
    - Timetable analysis by PT mode and combination of PT modes.
    - Network analysis to determine any supply-side changes and possible new areas served.
    - Frequency of services.
    - Connectivity analysis, measuring journey times.
    - Gate counts to determine ongoing modal share.
    - Employee surveys to analyse travel trends and behaviours.
    - Parking beat surveys on Base.
- **TPO2:** Reduce car kilometres associated with travel to and from HMNB Clyde.
    - Gate counts to determine ongoing modal share.
    - Employee surveys to analyse travel trends and behaviours (including home postcode).
- **TPO3:** Improve the reliability of public transport journey times to the Base for all within the key Dumbarton / Balloch / Alexandria labour market catchment.
    - Bus journey time analysis over time (BODS).
    - Traffic commissioner reports.
    - Bus timetable analysis.
    - Bus user satisfaction surveys.
    - ATS journey time analysis.
    - Rail punctuality reports.
    - Rail cancellations.

Appropriate data collection methods and metrics covering the above should be subject to further refinement and development as part of the OBC.

8.3.2.2 Evaluation Framework

The term ‘evaluation’ in the business case context describes objective driven review or audit of a project’s performance. There are two elements to an evaluation:

- ***Post-Implementation Review (PIR):*** Also known as a process evaluation, the objective of the PIR is to review and identify lessons learned and best practice in the project planning and delivery phase.
- ***Post-Evaluation Review (PER):*** The PER evaluates whether the project has delivered its anticipated outcomes and impacts (benefits).

8.3.2.2.1 Post-Implementation Review

PIR is an evaluation of how a scheme has been selected, funded, procured, managed, and delivered, with the aim of identifying lessons that could be learned for delivering similar schemes in future. It

would likely be led by Transport Scotland, assuming that they were the ultimate delivery body for any future rail provision at Faslane, regardless of the original funder.

The PIR for a station at HMNB Clyde / Faslane would be prepared through a combination of document reviews and depth interviews with those involved in the delivery of the project (e.g., Transport Scotland, Argyll and Bute Council, HITRANS, MoD, potentially ScotRail and Network Rail, contractors etc). From this exercise, information would be gathered on both subjective issues (perceptions of how the implementation and delivery went) and objective issues (factual data on how the implementation and delivery went). More specifically, the evaluation would focus on the process of how the scheme was delivered and identify factors that helped or hindered the effective delivery. The following types of questions would be considered in the PIR:

- Was sufficient resource put into establishing the refreshed 'case for change' and identification of the preferred option? Are there are any lessons that could be learned for future projects of this nature?
- Did the implementation meet budgetary expectations, and were there any unforeseen costs? If so, how was this managed?
- Was the approach to the identification, quantification and management of risks effective?
- How effective was the procurement strategy in delivering value for money?
- How effective were the contractual mechanisms adopted? Was change managed effectively?
- How effective was the project governance and assurance framework? Were there any issues in relation human resources?
- Was the project delivered to the agreed programme? If not, why not, and are there any lessons that can be learned?
- Were the benefits identified in the benefits blueprint realised? If not, what remedial actions were taken and are there any lessons that could be learned for future projects?
- Were there any issues with stakeholders that impacted on the effective delivery of the project?
- Could engagement with stakeholders have been improved?
- How were community benefits delivered through the project?
- In general, what worked well in delivering the project, why and how? What worked less well in delivering the project, and why?

The findings of the PIR should be set out in a succinct report and stored centrally as a document that could be drawn on when planning future projects and programmes.

8.3.2.2.2 Post-Evaluation Review

The PER should use the data from the monitoring programme to establish the extent to which the project has delivered the transport outcomes and societal impacts identified in the business case.

Transport Planning Objectives / Transport Outcomes

From a purely transport perspective, the PER should loop back to the Transport Planning Objectives set in the STAG and use the monitoring data to identify the extent to which these have been delivered.

Societal Impacts

The key focus of the PER should though be on the societal impacts, which are the ultimate benefits of the project. These are captured in the initial 'Benefits Blueprint', which should be updated at each stage of the business case.

It should be noted that it is common in an evaluation to incorporate an economic evaluation, through which outturn value for money can be determined. This has been done on several previous rail schemes in Scotland and may be appropriate here.

Evaluation Timing

A baseline data collection exercise should be undertaken shortly prior to scheme implementation. This should collect baseline data for all of the items listed in the Monitoring Plan (including for any control area / counterfactual), providing a basis for comparison in the evaluation.

This exercise could be repeated say one, three and five or ten years after implementation so as to monitor early outcomes and longer-term impacts. The exact scope of these studies will be dependent on the final M&E plan established in the FBC and the resources available to deliver them.

Transport Scotland's Rail Evaluation Guidance provides a well-developed framework within which such evaluations can be undertaken.

9 Conclusions and Next Steps

9.1 Conclusions

This report has considered options to improve the connectivity to HMNB Clyde by more sustainable modes of transport to tackle the overwhelming car mode share. It has been developed primarily in response to this core transport problem, to which the underlying causes can be underpinned by:

- A lack of space on the Base for further accommodation provision, thus requiring daily trip making.
- Restrictions on who can stay on Base, therefore, requiring a significant number of support staff and contractor staff travelling daily.
- Challenging shift start times of 0800 which significantly reduces the ability to travel to HMNB Clyde by public transport.
- Geographic location of HMNB Clyde, whilst beneficial for sea deployments, poses several challenges for bus service provision, and beyond generally accepted distances to walk or cycle on a regular basis.

The appraisal has also recognised the potential economic, social and environmental benefits that could be realised through improving sustainable transport connectivity to Scotland's largest single site employer.

Whilst a full economic appraisal of two options could not be undertaken at this stage, there is no evidence as to why they should be removed from consideration beyond this exercise. As such, following completion of the Detailed Options Appraisal, three options remain for further consideration:

- **ATS Option** – Which includes the expansion of the geographic coverage of the service and increased frequency.
- **Local Bus Option** – Including consideration of five potential local services that can be operated in the AM Peak to maximise potential bus patronage to the Base.
- **Rail Option** – A commuter service running twice a day between Dumbarton and Garelochhead, servicing a new station at Faslane.

All options provide a feasible alternative to the private car by delivering opportunities for modal shift and arrival at HMNB Clyde at more attractive time by public transport. It will be important to ensure that the delivery of any option does not make the potential user worse off in terms of cost.

The STAG process does not make any recommendations on which option should be selected, but rather appraises a set of credible options that can be progressed to an Outline Business Case (OBC) for more detailed development and assessment. The appraisal has highlighted, where appropriate, that each of these three options retain merit for further consideration and market engagement, with each helping to deliver against the main objective of reducing car modal share by providing an attractive sustainable transport alternative.

Should either of these three options progress to delivery, it would be essential to ensure that the preferred option is accompanied by a package of measures that would lock-in the benefits of the investment for HMNB Clyde and the wider Helensburgh and Lomond area. This would include delivering complementary measures within the Base, such as reduced parking permits / spaces and delivering localised connected services to feed into the main option. It is important to note that the three options in consideration are not mutually exclusive, and thus a package across any or all of the three would also provide far greater benefits.

9.2 Next Steps

Should the decision be made by HITRANS to proceed with any of the options, the next step would be to proceed to OBC development. If this also included the rail option, then a decision would also need to be made by Transport Scotland on the merit for further consideration and this would then enter Transport Scotland's railway 'Pipeline' process and development and design work would begin to inform an OBC.

The OBC is the means by which an ***ultimate preferred option*** is arrived at and the approach to funding, procuring and delivering is set out. There are several key project elements that would need to be further developed at OBC to arrive at a preferred option:

- Engagement with the two local bus operators to fully understand the feasibility and appetite to operate the local bus options. Both operators indicated their interest in engaging further on this subject and potential timetable / servicing changes.
- Understand the contractual obligations associated with the ATS service provision. This should include the scope of services, levels of frequency and geographic scope.
- For the rail option, further detailed discussions with ScotRail and Network Rail to understand the ability to operate a service between Dumbarton, including, rolling stock, crewing, fares and the wider West Highland Line strategy.
- A wider data collection programme. This should include travel surveys beyond the scope of HMNB Clyde and include the residents of the wider Helensburgh and Lomond area. This should include travel behaviours, comprising – travel to work, modal share, distance travelled, travel for social / education / health.

DIVIDER NAME

Appendix A Bus Timetables and Route Maps

A.1 Local Bus Option 1 - Garelochhead / Helensburgh Circular

Stops	Option Timetable	
Garelochhead, opp Station Road	**06:50**	
Garelochhead, after Dunivard Road	*06:51*	
Garelochhead, before Woodburn	*06:51*	
Garelochhead, o/s Birch Brae House	*06:52*	
Garelochhead, after Rowmore	*06:52*	
Faslane, nr Cemetery	**06:53**	
Faslane, at Glen Fruin	*06:53*	
Faslane, at High Balernock	*06:54*	
Faslane, after Station Road	*06:55*	
Shandon, at Peace Camp	*06:56*	
Shandon, after Kirk Brae	**06:57**	
Shandon, after The Birches	*06:57*	
Shandon, nr Queens Point	*06:58*	
Blairvadach, opp Outdoor Centre	*06:58*	
Rhu, after Aros Road	*06:59*	
Rhu, before School Road	*07:00*	
Rhu Ellan Court (at)	**07:01**	
Rhu, opp Marina	*07:02*	
Rhu Road Higher (before)	*07:03*	
New Stop Suffolk Street	*07:06*	
West Abercromby Street	*07:08*	
New Stop Golfhill Drive	*07:09*	
Helensburgh, opp Horton Place	**07:10**	
Helensburgh, opp Kent Court	*07:10*	
Helensburgh, nr Golfhill Drive	*07:11*	
Helensburgh, opp Collingwood Place	*07:11*	
Helensburgh, opp Jervis Place	*07:12*	
Helensburgh, opp John Logie Baird Primary	*07:13*	
Helensburgh, opp McAuslan Place	**07:14**	
Helensburgh Ben Bouie Drive (at 7)	*07:14*	
Helensburgh, after Ben Bouie Drive	*07:14*	
Helensburgh, opp Athole Street	*07:14*	
Helensburgh, opp Johnson Court	*07:15*	
Helensburgh Williamson Drive (At 62)	*07:15*	
Helensburgh, Hope Street	*07:16*	
Drumfork Road (eb)	*07:17*	
Drumfork Road (wb)	*07:18*	
Helensburgh Henry Bell Street (W-bound)	*07:20*	
Helensburgh, after Glenfinlas Street	*07:21*	
Helensburgh Lomond Street (W-bound)	*07:21*	
Helensburgh Railway Station (opp)	**07:22**	*Pick-up 07:13 arr, drop-off 07:25*
Helensburgh Colquhoun Square (NW-bound)	*07:23*	
Helensburgh West King Street (at 53)	*07:24*	
Helensburgh, before William Street	*07:24*	
Helensburgh, before Glasgow Street	*07:24*	
Helensburgh, at Sutherland Street	*07:25*	
Helensburgh, opp Ardencaple Quadrant	*07:25*	
Helensburgh, opp Ardencaple Drive	*07:26*	
Helensburgh, at Kidston Park	*07:27*	
Rhu Road Higher (opp)	*07:28*	
Rhu, opp Lagarie House	*07:29*	
Rhu, at Marina	*07:29*	
Rhu Ellan Court (opp)	**07:31**	
Rhu, opp Hall Road	*07:31*	
Rhu, opp Aros Road	*07:32*	
Blairvadach, at Gullybridge Home	*07:33*	
Shandon, opp Stuckenduff	*07:33*	
Shandon, opp Chapelburn	*07:34*	
Shandon, opp Kirk Brae	**07:35**	
Shandon, opp Peace Camp	*07:35*	
Faslane, opp Station Road	*07:36*	
Faslane, opp High Balernock	*07:37*	
Faslane, opp Glen Fruin	*07:38*	
Faslane, opp Cemetery	**07:39**	
Garelochhead, opp Rowmore	*07:39*	
Garelochhead, opp Woodburn	*07:40*	
Garelochhead, opp Dunivard Road	*07:40*	
Garelochhead, opp Station Road	**07:41**	*Pick-up 07:30 arr*
Garelochhead, after Dunivard Road	*07:42*	
Garelochhead, before Woodburn	*07:42*	
Garelochhead, o/s Birch Brae House	*07:43*	
Garelochhead, after Rowmore	*07:43*	
Faslane, nr Cemetery	**07:44**	
Faslane, at Glen Fruin	*07:44*	
Faslane, at High Balernock	*07:45*	
Faslane, after Station Road	*07:46*	
Shandon, at Peace Camp	*07:47*	
Shandon, after Kirk Brae	**07:48**	
Shandon, after The Birches	*07:48*	
Shandon, nr Queens Point	*07:49*	
Blairvadach, opp Outdoor Centre	*07:49*	
Rhu, after Aros Road	*07:50*	
Rhu, before School Road	*07:51*	
Rhu Ellan Court (at)	**07:52**	
Rhu, opp Marina	*07:53*	
Rhu Road Higher (before)	*07:54*	
Helensburgh, opp Kidston Park	*07:55*	
Helensburgh, opp Cairndhu Avenue	*07:56*	
Helensburgh, at Ardencaple Quadrant	*07:57*	
Helensburgh, opp Sutherland Street	*07:57*	
Helensburgh, after Glasgow Street	*07:58*	
Helensburgh, before John Street	*07:58*	
Helensburgh, nr James Street	*07:59*	
Helensburgh Colquhoun Square (E-bound)	*07:59*	
Helensburgh Railway Station (at)	**08:00**	*Pick-up 08:15 arr, drop-off 08:25*

A.2 Local Bus Option 2 – Garelochhead / Helensburgh Churchill Circular

Stops	Option Timetable	
Helensburgh, opp Horton Place	**07:13**	
Helensburgh, opp Kent Court	*07:13*	
Helensburgh, nr Golfhill Drive	*07:14*	
Helensburgh, opp Collingwood Place	*07:14*	
Helensburgh, opp Jervis Place	*07:15*	
Helensburgh, opp John Logie Baird Primary	*07:16*	
Helensburgh, opp McAuslan Place	**07:17**	
Helensburgh Ben Bouie Drive (at 7)	*07:17*	
Helensburgh, after Ben Bouie Drive	*07:17*	
Helensburgh, opp Athole Street	*07:17*	
Helensburgh, opp Johnson Court	*07:18*	
Helensburgh Williamson Drive (At 62)	*07:18*	
Helensburgh, at Nursery Street	*07:19*	
Helensburgh, opp Victoria Infirmary	*07:19*	
Helensburgh Henry Bell Street (W-bound)	*07:20*	
Helensburgh, after Glenfinlas Street	*07:21*	
Helensburgh Lomond Street (W-bound)	*07:21*	
Helensburgh Railway Station (opp)	**07:22**	*Pick-up 07:13 arr, drop-off 07:25*
Helensburgh Colquhoun Square (NW-bound)	*07:23*	
Helensburgh West King Street (at 53)	*07:24*	
Helensburgh, before William Street	*07:24*	
Helensburgh, before Glasgow Street	*07:24*	
Helensburgh, at Sutherland Street	*07:25*	
Helensburgh, opp Ardencaple Quadrant	*07:25*	
Helensburgh, opp Ardencaple Drive	*07:26*	
Helensburgh, at Kidston Park	*07:27*	
Rhu Road Higher (opp)	*07:28*	
Rhu, opp Lagarie House	*07:29*	
Rhu, at Marina	*07:29*	
Rhu Ellan Court (opp)	**07:31**	
Rhu, opp Hall Road	*07:31*	
Rhu, opp Aros Road	*07:32*	
Blairvadach, at Gullybridge Home	*07:33*	
Shandon, opp Stuckenduff	*07:33*	
Shandon, opp Chapelburn	*07:34*	
Shandon, opp Kirk Brae	**07:35**	
Shandon, opp Peace Camp	*07:35*	
Faslane, opp Station Road	*07:36*	
Faslane, opp High Balernock	*07:37*	
Faslane, opp Glen Fruin	*07:38*	
Faslane, opp Cemetery	**07:39**	
Garelochhead, opp Rowmore	*07:39*	
Garelochhead, opp Woodburn	*07:40*	
Garelochhead, opp Dunivard Road	*07:40*	
Garelochhead, opp Station Road	**07:41**	*Pick-up 07:30 arr*
Garelochhead, after Dunivard Road	07:42	
Garelochhead, before Woodburn	07:42	
Garelochhead, o/s Birch Brae House	07:43	
Garelochhead, after Rowmore	07:43	
Faslane, nr Cemetery	**07:44**	
Faslane, at Glen Fruin	*07:44*	
Faslane, at High Balernock	*07:45*	
Faslane, after Station Road	*07:46*	
Shandon, at Peace Camp	*07:47*	
Shandon, after Kirk Brae	**07:48**	
Shandon, after The Birches	*07:48*	
Shandon, nr Queens Point	*07:49*	
Blairvadach, opp Outdoor Centre	*07:49*	
Rhu, after Aros Road	*07:50*	
Rhu, before School Road	*07:51*	
Rhu Ellan Court (at)	**07:52**	
Rhu, opp Marina	*07:53*	
Rhu Road Higher (before)	*07:54*	
Helensburgh, opp Kidston Park	*07:55*	
Helensburgh, opp Cairndhu Avenue	*07:56*	
Helensburgh, at Ardencaple Quadrant	*07:57*	
Helensburgh, opp Sutherland Street	*07:57*	
Helensburgh, after Glasgow Street	*07:58*	
Helensburgh, before John Street	*07:58*	
Helensburgh, nr James Street	*07:59*	
Helensburgh Colquhoun Square (E-bound)	*07:59*	
Helensburgh Railway Station (at)	**08:00**	*Pick-up 08:15 arr, drop-off 08:25*

A.3 Local Bus Option 3 – Garelochhead / Cardross Circular

Stops	Option Timetable	
Garelochhead, opp Station Road	**06:39**	
Garelochhead, after Dunivard Road	*06:39*	
Garelochhead, before Woodburn	*06:40*	
Garelochhead, o/s Birch Brae House	*06:40*	
Garelochhead, after Rowmore	*06:41*	
Faslane, nr Cemetery	**06:41**	
Faslane, at Glen Fruin	*06:42*	
Faslane, at High Balernock	*06:43*	
Faslane, after Station Road	*06:44*	
Shandon, at Peace Camp	*06:45*	
Shandon, after Kirk Brae	**06:45**	
Shandon, after The Birches	*06:46*	
Shandon, nr Queens Point	*06:46*	
Blairvadach, opp Outdoor Centre	*06:47*	
Rhu, after Aros Road	*06:48*	
Rhu, before School Road	*06:49*	
Rhu Ellan Court (at)	**06:50**	
Rhu, opp Marina	*06:51*	
Rhu Road Higher (before)	*06:52*	
Helensburgh, opp Kidston Park	*06:53*	
Helensburgh, opp Cairndhu Avenue	*06:54*	
Helensburgh, at Ardencaple Quadrant	*06:54*	
Helensburgh, opp Sutherland Street	*06:55*	
Helensburgh, after Glasgow Street	*06:55*	
Helensburgh, before John Street	*06:56*	
Helensburgh, nr James Street	*06:56*	
Helensburgh Colquhoun Square (E-bound)	*06:57*	
Helensburgh Railway Station (at)	**07:00**	*pick-up 06:44*
Hermitage Academy	*07:10*	
Cardross, War Memorial	**07:11**	
Cardross, War Memorial	*07:21*	
Hermitage Academy	*07:24*	
Helensburgh Railway Station (opp)	**07:25**	*Pick-up 07:13 arr, drop-off 07:25*
Helensburgh Colquhoun Square (NW-bound)	*07:26*	
Helensburgh West King Street (at 53)	*07:26*	
Helensburgh, before William Street	*07:26*	
Helensburgh, before Glasgow Street	*07:27*	
Helensburgh, at Sutherland Street	*07:27*	
Helensburgh, opp Ardencaple Quadrant	*07:28*	
Helensburgh, opp Ardencaple Drive	*07:29*	
Helensburgh, at Kidston Park	*07:30*	
Rhu Road Higher (opp)	*07:31*	
Rhu, opp Lagarie House	*07:31*	
Rhu, at Marina	*07:33*	
Rhu Ellan Court (opp)	**07:33**	
Rhu, opp Hall Road	*07:34*	
Rhu, opp Aros Road	*07:35*	
Blairvadach, at Gullybridge Home	*07:35*	
Shandon, opp Stuckenduff	*07:36*	
Shandon, opp Chapelburn	*07:37*	
Shandon, opp Kirk Brae	**07:37**	
Shandon, opp Peace Camp	*07:38*	
Faslane, opp Station Road	*07:39*	
Faslane, opp High Balernock	*07:40*	
Faslane, opp Glen Fruin	*07:41*	
Faslane, opp Cemetery	**07:42**	
Faslane, nr Cemetery	*07:42*	
Faslane, at Glen Fruin	*07:43*	
Faslane, at High Balernock	*07:44*	
Faslane, after Station Road	*07:45*	
Shandon, at Peace Camp	*07:46*	
Shandon, after Kirk Brae	**07:46**	
Shandon, after The Birches	*07:47*	
Shandon, nr Queens Point	*07:47*	
Blairvadach, opp Outdoor Centre	*07:48*	
Rhu, after Aros Road	*07:49*	
Rhu, before School Road	*07:50*	
Rhu Ellan Court (at)	**07:51**	
Rhu, opp Marina	*07:52*	
Rhu Road Higher (before)	*07:53*	
Helensburgh, opp Kidston Park	*07:54*	
Helensburgh, opp Cairndhu Avenue	*07:55*	
Helensburgh, at Ardencaple Quadrant	*07:55*	
Helensburgh, opp Sutherland Street	*07:56*	
Helensburgh, after Glasgow Street	*07:56*	
Helensburgh, before John Street	*07:57*	
Helensburgh, nr James Street	*07:57*	
Helensburgh Colquhoun Square (E-bound)	*07:58*	
Helensburgh Railway Station (at)	**08:00**	*Pick-up 08:15 arr, drop-off 08:25*

A.4 Local Bus Option 4 – Cardross / Helensburgh Churchill / HMNB Clyde

Stops	Option Timetable	
Cardross, War Memorial	**07:00**	
Hermitage Academy	*07:10*	
Helensburgh, opp Nursery Street	*07:11*	
Helensburgh, opp Williamson Drive	*07:11*	
Helensburgh, at Johnson Court	*07:12*	
Helensburgh, nr Athole Street	*07:12*	
Helensburgh, before Ben Bouie Drive	*07:12*	
Helensburgh Ben Bouie Drive (at 8)	*07:13*	
Helensburgh, before McAuslan Place	**07:13**	
Helensburgh, at John Logie Baird Primary	*07:14*	
Helensburgh, nr Graham Place	*07:15*	
Helensburgh, after Jervis Place	*07:15*	
Helensburgh, before Collingwood Place	*07:16*	
Helensburgh, opp Hardy Hill	*07:17*	
Helensburgh, opp Horton Place	**07:17**	
Helensburgh, opp Kent Court	*07:18*	
Helensburgh, nr Golfhill Drive	*07:18*	
Helensburgh, opp Collingwood Place	*07:19*	
Helensburgh, opp Jervis Place	*07:20*	
Helensburgh, opp John Logie Baird Primary	*07:21*	
Helensburgh, opp McAuslan Place	**07:21**	
Helensburgh Ben Bouie Drive (at 7)	*07:21*	
Helensburgh, after Ben Bouie Drive	*07:21*	
Helensburgh, opp Athole Street	*07:22*	
Helensburgh, opp Johnson Court	*07:22*	
Helensburgh Williamson Drive (At 62)	*07:23*	
Helensburgh, at Nursery Street	*07:23*	
Helensburgh, opp Victoria Infirmary	*07:24*	
Helensburgh Henry Bell Street (W-bound)	*07:25*	
Helensburgh, after Glenfinlas Street	*07:25*	
Helensburgh Lomond Street (W-bound)	*07:26*	
Helensburgh Railway Station (opp)	**07:27**	*pick-up 07:13 arr*
Helensburgh Colquhoun Square (NW-bound)	*07:28*	
Helensburgh West King Street (at 53)	*07:28*	
Helensburgh, before William Street	*07:28*	
Helensburgh, before Glasgow Street	*07:29*	
Helensburgh, at Sutherland Street	*07:29*	
Helensburgh, opp Ardencaple Quadrant	*07:30*	
Helensburgh, opp Ardencaple Drive	*07:31*	
Helensburgh, at Kidston Park	*07:32*	
Rhu Road Higher (opp)	*07:33*	
Rhu, opp Lagarie House	*07:33*	
Rhu, at Marina	*07:35*	
Rhu Ellan Court (opp)	**07:35**	
Rhu, opp Hall Road	*07:36*	
Rhu, opp Aros Road	*07:37*	
Blairvadach, at Gullybridge Home	*07:37*	
Shandon, opp Stuckenduff	*07:38*	
Shandon, opp Chapelburn	*07:39*	
Shandon, opp Kirk Brae	**07:39**	
Shandon, opp Peace Camp	*07:40*	
Faslane, opp Station Road	*07:41*	
Faslane, opp High Balernock	*07:42*	
Faslane, opp Glen Fruin	*07:43*	
Faslane, opp Cemetery	**07:44**	
Faslane, nr Cemetery	*07:44*	
Faslane, at Glen Fruin	*07:45*	
Faslane, at High Balernock	*07:46*	
Faslane, after Station Road	*07:47*	
Shandon, at Peace Camp	*07:48*	
Shandon, after Kirk Brae	**07:48**	
Shandon, after The Birches	*07:49*	
Shandon, nr Queens Point	*07:49*	
Blairvadach, opp Outdoor Centre	*07:50*	
Rhu, after Aros Road	*07:51*	
Rhu, before School Road	*07:52*	
Rhu Ellan Court (at)	**07:53**	
Rhu, opp Marina	*07:54*	
Rhu Road Higher (before)	*07:55*	
Helensburgh, opp Kidston Park	*07:56*	
Helensburgh, opp Cairndhu Avenue	*07:57*	
Helensburgh, at Ardencaple Quadrant	*07:57*	
Helensburgh, opp Sutherland Street	*07:58*	
Helensburgh, after Glasgow Street	*07:58*	
Helensburgh, before John Street	*07:59*	
Helensburgh, nr James Street	*07:59*	
Helensburgh Colquhoun Square (E-bound)	*08:00*	
Helensburgh Railway Station (at)	**08:00**	*Pick-up 08:15 arr, drop-off 08:25*

A.5 Local Bus Option 5 – Helensburgh Station / HMNB Clyde

Stops	Option Timetable	
Helensburgh Railway Station (opp)	**07:30**	*pick-up 07:13 arr*
Helensburgh Colquhoun Square (NW-bound)	*07:31*	
Helensburgh West King Street (at 53)	*07:32*	
Helensburgh, before William Street	*07:32*	
Helensburgh, before Glasgow Street	*07:32*	
Helensburgh, at Sutherland Street	*07:33*	
Helensburgh, opp Ardencaple Quadrant	*07:33*	
Helensburgh, opp Ardencaple Drive	*07:34*	
Helensburgh, at Kidston Park	*07:35*	
Rhu Road Higher (opp)	*07:36*	
Rhu, opp Lagarie House	*07:37*	
Rhu, at Marina	*07:37*	
Rhu Ellan Court (opp)	**07:39**	
Rhu, opp Hall Road	*07:39*	
Rhu, opp Aros Road	*07:40*	
Blairvadach, at Gullybridge Home	*07:41*	
Shandon, opp Stuckenduff	*07:41*	
Shandon, opp Chapelburn	*07:42*	
Shandon, opp Kirk Brae	**07:43**	
Shandon, opp Peace Camp	*07:43*	
Faslane, opp Station Road	*07:44*	
Faslane, opp High Balernock	*07:45*	
Faslane, opp Glen Fruin	*07:46*	
Faslane, opp Cemetery	**07:47**	
Garelochhead, opp Rowmore	*07:47*	
Garelochhead, opp Woodburn	*07:48*	
Garelochhead, opp Dunivard Road	*07:48*	
Garelochhead, opp Station Road	**07:49**	

Appendix B Douglas Binns Limited Report

Faslane Station

Outline Feasibility Study

July 2023

Douglas Binns Limited

Douglas Binns Ltd
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Ref: FAS RE1 Issue 01

Contact: Douglas Binns

Approved for Issue: 

Date: 31 July 2023

Contents

Issue No.	Date	Comment
01 draft	27.07.2023.	Initial issue for comment
01	31.07.2023	Incorporating comments

1. Executive Summary

Douglas Binns Limited has produced an outline feasibility report into the siting of a railway station to provide access to His Majesty's Naval Base Clyde (HMNB Clyde) at Faslane.

An indicative location in the vicinity of the north gate has been identified along with access route options into the Base. A single platform station including a small car park has been proposed, with the preferred option maximising the use of existing roads and pavements for access. The platform length will be suitable for a seven car train. The estimated capital cost of the scheme will be provided by another party.

The current track alignment through the proposed station appears visually to be compliant for the proposed platform.

2. Introduction

Douglas Binns Limited has been commissioned by HITRANS to provide an indicative layout for a station adjacent to the north gate of HMNB Clyde, with access into the Base. The station would be located on the West Highland Line between Garelochhead and Helensburgh.

The station would predominantly serve HMNB Clyde, and would also cater for the likely small number of other passengers that may use it.

In 2018 HITRANS produced "HMNB Clyde Station Options Identification" (1) reviewing locations for the siting of a station to serve HMNB Clyde. Following review of this report by HITRANS and stakeholders, Douglas Binns Limited have been asked to investigate the "north gate" option. A site meeting took place on 30 June 2023 with a Ministry of Defence (MOD) representative from the Base and HITRANS.

This report examines the works associated with a new station and access:

- A new single platform station suitable for a typical seven car train
- A car park / turning head suitable for maintenance access and drop off only
- Pedestrian access to the public road and into the Base

Argyll and Bute Council are understood to be currently considering a cycle route on the north side of the main A814 road between the railway and Base.

This report covers the outline technical and environmental aspects of the proposed work and does not consider in any detail the cost, operational, ownership and legal aspects.

3. Site Location

The proposed location for the station is at OS reference NS 251 896 on the West Highland Line at 7 miles 58 chains. This is immediately to the south of an overbridge (Appendix A). The platform would be located to the west of the railway line. It may be possible to locate the platform slightly further south to reduce access lengths but there may be track alignment and topography constraints.

The railway is signalled by Radio Electronic Token Block which means that there are no signals in the vicinity which affect the station location. The station would be in the Helensburgh to Garelochhead token length.

The road into the station is proposed to be formed from the existing Glen Fruin Road to the south of the station.

It would be approximately 250 metres from the central point of the platform to the Glen Fruin road and a further 400 metres from there to the outer gate of the Base.

The land in the proposed area of the station is sidelong, falling from east to west with the ground level at the station approximately 16 metres above that of the A814 road immediately beneath.

The land is understood to be owned by the MOD, albeit potentially by two different departments. It is yet to be confirmed whether the land is currently tenanted.

4. Engineering Requirements

4.1 Station

I. Track Alignment

The proposed location of the station is on a gradient of 1:92 rising in the Up (southerly) direction. The track appears to be predominantly on a straight with the southern end of the platforms on a right hand transition curve travelling in the Up direction. These parameters appear acceptable for a platform although this will need to be verified by survey and design.

The track consists of jointed flat bottom rail on concrete sleepers.

There is an existing overbridge immediately to the north of the platform which should not be impacted on by the proposal. There are a number of culverts, a water pipe and cables beneath the railway, proposed platform and access road to the south.

A more southerly platform location would marginally reduce travel distances to the public road and HMNB Clyde, however this would bring the platform further onto the curve.

II. Platform Arrangement

A single platform is proposed to allow for a seven car train, at 166 metres in length. The width of the platform should be 2.5 metres minimum with all platform equipment beyond this width. It will be prudent to check this width against proposed passenger numbers, as given passenger numbers suggested in the previous options report (1) it is likely that the width would require to be increased.

There are a number of platform design options including traditional front wall and backfill, and a number of different alternative platform designs which could also be considered.

The design of the platform should take due cognisance of track drainage, given the site's location on the downhill side of the railway. The station needs to be able to be constructed with minimum impact to the operational railway. Options of modular platform design that can be constructed either set back from the track and slid or lifted in should be considered.

All station design work requires to be in accordance with "Design Standards for Accessible Railway Stations Version 04" (2).

Waiting shelters of typically 20m2 plan areas would be provided to a design of a type used on the Scottish network. Given the location and the number of passengers potentially utilising the station there should be potentially one enclosed shelter at the access point to the platform as well as open-sided shelters on the platform. Seating will be required.

A new dedicated power supply will be required for the station and car park.

A customer information system should be provided together with a help point connected to ScotRail's customer assistance team.

4.2 Car Park and Access to HMNB Clyde

Pedestrian access to the station is envisaged to be the prevalent form of access between the station and HMNB Clyde. This is proposed to be via a paved footpath to the Glen Fruin road, followed by ramps down to the A814 existing pavement. A foot crossing will be required across the A814 at a suitable distance from the existing roundabout adjacent to the North Gate. Liaison with Argyll and Bute Council to determine a suitable location for the crossing will be required, taking account of the existing amount of road traffic entering and leaving the Base at peak periods.

The ramped section of footpath between the Glen Fruin and A814 roads will be installed with maximum 1:20 gradients with maximum 10m section length in accordance with current guidance (2).

It is understood that a cycleway is proposed by Argyll and Bute Council to run along the east side of the A814. Cognisance will need to be taken of this for the footpath. There is an opportunity to cycle from the station to and from the Base.

The nature of access to the station by vehicular traffic requires to be agreed with stakeholders. It is currently envisaged that a single track access road with passing places would be provided for the circa 150 metres between the platform and the Glen Fruin road, running alongside the access path. The junction onto the Glen Fruin road will require careful consideration of sighting distances, with the location being close to the rail underbridge.

A small car park and turning area is proposed primarily catering for maintenance vehicles and potentially drop-off and pick up point for HMNB Clyde personnel. In order to minimise access road costs consideration should be made of the road make up being either of an unbound or bound nature.

Lighting (with power supply) will be required to the car park, for the footpath and access road as well as extending the existing lighting on the A814.

It has been assumed that the drainage outfall from the car park and access road can connect with existing road drainage systems or potentially outfall to existing waterways. The agreement of the Scottish Environment Protection Agency (SEPA) will be required. Two watercourses will require to be culverted.

De-vegetation of the route will be required including mature trees.

The requirement for an entry control system will need to be considered for the access road due to the location adjacent to the Base. How this is coordinated with mobility impaired access is to be determined.

A footbridge option to ease access into the Base was briefly considered, with access ramps running west from the station and a footbridge over the road and security fence with stairs, ramps and/or lifts taking people down to the Base car park level. The length of access ramps, the likely complexity and cost of a footbridge and security requirements have meant this option has not been taken forward at this point. An indicative line for this is shown on the proposed plan.

It is envisaged that the access footways and road would be of blacktop to the relevant Transport Scotland and Argyll and Bute guidance.

4.2 Power Supplies

There will be a requirement for power supplies for the station and its access. There are sub-station(s) within the Base that may be able to be used or a new supply from the Distribution Network Operator could be investigated. The existing street lighting power supply may also be extended if suitable, although this may be already fed from the Base.

5. Environmental Issues

The proposal will require to be discussed with the local planning authority, Argyll and Bute Council. There are two key issues to agree; the requirement for an environmental impact assessment and for planning permission. The planning authority will give guidance on this.

An environmental impact assessment screening letter is likely to be required to be submitted to the planning authority. The planning authority reviews this and determines whether an environmental impact assessment is required. The planning authority may also agree that this is a route for determining whether planning permission is required or if permitted development is applicable, if not a separate application may be required.

The MOD will require a Sustainability Appraisal to be produced for the works. This looks at the impact of the project from a number of different environmental perspectives. It is submitted by the project team and reviewed by their Defence Infrastructure Organisation.

An Enviro Insight report has been produced for the site and is provided in Appendix B. This provides a desktop, high level review of available data from Groundsure Location Intelligence. The report notes listed buildings, scheduled monuments and

designated ancient woodlands in the vicinity but they appear to be outwith the impact of the proposed project. This requires to be verified.

A number of environmental surveys will be required, and advice from a suitable specialist is required to determine which are applicable. These will include ecological, archaeological and visual impact.

A Geo Insight report for the site has also been produced and is provided in Appendix C. This provides a desk-based overview of the geological, geotechnical and services information for the area. It does not appear to highlight any significant issues of concern; however there will be a requirement for a detailed ground investigation, services and topographical survey in order to take the project forward.

Buried services were evident at the proposed platform location with pipe and cable marker posts.

Given the location of the proposed station and access on MOD property, an unexploded ordnance study will be required. This would initially consist of a desk-based survey, with site based investigations potentially required thereafter.

There may be opportunities to utilise designs which minimise the environmental impact and sustainability of the construction and operation of the station including; solar lighting and recycled road materials.

6. Security

There are a number of security issues to be addressed during construction and operation of the proposed station. These include:

- Construction teams are likely to all require BPSS clearance
- CCTV will be required for both the station and access road, linked to the control centre in the Base, as well as the ScotRail control centre
- Consideration is required into whether the vehicle access will require to be securely gated, allowing only maintenance and Base personnel to access the station. This would compromise access to mobility impaired passengers wishing to be picked up or dropped off at the station.
- If a footbridge were to be provided then specific access restrictions over it would be required, with the potential requirement for a staffed guardhouse at the station end of the of the footbridge.

7. Liaison with the Rail Industry and Land Owners

There has been a site meeting between an MOD Base representative, HITRANS and Douglas Binns Limited to initiate this report. It is understood that here have been initial discussions between HITRANS and Transport Scotland on the proposed station.

There are a number of stakeholders to be consulted with to determine the feasibility and funding for the project including:

- MOD operational departments
- MOD Defence Infrastructure Organisation
- MOD tenants (if any)
- Transport Scotland
- Network Rail
- ScotRail
- Argyll and Bute Council

The level of facilities provided at the station will require to be verified with Network Rail and Transport Scotland.

It is understood that the land surrounding the railway at the station site is wholly owned by the MOD and as such will be available for the station and car park.

Negotiations will be required with the land owners, and potentially their tenant(s) in the vicinity of station and access road. Access may be required to be maintained to the overbridge immediately north of the proposed platform.

A Scottish Transport Appraisal Guidance (STAG) study is likely to be required in support of the proposal.

6. Approvals and Consents

A number of approvals potentially require to be sought during the project:

	Item	**Approval by**	**Timescale**
1	Railway and other Guided Transport Systems Regulations for railway construction and operation.	ORR/NR	Acceptance in principle prior to work commencing. Approval on completion (timescale not given).
2	Network Change	ORR (via NR)	Prior to work commencing.
3	Track access agreement	NR	Prior to work commencing.
4	Network Rail "Agreement" for design and construction, unless work carried out by Network Rail directly.	NR	Prior to work commencing.
5	Planning permission and Building Warrants	Argyll and Bute Council	Prior to work commencing.
6	Construction Phase Plans, Method Statements	Client's representative	Prior to work commencing.
7	Discharge of water from site and impact on existing watercourses.	SEPA / Argyll and Bute Council	Prior to work commencing.
8	Design of car park and station.	NR	Prior to work commencing.
9	Power connection from distribution network operator.	Scottish and Southern Energy	Prior to work commencing.

7. Health and Safety

The proposed works would come under the auspices of the Construction (Design and Management) Regulations (CDM) 2015, under which the client has to appoint a Principal Designer as well as competent designers and contractors.

Designers' risk assessments will be required at the design stage of the programme. There are industry standard risks associated with working adjacent to an operational railway and specific risks associated with installation of a new station.

8. Key Opportunities and Risks

The following opportunities exist on the project:

- Reduction in road traffic
- Reasonably close proximity to existing public road.
- Utilise a reduced specification of access road to the station

The following risks have been identified:

- Land ownership to be determined.
- Ground conditions. Investigations have yet to be carried out.
- Ability to segregate the car park from use by others.
- The required level of passenger facilities especially waiting shelters.
- Ecological constraints – surveys required.
- The requirement to light the existing public road to the HMNB Clyde.

9. Conclusions

A single platform station suitable for a seven car train has been proposed at Faslane, to the east of the north gate of HMNB Clyde, on the West Highland Line. The platform is to be located to the west side of the railway between 7.5 and 7.75 mile posts. The station is proposed primarily to serve the Base.

The platform is proposed to be linked to the public road and Base north gate via a new access road wand footpath from the Glen Fruin road with a short section of footpath leading direct from the intersection of new and Glen Fruin roads and the main A814 below.

The station design is envisaged to be a basic platform with shelter(s), a turning area / small car park and an access pavement / road.

A number of stakeholders now need to be consulted with, an estimate produced and initial surveys carried out.

10. References

1. “HMNB Clyde Station Options Identification”, date tbc, Hitrans

2. “Design Standards for Accessible Railway Stations Version 04”, 2015, Department for Transport and Transport Scotland.

Appendix A: Site Plans

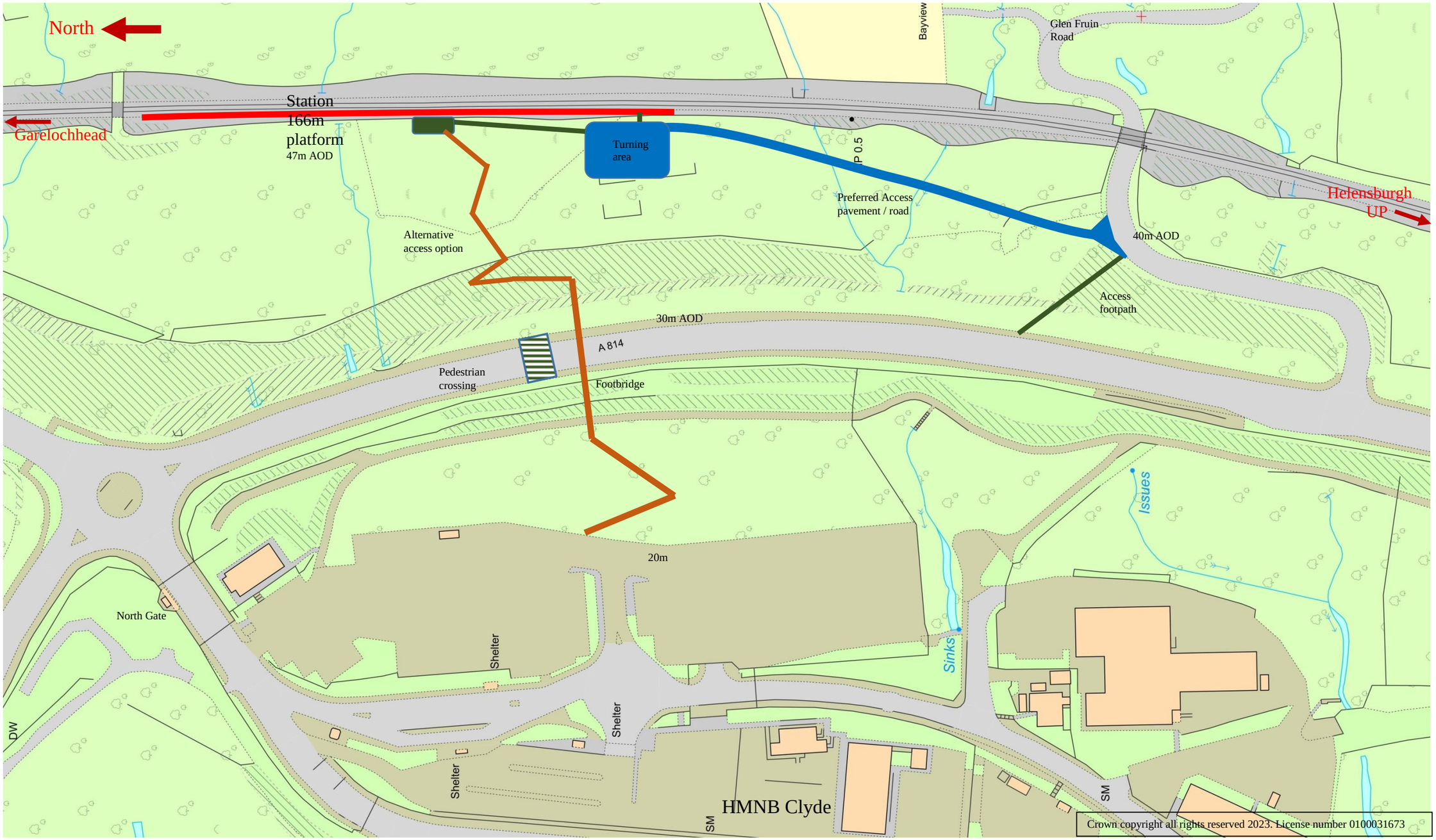


Figure 1: Faslane Proposed Station and Access

Note: Indicative levels shown only

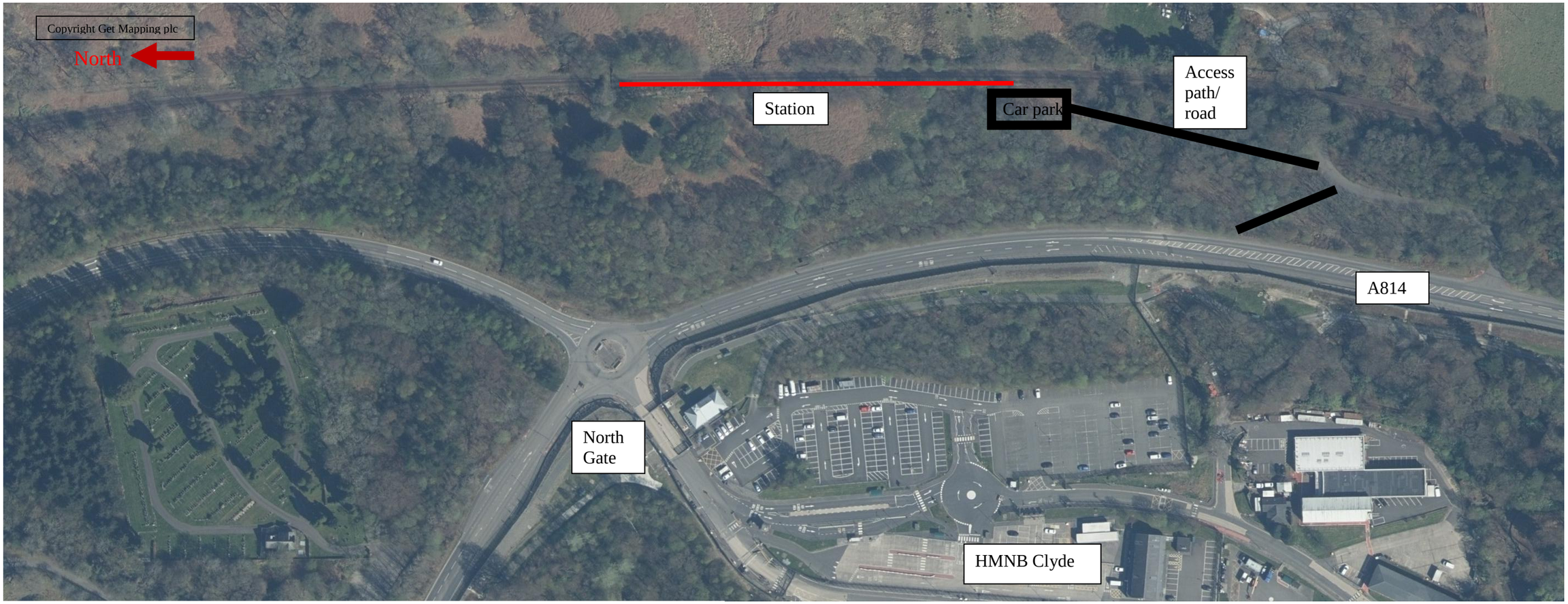


Figure 2: Site Location Aerial View – Preferred Access Option

Appendix B: Enviro Insight report

Appendix C: Geo Insight report

Appendix C SLC Rail Report

ESTIMATE/COST PLAN

PROJECT NAME	**Faslane Station**
PROJECT REFERENCE	**FAS-SLC-XX-CPN-COM**
REVISION	**Rev 2**
BASE QTR	**4Q23**
CLIENT	**HITRANS**
PI INSURANCE REQUIRED	**£5 MILION**
ESTIMATE MATURITY	**Order of Cost Estimate**
METHOD OF MEASUREMENT	**RMM1**
PROJECT BRIEFING	**Cost Estimate for a new station to serve HMNB Clyde. The station will be located on the West Highland Line between Garelochhead and Helensburgh. A new car park / turning area for maintenance access and drop off as well as pedestrian access to the road and the Base will also be provided.**

	Name	Date
Prepared by	Lewis Turner	10/01/2024
Checked by	Mat Taylor	28/11/2023
Authorised by	Jermaine Cunningham	28/11/2023

Scope

The Faslane Station Outline Feasibility Study July 2023, ref FAS RE1 Issue 01, produced by Douglas Binns Limited appraised several station options to provide access to His Majesty's Naval Base Clyde (HMNB Clyde) at Faslane. A single platform station including a small car park has been proposed, with the preferred option maximising the use of existing roads and pavements for access. The platform length will be suitable for a seven car train.

The scope for the project includes
- A new single platform station suitable for a typical seven car train
- A car park / turning head suitable for maintenance access and drop off only
- Pedestrian access to the public road and into the Base

This report, along with the drawings contained within it, form the basis for this Cost Estimate.

Estimate Revision

Development	Date	Version
Estimate created	16/11/2023	1
Estimate revised following comments from Frank and Doug	10/01/2024	2

Faslane Station

10 January 2024

SLC Rail

4Q23

Rev 2

Ref	Estimate Breakdown	Cost	Notes
1	**Direct Construction Works Costs**	**Value (£)**	
1.01	Signalling	**£6,950**	
1.02	Train Power Systems	**£0**	
1.03	Power and Plant	**£321,000**	
1.04	Permanent Way Works	**£0**	
1.05	Operational Telecoms	**£522,580**	
1.06	Buildings and Property	**£1,282,293**	
1.07	Civils Engineering	**£1,159,146**	
1.08	Enabling Works	**£215,850**	
	DIRECT CONSTRUCTION WORKS COST TOTAL	**£3,507,819**	
2	**Indirect Construction Works Costs**		
2.01	Preliminaries	**£1,079,209**	
2.02	Contractors Overhead and Profit	**£435,768**	
	INDIRECT CONSTRUCTION WORKS COST TOTAL	**£1,514,977**	
	TOTAL CONSTRUCTION COST	**£5,022,796**	
3	**Design, Project Management and Other Project Costs**		
3.01	Design	**£552,280**	See Design Team Fees sheet for cost build up
3.02	Project Management	**£502,280**	See Project Management Fees sheet for cost build up
3.03	Other Project Costs	**£1,161,639**	See Other Project Costs sheet for cost build up
	DESIGN, PM AND OTHER PROJECT COST TOTAL	**£2,216,198**	
	BASE COST ESTIMATE	**£7,238,994**	
4	**Risk**		
4.01	Risk - Allowance	**£4,343,397**	
	RISK COST TOTAL	**£4,343,397**	
5	**Inflation**		
5.01	Inflation	**£456,547**	See Inflation sheet for cost build up
	INFLATION COST TOTAL	**£456,547**	
6	**Taxation and Grants**		
6.01	Taxation and Grants	**£0**	
	INFLATION COST TOTAL	**£0**	
	ANTICIPATED FINAL COST	**£12,038,937**	

Assumptions

General Estimate Assumptions

1 All rates and prices have been assessed based on previous estimating experience from similar projects and adjusted as necessary to the base date noted below. At a later point in the estimate, these costs have then been escalated to account for inflation to the anticipated time of construction. Construction costs have been inflated to the start of the Tender period using the BCIS TPI forecasts and then from tender period to mid-point of construction period using the BCIS General Buildings inflation forecast. Inflation for PM and Design teams fees has been included at 3% per year, with Design fees inflated up to the start of the tender period and PM fees to mid-point of Construction period. The start of tender period is assumed to be 3Q24 and mid-point of construction is 2Q25.

2 Quantities have been prepared from information listed in the Sources of Information section (and other assumptions). They have been measured in accordance with RMM1, however given the level of design detail composite elemental levels have been used where necessary. It is deemed that composite Elements includes coverage of any relevant Sub-Element and Component Levels, however the scope and quantity of such may not be determined. This may affect rate certainty and contribute towards a wider estimating tolerance or provisional allowances for undefined scope.

3 As well as the specific project design information, the Network Rail Station Facilities & Amenities Design Manual NR/GN/CIV/200/03 has been used as a guide to determine what facilities, amenities and assets are required as part of the project.

4 Basis for the estimates in this report:
The estimates in this report are based on the following (as per RMM definitions):
- Direct construction costs for the main railway disciplines.
- Indirect construction costs for Contractor's preliminaries, temporary works and overhead & profit.
- Design team and survey fees for both Employer and Contractor.
- Employer's project management team fees. Deemed to include all other consultants and Network Rail management costs.
- Other project costs, including provisional allowances for Schedule 4 disruption costs (pending further information).
- Risk allowances which have been included based on a percentage allowance of 60%
-Inflation.

General Project Assumptions

1 Base date is 4Q23
2 No removal or treatment of Japanese knotweed is required
3 No allowance for environmental application costs, highway application costs
4 No allowance for noise and vibration
5 Works based on continuous working
6 New station is based on a Station Category F Small Unstaffed Station as per Network Rail's Station Facilities& Amenities Design Manual NR/GN/CIV/200/03
7 An allowance for utilities diversions has been included
8 Allowances have been included for costs for environmental works
9 No works to High Balernock User Worked Level Crossing
10 The existing overbridge is not affected by the works
11 No spares are required
12 No footbridge is required

Site Clearance

13 No invasive plants require removal
14 No contamination requires removal other than the excavated material
15 30 nr trees require removal
16 166m of trackside fencing will be removed

Earthworks

17 No allowance is required for ground stabilisation
18 20% of excavated material is contaminated non-hazardous and is included for in foundation or excavation rates
19 Excavated material will be disposed of off site
20 No Site dewatering and pumping, Soil Stabilisation Measures or Ground Gas Venting are required during construction
21 Site de-watering and pumping is not required
22 1m of fill is required under the new platform to provide a level surface, a new 1 m high retaining wall is also required to retain the fill

Power

23 A DNO is required for the station and car park which will be fed from the existing sub-station in the base
24 500m of power cabling and containment is required from the Sub-station in the base to the new station and car park DNO
25 An allowance is included for upgrade works to the existing sub-station

Platform

26 Platform is 166m long 3m wide and will be of modular construction
27 No DOO equipment is required
28 New UTX is not required
29 Platform rate is all in and includes drainage, lighting, telecoms, etc
30 Platforms will contain a 6 way multi duct
31 3 nr access ramps will be provided to the platform, 2 nr at the centre and Southern end of the platform for normal access from the car park and access road and 1 nr at the northern end to act as an SME
32 1 nr enclosed shelter is required at the access point to the platform as well as 2 nr open-sided shelters on the platform
33 4 nr bench seating to platforms is required
34 Platform drainage will connect to the new car park and access road drainage
35 2 nr new culverts will be installed for the existing waterways
36 PA speakers to be at 15m centres
37 3 nr NTI's and 1 nr SOD are required
38 2 nr Ticket validator's, 2 nr validators to platform, 1 nr Customer help point, 1 nr digital Clock are required
39 11 nr CCTV cameras are required to the platform
40 An allowance is included for works to the CCTV control centre
41 Existing culvert under track will be extended to allow for the new platform to be installed
42 CCTV will be transmitted to Faslane Base wirelessly, not via cabling. An allowance has been included for works to the CCTV control centre in the base

Signalling

43 No works are required to the signalling Controls and monitoring systems
44 There are no signals in the vicinity which are affected by the station location
45 Existing S&T cables will be slewed into ducts in the platform and the troughing will be removed for the length of the platform plus 10m at each end

Track

46 No work is required to the existing permanent way
47 No works are required to the track drainage

Car park, drop off and access road

48 Planting and landscaping to the car park is not required
49 200m of channels and gratings are required to the pedestrian footway
50 A 2m wide pedestrian access route is required to the length of the platform to serve as access from the car park/access road to the platform
51 A 450m2 car park and drop off area is required
52 Car park rate is all in and includes drainage, lighting, fencing, telecoms etc
53 Vehicle access will not be gated
54 A 410m2 vehicular access is required
55 New highway construction is based on a Type 3 Road Category as per the Transport Scotland guidance and consists of 40mm thick HRA surface course 60mm thick AC20 binder course, 320mm thick granular sub base
56 New footway construction comprises 20mm thick AC6 surface course, 60mm thick AC20 binder course, 150mm thick granular sub-base
57 2 nr 20m long passing places are to be provided to the vehicle access road
58 The drainage outfall from the car park and access road will connect with existing road drainage systems
59 Ticket vending machine are not required to the car park and car park management to be decided at a later date
60 6 nr CCTV cameras are required to the car park and access road
61 No bus stop or cycle storage is required to the car park
62 Assume 200m of fencing is required - Assumed quantity
63 Assume 100m of Fixed barriers is required - Assumed quantity
64 Assume a height restriction barrier is required to the car park entrance
65 An Oil Interceptor is required to the car park
66 The 3 nr platform access ramps and pedestrian footway will act as an SME
67 A new Pelican crossing will be provided to the A814
68 The pedestrian footway ramp will have handrails to both sides
69 An allowance for signage to the existing highway in approaches to the station is included
70 Permeable paving is not required to the car park
71 £10,000 is required for drainage consent costs for discharging into the highway drainage

Exclusions

General Estimate Exclusions

1 Excludes VAT
2 Excludes 3rd party compensation charges
3 Excludes planning and approval charges
4 Costs associated with Statutory Fees (e.g. HMRI, Local Authority, etc.)
5 Costs associated with taxes and levies, including VAT
6 Costs associated with licences and all associated costs and fees
7 Costs associated with changes in legislation and any form of applicable standards
8 Costs associated with changes in regulation and interpretation covering discriminatory, specific and general issues that may lead to design and cost changes
9 Costs associated with ground investigation
10 Allowances for adverse ground conditions / provisions for ground stabilisation unless specifically identified
11 Costs associated with phasing of works
12 Costs associated with remediation works to mine workings
13 Costs in relation to any interfaces with other Projects
14 Client's costs and legal costs for Level Crossing Consent Order, Compulsory Purchase Order, Planning Consent and other statutory powers
15 Land costs

Sources of Information

Name	References	Rev
Google Maps	-	-
Faslane Station Outline Feasibility Study July 2023	FAS RE1	01
Figure 2: Site Location Aerial View – Preferred Access Option	-	-
Figure 1: Faslane Proposed Station and Access	-	-
Fastline Faslane STAG Initial Appraisal: Case for Change Report	47897/5502	B

Change Control

Development	Version
Assumption around environmental works revised to reflect costs in estimate for Environmental works	2
2 nr culverts included to the access road	2
TVM to platform removed and replaced with validator	2
Slew of existing lineside cables removed	2
Drivers phone removed	2
Track drainage removed	2
£100k included for GI	2
UXO allowance increased to £25k	2
Prelims reduced from 25% to 15%	2
TOC compensation costs removed	2
Possession cost reduced	2
£5k included to upgrade line schematic and Sectional Appendix to reflect new station	2
£10k included for drainage consent costs	2

			Description	Qty	Unit	Rate	£ . P	Notes
GROUP ELEMENT 1.01: SIGNALLING SYSTEMS								
1			***Signalling Systems***					
	1		*Controls and monitoring systems*					
		1	*Consoles and panels*	1.00	Sum	£5,000.00	£5,000.00	Works to upgrade line schematic and Sectional Appendix to reflect new station
	8		*Cables and containment*					
		1	*Slewing existing cables into platform ducts*	0.00	m	£25.00	£0.00	Assume no cables to slew
		1	*Attendance on cable slew by Siemens*	0.00	Sum	£2,000.00	£0.00	
		2	*Containment*	20.00	m	£75.00	£1,500.00	Assume 10m in approaches to platforms
		3	*Crossings*	0.00	m	£2,000.00	£0.00	UTX to platforms
		3	*Turning chambers to UTX*	0.00	nr	£1,800.00	£0.00	To UTX
	14		*Testing and commissioning*					
		3	*Functional (including through testing)*	0.15	sum	£1,500.00	£225.00	Allowance
		4	*Commissioning and handover*	0.15	sum	£1,500.00	£225.00	Allowance
			Carry Forward				**£6,950.00**	

GROUP ELEMENT 1.02: TRAIN POWER SYSTEMS					
	Carry Forward			**£0.00**	

GROUP ELEMENT 1.03 : ELECTRIC POWER AND PLANT								
			Electric Power and Plant					
1			***Primary power supply***					
	1		*Main Grid substation*					
		1	*Allowance for upgrade*	1.00	Sum	£100,000.00	£100,000.00	
	2		*Distribution Network Operator (DNO) substation*					
		1	*New Power supply to station*	1.00	nr	£100,000.00	£100,000.00	
	6		*Earthing and bonding*					
		3	*Earthing*	1.00	nr	£10,000.00	£10,000.00	To power supply
		4	*Lightning protection*	1.00	Sum	£5,000.00	£5,000.00	To power supply
	7		*Cables and containment*					
		1	*Cable*	500.00	m	£15.00	£7,500.00	From main sub-station to new DNO. Assumed quantity
		2	*Containment*	500.00	m	£85.00	£42,500.00	From main sub-station to new DNO. Assumed quantity
		3	*Crossings*	1.00	Sum	£5,000.00	£5,000.00	To road
	8		*Testing and commissioning*					
		2	*Testing: on completion of the works*	0.15	sum	£170,000.00	£25,500.00	
		5	*Commissioning and handover*	0.15	sum	£170,000.00	£25,500.00	
			Carry Forward				**£321,000.00**	

GROUP ELEMENT 1.04: PERMANENT WAY					
Carry Forward				**£0.00**	

GROUP ELEMENT 1.05: TELECOMS								
			Operational Telecommunication Systems					
1			***Information transmission systems***					
	3		*Equipment housings, platforms and foundations*					
		3	*Location case, complete with racking and equipment*	2.00	nr	£20,000.00	£40,000.00	Telecoms cabinets to platform
	4		*Testing and commissioning*					
		4	*Commissioning and handover*	0.15	Sum	£40,000.00	£6,000.00	
2			***Telephone systems***					
	1		*Telephony equipment*		nr			
		1	*Direct line telephone*	0.00	Sum	£20,000.00	£0.00	
3			***Station Information and Surveillance Systems (SISS)***					
	1		*Audio Systems*					
		1	*PA system - station*	1.00	Sum	£10,000.00	£10,000.00	
		2	*Voice transfer system*		nr			
		3	*PA system - centralised long line*					
		4	*PA system - station long line. PA speaker*	11.00	nr	£700.00	£7,700.00	Assume at 15m centres
		4	*PA system - AFIL*	1.00	nr	£800.00	£800.00	Assume 1 nr per platform
		4	*PA system - Dynamic Ambient Noise Sensor*	2.00	nr	£250.00	£500.00	Assume 2 nr per platform
		4	*PA system - Station Announcement Point*	1.00	nr	£20,000.00	£20,000.00	Assume 1 nr per platform
	2		*Customer Information Systems (CIS)*					
		1	*Control Panel*	1.00	nr	£5,000.00	£5,000.00	
		2	*Local Control Unit (LCU)*		nr			
		3	*Visual display unit, NTS*	3.00	nr	£7,500.00	£22,500.00	
		3	*Visual display unit, SOD*	1.00	nr	£10,000.00	£10,000.00	Assume 1 nr per platform
		3	*Ticket validator*	2.00	nr	£2,000.00	£4,000.00	Assume 2 nr per platform
		3	*Ticket vending machine to platforms*	0.00	nr	£45,000.00	£0.00	Assume not required
		3	*Ticket vending machine to car park*	0.00	nr	£45,000.00	£0.00	Assume not required
		4	*Customer help point*	1.00	nr	£5,000.00	£5,000.00	Assume 1 nr per platform
		6	*Clocks: digital*	1.00	nr	£2,500.00	£2,500.00	Assume 1 nr per platform
	3		*Closed Circuit TeleVision (CCTV)*					
		1	*Cameras: remote to platforms*	11.00	nr	£1,200.00	£13,200.00	Assume at 15m centres
		1	*Cameras: remote to car park and access road*	6.00	nr	£1,200.00	£7,200.00	Assumed quantity
		2	*Visual display unit*					
		3	*Monitor*	1.00	nr	£2,000.00	£2,000.00	Allowance
		4	*Control Panels*	1.00	nr	£2,000.00	£2,000.00	Allowance
	4		*Cables and containment*					
		1	*Cables*	3,000.00	m	£25.00	£75,000.00	Assumed quantity
		2	*Containment; to platform for telecoms assets*	1.00	Sum	£75,000.00	£75,000.00	
		3	*Crossings*		m			
	5		*Testing and commissioning*					
		1	*Workstation*	1.00	sum	£1,000.00	£1,000.00	

		2	*Technical verification*		sum			
		3	*Functional (including through testing)*	0.15	sum	£263,400.00	£39,510.00	
		4	*Commissioning and handover*	0.15	sum	£263,400.00	£39,510.00	
4			***Operational Management Systems***					
	3		*Station management*					
		1	*Allowance for works to ScotRail's Control system for CCTV and Help Point*	1.00	nr	£20,000.00	£20,000.00	
		1	*Allowance for works to Faslane Base Control system for CCTV*	1.00	nr	£25,000.00	£25,000.00	
	4		*Cables and containment*					
		1	*Cables*	1,000.00	m	£25.00	£25,000.00	Assumed quantity
		2	*Containment; 6 way multi duct in platforms*	166.00	m	£200.00	£33,200.00	In platforms
	5		*Testing and commissioning*					
		3	*Functional (including through testing)*	0.15	sum	£103,200.00	£15,480.00	
		4	*Commissioning and handover*	0.15	sum	£103,200.00	£15,480.00	
			Carry Forward				**£522,580.00**	

GROUP ELEMENT 1.06: BUILDINGS AND PROPERTY								
			Buildings and Property					
1			***Substructure***					
			To platforms	506.00	m2	£405.00	£204,930.00	Costs from benchmarked platform data
2			***Superstructure***					
	1		*Frame*					
			To platforms	506.00	m2	£852.00	£431,112.00	Costs from benchmarked platform data
	4		*Stairs and ramps*					
		1	*Ramps to platforms*	3.00	nr	£75,000.00	£225,000.00	
4			***Fittings, furnishings and equipment***					
	1		*Fittings, furnishings and equipment*					
		1	*General fittings, furnishings and equipment; open sided waiting shelter to platforms*	2.00	nr	£45,000.00	£90,000.00	
		1	*General fittings, furnishings and equipment; enclosed waiting shelter to platform entrance*	1.00	nr	£53,000.00	£53,000.00	
		1	*General fittings, furnishings and equipment; bench seating to platforms*	4.00	nr	£2,500.00	£10,000.00	
		1	*General fittings, furnishings and equipment; Allowance for signage to platform*	1.00	Sum	£5,000.00	£5,000.00	
			To platforms	506.00	m2	£193.80	£98,062.80	Costs from benchmarked platform data
5			***Services***					
	8		*Electrical installations*					
		3	*Lighting installations to platforms*	22.00	nr	£2,500.00	£55,000.00	At 15m centres
		6	*Earthing and bonding systems*	1.00	nr	£10,000.00	£10,000.00	1 nr per platform
			To platforms	506.00	m2	£198.00	£100,188.00	Costs from benchmarked platform data
8			***External works***					
			Carry Forward				**£1,282,292.80**	

GROUP ELEMENT 1.07: CIVIL ENGINEERING								
1			***Earthworks***					
		3	*Filling under platform*	249.00	m3	£60.00	£14,940.00	To create level surface for platform
7			***Retaining walls***					
	1		*Foundations*					
		1	*Foundations: linear*	166.00	m	£200.00	£33,200.00	To retain fill under platform
	2		*Retaining walls*					
		1	*Walls: gravity type*	166.00	m2	£400.00	£66,400.00	To retain fill under platform
		7	*Waterproof membranes*	166.00	m2	£10.00	£1,660.00	To retain fill under platform
		9	*Drain hole or sweep hole*	7.00	nr	£50.00	£350.00	
8			***Fencing and enclosures***					
	1		*Fencing and railings*					
		1	*Fences*	200.00	m	£180.00	£36,000.00	Assumed quantity
	2		*Barriers and guardrails*					
		1	*Fixed barriers*	100.00	m	£150.00	£15,000.00	Assumed quantity
		1	*Handrail to pedestrian footway ramps*	84.00	m	£180.00	£15,120.00	Assume required
	2		*Barriers and guard rails*		m			
		3	*Access barriers: vehicular; height restriction barrier*	1.00	nr	£2,000.00	£2,000.00	
9			***General drainage***					
	1		*Surface water drainage*					
		1	*Drain pipes and trenches; under platform*	176.00	m	£225.00	£39,600.00	To collect platform drainage
		1	*Drain pipes and trenches; to car park*	50.00	m	£225.00	£11,250.00	
		1	*Drain pipes and trenches; to access road*	150.00	m	£225.00	£33,750.00	
		2	*Channels and gratings to pedestrian footway*	200.00	m	£320.00	£64,000.00	Assumed quantity
		3	*Gullies to car park*	4.00	nr	£550.00	£2,200.00	
		4	*Manholes and inspection chambers*	7.00	nr	£2,200.00	£15,400.00	To car park and access road
		5	*Oil Interceptors to car park*	1.00	nr	£10,000.00	£10,000.00	Assume required
		6	*Connections to public mains drainage*	1.00	nr	£5,000.00	£5,000.00	
	5		*Culverts*					
		1	*New culverts; 10 m long to watercourses under platform*	2.00	nr	£50,000.00	£100,000.00	Cost includes some rock removal
		1	*New culverts; 10 m long to watercourses under new access road*	2.00	nr	£25,000.00	£50,000.00	Cost includes some rock removal
		2	*Existing culverts: lining*	5.00	m	£2,500.00	£12,500.00	Temporary diversion of water covered in temporary works
	6		*Testing and commissioning*					
		2	*Testing: on completion of the works*	0.15	sum	£343,700.00	£51,555.00	
		4	*Commissioning: co-ordination of sectional work*	0.15	sum	£343,700.00	£51,555.00	
11			***Road, pavements and hardstandings***					
	1		*Roads*					
		1	*Excavation for new car park*	209.00	m3	£15.00	£3,135.00	Allows for an element of rock excavation
		1	*Disposal for new car park; inert*	167.20	m3	£35.00	£5,852.00	
		1	*Disposal for new car park; contaminated non-hazardous*	41.80	m3	£300.00	£12,540.00	
		1	*Excavation for new car park access road*	193.20	m3	£15.00	£2,898.00	Allows for an element of rock excavation

	1	*Disposal for new car park access road; inert*	154.56	m3	£35.00	£5,409.60	
	1	*Disposal for new car park access road; contaminated non-hazardous*	38.64	m3	£300.00	£11,592.00	
	3	*Surfaced access ways: vehicular to new car park*	450.00	m2	£85.00	£38,250.00	
	3	*Surfaced access ways: vehicular to new car park access road*	460.00	m2	£85.00	£39,100.00	
	6	*Kerbs, channels and edgings to new car park*	90.00	m	£30.00	£2,700.00	
	6	*Kerbs, channels and edgings to new car park access road*	300.00	m	£30.00	£9,000.00	
	6	*Allowance for works to connect new access road to existing highway*	1.00	Sum	£5,000.00	£5,000.00	
	6	*Allowance for signage to car park, access road and existing highway*	1.00	Sum	£10,000.00	£10,000.00	
	6	*Allowance for signage to existing highway in approaches to the station*	1.00	Sum	£5,000.00	£5,000.00	
	6	*New Pelican road crossing to A814*	1.00	Sum	£80,000.00	£80,000.00	
3		*Pavement and walkways; pedestrian footway between car park and platform*					
	1	*Excavation and disposal for surfacing*	92.00	m3	£10.00	£920.00	For pedestrian walkway/hardstanding between car park and platform
	1	*Disposal for new footway; inert*	73.60	m3	£35.00	£2,576.00	
	1	*Disposal for new footway; contaminated non-hazardous*	18.40	m3	£300.00	£5,520.00	
	4	*Surfaced access ways: pedestrian*	400.00	m2	£55.00	£22,000.00	For pedestrian walkway/hardstanding between car park and platform
	4	*Surfaced access ways: pedestrian; extra over for Wayfinding paving*	200.00	m2	£150.00	£30,000.00	
	6	*Kerbs, channels and edgings*	350.00	m	£30.00	£10,500.00	For pedestrian walkway/hardstanding between car park and platform
	6	*Allowance for signage to footway*	1.00	Sum	£2,500.00	£2,500.00	
5		*Service ducts within hardstandings*					
	1	*Cable routes; for lighting to footway*	400.00	m	£20.00	£8,000.00	
	2	*Service ducts ; for lighting to footway*	400.00	m	£250.00	£100,000.00	
6		*Lighting systems*					
	1	*Light fittings: with columns: freestanding; to footway, car park and access road*	30.00	nr	£2,000.00	£60,000.00	
3		*Pavement and walkways; access footway between road and A814*					
	1	*Excavation and disposal; regrading slope to construct new ramped footpath down to A814*	1.00	Sum	£10,000.00	£10,000.00	Allowwance
	1	*Excavation and disposal for surfacing*	19.32	m3	£10.00	£193.20	
	1	*Disposal for new footway; inert*	15.46	m3	£35.00	£540.96	
	1	*Disposal for new footway; contaminated non-hazardous*	3.86	m3	£300.00	£1,159.20	
	4	*Surfaced access ways: pedestrian*	84.00	m2	£55.00	£4,620.00	
	4	*Surfaced access ways: pedestrian; extra over for Wayfinding paving*	42.00	m2	£150.00	£6,300.00	
	6	*Kerbs, channels and edgings*	84.00	m	£30.00	£2,520.00	
	6	*Allowance for signage to footway*	1.00	Sum	£2,500.00	£2,500.00	
5		*Service ducts within hardstandings*					
	1	*Cable routes; for lighting to footway*	42.00	m	£20.00	£840.00	
	2	*Service ducts ; for lighting to footway*	42.00	m	£250.00	£10,500.00	
6		*Lighting systems*					
	1	*Light fittings: with columns: freestanding; to footway, car park and access road*	3.00	nr	£2,000.00	£6,000.00	

		1	*Allowance to extend the existing lighting on the A814*	1.00	Sum	£10,000.00	£10,000.00
	Carry Forward						**£1,159,145.96**

GROUP ELEMENT 1.08: ENABLING WORKS								
1			***Extra ordinary site investigation works***					
	1		***Archaeological investigations***					
		1	*Physical archaeological investigation*	1.00	Sum	£10,000.00	£10,000.00	
		2	*Attendance on archaeologists*	1.00	Sum	£1,000.00	£1,000.00	
	2		***Reptile / wildlife investigations***					
		1	*Trapping and relocation of species*	1.00	Sum	£10,000.00	£10,000.00	
		2	*Temporary fences or barriers*	1.00	Sum	£10,000.00	£10,000.00	
	3		***Other extraordinary site investigations works***		**Sum**			
		1	*Unexploded munitions or other ordnance*	1.00	Sum	£25,000.00	£25,000.00	
2			***Site clearance and preparation works***					
	1		***Site clearance***					
		1	*General clearance for new platforms*	506.00	m2	£25.00	£12,650.00	
		1	*General clearance for access road and car park*	1,452.00	m2	£25.00	£36,300.00	
		2	*Clearance of vegetation for new platforms*	506.00	m2	£25.00	£12,650.00	
		2	*Clearance of vegetation for access road and car park*	1,452.00	m2	£25.00	£36,300.00	
		4	*Management of shrubs, bushes and trees*	30.00	nr	£250.00	£7,500.00	Assume 30 nr trees need removal
		5	*Removal of trackside fence*	166.00	m	£25.00	£4,150.00	
		5	*Removal of kerb for new car park access road*	15.00	m	£20.00	£300.00	
	6		***Temporary utility diversion works***					
		1	*Diversions and interruptions; allowance for diversions of utilities and services*	1.00	Sum	£50,000.00	£50,000.00	
			Carry Forward				**£215,850.00**	
			Direct construction Total				**£3,507,818.76**	

			Description	Qty	Unit	Rate	£ . P	Notes
								Prelims Percentage
								31%
2	1	1	***Contractor's Preliminaries***					
			Indirect Construction Costs	15.00%	%	£3,507,818.76	£526,172.81	
			Employers' Requirements					
			Contractor's Cost Items:					
			Management Staff		Included		£0.00	See rate build up below
			Site Establishment		Included		£0.00	See rate build up below
			Site Maintenance		Included		£0.00	See rate build up below
			Site Demobilisation		Included		£0.00	See rate build up below
			Security		Included		£0.00	
			Safety & Environment	1	sum	£50,000.00	£50,000.00	
			Handback Procedures		Included		£0.00	% On Direct Works.
			Fees and Charges		Included		£0.00	% On Direct Works.
			Temporary Works	1	sum	£493,036.61	£493,036.61	See rate build up below
			Possessions Management (not Sch.4):	1	Sum	£10,000.00	£10,000.00	Planning, management and staffing. Excl Sch. 4 Pre-meeting, possession staff (COSS etc), equipment / fencing. Budget based on average of 1nr per week.
			Isolations:					Planning, management and staffing. Excl Sch. 4
			Rules of Route - Surveys, movement of plant and materials, works on/near line.		n/a		£0.00	Pre-meeting, Isolation staff, equipment / fencing. Assumes taken for each possession
			Train Power Systems					
			Possession based preliminaries supervision		n/a		£0.00	
			Carry Forward				**£1,079,209.42**	

Rate Build Ups for Prelims above

			Management Staff					
			Full-time equivalent staff numbers per week	0	nr	2,650.00	£0.00	Provision of contract and site management, engineers, commercial, supervision and administration staff. Resource rate averages the costs and adjusts to a full-time equivalent to recognise some may not be full-time allocated to the project.
						Total	**£0.00**	
			Temporary Works					
			Temporary hardstanding	1	Sum	£20,000.00	£20,000.00	Allowance
			Allowance for unmeasured temporary works to platform, car park and access road	1	Sum	£350,781.88	£350,781.88	10% of construction costs
			Track monitoring	1	Sum	£50,000.00	£50,000.00	Allowance
			Temporary fencing	1	Sum	£20,000.00	£20,000.00	Allowance
			Temporary diversion of water during lining to existing culvert	1	Sum	£20,000.00	£20,000.00	Allowance
			Temporary Works Design	1	Sum	£32,254.73	£32,254.73	Allowance
						Total	**£493,036.61**	

			Description	Qty	Unit	Rate	£ . P	Notes
2	1	2	***Contractor's Overheads & Profit***					
			OH&P	9.5%	%	£4,587,028.18	£435,767.68	
			Carry Forward				**£435,767.68**	

Description	Qty	Unit	Rate	£ . P	Notes
					Design Average percentage
Design Team Fees					**11%**
Design	10%	%	£5,022,795.86	£502,279.59	
Surveys	1	Sum	£50,000.00	£50,000.00	
Carry Forward				**£552,279.59**	

Description	Qty	Unit	Rate	£ . P	Notes
Project Management Team Fees					**Project Management Average percentage 10%**
PM Fees	10%	%	£5,022,795.86	£502,279.59	% On Direct Works + Preliminaries + OH&P
Carry Forward				**£502,279.59**	

Description	Qty	Unit	Rate	£ . P	Notes
Other Project Costs					
Land and Property Costs	1.00	Sum	Excl	£0.00	Land costs excluded
Fees to statutory and public bodies	1.00	Sum	Excl	£0.00	Assume not required
Payments to public and statutory bod	1.00	Sum	Excl	£0.00	Assume not required
Sponsor's agent fees	1.00	Sum	Excl	£0.00	Assume not required
Stakeholder Management	1.0%	%	£5,022,795.86	£50,227.96	% On Construction Works
Disruption of Asset Use	0.00	Sum	Excl	£0.00	Assume not required
TOC Compensation	0.0%	%	£5,022,795.86	£0.00	Not required
TOC PMO Costs	24.00	Mnth	£2,000.00	£48,000.00	Assume £2k per month for 2 years
Traffic Management	1.00	Sum	£52,585.00	£52,585.00	See Build up in Cost Build Up Tab
Legal Costs	1.00	Sum	£50,000.00	£50,000.00	Allowance
Client Legal Costs	1.00	Sum	£50,000.00	£50,000.00	Allowance
Environmental Works	1.00	Sum	£50,000.00	£50,000.00	Allowance
Liaison with Scottish Environment Protection Agency (SEPA) for drainage and environmental work	1.00	Sum	£20,000.00	£20,000.00	Allowance
Additional works around obtaining planning permission	1.00	Sum	£50,000.00	£50,000.00	Allowance
Sustainability Appraisal	1.00	Sum	£10,000.00	£10,000.00	Allowance
Ground Investigation	1.00	Sum	£100,000.00	£100,000.00	Allowance
Drainage consent costs - for discharge into highway drainage	1.00	Sum	£10,000.00	£10,000.00	Allowance
NR Costs					
Schedule 4 possession costs	1.00	Sum	£20,000.00	£20,000.00	See Build up in Cost Build Up Tab
NR APA Costs	5.0%	%	£3,507,818.76	£175,390.94	
NR BAPA Costs	7.5%	%	£3,507,818.76	£263,086.41	
NR APA Fee Fund	5.0%	%	£175,390.94	£8,769.55	
NR BAPA Fee Fund	7.5%	%	£263,086.41	£19,731.48	
Network Rail Industry Risk Fund	2.0%	%	£5,489,774.23	£109,795.48	
Network Rail Network Change Including Driver Training	100.0%	Sum	£50,000.00	£50,000.00	Allowance
Safety Critical Rail Staff	100.0%	Sum	£24,052.40	£24,052.40	See Build up in Cost Build Up Tab

Carry Forward	**£1,161,639.22**	

Description						Notes
Possession Cost Build up						
SRSA Advised Schedule 4 Costs	**% Allocation**	**Qty**	**Unit**	**Rate**	**Cost**	
8hr ALB		2	nr	£15,000.00	£0.00	
14hr Slows & 5hr Up Fasts		12	nr	£15,000.00	£0.00	
10hr Fasts & 8hr Slows		3	nr	£15,000.00	£0.00	
9hr Fasts & 2hr Slows		2	nr		£0.00	
6hr Slows Midweek Nights		32	nr		£0.00	
6.5hr Fasts Midweek Nights		20	nr		£0.00	
31hr Slows & 8hr Up Fasts		2	nr	£500,000.00	£0.00	
48hr ALB		6	nr	£1,200,000.00	£0.00	
72hr Slows & 48hr Fasts ALB		1	nr	£2,000,000.00	£0.00	
27hr ALB		3	nr	£500,000.00	£0.00	
Other Schedule 4 Costs						
48hr ALB		1	nr	£1,200,000.00	£0.00	
48hr ALB		1	nr	£1,200,000.00	£0.00	
14hr Slows & 5hr Up Fasts		12	nr	£15,000.00	£0.00	
Allowance	100.0%	1	Sum	£20,000.00	£20,000.00	
					£20,000.00	
Safety Critical Staff						
	Hours	**Rate**	**Days**	**Rate**	**Cost**	
COSS with PC (includes allowance for Site Warden where required)	8	23.42	10	£32.40	£5,761.60	Assumed quantity
Engineering Supervisor	8	33.31	10	£43.30	£7,860.80	Assumed quantity
Track handback engineer	8	52.75	10	£51.75	£10,430.00	Assumed quantity
					£24,052.40	
Traffic Management						
		Qty	**Unit**	**Rate**	**Cost**	
Lane Closure		0	shift	£345.93	£0.00	
2 Way Lights for Access to Work Site		30	shift	£369.00	£11,070.00	Assumed quantity
Hire 2 Way Traffic Lights		30	wk	£126.50	£3,795.00	Assumed quantity
Road Closure and Diversion for Highways Works		10	shift	£664.00	£6,640.00	
Man + Van		60	shift	£275.00	£16,500.00	Assumed quantity
Footpath Diversion		30	shift	£486.00	£14,580.00	Assumed quantity
					£52,585.00	
Carry Forward					**£96,637.40**	

Description	Qty	Unit	Rate	£ . P	Notes
Risk					
Risk Allowance	60%	%	£7,238,994.25	£4,343,396.55	
Carry Forward				**£4,343,396.55**	

Description	Qty	Unit	Rate	£ . P	Notes
Inflation					**Total Inflation percentage** **3.94%**
Tender Inflation					
Inflation: date of estimate to tender return - 3Q2024	9,951,057.76	Sum	2.58%	£256,737.29	
Construction Inflation					
Inflation: date of commencement to mid-point of construction period - 2Q25	9,951,057.76	Sum	1.39%	£138,267.33	
Professional Services Inflation					
Design Fees - Up to tender period - 2Q25	1.00	Sum	£20,834.75	£20,834.75	See build up below
PM fees - to mid-point of construction period - 2Q25	1.00	Sum	£18,948.50	£18,948.50	See build up below
NR fees - to mid-point of construction period	1.00	Sum	£21,758.79	£21,758.79	See build up below
Carry Forward				**£456,546.66**	

Client:	**HITRANS**
Project Title:	**Faslane Station**
Date of Estimate:	**10 January 2024**
Cost Base Date:	**4Q23**
Estimate Version:	**Rev 2**
Estimate Ref	**FAS-SLC-XX-CPN-COM**

Appendix D SYSTRA Rail Service Technical Note

TECHNICAL NOTE

FASLANE COMMUTER SERVICE

FASLANE COMMUTER SERVICE

IDENTIFICATION TABLE	
Client/Project owner	HITRANS
Project	Faslane Commuter Service
Title of Document	Faslane Commuter Service
Type of Document	Technical Note
Date	29/04/2022
Reference number	
Number of pages	16

TABLE OF CONTENTS

1. INTRODUCTION

1.1.1 In March 2022, SYSTRA was commissioned by HITRANS to undertake initial timetabling work to explore the feasibility of operating a commuter service for the staff of HMNB Faslane to reduce car use. The background to this work is a planned expansion of the site which will include an increase in both the number of staff living on site but also the number of staff travelling to the site each day. Currently the vast majority of the staff accessing the site do so by road using the A814, and most staff working at the site live in West Dunbartonshire.

1.1.2 To support the expansion of the site, a case has been developed for a new station at Faslane. However in advance of this it is proposed to operate a rail service to Garelochhead specifically to serve workers at the site.

1.1.3 This technical note provides a view on the feasibility of timetabling a service to operate from Dalmuir to Garelochhead, plus associated Empty Coaching Stock (ECS) movements, as well as a review of the additional opportunities that the service generates.

1.1.4 Our work has demonstrated that it is possible to operate a service to and from Garelochhead to fit around workers shifts. It has also been identified that a shuttle service across the day is achievable if desired, but that a more complex option to extend the service to and from Oban is constrained by timetabling problems for the return service.

2. ASSUMPTIONS

2.1.1 In planning the service we have made a number of assumptions about the resourcing and planning of the operation. These assumptions are set out below:

2.2 Rolling Stock

2.2.1 It is assumed the service would be operated by a ScotRail Class 156. The electrification of the Glasgow to East Kilbride and Barrhead routes will release a number of Class 156s providing capacity within the fleet to operate this service.

2.2.2 It will however be necessary to ensure that there is sufficient capacity within the Radio Electronic Token Block (RETB) equipped members of the fleet to operate the additional service due to the use of RETB signalling between Craigendoran Junction and Garelochhead. This may necessitate an increase in the number of Class 156s that are equipped with RETB equipment as only 16 members of the fleet are currently equipped.

2.3 Depot and Stabling

2.3.1 It is assumed that the train would start and end the day at Eastfield Holding Sidings (HS) north of Glasgow Queen Street. This aligns with the approach taken to resourcing trains for the West Highland Line where services starting from Glasgow are stabled and fuelled at Eastfield.

2.3.2 The train would have to be cycled back to Corkerhill Depot in south Glasgow but this could be achieved using a number of pre-existing Empty Coaching Stock (ECS) movements that link Eastfield and Corkerhill specifically for the transfer of Class 156s for West Highland Line services.

2.3.3 Between working morning and afternoon services the train would ideally be returned to Eastfield HS. In the sections below we have identified train paths that achieve this. However these paths are sensitive to the minor changes in the North Clyde Electrics timetable and we have therefore included an option that sees the train stable at Yoker Carriage Sidings (CS) during the day. Whilst the stabling of a diesel train at Yoker is not a preferred option, there would be no requirement for the train to be cleaned or fuelled and it should in principle, be achievable.

2.3.4 Two alternative options may also be available to utilise the train during the day, these are discussed in more detail below.

2.4 Train Crew

2.4.1 The service would be operated by train crew based at Glasgow Queen Street, who are the only ScotRail crews in the Glasgow area who are trained on the West Highland Line. These crew are familiar with the route between Glasgow Queen Street and Garelochhead via Maryhill, Westerton, and Singer. It is less clear if crews are also familiar with the route via Clydebank which would be required for operating the train into Yoker CS, and also the line between Westerton and Springburn via Partick and Glasgow Queen Street Low Level which is required for Empty Coaching Stock (ECS) movements.

2.4.2 If the service is to be developed early engagement will be required to ensure that sufficient trains crew are familiar with the West Highland Line as only certain links at Glasgow Queen Street are familiar with the route.

2.5 Amendment to Existing Services

2.5.1 We have undertaken the timetabling feasibility work using the May 2022 timetable as a base. This timetable sees a number of revisions to the timing of services in the North Clyde network although there has not been a substantial changes in the quantum of services relative to the December 2021 timetable.

2.5.2 It's worth noting that future timetable changes may alter the feasibility of the paths highlighted in this note.

2.5.3 In developing our timetable we have assumed that existing services cannot be retimed other than minor changes of one or two minutes or minor changes to allowances such as pathing time.

3. DALMUIR - GARELOCHHEAD

3.1.1 Our timetable feasibility work has concluded that it is possible to operate a morning and afternoon service that aligns with the working patterns of the majority of workers at Faslane. It is understood that the typical shift pattern is 08:00 to 16:00 and we have planned our service around this, with sufficient time allowed for workers to travel between Garelochhead station and Faslane.

3.2 Morning Service

3.2.1 A path has been identified that allows a passenger service to operate throughout from Glasgow Queen Street to Garelochhead calling at Dalmuir, Dumbarton Central, Dalreoch, and Helensburgh Upper. Capacity also exists for an associated ECS movement from Eastfield HS to Glasgow Queen Street to resource the service. The table below summarises the timings.

Table 1. Glasgow – Garelochhead morning service (summary times)

STATION	TIME
Glasgow Queen Street Dep	06:24
Dalmuir Dep	06:44
Dumbarton Central Dep	06:54
Dalreoch Dep	06:56
Helensburgh Upper Dep	07:12
Garelochhead Arr	07:21

3.2.2 The timing of the service provides an ample 40 minutes for transfer between Garelochhead station and the Faslane site. The service can be delivered without amendments to other services in the area.

3.2.3 There are two options for the return working from Garelochhead. The first sees the train return in passenger service to Glasgow before going to Eastfield HS, the second sees it operate in passenger service to Dumbarton, where it can either form a series of shuttle services or return ECS to Yoker CS.

3.2.4 The timings between Garelochhead and Dumbarton Central are common to both services. The train has to wait at Garelochhead until 07:49 to allow 1Y20 05:21 Oban – Glasgow Queen Street to pass Garelochhead at 07:30 and then clear the Garelochhead – Helensburgh Upper token section. This provides two passenger departures from Garelochhead towards Glasgow in 20 minutes. There are few options for increasing this interval further as unless the train departs at 07:49 the train would then have to wait at Garelochhead until 6S01 Bicester MOD – Glen Douglas MOD freight had passed at 08:33.

3.2.5 The first option which sees the train return to Eastfield HS involves the routing the train via Dalmuir, Westerton, Glasgow Queen Street Low Level and Springburn. This unusual routing is required due to lack of suitable paths to allow the train to take the more conventional route of operating via Knightswood Junction, Maryhill and Glasgow Queen Street High Level. The train could remain in passenger services as far as Springburn if required. The table below presents the timings for this option.

Table 2. Garelochhead – Springburn - Eastfield

STATION	PASSENGER SERVICE	ECS
Garelochhead Dep	07:49	
Helensburgh Upper Dep	07:59	
Dumbarton Central Dep	08:14	
Dalmuir Dep	08:26	
Westerton Dep	08:37	
Anniesland Dep	08:40	
Glasgow LL Dep	08:54	
Springburn	09:06	*09:07*
Eastfield HS		*09:10*

3.2.6 The ability to path this service is highly sensitive to the timing of North Clyde Electric Services. The service operates on minimum (but compliant) headways between Hyndland and Bellgrove. With this mind we present below the second option that diverts the train to stable at Yoker CS during the day. The timings for this option can be seen below.

3.2.7 The table below summaries the timings of the southbound working.

Table 3. Garelochhead – Dumbarton Central (summary times)

STATION	PASSENGER SERVICE	ECS
Garelochhead Dep	07:49	
Helensburgh Upper Dep	07:59	
Dumbarton Central Arr	08:13	
Dumbarton Central Dep		*08:29*
Dalmuir Pass		*08:36*
Yoker CS Arr		*08:39*

3.2.8 The operation of a second commuter service to Garelochhead was explored. It was found that it was not to provide a second arrival at Garelochhead until 08:50. This is discussed in more detail in the shuttle train option.

3.3 Afternoon Service

3.3.1 Train paths have also been found for an afternoon service between Dalmuir and Garelochhead and associated return working. The movements required to resource this service have planned from both Eastfield HS and Yoker CS.

3.3.2 If the train stables at Eastfield HS it is possible for the train to operate in passenger service throughout from Glasgow Queen Street High Level to Garelochhead. Table 4 below summarises the timings of this service.

Table 4. Glasgow Queen St – Garelochhead afternoon service (summary timings)

STATION	PASSENGER SERVICE	ECS
Glasgow Q St	15:11	
Maryhill Dep	15:18	
Westerton Dep	15:20	
Dalmuir Dep	15:30	
Dumbarton Central Dep	15:40	
Dalreoch Dep	15:41	
Helensburgh Upper Dep	15:57	
Garelochhead Arr	16:07	

3.3.3 The service is also able to start form Dalmuir with the train operating ECS from Yoker CS to Dalmuir station. Table 5 summarises the timings of this service.

Table 5. Dalmuir – Garelochhead afternoon service (summary times)

STATION	PASSENGER SERVICE	ECS
Yoker CS Dep		*15:22*
Dalmuir Arr		*15:28*
Dalmuir Dep	15:30	
Dumbarton Central Dep	15:40	
Dalreoch Dep	15:41	
Helensburgh Upper Dep	15:57	
Garelochhead Arr	16:07	

3.3.4 The above options do not require retiming of other services.

3.3.5 The return working is more complex. The service would run in passenger service between Garelochead and Dalmuir. From Dalmuir the train would then operate ECS to Eastfield HS via Westerton, Maryhill, Cowlairs West Junction, Sighthill West Junction and reversal in Springburn station. It is not possible to return the train in passenger service to Glasgow due to pathing problems created an extended journey time between Dalmuir and Westerton and a lack of suitable paths between Cowlairs West Junction and Glasgow Queen Street.

3.3.6 The only service that requires retiming to accommodate the service below is an ECS from Dalmuir to Dalmuir via the Dalmuir Reversing Siding (5L24) which has to be retimed to arrive in Dalmuir station 4 minutes later.

3.3.7 The table below summaries the timings of the return service and associated ECS.

Table 6. Garelochhead - Dalmuir (summary times)

STATION	PASSENGER SERVICE	ECS
Garelochhead Dep	16:33	
Helensburgh Upper Dep	16:44	
Dalreoch Dep	16:55	
Dumbarton Central Dep	16:56	
Dalmuir Arr	17:06	
Dalmuir Dep		*17:08*
Westerton Pass		*17:18*
Cowlairs West Jn Arr		*17:25*
Cowlairs West Jn Dep		*17:28*
Springburn Arr		*17:34*
Springburn Dep		*17:40*
Eastfield HS Arr		*17:45*

3.3.8 The service above is complemented by the following 1Y26 14:41 Oban – Glasgow Queen Street which departs Garelochhead at 16:49.

3.3.9 The possibility of planning a service into Glasgow via the low-level lines was explored however it was not possible due to conflicts with services starting from Helensburgh and travelling along the low-level lines and also with services travelling on to the low-level lines from Milngavie via Anniesland.

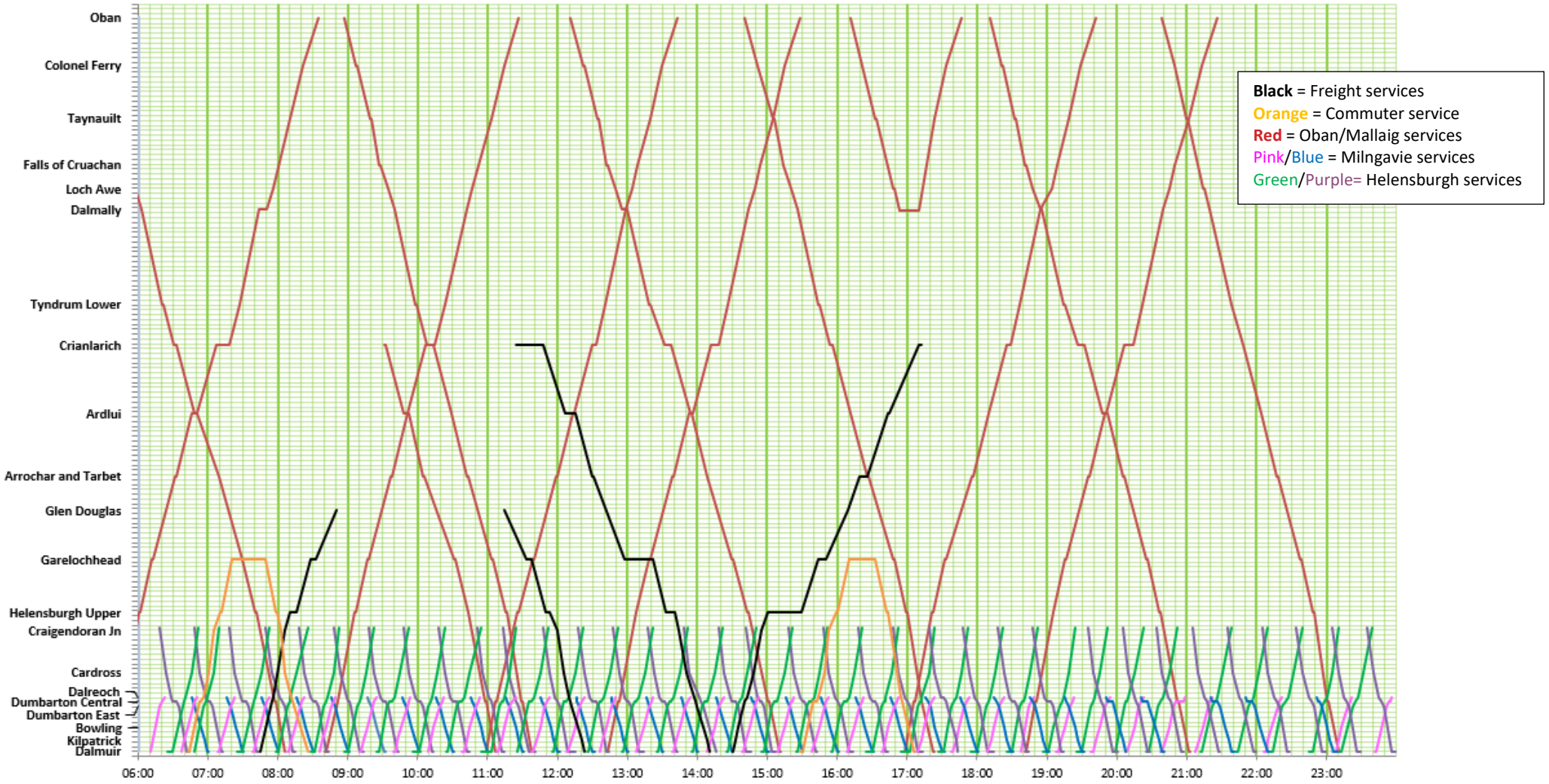
3.4 Summary

3.4.1 Within this section we have demonstrated the feasibility of operating a commuter service in both peak periods. It is also possible for three of the four services to operate to and from Glasgow, with daytime stabling occurring at Eastfield HS.

3.4.2 Some alternate options were explored to see what possibilities were available between the morning and evening peaks, discussed in the following section.

3.4.3 The timetable graph below shows the new services overlaid on the base timetable between Dalmuir and Oban.

Figure 1. Faslane Commuter Services Timetable Graph



4. ALTERNATIVE OPTIONS

4.1.1 The operation of Faslane commuter service provides an opportunity to explore option for enhancing services on the West Highland Line more widely across the day. We have explored two options, the first to provide an all-day shuttle service between Dumbarton and Garelochhead and the second to consider extension of services to Oban.

4.2 All Day Shuttle

4.2.1 Utilisation of the train would be improved if it could be used all day. To address this we have considered the operation of an off peak shuttle service between Dumbarton and Garelochhead. The value of this service would be enhanced if Faslane station were completed, which would allow the service to better serve the increased number of staff living on the site (as is proposed) as this would generate off peak demand for such a service.

4.2.2 As highlighted above, running services to and from Glasgow would be operationally challenging due to the complexities of finding train paths through the busy North Clyde network AND finding paths between Cowlairs West Junction and Glasgow Queen Street.

4.2.3 Instead, operation of a shuttle between Dumbarton Central and Garelochhead would be more viable and provide a better service frequency than would be achievable by running to Glasgow. Dumbarton Central was chosen as a suitable location to reverse services as it has a third platform which is currently unused and is accessible from both the Up and Down lines and it has a consistent service into Glasgow which would give an easy and frequent connection to passengers wishing to travel further.

4.3 Timetable

4.3.1 A timetable graph was created (Figure 2) which highlighted all of the existing services between Oban and Dalmuir. Once these were plotted and the wider timetable could be seen, it was identified that it was possible to run a shuttle service between Garelochhead and Dumbarton throughout the day with the potential to add three additional shuttle services, one of which extended past Garelochhead to Arrochar and Tarbet.

4.3.2 This would increase the number of passengers trains using Garelochhead and Helensburgh Upper between 07:00 and 19:00 from 10 to 20, providing improved connectivity to Glasgow albeit via interchange at Dumbarton. It also avoids the service using the busy North Clyde electric routes during the day adding pressure to this congested network and presenting a performance risk.

4.3.3 The table below summarises the timing of the additional services. It will be seen that the first additional northbound train provides an arrival in Garelochhead before 09:00.

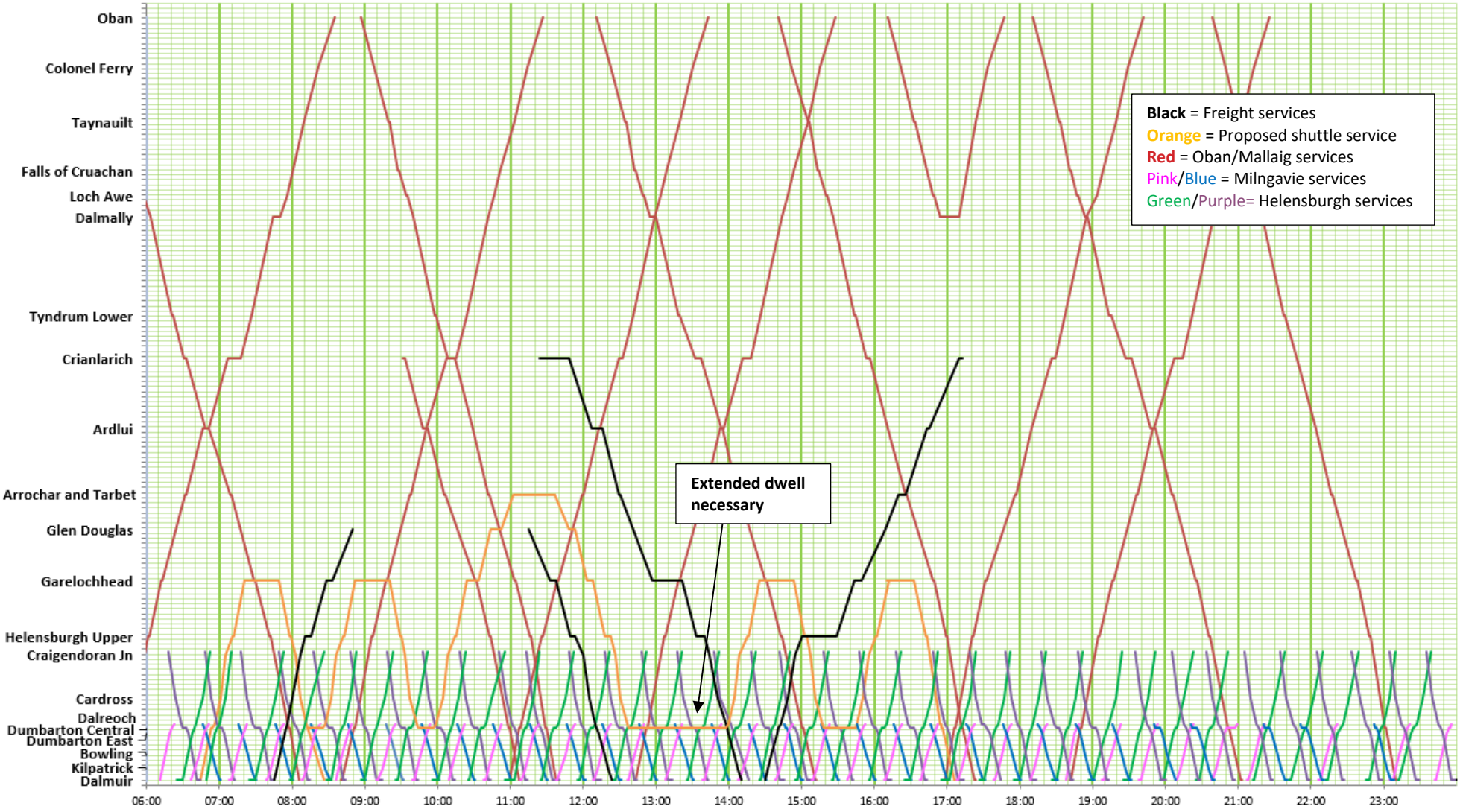
Table 7. Shuttle Service Summary Timings

	AM COMMUTER	SHUTTLE 1	SHUTTLE 2	SHUTTLE 3	PM COMMUTER
Dumbarton Dep	06:54	08:25	09:57	13:58	15:43
Garelochhead Arr	07:21	08:52	10:24	14:25	16:10
Arrochar & Tarbet Arr	-	-	10:57	-	-
Arrochar & Tarbet Dep	-	-	11:37	-	-
Garelochhead Dep	07:49	09:20	12:03	14:54	16:33
Dumbarton Arr	08:13	09:45	12:37	15:18	16:55

4.3.4 It is notable that there is no regular pattern for how the current freight and passenger services are planned between Crianlarich and Craigendoran Jn, this is especially noticeable between 10:00 and 14:00. This makes it extremely difficult to plan the shuttle to operate to a regular pattern, with extended dwells necessary throughout the days workings.

4.3.5 The workings for the proposed shuttle service can be seen in Figure 2 with annotations.

Figure 2. Shuttle service train graph



4.4 Extension to Oban

4.4.1 An alternative to the shuttle service would be to use the train to amend and improve the Glasgow – Oban timetable. Rather than the train returning from Garelochhead after the morning commuter service, it could instead continue to Oban, arriving at 09:45.

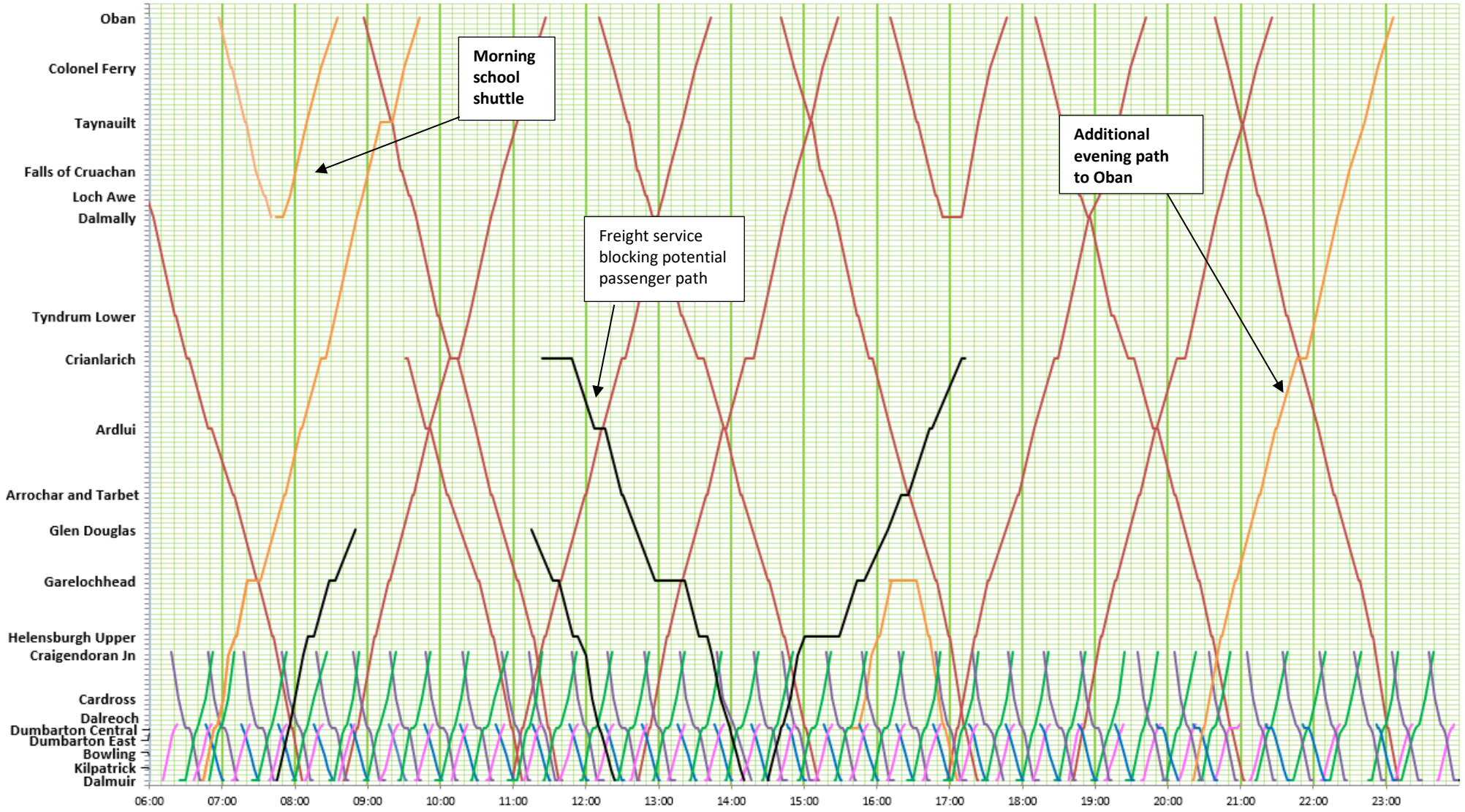
4.4.2 As part of this scenario, the 05:20 Glasgow to Oban service was amended to start from Dalmally to provide a school service from Dalmally to Oban. This in turn required a new working to be planned from Oban to Dalmally and requires a second train to be stabled overnight at Oban. The rationale for this change is that the current 05:20 Glasgow – Oban only operates to provide a trains for the Dalmally – Oban school traffic and provide a train to resource the 08:57 Oban – Glasgow, which in turn allows an early morning Oban – Glasgow to operate. With an early departure from Glasgow the train is generally unattractive to Oban bound passengers.

4.4.3 All of the above requires an additional train to be stabled overnight at Oban. To meet this need, a path has ben found for a new service departing Glasgow Queen St at 20:01 and arriving Oban at 23:06, providing a later departure from Glasgow towards Oban than the current 18:23 departure.

4.4.4 The difficulty with this proposal is finding a return path for the train arriving at Oban at 09:45. A path is required to allow the train to return to Glasgow in time to operate the 15:11 Glasgow – Garelochhead commuter train. The only path available to achieve this with a departure around 10:30 is blocked south of Crianlarich by 6E45 Fort William – North Blyth Alcan freight service. The only alternative to this would be to resource a second train to operate the afternoon Faslane service. This would be at risk of incurring the cost of leasing an additional Class 156 or would require a unit with availability to be found which would allow the morning Faslane unit when it returned from Oban to slot into its workings. Given the need for a an RETB equipped Class 156 meeting this requirement may be challenging form the limited pool of available trains.

4.4.5 Unless either the freight path moves or availability of an additional unit can be confirmed it is not recommended that this option is pursued.

Figure 3. Amended Oban Service Train Graph



5. OPERATING COSTS

5.1.1 Using a range of operating costs metrics we have estimated the costs of operating the options. These estimated costs include:

- Rolling stock leasing costs
- Train crew (driver and conductor)
- Rolling stock maintenance
- Fuel costs
- Variable Track Access charges

5.1.2 Leasing costs and train crew costs represent the most substantial costs as these are largely fixed there is relatively little variation in the costs between the different options.

5.1.3 We have estimated costs for the three viable options:

- Option 1 – AM & PM Commuter service with train returning to Eastfield during the day
- Option 2 – AM & PM Commuter service with train returning to Yoker during the day
- Option 3 – AM & PM Commuter service plus off peak Dumbarton – Garelochhead shuttle

5.1.4 A sensitivity in these operating costs is the calculation of train crew costs. For Option 1 and 2 the time in service is low and is split between morning and afternoon operations. We have made an assumption that one additional full time crew would be required for Option 1 and 2 and two crews would be required for Option 3.

Table 8. Additional annual operating costs

OPTION	OPERATING COSTS
Option 1	£410,248
Option 2	£388,334
Option 3	£604,295

5.1.5 It can be seen that Option 3 incurs operating costs that are around 50% higher than Option 1 and 2, but provides more than twice as many additional passengers services (10 versus 4).

6. SUMMARY

6.1.1 There is capacity in the May 2022 timetable for additional services to and from Garelochhead which would help serve the planned expansion in employment at the naval base at Faslane.

6.1.2 For each of the additional peak services, there is a compliant path to and from Eastfield HS although the viability of some ECS workings is very sensitive to any changes to the North Clyde Electric timetable.

6.1.3 The analysis has also shown that there is also the opportunity to use Yoker as a stabling location throughout the day. Yoker is not normally used as a stabling location for diesel trains and more work would be required to explore if this would be acceptable to ScotRail.

6.1.4 The opportunities between the peak periods were explored to look at extending the Garelochhead commuter service to Oban and separately, running a shuttle service to Garelochhead all day. This found whilst operating to Oban was very challenging it was possible to operate an off peak shuttle service from Dumbarton to Garelochhead and Arrochar & Tarbet.

6.1.5 If the proposal is to be taken forward early engagement with Network Rail and ScotRail is recommended to validate the timetable and address any operational issues.

APPROVAL					
Version	**Name**		**Position**	**Date**	**Modifications**
1	Author	James Jackson	Associate Director	25/03/2022	
	Checked by				
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2	Author	Oliver McCabe	Senior	28/04/2022	
	Checked by	James Jackson	Associate Director	29/04/2022	
	Approved by	James Jackson	Associate Director	29/04/2022	