

Date: 8 December 2021
My ref: MetroWest Phase 1
Your ref:
Contact: James Willcock
Telephone: [REDACTED]
Email: [REDACTED]@n-somerset.gov.uk



Mr O'Hanlon
Department for Transport
Great Minster House
33 Horseferry Road
London
SW1P 4DR

Place Directorate
North Somerset Council
Town Hall
Weston-super-Mare
BS23 1UJ

DX 8411 Weston-super-Mare

By email only

Dear Mr O'Hanlon

Applicant: North Somerset District Council
Development Consent Order application for Portishead Branch Line – MetroWest Phase 1
Application Reference: TR040011

Applicant's response to the Secretary of State's letter of 30 November 2021 requesting updated information

I write in response to your letter letters of 24th and 30th November 2021, in connection with our response of 23rd November 2021 to your request for further information set out in your letter of 9th November 2021.

The Applicant encloses its response to a Submission by Mr B Cash and Others, received By Secretary of State on 23rd November 2021.

The Applicant notes the consultation of 9th November 2021 is on one precise matter. The consultation letter states:

*Please could the **Applicant** provide an assessment of the impact of the scheme against the third, fourth and fifth carbon budgets, or explain why it does not think this is appropriate.*

The Submission by Mr B Cash and Others does not, at any point in seven pages, address this question.

The Submission instead seeks to make further submissions on issues outside of the consultation of the 9th November 2021 and to reopen issues addressed at the Examination into the Order.

Despite this, the Applicant has fully reviewed, at considerable expense, the Submission, to provide a response. Whilst it finds nothing of substance in the Submission that could not have been dealt with during the Examination, the Applicant has sought to respond to each of the points raised, in order to assist the Secretary of State in reaching his determination.

As the Applicant for the Order, the Applicant should be the person entitled to make the final round of submissions on the Order. Given that nothing has been raised in the Submission that could not have

[REDACTED]
Town Hall, Weston-super-Mare, BS23 1UJ


fully been dealt with at the Examination, and largely repeats previous submissions, the Applicant would not expect there to be any further round of submissions by B Cash and PG Virden on the Applicant's responses to the Submission.

Please confirm receipt of this letter and enclosures.

Yours sincerely



James Willcock
MetroWest Phase 1 Programme Manager


Town Hall, Weston-super-Mare, BS23 1UJ



Department
for Transport

Rail Environment Policy Statement

On Track for a Cleaner, Greener Railway

July 2021

Department for Transport
Great Minster House
33 Horseferry Road
London
SW1P 4DR



© Crown copyright 2021

This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit

[redacted] or contact,
The National Archives at [redacted].

Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

This publication is also available on our website at

[redacted]

Any enquiries regarding this publication should be sent to us at

[redacted]

Contents

1 Purpose	5
2 Introduction	6
3 Scope	7
4 Rail Environment Priorities on a Page	8
5 Rail Reform: An Opportunity to Transform Rail Sustainability	9
6 Traction Decarbonisation	10
Electrification	11
New Traction Technologies	12
7 Air Quality	14
Sources of Air Pollution on the Railway	14
The Regulatory Landscape	14
Improving our Understanding	15
Intervention Measures	16
8 Non-Traction Decarbonisation: Decarbonising the Rail Estate	18
Stations, Freight Depots, and Terminals	18
Vehicles	19
Materials, Construction, and Whole Life Carbon	19
9 Waste, Litter, and Graffiti	22
Waste	22
Litter and Fly-tipping	23
Graffiti	24
10 Social Value	25
11 Integrated Travel and Modal Shift	27
Passenger Modal shift, Active Travel and Integrated Transport	27
Freight Modal Shift	28
12 Land Use	30

Clean Energy Generation	30
Biodiversity	31
Carbon Offsetting, Capture, and Storage	31
13 Railway Noise	33
14 Water	35
15 Endnotes	37

1 Purpose

The Williams-Shapps Plan for Rail, published 20 May 2021, called for a 30-year strategy to ‘provide clear, long-term plans for transforming the railways’. The 30-year strategy will incorporate a ‘comprehensive environment plan for the rail network’, to be published in 2022, which will ‘establish rail as the backbone of a cleaner future transport system’.¹

Work on this environment plan, the Sustainable Rail Strategy (SRS), has been commissioned and is underway. It will build on the commitments for rail set out in the UK’s revolutionary new plan to decarbonise transport called [REDACTED], in addition to addressing a range of environmental sustainability issues on the railway, including the topics covered by this document.

The purpose of this Rail Environment Policy Statement (REPS) is to set a clear direction for the rail industry on environmental sustainability and to outline policy priorities for the SRS. By setting the direction of travel for environmental policy on the railway now, we are building the foundations that will allow us to achieve a cleaner, greener railway that is fit for the future.

2 Introduction

The rail network plays a vital role in our transport system. It is a fast, safe and reliable way of moving people and goods over long distances, in and around our city centres and internationally. It enables people to get to work, visit friends and family, and do business. It enables the efficient movement of goods from ports, quarries, and distribution centres to urban centres, and helps avoid the need for lorries on roads.

Rail is lower carbon than other long-distance transport and becoming even less carbon intensive as the National Grid decarbonises. In 2019, greenhouse gas emissions from rail made up just 1.4% of the UK's domestic transport emissions², while 9% of passenger miles travelled in Great Britain were by rail³. On average, rail freight trains emit around a quarter of the CO₂ equivalent (CO₂e) emissions of HGVs, per tonne mile travelled.⁴ In 2019/20, carbon emissions per passenger kilometre were at their lowest level since comparable data began in 2011/12⁵.

Businesses across the rail industry are taking action. The Railway Industry Association has been working with Network Rail to learn lessons from past electrification projects to reduce the cost of future projects, improving value for money. The rail industry has incorporated goals for advancing low-carbon technologies to reduce emissions through its Rail Technical Strategy.⁶ Operators, rolling stock companies and manufacturers are collaborating with small and medium enterprises to develop new technologies, like battery and hydrogen trains, taking advantage of DfT's 'First of a Kind (FoaK)' programme to demonstrate innovations on the railway.

Recent progress has been strong. In the last three years, we have completed almost 700 track miles of rail electrification in England and Wales⁷, and since the start of 2019 we have contributed over £9 million to 26 FoaK projects that will help decarbonise the railway or reduce harmful emissions. We are investing £4.5 million to establish a network of air quality monitors in stations across the country. Last year, Network Rail published an Environmental Sustainability Strategy, a Biodiversity Action Plan, and became the world's first railway company to sign up to the most ambitious targets in the United Nations' Science Based Targets initiative.

But there is more work to be done. This document sets the direction of travel for environmental sustainability on the railway over the next 30 years. It marks the beginning of a process that we will continue to develop in further detail through SRS and which Great British Railways will work hard to implement, in line with its mission to make the railway the 'backbone of a cleaner, greener public transport network'.⁸

3 Scope

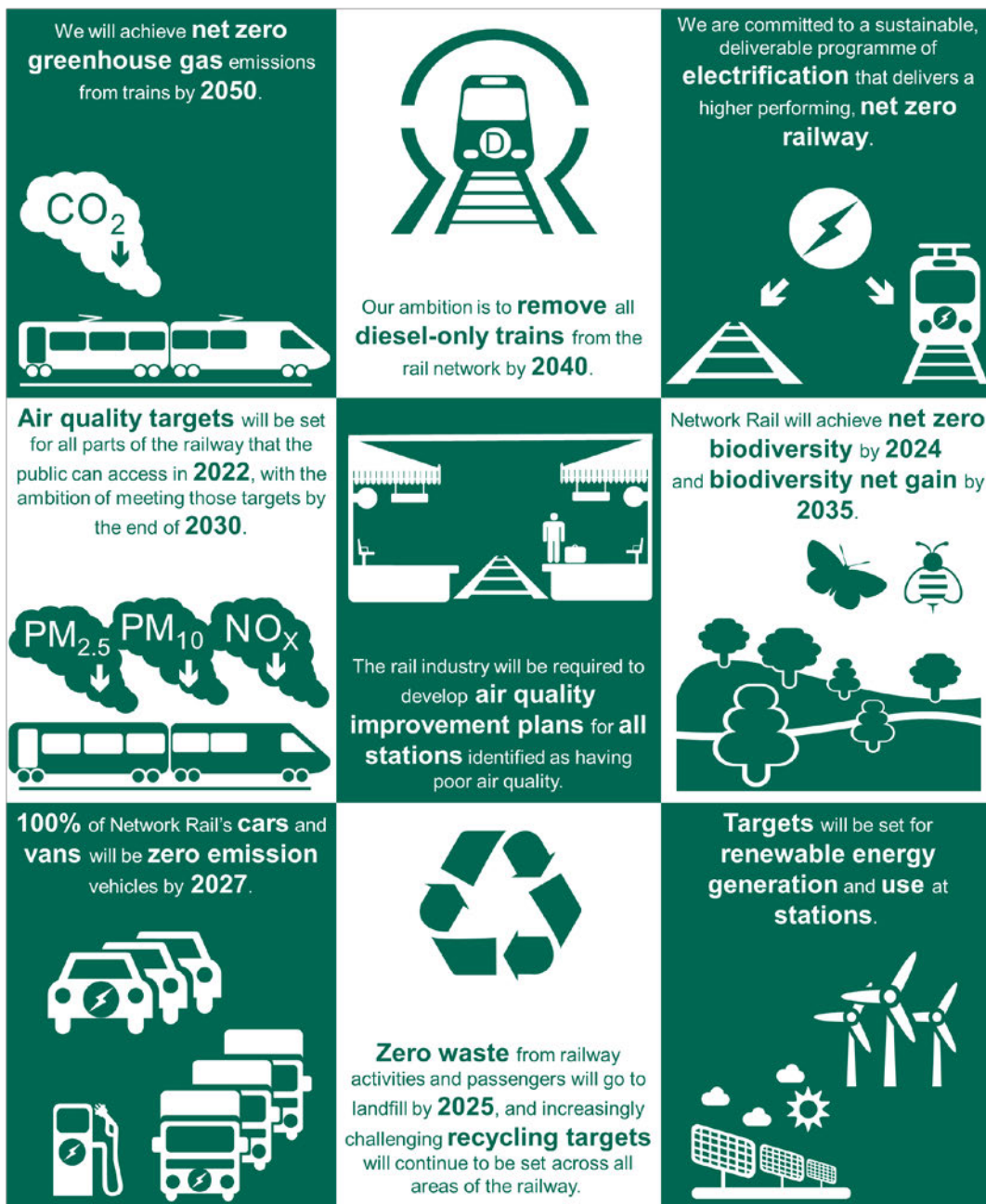
This document sets out environmental priorities for the mainline railway. The Williams-Shapps Plan for Rail focused on railways within Great Britain, as transport is a devolved area in Northern Ireland. The devolved authorities in Scotland and Wales have a range of powers in relation to rail which they will continue to exercise, as will TfL and other metropolitan authorities, in relation to rail and light rail in their areas. As now, they and Great British Railways will need to work together to deliver a co-ordinated network across Great Britain. Collaboration across borders will be vital to achieve a sustainable railway.

New railway projects, such as HS2, are guided by the same principles and high standards of sustainability as we expect for our mainline railway but are not explicitly included within the scope of this document. HS2, for example, has its own biodiversity and noise commitments set out in its sustainability policy and the environmental minimum requirements which accompany the legislation for each phase.

Climate change adaptation is outside the scope of this policy. Our detailed plans to enhance resilience to climate change risks across rail and other modes of transport are contained in the UK's National Adaptation Programme.

Additionally, Network Rail reports on the steps it is taking to prepare for climate change under the Adaption Reporting Power. The government is in discussions regarding additional organisations to include under the next round of adaptation reporting. The rail industry should ensure that it is taking proactive steps to mitigate any potential disruption or safety risks that occur due to increased severe weather events, which are likely to increase in frequency, severity, and cost impact, due to climate change.

4 Rail Environment Priorities on a Page



5 Rail Reform: An Opportunity to Transform Rail Sustainability

The Williams-Shapps Plan for Rail will overhaul the sector to better meet the needs of passengers, businesses and manufacturers more effectively and affordably, with trains running on time, simple fares, and a railway that is more accessible for all. Making rail travel easier, simpler and better integrated, including through improving journey connectivity with active travel choices such as walking and cycling and other public transport services, will take cars off the road and encourage people to shift to rail, a greener mode of travel.

The establishment of Great British Railways, a single organisation responsible for track, train and stations, will better support the delivery of environmental objectives across the areas addressed in this document. For example, it will be easier to make holistic assessments of the right decarbonisation technologies to remove diesel trains on each part of the network. It will be easier to tackle air quality and the impacts of noise, and there will be new opportunities to invest in solar panels and other greenhouse gas reduction technologies, regardless of payback.

As a public body with responsibility for a major national asset, Great British Railways will have a responsibility to put environmental sustainability at the heart of its operations. A specific duty will be placed on Great British Railways to consider environmental principles in all its operations. It will be accountable for and will lead the sector's delivery of a more environmentally sustainable rail network.

The Plan for Rail will also help drive growth of the rail freight sector, ensuring that we maximise the environmental benefits of moving freight by rail, and Great British Railways will have a statutory duty to promote rail freight. Furthermore, Great British Railways will develop a methodology to better assess the value of rail freight to support decision making, building on the "Value of Rail Freight" report commissioned by the Rail Delivery Group.⁹ Future access agreements could also support growth by including more efficient use of train paths and simpler ways of charging, within the context of a rules based access regime which safeguards fair access to the rail network for freight.

6 Traction Decarbonisation

Rail is a comparatively low-carbon way of travelling and moving goods. Despite the coronavirus pandemic, 703 million rail journeys were made in 2020¹⁰, most of which are likely to represent greener choices over more carbon intensive modes of transport. However, the scale of the government's ambition means that comparatively low carbon is no longer good enough. Our legal commitment to achieve net zero greenhouse gas emissions by 2050 and our objective of achieving a net zero transport system are not consistent with rail traction continuing to produce almost 3 megatonnes of CO₂e, as it did in 2019-20¹¹.

The decarbonisation challenge faced by the railway is significant, as it is with other modes of transport, but there are existing proven and near-proven technologies that can be used to decarbonise rail. These technologies present the railway with an opportunity to lead our country's shift to net zero-carbon travel.

What We Want to Achieve

We will decarbonise the railway to help deliver the UK's net zero emissions by 2050 commitment. In line with [REDACTED], we will achieve net zero greenhouse gas emissions from trains by 2050 and we will support transport emission reductions in every carbon budget. Our ambition is to remove all diesel-only trains from the network by 2040.

Work to deliver this has already begun. The [REDACTED] has responded to the government's call for a vision for rail decarbonisation and, over the last year, Network Rail has led work with rail industry representatives to develop a Traction Decarbonisation Network Strategy (TDNS). The [REDACTED] of TDNS was published in September 2020.

TDNS presents a strategic vision for a decarbonised railway and recommendations for achieving that. It will be our guide for decarbonising the railway. DfT will work with its partners on an affordable and deliverable rail decarbonisation programme. The analysis that informs TDNS will be updated periodically to take into account development of rail decarbonisation technologies and other changes.

Decarbonising rail freight is a challenge that must be overcome because heavy freight trains require higher total outputs of energy and power compared to passenger trains. We will electrify more of the network to enable electric rail freight to run on more routes.

We will also work with the rail freight industry to ensure that the existing electric network can be better used.

Short “infill” electrification projects could quickly deliver benefits and enable rail freight operators to immediately switch services over to electric traction. We will pursue such electrification to maximise the benefits gained from rail freight. By filling in electrification gaps to key ports and terminals, we can open new opportunities for electric, cleaner, greener, rail freight journeys. As freight electrification is rolled out further, additional electric locomotives will be required to supplement those already available.

We will develop further interventions, in partnership with industry, to help freight operating companies have the confidence they need to invest in replacing current rolling stock. Those companies making the early moves will have real commercial opportunities to meet customer demand for lower-carbon services. As we develop potential policy interventions, we will ensure rail freight maintains its competitiveness with road freight, and that interventions represent value for money for the taxpayer.

Recent DfT-funded research conducted for RSSB concluded that, while significant infrastructure and operational changes would be necessary, hydrogen and battery technologies could, in principle, work on a modelled freight route.¹² However, currently, only electric and diesel power are considered suitable for powering freight trains at the speeds required. We will periodically review the technology and policy options for rail freight as rail decarbonisation technologies develop, so we can give a clear path to a future decarbonised rail freight network.

As rail is already a comparatively greener way of transporting goods and materials than other transport modes, we will continue to encourage the shift of freight from more carbon-intensive modes to rail (and in particular from road haulage to rail), and we will introduce a rail freight growth target to help drive growth as we implement the Williams-Shapps Plan for Rail. A national freight co-ordination team will be created within Great British Railways to act as a single point of contact for freight operators and customers across the network, helping to create new opportunities for growth and investment.

Electrification

Two fifths of the railway are already electrified, allowing people to travel and goods to be transported without the train’s operation creating any greenhouse gases. As the National Grid continues to decarbonise, total greenhouse gas emissions from electric trains will continue to reduce.

The government has delivered extensive electrification over the last decade. In the last three years (for which data is available), Network Rail has completed almost 700 track miles of extra electrification in England and Wales.

International rail services through the electrified Channel Tunnel provide a more environmentally friendly means of international travel for passengers (via Eurostar and

Eurotunnel shuttles) and for rail freight and HGV freight via the electrified Eurotunnel Shuttles.

We are committed to continuing to support the growth and development of these important international services, particularly as part of our recovery from Covid-19, so that their benefits can be maximised, and we will continue to work closely with the sector as we do so.

There is much more to do, however, and we are committed to delivering an ambitious, sustainable, and cost-effective programme of electrification guided by Network Rail's TDNS. This includes pursuing options for electrifying the remaining diesel pockets of the third-rail network.

What We Want to Achieve

We recognise the challenges faced by some previous electrification schemes. Our aspiration is to achieve a stable, ongoing rail electrification programme that learns from past mistakes. Establishing Great British Railways will be part of the solution, providing a renewed commitment to the environment through a joined-up leadership over track and train.

To decarbonise the railway, electrification must be more efficient than ever before. Work conducted by Network Rail and the Railway Industry Association to identify lessons from past schemes provides a solid foundation but the challenge will be to deliver efficiently in practice.

To achieve this, Great British Railways will lead an efficient electrification programme, working with funders and suppliers to minimise the cost and disruption of further electrification. The affordability and value for money of each electrification scheme will be assessed to ensure rail decarbonisation is achieved as efficiently as possible.

Modern methods of electrification, including discontinuous overhead electrification and safer technology, could help us decarbonise more quickly and cost-effectively. DfT, Network Rail, Office for Rail and Road (ORR), and RSSB are working together to explore options for safer versions of third rail electrification. Great British Railways will continuously review technical developments so they are appropriately and consistently adopted in all projects.

The benefits of electrification will only be delivered as new rolling stock is introduced or where bi-mode trains are used effectively. Future passenger rolling stock procurements will need to consider how to be consistent with the decarbonisation trajectory set out by [REDACTED]. We will prioritise planning for the zero-carbon replacement of near life-expired diesel vehicles.

New Traction Technologies

As stated in the Williams-Shapps Plan for Rail, electrification – a proven, existing technology – is likely to be the main way of decarbonising the majority of the network.¹³

However, there will also be a role for battery and hydrogen trains on some lines, where they make economic and operational sense.

Advice from the rail industry is that hydrogen and battery trains may be particularly suitable for deployment on less intensively used parts of the network.

The government has provided over £4 million of funding through FoAK competitions for new traction technologies. This includes £750,000 to facilitate trials of the UK's first hydrogen-powered train to run on the mainline, HydroFLEX. The DfT-funded research and development programme, delivered by RSSB, has examined the challenges still to be overcome before these technologies can be used on the operational railway. We will continue to support the development of alternative traction technologies, as well as research into how they can be best deployed on the network.

What We Want to Achieve

TDNS has indicated parts of the network where battery and hydrogen trains are likely to be the optimum way to decarbonise. Future rolling stock procurements will need to consider how to enable the use of hydrogen and battery trains where they are the best way to deliver our decarbonisation targets. As early deployments are successful, and as battery and hydrogen technology develops, future analysis will provide increasing certainty about the end state division between use of electrification and new traction technologies on a net zero-carbon railway.

A future net zero-carbon railway may make use of discontinuous electrification and may have routes that are partly electrified, where those options are consistent with the effective use of the network for freight traffic. Zero-emission bi-modes may, therefore, have a significant role to play in addition to single-mode battery or hydrogen trains. These, and existing diesel-electric bi-mode trains, will also allow us to make best use of electrification as it is delivered.

The rail sector is using technology, such as hybridisation of diesel engines and Connected Driver Advisory Systems, to incrementally reduce carbon emissions as quickly as possible. In advance of zero-carbon trains, wider deployment of these bridging technologies can provide reductions in carbon emissions more quickly.

Some rail operators are exploring the use of biofuels and sustainable alternative fuels to achieve immediate carbon savings. We recognise the potential value of sustainably sourced biofuels as a transitional technology, where their use is technically feasible and makes commercial and environmental sense.

As part of [REDACTED], the government has set out plans to work with stakeholders to develop a longer-term strategy on how the uptake and use of low-carbon fuels, including biodiesel and renewable hydrogen, could support decarbonisation across transport modes to 2050. The strategy is to be published in 2022.

7 Air Quality

When the air we breathe is polluted, it can affect people's health, the environment, and the economy, where we live, work, and bring up families. Children, the elderly, and those with pre-existing lung or heart conditions are at greatest risk. Long-term exposure to air pollution in the UK is associated with increased morbidity and mortality from chronic diseases,¹⁴ with the total social cost of adverse health impacts estimated at £20 billion per year.¹⁵ In the short-term, exposure can exacerbate asthma, while long-term exposure can increase the risk of stroke, lung cancer, respiratory conditions, and cardiovascular disease, and may affect unborn children.¹⁶

In 2019, the government published its Clean Air Strategy (CAS)¹⁷, which outlined action that will improve air quality and reduce the incidence of serious illness, improving quality of life for tens of thousands of people. The CAS pledged to halve the harm to human health caused by air pollution by 2030 and committed to reduce emissions from rail.

Sources of Air Pollution on the Railway

Diesel train emissions comprise of several harmful pollutants, including nitrogen oxides (NO_x) and particulate matter (PM). PM is emitted from diesel engine exhausts, but also result from non-exhaust emissions such as brake and track wear. Further research is needed to understand the relative contribution of non-exhaust emissions from rail. NO_x is produced by the combustion process of diesel engines. When it reacts with other gases in the air, it can create nitrogen dioxide (NO₂). Nationally, the railway contributes around 2% of total NO_x and less than 1% of total PM.¹⁸ In some areas, diesel trains can contribute significantly to air pollution hotspots for various reasons. For example, at enclosed stations, the combination of an enclosed environment and idling diesel trains leads to a build-up of pollutants.

The Regulatory Landscape

Action to manage and control air pollution is largely driven by national legislation and regulation that sets legally binding limits and objectives for levels of harmful pollutants in outdoor air. This includes NO₂ and particulate matter (PM₁₀ and PM_{2.5}). Under the Local Air Quality Management (LAQM) framework, local authorities are required to review and assess ambient (outdoor) air in their area and designate Air Quality Management Areas (AQMAs) if improvements are necessary to meet the air quality objectives. The LAQM

framework also covers those parts of the GB rail network that are not indoors/enclosed which the public can access.

The air quality part of the government's landmark Environment Bill will strengthen existing legislation and introduce a duty to set a new legally binding ambient target for fine particulate matter (PM_{2.5}), the most damaging pollutant to human health, alongside one further long-term air quality target.

There are air quality standards and guidelines that apply to indoor environments, but these do not generally have legal status. This is apart from the protections in place for the occupational health of workers, known as Workplace Exposure Limits. These limits are indented to protect the health of employees (such as railway staff) from exposure to harmful substances. There are limits for NO₂, but none specifically set for PM₁₀ or PM_{2.5}. The Workplace Exposure Limits for NO₂ are substantially higher than the national limits set for outdoor NO₂ and are not generally aimed at protecting those likely to be susceptible to the health impacts of air pollution, such as children or the elderly.

What We Want to Achieve

To protect the health of those who travel, live beside and work on the rail network, we need to ensure that the regulatory and standards framework is clear, consistent and recognises the different locations (open and enclosed stations, depots, train carriages) and people (staff and general public) that may be affected by railway emissions.

To achieve this, we are funding a comprehensive review of all the air quality regulations, standards, and guidelines that control air pollution and people's exposure to it on the rail network. The review will be completed in 2022. It will assess UK and EU air quality legislation, World Health Organisation air quality guidelines, indoor and health and safety air quality guidance, national and regional policies/plans. The review will inform the government's decisions on whether new or strengthened railway standards are needed, or further regulation to ensure that air quality is of a suitably high standard on all parts of the network.

Alongside the review, we are also funding research that will develop a set of air quality targets to address air pollution risks in different locations across the railway. We will use this research to set targets for levels of PM_{2.5}, PM₁₀ and NO₂ for all parts of the network that the public can access in 2022, with the ambition of meeting these targets by the end of 2030, consistent with the Clean Air Strategy.

The aim is to significantly reduce people's exposure to air pollution caused by the railway, ensuring that rail remains one of the cleanest forms of transport.

Improving our Understanding

Building a robust evidence base is fundamental to helping us understand the impact of rail on air quality. Since 2018, we have invested over £2 million in air quality projects delivered by the Clean Air Research (CLEAR) programme. The CLEAR programme, managed by RSSB, is based around three key themes: modelling, monitoring and mitigation. It underpins the development, delivery and implementation of the industry's Air Quality

Strategic Framework published in June 2020¹⁹, which aims to achieve ‘a rail network with a minimal impact on local air quality’.

The CLEAR Programme has improved the accuracy of national emissions reporting from the railway and provided a better understanding of air quality in areas where passengers are likely to be exposed²⁰. This has highlighted that enclosed stations can be air pollution hotspots, primarily due to diesel train emissions but also influenced by other factors such as background pollution from surrounding city streets, particulate emissions from food outlets and station architecture.

What We Want to Achieve

The government is committed to improving air quality in and around stations, particularly where many people are likely to be exposed to harmful pollutants. To better understand this issue, we are funding a £4.5 million stations air quality monitoring network. This will be rolled out over the next three years, with air quality monitors installed in approximately 100 stations across England and Wales from summer 2021.

The network will initially provide a snapshot of air quality at stations and identify priority locations where improvement measures are needed. Responsible organisations will be required to produce air quality improvement plans for the priority locations identified, with the aim that levels of air pollutants inside these stations meet the targets we will set for PM_{2.5}, PM₁₀ and NO₂. The air quality monitoring network will show how air pollution changes over time, helping us to understand the effectiveness of different interventions and how other changes on the railway influence air pollution. To ensure transparency, we will publish the stations monitoring data in a single accessible format.

Emissions from diesel trains can also affect air quality inside the trains themselves. We are funding research through the CLEAR programme to better understand this risk and how it can be reduced. The research will assess the air quality inside a range of trains, helping us to establish the levels of air pollution that passengers and staff may be exposed to inside trains and any associated health risks. This research will be used to develop best practice guidance for the industry and set out a range of measures that can be used to improve air quality standards inside trains.

Intervention Measures

Research, development, and innovation are all essential to find the most effective ways to improve air quality in the short-medium term ahead of delivering a net zero-emission railway by 2050. Since 2019, we have invested around £2.5 million through Foak competitions to fund the development of new technologies that can be retrofitted to existing diesel trains to significantly reduce the levels of harmful pollutants they emit. These include hybridisation with fuel saving technologies such as batteries and the aftertreatment of exhaust gases using catalytic convertor-type technology.

Idling diesel trains are a major source of emissions in areas where high levels of human exposure are likely, for instance in stations. Reducing unnecessary idling is therefore an effective way of reducing air pollution that does not necessitate additional technical changes to existing diesel trains.²¹

What We Want to Achieve

We will continue to support the development of new emission-reducing technologies, as well as research into how they can best be deployed on the network to support the move towards a cleaner, greener railway.

To ensure the most appropriate technologies are adopted, we are funding research through the CLEAR programme that will assess the emissions benefits of various retrofit options for diesel trains. The project is aiming to develop emissions targets that represent real-world use for each type of retrofit technology.

We welcome the work that the Rail Delivery Group is doing in collaboration with industry to develop and rollout an idling limit which recognises technical and operational requirements for running the railway on a day-to-day basis. Newer trains with start-stop systems and automatic engine shutdown can also help reduce idling times. Where trains do not have these systems, drivers and dispatch teams are key to ensuring engines are turned off.

8 Non-Traction Decarbonisation: Decarbonising the Rail Estate

sets out our ambitious plans to reduce tailpipe emissions from transport but, to reach net zero carbon emissions across the UK economy, we will need to go further and decarbonise the entire rail estate. This includes emissions from the 2,500 railway stations and more than 500 depots, maintenance and related facilities in Great Britain, as well as the whole-life carbon emissions of maintenance and construction on the rail estate. A joined-up approach led by Great British Railways, with supply chains and retailers, will be vital to help us achieve net zero carbon emissions across the non-traction elements of our railway.

Stations, Freight Depots, and Terminals

The 2,500 railway stations in Great Britain are important transport hubs, facilitating millions of journeys each year. Our stations will be a key part of our holistic approach towards decarbonising the wider rail estate. The government, Network Rail, and train operators all currently have important roles to play in this. In the future, station management will be integrated within Great British Railways, improving accountability for the long-term investment in stations.

In collaboration with industry, the Rail Delivery Group (RDG) published in April a Sustainable Stations Guide to provide environmental sustainability recommendations that passenger train operators should aspire to. This comprehensive guide sets out recommendations and best practice case studies for everything from station design, energy and water management, and biodiversity, to integrated transport and recycling.

We have built environmental reporting into National Rail Contracts and have set train operators targets to continually reduce energy consumption and carbon emissions in all managed stations. National Rail Contracts also require train operators to develop a strategic approach and roadmap that sets out long-term pathways towards total decarbonisation of both traction and non-traction elements of their operations by 2050. This includes a full set of validated science-based targets; milestones that support this, and giving consideration to assets' lifecycles, rather than contracts, when considering initiatives. Train operators must also demonstrate that they have implemented an effective energy management system to help establish sustainable processes and improve energy performance.

What We Want to Achieve

To achieve net zero carbon emissions by 2050, we will need to further reduce the environmental impact of stations, terminals and depots. We support the Sustainable Stations Guide and expect those managing stations to use it going forward. We will work with those managing stations to roll successful initiatives out to more stations.

In future, station management will be integrated within Great British Railways to improve accountability and long-term decision-making over how stations and the rail estate are maintained and improved for passengers and local communities. New, aligned incentives across the sector will help to make stations and trains more sustainable by reducing energy consumption and improving efficiency. Great British Railways will also take over the contracting of train services through Passenger Service Contracts, setting required service levels and specifications, including on environmental sustainability. Targets will be set for renewable energy generation and use at stations.

We will work with the rail freight industry and Great British Railways to encourage the freight sector to decarbonise their operations within rail freight terminals and depots. We are currently supporting a research and development project to identify and stimulate innovation of low-emission technologies for use in the rail freight estate.

Vehicles

Network Rail has a fleet of 9,550 road vehicles to support its functions and train operating companies are likely to own and operate further vehicles. Along with the wider Government Fleet Commitment, Network Rail has committed to transition its cars and vans to zero emission vehicles by 2027.

Network Rail has identified ten potential pilot sites based on their energy capacity and vehicle usage for a major electric vehicle feasibility study. In 2019-20 Network Rail's fleet generated an estimated 48,600 tonnes of CO₂, equivalent to more than 110,000 barrels of oil. By transitioning to zero emission vehicles, all these emissions could be removed at the tailpipe and by producing or purchasing renewable energy to power these vehicles, Network Rail will ensure that as many of these emissions are removed as possible. Some emissions will remain from the production of the vehicles and batteries.

What We Want to Achieve

While challenging, we expect Network Rail and Great British Railways to meet or exceed the Government Fleet Commitment targets. We will also ask Network Rail to undertake a study to examine whether this number of road vehicles is necessary.

Materials, Construction, and Whole Life Carbon

Beyond the emissions produced by the operation of the existing rail estate and passenger emissions, we also need to consider emissions arising from the maintenance, construction, and procurement of new assets, and the disposal of existing assets.

Achieving greener construction on the railway and the rail estate will be crucial to help us deliver net zero carbon emissions by 2050. The whole-life carbon emissions of buildings and infrastructure include heating and cooling, providing power, carbon associated with manufacturing, assembly, deconstruction, and the ultimate disposal of materials. Supply chains will be key to delivering sustainability across the rail network.

In the National Rail Contracts, we have included a requirement that train operators must achieve a BREEAM (Building Research Establishment Environmental Assessment Method) rating of at least 'excellent' for all new major construction projects at both the design and post-construction stage. Great British Railways will adopt this requirement when it takes over the management of all stations.

We welcome recent investment in the construction sector in newer low-carbon materials. Changing the materials used in rail can have a positive impact on our carbon footprint. We can achieve greener construction by reducing material usage through better planning and resource management, and through reusing materials.

Network Rail has produced and published its own Science Based Targets for emissions reductions to support net zero 2050, including a target to ensure 75% of its suppliers also have Science Based Targets by 2025. Network Rail is leading the industry in this respect and Great British Railways will continue this. Each of Network Rail's over 11,000 listed suppliers plays a role in the overall building and maintenance of the rail system, and must play a role in reducing carbon emissions.

Network Rail is pursuing sustainable construction methods and the re-use of key infrastructure materials like track and ballast, and is working proactively on better management of materials (such as scrap metal) on the lineside. Research and development activities are underway, working with other industries, academic institutions and organisations to drive innovation in circular economy and prevent the waste of valuable resources at source.

Network Rail uses in-house processing facilities across the rail network to reuse and recycle materials and has an app to share surplus materials internally rather than buying new. Network Rail's ambition is to reuse, repurpose or redeploy all surplus resources, design out waste and plastic pollution, and embed "circular economy" thinking into the rail industry by 2035. Network Rail will be setting high standards for its supply chain and will work with suppliers to research and develop new, innovative secondary materials that reduce reliance on virgin materials.

The machinery that supports maintenance and construction on the rail network will also need to be decarbonised. Through the Foak programme, the government has provided nearly £400,000 to fund the development of the world's first zero-emission machine for removing and replacing rails. The government will continue to support innovative solutions to help bring new technologies to market.

Train design and manufacture is also important. Manufacturers promoting best practice already use sustainable or recycled materials and adhere to environmental standards. For example, the commuter train Desiro City has been developed using low-weight aluminium materials and has a recycling rate of 97.4%.

What We Want to Achieve

We will push Great British Railways to go further and faster in these areas in the future. Network Rail has made a good start by setting out its policies in its Environmental Sustainability Strategy and by publishing Science Based Targets. Network Rail and Great British Railways will now need to deliver on these commitments and bring the rest of the rail industry with them.

We will push for whole life carbon to be factored into all infrastructure projects by 2027 at the latest. We will work with the Department for Business, Energy and Industrial Strategy to ensure that Network Rail and Great British Railways are aware of developments in sustainable construction. We will continue to support the development of innovative technologies and materials and to ensure that sustainability and low-carbon materials are considered at all stages of a train's lifecycle. We want Network Rail and Great British Railways to build on positive examples of low-carbon construction from HS2 and others for future projects.

From 1 April 2022, the government will remove the entitlement to use red diesel from most sectors, including in construction. This should strengthen the business case for alternative fuel construction plant and machinery and incentivise the purchase of non-diesel powered (low emission) technology.

9 Waste, Litter, and Graffiti

The rail network generates a significant amount of waste each year. We need to reduce waste generated as much as possible and ensure that waste products are reused or recycled. We also need to address litter, fly-tipping and graffiti on the network.

This will be an important part of encouraging passengers to return to rail as now, more than ever, passengers are looking for cleanliness on the railway, to help them to build their confidence to travel.

Waste

To reduce emissions, make the most of natural resources and reduce the impact to our natural environment, we need to minimise the amount of waste generated, and where waste is generated, make sure that it is reused or recycled.

Network Rail has made good progress on minimising the amount of waste sent to landfill, both from operating and maintaining the railway and from the 20 stations that it currently manages, with 98% of waste diverted from landfill. As set out in the Materials section of this document, Network Rail's ambition is to reuse, repurpose or redeploy all surplus resources, design out waste and plastic pollution, and embed "circular economy" thinking into the rail industry by 2035.

National Rail Contracts require train operators to send zero waste to landfill and recycle a significant proportion (typically 80%) of waste produced by their operations, including by passengers in stations and on trains. Some train operators are currently more advanced than others in meeting these targets, having had recycling targets built into their franchise agreements for longer.

What We Want to Achieve

It is important that even more focus is given to end of life, reuse and recycling when products and materials are selected in future. Waste should in the first instance be minimised. Where waste cannot be reused it should be recycled and in the very limited cases where waste cannot be recycled it should be diverted from landfill.

We expect a standardised ambitious approach across the network as Great British Railways takes over the running of all stations and the purchasing of train services through Passenger Services Contracts. Zero waste from railway activities and passengers will go to landfill by 2025, and increasingly challenging recycling targets will continue to be set across all areas of the railway.

Network Rail office estate will remove consumable single-use plastics by 2025 and all other areas of the railway will work towards zero single-use plastics, setting challenging targets for consumables and packaging.

Litter and Fly-tipping

Litter and fly-tipping is unsightly, unsanitary, dangerous, and damaging to land that should be both a natural and transport asset. Fly-tipping has become more prevalent over the last year with waste disposal site closures during the pandemic.

In 2020, Network Rail pledged £2 million to support trackside clean-ups for the Great British Spring Clean. Network Rail is supporting this year's Great British Spring Clean by encouraging staff to contribute, by taking volunteering days to join litter picks in their communities. In May 2021, Grant Shapps challenged Network Rail to do more to tackle litter on the railway.

Network Rail carries out regular litter clearance programmes at all stations and surrounding areas, prioritising busier routes. Network Rail is working closely with neighbours and local councils to address localised litter build-ups, prioritising clear safety risks, or those in high-profile or sensitive areas and also carrying out regular track and cab inspections.

Network Rail is also taking preventative measures to target well-known litter hot spots. This includes upgrading fencing and installing CCTV cameras to monitor activity on rail land and provide clear evidence of criminal activity for use in prosecutions, working closely with the British Transport Police.

What We Want to Achieve

Network Rail has made good progress in tackling litter and fly-tipping and Great British Railways will need to build on this work. We want a rail network free from litter and waste and will continue to challenge Network Rail and Great British Railways to do more to keep the rail estate clean, safe and welcoming.

Deterrents to fly-tipping will be key, preventing the waste being dumped and the problem materialising. Where waste has been dumped, we want Network Rail or Great British Railways to ensure it is removed and the land cleaned up as quickly and effectively as possible. Where possible and safe to do so, any dumped waste should be reused or recycled in the same way that other waste would be.

Graffiti

Passengers should be able to feel pride in the rail network. The widespread scourge of graffiti makes this difficult. We want the rail estate to be as safe, clean and welcoming as possible for all passengers, and this includes preventing and removing graffiti across the estate.

In February 2020, DfT challenged Network Rail and train operators to go further than they already had and implement anti-graffiti measures that would produce rapid and visible results. We also requested longer-term plans to promote closer working practices between train operators, Network Rail and the British Transport Police.

Network Rail responded with a ‘blitz on graffiti’, which began in March 2020. Network Rail estimates that £1.5-2 million has been spent on graffiti clearance since October 2020, with thousands of tags removed and sites cleared of graffiti.

Network Rail has established longer term plans to maintain graffiti clearance at well-known hotspots across all regions. Through these plans, preventative measures are being trialled in the form of anti-graffiti vinyl film, paints and the use of drone technology.

What We Want to Achieve

Network Rail has made good progress tackling graffiti and Great British Railways will need to build on this work. We want a rail network free from graffiti and will continue to challenge Network Rail and Great British Railways to do more to keep the rail estate clean, safe and welcoming.

Deterrents to graffiti will be key, preventing the damage being done, through preventing access to the railway, deploying new technologies that prevent graffiti, and pursuing prosecutions. Where graffiti has occurred, we want Network Rail or Great British Railways to remove it quickly and effectively.

10 Social Value

Increasing the environmental sustainability of the rail network should also increase the social value it contributes to the public, passengers, communities, and those employed in the sector. In 2020, the government published a Guide to using the Social Value Model that all commercial practitioners within government must use throughout the procurement lifecycle.

The Social Value Model sets out government's social value priorities for procurement, including five themes and eight policy outcomes that flow from these themes. The rail network can contribute to these themes.

The Williams-Shapps Plan for Rail strives to embed social value across the rail network, including in relation to environmental sustainability, which is the focus of this chapter. The most relevant themes for environmental sustainability from the model are 'Fighting climate change' and 'Wellbeing'.

All areas covered by this document will improve the environmental sustainability of the rail network and the social value it contributes. Reducing harmful emissions from trains, reducing noise, and increasing the use of active travel, public transport and rail will bring health and wellbeing benefits. Increasing biodiversity on and around the rail estate will benefit the environment and could benefit the health and wellbeing of those using and engaging with the rail estate. Decarbonising trains and the wider network will reduce emissions, help us fight climate change, protect the environment and support the benefits that this will bring for us all.

Network Rail's Social Value Framework embedded into the organisation and procurement processes advocates the UK government's Social Value Model. The framework, along with the Rail Social Value Tool, includes monetised values to identify opportunities and risks and can integrate these qualitatively into decision-making.

The government funds and works closely with the Community Rail Network (CRN), a representative body supporting Community Rail Partnerships and Station Adopters. Around the country, 73 Community Rail Partnerships and 1,000 station friends' groups work with rail partners to build understanding of local needs and enable more people to travel by rail and use their local stations. Local communities act as partners to help develop rail and its place as the backbone of local sustainable transport networks.

Community Rail Partnerships treat stations as vital local centres of social and economic activity, and potential beacons for sustainability. Community rail promotes green and caring credentials, and focuses on connections with bus, community transport, and active travel, to make rail more accessible, and reduce car dependency.

What We Want to Achieve

Great British Railways will build on work done by Network Rail to embed social value into procurement practices and embed social value across the rail network. This will include incorporating wider social objectives that promote environmental sustainability, community and employee wellbeing and equal opportunity into future Passenger Service Contracts with train operating companies. Through National Rail Contracts, we are already seeking to ensure that social value initiatives are built in. We will work with the rail industry and across government to determine how pledges around social value can be measured and monitored.

The Williams-Shapps Plan for Rail sets out the government's vision for the future of Community Rail, recognising the important role that Community Rail Partnerships already play in supporting a thriving rail network across the country. Community Rail Partnerships will be empowered to strengthen rail's social and economic impact, and best practice as evidenced by the work of many Community Rail Partnerships will be supported more widely across the network. These important organisations will continue to enjoy the same level of support and protection that they currently receive.

11 Integrated Travel and Modal Shift

To support a green recovery, railways need to encourage a shift away from planes, cars and lorries, become the best option for long-distance travel, and improve the whole journey experience.

This includes making it easier to get to and from stations by walking, cycling or other public transport, supporting green infrastructure outside cities, such as charging points at rural stations, modernising fares to compete with air travel, improving freight connectivity through interchanges and creating better links with freeports.

Passenger Modal shift, Active Travel and Integrated Transport

The government's vision is for active travel (typically walking or cycling) and public transport to be the natural first choice for our daily activities. As a low-carbon way to travel, rail will play an important role in decarbonising the transport sector and in helping us meet our net zero carbon targets for 2050.

In 2019 in England, 81% of journeys taken by train already included active travel or public transport as well as rail.²² Station Travel Plans have improved integration with other modes of transport and identified walking and cycling routes to many stations. Many stations provide secure storage for bikes. Bikes are accepted on the vast majority of non-peak trains, though the process for doing this varies according to the route and the train operator and this isn't always clear to cyclists.

Plus Bus already allows rail passengers to purchase onward bus tickets with their rail ticket but this isn't widely used and many passengers may not even be aware of it. Some train operators have already installed electric vehicle charging points at their managed stations, and Network Rail has installed more than 300 at the stations it manages.

The Cycle Rail grant scheme funds the installation of cycle racks, security systems, ramps, and cycle paths at train stations. Through the scheme, we have provided more than £40 million funding since 2012 to create over 22,000 new parking spaces and other features, spread across more than 200 stations UK-wide.

What We Want to Achieve

Rail offers a low-carbon option for both short and long-distance travel. We want to make rail the first option for suitable journeys in the UK and encourage commuters to cycle, walk or take public transport to and from rail stations, making their journey environmentally sustainable from door to door. By making journeys simpler and more integrated, we want to encourage more people to travel by train.

The Williams-Shapps Plan for Rail sets out how we will reform the rail network to make it more appealing and encourage customers to return in larger numbers than ever.

The government will invest substantial sums on safe cycle routes to stations, particularly in commuter towns such as Guildford and Harrogate, and will increase cycle storage at stations, including at city-centre termini, where it is currently limited. Great British Railways will increase space for bikes on existing trains wherever practicable, including on popular leisure routes. It will also make it easier to reserve bike spaces online.

Future train fleets will include more bike spaces, relevant to the markets served. Operators may continue to restrict bikes on peak-hour commuter trains, where the space is needed for passengers, and due consideration will be given to the accessibility needs of all passengers.

In the future, each Passenger Service Contract will be designed by Great British Railways to support the needs of passengers and the whole network, as part of an integrated system. This will include integration with other transport services to enable more convenient connections between long-distance and local services and joint working during disruption or emergencies. It will also require the operators to support the integration objectives for bus travel and cycling.

New transport services, such as e-bikes and e-scooters, are emerging all the time. As they mature, we will ensure seamless integration, learning from the past to inform decision making and implementation.

Freight Modal Shift

Although most rail freight is carried by diesel trains, it remains one of the lowest carbon ways of moving goods on land. On average, rail freight trains emit around a quarter of the CO₂e emissions of HGVs per tonne mile travelled.²³ The government is supportive of modal shift of freight from road to rail, wherever possible, to reduce emissions from the freight sector.

Freight operating companies are already taking significant steps to reduce their own emissions. Freightliner, for example, has fitted stop-start technology in all its Class 66 and Class 70 fleet to reduce carbon, air quality and noise emissions when idling.

They calculate that their locomotive idling hours reduction plan has achieved a 36% average reduction in idling hours over the last six months of 2020, equating to a saving of 3,138 tonnes of CO₂e since May 2020.

The government provides grants – including through the Mode Shift Revenue Support Scheme – to support the carriage of freight by rail and water on routes where road haulage has a financial advantage. These grants help to remove around 900,000 HGV journeys from roads each year²⁴. In 2021/2022, the government allocated up to £20 million for these grants, a 28% increase in funding compared to 2019/20.

The government has continued to invest in the rail network to improve its capability and capacity for freight. These investments support the growth of the rail freight sector and, in turn, modal shift of freight from road to rail. The government invested over £235 million in the Strategic Freight Network between 2014-2019 to improve freight capacity and capability, and further funding is being made available through the Rail Network Enhancements Pipeline.

The government supports the development of the network of Strategic Rail Freight Interchanges (SRFIs) to better enable the environmental and economic benefits that rail freight offers. SRFI's are integral to decarbonisation as they make rail freight more affordable, thereby reducing freight movements on the road networks. We will explore ways to enable future SRFIs to be located more appropriately around the country.

What We Want to Achieve

As announced in the Williams-Shapps Plan for Rail and [REDACTED], the government will introduce a rail freight growth target for all areas of the network that the department oversees, but this target should not become a ceiling. The target will provide a common objective for industry collaboration, help provide private operator investment confidence, and galvanise action across local partners and industry. Further details about the growth target will be confirmed in due course and we will work closely with industry partners to develop the target.

To further grow rail freight for 2021/22, the government is investing £20 million in modal shift grant schemes. We will continue to work with the rail freight industry, Innovate UK, and RSSB to look at how best to progress options on innovation, research and development to reduce emissions from rail freight. Through the 2021 Foak competition, we are providing nearly £2 million in funding for five decarbonisation-focused rail freight projects.

Looking ahead, the government is considering its wider approach to the freight sector through its Future of Freight programme. The strategy will describe the government's long-term vision for the sector across a range of indicators, including decarbonisation, and provide a policy route map to achieve that vision. The government will take forward work on the strategy throughout 2021.

12 Land Use

The rail estate is vast, with around 52,000 hectares of land currently managed by Network Rail and in future to be managed by Great British Railways. The extensive estate can be used more effectively to reduce the UK's net greenhouse gas emissions and improve biodiversity. A sustainable, long-term approach to land management on the network will support biodiversity.

Network Rail will publish a comprehensive land use strategy by April 2022 to maximise the potential benefits of the rail estate and ensure that land is prioritised appropriately.

Clean Energy Generation

Renewable energy offers zero emissions at source and reduced whole life carbon emissions, when compared to traditional energy sources. The rail estate, including many of the network's stations, offers opportunities for renewable energy production to provide energy for direct use on the rail network, or to support the wider grid.

Network Rail's Environmental Sustainability Strategy sets out Network Rail's approach to renewable energy generation, including a commitment to feed-in 100% of non-traction electricity from renewable energy sources by 2030.

Network Rail has undertaken a review of its land to prioritise optimum locations for renewable energy generation and storage. This used the Geographic Information System (GIS) to reveal information such as areas of electricity network stress, areas where Network Rail consumes large amounts of energy, and the renewable energy potential of sites and neighbouring land. A geo-spatial database has been created and will be used to prioritise optimum locations for renewable energy generation and storage.

What We Want to Achieve

Renewable power generation on the rail estate will be increased to provide more clean energy to stations and local communities. Successful initiatives, such as new technology to power tracks from lineside green energy, will be rolled out more widely across the network as appropriate.

We want the rail estate to support wider generation of renewable energy to support the whole country in decarbonising as we move towards 2050 and our commitment of reaching net zero greenhouse gas emissions.

Biodiversity

The UK needs to do more to encourage a diverse ecosystem. The State of Nature 2016 report highlighted that between 1970 and 2013, 56% of animal species in the UK have declined in population, with 40% showing strong or moderate declines. Of the nearly 8,000 species assessed using modern Red List criteria, 15% are extinct or threatened with extinction from Great Britain.²⁵ The Living Planet Index suggests that we are among the most nature-depleted countries in the world.

The rail network is home to a wide variety of plants and animals and includes 200 sites of special scientific interest and an estimated six million trees. In 2018, the government commissioned an independent review led by John Varley to examine Network Rail's approach to lineside vegetation management. The Varley Review (2018) contained six recommendations for Network Rail.

Network Rail published its Biodiversity Action Plan in 2020, setting out a vision of a lineside that is safe, operationally viable and environmentally friendly. The plan responds to each of the Varley recommendations and was developed in line with Defra's 25-Year Environment Plan Network. The plan sets out detailed goals and actions on how biodiversity will be improved across the rail estate in the coming years, including a commitment to deliver net zero biodiversity by 2024 and biodiversity net gain across the network by 2035. This includes: a stocktake of environmental assets, measuring the impacts of rail estate management on biodiversity, route level action plans to turn the vision into practice, and engagement and communication with a wide list of partners, stakeholders and neighbouring landowners.

What We Want to Achieve

Network Rail has made strong progress to improve its approach to biodiversity. The government will push Network Rail and Great British Railways to achieve or go further than the commitments made in the Biodiversity Action Plan, including in the short term to establish a biodiversity baseline and publish a Habitat Baseline Management Plan by the end of 2021.

We will work with Great British Railways to ensure delivery of biodiversity improvements at least as ambitious as those set out in the government's 25 Year Environment Plan and the Environment Bill.

Carbon Offsetting, Capture, and Storage

With a large estate that could be used to offset carbon emissions from other sectors, and as a mode of transport where many technologies already exist to help it decarbonise, rail is in a strong position to achieve negative carbon emissions and support other, more difficult to decarbonise, sectors.

Trees are one of nature's best solutions to achieve carbon capture, naturally removing carbon from the atmosphere as they grow. The rail estate already includes an estimated six million trees and is densely populated with trees (20% of land coverage) compared to the rest of the UK (13% of land average). Network Rail is supporting the planting of more than 80,000 further trees and hedgerows across the country through a £1 million, four-year programme.

There is also the potential to use the rail estate for carbon capture by other means. The Net Zero Innovation Portfolio is a £1 billion fund, announced in the Prime Minister's Ten Point Plan for a Green Industrial Revolution, that will accelerate the commercialisation of low-carbon technologies, systems, and business models in power, buildings, and industry, including direct air capture and greenhouse gas removal.

The government set out its approach to carbon capture, usage and storage (CCUS) in its [REDACTED]. The approach is designed to enable the UK to become a global technology leader for CCUS and ensure that the government has the option of deploying CCUS at scale during the 2030s, subject to costs reducing sufficiently.

What We Want to Achieve

We welcome the tree planting initiatives that Network Rail is already undertaking. Great British Railways will continue these and explore further opportunities to support additional tree planting across the country, including considering how neighbouring landowners might be supported to plant additional trees.

We will work closely with colleagues in the Department for Business, Energy, & Industrial Strategy (BEIS) to understand what role the transport sector might play in carbon capture, use and storage from 2030 to 2050 and beyond, and how emerging technologies might be deployed on the rail estate.

13 Railway Noise

The provision of railway services causes noise which can be a nuisance to lineside neighbours, passengers, and staff, but may also affect people's health and wellbeing. The World Health Organisation recognises environmental noise as one of the top environmental health risks in Europe. It may cause sleep disturbance, annoyance, and there is growing evidence that long term exposure to high levels of environmental noise is associated with illnesses like heart attack and stroke²⁶.

The phenomenon of railway noise is a complex issue, with sources including rolling noise (from train wheel/rail contact); traction noise (from train motors/engines); horns; railway premises (from station platform loudspeakers, plant room, lifts); maintenance and construction (from track upgrade works or major infrastructure projects).

Work So Far

The government carries out periodic strategic noise mapping to identify the most sensitive areas on and around the rail network that are exposed to railway noise, known as noise Important Areas (IAs). The department, with support from RSSB and Network Rail, is responsible for examining each of the IAs and reporting their location to the relevant local authority. This reporting includes an indication of intervention measures that have recently been taken, or are planned in the near future, that will be acoustically beneficial to the affected population, assisting with the implementation of the government's policy on noise.

Mitigation measures for railway noise are described in the government's Noise Action Plan: Railways²⁷, which was last updated in 2019. Reductions in railway noise have been achieved through activities like Network Rail's track grinding programme, which is primarily aimed at protecting railway infrastructure and the trains but also reduces rolling noise. All new trains must adhere to more stringent technical specifications set for external noise and noise within the driver's cab. Furthermore, an increase in the number of electric trains has helped to reduce traction noise. There has also been a reduction in station noise largely through improvements to Public Address system design.

In addition to control measures that tackle noise at its source, mitigations can also include planning controls that consider noise arising from new railway lines and lineside developments, compensation and insulation schemes for affected homes, noise barriers, and façade insulation.

Many of the benefits of developing a more sustainable railway will also help to reduce rail-related noise, for example electrification of the network and the phasing in of low emission technologies, like battery and hydrogen power trains.

The next noise mapping round in 2022 is aiming to provide more detail compared to previous rounds. This will help to determine what the most effective noise mitigations might be in sensitive locations on and around the rail network.

What We Want to Achieve

We will continue to work with Network Rail, then Great British Railways, and train operators to minimise the impact of noise from the railway on its lineside neighbours, passengers, and staff.

We will also continue to evaluate the emerging health risks of environmental noise in order to protect the health and wellbeing of railway lineside neighbours, passengers, and staff, as well as support the development of innovative technologies to reduce the noise caused by the railway.

14 Water

Network Rail and train operators use water in their operations and for water supply to customers. Network Rail also owns land across England, Scotland and Wales and its 20,000 miles of infrastructure pass through both urban and rural areas falling within, and crossing over, multiple water bodies. Pollution prevention, drainage and flood protection are key considerations. It is key that Network Rail, Great British Railways and train operators not only use water more efficiently but also enhance the water environment in which they operate. Water is an integral part of the circular economy and biodiversity.

In 2019, Network Rail's water use (not including water used by train operating companies) and wastewater disposal was approximately 2,200 million litres. Water is used vastly at stations, depots and offices and there are other uses, such as dust suppression.

Network Rail is currently rolling out a system to track water use and assess its organisational water footprint. By 2024, Network Rail aims to have a full understanding of water use and environmental interactions across the network, as well as clear regional action and implementation plans aligned to overarching controls.

Network Rail is committed through its environmental policy to taking action to prevent pollution to water which may occur as a result of its operations, to reduce environmental impacts and use resources (including water) sustainably. In an agreement between Network Rail, Water UK, the Environment Agency, and Natural Resources Wales, a pesticide agreement was drawn up in August 2016 that controls the use of certain pesticides within public water supply source protection zones (SPZ), drinking water protected areas (DWPA), and safeguarded zones. The policies are implemented through the prevention of pollution standard and task risk control sheets.

In the National Rail Contracts, we require train operators to monitor and reduce water usage throughout their operations. We require train operators to first identify and address any leaks (if in existence), install automated meter reading water meters at all sites (if not already installed), and set annual targets for reductions in water consumption.

What We Want to Achieve

Existing commitments in the National Rail Contracts will move into Passenger Service Contracts under Great British Railways. We will continue to set challenging targets for

Great British Railways when it takes over the management of stations and it will need to do the same for train operators running services.

We will push Network Rail and Great British Railways to go further than their current commitments and to publish their commitments and plans to reduce water consumption and the negative impact their estate has on the quality of water bodies it interacts with.

Future water policies will be driven by Defra's 25-Year Environment Plan and the Environment Bill will determine how the UK protects its natural environment, including delivering sustainable water resources.

15 Endnotes

- 1 [REDACTED] DfT, p. 81
- 2 [REDACTED] BEIS
- 3 [REDACTED] DfT
- 4 [REDACTED] BEIS
- 5 [REDACTED] ORR
- 6 [REDACTED]
- 7 Covers period from 2017-2020: this is the most recent electrification data currently available
- 8 [REDACTED] DfT, p. 86
- 9 [REDACTED] Rail Delivery Group
- 10 [REDACTED] ORR (703 million is the total of 2019/20 Q4 and 2021 Qs 1-3)
- 11 [REDACTED] ORR
- 12 [REDACTED]
- 13 RSSB
- 14 [REDACTED] DfT, p. 88
- 15 [REDACTED] PHE
- 16 [REDACTED] Royal College of Physicians
- 17 [REDACTED] BMJ
- 18 [REDACTED] Defra
- 19 [REDACTED] RSSB
- 20 Green et al., Research into air quality in enclosed railway stations, RSSB, 2019
- 21 [REDACTED] RSSB
- 22 [REDACTED] DfT
- 23 [REDACTED] BEIS
- 24 Internal DfT analysis
- 25 [REDACTED] National Trust
- 26 [REDACTED] World Health Organisation
- 27 [REDACTED] Defra

Application for the Portishead Branch Line (MetroWest Phase 1) Order

Request by the Secretary of State for Transport for further information from North Somerset District Council in relation to its Carbon Budget Assessment

Applicant's responses to submissions By Mr B Cash and Others, received By Secretary of State on 23 November 2021

1. Introduction.

1.1 North Somerset District Council (The Applicant) has reviewed the submission of B Cash and PG Virden provided in response to the Secretary of State's Consultation of 9 November 2021 (the Submission).

1.2 The Applicant notes the consultation of 9 November 2021 is on one precise matter. The consultation letter of 9 November states:

*Please could the **Applicant** provide an assessment of the impact of the scheme against the third, fourth and fifth carbon budgets, or explain why it does not think this is appropriate.*

1.3 The Submission does not, at any point in seven pages, address this question.

1.4 The Submission instead seeks to make further submissions on issues outside of the consultation of the 9 November and to reopen issues addressed at the Examination in to the Order.

1.5 Despite this, the Applicant has fully reviewed, at considerable expense, the Submission, to provide a response. Whilst it finds nothing of substance in the Submission that could not have been dealt with during the Examination, the Applicant has sought to respond to each of the points raised, in order to assist the Secretary of State in reaching his determination.

1.6 As the Applicant for the Order, the Applicant should be the person entitled to make the final round of submissions on the Order. Given that nothing has been raised in the Submission that could not have fully been dealt with at the Examination, and largely repeats previous submissions, the Applicant would not expect there to be any further round of submissions by B Cash and PG Virden on the Applicant's responses to the Submission.

2. The Applicant's Detailed Responses

The Applicant's detailed responses are set out in Table 2.1.

Table 2.1

Topic and response number	Submission	Applicant's response
1. Electrification Response 1	<p><i>The Sixth Carbon Budget: The UK's path to net zero</i> (2020) Committee on Climate Change, p 100, states: 'The Government has set an ambition to phase out diesel trains by 2040.'</p> <p>Two tunnels on the Portishead-Bristol rail-line would have to be modified to enable electrification. Phase 1 of the project is costed at £116m; this does not include modifying the tunnels. Phase 2 costs an additional £55m and includes modifying the tunnels. Were electrification to go ahead as well, additional funding would be needed for the electrification. As far as we can tell, additional funding has not been requested since there is no decision to progress to Phase 2.</p>	<p>See the Applicant's response C.C.1.1 to the ExA's First Written Questions, document 9.10 ExA.WQ1.D2.V1.</p> <p>Recent technological advancements in train traction / propulsion in the rail industry now has the potential to enable noncontinuous electrification of railway lines. This enables railway lines to be partly electrified via overhead line electrification (OLE) where there are obstructions, such as low tunnels. For sections of railway that cannot be electrified without major additional costs, the trains can switch to an alternative method of propulsion.</p> <p>There is a variety of different technology already available. For example, bi-mode trains are available with electric OLE and battery or diesel propulsion and tri-mode trains are available with electric OLE, electric (third rail) and diesel propulsion. Great Western Railways is currently operating tri-mode class 769 trains in the North Downs between Reading and Redhill. Great Western Railways and Hitachi are also currently trialling the conversion of their class 802/0 trains from Bristol and South Wales to London to electric OLE and battery propulsion from the current electric OLE and diesel configuration. Transport for Wales (TfW) is currently trialling class 756 tri-mode trains for operation on the Rhymney, Coryton and Vale of Glamorgan Lines. Vivarail's Class 230 has a number of power options, including diesel, electric and battery, which can be used singly or in bi-mode combinations. A battery-only version was demonstrated across southern Scotland during COP26. Bi-mode battery-electric versions are due to run on the Wrexham-Bidston line for TfW shortly.</p> <p>As set out above bi-mode and tri-mode units are already in operation on the national network and in a relatively short timescale will become standard for train operators in order to meet the Government's carbon budgets.</p>

Topic and response number	Submission	Applicant's response
		<p>The Department for Transport has, since the close of the Examination, published the Rail Environment Policy Statement - Toward a Cleaner, Greener Railway, July 2021. This is provided at Appendix 1. Page 12 states:</p> <p><i>"Modern methods of electrification, including discontinuous overhead electrification and safer technology, could help us decarbonise more quickly and cost-effectively. DfT, Network Rail, Office for Rail and Road (ORR), and RSSB are working together to explore options for safer versions of third rail electrification. Great British Railways will continuously review technical developments so they are appropriately and consistently adopted in all projects.</i></p> <p><i>The benefits of electrification will only be delivered as new rolling stock is introduced or where bi-mode trains are used effectively. Future passenger rolling stock procurements will need to consider how to be consistent with the decarbonisation trajectory set out by <u>Decarbonising transport: a better, greener Britain</u>. We will prioritise planning for the zero-carbon replacement of near life-expired diesel vehicles."</i></p> <p>It continues on P13:</p> <p><i>"However, there will also be a role for battery and hydrogen trains on some lines, where they make economic and operational sense.</i></p> <p><i>Advice from the rail industry is that hydrogen and battery trains may be particularly suitable for deployment on less intensively used parts of the network."</i></p> <p>Adoption of bi-mode and tri-mode trains by train operators into their standard operating fleets in a relatively short timescale means that it should not be assumed that the only solution for the Portishead Branch Line is overhead line electrification for the whole of the route between Parson Street and Portishead.</p> <p>As new rolling stock is commissioned and becomes available to train operators, the potential for reduced emissions will increase, potentially without there being a need for significant capital expenditure on railway infrastructure.</p>
2. Unwarranted increase in	Phase 1 of this scheme would cause an unjustified ongoing increase in greenhouse gases.	Under the Climate Change Act 2008 the Government has a legally binding framework to cut greenhouse gas emissions by at least 100% by 2050. As noted

Topic and response number	Submission	Applicant's response
<p>greenhouse gases: Summary</p> <p>Response 2.1</p>	<p>Any net increase of CO2 breaches legally binding policy and the 2016 Paris Climate Agreement. The estimated 942 tonnes p.a. net increase in CO2 and 11.8 tonnes of NOx far outweighs savings by reduced car commutes. This substantial net increase in greenhouse emissions will be caused mainly by trains carrying very few passengers, and since there are already far less polluting buses, without purpose. Moreover, if car travel to and from stations is not factored in (as it appears), estimated net increases are too low.</p>	<p>at paragraph 5.16 of the NNNPS, "Emission reductions will be delivered through a system of five year carbon budgets that set a trajectory to 2050. Carbon budgets and plans will include policies to reduce transport emissions, taking into account the impact of the Government's overall programme of new infrastructure as part of that."</p> <p>Many Government policies would be undeliverable if net carbon emission increases were prohibited at a project and activity level. That is why the carbon budget approach enables the Government to ensure delivery of the 2050 target whilst permitting new developments and activities that will themselves be net emitters of GHGs, whether at construction or operational stage.</p> <p>The Net Zero Strategy: Build Back Greener (published October 2021): (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1028157/net-zero-strategy.pdf) was presented to Parliament pursuant to Section 14 of the Climate Change Act 2008. It sets out the next steps to be taken to cut carbon emissions in order to meet the Sixth Carbon Budget (2033 – 2037) and also the UK's 2030 Nationally Determined Contribution for the purposes of the Paris Agreement on Climate Change (described in the Technical Appendix to the Net Zero Strategy publication at pp 309 – 310). The Net Zero Strategy builds on the findings in the latest report by the Intergovernmental Panel on Climate Change (IPCC (2021), 'Sixth Assessment Report', [REDACTED])</p> <p>The Climate Change Committee's Independent Analysis: The UK's Net Zero Strategy (https://www.theccc.org.uk/wp-content/uploads/2021/10/Independent-Assessment-of-the-UK-Net-Zero-Strategy-CCC.pdf) (October 2021) states "Our overall assessment is that it is an ambitious and comprehensive strategy that marks a significant step forward for UK climate policy, setting a globally leading benchmark to take to COP26. Further steps will need to follow quickly to implement the policies and proposals mapped out in the Net Zero Strategy if it is to be a success."</p> <p>The Department for Transport has, since the close of the Examination, published the Rail Environment Policy Statement - Toward a Cleaner, Greener Railway, July 2021, page 10 states:</p>

Topic and response number	Submission	Applicant's response
		<p>"Our ambition is to remove all diesel-only trains from the network by "2040."</p> <p>The train service will be operated by Great Western Railways (GWR). GWR operate a standard fleet of class 165/166 and 158 diesel multiple unit trains in the Bristol area. These trains were manufactured between 1989 and 1993. Since 1989 / 1993 the original diesel engines for their whole fleet have been replaced with new engines.</p> <p>The original engines pre-dated EURO emission standards and their emissions were much higher than the emissions from the engines currently fitted across the fleet. During the technical development of the Environmental Statement efforts were made by the project team to ascertain from GWR details on what the EURO standard is for their current class 165/166 and 158 fleet in the Bristol area. While GWR confirmed all the engines had been replaced with new engines, they were not able to provide any documentary evidence on the EURO standard. Therefore, the project team adopted a worst-case scenario by using the emission standard of the original 1989 / 1993 engines for calculating the CO2 impacts of the scheme arising from the trains. See ES Appendix 7.2 (REP6- 112), paragraphs 1.9.3 to 1.9.5.</p> <p>The ES authors also took a conservative approach in assessing the reduction of CO2 arising from the reduction in car use arising from the scheme, due to the way in which transport models work. This is because, when reassigning current car trips to rail (as a result of re-opening the branch line), the transport modelling for the road network considers the reduced congestion and overall reduction in car kilometres across the highway network. However, because the car is the dominant mode on the highway network, the model calculates that any capacity freed up on the network starts to fill up again as that highway route starts to become more attractive for some highway users using parts of the route from different origins and to different destinations.</p> <p>The overall position is that the calculations of the CO2 emissions in the Environmental Statement are a realistic worst case scenario.</p> <p>By increasing modal choice the DCO Scheme improves the choice of modes for journeys between Bristol, Pill and Portishead and gives policy makers more tools to implement demand side policies to influence travel behaviour in the future.</p>

Topic and response number	Submission	Applicant's response
2.2	There is also a 340 kg p.a. increase in PM10. A primary school is 60 metres downwind from the proposed Portishead station; for 180 metres the railway runs 10 metres from the playing field boundary, and the school building is only 25 metres away. Diesel particulates and NOx cause and aggravate health problems, and before pulling away at full power, trains will stand at the terminus with idling engines.	<p>The modelling results are provided in the ES, Appendix 7.4 Table 1.1 (Examination document REP6-112). Receptor R12 is representative of Trinity Anglican Methodist Primary school. The annual mean NO₂ concentration in the do-minimum (DM) was 12.5µg/m³ increasing to 12.8 µg/m³ for the do-something (DS) in 2021 (assumed opening year). For annual mean PM₁₀ concentrations the DM was 13.4 µg/m³ and for the DS also 13.4 µg/m³. The background PM₁₀ used in the model at this location was 13.3 µg/m³. The rail contribution is imperceptible so the 0.1 µg/m³ contribution is from the road source only in the DM and DS. Furthermore, these concentrations of NO₂ and PM₁₀ are well below air quality objectives (i.e., 40 µg/m³ for both NO₂ and PM₁₀).</p> <p>Consequently there is no impact on air quality at this location as a result of the DCO Scheme.</p>
2.3	<i>The Environment Statement</i> concludes 'the magnitude of CO2 change is negligible on the national scale...' This was written before Cop26, and fails to acknowledge the climate crisis. The increase in NOx is also said to be 'negligible'. However, it is no longer defensible to propose any increase in greenhouse gases not compensated by equal or greater reductions elsewhere.	Please see the Applicant's response to 2.1 above
2.4	WECA, North Somerset Council and Bristol City Council each declared a climate emergency and intentions to reduce carbon footprint. The contribution to global warming resulting from this scheme compromises local and national policy, legal requirements and international agreement. None of these issues are addressed in the DCO.	Please see the Applicant's response at 2.1 above. The declarations of climate emergencies and intentions of the local authorities do not change the decision-making framework for the DCO application and in any event these statements of intent are not inconsistent with national policy, including the Government's Net Zero Strategy and transport Decarbonisation Plan. No basis has been identified on which it could be asserted that emissions from the DCO Scheme contravene any legal or policy requirements.
3. Argument: Response 3.1	Reinstating the Portishead-Bristol railway would result in an unjustified ongoing increase in greenhouse gases and needless building on green spaces: the global-warming (and financial) costs are too high and the benefits negligible.	<p>For the reasons given in Response 2.1 above the Applicant does not believe the DCO Scheme will lead to any appreciable increase in greenhouse gases.</p> <p>The DCO Scheme also offers modal choice by providing an alternative to highway based modes of transport and by opening up opportunities for measures to be adopted to further encourage modal switch.</p>

Topic and response number	Submission	Applicant's response
		<p>The Order land does not extensively build on green spaces. It predominately comprises of previously developed land or existing railway. Permanent development on green field sites is confined to small compounds required for operational maintenance and safety reasons at:</p> <ul style="list-style-type: none"> - Sheepway (Work No. 9, Plot 02/105 Area of plot 2245m2), - Chapel Pill Lane, Ham Green (Work No. 24, Plots 08/25, 08/27 and 08/30 Area of plots 2,964.25 m2), and - Clanage Road, Bower Ashton (Work No. 26 Plot 15/10 Area of plot 3137 m2) <p>The total area of permanently taken land for these compounds is approximately 8,365 square metres, which is just over the area of a standard football pitch (approximately 8000 square metres). The Applicant believes very special circumstances exist for the use of those lands for the purposes of the DCO Scheme. See the Applicant's Planning Statement from paragraph 6.5.154 onwards (Examination document APP-208).</p>
3.2	<p>The pointlessness of this project - which would increase commuting greenhouse gas emissions by nearly 1000 tonnes p.a. - has been highlighted by the pandemic: rail commuter passenger numbers plummeted and are not expected to recover to anything like their former levels for the foreseeable future. Taking into account all travel - peak, off-peak and weekend - according to the official estimates, on average these trains will initially run at only just over 12% of capacity (12.1%) i.e., 87.9% empty.¹ Two weekday 'rush hour' trains - one to Bristol, one back - might be quite full. But only six other trains each 'busy' weekday would carry 50 or more passengers (18.5% of capacity/81.5% empty). The schedule has 224 departures per week, but 180 trains (80%) will carry fewer than 30 passengers: not even one small busload. Even on the busier days² only 15% of the available seats will be taken; i.e., on average, trains on 'busy days' will run up and down the line 85% empty.³ This is forecast to improve</p>	<p>The Applicant refers to Examination document REP1- 029, (document 9.4 ExA.RR.D1.V2 41-2) in Appendix C – the responses to Mr Cash and REP1- 029, (document 9.4 ExA.RR.D1.V2 40-1), the response to Mr Virden.</p> <p>As is stated in Examination document REP1- 029, (document 9.4 ExA.RR.D1.V2 Appendix C at 41-2) paragraph 2 and 3, the forecast passenger demand is set out in detail in the Forecasting Report which is appendix 2.1 of DCO document 8.4 Outline Business Case 2017, Part 3 of 3, Appendix 1.1 to 5.1 (Examination document APP-203). The forecast passenger demand has been benchmarked against actual passenger volumes at similar sized existing stations. The Outline Business Case including the forecast passenger demand was subject to technical scrutiny by the Department for Transport. Section 3.6 Capacity Analysis of the report states that in the opening year on the Portishead Line, some 220 of the 263 seats (of a three carriage Class 166 train) will be occupied in the morning peak, and 201 in the evening peak. By year seven after opening, there will be standing room only in the morning peak, at which point additional carriages will be sourced to form five carriage trains (subject to contractual arrangements), see figure 3.7 and figure 3.8. Figures 3.9 and 3.10 shows the demand curve through over a whole day, with demand reducing in the off peak, flattening around lunchtime before increasing into the evening peak. This demand curve is typical of the demand curve for any local/regional rail service in the west of England.</p>

Topic and response number	Submission	Applicant's response
	by 2036, but only to 20% of capacity (80% empty).4	<p>In respect of modal shift and modal choice the forecast passenger demand is set out in detail in the Forecasting Report which is appendix 2.1 of DCO document 8.4 Outline Business Case 2017, Part 3 of 3, Appendix 1.1 to 5.1 (Examination document APP-203). The forecasting report sets out in detail the passenger demand modelling for the opening year and the first 15 years thereafter.</p>
3.3	<p>But those are pre-pandemic estimates. According to Rail Delivery Group (RDG), in mid-October 2021 train commuter numbers were only 45% of those seen in autumn 2019. If this becomes the new normal, then initially only 5.4% of all scheduled seats will be taken, i.e., on average, these trains will be 94.6% empty (after fifteen years: 7.2% of all seats taken/trains 92.8% empty). Passenger numbers might pick up but, in the realistic view of the RDG, for the foreseeable future commuting by rail will not return to anywhere near the pre-pandemic levels.</p>	<p>The RDG's October 2021 press release can be found here:</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>There is evidence that rail demand is recovering with some markets nearing and in some cases exceeding pre-pandemic levels, particularly leisure trips. The long-distance commuter market has been slow to recover but this is heavily weighted by the reduction of passenger numbers in London and the South East.</p> <p>Outside of London, the official figure reported by RDG for commuter traffic is 54% compared to pre-pandemic levels.</p> <p>Recovery continues and steady growth is expected through 2022 and beyond. This growth is underpinned by strong demand for local and regional services, and although commuter demand for long distance services is expected to remain low for the short to medium term, local and regional demand is expected to recover to pre-pandemic levels in the coming years.</p> <p>MetroWest will be tested against the long-term behavioural impact of Covid on rail demand in accordance with DfT's guidance. The Applicant and Network Rail will present a sensitivity test on rail demand as a result of the expected an increase in home working.</p> <p>Whilst passenger numbers are a key factor in the business case, there are many other strategic factors in support of the DCO Scheme including to improve connectivity across the region, linking communities to regional economic centres, continuing to deliver the objective of levelling up the economy set by the government.</p>

Topic and response number	Submission	Applicant's response
3.4	<p>Meanwhile, the estimated net increase in greenhouse gas emissions (CO₂ and NO_x) far outweighs savings: the <i>Outline Business Case</i> says that running the scheduled trains will result in a net yearly increase in CO₂ emissions of 942 tonnes, with NO_x at 11.8 tonnes.</p> <p>However, as suggested above (in the Summary), these are almost certainly underestimates. On the face of it, whether or not the estimates are reliable so far as they go, the published net increase of CO₂ already breaches legally binding policy and international agreement (i.e., the Paris Climate Agreement, ratified by the UK Government in 2016).⁵ Moreover, the substantial extra production of greenhouse gases is an issue that was not adequately addressed in the DCO.</p>	<p>The Greenhouse Gases (GHG), PM₁₀ and NO_x emissions state in the Applicant's ES are a realistic worst case. GHG gases, PM₁₀ and NO_x emissions for road transport were in line with the best available information on fleet forecasts and emissions factors according to the Emission Factor Toolkit v8.01. The net disbenefit is likely to be overestimated.</p> <p>The overall increases are extremely small. The outcome for an individual project does not in itself breach the legal obligation under the Paris Agreement. See further Response 2.1 above.</p>
3.5	<p>(i) The <i>Outline Business Case</i> states that by reinstating trains along this route there will be an initial reduction of 580 vehicles (two-way trips) per day,⁶ and that removing those cars from the roads will help reduce greenhouse gas emissions. Accepting that estimate of a reduction in road traffic, and the subsequent calculations, reinstating the railway will cut CO₂ emissions by 266 tons a year. But the scheduled 224 diesel train journeys each week will emit 1,208 tons of CO₂ p.a.⁷ As a result, 'as shown in Table 7.18, CO₂ emissions in the opening year of the DCO Scheme are predicted to increase overall by 942 tonnes/year compared with the DM [Do-Minimum]. This is despite the scheme resulting in reductions in regional road CO₂ emissions of 266 tonnes/year.'</p>	<p>The OBC does not say that there will be an initial reduction of 580 "vehicles (two-way trips) per day" from reinstating the Portishead line. The reference is noted as being from Table 2.4 in the Economic Case within the Outline Business Case (OBC). However, the value of 580 in this table is for the 2036 AM peak hour only, and moreover is the approximate reduction in car trips estimated for the whole of the MetroWest Phase 1 scheme (not just the Portishead line). Taking the other time periods into account, over the course of an average weekday, over 1,500 car trips are estimated to be removed from the highway network as a result of MetroWest Phase 1 in 2021, rising to 2,300 per day in 2036 (over 400,000 and 630,000 trips per annum in 2021 and 2036 respectively). Note that these trips are as subset of all rail trips; the remainder are adjudged to be former bus trips or new journeys.</p> <p>Analysis in the OBC was not done for the Portishead line in isolation, and that specific figures for impacts solely related to the Portishead line cannot be extracted from this analysis. Notwithstanding this, based on the broad assumption that around 40% of all new rail trips generated by MetroWest Phase 1 are related to the Portishead line, this would imply around 700 car trips are removed from the road network on an average weekday in 2021 (180,000 per annum) and over 900 in 2036 (approx. 250,000 per annum).</p>

Topic and response number	Submission	Applicant's response
		Estimates of the amount of CO2 saved have been made, using basic methodologies as detailed in the Environmental Statement. The analysis to date is a realistic worst case scenario and, for instance, has not fully represented the changing pattern of CO2 emissions from transport vehicles through technological advances (particularly for rail vehicles).
3.6	But what is not mentioned is that many commuters will have to get some distance to or from a station, and will no doubt use a car - hence the planned Portishead railhead and Pill car parks. In the calculations of emissions saved and created by this project, there is no mention of greenhouse gasses emitted from the cars commuters use to travel to and from their station at the beginning and end of the day. If these are not included, the figure for CO2 saved by removing commuters' cars from the roads (266 tonnes/year) must be an overestimate; in other words, the figure for net CO2 created (942 tonnes/year) is too low.	<p>Calculations of emissions from car trips removed from the highway network have considered the net impact of journeys. Thus, while the Submission notes that some rail trips will indeed involve a car trip to the station, it is not relevant, as this element of any journey is not included in the calculations of changes in car CO2.</p> <p>Likewise, it should be noted that not all rail journeys from Portishead/Pill will be to Bristol, and some longer car trips could be removed (some much longer, albeit fewer in number) and not fully represented in the calculations, and the amount of CO2 saved is commensurately higher. Hence the reduction in CO2 is a conservative net figure.</p>
3.7	<p>A glance at the map shows that about half of Portishead's residents live 1km or more from the Quays Avenue railhead (2/3rds of a mile, a 10-12 minute walk). Those commuters will most likely travel to and from the station by car; say, an average of 2km for each journey.</p> <p>If we ignore the likelihood that some passengers will be dropped off and picked up at the station (with twice as many round-trips per commute, i.e., cars travelling 8km rather than 4km), that in bad weather more rail passengers will begin and end their journeys by car but some cars may carry more than one commuter, and also take Pill out of the equation since most local residents live within 1km of the station, a conservative 'ballpark' estimate may be derived for the total distance in one year that all the cars travel between home and station.</p>	<p>As explained in response 3.6, the calculation of CO2 emissions related to car trips removed has only used a net journey equivalent to the rail segment of the overall trip, that does not include access to the station in CO2 emissions removed.</p> <p>The purpose of the DCO Scheme is to provide a sustainable travel mode that provides modal choice for journeys. Even if a passenger travels from a point 2km from Portishead Station to then catch a train to Bristol, that is an improvement on the current equivalent which will be wholly by car. It is approximately a 32km round trip between Portishead and Bristol TM via the A369.</p>
3.8	In 2015, the average car on the road emitted 153gm/km. If one-half of Portishead's rail	See responses 3.6 and 3.7.

Topic and response number	Submission	Applicant's response
	<p>commuters travel to and from the station by car, at an average distance of 2km, that would produce more than 43 tonnes of CO2 p.a. (See calculation in footnote.)¹⁰ While the fuel consumption of cars may have improved slightly since 2015, it will not have been enough to make a substantial difference to the estimated extra tonnes of CO2 p.a. This factor is not mentioned in the published estimate; including this calculation elevates the net production of atmospheric CO2 under the trains scheme to 985 tonnes p.a.</p>	
3.9	<p>(ii) NOx is a less publicised but equally potent greenhouse gas: 'The catalytic role of NOx in the production of tropospheric ozone provides the most prominent contribution. The global warming potential is...comparable to that of methane.... We estimate an additional 5-23% for [an industrial country's] contribution to the anthropogenic greenhouse effect as a result of the indirect greenhouse effects stemming from NOx. Furthermore, a small...amount of the deposited NOx which has primarily been converted into nitrates is again released from the soil into the atmosphere in the form of the long-lived greenhouse, gas nitrous oxide (N2O). Thus, anthropogenically induced NOx emissions contribute to enhanced greenhouse effect and to stratospheric ozone depletion in the time scale of more than a century.'</p> <p>Under this scheme, estimates for Nox are, for the opening year, road NOx to reduce by 465.9 kg, rail NOx to increase by 12,287 kg. The net total NOx created will therefore be 11,821 kg, i.e., 11.82 tonnes p.a.¹² Again, there is no indication that NOx emissions from the many commuters' cars travelling to and from their stations are factored into the published calculation. If they are not, as seems the case, the total net production of NOx will be higher than the published estimate.</p>	<p>NOx is a combination of NO and NO₂. NO oxidises to NO₂ very quickly in the presence of ozone (O₃). NO₂ is not in itself a GHG. Equally O₃ is produced by the splitting of NO₂ in the presence of sunlight to NO+O. The O molecule then combines with O₂ to form O₃. Ozone indirectly can increase cloud formation and the ability of plants to absorb carbon. This would represent 0.0014% of the total NOx emissions compared to annual mass estimated for the UK in 2019.</p> <p>[REDACTED]</p> <p>[REDACTED]).</p> <p>The estimates of NO₂ from changes in the regional traffic model GBATS5 resulting from all the improvements to be implemented under MetroWest Phase 1 have been factored into the calculations.</p>

Topic and response number	Submission	Applicant's response
3.10	<p>(iii) How far the scheme will increase the production of particulates is estimated as follows: Road PM10 (kg/year) -59.1, rail PM10 (kg/year) +406; net total PM10 (kg/year) +340.13 Again, cars travelling to and from stations do not seem to be factored into the estimate. While a 340 kg net increase of PM10 p.a. is hardly welcome, there is no greenhouse effect, and aside from parts of St Phillips, Bedminster and Pill close to the railway, this pollutant will probably not affect many people. Except, that is, the children and staff at Trinity Primary school Portishead, located 60 metres downwind from the proposed Portishead terminus; for 180 metres the railway runs 10 metres from the playing field boundary and the school building is only 25 metres away. Before pulling away at full power trains will stand at the station with their engines idling between trips and it is known that diesel particulates and NOx cause and aggravate health problems, including asthma and brain-development. Surely this is hazardous?</p>	<p>The comments are focused on total emissions from the DCO Scheme and as such representation of exposure to pollutants NO₂ and PM₁₀ cannot be discerned for any given location. The likely significant effects based on EPUK and IAQM (2017) guidance have been presented and discussed in full in Section 7.6 of the ES (REP6-074).</p> <p>Response 2.2 deals with emissions close to Trinity Primary School.</p> <p>Idling emissions of the passenger trains were factored into the air quality assessment. ES, Chapter 7 Air Quality and Greenhouse Gas Paragraph 7.10.4 (REP6-074). The overall operational impacts from rail and road traffic emissions were assessed. Annual mean NO₂ and PM₁₀ were both predicted to be below 75% of the Air Quality Assessment Level AQAL (40 µg/m³) at all modelled receptors in Portishead and Pill in the do something scenario. The risk of harm to human health is likely to be very small at exposures below the AQAL. The largest predicted change in NO₂ concentration was a change of 1.2% of the AQAL for a residential property in Pill (R25), within 10 m of the existing railway line.</p>
3.11	<p>(iv) Commuters will almost certainly add to local traffic problems by driving to and from the station; or having got into their cars they might think that it more convenient and quicker (or as quick) to skip the train and drive all of the way from home to destination. What with cars still being driven to work, "wasteland" tarmacked and built on when best left to nature as carbon sinks, and diesel-thirsty trains running on unwanted schedule there will be little improvement in overall congestion at a significant increase in overall pollution, including CO₂, NOx and particulates.</p> <p>Nor does it register in the documents that the proposed net increase in emissions will be caused mostly by trains carrying at very few passengers, and</p>	<p>The whole ethos of providing the rail service as an alternative option to the private car is a key aim of the DCO Scheme. As set out in DCO document 6.6, Environmental Statement, Volume 2, Chapter 3 Scheme Development and Alternatives Considered (REP6-070), the Portishead to Bristol A369 corridor has systemic congestion at both ends, with the M5 dissecting the A369 east of Portishead and network bottle necks at the Bristol City Centre end. As a result the average speed by car from Portishead town centre to Bristol city centre is around 12 mph during the morning peak, with a journey time of 50 minutes for the 10 miles (16 kilometre) distance.</p> <p>Portishead station will include multi-modal facilities, providing access for pedestrians, cyclists, bus users, taxis and car users. Car parking at a station is part of the standard mix of modal access for rail services observed widely at stations across the network, particularly for those travellers with impaired mobility.</p> <p>The benefit of taking the train during the rush hour is that will reduce the journey time from the proposed location of the new Portishead station to Bristol Temple</p>

Topic and response number	Submission	Applicant's response
	<p>therefore, since there is already an adequate bus service, without real purpose. Against all types of fossil fuel use, a full bus is by far the most efficient and least polluting form of transport. Given the political will, at comparatively little cost, the local authorities could provide the conditions for substantial improvements to the bus service.</p>	<p>Meads from around 50 minutes by car to 23 mins by train. Clearly this will be a major disincentive for travellers to drive into the Bristol city centre.</p> <p>As has been explained in response 2.1 above in particular there will not be a significant increase in pollution as a result of the DCO Scheme, whilst the provision of increased modal choice allows traffic restraint measures to be promoted more easily.</p> <p>Response 3.2 deals with anticipated usage of train services.</p>
3.12	<p>(v) The above quote from Environmental Statement (ES) with regard to the net increase in the main green house gas, continues: "the magnitude of change is negligible on the national scale as it is only 0.003% of the total CO2 emitted nationally".</p> <p>But no matter how negligible on the national scale the increase in CO2 emissions may be to the authors of the ES this judgment fails to acknowledge the escalated global climate emergency. Surely it is no longer defensible to propose any increase in CO2 not compensated by an equal or greater reduction elsewhere? The outline business case is two brief paragraphs, in which "traded emissions" are mentioned. This seems to refer to carbon offsetting. However, many environmental scientists doubt the effectiveness of that commercial device.</p> <p>As mentioned, NOx is an important green house gas. Whilst the ES registers and overall increase in NOx emissions the summary of the assessment in the DCO scheme on air quality and green house gases states that "NOx and carbon contribute to global warming and climate change" but "magnitude – negligible".</p> <p>On the contrary, while projected increases agree house gases may be a small proportion to the</p>	<p>The Applicant has dealt with this in its Addendum to the ES submitted on 23 November 2021 at paragraphs 1.1.6, 2.14 and 2.2.6.</p> <p>As explained above to Response 3.9, NOx is not a greenhouse gas but can change to form very small concentrations of O3.</p>

Topic and response number	Submission	Applicant's response
	<p>national total, any increase is significant and should be avoided since it adds to the global accumulation of greenhouse gases driving the climate crises. No matter how "negligible" it may seem to the authors of the ES, according to national policy, legal requirement and international agreement, the enquiry must consider the contribution to the scheme would make to global warming.</p>	
3.13	<p>(vi). needlessly increasing greenhouse gases is both unconscionable and contrary to policy and law. CO2 has already risen from the preindustrial level to 311 in 1950, by 1990 it was 354 and in November 2021 it was 415. At the current rate of increase by 2025 levels would be higher than at any time in the last 3.3 million years.</p> <p><i>"The atmosphere now has 415 parts of CO2 per million (we are already at levels when global temperatures were 3 degrees warmer than the preindustrial average and the sea level was 20 meters higher than at present. CO2 levels are currently rising at 2.5ppm per year...by 2025 we will have exceeded anything seen in the last 3.3 million years".</i></p> <p>Both WECA and NSC declared a climate emergency and an intention to reduce the carbon footprint. It November 2018, Bristol City Council (BCC) declared a climate emergency and committed to reducing the use of carbon burning energy to the extent of making the city carbon neutral by 2030. Two years ago the government ordered BCC to produce a plan for bringing the area's NO2 levels to within legal limits. From March 2021, privately owned vehicles were supposed to have been prevented from entering into Bristol central zone between 7am and</p>	<p>The Applicant has dealt with these issues in response 2.1 above and in its Addendum to the ES submitted on 23 November 2021.</p>

Topic and response number	Submission	Applicant's response
	<p>3pm and commercial agreements would have to pay. And yet with the scheme, for no good reason, more diesel trains would be running in and out of the city emitting significant quantities of CO2, NOx and particulates.</p>	
<p>4. Compromised legal and policy requirements</p> <p>Response 4.1</p>	<p>In light of the above points, this plan compromises both policy and legal requirements in a number of ways.</p>	<p>The Applicant believes its scheme is fully in compliance with the National Networks NPS and the scheme is supported by the Local Development Plan.</p>
<p>4.2</p>	<p>(i) In February 2020 the UK's appeal court ruled that when deciding for a third runway at Heathrow airport the government did not take into account its commitments under the legally binding Paris Climate</p>	<p>Please see the Applicant's response at 1.2 above.</p> <p>In accordance with section 104 of the Planning Act 2008 the Secretary of State is required to determine the application in accordance with the NNNPS unless one</p>

Topic and response number	Submission	Applicant's response
	<p>Agreement, and cannot stand. The Portishead railway scheme does estimate carbon impact but neither the documentation nor the decision to go ahead deal adequately with the fact that the prevention of small CO2 emissions by removing cars from the road would be substantially outweighed by trains creating a far greater amount of greenhouse gas. The scheme breaches the Paris Climate Agreement.</p>	<p>or more of subsections (4) to (8) apply. Subsection (4) "applies if the Secretary of State is satisfied that deciding the application in accordance with any relevant national policy statement would lead to the United Kingdom being in breach of any of its international obligations". It is relevant in this respect to note that:</p> <ul style="list-style-type: none"> - The UK confirmed its Nationally Determined Contribution (NDC) under the Paris Agreement to the United Nations Framework Convention on Climate Change (UNFCCC) in December 2020. The NDC commits the UK to reducing economy-wide greenhouse gas emissions by at least 68% by 2030, compared to 1990 levels. - The NDC aligns with the legislated UK carbon reduction target in the 6th Carbon Budget, which, by setting a carbon budget for the period 2033 to 2037 of 965 MtCO2e, will achieve an emissions reduction of 78% by 2035 compared to 1990 levels. - As confirmed in the Applicant's responses on the 3rd – 6th carbon budgets submitted to the Secretary of state on 23 November 2021 the climate assessment will not impact the UK achieving its carbon reduction targets. In turn it can therefore be concluded that there are no implications of the development in relation to the Paris Agreement and the UK's Nationally Determined Contribution under the Paris Agreement.
4.3	<p>(ii) In February 2019 North Somerset Council (NSC) declared a climate emergency and set a target for its air becoming carbon neutral by 2030. In July 2019 WECA also declared a climate emergency and committed to climate neutrality by 2030. By endorsing this scheme, both authorities compromise the policy on greenhouse gas emissions.</p>	<p>See Response 2.4. The Applicant believes the DCO Scheme, by providing a sustainable alternative form of transport between Portishead and Bristol is fully in compliance with the aims of any climate emergency declaration.</p>
4.4	<p>(iii) Several paragraphs in the national policy statement set goals (all involving carbon impact) which on the face of it this scheme fails to meet.</p>	<p>The Applicant believes its scheme is fully in compliance with the National Networks NPS.</p>

Topic and response number	Submission	Applicant's response
4.5	(a) Meet legal requirements and not entail greater costs than benefits. NPS 5.1.2 "under Section 104 of the Planning Act the Secretary of State must decide an application for a national networks nationally significant infrastructure projects in accordance with this NPS unless he/she is satisfied that to do so it would: lead to the UK being in breach of its international obligations; be unlawful; lead to the Secretary of State being in breach of any duty imposed by or under any legislation; result in adverse impacts of the development outweighing its benefits".	The Applicant's scheme is supported by the NNNPS as is set out in Appendix 2 of the Applicant's Statement of Reasons (REP 6-014). As is stated above the DCO Scheme would not put the UK in breach of its international obligation and is not unlawful. Making the order would not lead to any breach of any of the Secretary of State's duties.
4.6	(b) The need for lower carbon transport choices. NNN PS P25 3.6: transport will play an important part in meeting the governments legally binding carbon targets and other environmental targets. As part of this there is a need to shift to greener technologies and fuels and to improve lower carbon transport choices.	The DCO scheme is for a mode of sustainable transport and seeks to reuse a disused railway for its original purpose. It is a low carbon alternative to the use of the private car to travel between Portishead and Bristol. See Responses 1 and 2.1 above regarding the Government's policy - Rail Environment Policy Statement - Toward a Cleaner, Greener Railway, July 2021, which is provided at Appendix 1.
4.7	(c) Then support the switch to ultra-low emission transport. NNPS P 25 3.7 the government is committed to supporting the switch to the latest ultra-low emission vehicles.	See Responses 1 and 2.1 above regarding the Government's policy - Rail Environment Policy Statement- Toward a Cleaner, Greener Railway, July 2021, which is provided at Appendix 1.
4.8	(d) Improve air quality, reducing CO2 emissions. NN NPS p 25, 3.8: 'Impacts of road [sic] development need to be seen against significant projected reductions in carbon emissions and improvements in air quality as a result of current and future policies to meet the Government's legally binding carbon budgets and the European Union's air quality limit values.' Mentioned are CO2, NOx and PM10 [particulates, mainly from diesel engines].	See Responses 1, 2.1 and 2.2 above

Topic and response number	Submission	Applicant's response
4.9	(e) Reduce costs and environmental impacts. <i>NN NPS</i> p 27, 3.14: recommends 'innovative transport technologies [which] have the potential to revolutionise the way we travel, improving the safety and reliability of journeys, while reducing costs and environmental impacts.'	The DCO scheme is for a mode of sustainable transport and seeks to reuse a disused railway for its original purpose. It is a low carbon alternative to the use of the private car to travel between Portishead and Bristol. See Responses 1 and 2.1 above regarding the Government's policy - Rail Environment Policy Statement - Toward a Cleaner, Greener Railway, July 2021, which is provided at Appendix 1.
4.10	(f) Reduce carbon emissions by providing sustainable door-to-door journeys. <i>NN NPS</i> p 27, 3.15: 'The Government is committed to providing people with options to choose sustainable modes and making door-to-door journeys by sustainable means an attractive and convenient option. This is essential to reducing carbon emissions from transport.'	The DCO Scheme is fully compliant with this part of the NPS by providing a sustainable mode of transport and increasing modal choice. The DCO Scheme will re-use an existing disused railway and provide a passenger service on an existing but under used freight line, with stations located within easy walking and cycling distance of a large number of people who are currently unable to access rail transport on foot or by bike.
4.11	(g) Investment in cycling and pedestrian environments. <i>NN NPS</i> p 27, 3.16 & 3.17: 'As part of the Government's commitment to sustainable travel it is investing in developing a high quality cycling and walking environment to bring about a step change in cycling and walking across the country... The Government expects applicants to use reasonable endeavours to address the needs of cyclists and pedestrians in the design of new schemes. The Government also expects applicants to identify opportunities to invest in infra-structure.' Cycling and pedestrians are not mentioned in this scheme. While walking might be encouraged for the many potential passengers who live some distance from their station, so is car use (and associated greenhouse gas emissions) by the provision of new carparks. Most of Portishead's more distant housing is up a steep hill from the station, so it is doubtful that cycling is encouraged. On the other hand, a busway would provide the opportunity to fit a cycleway alongside.	<p>The DCO Scheme addresses the policy objectives of the NN NPS through the provision of multiple enhancements for pedestrians and cyclists. In summary the scheme will</p> <ul style="list-style-type: none"> • provide a new 300 metre cycle and pedestrian boulevard linking Portishead station to the town centre, • new cycle lanes on Quays Avenue and Harbour Road approaching Portishead station. • provide new parallel pedestrian and cycle paths to the north and south of Portishead station • Re-build the existing permissive cycle links on the NCN route 26 under the three bridges at Royal Portbury Dock Road, Marsh Lane and under the M5 • provide a new bridleway extension under the M5 viaduct as an alternative route to the existing NCN26 route under the M5 • provide cycle parking at Portishead and Pill stations. <p>Furthermore, accessibility has been integral to the design of the scheme, to assist people with mobility impairments. For example, the design of Portishead and Pill stations to provide step free access from the station entrance through to the station platforms.</p> <p>The DCO Scheme is therefore fully in compliance with NNNPS Para 3.16 and 3.17.</p>

Topic and response number	Submission	Applicant's response
4.12	(h) Integrate sustainable transport modes, facilitate better travel to stations. <i>NN NPS</i> p 27 3.18: 'On the rail network, Station Travel Plans are a means of engaging with station users and community organisations to facilitate improvements that will encourage them to change the way they travel to the station. Train operators will also be asked to consider the door-to door journey in new... specifications that will aim to facilitate enhanced integration between sustainable transport modes.' Car travel to the station (and hence emissions) is encouraged by neglect of this requirement.	<p>Outline Station Travel Plans have been produced for Portishead and Pill stations, see DCO doc 6.25 (Examination document APP-171), Environmental Statement, Volume 4, Technical Appendices, Appendix 16.1: Transport Assessment (Part 17 of 18) – Appendix M, Outline Station Travel Plans. The station travel plans must be provided in accordance with sub paragraph (6) of Requirement 27 of the dDCO.</p> <p>The SMART objectives for Portishead Station are to:</p> <ol style="list-style-type: none"> 1. Achieve a proportion of 46% of passengers walking to and from the station. 2. Achieve a proportion of 4% people cycling to the station. 3. Ensure that bus travel to the station is a realistic option for travellers, through available services and the location of bus stops. 4. Achieve a proportion of people driving to the station of under 32%. 5. Provide travel information to residents and business in Portishead, to maximise awareness of new rail services and options for accessing the station, including cycling facilities, bus services and local car sharing schemes. <p>The DCO Scheme is therefore fully in compliance with NNNPS Para 3.18.</p>
4.13	(i) Cut greenhouse emissions. <i>NN NPS</i> p 49 5.16: 'The Government has a legally binding framework to cut greenhouse gas emissions by at least 80% by 2050.' Deliberately increasing greenhouse gases in the meantime (as with this scheme) is not a responsible option.	See Responses 1, 2.1 and 2.2 above.
4.14	(j) Legal requirement to meet carbon budgets. <i>NN NPS</i> p 50 5.18: 'The Government has an overarching national carbon reduction strategy (as set out in the Carbon Plan 2011)... The Government is legally required to meet this plan. Therefore, any increase in carbon emissions is not a reason to refuse development consent, unless the increase in carbon emissions resulting from the proposed scheme are so significant that it would have a material impact on the ability of Government to meet its carbon reduction targets.' Since 2014, when <i>NN NPS</i> was published, we have learned much more about the urgency of the	<p>As is set out in the Addendum to the ES submitted on 23 Nov 2021 at paragraph 2.2.9, in a Ministerial Statement issued on 22 July 2021 the Secretary of State for Transport advised that a review of the NPSNN will begin later in 2021 this year, to be completed no later than Spring 2023. "While the review is undertaken, the NPS remains relevant government policy and has effect for the purposes of the Planning Act 2008. The NPS will, therefore, continue to provide a proper basis on which the Planning Inspectorate can examine, and the Secretary of State can make decisions on, applications for development consent."</p> <p>See also Responses 1, 2.1 and 2.2 above.</p>

Topic and response number	Submission	Applicant's response
	<p>escalating climate crisis. Any increase in CO2 is now known to be significant, and a project which needlessly causes an ongoing net increase in greenhouse gases of nearly 1000 tonnes p.a. is surely questionable.</p>	
4.15	<p>(iv) On the grounds that they disregarded objectivity, accountability, openness, and honesty, did not act solely in the public interest, did not make choices based on all the necessary evidence, and did not strive to ensure value for money to the local community or to avoid legal challenge (e.g., with regard to CO2 emissions), WECA and NSC breached local authority Codes of Conduct. <i>The Civil Service Code</i> includes the following directions: 'You must carry out your fiduciary obligations responsibly (that is make sure public money and other resources are used properly and efficiently)... You must provide information and advice, including advice to ministers, on the basis of the evidence, and accurately present the options and facts... You must not ignore inconvenient facts of relevant considerations when provided advice or making decisions.</p>	<p>The technical development of MetroWest Phase 1 has been reported in the public domain since the outset of the scheme in 2013, to NSC Executive and Full Council and to WoE Joint Committee and WECA Committee.</p> <p>The DCO process has very specific requirements for undertaking formal consultation with those that are likely to be affected by the proposed scheme. Affected communities were consulted formally through a two-stage process. The project team set out how it intended to consult with communities and other affected parties through its Statement of Community Consultation, as published in June 2015 for the Stage 1 consultation and revised for the September 2017 for Stage 2 formal consultation. The Stage 1 formal DCO consultation was carried out by the project team between 22nd June 2015 and 3rd August 2015. The Stage 2 formal DCO consultation commenced on 23rd October 2017 for 6 weeks until 4th December 2017.</p> <p>The total number of responses received during the Stage 1 consultation was 878. The total number of responses received during the Stage 2 consultation was 1,055. The level of support for the scheme is very high with 95% of community respondents fully or mainly in support of the proposals.</p> <p>Prior to the submission of the DCO application, the Local Planning Authorities were asked to determine whether the scheme consultation had been adequate. The Local Planning Authorities confirmed their satisfaction of the approach to the scheme consultation in their adequacy of consultation responses published on 12 December 2019 on the application website.</p> <p>Post the submission of the DCO Application interested parties were able to submit relevant representations to the Examining Authority and further representations throughout the DCO examination.</p> <p>In the light of the above it is not appropriate to suggest that the Applicant's approach to the DCO Scheme has been anything but open and transparent.</p>

Topic and response number	Submission	Applicant's response
4.16	WECA's Code of Conduct for Local Enterprise Partnership (LEP) board members sections 2, 3 and 4 state that council members shall have regard to objectivity, accountability openness, and honesty and must act solely in the public interest and must make all choices based upon evidence. North Somerset Council's Code of Conduct states that employees must ensure that they have used public funds and trusted them in a responsible and lawful manner. They should strive to ensure value for money to the local community and avoid legal challenge to the authority.	The Applicant does not see the relevance of these references. All Members and officers have throughout acted with probity and with full regard to the legal and fiduciary duties placed on them and their employers. The Applicant believes the DCO Scheme is good value for money and this view is supported by the Applicant's Outline Business Case. See also response 4.15.
4.17	Alternatives to the trains project were not examined and in fact were rejected out of hand; objectivity, the evidence, acting in the public interest and avoiding legal challenge were all compromised by the failure to explore any possible solutions to the traffic problem other than reinstating trains, and by choosing a scheme which cannot serve the public well and has financial and environmental costs that far outweigh any benefits; other than admitting that there would only be one train per hour (with no extra trains at the times of peak demand) the accountability, openness and honesty were compromised by the failure to make the public aware of any drawbacks to the trains scheme – not least the substantial and ongoing increase in greenhouse gases. Information about the many deficiencies of the official plans not being made public, but must be painstakingly dug out and deduced from the long and technical funding bid document.	<p>The Applicant refers to the content of chapter 3 of Volume 2 of its ES (REP6-070). The Applicant has considered the reasonable alternatives to the DCO Scheme in accordance with the Infrastructure Planning Environmental Impact Assessment Regulations 2017/572, Paragraph 2 of Schedule 4, and PINS Advice Note 7, Para 9.3.</p> <p>The infrastructure will provide sufficient capacity to operate additional train services in the morning and evening peak, with an every 45 minute frequency, as part of the Hourly Plus proposal, as set out in chapter 4 of Volume 2 of the ES (REP6-073).</p> <p>The Applicant also refers to responses 1, 2.1, 2.2 and 3.2 above.</p>
4.18	Just as the schemes environmental costs have not been announced, nor have the full financial	The DCO Scheme's environmental impacts are fully set out in the Environmental Statement DCO doc 6.25 (Examination document APP-097).

Topic and response number	Submission	Applicant's response
	<p>costs. On the (pre-Covid) passenger estimate a subsidy of £1.5 million p.a will be needed to run the trains. And whereas a commuter's return bus fare is currently £4, to cover the normal repayments on the 116 capital outlay would require a return train fare of £35. Alternative to this trains plans were never examined. For local journeys, buses are at least twice as energy efficient as trains; they offer more convenient service by passing close to most homes and residents actual destinations (in effect making full journeys quicker) especially if enhanced by priority bus lanes, restricting cars from Bristol centre etc. The proposed train schedule is rigid, and demand is such that the correct majority of the scheduled trains would carry very few passenger and therefore be highly inefficient/uneconomical. By contrast, a bus company is easily able to adjust its schedules to run more frequent services at times of peak demand and fewer off peak. Better still, introduce eco-buses (green-electric, biogas, hydrogen).</p>	<p>The forecast financial profile is set out in detail in the Forecasting Report which is appendix 2.1 of DCO document 8.4 Outline Business Case 2017, Part 3 of 3, Appendix 1.1 to 5.1 (Examination document APP-203). This is based on the forecast passenger demand and other variables including fare tariffs and estimated train operator costs. This work is presented as a range of scenarios, in light of the number of variables. In some of these scenarios the scheme breaks even after the first three years of operation, while for some of the scenarios, the break-even point is several years later.</p> <p>The Outline Business Case including the forecast revenue profile was subject to technical scrutiny by the Department for Transport.</p> <p>Extensive assessment of alternative scheme options was undertaken, as set out in DCO document 6.6, Environmental Statement, Volume 2, Chapter 3 Scheme Development and Alternatives Considered (REP6-070). The Portishead to Bristol A369 corridor has systemic congestion at both ends, with the M5 dissecting the A369 east of Portishead and network bottle necks at the Bristol City Centre end. As a result the average speed by car from Portishead town centre to Bristol city centre is around 12 mph during the morning peak, with a journey time of 50 minutes for the 10 miles (16 kilometre) distance. The A369 and surrounding highway network suffers from a lack of network resilience and, consequently, unreliable journey times. At the Portishead end, queuing onto and off the M5 at Junction 19, impedes traffic flow on the A369. At the Bristol end of the corridor, systemic levels of traffic congestion starting in Ashton/ Bower Ashton and continuing into the city centre result in very low average speeds and extended journey times.</p> <p>In addition to the poor journey times by car, the corridor also has poor journey time reliability as a result of incidents and accidents on the M5, whereby motorists are diverted onto the A369 at Junction 19, causing widespread delays and disruption to the whole corridor.</p> <p>By contrast the option to re-open the Portishead branch line using the dis-used railway and existing freight line provide a journey time of just 23 minutes, being almost twice as fast as by car at peak times and more than twice as fast as the existing bus services.</p>

Topic and response number	Submission	Applicant's response
		<p>Consequently, the 'bus' option would never deliver journey time savings (or journey time reliability) comparable with rail principally because of the inherent road congestion in the Bristol City Centre as well as at M5 Junction 19. In turn the socio- economic benefits of the 'bus' option would be dramatically lower than rail. A rail based scheme remains the most appropriate mode to achieve the stated aims and objectives for promoting the DCO Scheme.</p> <p>For further information on alternative considered refer to DCO document 6.6 (Examination document APP-098), Environmental Statement, Volume 2, Chapter 3 Scheme Development and Alternatives Considered explains the history of the development of the project including the options considered.</p>
4.19	<p>Even better for very little cost install a dedicated busway along the 3.5km derelict Portishead rail spur to the M5 (junction 19) thereby avoiding the A369 bottleneck; buses would join the motorway, come off at junction 18 (Avonmouth) and take the Portway priority bus lane into Bristol, from there they could either join the new prioritised metro system or take any other route. To facilitate a frequent service avoiding the main bottleneck, buses would flow one way (from Portishead) along the busway during the morning "rush hour" and the other way (into Portishead) for the afternoon/evening peak.</p>	<p>In order to provide access onto the M5 buses would have to navigate through the M5 Junction 19 roundabout which suffers with systemic congestion (and which is the principal cause of congestion on the A369 at Portbury) as set out in response 4.18 above. This would result in the poor journey times and journey time reliability that is the source of the transport problem that is to be addressed by the DCO Scheme. There is no space to create a separate new junction with the M5 and the typical cost of major new motorway junctions is now in the order of £100m.</p> <p>Buses would still have to contend with the systemic congestion through Bristol City Centre.</p> <p>The Interested Party's suggested flow of buses in one direction ignores that the potential for the DCO scheme to also provide modal choice for people travelling from Bristol to Portishead for their employment, schooling or leisure the DCO Scheme is inherently more practical and flexible than the Interested Parties' purported proposal.</p>
4.20	<p>With no need for new stations and car parks, a short busway to the M5 would cost under £10m and save £106m. And if some of that saving were put in to running ecobuses the substantial and ongoing net increase in greenhouse gases embodied in the train scheme would be replaced by significant ongoing net reductions, and perhaps even carbon neutrality.</p>	<p>See responses 4.18 and 4.19 above. Very major investment and land assembly would be needed to connect a busway using the dis-used railway on to the M5 via the creation of a new motorway junction or new facilities at Junction 19. Without a new motorway junction or connection, buses would have to navigate through the junction 19 Roundabout which suffers with systemic congestion. This would result in the poorer journey times and poorer journey time reliability which is the source of the transport problem that the DCO Scheme addresses, by providing a none highway based mode of transport with a journey time less than half the journey by car in the AM and PM peak.</p>

Appendix 1 - Rail Environment Policy Statement- Toward a Cleaner, Greener Railway, July 2021