APPENDIX 18: CONSULTATION BROCHURE

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HIGHWAYS AGENCY

Safe roads, reliable journeys, informed travellers

M4 junctions 3 to 12 smart motorway

Public consultation
November 2014

An executive agency of the Department for Transport

Contents

Introduction

Motorways in England are constructed and managed by the Highways Agency, which is an executive agency of the Department for Transport and is responsible for operating, maintaining and improving the strategic road network in England on behalf of the Secretary of State for Transport.

The M4 motorway (M4) is the main strategic route between London, the West of England and Wales, connecting directly to the M25 and Heathrow Airport. The M4 carries over 130,000 vehicles per day and currently suffers from heavy congestion making journey times unreliable. Traffic flows on the M4 are forecast to increase to an average of 160,000 vehicles per day over the next 20 years, which will result in even more congestion if nothing is done.

Scheme proposal

The Highways Agency is proposing to improve a 32 mile stretch of the M4 motorway between junction 3 (Hayes) and junction 12 (Theale) by making it a smart motorway. (See Figure 1).The smart motorway proposal on the M4 will use the latest technology to improve journeys by monitoring traffic flow and setting speed limits accordingly to keep traffic moving smoothly, instead of continually stopping and starting. The proposal also involves converting the hard shoulder permanently to a traffic lane to create the much needed extra capacity necessary to support economic growth. Information about road conditions and speed limits will be displayed to drivers on electronic road signs.

The conversion of the hard shoulder into a running lane will be continuous through junctions unless there is an operational reason not to do so. Through junction running arrangements, where the new running lane will continue through junctions, are proposed at junctions 4, 5, 6, 7, 8/9 and 11. It is not proposed to use through junction running arrangements at either end of the scheme at junctions 3 and 12 or at junctions 4b and 10, which are motorway to motorway links. See section two for further information.

To enable the provision of a smart motorway along the whole length of the proposed scheme, it will be necessary to widen or replace a number of bridges where there is currently no hard shoulder.

Scheme objectives

The objectives of the proposed scheme are to:

- Reduce congestion, smooth the flow of traffic to improve journey times, making journeys more reliable
- Support the economy and facilitate economic growth within the region, by providing much needed capacity on the motorway
- Continue to deliver a high level of safety performance on the network using smart motorway techniques
- Minimise environmental impacts of the scheme

What you will find in this consultation brochure

Section 1 – Why we are consulting

An explanation of why consultation is important to the proposed M4 Junctions 3 to 12 smart motorway scheme and the planning process associated with Nationally Significant Infrastructure Projects under the Planning Act 2008.

Figure 1: Scheme location

Section 2 the proposed scheme explained – Detailed information on the various elements of the proposed scheme.

Section 3 how we got here – Background to the proposed scheme and how the current proposals have been arrived at.

Section 4 how this affects you – Information to help you understand how we plan to consider the environment, traffic movement, construction impacts and the land we would need in order to deliver the proposed scheme.

Section 5 what happens next – We set out the next steps for the project and where you can find other useful information to help you prepare a response to this consultation.

This brochure has been prepared to provide you with information about the proposed scheme, which we hope you will find useful when deciding how to respond to the consultation. We recommend that you also refer to a range of other materials which have been designed to help you provide informed feedback. See section five for details of where the consultation material is available.

These materials are; this consultation brochure; proposed scheme drawings which show our design proposals; preliminary environmental information report, and non-technical summary, which includes information on potential environmental impacts related to the proposed scheme; Statement of Community Consultation and Section 48 Notice which provide details of the consultation event venues and document deposit points; Planning Act 2008 factsheet; questionnaire.

Section 1: Why we are consulting

The consultation process

We believe that the proposed smart motorway scheme meets the strategic, economic, social and environmental objectives better than any other scheme option (see section 3 for details of the proposed scheme development to date), providing a robust transport solution that addresses national, regional and local needs in the most appropriate way. However, it is important for us to understand the views of the community and other stakeholders and to consider these as we continue to develop our scheme proposals.

We previously held public exhibitions during the early stages of the scheme's development to provide members of the public and stakeholders with the opportunity to understand the smart motorway concept and our initial scheme designs for the M4. These public exhibitions were held over a six week period between the 18 March and 30 April 2014 and enabled us to talk to local people about smart motorways and to seek their views.

The feedback received from this exercise has enabled key issues raised by the community to be properly considered and addressed as part of the development of our proposals.This stage of public consultation is a statutory process set out in the Planning Act 2008. read Therefore we are undertaking a consultation exercise until 21 December 2014, where we are inviting comments on the scheme proposals.

Feedback received from this consultation exercise will help shape the final scheme proposals and form the basis of our application for a Development Consent Order.

Our responsibilities as scheme developer

The Planning Act 2008 requires the developer of a proposed scheme – in this case the Highways Agency – to consult with statutory bodies, local authorities, landowners, neighbouring communities and road users. We have worked closely with local authorities in the area to define how we will undertake consultation with local communities and this is set out in our Statement of Community Consultation (SoCC). In addition to the SoCC, we have published a statutory notice under Section 48 of the Planning Act 2008, in local and national papers to notify the wider public about our consultation on the proposed scheme.

Following this statutory consultation period, we will produce a consultation report summarising the responses received and outlining how these have

been considered in the scheme proposals. We will send a copy of this report to the Planning Inspectorate as part of our Development Consent Order application, who will consider the application and supporting material; and decide if it meets the required standards to proceed to examination and whether our pre-application consultation has been adequate.

How you can get involved

You may already have told us your views on our proposed Scheme in the past, but we would like to hear from you again. Your views are really important to us. Therefore we encourage you to complete the questionnaire, referring to those aspects of the proposed scheme that you support as well as those you may have questions or concerns about. Alternatively you may respond to us by email or letter.

Responding to this consultation is your best opportunity to have your say on the scheme proposals as there will be little opportunity for the Highways Agency to make further amendments to the proposed scheme following submission of the Development Consent Order application. Once submitted to the Planning Inspectorate, you will also have the chance to register with the Planning Inspectorate as an interested party, and to make further representations at that time.

Development Consent Order

A scheme of this scale is considered to be a Nationally Significant Infrastructure Project as defined by the Planning Act 2008. This means that the Highways Agency is required to submit an application for a Development Consent Order for approval to construct the scheme. A Development Consent Order is a Statutory Instrument that would undergo Examination by the Planning Inspectorate. Subject to its approval it would provide the Highways Agency with the powers to construct the smart motorway scheme.

The Highways Agency anticipates that an application for development consent in respect of the proposed scheme will be submitted to the Planning Inspectorate in early 2015. The Planning Inspectorate will consider the application for development consent and make a recommendation to the Secretary of State who will decide whether development consent should be granted for the proposed scheme. Subject to receiving development consent, our aim is to start construction work in 2016.

Figure 2 on page 8 shows the Development Consent Order application process. Figure 3 on page 9 shows the expected timetable for our application and its subsequent determination by the Planning Inspectorate.

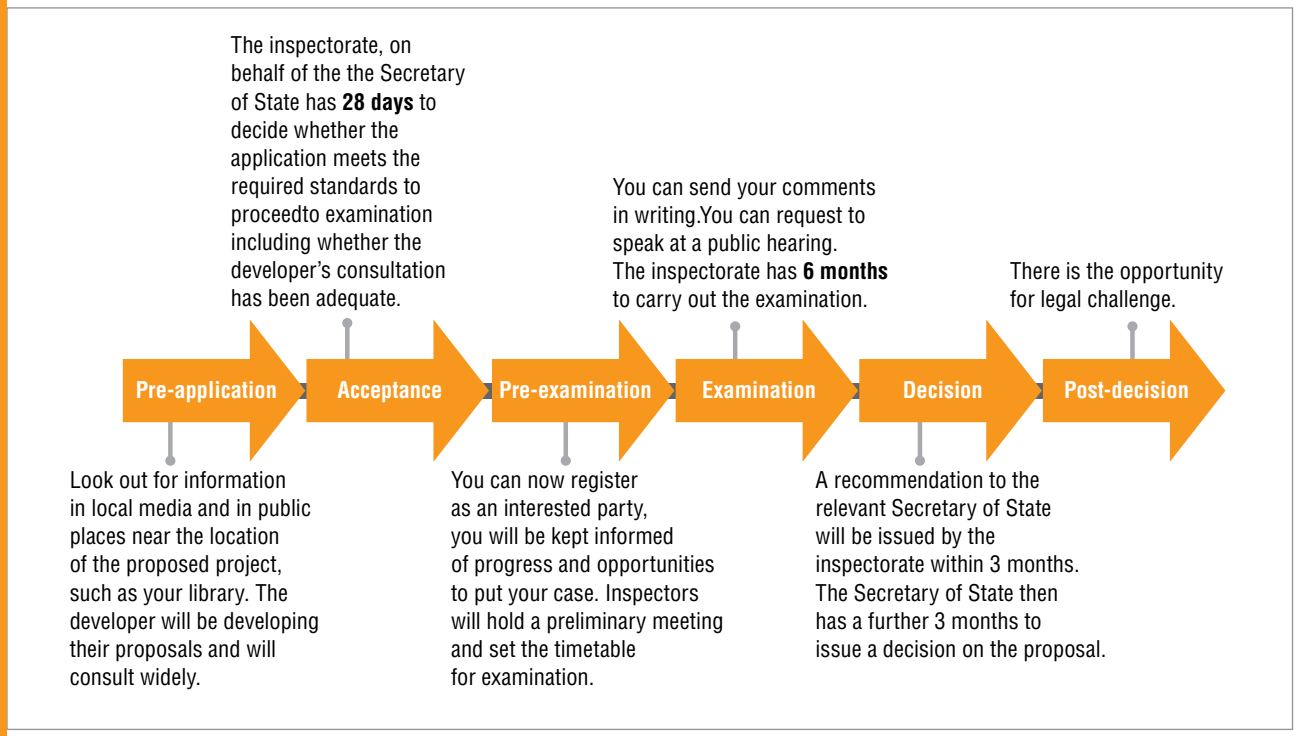

Figure 2: The Development Consent Order process for nationally significant infrastructure projects

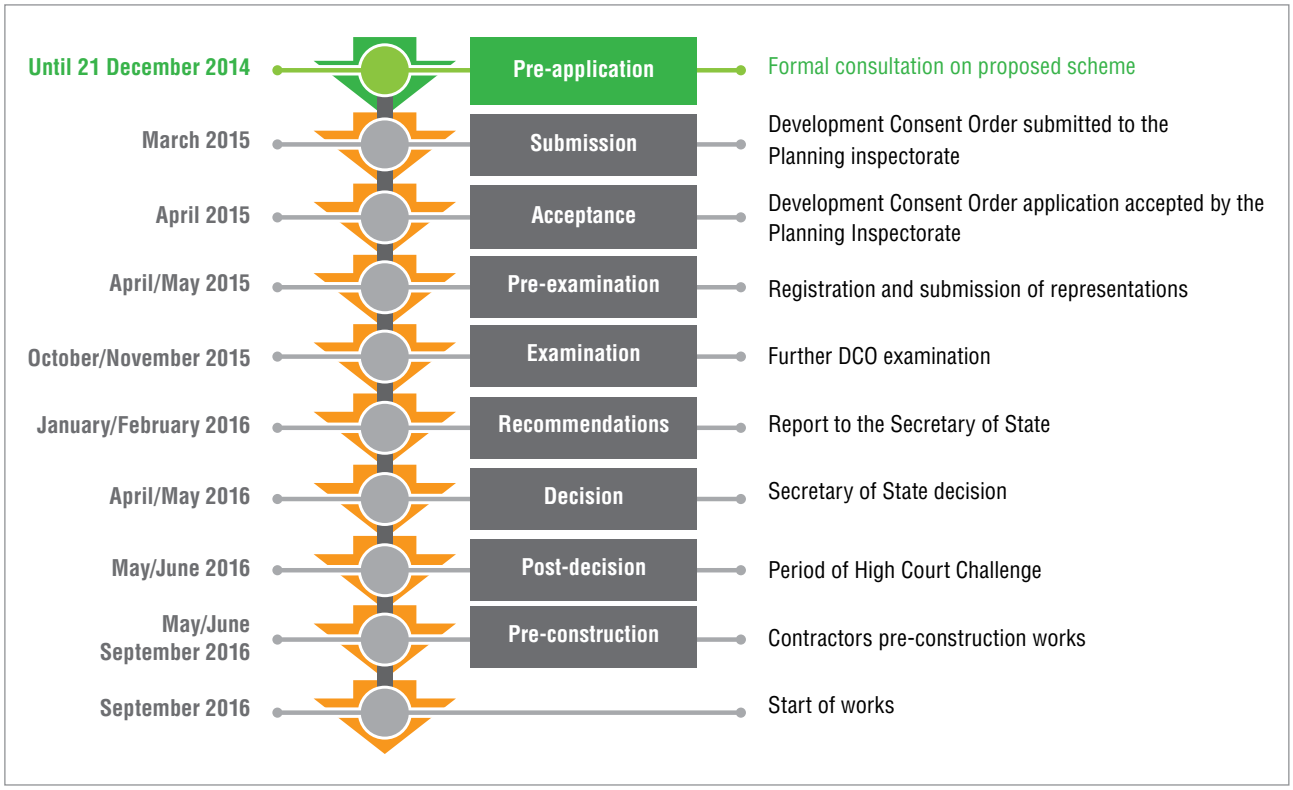

Figure 3: M4 smart motorway scheme – where we are now

Section 2: What we are proposing

The smart motorway scheme will include the permanent conversion of the hard shoulder to a running lane and will provide the necessary signing and technology to manage traffic. The proposed scheme has been designed in accordance with the Highways Agency's *Design Manual for Roads and Bridges and Interim Advice Note 161/13*.

Figure 4: Key features of a smart motorway

Some localised widening of the M4 carriageway will be required at junctions to accommodate slip roads, and in areas where there is no existing hard shoulder - generally at overbridges above the M4 between junction 4b (interchange with M25) and junction 8/9 (interchange with A404M and A308M). The motorway will be re-aligned over Thames Bray and Windsor Rail underbridges to allow for widening. The carriageway between junction 4 (Heathrow) and junction 4b (interchange with M25) is currently four lanes wide, with a hard shoulder. We propose widening this section to five lanes to provide sufficient capacity for traffic exiting / joining the main carriageway.

Figure 5: Discontinuous hard shoulder at overbridge

There are currently a number of sections of discontinuous hard shoulder between junction 4b (the M25) and junction 8/9 (interchange with A404M and A308M) where existing bridges limit the available carriageway width. Some overbridges, carrying routes over the motorway, will need to be demolished and replaced. (See figure 5). Widening will also be required to underbridges carrying routes underneath the motorway. (See figure 6).

Figure 6: Discontinuous hard shoulder at underbridge

The majority of works along the motorway corridor will be within land owned by the Secretary of State for Transport. Every effort has been made to keep land take to a minimum however, additional land will be required permanently to accommodate the proposed works, such as local road realignment at overbridges and widening of underbridges. Land will also be required temporarily for access, storage and construction activities and will be reinstated to its former land use once construction work is complete. Both permanent and temporary land take will be included within the proposed Development Consent Order application. See details on the Highway's Agency web-site **http://www.highways.gov.uk/roads/road-projects/m4-junctions-3-12/**

Carriageway

Through junction running is the preferred design for all-lane running schemes as it enables a consistent number of lanes along the route corridor, reducing the number of lane changes and the associated hazards.

Through junction running is proposed at junctions 4, 5, 6, 7, 8/9 and 11 and at the Reading motorway service area.

Through junction running is not proposed at the junctions where the smart motorway begins and ends, ie junction 3 (Hayes) and junction 12 (Theale). On the approach to these junctions from outside the proposed scheme, the left hand lane of the entry slip road would feed into the new nearside lane of the four lane motorway. At the end of the proposed scheme, the nearside lane would diverge from the motorway into the exit slip road.

Through junction running is not proposed at junction 4b (M25) and junction 10 (A329M). These two junctions have free flow motorway to motorway slip roads with high traffic flows. Use of through junction running would create traffic flow conflict between through traffic in the left hand lane and traffic exiting the motorway.

Emergency refuge areas

Emergency Refuge Areas (ERAs) are required to provide a safe area for vehicles to stop outside the main carriageway in an emergency whilst also preventing interruption to the flow of traffic. The current proposal is for 32 ERAs along the length of the proposed scheme. The maximum spacing between ERAs or other points of exit from the main carriageway (ie junction slip roads, motorway service areas and hard shoulders) is 2.5km. ERAs are similar in appearance to laybys and will measure 100m in length, with a minimum width of 4m, as required by Highways Agency design standards. It should be noted that ERAs are for use only in emergencies.

With no hard shoulder on the proposed scheme, existing police observation platforms will be removed and where possible new ones positioned adjacent to ERAs. An assessment is currently being undertaken, in conjunction with key stakeholders on the number and location of police observation platforms.

Signs, gantries and technology

Operation of the smart motorway will be controlled via gantry mounted LED signs. Existing gantries, which are no longer required, will be removed to ground level. Figure 7 provides details of the various types of technology to be installed on the smart motorway. The maximum number of signs and gantries proposed at the time of the Development Consent Order application will be subject to an environmental impact assessment.

Safety barriers

It is proposed to provide a rigid concrete barrier and paved central reserve throughout the length of the proposed scheme in accordance with the Highways Agency's design standards (Figure 8). This will result in improved safety for road users and road workers. Rigid concrete barriers also require minimal maintenance and will therefore reduce the amount of maintenance work required.

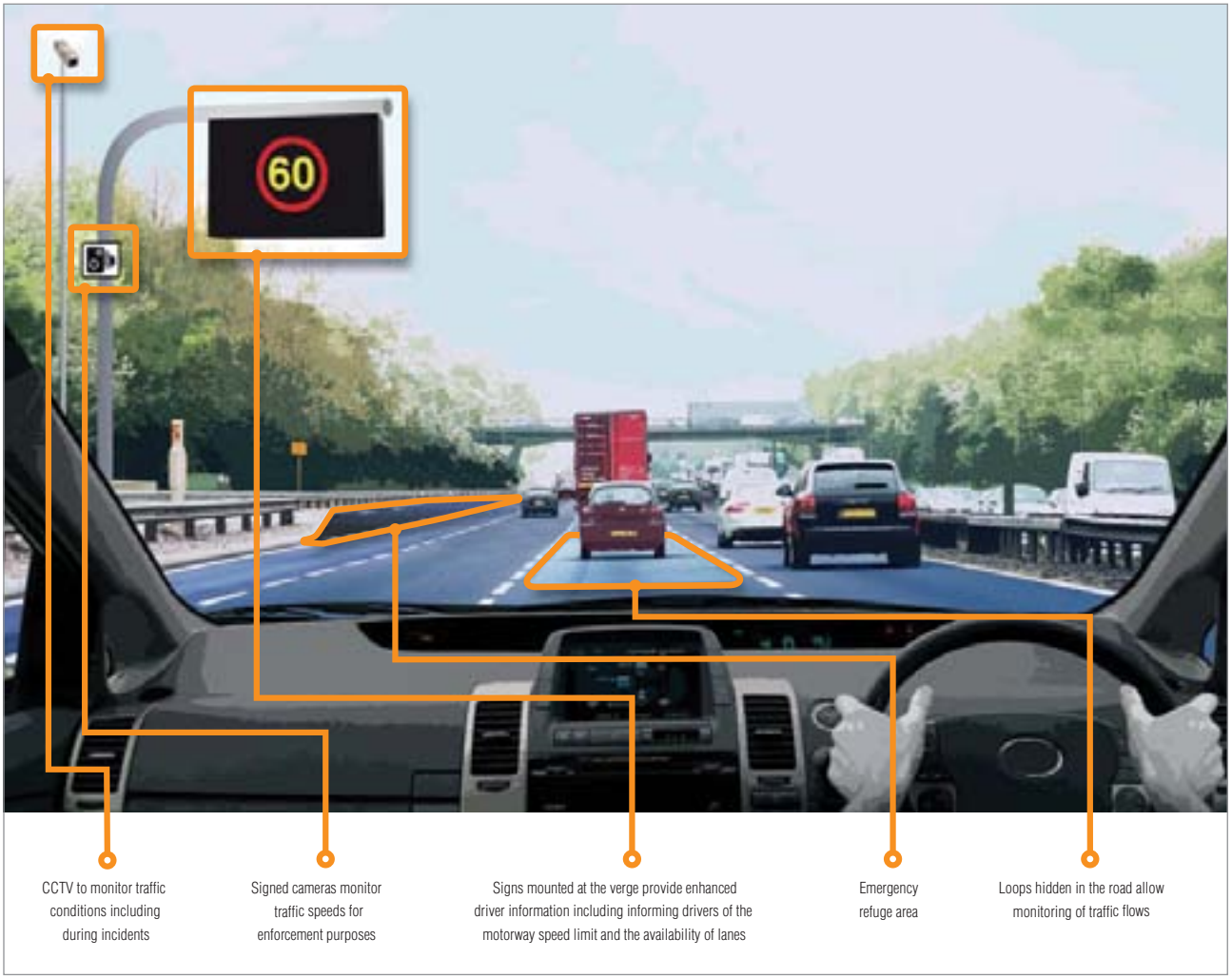

Figure 7: Signs, gantries and technology equipment summary

Figure 8: Concrete barrier in central reserve

Other types of safety barrier will be provided within carriageway verges where required, to protect gantry mounted signs and signals, lighting columns, as well as for embankments, retaining walls and bridges.

Drainage

The existing central reserve drainage system will be replaced. Improvements are also proposed to drainage within the verges to ensure that there is no flooding of the carriageway once the hard shoulder is upgraded to a running lane.

In line with Highways Agency design standards, discharge from the highway drainage system to local watercourses will not be increased and therefore there will be no impact on flood risk.

Retaining walls and piling

In order for carriageways to be widened locally and/or for equipment at gantry bases to be installed in the carriageway verges without the need for any land take, some retaining walls will be required.

Piling work will be necessary for the foundations of structures and gantries. Details of piled foundations will be developed during the detailed design stage in liaison with local authorities to ensure designs and construction method statements are acceptable.

Lighting

The full extent of the proposed scheme, with the exception of the M4 between junctions 8/9 and 10 is currently lit with either central reserve or verge lighting. The extent of the lighting is currently under review. Recommendations from this review will be considered and taken into account in the development of our design proposals to improve the M4 between junction 3 (Hayes) and junction 12 (Theale).

Road surfacing

A thin surface course is proposed where it is necessary to resurface or provide new surfacing material. This is commonly known as low noise surfacing. It is therefore proposed to resurface the existing hard shoulder and far-side lane (new lanes 1 and 4) with a new thin surface course.

Environmental barriers

Environmental barriers, in the form of fencing, to mitigate noise from the carriageway and visual

impacts will be incorporated within the proposed scheme where the environmental assessment process identifies that this form of mitigation is required.

Landscaping

Environmental enhancement will be developed through the preparation of an environmental masterplan as part of the development consent application. This will set out the proposed approach to environmental design. Vegetation cleared during construction will be re-planted, where possible with native species to provide habitats and visual screening.

Bridges

Bridges that require demolition and re-building to accommodate a new lane where no hard shoulder currently exists are listed below.

Overbridges to be demolished and reconstructed:

- Ascot Road (A330)
- Monkey Island Lane
- Marsh Lane
- Lake End Road
- Huntercombe Spur (junction 7)
- Oldway Lane
- Wood Lane
- Datchet Road
- Recreation Ground
- Riding Court Road
- Old Slade Lane

The proposal to replace 11 overbridges will include either:

- Building a new overbridge in the same location as the existing bridge or,
- Building a new overbridge to the side of the existing bridge.

Any diversions required during the construction and demolition of any overbridges will be agreed with the local authority to ensure disruption to the local community is kept to a minimum.

During the construction works, a minimum of three lanes will remain open at peak times on the M4 in each direction, though some limited night time closures on the M4 will be required to enable the demolition of the existing overbridges and the lifting of the new bridge beams into position.

Overbridge proposals

Figure 9: Ascot Road overbridge

Scheme proposal: We are proposing to replace Ascot Road overbridge to the east of the existing bridge.

Scheme design: The location of the replacement bridge will avoid impacting on residential property. A new retaining wall will also be built alongside the new bridge to avoid existing industrial premises. To allow traffic on the M4 to use the hard shoulder as a running lane, the new bridge will be constructed approximately 1.4m higher than the existing bridge.

Scheme construction: Access will be maintained as much as possible over the existing bridge until the new bridge is complete. Any diversions required during the construction and demolition of this structure will be agreed with the local authority to ensure disruption to the local community is kept to a minimum.

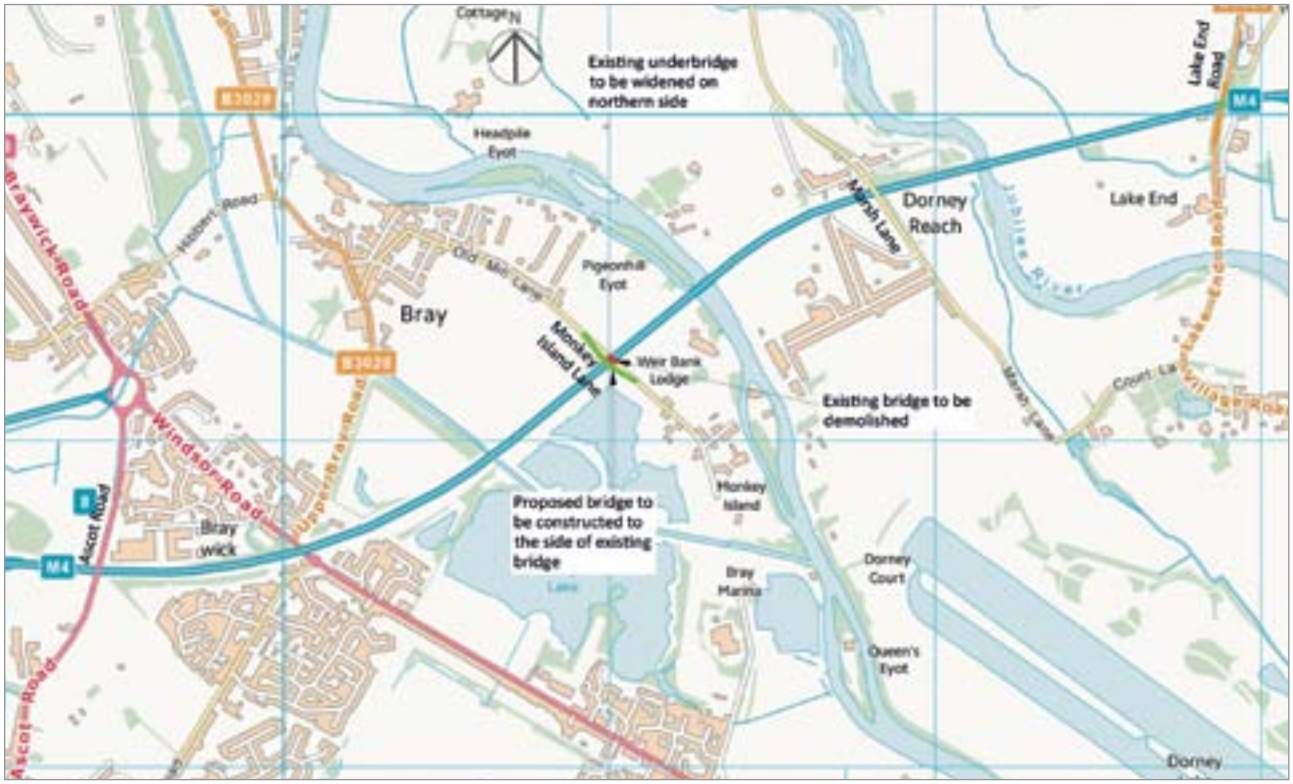

Figure 10: Monkey Island Lane overbridge

Scheme proposal: We are proposing to replace Monkey Island Lane overbridge to the west of the existing bridge.

Scheme design: The location of the replacement bridge will avoid impacting on residential property. In order to allow traffic on the M4 to use the hard shoulder as a running lane, the new bridge will be constructed approximately 1.4m higher than the existing bridge.

Scheme construction: Access will be maintained as much as possible over the existing bridge until the new bridge is complete. Any diversions required during the construction and demolition of this structure will be agreed with the local authority to ensure disruption to the local community is kept to a minimum.

Figure 11: Marsh Lane and Lake End Road overbridges

Marsh Lane

Scheme proposal: We are proposing to demolish the existing bridge and construct a new bridge at the same location.

Scheme design: To allow traffic on the M4 to use the hard shoulder as a running lane, the new bridge will be constructed approximately 1.1m higher than the existing bridge.

Scheme Construction: Access to the bridge will not be available during the demolition and construction period. Diversions required during this period will be agreed with the local authority. To minimise disruption to the local community, work on Lake End Road overbridge, which could be used as a diversion route for traffic, will not be undertaken at the same time as work on Marsh Lane overbridge.

Lake End Road

Scheme proposal: We are proposing to demolish the existing bridge and construct a new bridge at the same location.

Scheme design: In order to allow traffic on the M4 to use the hard shoulder as a running lane, the new bridge will be constructed approximately 1.1m higher than the existing bridge.

Scheme construction: Access to the bridge will not be available during the demolition and construction period. Diversions required during this period will be agreed with the local authority.
In order to minimise disruption to the local community, work on Marsh Lane overbridge, which could be used as a diversion route for traffic, will not be undertaken at the same time as work on Lake End Road overbridge.

Junction 7 Huntercombe Spur

Scheme proposal: We are proposing to replace Huntercombe Spur overbridges with new bridges constructed to the east of the existing bridges.

Scheme design: To allow traffic on the M4 to use the hard shoulder as a running lane, the new bridges will be constructed approximately 1.1m higher than the existing bridges.

Scheme construction: The proposals have been designed to enable traffic flow on the slip roads to be maintained as much as possible throughout the construction period. Any diversions required during the construction and demolition of this structure will be agreed with the local authority to ensure disruption to the local community is kept to a minimum.

Figure 12: Junction 7 Huntercombe Spur overbridgebridges

Figure 13: Oldway Lane overbridge

Scheme proposal: We are proposing to demolish the existing bridge and construct a new bridge in the same location. The replacement bridge will continue to provide access over the M4 for pedestrians and cyclist / equestrian use.

Scheme design: To allow traffic on the M4 to use the hard shoulder as a running lane, the new bridge will be constructed 1.1m higher than the existing bridge.

Scheme construction: Access to the bridge will not be available during the demolition and construction period. Any diversions required during the construction and demolition of this structure will be agreed with the local authority to ensure disruption to the local community is kept to a minimum.

Figure 14: Wood Lane overbridge

Scheme proposal: We are proposing to replace Wood Lane overbridge to the east of the existing bridge.

Scheme design: The location of the replacement bridge will avoid impacting on residential property. A new retaining wall will also be built alongside the new bridge to avoid existing retail premises. To allow traffic on the M4 to use the hard shoulder as a running lane, the new bridges will be constructed approximately 1.4m higher than the existing bridges.

Scheme construction: Any diversions required during the construction and demolition of this structure will be agreed with the local authority to ensure disruption to the local community is kept to a minimum.

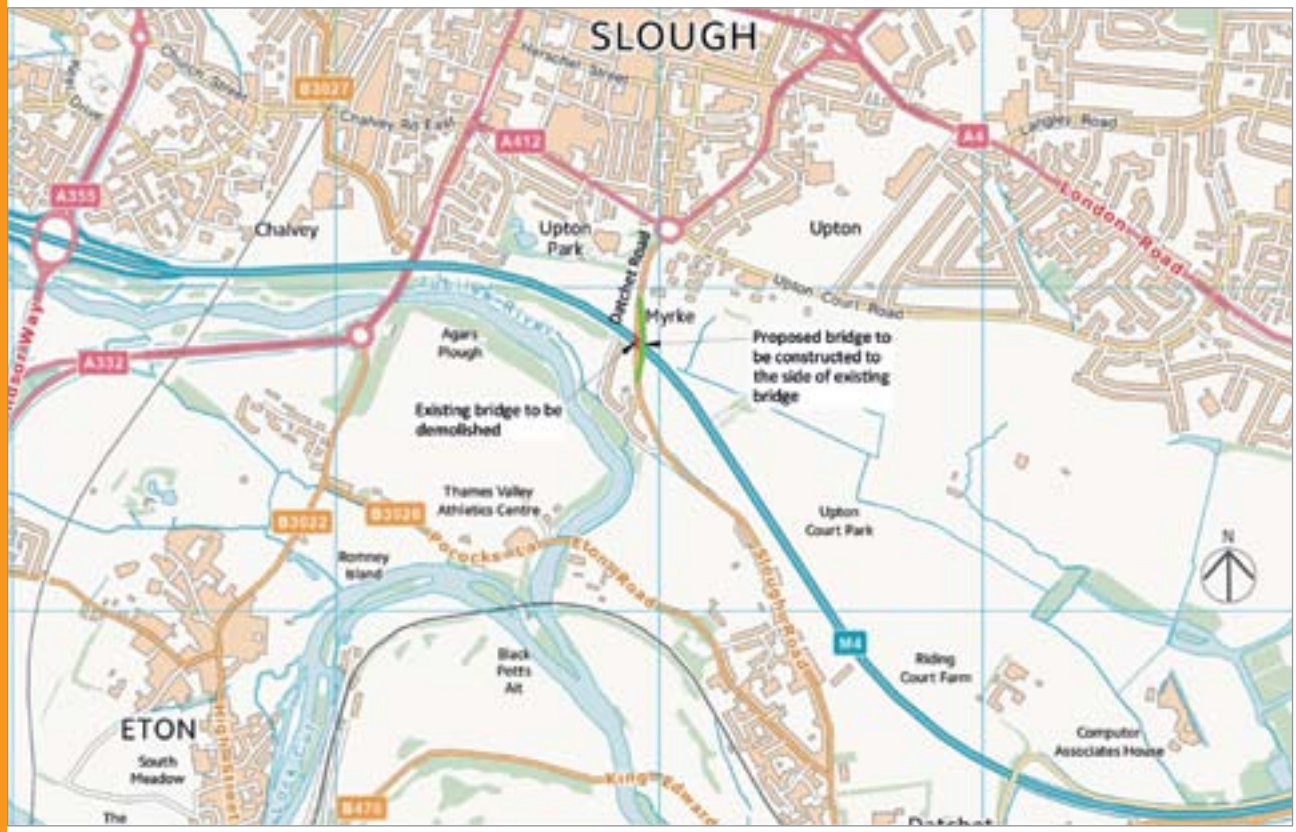

Figure 15: Datchet Road overbridge

Scheme proposal: We are proposing to replace Datchet Road overbridge to the east of the existing bridge.

Scheme design: The location of the replacement bridge will avoid impacting on residential property. To allow traffic on the M4 to use the hard shoulder as a running lane, the new bridge will be constructed approximately 1.4m higher than the existing bridge.

Scheme construction: Access will be maintained as much as possible over the existing bridge until the new bridge is complete. Any diversions required during the construction and demolition of this structure will be agreed with the local authority to ensure disruption to the local community is kept to a minimum.

Figure 16: Recreation Ground overbridge

Scheme proposal: We are proposing to demolish the existing single carriageway bridge and construct a new bridge at the same location.

Scheme design: To allow traffic on the M4 to use the hard shoulder as a running lane, the new bridge will be approximately 1.0m higher than the existing bridge.

Scheme construction: Access to the bridge will not be available during the demolition and construction period. Any diversions required during construction and demolition of this structure will be agreed with the local authority to ensure disruption to the local community is kept to a minimum.

Figure 17: Riding Court Road overbridge

Scheme proposal: We are proposing to replace Riding Court Road overbridge to the west of the existing bridge.

Scheme design: The location of the replacement bridge will avoid impacting on residential property. In order to allow traffic on the M4 to use the hard shoulder as a running lane, the new bridge will be constructed approximately 1.4m higher than the existing bridge.

Scheme construction: Access will be maintained as much as possible over the existing bridge until the new bridge is complete. Any diversions required during the construction and demolition of this structure will be agreed with the local authority to ensure disruption to the local community is kept to a minimum.

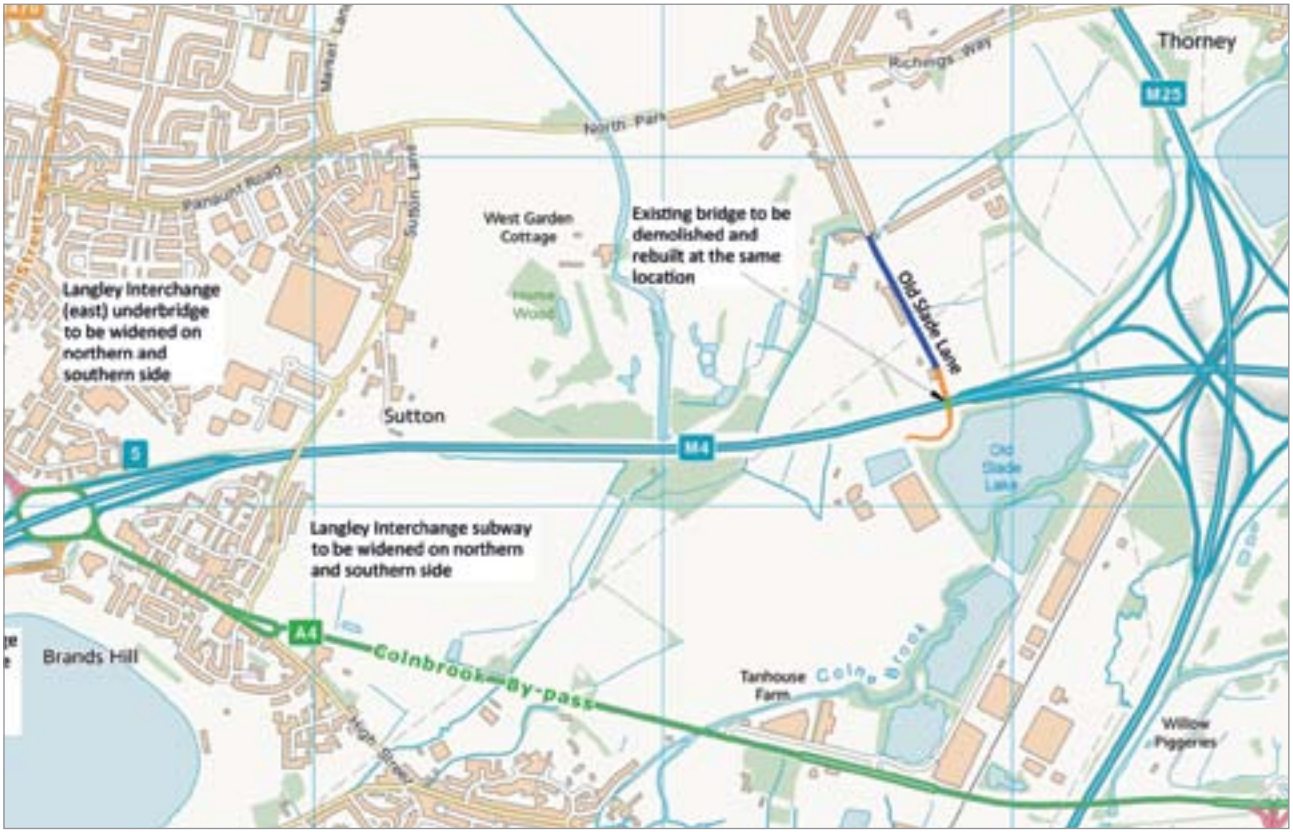

Figure 18: Old Slade Lane overbridge

Scheme proposal: We are proposing to demolish the existing bridge and construct a new bridge at the same location. The replacement bridge will continue to provide farm access, as well as access for pedestrians and cyclists as part of the Colne Valley Trail.

Scheme design: To allow traffic on the M4 to use the hard shoulder as a running lane, the new bridge will be constructed approximately 1.1m higher than the existing bridge.

Scheme construction: Access will not be available during the demolition and construction period of the bridge. Any diversions required during the construction and demolition of this structure will be agreed with the local authority to ensure disruption to the local community is kept to a minimum.

Underbridges and culverts

The following four underbridges, two subways and two culverts are proposed to be widened:

Figure 19: Thames Bray underbridge

Scheme proposal: Thames Bray underbridge is to be widened on its northern side.

Scheme design: The existing bridge will be widened to match the existing bridge structure.

Scheme construction: To minimise disruption to the local community, access along the footway / cycleway on the southern side of the bridge will be maintained as much as possible during the construction period for the underbridge.

Any diversions required during the construction and demolition of this structure will be agreed with the local authority to ensure disruption to the local community is kept to a minimum.

Some limited closures on the River Thames will be required to enable lifting of the new bridge beams into position. These will be agreed with the Environment Agency to minimise disruption to river navigation.

Figure 20: Windsor Rail underbridge

Scheme proposal: The existing bridge is to be widened.

Scheme design: We are proposing to widen the existing bridge on its southern side in order to minimise the effects on residential properties and business premises. The proposed widening will match that of the existing bridge.

Scheme construction: Some limited night time closures on the Slough to Windsor and Eton Branch Line will be required to enable lifting of the new bridge beams into position. These will be agreed with Network Rail.

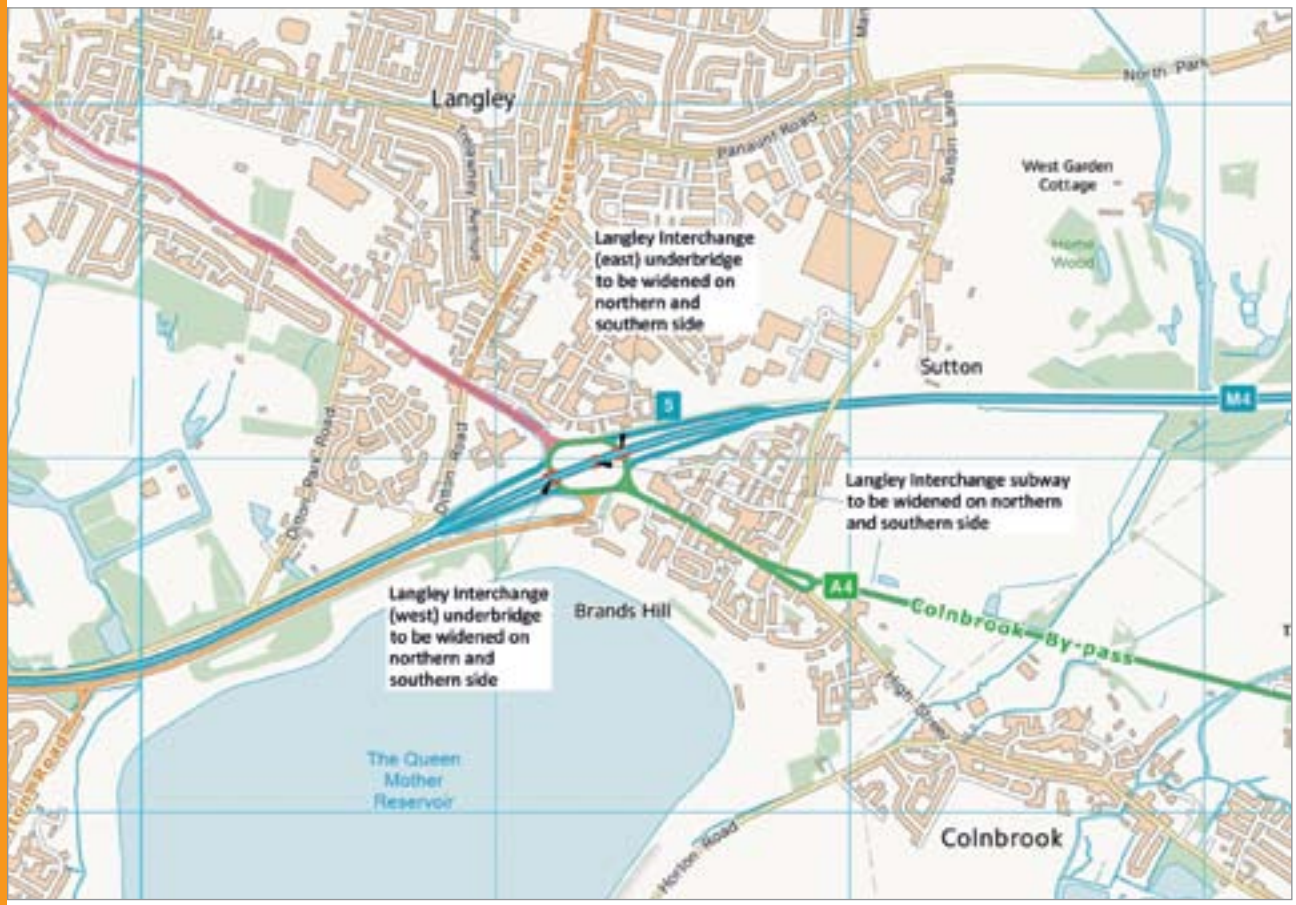

Figure 21: Junction 5 Langley Interchange (West and East) and Langley subway

Scheme proposal: We are proposing to widen the two underbridges and a subway at Langley Interchange.

Scheme design: The east and west underbridges at Langley Interchange and Langley subway are to be widened on their northern and southern sides.

Scheme construction: Some limited night time closures of the underbridges will be required to enable lifting of the new bridge beams into position. It will be necessary to close Langley subway while we undertake the widening works to ensure public safety. Any diversions required during the construction works will be agreed with the local authority to ensure disruption to the local community is kept to a minimum.

Figure 22 Sipson Road subway

Scheme proposal: We are proposing to widen the Subway at Sipson Road.

Scheme design: Due to the presence of residential land and Cherry Lane Primary School to the north of the Subway, it is proposed to widen the subway on its southern side with no changes proposed to the north. The extension will be designed and constructed to match the existing structure.

Scheme construction: The subway will be closed during the construction works and a suitable diversion agreed with the local authority to ensure disruption to the local community is kept to a minimum.

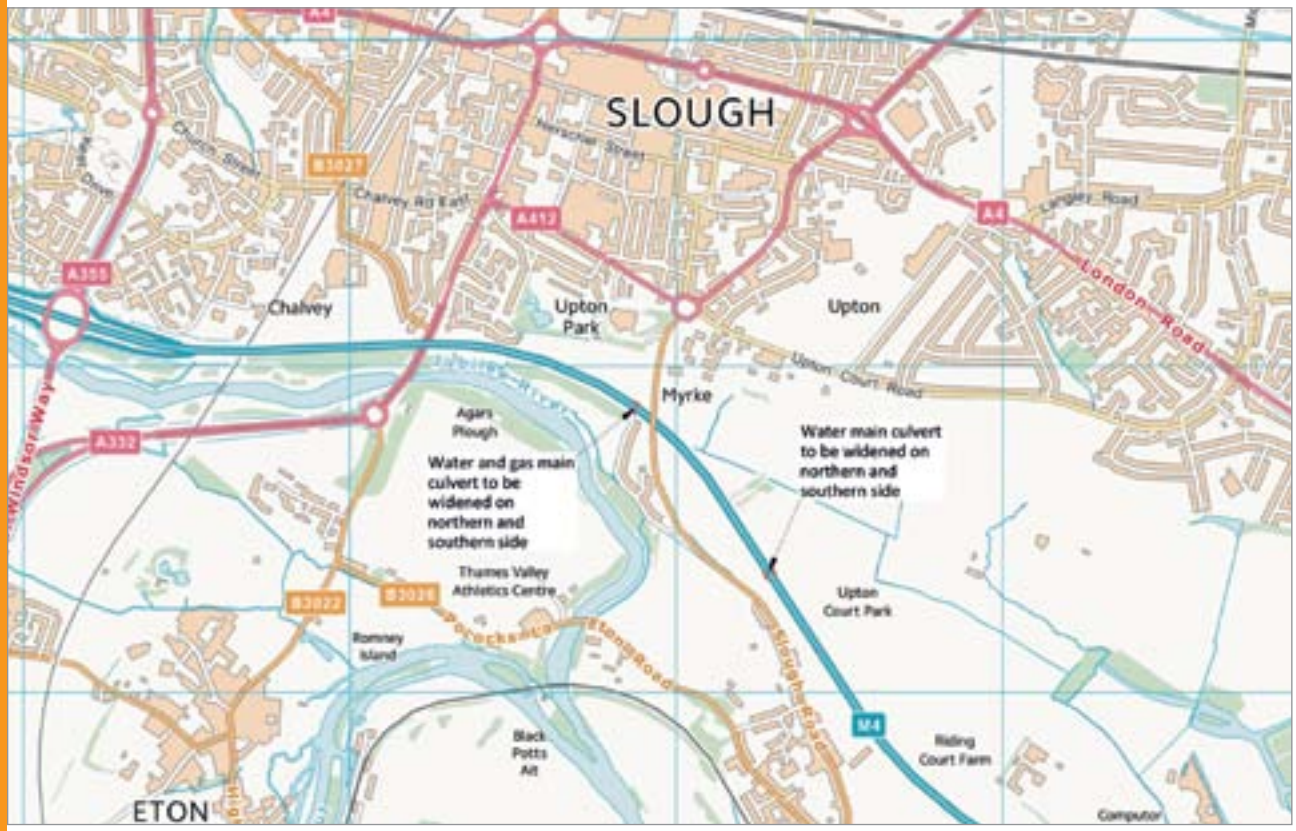

Figure 23: Service Culverts, Datchet

Scheme proposal: We are proposing to widen two service culverts on their northern and southern sides.

Due to the presence of residential land and Cherry Lane Primary School to the north of the subway, it is proposed to widen the subway on its southern side by 3.6m with no changes proposed to the north. The extension will be designed and constructed to match the existing structure.

Scheme construction: There will be no disruption to local routes during the proposed construction works.

Section 3: How we got here

The following table provides a brief history of the events that has led to the development of the M4 junction 3 to junction 12 as a proposed smart motorway scheme:

2003	The case for providing additional capacity on the M4 within the Thames Valley was first examined in The Thames Valley Multi-Modal Study
2008	The *Advanced Motorway Signalling and Traffic Management Feasibility Study* (Department of Transport), highlighted the following causes of congestion in the scheme area and identified the M4 junction 3 to junction 12 as a priority for the provision of additional capacity: • the large number of commuters using the strategic road network • the number of commuters willing to travel significant distances • low vehicle occupancy • widely dispersed origins and destinations • a low proportion of trips starting or ending in urban centres The study also concluded that the number of trips and trip miles would increase significantly, therefore making the existing situation worse. Ministers agreed that hard shoulder running as an alternative to widening should be investigated.
2009	In January the Department for Transport announced its approach for improving capacity and reliability on the motorway network through the concept of Smart motorways. A programme of managed motorway construction by 2015 was set out, including M4 junction 3 to junction 12.
2010	Scheme development commenced in February through the investigation of a range of operational and design options.
2012	In May the roads minister announced the scheme as one of six Highways Agency major road schemes for development work. This included design and consultation work, along with progressing any statutory processes.
2013	In February the Highways Agency announced that the scheme should be based on the concept of managed motorways all-lane running.
	In the June spending review, the Government committed itself to funding the scheme subject to value for money and deliverability.
2014	In January work commenced on taking the M4 junction 3 to junction 12 smart motorway scheme through its development phase, involving preliminary design and preparation of the application for Development Consent Order under the Planning Act 2008.

Smart motorways

As an Agency we have changed the name of managed motorways to smart motorways. We are making smarter use of our motorway network, smart motorways encompasses all sections of our network that incorporate technology to manage congestion and improve journey time reliability. This includes controlling speeds to improve traffic flow through the use of variable mandatory speeds and providing driver information on overhead signs.

Most recognisably smart motorways can use technology to open the hard shoulder at times of peak demand or the hard shoulder is permanently converted to a traffic lane with additional emergency refuge areas. This adds extra capacity on some of the busiest sections of our motorway network.

It is important to the Agency that all road users understand the layout, signs and signals used on our smart motorways sections. We have been working to introduce a series of information products that can be easily identified and understood as smart motorways. From November 2013 these were promoted and shared with road users and our partners.

Section 4: How this affects you

Impacts on the environment

The smart motorway scheme is a schedule 2 development, as defined by the Infrastructure Planning (Environmental Impact Assessment (EIA) Regulations 2009 (as amended) (the EIA regulations), as a development that is likely to have significant effects on the environment by virtue of factors such as its nature, size or location. An EIA is therefore required.

An EIA is being carried out in line with the EIA Regulations, as well as guidance set out in the Highways Agency's *Design Manual for Roads and Bridges, Volume 11, Environmental Assessment (2008)*. The EIA is being prepared in two stages, as follows:

- A Preliminary Environmental Information (PEI) report to enable consultees, including local communities, to understand the environmental effects of the proposed scheme and the potential mitigation measures. The PEI report is intended to inform consultation responses regarding the proposed scheme.

- An environmental statement to include the full results of the EIA will accompany the Development Consent Order application.

Publication of the PEI report at this stage includes the environmental information assembled to date. Our preliminary findings indicate that environmental impacts are likely to be as follows:

Air quality

The assessment has found there to be no significant impacts to air quality as a result of the proposed scheme.

Construction activities could adversely affect air quality in some areas through dust generation or plant emissions. However, proposals to control potential impacts will be set out in a Construction Environmental Management Plan, which will be included with the proposed Development Consent Order application.

Noise and vibration

Residential properties within a 1km study area as well as other sensitive receptors such as schools, places of worship, community facilities and a hospital were included in our noise and vibration assessment.

The scheme would result in increasing traffic noise levels for residential properties in some areas, though for the majority it would result in a decrease in noise levels. The design of the proposed scheme will include low noise surfacing and noise barriers to reduce these noise impacts.

The Construction Environmental Management Plan will include measures to control potential impacts to surrounding neighbourhoods during construction.

Ecology and nature conservation

Ecological surveys were undertaken at targeted locations based upon the potential of the habitat to support protected species. It is not anticipated that any direct impacts will occur to any designated sites as a result of the proposed scheme.

Mitigation measures for any impacts to protected species during construction will be set out in the Construction Environmental Management Plan.

Geology and soils

A desk-based review has confirmed that there is a single site of statutory geological importance within the proposed scheme boundaries (Pinsent's Kiln). Pinsent's Kiln will not be affected by the proposed scheme.

It is proposed to undertake detailed ground investigation along the proposed scheme to determine the extent of contaminated materials within the highway boundary.

Landscape

The landscape and visual assessment has established a zone of visual influence as an area within which the proposed scheme would be visible. The adverse landscape and visual impacts of the proposed scheme's operation would be mitigated through the design proposals, including the location of gantries and signage and any planting required along the length of the proposed scheme.

Any impacts introduced temporarily into the landscape as part of the construction work would be mitigated through the use of screening where appropriate.

Materials and waste

Construction and excavation materials for the proposed scheme will consist of soils and stones, plastics, packaging, insulation material, metals, municipal waste and waste construction materials. It is anticipated that the majority of these materials would be reused on-site although some would be required to be taken off-site. Responsibility for the management of waste during the construction phase of the proposed scheme would be set out in a construction environmental management plan, to include a materials management plan and site waste management plan.

Community and private assets

Impacts to community facilities (including community centres, places of worship, healthcare facilities, schools and education facilities) along the proposed scheme will be mitigated as far as possible in agreement with the relevant local authority. This includes any impacts on existing access arrangements along the scheme.

Impacts during the construction phase of the proposed scheme would be set out in the construction environmental management plan.

Drainage and the water environment
The assessment has considered the potential impacts of the proposed scheme on drains, flood plains and water courses. Drainage design has been developed to protect the local water environment from highway pollution and prevent increased flood risk.

During construction a construction environmental management plan will set out construction mitigation measures to control the quality of the water environment.

Cultural heritage
Cultural heritage sites include archaeological remains, gardens and designated landscapes, listed buildings and scheduled monuments. The presence of new infrastructure may result in some minor changes to the environment surrounding these important sites.

An archaeological watching brief will be put in place to record any archaeological sites that may be identified during construction,

Traffic impacts

Computer based transport modelling has been used to forecast traffic flows and assess potential impacts. This has concluded that the proposed scheme will result in a reduction in congestion on the M4, smoothing traffic and improving journey time reliability, The scheme also results in a net positive impact on traffic flows on the surrounding road network.

Construction impacts

The construction works associated with any road scheme of the scale proposed will inevitably impact on our stakeholders and can include the following:

- Construction noise and vibration
- Dust, odours and other air-quality issues
- Construction vehicle movements on local roads
- Site access / egress arrangements
- Site safety and security issues
- Road safety through roadworks and traffic management arrangements
- Delays and disruption to road users on the M4 and M25
- Delays and disruption to local traffic on other roads
- Light pollution
- Toxic or harmful discharges into water-courses and drainage systems
- Temporary impacts on landscape character and visual intrusion
- Temporary closures of roads, other public rights-of-way, and private accesses
- Other severance effects

An approach to undertaking the work will be prepared by the appointed contractor, in consultation with the local authorities and statutory consultees to deal with each of these effects, both at

a project level and at specific locations throughout the proposed scheme. Where possible and appropriate, a range of measures will be put in place early on in the construction period, such as acoustic fencing and visual screens to minimise the effects on neighbouring properties. Trees, hedgerows and other natural features will be retained, wherever possible, and land required for temporary access roads during construction will be restored as soon as possible following the completion of works.

Timing and phasing of construction works

In the event that development consent for the proposed scheme is granted, construction of the main works is expected to commence in 2016 and continue for a period of approximately five years to 2021. Construction of the main works would be preceded by site preparation works and works by utility companies to stop-up and/or divert services such as water pipes, buried and overhead cables, and gas mains.

The detailed phasing of the construction works has not yet been determined, as these will need to be developed in conjunction with the appointed contractors. This would include minimising as far as possible inconvenience to local residents and businesses.

The phasing and timing of works will be coordinated with other stakeholders, including local authorities, Network Rail and train operators.

Construction of bridges

Bridges and larger retaining structures will generally require piled foundations. Piling operations can be noisy and can result in airborne and ground-borne vibration. We will work with our appointed contractors to minimise the disruption caused by piling operations and ensure that our ways of working are agreed with the local authorities to ensure that any nuisance is minimised.

The use of temporary cranes to lift materials and components at bridge sites is likely to be required and this can be a particular safety issue when working close to roads or railways. The approach to undertaking this type of work will be developed to ensure that lifting operations are conducted safely. In the case of rail-related operations, track possessions will be required to carry out certain construction activities.

Site compounds and use of local public roads

Contractors will require working areas close to the proposed scheme for the storage of materials and equipment and for temporary offices and storerooms.

We estimate that we will need three or four construction compounds, at least one of which will also include the site offices.

The following sites are being considered as potential locations, though these are currently the subject of further site assessment work to determine their suitability and final site selection:

- Bardon Theale Depot at the junction off Wigmore Lane, near junction 12. Access via A4
- Existing farmland, off A4 Dorking Way, near junction 12
- Existing farmland at the end of A33 Old Basingstoke Road, adjacent to junction 11
- Within looped slip roads at junction 10
- Previous compound area off A308 (M) adjacent junction 8/9
- Within looped slip roads at junction 7
- Previous compound off A355, near junction 6
- Triangle of land between M4, Datchet Road and recreation ground access road.
- Colnbrook landfill site at Sutton Lane, near junction 5
- Existing London Concrete (Bardon) site adjacent M25 (northbound) to M4 (westbound slip road)
- Prologis Park off A408 adjacent junction 4
- Shepiston Lane, Hayes near junction 4
- Existing Highways Agency Depot at Heston Motorway Service Area at junction 3.

Plans showing the possible locations of each of the proposed site compounds are included within the proposed scheme drawings forming part of the consultation material (see section five for details of where the consultation material is available).

Access and exit arrangements onto local roads, from working areas and site compounds, will be included in the Development Consent Order application.

Traffic management proposals will be set out in a Traffic Management plan. This will be finalised in consultation with local authorities and other stakeholders prior to the start of construction.

Liaison

We would ensure that site liaison officers are appointed to keep people informed and to deal with any queries from local communities, local businesses and other stakeholders (including road-users) during the construction period. These liaison officers will have an important role in ensuring that local residents are informed of progress, and advising on matters such as planned local diversions or disruption to traffic.

Section 5: What happens next

Consultation report and DCO application

Following this formal public consultation period we will carefully consider all of the responses received and produce a consultation report outlining how this has been taken into account in the development of our design proposals to improve the M4 between junction 3 (Hayes) and junction 12 (Theale). We will send this report to the Planning Inspectorate as part of our Development Consent Order application.

The Planning Inspectorate will then consider the application and supporting material and decide whether it meets the required standard to proceed to examination and whether our pre-application consultation has been adequate. Once the application has been formally accepted by the Planning Inspectorate, the Development Consent Order application documents, including the Consultation Report will be available to view on the Planning Inspectorate's website: **http://infrastructure.planningportal.gov.uk/.**

The website will also provide updates on the progress of the application as it progresses through the Examination phase, as well as providing further information on the Development Consent Order application process for nationally significant infrastructure projects.

More information on the proposed M4 junctions 3 to 12 smart motorway scheme is available on the scheme website:

www.highways.gov.uk/roads/road-projects/M4-Junctions-3-12

Here you will find background information on the proposed scheme together with regular updates on what is happening and future progress. Information on the current consultation can also be found on the Government's consultation web page via **www.gov.uk** search M4 junction 3-12 smart motorway.

Tell us what you think

We are keen to hear your views about the proposed scheme. To make sure that we capture and record the feedback received during this consultation, we encourage you to complete the questionnaire. A copy of the questionnaire is available at the deposit points, the exhibitions and is available to complete online on the scheme website.

Please provide any comments to us by 23:59 on Sunday 21 December 2014.

On the web:
https://www.surveymonkey.com/r/M2RQKTZ

By post:
M4 junctions 3 to 12 smart motorway
Highways Agency
The Cube
199 Wharfside Street
Birmingham
B1 1RN

By email:
M4J3to12SmartMotorways@highways.gsi.gov.uk

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