Welcome

M4
Upgrade to smart motorway junctions 3 to 12
Smart motorways

Smart motorways are a technology driven approach to the use of our motorways, increasing capacity and relieving congestion while maintaining safety. Smart motorways help make journey times more reliable.

Technology is installed to monitor and manage traffic flow and the hard shoulder is used for traffic, either permanently (known as 'all lane running') or at peak times.

As well as the additional capacity from the extra lane, the technology manages traffic using variable speed limits to smooth traffic, reducing frustrating stop-start flow and improving journey reliability.

It is also used to support the response to incidents, using the signs and signals to close any lane in advance of the incident scene.

Drivers are enjoying the benefits of smart motorways across the country and our motorways continue to be some of the safest in the world.
M4 junctions 3 to 12 smart motorway

We are improving the busy 32-mile (51km) stretch of the M4 between junction 3 near Hayes and junction 12 near Theale, by upgrading it to an all lane running (ALR) smart motorway.

This scheme is the largest planned smart motorway scheme in England to date. The M4 carries an average of 130,000 vehicles per day. The smart motorway technology will enable variable speed limits to improve journey times and ease congestion.

The project involves:

Key changes to the motorway:

All lane running
- Between junctions 3 and 12 the hard shoulder will be converted permanently to a traffic lane, so that there are four lanes available for use by road users. Between junctions 4 and 4b, there will be five lanes.
- Where a hard shoulder does not currently exist, the motorway will be adapted to create a minimum of four lanes.

Through junction running
- This enables a consistent number of lanes to pass through the junction, reducing the need to change lane for vehicles staying on the motorway. Through-junction running will be in place at junctions 4, 5, 6, 7, 8/9 and 11 and at the Reading motorway service area.

Bridge works
- To accommodate the new smart motorway:
  - 11 bridges carrying local traffic over the motorway will need demolition and replacement.
  - 4 bridges that carry the motorway over roads, railways and rivers will need widening.
  - 2 subways under the motorway will also need lengthening.
  - Local side roads connecting to the replaced bridges will need re-aligning.
  - Junctions and slip-roads needed for traffic joining and leaving the improved motorway will need changing.

You will also see:

- Construction of Emergency Areas.
- Installation of enhanced communication systems, closed circuit television (CCTV) and electronic systems to allow automated speed control and congestion management with human oversight.
- Works to accommodate utility apparatus affected by the scheme.
- A new concrete central reservation, barriers and environmental mitigation works to improve safety and reduce noise.
Smart motorway M4 junctions 3 to 12

Smart technology

A smart motorway has technology installed to monitor and manage traffic flow. It is important that you understand the signs and comply.

When lanes are closed, signs display a Red X showing which lanes cannot be used.

- Signals in the verge or above the carriageway inform you of the speed limit, any lane closures and provide information on road conditions such as severe weather.

- Sensors and CCTV allow us to detect and monitor congestion and incidents, so we can set appropriate speed limits and manage incidents effectively.

- Speed limits vary and are applied at times of congestion, to prevent stop - start conditions. If no speed limit is shown the national speed limit applies.
Better journeys

Smart motorways are an effective way to provide more capacity on our busiest motorways while maintaining safety at less cost than traditional widening schemes, meaning better value for the tax payer.

All lane running, which involves permanent conversion of the hard shoulder as a live lane for traffic to use, provides an opportunity to modernise and improve far more of our motorways than under previous approaches.

The approach also supports economic growth, as the M4 is a strategic part of both the English and Welsh road network, connecting London to South Wales. Currently the M4 is one of the most congested stretches of motorway in Britain.

By varying the speed limit, we can help to avoid stop-start traffic, so that you are more likely to get to where you need to be on time.

Variable mandatory speed limits displayed in a red circle mean it is the law to follow the speed limit indicated. They are a key feature of smart motorways and are used when traffic volumes increase. The monitoring sensors we use activate lower speed limits to smooth congestion and keep you moving.

We use 60, 50 and 40mph limits on all types of smart motorways. When no speed limit is shown the national speed limit of 70mph is in place.
Emergency areas

- Emergency areas provide an area of relative safety following a breakdown.
- There will be 33 highly visible emergency areas within the M4 junctions 3 to 12 smart motorway scheme.
- Places of relative safety will be every 1.12 miles on average and no more than 1.6 miles apart. If you are driving at 60mph you will pass one approximately once a minute.
- There is an emergency telephone in each emergency area for motorists’ use. This connects you to Highways England’s Regional Control Centre and pinpoints your location.
- Where possible it is recommended that you attempt to come off the motorway at a service area, or onto a local road.

Remember to use the emergency telephone as this automatically pinpoints your location
Incident management

- Incidents such as collisions and breakdowns are managed by Highways England’s Regional Control Centre (RCC).
- If the collision or breakdown means vehicles are unable to get off the carriageway or reach an emergency area, we can use technology to close any lane on the motorway.
- The RCC sets signs to inform other road users about what is happening and manage traffic so that the people involved in the incidents are protected and an access route is cleared for emergency vehicles.
- They then continue to monitor traffic conditions throughout each incident and reopen lanes as soon as it is safe to do so.
- We are working closely with the emergency services to develop best practice as these major improvements are rolled out on our motorways.

1. Incident detection
2. Emergency service on scene
3. Incident protection and clearing
4. Incident cleared and smart motorway re-opened
Red ❌ signs

- Red ❌ signs are used for safety reasons to close lanes:
  - To protect road users who may have broken down or been involved in an incident.
  - To provide access and protection for the emergency services, our traffic officers and our road workers.
- If you see a Red ❌ symbol on a gantry sign over or at the side of the motorway it means that the lane is closed for one or more of these reasons.
- Driving in a lane with a Red ❌ symbol is illegal and dangerous and drivers must not use this lane.
Planning process

The M4 junctions 3 to 12 project is the first smart motorway scheme to receive planning permission through the Development Consent Order (DCO) process.

The DCO process was established by the Planning Act 2008 and is used for certain large and complex schemes (including highway improvements) that have been designated as Nationally Significant Infrastructure Projects (NSIPs) by the Government.

The benefits of the DCO process include extensive pre-application consultation, detailed analysis, including a full Environmental Impact Assessment, and examination by an independent inspector before the final decision is made.

The DCO consultation for the M4 junctions 3 to 12 smart motorway project took place between 2014 and 2015 with letters sent to over 26,000 addresses along the route and a comprehensive programme of consultation and engagement with local authorities, the local community, road users and key stakeholders.

The Secretary of State for Transport granted the Development Consent Order in September 2016, with a series of planning conditions (called requirements), to resolve during the detailed design phase. We have been working on these and preparing for the start of construction works since then.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Activities</th>
<th>M4 Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-application</td>
<td>Initial consultation and exhibitions, HE submitted DCO application</td>
<td>Feb 2014 – Mar 2015</td>
</tr>
<tr>
<td>Acceptance</td>
<td>Planning Inspectorate (PINS) reviewed application compliance against PA2008</td>
<td>Mar 2015 – Apr 2015</td>
</tr>
<tr>
<td>Pre-examination</td>
<td>PINS informed stakeholders and set Examination dates</td>
<td>Apr 2015 – Sep 2015</td>
</tr>
<tr>
<td>Examination</td>
<td>PINS held hearings, assessed scheme and stakeholder comments</td>
<td>Sep 2015 – Mar 2016</td>
</tr>
<tr>
<td>Decision</td>
<td>PINS made recommendations, Secretary of State (SoS) granted the DCO</td>
<td>Mar 2016 – Sep 2016</td>
</tr>
<tr>
<td>Post-decision</td>
<td>Continuing detailed design, Engaging with Local Authorities and Statutory Bodies to discharge the planning requirements, Preparing for construction</td>
<td>Sep 2016 – July 2018</td>
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</tbody>
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Environment

As part of the DCO planning process, a full Environmental Impact Assessment was carried out and has been used to inform the design of the project. This included assessments and design of mitigation where needed for:

- Air quality
- Cultural heritage
- Landscape and visual
- Ecology and nature conservation
- Geology and soils
- Materials and waste
- Noise and vibration
- Effects on all travellers (drivers, passengers, cyclists, horse riders, pedestrians)
- Community and private assets (including residents, local authorities, statutory utilities such as gas and water)
- Road drainage and the water environment

During the examination of the DCO application, further environmental protections were requested and planning requirements attached to the consent.

Planned protections include:

- The provision of new environmental (noise) barriers
- Upgrading of existing environmental (noise) barriers
- Retention or replacement of existing environmental (noise) barriers depending on condition and location
- Lower noise surfacing across the whole scheme
- Provision of artificial badger setts
- Provision of bird and bat boxes
- Provision of habitats for reptiles and great crested newts
- Provision of ledges at appropriate structures to allow safe passage of otters under the motorway
- Provision of permanent fencing to prevent otters and badgers gaining access to the motorway
- New landscaping of the highways embankment
- Air quality monitoring in agreed locations
When will the work start?

This is the longest smart motorway project in England to date (32 miles, 51km). To minimise disruption to our customers we will need to work on different stages at different times. Work on the motorway will start in July 2018 and is expected to be completed in March 2022.

Our current intention for the phasing of construction, is to start at junction 8/9 and progress west towards junction 10. In tandem we will start work on four bridges between junction 8/9 and junction 7. The more complex section of the scheme, progressing east from junction 8/9 towards junction 3, will be started in May 2019.

We have carefully planned the work to minimise disruption to our customers, however this timetable may change. Any changes will be notified on our project web page:

www.highwaysengland.co.uk/m4j3to12

<table>
<thead>
<tr>
<th>Motorway Link</th>
<th>J12 - 11</th>
<th>J11 - 10</th>
<th>J10 - 8/9</th>
<th>J8/9 - 6</th>
<th>J8 - 5</th>
<th>J5 - 4b</th>
<th>J4b - 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start</td>
<td>May 20</td>
<td>May 20</td>
<td>Sept 18</td>
<td>May 19</td>
<td>Dec 19</td>
<td>Oct 19</td>
<td>Jan 20</td>
</tr>
<tr>
<td>Finish</td>
<td>Feb 22</td>
<td>Jan 22</td>
<td>May 20</td>
<td>Dec 21</td>
<td>Mar 22</td>
<td>Mar 22</td>
<td>Mar 22</td>
</tr>
</tbody>
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Notes:

1. Mobilisation work to 4 structures in junctions 8/9-7 link will also start in late autumn 2018.
2. Timetable subject to governance, funding approval and discharge of the DCO.
3. Progress updates will be provided on the Highways England website throughout the delivery.
We will need to set up a number of construction compounds along the M4.

During construction, narrow lanes and reduced speed restrictions will be put in place to create a smooth and safe flow of traffic through the works and to protect workers. Additionally, traffic management barriers will be needed. Three narrow lanes will be available for road users during peak hours.

Wherever possible, noisier works will be undertaken during daytime hours. Core working hours will be from 08:00 to 19:00 on weekdays (excluding bank holidays) and from 07:00 to 16:00 on Saturdays.

There will be temporary closures of the carriageways at night on some occasions. In these instances, clearly signed diversions will be put in place.

If you live near the motorway, your view of the M4 between junctions 3 and 12 may change during construction as we will need to remove some vegetation to build the new smart motorway infrastructure. We will be replanting where we can to help to screen views of the motorway.

The work will involve installation of gantries and monitoring equipment, new drainage systems, safety barriers, construction of emergency areas and carriageway resurfacing.

The construction of the scheme will be governed by the Construction, Design and Management Regulations, and we will be a member of the Considerate Constructors scheme which will help ensure that we are a good and responsible neighbour.

Further details will be provided on the project web pages as they become available both before and during construction.

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**Bridge works**

To accommodate the new smart motorway:
- 11 bridges carrying local traffic over the motorway will need demolition and replacement.
- 4 bridges that carry the motorway over roads, railways and rivers will need widening.
- 2 subways under the motorway will also need lengthening.

Much of the M4 was originally built as a two-lane dual carriageway, and has been upgraded over the years. Eleven bridges over the motorway need to be replaced to make room for a new lane where there is no existing hard shoulder.

To limit disruption, seven of the new bridges will be built next to the existing ones, before the old ones are demolished. However, where there is not enough space for this, some bridges will be demolished first, then a new bridge built in the same place.

Where the motorway passes over, for example, the River Thames at Bray and the railway line to Windsor, we will need to widen structures to support the new smart motorway.

Some weekend closures will be required for bridge works. Full details will be communicated and posted on our project web page well in advance.

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**Bridges to be replaced**
Contact us

If you would like to know more about the M4 junctions 3 to 12 smart motorway scheme you can contact us:

Email the project at: M4J3to12SmartMotorways@highwaysengland.co.uk

Call the Highways England national switchboard on: 0300 123 5000

Follow @HighwaysSEAST for live traffic information

You can also find further information on our project web page:

www.highwaysengland.co.uk/m4j3to12

Community engagement

We look forward to continued engagement with local stakeholders and residents.

July 2018 exhibitions are taking place around M4 junctions 7 to 12 where construction on this scheme will start. Further engagement will take place around junctions 3 to 7 in due course.

During construction, there will be a Public Liaison contact person dedicated to the scheme.