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Calvert Infrastructure Maintenance Depot (IMD)

IMD CALM presentation, 6th July 2021

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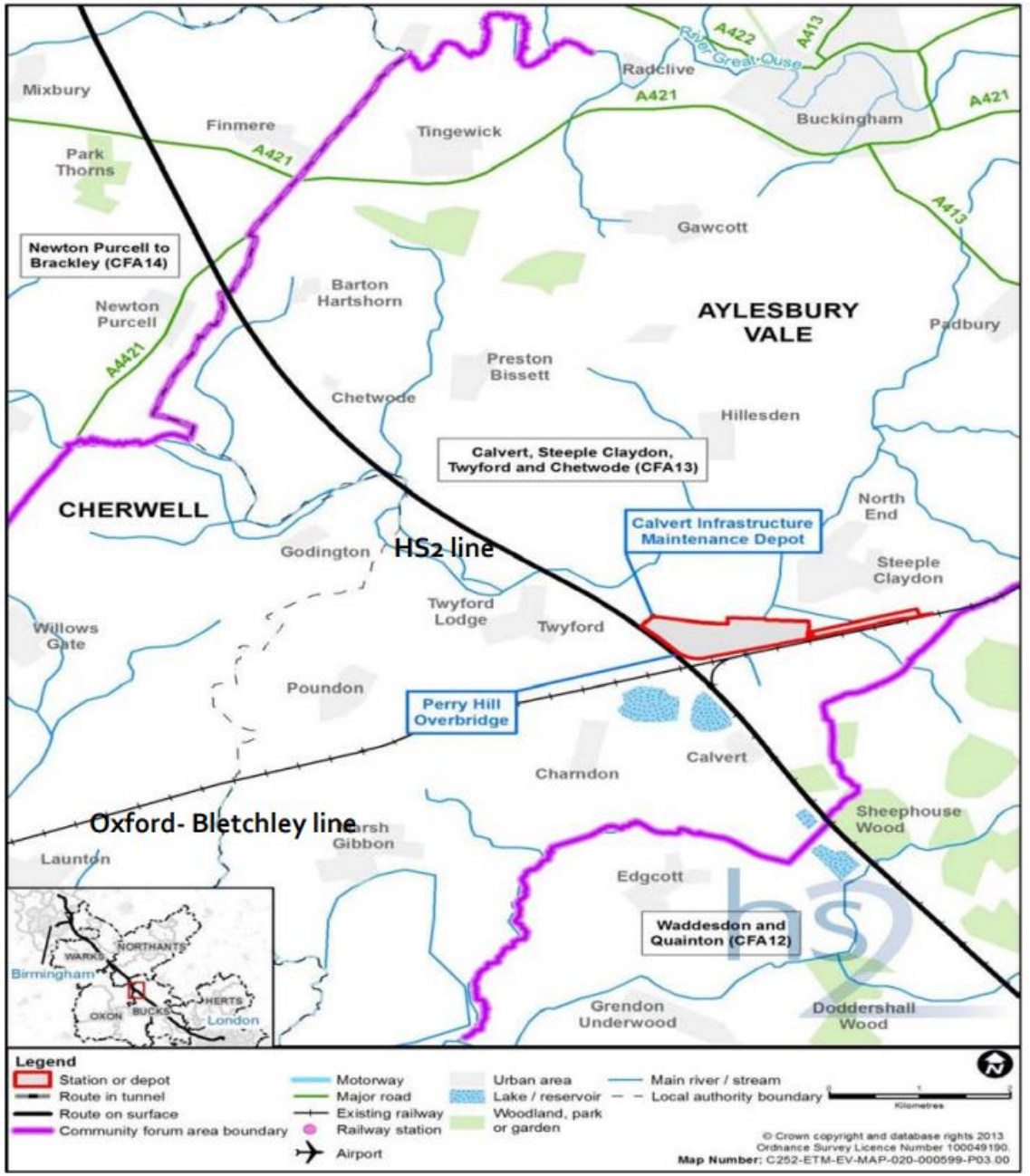
Introducing the IMD

Area map

This map shows the original extent of the IMD, as defined in the 2017 HS2 Act, in the context of the wider area.



Why we are developing the IMD

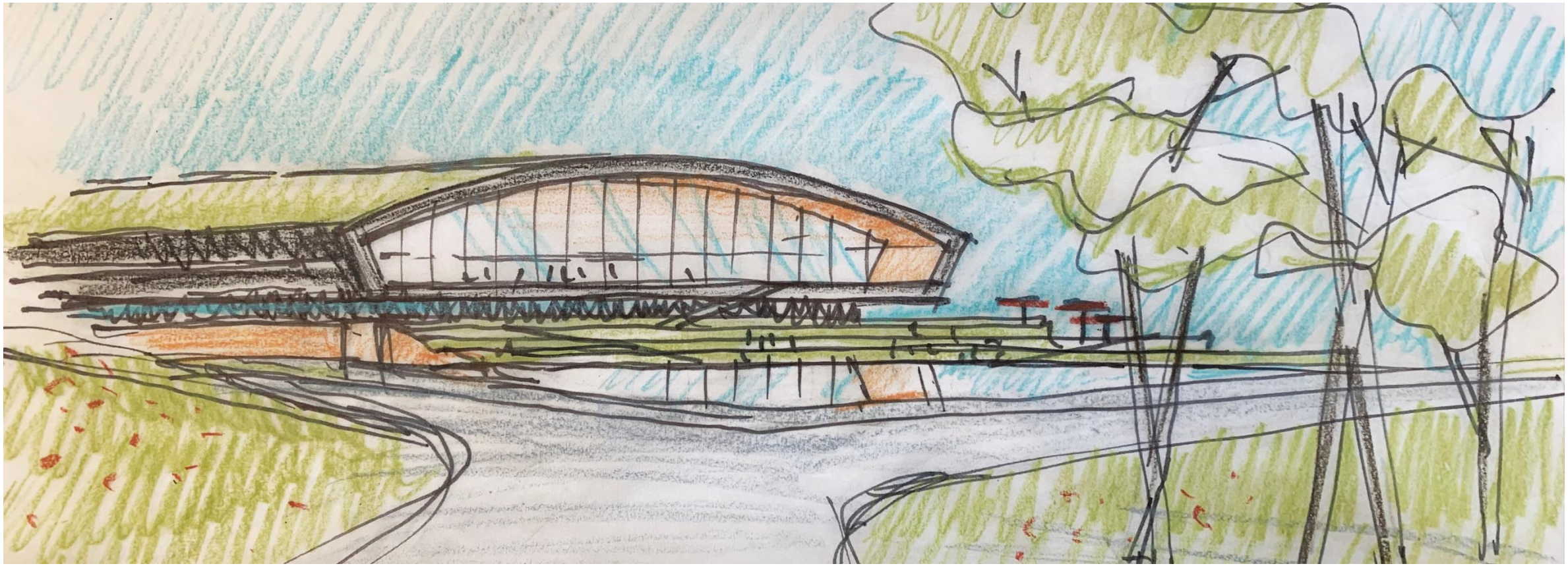
Calvert IMD is one of a small number of Key Design Elements of HS2. Because of this, its design has additional scrutiny, including from the Independent Design Panel.

The 2017 HS2 Act set out what the IMD must deliver, including:

- A base for maintenance teams and equipment, including On-track Maintenance Machines
- A main workshop with rail pit for heavy train maintenance
- Two storage facilities, one covered and one open-air
- A workshop for light maintenance
- Offices and accommodation for the IDM workforce
- Sections of track used purely for training staff

Calvert IMD – Approach to the site

Indicative view of the IMD from the entrance gate



Calvert IMD and Steeple Claydon

This indicative view shows how the IMD will appear from above in relation to Steeple Claydon.

The IMD can be seen in the bottom left, where the East-West Rail and HS2 lines meet.

Steeple Claydon can be seen in the top right.

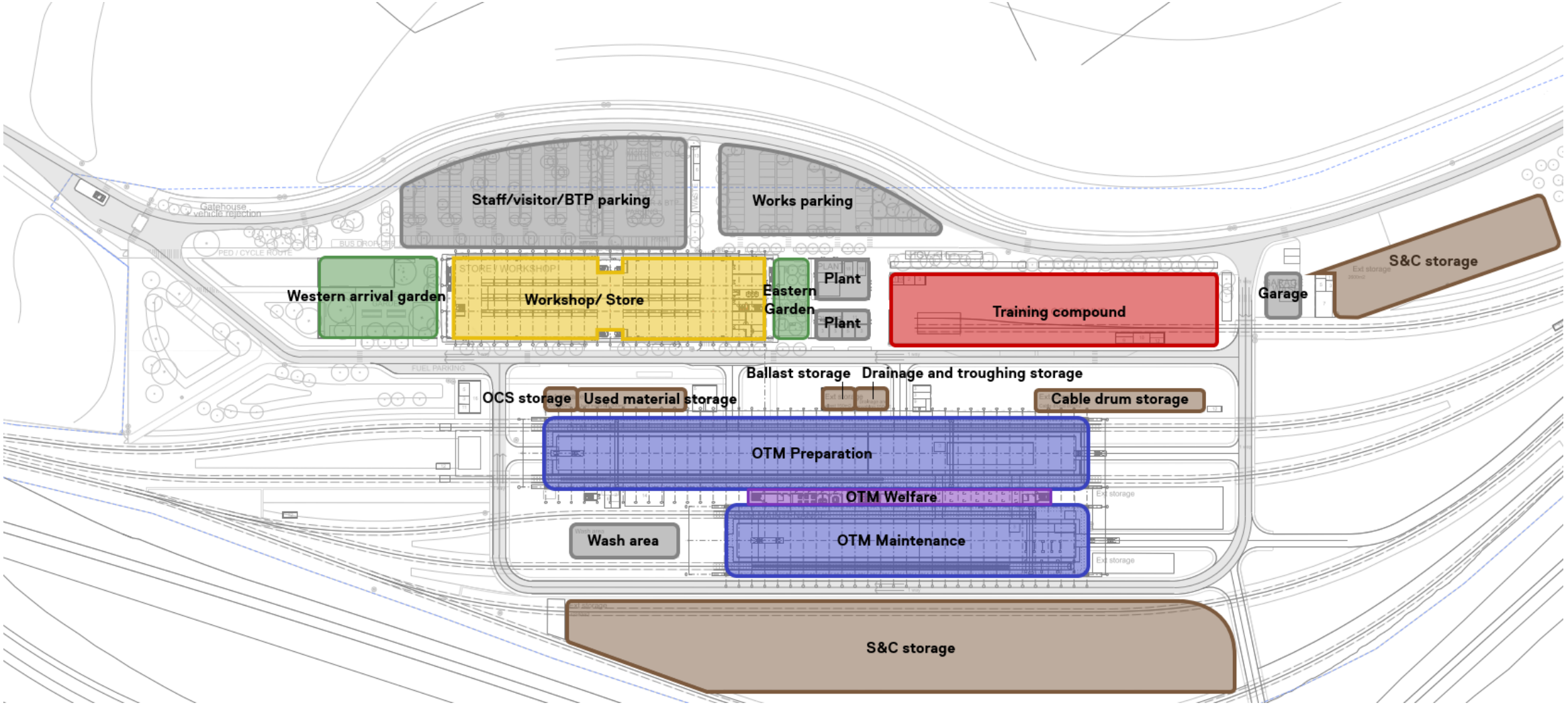
Calvert IMD – view from Steeple Claydon

This view, taken from near St Michael's Church in Steeple Claydon, gives an indication of the visual impact of the IMD. A 5m high earthwork bund coupled with a green roof will provide significant visual mitigation in respect of views from Steeple Claydon.

We are in the process of developing a range of detailed views which we will have at the public consultation in September.

Calvert IMD – Site plan

Indicative site plan



Calvert IMD – Planting plan within the IMD

Indicative site plan

Calvert IMD – Tree planting within the IMD

Indicative site plan

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Using the IMD

What Calvert IMD will be used for

The IMD is **the main HS2 centralised** maintenance facility for Phase One. It's main functions are to:

- plan and manage all the HS2 infrastructure maintenance activities; such as track, overhead power and tunnel maintenance, vegetation management, drainage and cable inspections for equipment etc.
- stable and maintain the on-track maintenance machines (OTMs)
- store strategic spares
- be a centre for training for the maintenance staff
- act as a main hub for the British Transport Police
- provide incident support to the main line

OTM preparation and maintenance sheds

The primary purpose of the IMD is to maintain a fleet of On Track Maintenance Machines (OTMs). These machines will leave the IMD at night to perform maintenance activities on the tracks when the HS2 trains aren't running.

OTMs will leave the depot at around midnight, and return around 5am (Monday to Saturday) or 8am (Sunday).

OTMs are a complex fleet of railway maintenance machines that are used across the rail industry to deliver on a range of different tasks. The machines will stored, configured, maintained and prepared inside the IMD sheds.

The majority of staff at the IMD will be either maintenance staff working on the OTMs or office staff planning and delivering the maintenance activities.

Storing materials at the IMD

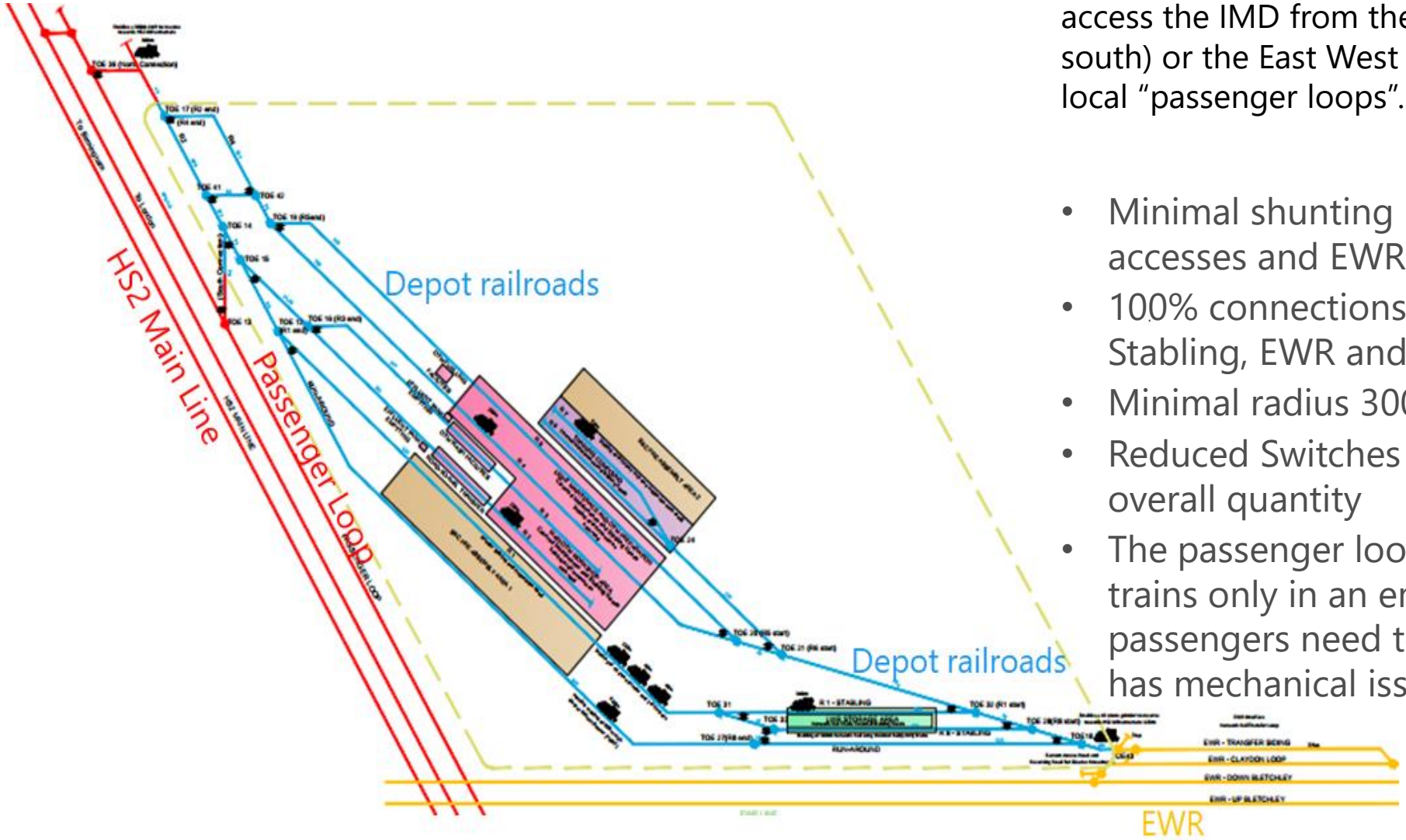
The IMD will be used to store materials for the maintenance of 312km of track in phase 1.

This shows the amount of storage for different types of item:

1. **Switches and crossings**. 15,000m^2 for 13 high speed types, 16 low speed types and 4 switch diamonds.
2. **Plain line rail**. 18m minimum length
3. **Cable drums**. 800m^2.
4. **Overhead power cable components**. 150m^2.
5. **Track drainage pipes and cable troughing.** 150m^2.

All storage areas will have HGV access

IMD Track Schematic



On-Track Maintenance Machines will be able to access the IMD from the HS2 Main Line (north or south) or the East West Rail line (east or west) using local “passenger loops”.

- Minimal shunting movements from Northern accesses and EWR to the Preparation Shed
- 100% connections between all railroads in Stabling, EWR and Northern accesses
- Minimal radius 300m to reduce squeal noise
- Reduced Switches and Crossings type and overall quantity
- The passenger loops will be used by HS2 trains only in an emergency when passengers need to be evacuated or a train has mechanical issues.

Training centre and British Transport Police

The IMD will act as a training centre for rail maintenance staff, with up to 30 people being trained at any one time. Training will be conducted inside the IMD buildings.

The IMD will also be a base for British Transport Police. We expect 8 police staff normally on shift at any one time, with a peak of 30, including shift changeovers and surge manning in response to threats.

A day in the life of the operational IMD

The IMD will operate 24 hours a day, 365 days a year.

- A typical day will begin with the On-track Maintenance Machines (OTMs) leaving the depot at around midnight. The machines could go anywhere on the lines from London to Birmingham to conduct maintenance works. The OTMs will return at around 5am (8am on Sundays).
- During the day the machines will be worked on by the maintenance crews (working in shifts) while office staff plan maintenance along the line.
- British Transport Police will work in shifts from the IMD, with up to 8 staff on a typical shift.
- Training of up to 30 maintenance staff may take place within the buildings
- Up to 180 staff will be on-site at any one time. HS2 will be looking to recruit locally as far as possible.

The IMD is planned to open in 2028. This represents our current expectations for how it will operate once open, but changes are possible. Operations will build up gradually over a number of years from 2028.

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Developing the IMD

Our approach to developing Calvert IMD

Our approach to the development of the IMD starts with the HS2 Act.

- The HS2 Act sets out the framework
- We are currently working on the early design
- We have been working with council officers
- We have updated local councillors throughout 2021
- Public engagement is planned for September 2021
- We plan to submit Schedule 17 in February 2022 – this is the planning condition discharge application for the more detailed design
- The IMD is proposed to be constructed from 2025 and open for trial operations from 2028

HS2 is committed to working with local communities to minimise the disruption and impact from the IMD.

Elements of the IMD set out in the HS2 Act

Many aspects of the IMD were set in law by the HS2 Act.

1. IMD to directly connect to both HS2 and the classic railway to allow maintenance materials and equipment **to be delivered to the depot by rail rather than by road.**

2. To be a level and straight site, at least 1km minimum length, **with road connections, away from built up areas** and flood plains, and in a location where it would provide a low visual impact.

3. A footprint of approximately **37 hectares that is 350m wide at the western end and 100m wide at the eastern end.**

4. Transport of heavy materials will be carried out by rail, while an access road will be used only for light equipment or if transport by rail is not appropriate.

Obligations on HS2 and Bucks Council

The HS2 Act puts a number of obligation on HS2 and Buckinghamshire Council. HS2 and Buckinghamshire Council must seek to ensure that:

- the design **is safe, efficient, and** meets with the requirements of **whole life operation** and maintenance alongside initial buildability;
- the design contributes to the government's pursuit of **sustainable development**, as set out in the National Planning Policy Framework, which involves seeking positive improvements in the quality of the built, natural and historic environment, as well as in people's quality of life
- **the design of all visible elements** of the built and landscaped environment **in both rural and urban areas are sympathetic** to their local context, environment and social setting
- the design cohesion is achieved through **a strong aesthetic ethos** and a **recognisable architectural language**
- the design is developed through engagement to **seek peoples' views and ideas on the aesthetic design of the visible buildings and permanent structures**
- the design has a culture of cost awareness to give cost/quality decisions which achieve best value for the funders
- the design innovation is encouraged to generate best value to funders, users and those affected by the railway
- the design considers the passenger experience

Calvert Railhead

The IMD site will first be used as a railhead for the construction of the HS2 line. The IMD will replace the railhead when it no longer needed.

The railhead will be constructed in a way that minimises waste and allows materials to be re-used as far as possible, and designed to maximise the re-use of materials when it is converted into the IMD.

What is a railhead?

A railhead is a strategic location on a railway system where construction materials are loaded, unloaded or transferred to other areas. Items such as rails, signalling equipment and slab track will be stored at the railhead. Larger items will be delivered by rail, reducing pressure on local roads.

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Improvements to the IMD Design

Design improvements

As part of HS2's value engineering initiative, two major design changes have been introduced for the IMD since the HS2 Phase One Act became law in 2017:

- The alignment through the IMD has been **raised by 3m** to remove complicated drainage works and the need **for nine pumping stations.** This raises the IMD nearer to the level of the surrounding ground level and reduces the total amount of land HS2 needs to take.
- The **Southern Access Chord** into the IMD (an additional length of track) has also been removed to simplify the construction process

Benefits of this approach

- Quicker construction programme (reduced earthworks, drainage and civils works) with less disruption and noise for local community
- Reduction in excavated material by 600,000 cubic meters

Design improvements - footprint reduction

A great deal of work has already gone into reducing the amount of land required for the Railhead and IMD.

Railhead:

- Reduced the amount of track required for the operation of the Railhead **by 6km.**
- Reduced the number of switches and crossings from **50 to 32.**
- **Railhead is 67 hectares smaller than originally planned in the HS2 Act.**
- Reduced earthworks for the Railhead as they are the same for the IMD.
- Less noise and fewer train movements

IMD:

- Sidings reduced from **17 to 7**
- Refined the layout so it no longer needs to occupy the **far eastern end of the site**.
- **Reduced the IMD land taken from 38 hectares to 28 hectares.**
- Less maintenance during operation (fewer trains movements and sidings).
- Sustainable site conversion from the Railhead to the IMD.
- Reduced visual impact of the IMD in the landscape

The total area has been reduced by approximately 33%.

Land allocation in Environmental Statement

The shaded area on this map shows the land originally allocated to the IMD and railhead in the earlier Environmental Statement. Much of the work to date has been to reduce this area and minimise the land use.

Land allocation currently proposed

The grey areas show land currently proposed for the IMD and rail lines – a substantial reduction.

We are proposing extensive planting in the area around the IMD footprint, inside the area marked with the blue line.

Our current intention is for all planting to be native species, based on local habitat types including damp meadows, scrub planting, mixed hedgerows and native tree planting.

Design improvements – slab track

In 2017 the Department for Transport approved the change of the HS2 track from from ballast to slab track. This provided the opportunity to downsize the Railhead through the removal of significant storage areas for ballast, and ballast sidings. Instead of keeping ballast at Calvert, HS2 will stockpile slab track every 5km along the route. These improvements have allowed us to combine the Railhead and IMD in one area.

User experience and sustainability

A lot of early work has gone into ensuring the IMD will be a highly sustainable facility.

Merging of the admin and store blocks; reduction in the length of the northern block

Timber and pre-used steel in floor slabs and structures + glulam timber beams

Simplification of the stepped roof sections on the admin / store block

An advancing strategy for net zero operational emissions (regulated load)

Attenuation swales

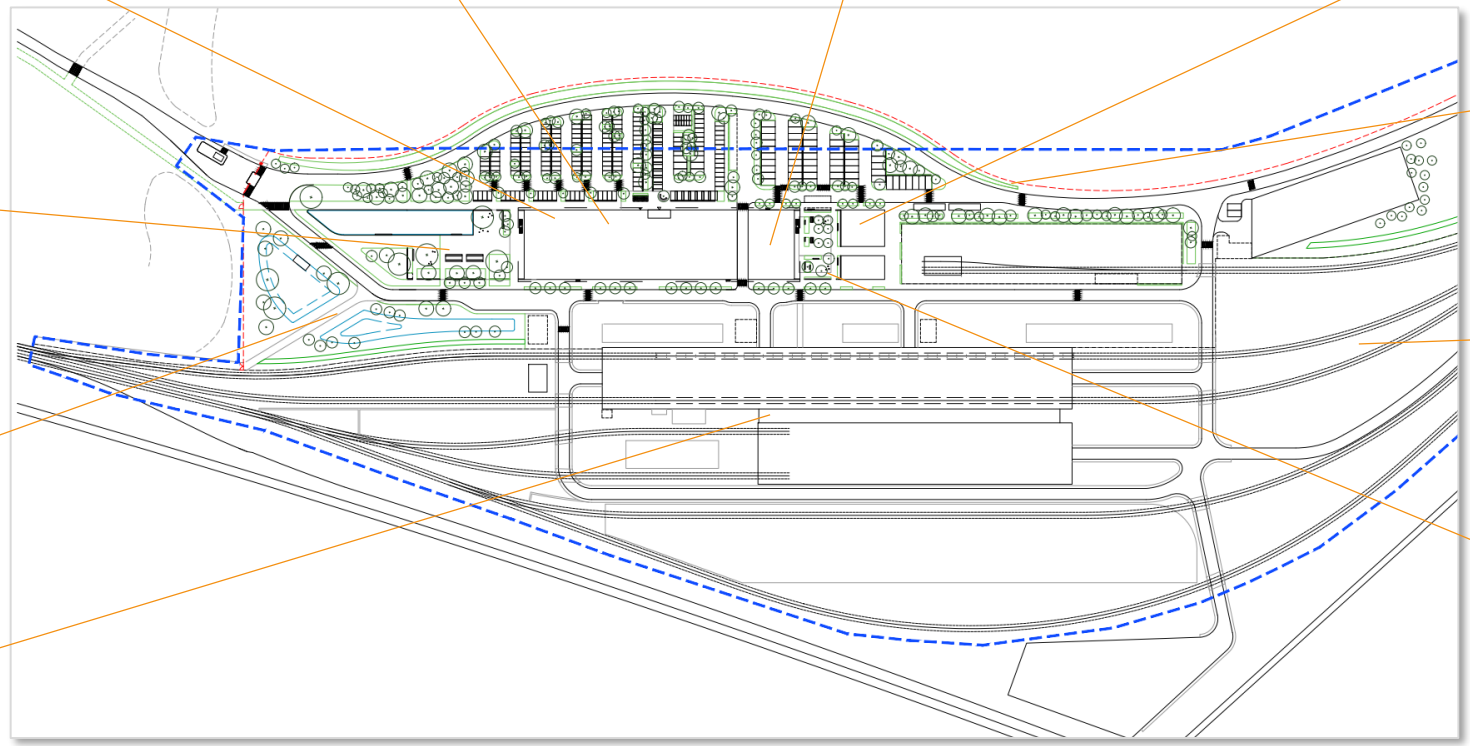
Preservation of space for shuttle bus facility and cycle parking

Reduce walkway lighting

Biodiverse wetlands and ecological ponds as part of SuDs strategy

Staff gardens and green landscape features

Reduction in the size of the offices



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Thank you – any questions?