

## Accessibility at Crossrail stations – Summary of preferred options

### About Crossrail

When Crossrail is fully open by the end of 2019 it will provide easier, quicker and more direct travel on a mix of existing railway lines and newly built tunnels. As a fully integrated part of the Transport for London (TfL) network, the line will provide connections with more Underground lines than any other service, enabling more direct journeys and simpler interchanges, and increase capacity on London's rail network by 10 per cent – the largest increase since the 1940s. Up to 24 trains per hour will operate in the central section, between Paddington and Whitechapel, during peak periods, with each carrying up to 1,500 passengers. It is anticipated that 200 million people will travel on Crossrail each year.

Crossrail will serve 40 stations linking Reading and Heathrow in the west, to Shenfield and Abbey Wood in the east, via 21 km of new twin-bore tunnels under central London.



Crossrail regional route connections map

The Crossrail story is not just about transport, but the UK economy as a whole. This major new suburban rail service for London and the South-East will, for the first time, provide a direct connection between the economic hubs of the City, Canary Wharf, the West End and Heathrow Airport to commuter areas east and west of the capital. Overall, 1.5 million more people will be within a 45 minute commute of major employment centres.

These new transport links, complemented by significant over-station developments, will see Crossrail leave a strong and sustainable economic legacy. As Europe's biggest construction project, Crossrail is also creating thousands of jobs and training opportunities as well as business opportunities for companies of all sizes to supply services and materials. The new railway will support regeneration across the capital and add an estimated £42bn to the economy of the UK. The project is currently employing more than 10,000 people.

## **Current position on Crossrail accessibility**

Crossrail will dramatically improve accessibility provision along most of the route, and bring step-free access to the heart of the West End. All newly built Crossrail stations will have step-free routes, clear and simple signage and information to ensure that the majority of passengers can move independently through stations.

The new Crossrail train fleet will be built to the latest standards of accessibility. Crossrail trains will have dedicated clearly distinguished priority seats and space for wheelchairs. Each carriage will provide both visual and audio information about the train's journey, and a facility to alert and speak to the driver in the event of an emergency. Drivers will also be able to view CCTV images of all carriage interiors.

All new Crossrail Stations and the refurbishment of existing station facilities, will take into account accessibility needs and follow the guidance contained in the DfT publication [Accessible Train Station Design for Disabled People: A Code of Practice](#). This guidance will be used to determine the minimum level of facilities to be provided.

Some examples of the types of support we will offer at Crossrail stations are:

- Meeting customers upon arrival at a station
- Help with purchasing tickets
- Help getting around the station
- Assistance in boarding or alighting from a train ranging from 'a helping hand' to use of a ramp if required
- Help in making train connections
- Help with luggage
- Liaising with other train operating companies or London Underground where a customer is using the services of more than one operator.

TfL's train operator (known as the CTOC) will, as part of its operating licence, publish a guide to services provided as part of its 'disabled person's protection policy'. This document will provide details of all facilities and how to obtain further help or assistance.

Step-free access will be provided at 33 of the 40 stations on the route. The majority of journeys will be accessible for disabled passengers and those with buggies or heavy luggage. New stations will be step-free from street to train. Where existing stations are step-free to the platform, passengers can use a 'turn up and go assistance service' and train access will be provided by manual ramps. Provision at individual Crossrail stations is as follows:

- Twelve stations - Paddington, Bond Street, Tottenham Court Road, Farringdon, Liverpool Street, Whitechapel, Canary Wharf, Custom House, Woolwich, Abbey Wood and Heathrow Airport (two stations) - will have step-free access from street to train
- Twenty-one stations will have step free access from street to platform
- Two stations (Taplow and Langley) are step free on the London-bound platform
- Five stations (Maryland, Manor Park, Seven Kings, Hanwell and Iver ) are currently not step-free

### **Scope of work**

In 2013 the Crossrail Joint Sponsors (the Department for Transport and Transport for London) stated that their aim was to make the whole Crossrail route accessible. In August the Mayor of London announced that he would ensure funding for this would be found. Crossrail Ltd then started work on feasibility studies to find out the options to provide step-free access from street to platform at each of the seven stations that are currently not step-free within the scope of the Crossrail project.

The preferred option for each of these stations represents a practical, workable solution which could be implemented at Seven Kings, Maryland, Manor Park and Hanwell within the Greater London Authority (GLA) area; Iver and Taplow in South Buckinghamshire; and Langley in Berkshire. Further work will need to be done to verify the technical and engineering assumptions made in the reports.

### **Overview of the preferred options**

Practical schemes for all of the seven locations have been identified and this paper provides an overview of the preferred option at each station:

- **Seven Kings:** A new footbridge with three lifts and stairs, accessed from a walkway on the embankment south of platform one
- **Maryland:** Three lifts inside the existing building
- **Manor Park:** A new footbridge with three lifts and stairs
- **Hanwell:** A new footbridge with two lifts sited away from the listed station
- **Iver:** Two new lifts on existing footbridge with a long ramp to platform one which is occasionally used by Crossrail services
- **Langley:** A new footbridge with three lifts and stairs
- **Taplow:** A new footbridge with two lifts and stairs

An initial review of the proposals has not revealed any major construction although the works at Hanwell, Manor Park and Seven Kings will require some weekend road closures, as well as weekend possessions of the railway.

In line with TfL network service standards, the Crossrail train operator will staff the stations from first to last train, so that staff assistance will always be available. The lifts will normally be available at all times trains are running.

Further information about these schemes can be found in Appendix A.

## **Implementation**

There should be opportunities to implement some of these schemes during the current timeframe of the Crossrail project, once capital funding is available and planning permission is secured. There are a number of delivery agents including Crossrail Limited, Network Rail and TfL. It seems likely that most schemes would require a planning application under the Town and Country Planning Act (TCPA).

If the works are added to the Crossrail scope, Crossrail Limited is obliged to adhere to the provisions and requirements in the Crossrail Act. For example, an assessment against the Crossrail 'Environmental Design Checklist' would need to be made for each station scheme to assess whether it presents any new significant impacts over and above those reported in the 2005 Crossrail Environmental Statement.

## **Indicative costs**

The total indicative capital cost to implement the options outlined in this paper is circa £30m (subject to risk allowances). This does not include a provision for other costs such as future maintenance and operating costs.

## **Next steps**

Rail for London is funding ongoing design work to maintain momentum while sources of capital funding are explored.

The next stage is to produce a detailed design for each of the seven schemes in conjunction with Network Rail and local authorities. This stage of work is due to be completed by the middle of 2015.

This work will deliver designs which will be suitable for tendering purposes, ready for commissioning and implementation. They will also be suitable for submission for

planning applications, if needed. This puts us in the best position to implement the schemes when the funding position is resolved.

Over the next few months we will be taking the opportunity to meet with stakeholders and discuss the plans with them working through the following steps:

- Reviewing the potential funding sources
- Agreeing funding sources
- Producing detailed designs (up to the middle of 2015)
- Engaging with stakeholders

## **Appendix A: Preferred Options for each station**

## **Seven Kings**

### **Station characteristics**

Seven Kings station is located on the Great Eastern mainline railway in the London Borough of Redbridge, east London. It has an annual footfall of 2.1 million passengers (Office of Rail Regulation, ORR, 2012/13). When Crossrail is open, the annual footfall is expected to increase to 3.5 million by 2026.

There are two bus stops in the vicinity of the station, both of which are accessible.

### **Catchment areas**

TfL's analysis using 2011 Census data shows that there are 8,700 people living within the 960 metre catchment area of Seven Kings station who are under the age of four, over the age of 65, or have a disability which limits their day to day activities. The station also serves two medical centres and six schools.

### **Proximity to other step-free stations**

The nearest step-free Crossrail station will be Goodmayes, which is approximately 0.8km away and has a direct bus link to Seven Kings.

### **Proposed scheme**

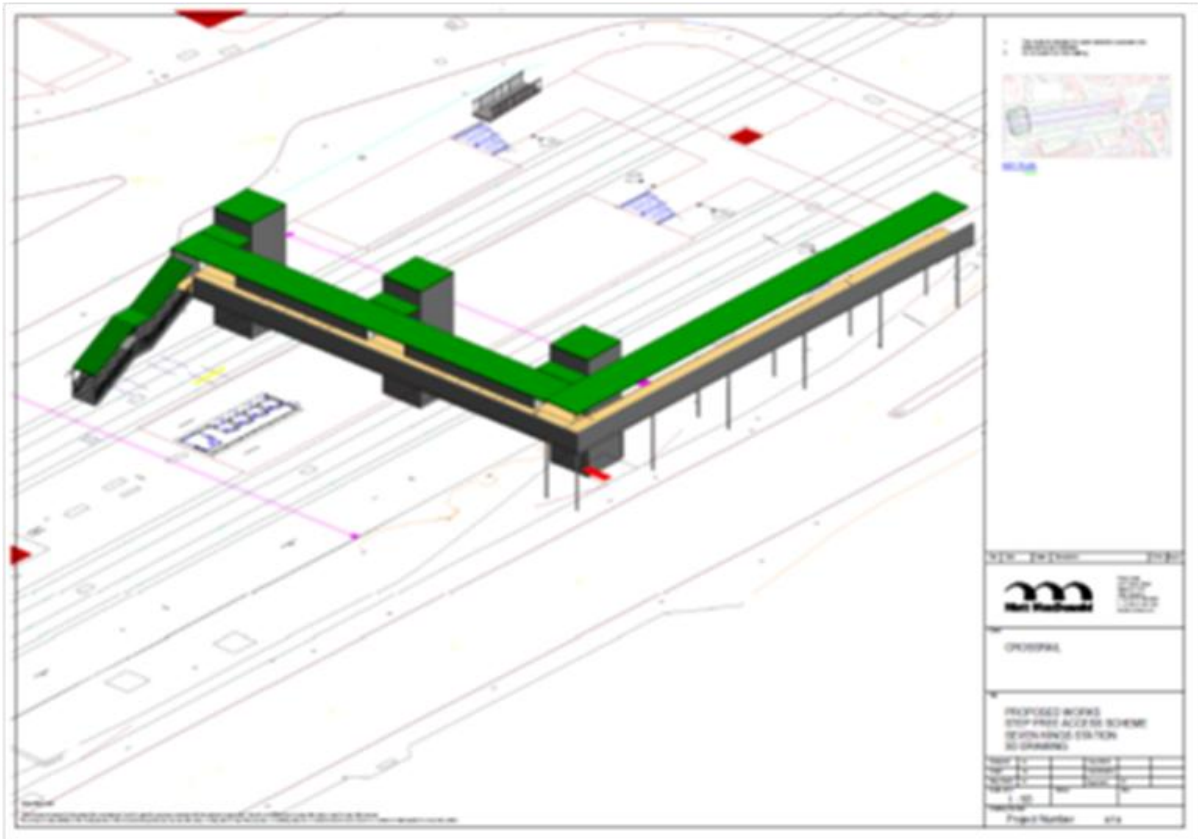
This option provides a walkway on the railway land to the south of the station connecting to a new footbridge with lifts to all platforms. In addition, an emergency staircase at the north side of the bridge will avoid a dead end. Those not needing step-free access can continue to use the station's existing staircases.

### **Passenger walkthrough**

Passengers who need to use the lifts to get to the platforms will enter the step-free ticket hall from the street, and pass through the gateline to the existing footbridge. A clearly signed and well lit route will sign post them to the left and past the steps to platform one and to the right into a new covered pathway leading down the side of the station. This will link to a new bridge over all platforms. The journey to this point has been step free

The bridge will have lifts to all platforms, as well as stairs at the far end to avoid a dead end. All lifts will be through-lifts with no requirement to turn within them. The route to the lifts will be clearly signed.

The design concept is illustrated in Figure 1 below.



**Figure 1: Seven Kings Preferred Option**

### **Business case**

An assessment of the value for money of this scheme has been carried out. The benefit to cost ratio is calculated as 0.8:1, assuming demand increases in line with current Crossrail forecasts.



## **Hanwell**

### **Station characteristics**

Hanwell station is located on the Great Western mainline railway in the London Borough of Ealing, west London. It is a Grade 2 listed station on an embankment which is currently accessed by stairs from a low level underpass.

It has an annual footfall of 0.4 million passengers (ORR 2012/13). When Crossrail opens annual footfall is expected to increase to 0.9 million by 2026. There are two bus stops in the vicinity of the station, both of which are fully accessible.

### **Catchment areas**

TfL's analysis using 2011 Census data shows that there are 5,700 people living within the 960 metre catchment area of Hanwell station who are under the age of four, over the age of 65, or have a disability which limits their day to day activities. The station serves Ealing Hospital, five schools, a residential care home and Hanwell Library.

### **Proximity to other step-free stations**

The nearest step-free station (upon completion of committed schemes) is West Ealing, which is approximately 1.3km away. The E3 bus links both stations, although the bus stops are some distance from both Hanwell and West Ealing stations.

### **Proposed scheme**

This option involves building a new footbridge with lifts to all platforms and an emergency staircase from the bridge to platform three. The lift to platform three will start at street level and take passengers to either platform three or to the footbridge. The lift to platforms one and two will connect the platform to the bridge.

The entrance to the lifts will be on the north side of the station, to the east of the current entrance. In discussion with English Heritage, an alternative scheme at Hanwell is being explored which is less visually intrusive and installs lifts within the listed structures.

### **Passenger walkthrough**

Passengers needing to get to the platforms can take the lift from the pavement on the north side of the station. By arrangement with London Borough of Ealing, disabled drop-off and/or parking at this location is being looked into. If the London (east)-bound platform is required, passengers will get off the lift at its first level, while

passengers needing trains on the west-bound, will take the lift to the next level. Here, a new bridge over the railway will take them to another lift which they can take to the central platforms. All lifts will be through-lifts and there will not be a requirement to turn in the lift.

To exit the platform, passengers can take the same well sign posted route in reverse,

The current design concept is illustrated in Figure 2 below.

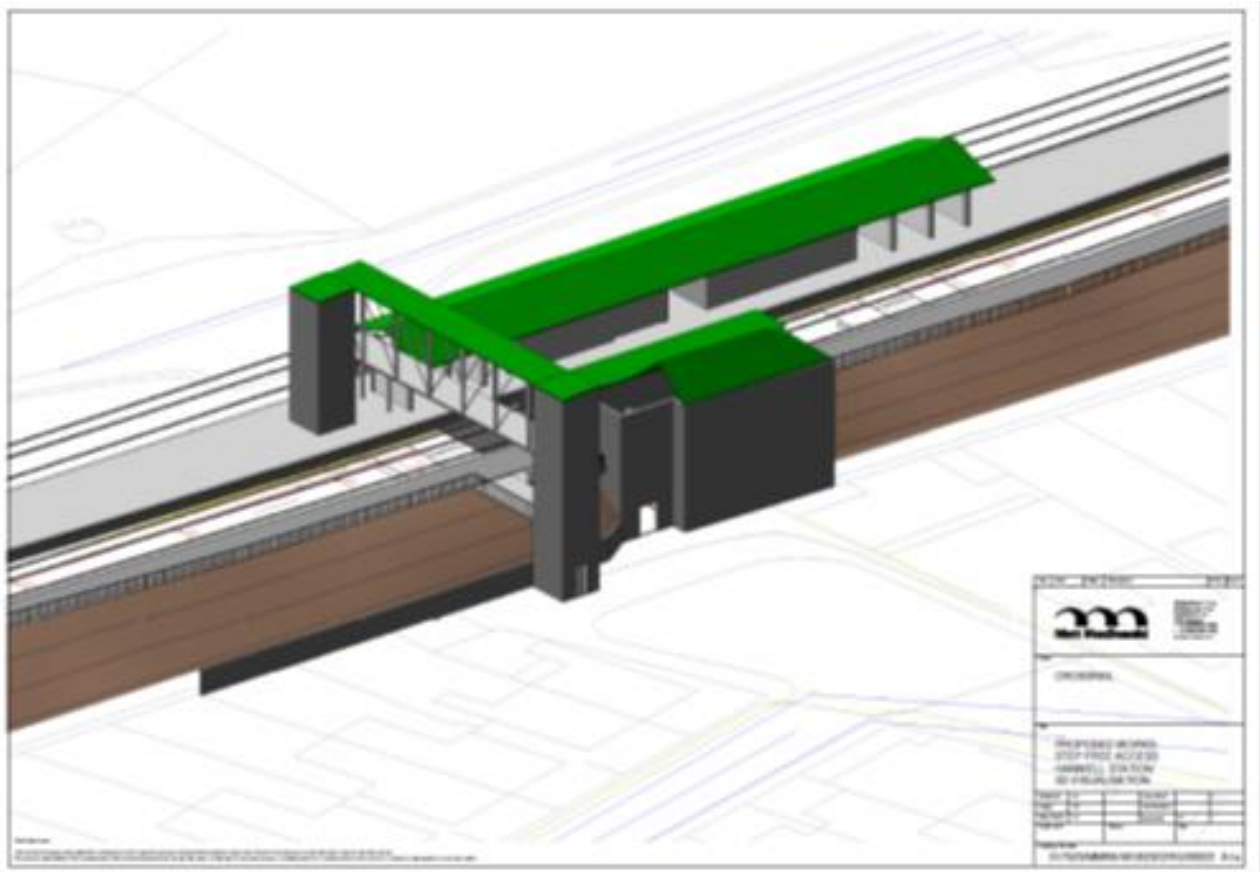


Figure 2 : Hanwell Preferred Option

### Business case

An assessment of the value for money of this scheme has been carried out and the benefit to cost ratio is calculated as 0.2: 1, assuming demand increases as per the Crossrail forecasts.

## **Maryland**

### **Station characteristics**

Maryland station is located on the Great Eastern main line railway in the London Borough of Newham, East London. The station is located on a bridge over the railway line. It has an annual footfall of 0.7 million passengers (ORR 2012/13). Once Crossrail is open, the annual footfall is expected to increase to 4.5 million by 2026. There is a bus stop in the vicinity of the station which is fully accessible and another is planned in 2013/14.

### **Catchment areas**

TfL's analysis using 2011 Census data shows that there are 8,800 people living within the 960 metre catchment area of Maryland station who are under the age of four, over the age of 65, or have a disability which limits their day to day activities. The station serves three schools, the University of East London, the College of Technology and Management, and Bow County Court.

### **Proximity to other step-free stations**

The nearest step-free station is Stratford, which is approximately 0.8km away, and the stations have a direct bus link.

### **Proposed scheme**

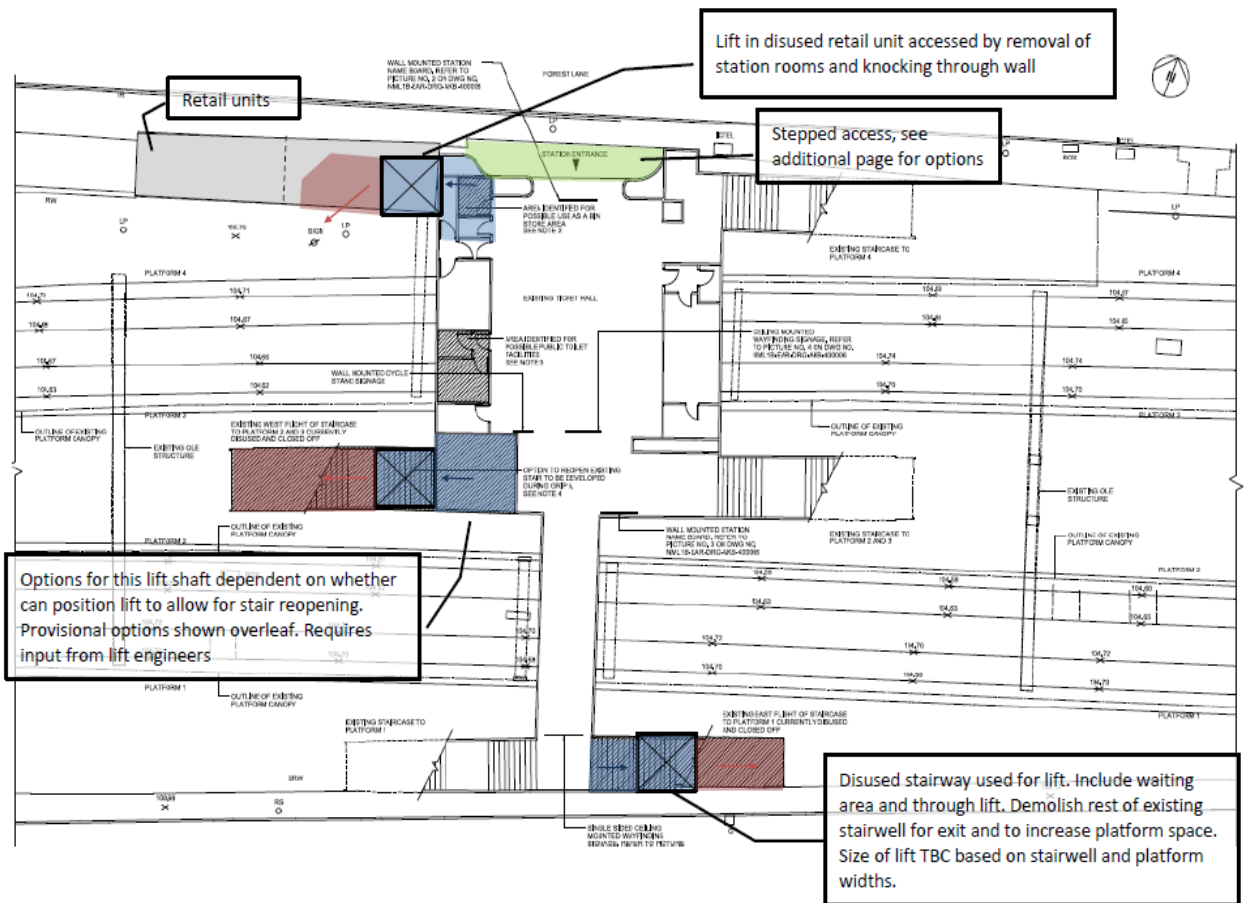
This option sees the construction of three lifts within the station. Maryland station has a stepped entrance, so the first of lift provide a short rise from pavement to concourse, and access to platform four. Two further lifts will be built within the disused staircases on platforms two and three and platform one.

### **Passenger walkthrough**

Passengers who want to travel from Maryland can take a short rise lift to the right of the station entrance up to concourse level. The same lift will also give access down to the fast line platforms which Crossrail services will use occasionally. Clear signage will direct passengers down the existing passageways from the concourse to new lifts, adjacent to the current stairs, which will take them to the central platforms and the London-bound platform. It may not be possible to install through-lifts at all three locations, but if this is not possible then the lift cars will be large enough to turn around in.

A passenger arriving at Maryland will reverse this journey to exit the station.

The design concept is illustrated in Figure 3 below.



**Figure 3 : Maryland Preferred Option**

### **Business case**

An assessment of the value for money of this scheme has been carried out and the benefit to cost ratio is calculated as 1.57: 1, assuming demand increases as per the current Crossrail forecasts.

## **Manor Park**

### **Station characteristics**

Manor Park station is located on the Great Eastern mainline railway in the London Borough of Newham, East London. It is situated on a bridge at the east end of the platforms. It has an annual footfall of 1.7 million passengers (ORR 2012/13). When Crossrail opens annual footfall is expected to increase to 6.5 million by 2026. There is a bus stop in the vicinity of the station, which is accessible, and another one is planned for 2014/15.

### **Catchment areas**

TfL's analysis using 2011 Census data shows that there are 8,100 people living within the 960 metre catchment area of Manor Park station who are under the age of four, over the age of 65, or have a disability which limits their day to day activities. The station also serves three primary schools and Manor Park library.

### **Proximity to other step-free stations**

The W19 bus provides a link to Ilford station which is being made step-free under the Crossrail project.

### **Proposed scheme**

This option involves extending the walkway to platform two and three to a new footbridge with lifts and stairs access to all platforms. The current walkway to platform one would be removed. All passengers would pass through the gateline in the ticket hall and follow the clearly sign posted options to use either the stairs or lifts depending on their needs or preference.

### **Passenger walkthrough**

Passengers wanting to use the lifts would enter through the step free entrance to the station, and take a clearly sign posted new passageway to a new bridge across the railway line. From this bridge, new stairs and lifts would provide access to all platforms.

The lift to the London-bound platform may not be a through lift as the platform is very narrow and may not provide a safe route along the edge of the platform. If this is the case, then the lift will be sized to permit turning around. The other two lifts will be through-lifts.

Passengers arriving at Manor Park would take the reverse journey to exit the station.

The changes are illustrated in Figure 4 below.

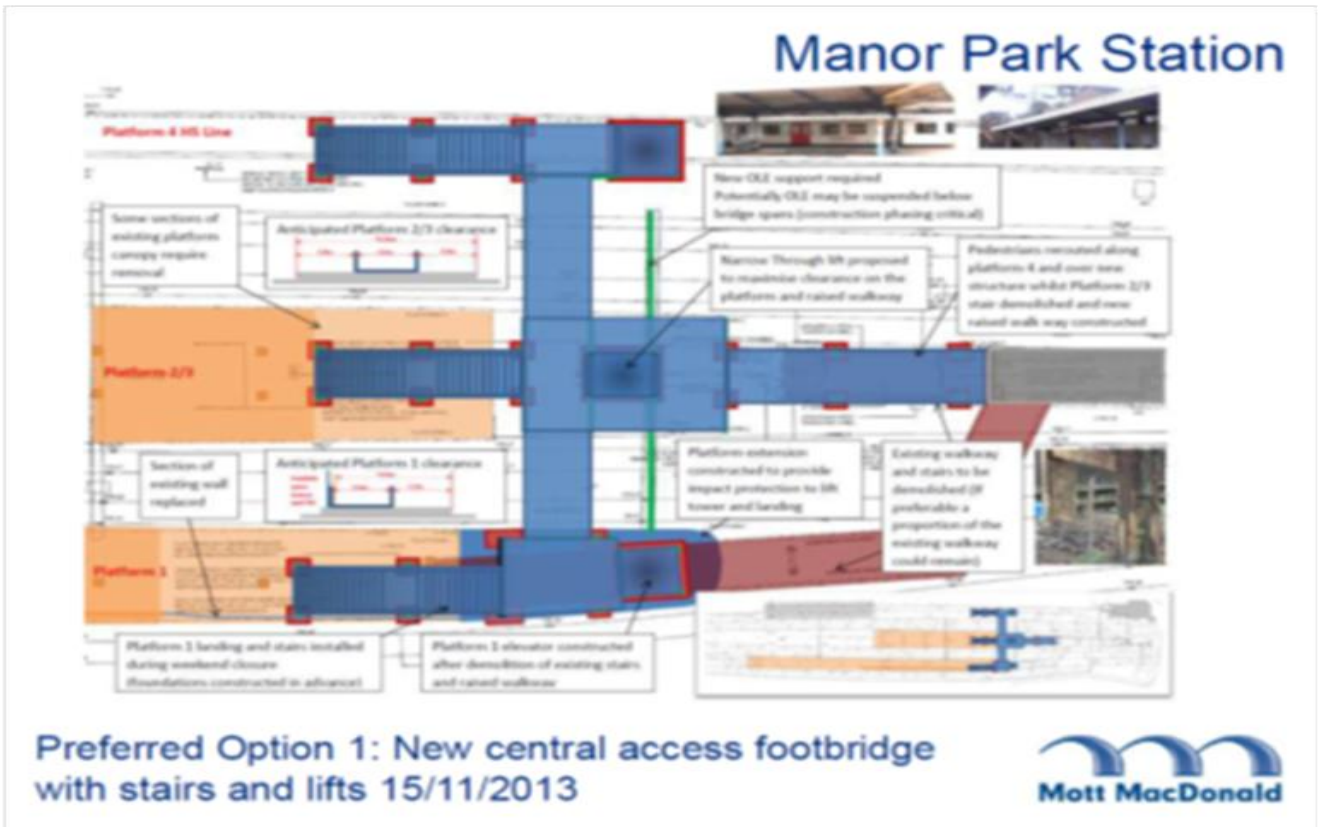


Figure 4: Manor Park Preferred Option

### Business case

An assessment of the value for money of this scheme has been carried out and the benefit to cost ratio is calculated as 1.5: 1, assuming demand increases as per the Crossrail forecasts.

## **Iver**

### **Station characteristics**

Iver station is located on the Great Western mainline railway in Buckinghamshire. It has an annual footfall of 0.19 million passengers (ORR 2012/13). The station is accessed via an existing footbridge over the railway with a small entrance building located at the southern end on Wellesley Avenue. When Crossrail opens, the annual footfall is expected to increase to 0.38 million by 2026. There are two bus stops in the vicinity of the station, providing onward links to destinations including Uxbridge and Wexham Park Hospital.

### **Catchment areas**

TfL's analysis using 2011 Census data shows that there are 500 people living within the 960 metre catchment area of Iver station who are under the age of four, over the age of 65, or have a disability which limits their day to day activities. The station also serves a sports centre.

### **Proximity to other step-free stations**

The nearest step-free station is West Drayton which is approximately 3km away; however there are no direct bus services.

### **Proposed scheme**

This option would involve installing a new ramp from the west side pavement on Wellesley Avenue up to the existing footbridge. Access to platforms two and three and four will be provided by removing the panels opposite the existing stairs and installing two new lifts.

In addition, a ramp will be installed down to the fast line platform (platform one) which will be used occasionally by Crossrail trains. This ramp is quite long but it is expected to have only very occasional use.

### **Passenger walkthrough**

All passengers will approach the station from Wellesley Avenue along an improved footpath. There is currently no railway land available for drop off points but this issue will be discussed with South Buckinghamshire County Council who may be able to help. Passengers will use a short ramp to access the existing footbridge from where they can use new lifts for step free access to all platforms normally used by Crossrail services. For the occasional times when the fast line platforms are in use a ramp provides access to and egress from platform one. This ramp will be just over 60m long and will be compliant with modern standards.

The changes are illustrated in Figure 5 below.

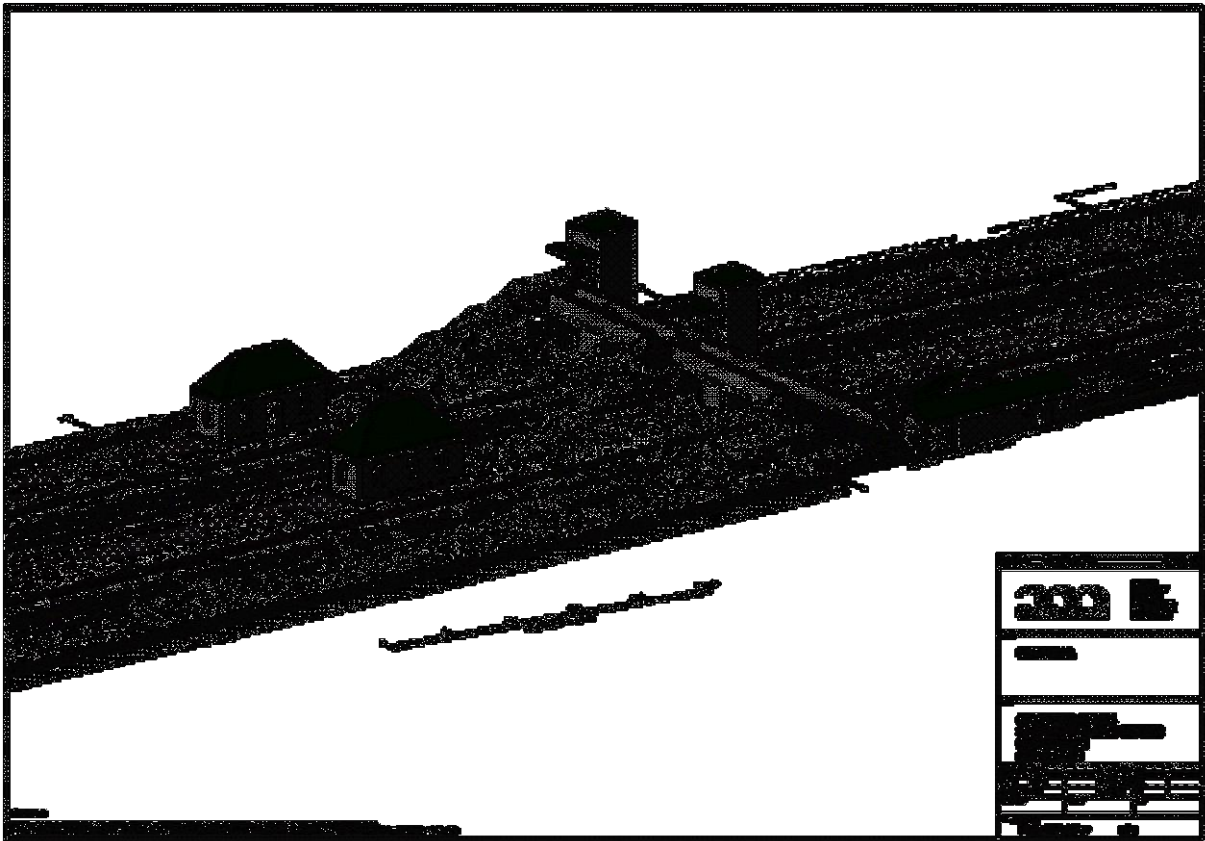


Figure 5 : Iver Preferred Option

### Business case

An assessment of the value for money of this scheme has been carried out and the benefit to cost ratio is calculated as 0.13:1, assuming demand increases as per the Crossrail forecasts.



## **Langley**

### **Station characteristics**

Langley station is located on the Great Western main line railway in Berkshire. It has an annual footfall of 0.72 million passengers (ORR2012/13). The station is located on the north side of the railway and is step-free in the London-bound direction, but currently has a stepped footbridge leading to the west-bound platform. When Crossrail opens, the annual footfall is expected to increase to 1.21 million by 2026. There are two bus stops in the vicinity of the station, providing links to locations including Abbots Langley and Watford.

### **Catchment areas**

TfL's analysis using 2011 Census data shows that there are 3,100 people living within the 960 metre catchment area of Iwer station who are under the age of four, over the age of 65, or have a disability which limits their day to day activities. The station also serves East Berkshire College which has approximately 11,000 students.

### **Proximity to other step-free stations**

The nearest step-free station is Slough which is approximately 4km away.

### **Proposed Scheme**

This option would see a new footbridge built to the east of the existing bridge with lifts and stairs to all platforms. The existing stepped bridge will be retained as a route over the railway but its northern entrance will be restricted to the car park and the existing access to the central platform will be closed so that all passengers will pass through the proposed gateline on their London-bound journey.

### **Passenger walkthrough**

Any passenger requiring the lifts will enter the station from the north side where there parking bays provided for badge holders. A new bridge with lifts to all platforms will be located close to the station entrance building just beyond the existing refreshments stall and will be clearly signed. It is intended that step free access to the station from the south will be arranged via a gate activated by staff on request so that any passenger requiring the use of the lifts from that location will be able to do so without having to arrange transport to the north side via public roads.

The changes are illustrated in Figure 6 below.



**Figure 6: Langley Preferred Option**

**Business case**

An assessment of the value for money of this scheme has been carried out and the benefit to cost ratio is calculated as 0.36:1, assuming demand increases as per the Crossrail forecasts.

## **Taplow**

### **Station characteristics**

Taplow station is located on the Great Western mainline railway in Buckinghamshire. It has an annual footfall of 0.24 million passengers (ORR2012/13). The station is located on the north side of the railway and is step-free in the London-bound direction, but currently has a non-accessible footbridge leading to the Maidenhead-bound platform. When Crossrail opens, the annual footfall is expected to increase to 0.48 million by 2026. There are two bus stops in the vicinity of the station, providing links to locations including Wexham Park Hospital and Bracknell.

### **Catchment areas**

TfL's analysis using 2011 Census data shows that there are 900 people living within the 960 metre catchment area of Taplow station who are under the age of four, over the age of 65, or have a disability which limits their day to day activities. The station also serves a school and a nursery within ten to fifteen minutes walk.

### **Proximity to other step-free stations**

The nearest step-free station (when works are completed) is Burnham, which is approximately 3km away.

### **Proposed scheme**

It is proposed that a new footbridge be installed with lifts and stairs to platform four and the central platform two and three. These are the only platforms served at this station as platform one is decommissioned. There is already a step-free route from the pavement to platform four, through the step-free entrance.

### **Passenger walkthrough**

Passengers will access the new footbridge through the existing station building as the route to the London bound platforms is already step-free. Passengers requiring trains to stations to Reading will turn left out of the station building where a through-lift will be available to the bridge and a further through-lift will provide access to and egress from the Reading platform. The car park to the south will not have lifts installed but dedicated parking bays for blue badge holders, and drop off points will be provided on the north side, next to the station building.

The heritage bridge will be retained as part of this scheme.

The changes are illustrated in Figure 7 below.



Figure 7: Taplow Preferred Option

### Business case

An assessment of the value for money of this scheme has been carried out and the benefit to cost ratio is calculated as 0.2:1, assuming demand increases as per the Crossrail forecasts.