

Date: 17 June 2015

Item: Crossrail On Network Stations Improvement Programme

This paper will be considered in public

1 Summary

| ONSIP                        |                            |                            |                                |                 |
|------------------------------|----------------------------|----------------------------|--------------------------------|-----------------|
| Existing Financial Authority | Estimated Final Cost (EFC) | Existing Project Authority | Additional Authority Requested | Total Authority |
| £ 93.6 m                     | £ 93.6m                    | £0m                        | £ 93.6m                        | £ 93.6m         |

**Authority Approval:** Approval is requested for budgeted Project Authority of £93.6m within the approved business plan. £14m of this total has been granted by the Department for Transport (DfT) to cover the installation of three lift schemes.

**Outputs and Schedule:** The programme comprises works at twenty two surface (On Network) stations to be served by TfL’s Crossrail services but where the Crossrail project is neither required nor funded to enhance the relevant facilities. The programme of work has four key outputs, to:

- complete the accessibility of Crossrail by installing lifts at seven stations which would otherwise remain non-accessible;
- provide for ticket gates at seven stations that would otherwise remain un-gated and vulnerable to fraudulent travel;
- remodel ticket halls to provide for larger and better public areas; and
- improve the condition of currently poor station infrastructure to improve and enhance customer facilities and experience.

The work has completed its feasibility stage and is ready to progress to implementation. Subject to approval it is planned to complete the works on the Great Eastern (Shenfield) line by May 2017 (coinciding with introduction of the first of the new Crossrail ‘Class 345’ trains), and in the West by the time the full Crossrail network opens in December 2019.

2 Recommendation

2.1 The Committee is asked to note the paper and approve Project Authority for £93.6m for the Crossrail On Network Stations Improvement Programme works.

### **3 Background**

- 3.1 While the Crossrail project is creating significant new infrastructure through Central London and is providing some new station buildings along the surface sections to East and West, many of the existing stations between Shenfield and Reading will not be materially improved by the Crossrail project, and seven of them will remain non-accessible. TfL intends to remodel and improve those stations, to make the remaining seven accessible from street to platform, to permit gatelines to be installed within larger public areas and provide better facilities for customers. In terms of scope and delivery the Crossrail On Network Stations Improvement Programme (ONSIP) is following the same principles as the successful upgrade of stations on the London Overground network (see paragraph 4.4 for further details).
- 3.2 The accessibility schemes, which will make Crossrail a fully accessible railway, from street to platform, have attracted strong support from the Mayor and the Secretary of State for Transport as well as other stakeholders such as local authorities and Transport for All. The DfT has provided £14m to part fund the implementation of the accessibility plans.
- 3.3 It is critical that the works are let shortly so as to be completed in time to meet Stage 1 opening (new Crossrail trains and branding) on the Great Eastern in May 2017 and Stage 5 (start of Crossrail services to Reading) on the Great Western by December 2019. On current plans, the lift schemes on the Great Eastern will only meet these dates if they are in a position to take advantage of railway possessions already booked by others in early 2017.
- 3.4 While Crossrail is also undertaking other project works on the Great Eastern during the same period of time it is generally possible to separate the works so that the ONSIP activities and Crossrail do not impede each other. Work has commenced to integrate the programmes at a detailed level and this will continue.
- 3.5 The proposed works contribute to the delivery of the Mayor's Transport Strategy as follows:
  - (a) Proposal 5 which covers the successful completion of Crossrail and its integration with the wider transport network;
  - (b) Proposal 13 which covers improved ambience and amenities at stations; and
  - (c) Proposal 40 which covers improvements to the physical accessibility of the transport network.
- 3.6 The history of neglect at the relevant stations is the source of some risk as only limited asset information is available. This risk has been assessed through a formal quantified risk assessment and this has resulted in a risk provision of circa £18m being included in the overall budget for the works.
- 3.7 Financial Authority is in place within the Business Plan for the ONSIP scope and Procurement Authority will be sought in due course.

## 4 Proposal

### Preferred Option

- 4.1 There are two inter-linked elements within the ONSIP works: the lift schemes and the station improvements.
- 4.2 The lift schemes entail the installation of a total of eighteen new lifts, at seven stations, as follows:
- (a) Maryland – three new lifts installed internally to the existing station buildings;
  - (b) Manor Park – a new footbridge with three lifts;
  - (c) Seven Kings – a new footbridge providing step free access for persons of restricted mobility via three lifts, with existing route to platform unchanged;
  - (d) Hanwell – one lift installed internally and one within a new, free-standing, structure;
  - (e) Langley – a new footbridge with three lifts;
  - (f) Iver – two new lifts attached to existing footbridge plus a ramp to the fast line platform; and
  - (g) Taplow – a new footbridge with two lifts.
- 4.3 The station improvements will cover all stations at which Mass Transit Railway Corporation (Crossrail) Limited (MTR), the operator of Crossrail, will be Station Facility Owner, comprising eleven stations on the Great Eastern line between Maryland and Brentwood and eleven on the Great Western line between Acton Main Line and Taplow. The work will vary from station to station as some are severely neglected while others are benefiting from some improvement under the Crossrail scope. At each location, however, some work will be required as Crossrail is not performing an entire renovation of any of the stations in question.
- 4.4 The station improvement works will generally cover the following:
- (a) renovate the exterior of existing buildings;
  - (b) enlarge entrances, where practicable, and install automatic doors;
  - (c) replace or repair floor and wall finishes, ceilings, joinery etc.;
  - (d) install new lighting, signage and wayfinding where necessary
  - (e) remove clutter throughout each station;
  - (f) remove or relocate all surface mounted cables;
  - (g) open up any covered windows to introduce natural light;
  - (h) remodel ticket halls to reduce space taken up by non passenger uses;
  - (i) repair and redecorate canopies;
  - (j) provide improved waiting facilities at platform level; and

(k) install improved seating.

- 4.5 The overall standard of finish planned is similar to that already delivered on the Overground network although, due to the poor condition of the stations and the remodelling of ticket halls within ONSIP, the work to achieve this result is, in places, more extensive.
- 4.6 At some locations, particularly at Ealing Broadway, West Drayton, Iver and Burnham new or significant facilities are planned under ONSIP:
- (a) at Ealing Broadway the programme provides improved interchange between the Underground and Crossrail services and takes advantage of secondary revenue potential by remodelling the lower level of the station, and
  - (b) at West Drayton, Burnham and Iver new entrances are required to permit gates to be installed and, in the cases of Iver and Burnham to create an adequate station approach and entrance.
- 4.7 Images of Iver and Burnham and some other stations as they are today are shown in Appendix 1 together with images of before and after at Maryland as an example of the significant improvements to be generated by ONSIP.
- 4.8 The overall programme for both lifts and station improvements is to commence work on the Great Eastern railway first to coincide with MTR's start of train operation and TfL's new responsibilities under the 125 year full repairing leases which are proposed to commence on 31 May 2015. It is planned to complete all work on the Great Eastern by May 2017 (as the new 345 trains enter passenger service and Crossrail as a new TfL brand is launched). Following completion on the Great Eastern work will move to the Great Western with completion planned for November 2019 just prior to the full Crossrail service commencing operation to Reading.
- 4.9 While possessions of the railway will be required for installation of the new lift schemes it is planned, where possible, to utilise possessions already booked for other purposes, so minimising impact on passengers. It may be, however, that some dedicated possessions may have to be arranged. Because most surface stations have a 'night' entrance which can be employed as a temporary entrance during ticket hall remodelling it is not anticipated that any station closures will be required.
- 4.10 The ONSIP works will have a direct and positive impact on equality by removing barriers to travel by disabled people at seven stations. Other key users of lifts are passengers with heavy luggage and parents with young children who find negotiating stairs difficult. These passengers will enjoy significantly improved travel opportunities as a result of the lift schemes.

### **Benefits (and Value)**

- 4.11 The benefits of ONSIP which have been considered in the business case mirror the key objectives of the programme set out in paragraph 1. These are improved accessibility and ambience and a reduction in fraudulent travel.
- 4.12 The summary of the economic appraisal and benefits for the preferred option is tabulated below. Note that the Estimated Final Cost includes the risk provision outlined in paragraph 3.6 above.

| Economic Appraisal                              |         |
|---|---------|
| Estimated Final Cost, £k<br>(at outturn prices) | 93,620  |
| Net Present Values ,£k                          |         |
| Discounted NPV EFC                              | 90,562  |
| Other CAPEX                                     | 0       |
| Other costs                                     | 0       |
| OPEX (+ or -)                                   | +3,369  |
| Third Party                                     | 13,541  |
| Revenue   | 48,019  |
| Other Income                                    | 0       |
| Net Financial Effect                            | 45,912  |
| Payback Period                                  | N/A     |
| Passenger Benefits                              | 145,699 |
| Impacts during<br>Implementation                | N/A     |
| Total Benefit, £k                               | 145,699 |
| Benefit : Cost Ratio                            | 3.17:1  |

4.13 Monetised benefits generated by ONSIP include:

- (a) increased revenue generated by step free access and ambience benefits;
- (b) increased revenue generated by a reduction in fraudulent travel;

Social benefits include:

- (c) ambience benefits delivered by the station refurbishment programme; and
- (d) benefits arising from the step free access programme.

4.14 The benefits quoted for the step free access schemes represent additional journeys encouraged by the presence of lifts plus the generalised time benefits realised by users of the new facilities which arise from the reduced journey time they experience when travelling through stations, spread across the following groups: mobility impaired, wheelchair users, sight impaired, hearing impaired and those encumbered by luggage or other items.

4.15 Ambience benefits were calculated by using the Business Case Development Manual, with the attributes used reflecting the areas that will be improved as a consequence of the upgrade works.

### Options Analysis

4.16 There are few genuine alternative options. In the case of the lift schemes 'do nothing' is incompatible with Mayoral, TfL and DfT policy and with the funding provided by the DfT for accessibility. Few locations offered alternatives to the options selected. The only viable alternatives were more expensive; these included replacing the ramp at Iver with a third lift and extending the bridge at Taplow to serve the car park with a third lift. These alternatives offered no significant value to offset a large cost increase and were thus rejected.

4.17 The station improvements are necessary if TfL is to meet reasonable passenger expectations of Crossrail services and also protect revenue by installing gates where none are provided. The ticket halls are generally in very poor condition and are dominated by large office and staff areas leaving little room for gates or passengers. The interior renovation is generally driven by the demolitions required to remodel the interiors to increase passenger circulation area and install gatelines. The exterior renovation could be deferred but this would entail a higher cost in the future as the work cannot be deferred for the full term of the station leases.

### **Delivery of Preferred Option**

4.18 The planned delivery strategy will utilise the existing TfL Overground Projects Team to deliver the lift schemes and MTR to deliver the station upgrades. The estimated final cost of the lift schemes is estimated to be £33m including management and risk with £60.6m being expended on station improvements and overall programme management by the Crossrail Operations team.

4.19 The Overground team has appropriate and relevant experience of the installation of lifts and has capacity to undertake these elements of the ONSIP programme. The Overground team will finalise the necessary procurement documents and obtain the required procurement approvals for these before proceeding to complete the works.

4.20 MTR is well placed to deliver the works at stations as they control access and safety at those locations, will manage passengers through the construction works, manage the staff involved in the works and will have a significant input to the programme. Many of the same team (working as part of LOROL, the London Overground concessionaire) gained important experience in delivering station upgrades during the equivalent and successful Overground Station Enhancement Works Agreement project. The concession contract already includes TfL's right to direct them to manage such works and it is proposed to use the existing contractual provision subject to obtaining formal procurement authority in due course.

4.21 Key milestones

| Milestone  | Target Date    |
|--|----------------|
| Apply for Planning Permission for eastern lift schemes | July 2015      |
| Project Authority from Committee                       | 17 June 2015   |
| Contract Award – lifts                                 | September 2015 |
| First station upgrade package awarded                  | October 2015   |
| Key GE possessions                                     | January 2017   |
| Complete GE lifts and stations                         | June 2017      |
| Commence work on GW                                    | June 2017      |

|                                |               |
|--------------------------------|---------------|
| Key GW possessions             | January 2019  |
| Complete GW lifts and stations | November 2019 |

- 4.22 The stations have been visually inspected by the project team, designers and specialist surveyors. These visits have revealed no signs of major distress in the buildings themselves such as structural cracking although water ingress is apparent at some locations. The structure of each building is likely to be sound although some roof repairs may be required.
- 4.23 ONSIP have not however carried out significant intrusive inspections. Such investigations would require asbestos surveys to be carried out and life-expired finishes to be removed and then reinstated with the attendant cost and risk of damage. Detailed condition has been carried forward as a risk to be managed through detailed design and delivery.
- 4.24 Remedial work to existing footbridges on the Great Eastern is not included within the ONSIP scope. This is because Network Rail (NR) is responsible for inspections which are currently underway and it is anticipated that it will fund any necessary repairs to the structures themselves. Should NR offer to pay TfL to undertake repairs taking account of synergies with ONSIP works then scope could be varied into ONSIP or separately tendered.
- 4.25 No IM requirements or resources have been identified as items such as information displays are either provided by NR as part of Crossrail's delivery or are being developed by others within TfL.

### Top five risks

| Risk No | Risk Description                     | Mitigation Actions  |
|---------|--------------------------------------|---|
| 1       | Design change due to asset condition | Apply lessons learned from first package of station upgrades            |
| 2       | Design change by MTR/IR issues       | Workshops planned with MTR who will be involved in delivering the works |
| 3       | Access/possessions                   | Engage with NR long term access planning process                        |
| 4       | Impact of Crossrail and Route works  | Development of integrated programme in hand                             |
| 5       | Testing/System integration           | Piggy-back on processes to be developed by Crossrail                    |

- 4.26 The total risk value for the project included in the requested Estimated Final Cost is £18.03m at P50 and it has been incorporated into the project risk register.

## 5 Legal Implications

- 5.1 The work on the Great Eastern line will take place within the new legal framework of the 125 year full repairing lease currently being finalised between TfL and NR. Some planning consents may be required and the works will also be governed by normal Station Change process which governs all changes to stations on the national network. Since MTR is both issuing the station change notices and is the major party affected by the proposed improvements as they are SFO at these stations it is very unlikely that this process will be more than a formality. On the

Great Western railway discussions regarding detailed lease conditions are less developed but the works may require NR approval as well as planning consents, where applicable. Works are not planned to start on the Great Western until late 2017, by which time MTR (as Crossrail operator) will have become Station Facilities Owner for the stations concerned.

## 6 Financial Implications

6.1 Cost estimating has been carried out by specialist external advisors. Original estimates were produced in 2013 after the first optioneering phase and have been updated as design development of the preferred options has progressed during 2014 and early 2015. The costs of managing the works have been assessed by the Sponsor based on an expectation of a size of team required to manage works occurring at multiple sites and with more than one contractor. This will be updated when the delivery partners have secured approval for their proposed organisations and provided further detailed cost estimates.

6.2 Summary of the costs and funding:

| Costs and Funding     | Prior Yrs, £m | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | Total |
|-----------------------|---------------|---------|---------|---------|---------|---------|-------|
| Cost (Out-turn)       |               |         |         |         |         |         |       |
| Feasibility           | 2.12          |         |         |         |         |         | 2.12  |
| Design and Management |               | 2.30    | 5.10    | 4.00    | 5.00    | 2.14    | 18.54 |
| Implementation        |               | 3.30    | 20.13   | 13.21   | 14.55   | 2.74    | 53.93 |
| Other costs           |               | 0.50    |         | 0.50    |         |         | 1.00  |
| Risk                  |               | 1.86    | 5.10    | 4.42    | 5.00    | 1.65    | 18.03 |
| Estimated Final Cost  | 2.12          | 7.96    | 30.33   | 22.13   | 24.55   | 6.53    | 93.62 |

|                        | Investment Funding |      |       |       |       |      |       |
|------------------------|--------------------|------|-------|-------|-------|------|-------|
| Budget/Plan            | 2.12               | 7.96 | 30.33 | 22.13 | 24.55 | 6.53 | 93.62 |
| This Authority Request |                    |      |       |       |       |      | 93.62 |

6.3 The only ongoing/future costs not included in the Project costs relate to lift maintenance which will form part of the budget for maintenance of the Crossrail route. The cost of maintaining brand new lifts has been obtained from the East London Line maintainer and is very low in the first years of operation. Maintenance of the Great Eastern and West Anglia routes begins from 31 May 2015 and is fully budgeted.

6.4 As the majority of finishes in the on-network stations will be renewed, there is likely to be a modest reduction in cleaning and maintenance costs as each station upgrade is completed.

6.5 Third party funding has been received from the DfT for the lifts at Langley, Iver and Taplow. This has been granted as a lump sum of £14m with risks and opportunities passing to TfL and forms part of the overall business plan funding allocation (see Appendix 2).

6.6 As well as the cost estimates detailed in the public paper, benchmarking of the lift schemes has compared the outturn cost of the Access for All project at Denmark Hill to the scheme at Seven Kings, which is a similar design. Denmark Hill outturn as reported by the DfT (2013) £4.4m; Seven Kings schemes construction budget excluding management is £4.0m. The station upgrade works have been



estimated using industry standard norms which have been developed over many years. There is limited direct comparison with the work planned at individual stations but at a headline level the costs compare with those expended on the equivalent and highly successful works previously undertaken on London Overground.

## **7 Commercial**

7.1 The procurement strategy for the component parts of the programme is anticipated to be:

- (a) the lift schemes are likely to be procured as two lump sum design and construct contracts, one for eastern schemes and one for western schemes under NEC3 terms; and
- (b) MTR delivered stations upgrades will be procured as packages comprising groups of two or three stations at a time.

## **8 Assurance**

8.1 TfL Project Assurance and the Independent Investment Programme Advisory Group (IIPAG) have undertaken an Option Integrated Assurance review and a Management response has addressed the recommendations.

### **List of appendices to this paper:**

Appendix 1: Photographs and images

Appendix 2: DfT Grant Letter

### **List of Background papers:**

IIPAG and PMO Reports, with management responses

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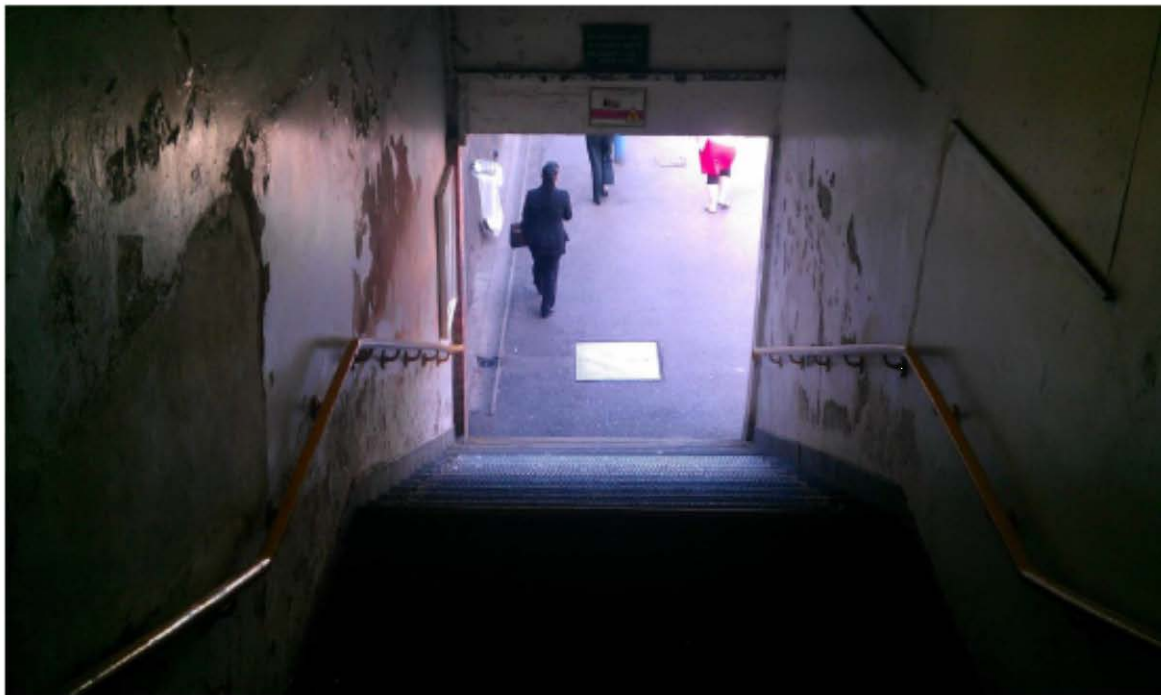
## Appendix 1

Run down exteriors both east and west





## Cluttered and poorly maintained interiors



# Transformation of Maryland – lifts installed and interior renovated



## Appendix 2 DfT Grant Letter



Rail Executive

Allison Phillips  
CROSSRAIL PROJECT DIRECTOR  
RAIL EXECUTIVE  
DEPARTMENT FOR TRANSPORT

Web Site: [www.dft.gov.uk](http://www.dft.gov.uk)

9 March 2015

Dear Martin,

The Secretary of State for Transport (Secretary of State) has determined under section 31 of the Local Government Act 2003 that a grant of £14 million should be paid to the Greater London Authority (GLA) specifically for use by Transport for London (TfL).

The Secretary of State has determined that the grant will be paid subject to the following conditions:

1. The GLA is required to transfer the grant to TfL forthwith;
2. The money is only to be used by TfL to pay for works at the following railway stations along the Crossrail route, and only for the purpose of enabling step-free access at these stations:
  - a.) Langley;
  - b.) Taplow; and
  - c.) Iver.
3. The Secretary of State will not provide any further funding for works required to make these stations step-free. Should costs exceed the £14 million total of this grant then TfL are to pay all additional costs.
4. The works to enable step-free access at Langley, Taplow and Iver stations, are to be completed before full Crossrail services commence in December 2019.
5. If the GLA or TfL breaches any of these conditions, then the Secretary of State may require all or any part of the grant to be repaid by a date specified in writing.

If you wish to accept this offer of grant please sign both copies of this document, returning one to me before Friday 20 March 2015.