

Croxley Rail Link

Monitoring & Evaluation Plan

Report

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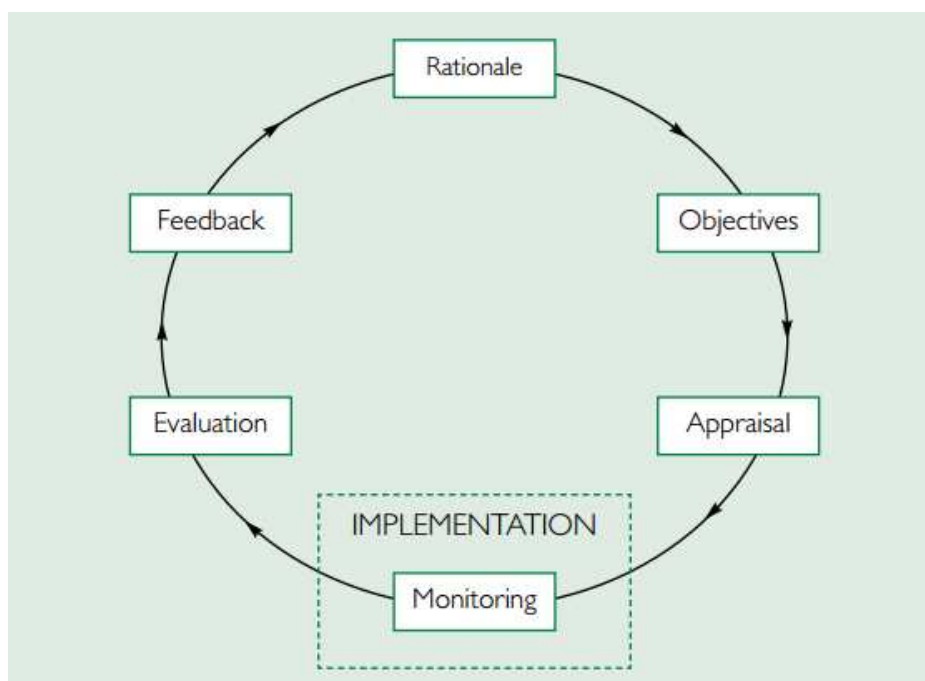
- A 2013 PASSENGER TRAVEL SURVEY FORM
- B ATC LOCATIONS

1 Introduction

Purpose of this Document

- 1.1 The Department for Transport (DfT) produced the ‘Monitoring and Evaluation Framework for Local Authority Major Schemes (September 2012)’ to provide guidance on assessing the success of schemes in comparison to forecasts at the appraisal stage. This was followed in 2013 by ‘Best Practice Guidance for planning the Fuller Evaluations of Local Authority Major Schemes’.
- 1.2 Both of these guidance documents are in line with the content of the HM Treasury Green Book¹, which describes the monitoring and evaluation cycle. This is shown in Figure 1.1.

FIGURE 1.1 THE APPRAISAL AND EVALUATION CYCLE



- 1.3 Croxley Rail Link (CRL) has been selected for ‘Fuller Evaluation’ by DfT. To assist with planning for this process, an initial document was produced that considered the above guidance documents and proposed an approach to meeting the requirements of fuller evaluation. The approach was to identify what could be most reasonably and realistically measured to meet the requirements, whilst prioritising the elements of most significance to the scheme. It was therefore mainly concerned with the content of Section B of the guidance document for fuller evaluations noted above - ‘Selecting the appropriate type of evaluation’.
- 1.4 Following feedback from DfT on the ‘proposed approach’, this document builds upon the content of that document by adding further detail and refinement to satisfy the requirements of DfT’s ‘Best Practice Guidance’ and is aimed at fulfilling

¹ The Green Book: Appraisal and Evaluation in Central Government

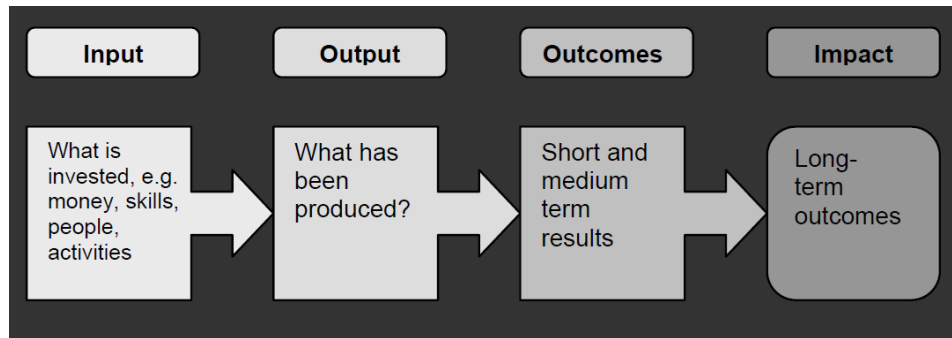
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the requirement for a detailed monitoring and evaluation plan to accompany the application for Full Approval.

Definitions

- 1.5 The DfT guidance - and hence this document - makes reference to inputs, output, outcomes and impacts. For clarity, their relationship as described in the DfT guidance is shown diagrammatically below.

FIGURE 1.2 INPUTS, OUTPUTS, OUTCOMES AND IMPACTS



- 1.6 DfT provide the following definitions for ‘monitoring’ and ‘evaluation’ and these will be adhered to in this document:

- **Monitoring** - *The collection of data to check progress against planned targets and benefits, and can be defined as the formal reporting and evidencing that spend and outputs are successfully delivered and milestones met. Monitoring data can play a key part in evaluation by providing valuable evidence throughout the life of the scheme.*
- **Evaluation** - *The assessment of the effectiveness and efficiency of the scheme during and after implementation. It seeks to measure the causal effect of the scheme on planned outcomes and impacts. It is used to assess whether the anticipated benefits and value for money have been realised and whether any unanticipated impacts have occurred.*

2 Scheme Background & Context

Scope

Scheme Purpose

- 2.1 The Croxley Rail Link (CRL) will connect the London Underground Metropolitan ('Met') Line to Watford Junction, increasing the number of residents and businesses conveniently served by London Underground. At Watford Junction, opportunities for interchange with National Rail services will be created. Therefore, the scheme will improve connections across the public transport system, enabling more people to access a wider range of jobs and services more easily.
- 2.2 Figure 2.1 shows the scheme and its location within Watford. Figure 2.2 shows the scheme in the context of the surrounding geographical area, including the major road and rail network.

FIGURE 2.1 OVERVIEW OF SCHEME

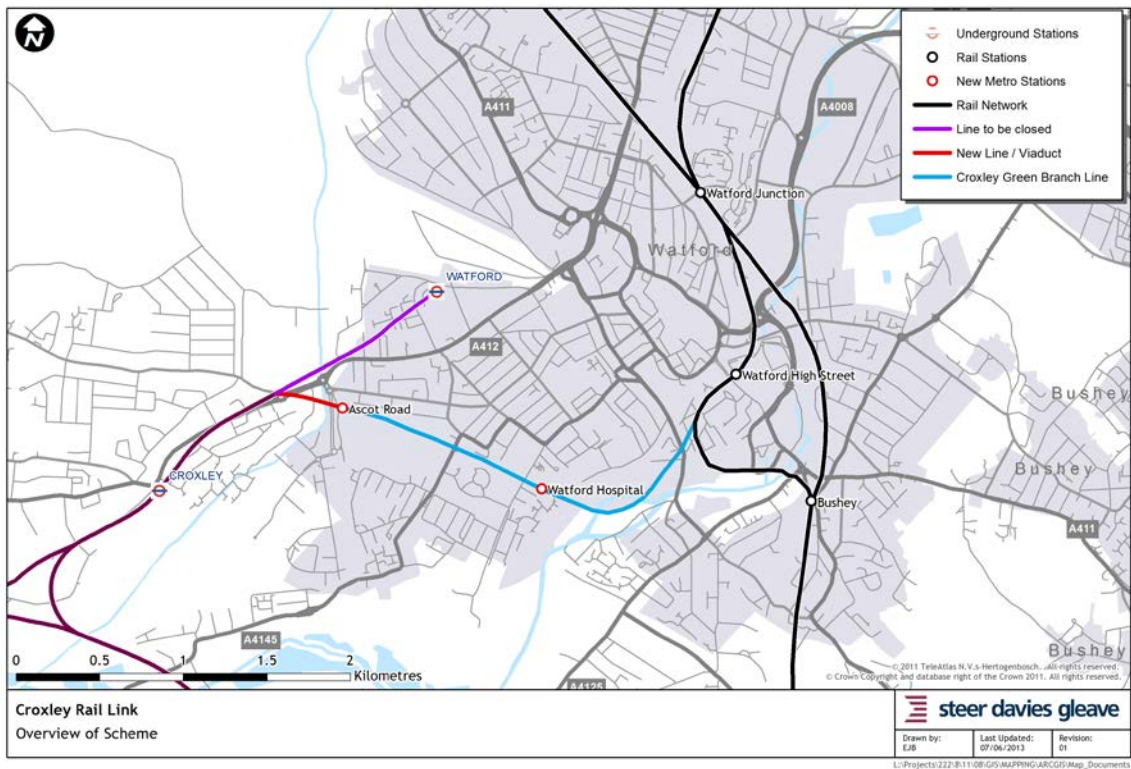
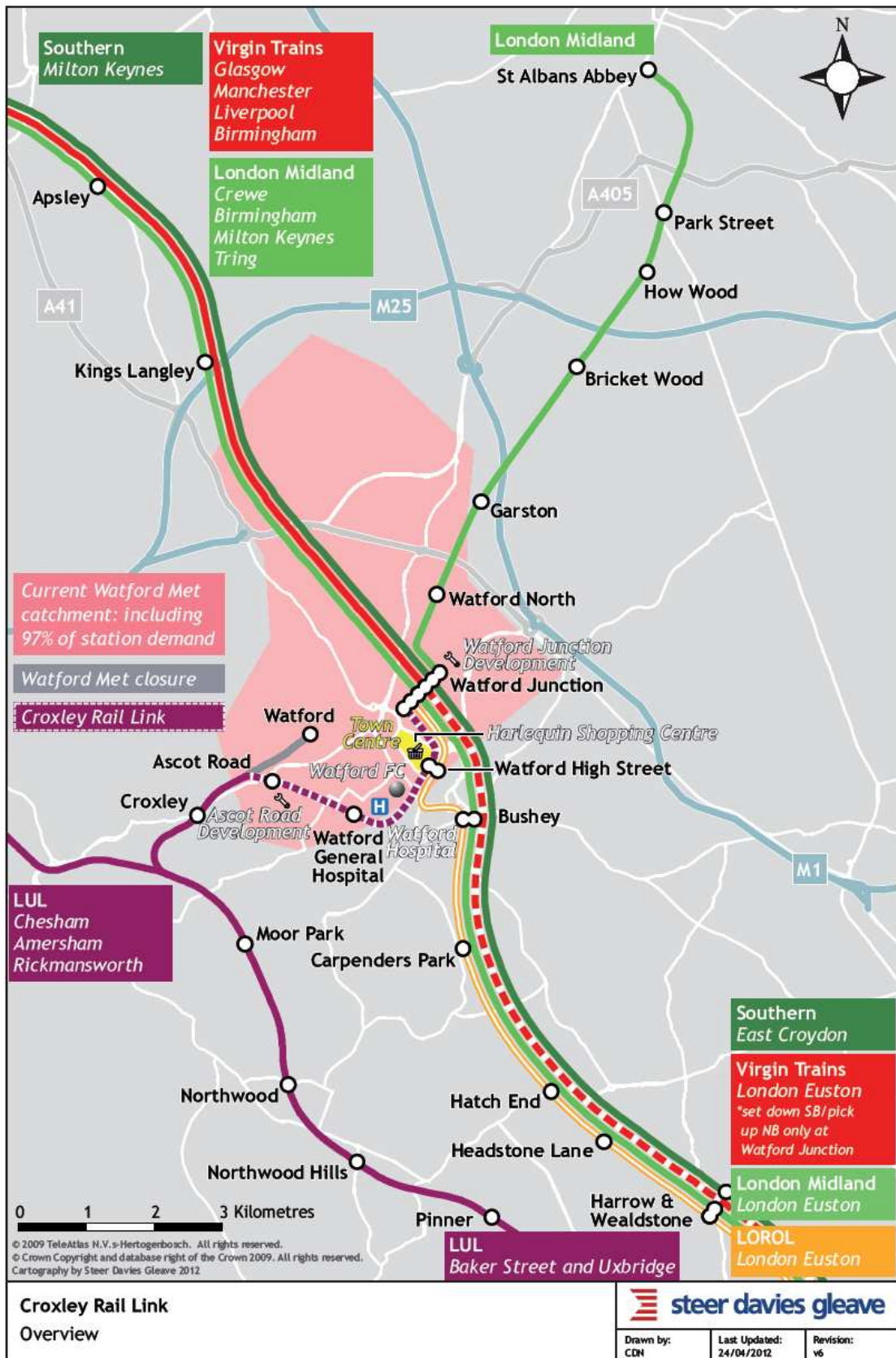


FIGURE 2.2 CONTEXT OF SCHEME



Intended Beneficiaries

- 2.3 The proposals will increase the number of passengers using the Met Line, including attracting some trips that previously were likely to have been made by car.
- 2.4 New stations at Ascot Road and Watford Hospital will serve areas that have some of the highest population densities, lowest car ownership levels and lowest household incomes within Watford. Improved access to public transport will contribute to addressing some of the current disadvantages faced by residents of these areas.
- 2.5 The proposed alignment of the scheme will also serve a number of the major development projects within Watford, including the proposed Health Campus. The project will increase the potential employee catchment area of both existing and future Watford businesses, thus enhancing the attractiveness of sites along the corridor and encouraging regeneration.
- 2.6 As the scheme requires that Watford Met station be closed, the impact of the scheme on existing passengers using that station - both those who are resident in Watford and those making trips into Watford - has been assessed. Although there will be some individuals who are worse off, for both of these groups, the overall net impact is positive. The wider case for the scheme also takes into account the significant benefits for residents and employees who do not currently have a good level of access to Met Line services.

Evidence from Similar Schemes

- 2.7 The scheme will form part of the London Underground, a well-established mass-transit system and a proven attractive alternative to car use.
- 2.8 Current Met Line services have a high level of reliability, particularly in comparison to journeys currently made by bus (or other modes) on the highway network in peak traffic periods.
- 2.9 The passenger catchment area from the existing station - based upon the results of a passenger survey conducted in 2010 - is shown in pink on Figure 2.2. The scheme extends the Met line further into this area and will work to expand it.

Context

- 2.10 As can be seen in Figure 2.2, a notable feature of the local rail network is the lack of a link between the residential communities in the western part of the town and the principal core business, leisure and employment opportunities towards the central and eastern part of the town. A resultant emphasis on car travel to meet this significant demand is a major contributor to traffic congestion within the town. This situation is aggravated by a road network serving the western part of the town that does not provide effective access to the south, placing additional traffic on routes around the town centre.
- 2.11 Watford is skirted by the M25, the A41 and the M1, all of which exhibit problems associated with high and increasing traffic volumes. During peak periods, the existing trunk and local road networks have junctions at or over capacity. This often leads to ‘rat running’ in residential streets. Given the proposed developments in the area and the expected annual travel growth, this could lead

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to gridlock of the transport network, and/or discouragement of economic growth within the town, if alternatives are not provided.

Scale of Investment

- 2.12 The capital cost of the project is of the order of £120m, which will be incurred over several years between 2012 and 2016.
- 2.13 In line with DfT's value for money (VfM) categorisation, the scheme represents high VfM, with a Benefit Cost Ratio (BCR) in the order of 2.5.

Implementation

How will it be implemented and where?

- 2.14 Under the Croxley Rail Link proposals, the Croxley Green branch line will be reconstructed and brought back into use. A new 400m viaduct (including embankments) will connect the branch line with the Met Line, which will close between Croxley and Watford Met. The branch line will connect with the National Rail Direct Current (DC) Lines loop south of Watford High Street station. Underground services will share track with Overground services to access Watford Junction station. New fully accessible stations-constructed and fitted to Transport for London's (TfL) Station Planning Guidance standards - will be provided at Ascot Road and Watford General Hospital
- 2.15 The length of new railway (structures, track and signalling) added to the Met Line is approximately 4.5km, although the scheme facilitates the closure of 1.3km of the existing Met Line between the new viaduct and Watford Met station, which will be used for stabling. This results in a net increase in track length in passenger service of around 3.2km.
- 2.16 The proposed service for the CRL is 6 trains per hour to Watford Junction in the peak. This is the best overall value for money option, requiring the purchase of only one additional train while meeting London Underground Limited's (LUL) Customer Service Delivery Standards of a 'turn-up-and-go' service. The journey time between Croxley and Watford Junction stations is predicted to be 11 minutes.

Stakeholders

- 2.17 The Croxley Rail Link scheme has active support from key stakeholders, including a commitment from London Underground Limited (LUL) to operate services and pass through the net operating surplus to Hertfordshire County Council (HCC) in support of its local financial contribution. Network Rail (NR) are fully engaged with the project as existing owners of the heavy rail alignment and because of the interface/interaction with the operational DC lines through Watford High Street station into Watford Junction station. A Strategic Board has been established which consists of NR, LUL, HCC and key advisors, meeting on a monthly basis. (See section 5 for more information.)

3 Scheme Objectives & Outcomes

Nature of Anticipated Objectives

Objectives of the Scheme

- 3.1 The scheme objectives - as have been used throughout scheme development - are as follows:
- To **enhance sustainable links** to, and between, residents and employment, business, education, health and leisure opportunities within Watford and across Hertfordshire, and to key external attractors in London and the national rail network, reinforcing Watford's role as a key transport hub.
 - To **improve local connectivity** within Watford between current and potential employees, the town centre and the key development areas of Watford Junction, Watford Business Park/Ascot Road and the Health Campus providing a catalyst for both economic and housing development.
 - To **provide a sustainable and value-for-money alternative** to car travel, with inherently lower environmental impacts per trip including noise and greenhouse gas emissions.

Changes That the Scheme Will Deliver

- 3.2 The scheme's outputs will be:
- Physical infrastructure (for example, viaduct, railway line, signalling, stations).
 - Six trains per hour at peak times and four trains per hour off-peak on the Met Line that will serve Watford Junction.
 - Closure of Watford Met station.

Benefits Generated

- 3.3 As a consequence of the above outputs, the following benefits will be generated:
- Increased number of residents and businesses conveniently served by London Underground.
 - Improved connections across the public transport system enabling more people to access a wider range of jobs and services more easily.
 - Creation of interchange opportunities with National Rail services at Watford Junction.
 - Increased number of passengers using the Met Line, including the attraction of some trips that previously were likely to have been made by car.
 - Services with a high level of reliability, particularly in comparison to journeys currently made by bus (or other modes) on the highway network in peak traffic periods.

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- The new stations at Ascot Road and Watford Hospital will serve areas that have some of the highest population densities, lowest car ownership levels and lowest household incomes within Watford. Improved access to public transport will contribute to addressing some of the current disadvantages faced by residents of these areas.
- The proposed alignment of the scheme serves a number of the major development projects within Watford, including the proposed Health Campus. The project will increase the potential employee catchment area of both existing and future Watford businesses thus enhancing the attractiveness of sites along the corridor and encouraging regeneration.

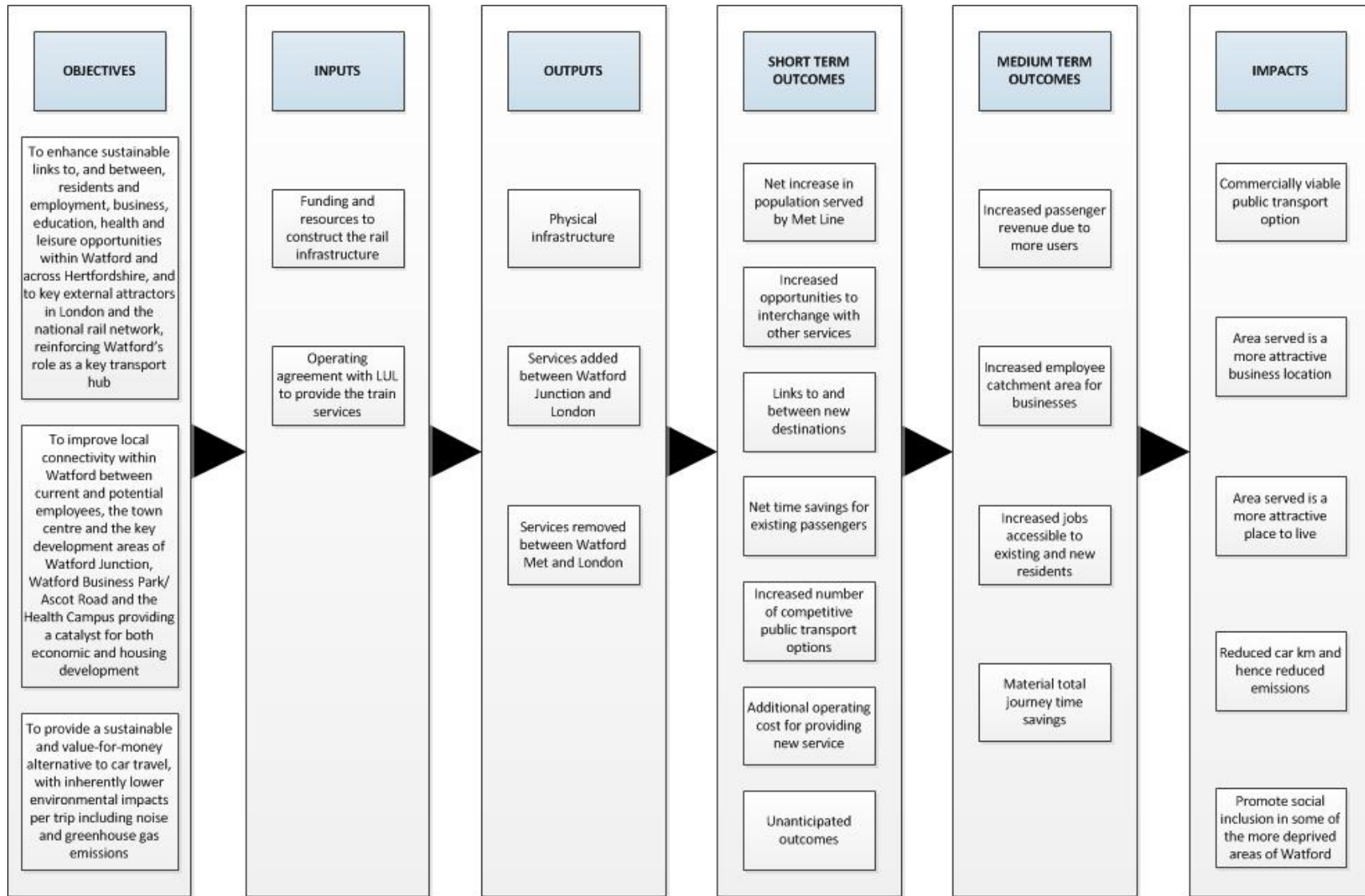
Logic Mapping

- 3.4 Figure 3.1 is a logic map for the scheme, illustrating how the scheme objectives are linked to the stages of the project, beginning with the scheme inputs and followed by the consequent outputs, outcomes and impacts. The first map is a high level summary, with the subsequent maps providing more detail on the linkages from the medium term outcomes. (This approach was taken as it is at this point that the relationships diverge away from “all to all”.)
- 3.5 Measures for each stage of the scheme (inputs, outputs, outcomes and impacts), are provided in sections 5 (Evaluation Approach) and 6 (Data Requirements & Collection Methods).

Timeframe

- 3.6 Construction of CRL is planned for completion by the end of 2016, at which point the outputs will be completed. The short term outcomes will be present once operations commence.
- 3.7 The medium term outcomes are estimated to ramp up over approximately the following three years, with initial evidence of the impacts being present by year five following construction completion.

FIGURE 3.1 LOGIC MAP



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FIGURE 3.1.A INCREASED PASSENGER REVENUE

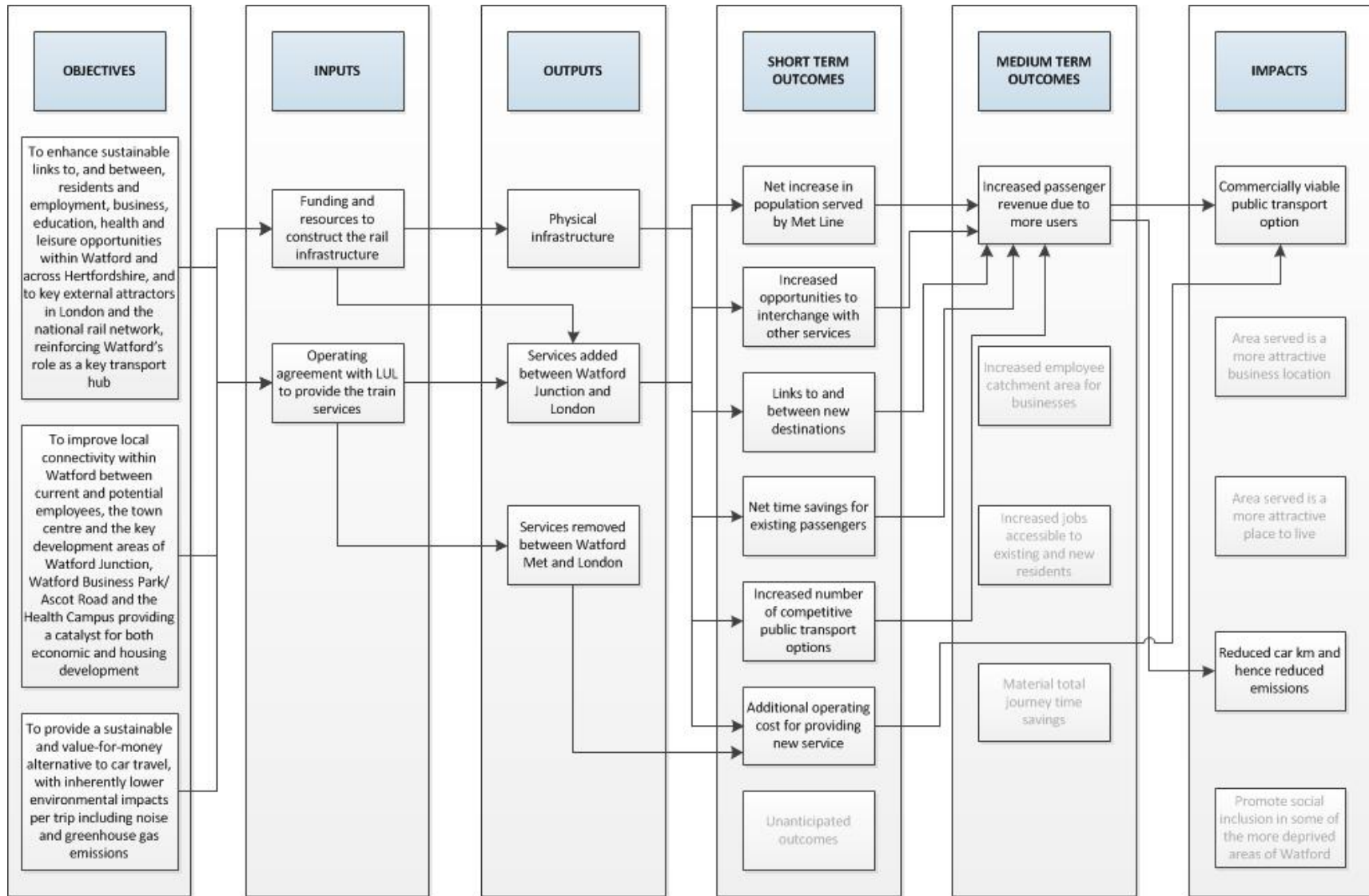
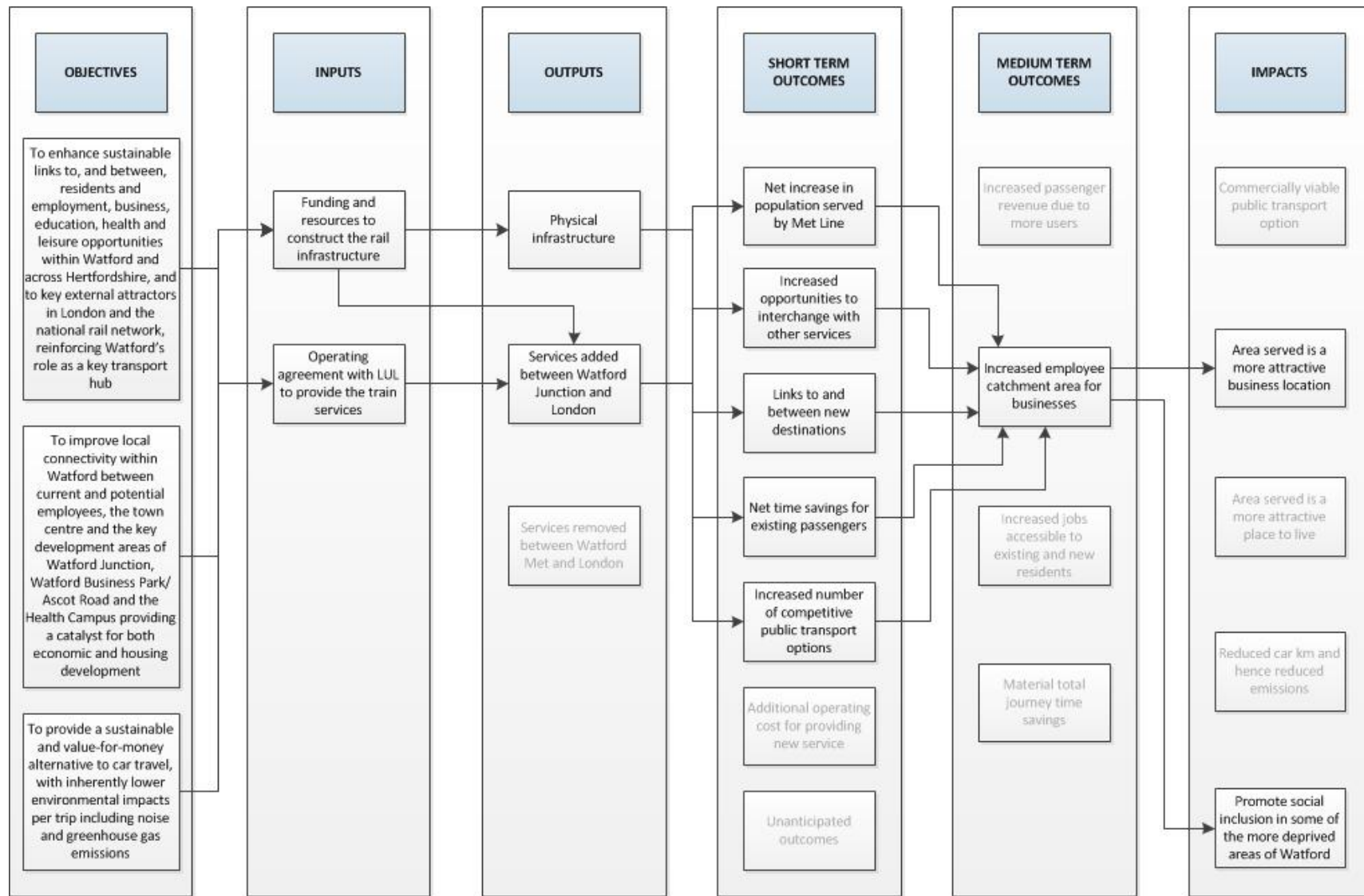


FIGURE 3.1.B INCREASED EMPLOYEE CATCHMENT



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FIGURE 3.1.C INCREASE IN ACCESSIBLE JOBS

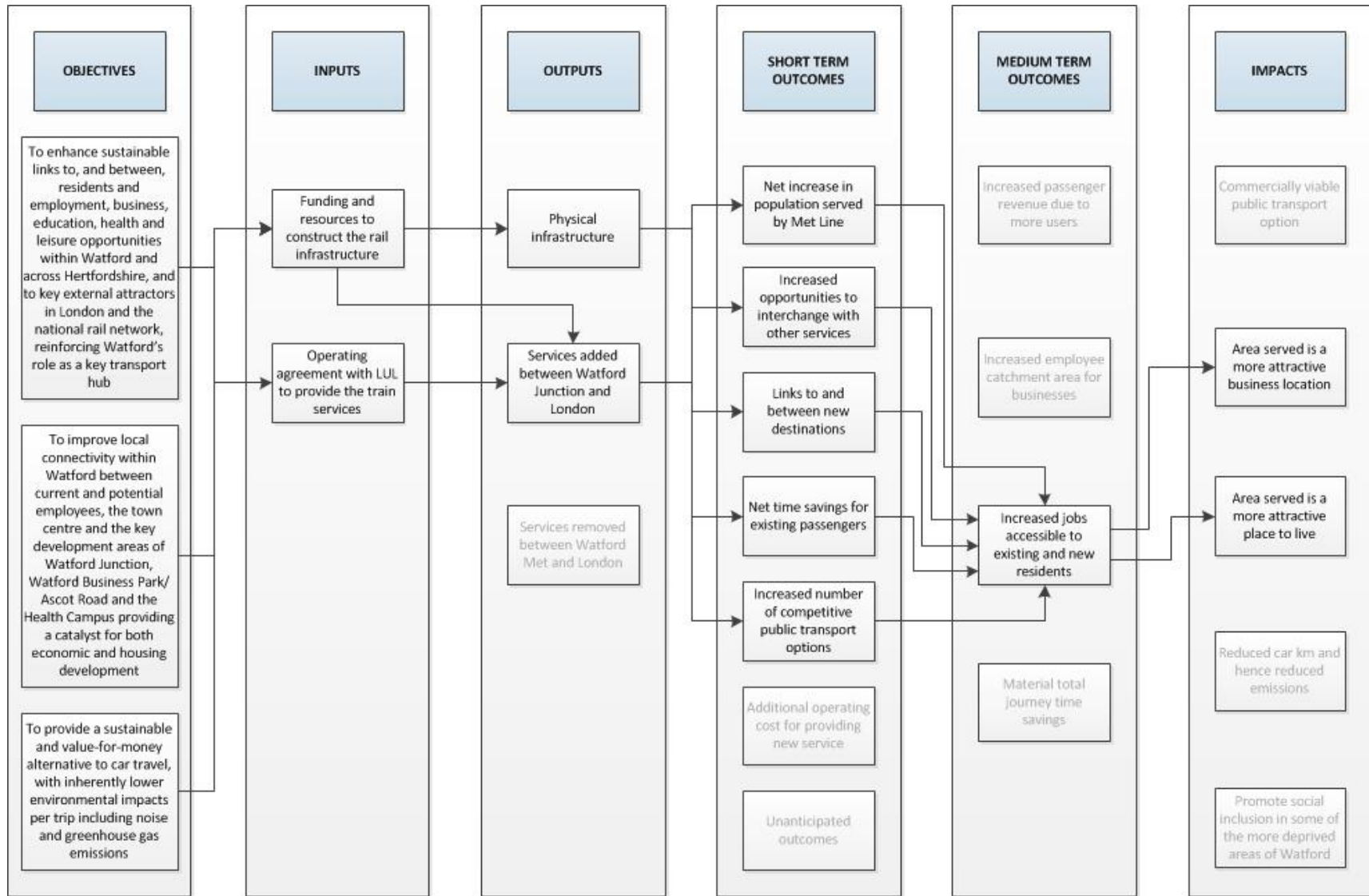
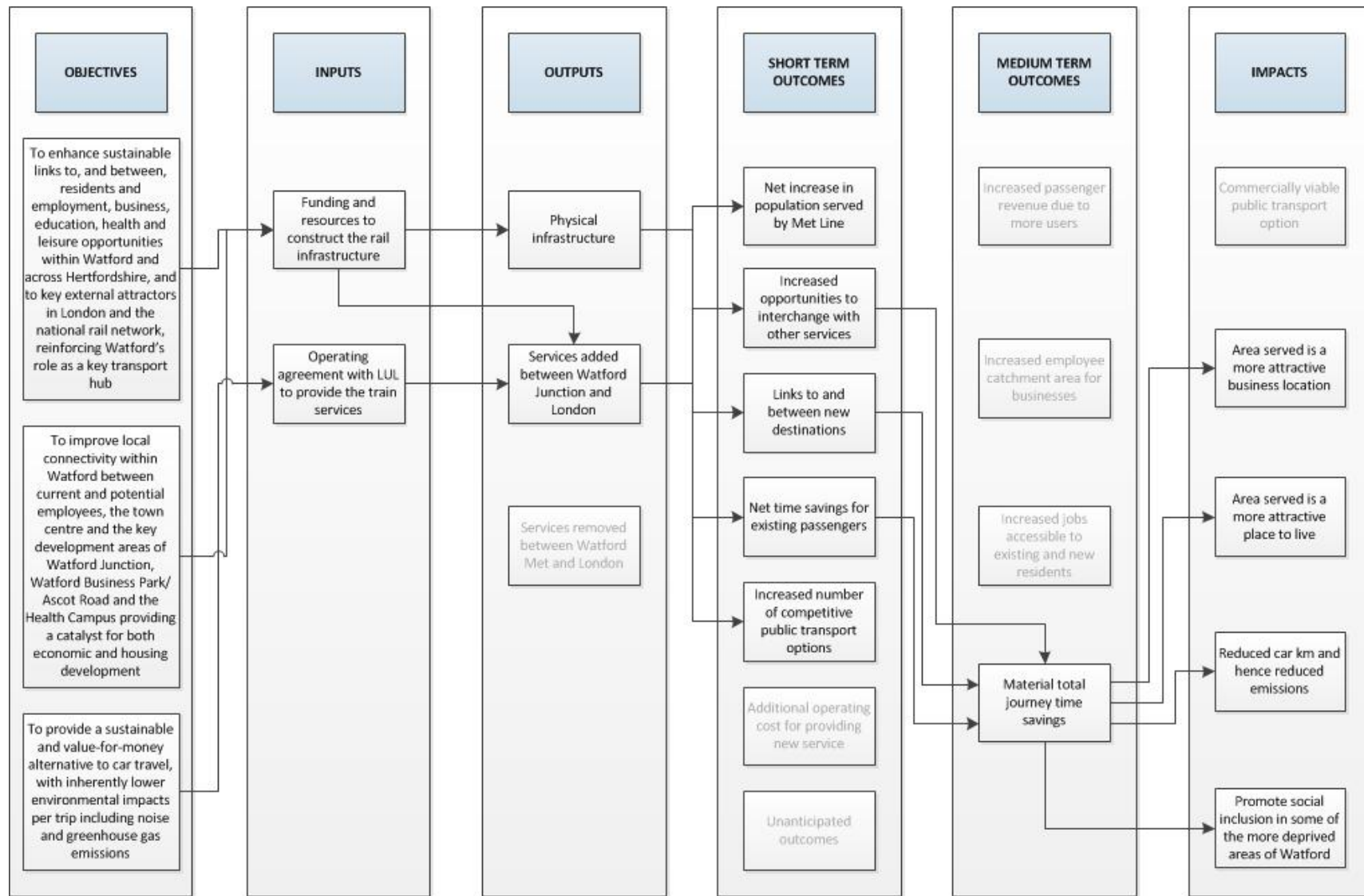


FIGURE 3.1.D JOURNEY TIME SAVINGS



4 Evaluation Objectives & Research Questions

Evaluation Objectives

- 4.1 In essence, the evaluation is being undertaken to demonstrate that the scheme has achieved what it set out to do. That is, that the scheme objectives have been met. This overarching objective can be broken down into the following evaluation objectives.
- 4.2 Demonstrate that:
- A. The resources committed to make the project a reality have been utilised and managed effectively.
 - B. The scheme has resulted in the forecast levels of patronage and hence the associated changes related to other modes.
 - C. Through the presence and use of the scheme, the anticipated benefits have been realised.
 - D. The scheme has been a justified investment in the area.

Research Questions

- 4.3 No one information source is able to demonstrate that an evaluation objective has been met, and so it follows that multiple sources of information need to be considered together. To assist with gathering that information, research questions have been posed that help to break down the objectives into discrete blocks of information. In subsequent sections of this document, the data that will be collected and collated to answer these questions is addressed.
- 4.4 The research questions are listed below and are ordered in terms of their mapping to the evaluation objectives above.
- A1. Was the scheme delivered on time and within budget?
 - A2. What contributed to the successes and are there any lessons to be learnt?
 - B1. Are patronage levels in line with the forecasts?
 - B2. Are travellers using the scheme in the anticipated manner? (e.g. Time of day, direction, length of trip)
 - B3. If differences are evident, for what reasons have these occurred?
 - C1. Has the scheme resulted in Watford being a better place to live and work?
 - C2. Does the scheme promote social inclusion?
 - C3. Has the scheme resulted in less car km travelled and hence a reduction in congestion and emissions?
 - C4. How are the impacts distributed between those who gain and those who lose?
 - D1. Is the service commercially sustainable?
 - D2. Are the borrowing repayments covered?
 - D3. Do the outturn costs and benefits demonstrate that investment in the project was justified?

5 Evaluation Approach

Evaluation Types

5.1 On top of the Standard and Enhanced Monitoring, the DfT framework, requires three types of complementary evaluation types be implemented. These are:

- Process evaluation - how was the scheme delivered?
- Impact evaluation - what difference did the scheme make?
- Economic evaluation - did the benefits justify the costs?

Process Evaluation

5.2 The process evaluation will focus on those activities that are associated with how the scheme's inputs were utilised to create the outputs. It is therefore concerned with the following categories from the Monitoring and Evaluation Framework that focus on collecting data during scheme implementation:

- Scheme Build
- Delivery Process
- Costs
- Delivered Scheme

5.3 Information will be collected that allows analysis of how the scheme was constructed along with how effectively the process and the people and resources involved were managed. To do this, use will be made of the information generated as part of 'business as usual' project management processes.

5.4 The text below describes the project management processes that will be used to collect information for the process evaluation. Section 6 provides - against each relevant item in the DfT Framework - the detail of what information will be collected, and when, using these PM processes.

Project Governance

5.5 HCC, LUL and NR comprise the Corporate Ownership of the project, meeting monthly as the **Strategic Board**. The Strategic Board comprises the Senior Responsible Owners from HCC, LUL and NR and is ultimately responsible for overseeing the delivery of the CRL Project. Taylor Woodrow, the appointed Main Works Contractor, also attends the monthly Strategic Board meetings.

5.6 The Board is responsible for making strategic decisions, reviewing project progress and approving any cost or programme changes outside of agreed tolerances. Issues that have not been resolved at Sponsor Steering Group level (see below) are escalated to this Board for consideration and resolution. The Strategic Board is chaired by the Senior Responsible Owner for HCC.

5.7 HCC, LUL and NR are also Project Sponsors. The **Sponsor Steering Group** comprises the Project Sponsors and others from HCC, LUL, NR, CRAG (Croxley Rail Link Assurance Group) and Taylor Woodrow. This group manages the day-to-day running of the project and meets monthly, where each of the partner organisations

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provides updates. Any issues that are not resolved by the Sponsors Steering Group are escalated to the Strategic Board.

5.8 The HCC internal **Project Board** comprises the following:

- CRL project team: Senior Responsible Owner, project sponsor, project director, project manager and Stakeholder Manager.
- Senior colleagues in the property, finance, legal and PR department.
- Senior Responsible owner of the appointed Main Works Contractor.

5.9 This group convenes on a monthly basis to receive CRL progress updates with significant risks being reviewed and challenged, budget monitoring being reviewed and variances clarified and strategic guidance of any bottlenecks being reviewed and addressed.

Stakeholder Management

5.10 The **Stakeholder Engagement Group** (SEG) members will keep 3rd party stakeholders informed of all relevant issues discussed at the meetings. Stakeholders are those who will affect, or be affected by, activities during construction. This group will further ensure and monitor compliance with the Transport and Works Act Order (TWAO) commitments. The SEG meets monthly and a set of minutes is prepared and circulated.

5.11 In addition to the SEG, regular fortnightly meetings are held between members of the project team, including HCC Communications and Taylor Woodrow's Stakeholder and Consents Managers. Stakeholder management and separate meetings are held with each of the identified stakeholders at key stages during the implementation process. Individual stakeholder meetings with affected parties are scheduled as and when required and are compulsory on the consents registered, which is reviewed at fortnightly meetings held with Taylor Woodrow. Output of individual meetings is reported to the SEG to ensure effective dissemination of information as well as to obtain scheme partners' input in those issues that require specific attention. Outputs from the SEG are reported to the Sponsor Steering Group. In the event of items requiring specific input from the scheme partners, such items are included in the Communications Report, which is discussed and resolved at the Sponsor Steering Group meeting.

5.12 The Communication and Stakeholder engagement documents are updated as and when required by the communication team.

Assurance

5.13 The **Croxley Rail Link Assurance Group** (CRAG) is a quality assurance forum and is set up and managed by HCC. It comprises a Document Control team together with senior personnel from HCC, LUL and NR. CRAG acts a single point to manage the flow of all formal technical and design documentation between Taylor Woodrow and the Sponsors, including assurance submissions for review and acceptance.

5.14 CRAG will receive and record all inward and outward technical and design documentation between Taylor Woodrow and HCC. They will have access to all HCC, LUL and NR personnel allocated to the project and will be authorised to give technical and other advice and acceptances.

- 5.15 HCC, LUL and, NR will each nominate a Lead or Designated Project Engineer respectively to ensure that assurance documentation is properly reviewed for completeness and acceptability to the respective companies. The Designated Engineers shall also manage the Technical Query and Technical Requirements processes where they affect their respective organisations.
- 5.16 HCC, LUL and NR will appoint Discipline Engineers and other personnel to scrutinise assurances from Taylor Woodrow in accordance with the Review Process.

Contract & Cost Management

- 5.17 'Phase 3' of the CRL project - 'Final Technical Design, Mobilisation and Construction' - includes the duration of the Main Works Contract and is divided into two stages. During Stage 1, Taylor Woodrow will carry out detailed design, obtain planning permissions and produce an initial price for Stage 2. In Stage 2, the Main Works Contractor will complete the final design, construct the scheme and progress and coordinate commissioning arrangements, trial operations and handover of the scheme for LUL operation.
- 5.18 The **Contract Management Group (CMG)** comprises representatives from HCC to manage the flow of all contractual information to and from Taylor Woodrow. The group undertakes and manages all the relevant responsibilities of the amended New Engineering Contract 3rd Edition (NEC3) Professional Services Contract for Stage 1 and will do so for the amended NEC3 Engineering and Construction Contract during Stage 2.
- 5.19 Contract Progress Meetings are held on a monthly basis whereby progress is matched against programme. Any change to the scope of work is managed via the NEC3 contract. Delays to progress are discussed with a view to the overall impact on the project and how best they can be mitigated. The project manager and contract manager are part of these progress meetings and any high level risks are escalated to the HCC internal project board. The Risk Register is reviewed on a monthly basis to track the progress of identified risks and mitigations actions that can be put in place.
- 5.20 Budget review meetings are held fortnightly and a budget update is provided on a monthly basis. The HCC appointed Quantity Surveyor reviews the proposed construction budgets and highlights any anomalies with the Main Works Contractor for clarification. Once agreed, an updated budget, along with any variances, is highlighted to the project manager. Monthly budget updates are escalated to the HCC project board along with a commentary on cost variances, which are discussed and proposed actions agreed for implementation.
- 5.21 The Contract Management Group reports directly to the internal HCC Project Board.

Change Management

- 5.22 Stage 1 of the Main Works Contract operates under the terms and conditions of the NEC3 Professional Services Contract. Stage 2 of the Main Works Contract will operate under the NEC3 Engineering and Construction Contract. Both of these standard NEC contracts have been amended to suit the nature of the project and HCC's position as a public sector client. In each of these contracts and therefore

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during each of the two stages, HCC is able to vary the scope of the Main Works Contractor's work through the Compensation Event process.

- 5.23 Should HCC wish to vary the scope of the work undertaken by the Main Works Contractor for CRL, the Contract Management Group can instruct the Contractor to carry out the relevant work by notifying them of the Compensation Event. It would usually be the case that the Contract Management Group would first instruct the Contractor to submit quotations for a proposed change on which they could then base their decision on whether to proceed or not.
- 5.24 Similarly, if the Contractor identifies that they should be entitled to a Compensation Event (for example, because designs need to be changed as a result of site conditions that an experienced contractor could not reasonably be expected to have taken into account), the Contractor notifies HCC and submits a quotation for the work. The CMG will then make a decision as to whether they will accept the quotation or not.

Risk Management

- 5.25 The Mains Works Contractor will largely take ownership of the management of risks to the project throughout construction. HCC's Risk Management Guide and Project Risk Strategy will be adopted and utilised by Taylor Woodrow when developing their Risk Management Plan. HCC will review and agree Taylor Woodrow's Risk Management Plan at the beginning of the construction phase.
- 5.26 The Risk Register will be maintained and updated on a monthly basis by Taylor Woodrow's Risk Manager. This system captures inherent risks by 'original score' and the residual risk level by 'current score'. The movement towards the 'target score' is also recorded on the risk system. Regular risk reduction meetings will be held between HCC and Taylor Woodrow. The purpose of risk reduction meetings will be to:
- Make and consider proposals for how the effect of the registered risks can be avoided or reduced.
 - Seek solutions that will bring advantage to all those who will be affected.
 - Decide on the actions that will be taken and who will take them.
 - Decide which risks have now been avoided or have passed and can be removed from the Risk Register.
- 5.27 Those residual risks that cannot be removed from the risk register as part of risk reduction meetings will be escalated. Thresholds are given for all tiers in the project structure using the risk categories: severe (red), significant (amber), material (yellow), manageable (green). Red and Amber Risks will be discussed and reviewed at the Sponsors Steering Group meetings. Red risks will be discussed and reviewed at the Strategic Board Meetings.

Scheme Context

- 5.28 The Major Scheme Business Case (MSBC) contains a chapter that describes the scheme's context at the time of that document's writing (2009).
- 5.29 Table 5.1 shows the data categories considered.

- 5.30 So as to evaluate the effect of context on the outcomes and impacts, it is proposed that a standalone Scheme Context document be produced, as a baseline, using the content of the MSBC but updated with the latest information where it is available (including 2011 census data). Along with updating the document upon scheme completion, updates will be made should issues relevant to context be raised through the SEG meetings, along with a commentary on what has changed and the reasons why. This information can also be supplemented with the views of stakeholders.

TABLE 5.1 SCHEME CONTEXT INFORMATION

Category	Previous / Potential Source
Population density and growth forecasts	<ul style="list-style-type: none"> • Census • TEMPRO
Recent and proposed developments	<ul style="list-style-type: none"> • Planning applications
Transport problems- current and anticipated	<ul style="list-style-type: none"> • HCC and Highways Agency monitoring programme
Highway demand growth	<ul style="list-style-type: none"> • TEMPRO
Rail services and growth	<ul style="list-style-type: none"> • Timetabled services • TEMPRO
Bus services and growth	<ul style="list-style-type: none"> • Timetabled services • TEMPRO
Travel to work mode share	<ul style="list-style-type: none"> • Census
Car ownership and public transport use by those with car available	<ul style="list-style-type: none"> • Census
Strategic east-west and north-south movements (e.g. via M25, M1, WCML etc.)	<ul style="list-style-type: none"> • Local Transport Plans in Watford and the surrounding areas
Local attitudes to travel	<ul style="list-style-type: none"> • Hertfordshire County Travel Survey
Proposed transport improvements	<ul style="list-style-type: none"> • Watford Growth and Transport Plan
Socio-economic factors	<ul style="list-style-type: none"> • Index of Multiple Deprivation • Census • Crime statistics • Planning policy • Council policy

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Impact Evaluation

- 5.31 There are a number of ways of approaching an impact evaluation depending on its purpose.² An evaluation for **accountability** purposes focuses on identifying whether a predicted outcome has been achieved, while an evaluation that is **knowledge**-based seeks to go further and generate understanding and transferable lessons.
- 5.32 When conducting an evaluation for **accountability** purposes, the guidance recommends that either an outcome study or an experimental design approach is most suitable:
- With an **outcome study**, the situation prior to the scheme is compared to that following its introduction and observed changes reflecting the anticipated effects are assumed to have resulted from the intervention.
 - With an **experimental design** approach, a population in receipt of the intervention and a population not in receipt are compared to draw conclusions on what transpires in each situation.
- 5.33 As the CRL scheme involves constructing physical infrastructure to meet the needs of a particular geographical area, the experimental approach is not appropriate. Therefore the focus of the evaluation for accountability will be an outcome study that collects data to measure the extent to which the predicted outcomes have been achieved.
- 5.34 When conducting an evaluation for **knowledge** purposes, the guidance recommends that the theory based approach is used. Theory based approaches provide evidence on the outcomes and impacts achieved by an intervention, the factors that contributed to achieving them and how they were achieved.
- 5.35 A **theory-based** approach includes:
- Understanding why and under what conditions change has been observed.
 - Using quantitative and qualitative methods and data from different sources to inform the evidence base ('triangulation') to strengthen confidence in the conclusions.
- 5.36 As CRL has been selected for fuller evaluation, it is appropriate that the evaluation purpose is expanded beyond that of an accountability evaluation by also introducing suitable elements of a knowledge-based evaluation.
- 5.37 The impact evaluation for this scheme will therefore be a **combined outcome and theory-based approach**. This will collect data on *what* has happened, and triangulate it against additional information to understand *why* it has happened.
- 5.38 The following categories from the Monitoring and Evaluation Framework collect information concerned with the changes that occur once the scheme is complete, providing the basis for analysing whether the scheme has produced or been a catalyst for the intended results:

²Guidance for Transport Impact Evaluations, Tavistock Institute & AECOM, March 2010

- Travel Demand
- Travel Behaviour
- Travel Times & Reliability
- Impacts on the Economy
- Impacts on Carbon
- Impacts on Noise
- Impacts on Local Air Quality
- Impacts on Accidents

5.39 The text below provides further information on what data collection activities will take place. Section 6 provides further information on the elements of the DfT Framework that these are relevant to.

Travel Demand & Behaviour

5.40 The Transport Assessment, completed for the TWAO submission, found that changes in road traffic flows “relate to a transfer of journeys by car to the proposed scheme and changes in travel patterns in light of the closure of the Watford Metropolitan Station”.³ Therefore, it is proposed that changes in travel demand and travel behaviour will be evaluated through a passenger travel survey triangulated against the results of station access counts and ticket barrier demand data from the quarterly revenue reports (see section 7). This will include an analysis of the difference between outturn rail passenger numbers and scheme forecasts.

5.41 The passenger travel survey will collect postcode information for respondents, allowing a spatial analysis of the characteristics of those using the new stations. (This is particularly relevant for research question C4.)

5.42 ATC (Automatic Traffic Count) data collected in the vicinity of the stations will also be used. HCC have a countywide traffic monitoring programme incorporating over 230 ATC sites. These include a number of count sites within the Watford area where traffic data (volume by direction) is collected for at least one week per year. In addition to these there are a number of congestion monitoring count sites around the central ring road in Watford where traffic data is collected.

5.43 Table 5.2 outlines the proposed survey programme. Surveys will always be conducted in October to mitigate the effects of seasonality and to avoid school holiday and exam periods. Periods where major events are being held at nearby large venues (for example, Wembley and Watford Football Club) will also be avoided due to the production of non-typical trips. Surveys will take place throughout the day (not just in the peak period).

³ ‘Environmental Statement, ch.15 Traffic and Transport, paragraph 15.4.15

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TABLE 5.2 PROPOSED SURVEY PROGRAMME

Station	October 2013	October 2017 (One Year After Completion)	October 2021 (Five Years After Completion)
Watford Met	Station access counts, ATC data, ticket barrier demand data & passenger travel surveys	–	–
Ascot Road	–	Station access counts, ATC data and ticket barrier demand data	Station access counts, ATC data, ticket barrier demand data & passenger travel surveys
Watford Hospital	–	Station access counts, ATC data and ticket barrier demand data	Station access counts, ATC data, ticket barrier demand data & passenger travel surveys
Watford High Street	Ticket barrier demand data along with a manual count at the gate line for comparison	–	Passenger travel surveys & ticket barrier demand data
Watford Junction	Ticket barrier demand data along with a manual count at the gate line for comparison	–	Passenger travel surveys & ticket barrier demand data

- 5.44 Passenger surveys and manual classified counts were conducted at the existing Watford Met Station in July 2010⁴. The surveys had good response rates of 32% and 14% of average weekday and weekend passengers respectively (assuming that all daily passengers make two-way trips), resulting in robust results. The results from the 2010 surveys will be used as a basis for comparison to the results of the planned surveys noted above.
- 5.45 Post implementation passenger travel surveys will be conducted in year five only as the full impact of the scheme will not have manifested itself in year one.
- 5.46 Station access counts following completion will be conducted at the new Met Line stations only. This is because for stations with multiple types of rail services (Underground, Overground, National Rail) it is not possible to identify those who are accessing the station *and* using the new scheme without a detailed survey of all passengers accessing the station. The limited additional information from such a survey would not justify the added cost. However, a comparison of gateline data from Watford High Street and Watford Junction before and after scheme implementation will give an indication of the scheme's impact.

⁴ CRL/2/2 Transport Case Proof of Evidence, Volume 2, September 2012, p.15

October 2013 Survey at Watford Met

- 5.47 At the time of writing, the October 2013 survey at Watford Met has just been completed, with approximate response rates of 35% and 30% of average weekday and weekend passengers respectively (based on 2012 data and assuming that all daily passengers make two-way trips)⁵. This indicates that the results of this new survey will also be robust.
- 5.48 A copy of the survey can be seen in Appendix A. The survey was conducted face to face with a sample of passengers using Watford Met station. As the station is at the end of the line, dwell time and/or recovery time allowed interviewers to board the trains to interview passengers, as well as interviewing passengers on the platforms. Station access counts recorded the number of passengers arriving, by mode.
- 5.49 The counts and passenger interviews took place between 07.00 and 21.00. Whereas the counts aimed to record every passenger entering the station during these times, the interview sample aimed to collect a target number of interviews during each time period across different days.
- 5.50 The 95% confidence level is generally accepted as the appropriate benchmark and so for a 95% confidence interval, the sample sizes in Table 5.3 were calculated for each survey period.

TABLE 5.3 SURVEY SAMPLE SIZES

Time period	Target sample sizes	Target % of average daily usage	Achieved % of average daily usage
Weekday A.M. peak (07.00 - 10.00)	270	16%	10%
Weekday inter peak (10.00 - 16.00)	150	11%	25%
Weekday P.M. peak (16.00 - 19.00)	300	25%	22%
Weekday evening (19.00 - 21.00)	120	16%	14%
Weekday total	840	17%	19%⁶
Saturday total (10.00 - 18.00)	300	11%	11%
Weekend total	300	11%	11%
Total no. of face to face interviews	1140	22%	24%⁶

⁵ "station-entry-and-exit-figures.xls" available from:
<http://www.tfl.gov.uk/corporate/modesoftransport/londonunderground/1592.aspx>

(Weekday passengers stated is the average of weekday entries and exits, weekend the average of Saturday and Sunday entries and exits.)

⁶ Includes responses where no time of day recorded

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5.51 For the counts, the aim was to count all arrivals during two representative fourteen hour periods on weekdays and one eight hour period on a Saturday, by positioning surveyors at strategic points (car parks, cycle parks, taxi ranks) as well as at entrances and exits from the station. In this way, arrivals by mode were collected as a proportion of all entrances. Counts were categorised as follows (arrivals only):

- Car, as driver
- Car, as passenger
- Bus
- Bicycle
- Motorcycle
- Pedestrian
- Taxi
- Other (specified)
- Don't know

5.52 The passenger travel surveys to be conducted in October 2021 will follow the same format as far as possible.

Travel Times & Reliability

5.53 The rail link is a segregated line and so there is little scope for variability in travel time when in operation. Transport for London already report on the performance measure of Percentage of Scheduled Kilometres Operated (PoS):

- *“[PoS] is a measure of [LUL’s] performance in operating the train service that is scheduled to operate in passenger service. It is measured over the whole of the traffic day, seven days per week, and takes account of trains that are turned short of their intended destination as well as trains that are cancelled. Actual kilometres operated are expressed as a percentage of scheduled kilometres, which are the distances timetabled to be run, adjusted for any planned short-term changes to the timetable such as weekend engineering works.”⁷*

5.54 It has been proposed⁸ that PoS data be used as the performance benchmark for the scheme for use in measuring ‘significant and prolonged disruption’ to services and hence compensation payments from LUL to HCC. Therefore, as this information is already collected by LUL and is also to be used for the scheme for other purposes, it is recommended that this data also be used as a proxy for travel times and their variability in the rail corridor.

5.55 LUL produce performance reports on four-week periods throughout the year (with a lag of around 3 months). This includes PoS, although the publicly available

⁷ London Underground Performance Reports, available from:
<http://www.tfl.gov.uk/corporate/modesoftransport/londonunderground/1592.aspx>

⁸ ‘Performance Benchmarks and Metrics’, memo to HCC dated 15th Nov 2012, paragraph 1.17

documents report at a tube line level. Therefore, data specific to CRL will be provided by LUL.

- 5.56 HCC has access to DfT Traffic Master data (journey speed, time etc.), which it uses to analyse journey time reliability along the A412, a major east-west road corridor in Watford (see Figure 2.1 for location). The data is provided on an annual basis in December for the preceding academic year, and so 2012/13 data will be available in December 2013 for use as a baseline and will be compared with data for subsequent years. This data will be used to analyse changes that may have occurred on this route due to CRL.

Impacts on the Economy

- 5.57 For **congestion relief**, it is proposed that a cost-effective method is to monitor the direct contributor to congestion; namely changes to distances driven by those accessing stations by road. This data can be obtained from the passenger travel survey results triangulated against station access counts, along with ATC and Traffic Master data.
- 5.58 **Access to job opportunities and local services** will be measured using TfL's PTAL (Public Transport Accessibility Level) method⁹. The PTAL measure reflects:
- Walking time from a point-of interest to public transport access points.
 - The reliability of the service modes available.
 - The number of services available within a catchment area.
 - The level of service at the public transport access points - i.e. average waiting time.
- 5.59 A baseline plot of accessibility was created based upon station locations and the planned service pattern. These plots will be updated with data from the actual service pattern after year one and year five and comparisons made to the baseline.
- 5.60 The passenger travel survey will collect postcode information of respondents. This will be used to assess how those using the station compare to the accessibility plots.
- 5.61 The effect on **local land development** will be investigated by comparing the numbers and types of planning applications before the scheme with those five years after the scheme opens.
- 5.62 Information on the **jobs created** by the scheme will be obtained from the construction contractors. Jobs created by the on-going operation of the scheme will be obtained from TfL.
- 5.63 To understand the impact on jobs in the locality in general, interviews will be conducted with local major employers. At the BAFFB (Best And Final Funding Bid) stage for the scheme (2011), interviews were conducted¹⁰ with the following sixteen local major businesses and developers to understand the potential economic impacts of CRL for these organisations:

⁹ Measuring Public Transport Accessibility Levels, Transport for London, April 2010

¹⁰ Economic Impacts Report, Steer Davies Gleave, August 2011

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- Watford and West Herts Chamber of Commerce
- Centros
- Watford Health Campus
- Croxley Green Business Park
- Sigma
- DDD Ltd
- John Lewis
- Matthew Arnold & Baldwin LLP
- Hays
- Total
- NatWest
- Clydesdale Bank
- Pharmasure
- VAL AD Development Group
- Harlequin Shopping Centre
- Warner Bros

5.64 It is proposed that follow-up interviews are conducted with these organisations (along with others who may have moved to the area, to be identified at the time) one year and five years following commencement of operation. This will aid in assessing the impact on indirect jobs, as well as triangulating other information on impacts on the economy noted above. District council representatives will also be interviewed.

Carbon Impacts

5.65 The Environmental Statement prepared for the TWAO submission concluded that there will be a non-material reduction in carbon-related emissions¹¹.

5.66 As the forecast carbon impacts are low - and as carbon emissions are proportional to distance travelled - changes in emissions due to those accessing the station will be calculated using distances travelled obtained from the passenger survey (based on postcodes), assumptions on fleet composition and WebTAG emissions factors¹².

Impacts on Noise, Air Quality & Accidents

5.67 As part of the Environmental Assessment, current **noise** levels have been monitored at twelve receptor sites and the change in noise levels due to operational train noise predicted. Though the predicted noise levels are below the threshold to qualify for assistance under the Noise Insulation (Railways and Other Guided Transport Systems) Regulations, two receptor sites are predicted to be above the design target for train related noise as specified in LUL's own design guidance. Noise mitigation measures will therefore be provided at these sites along with visual screening at the Laurence Haines School.

5.68 After completion of the scheme, noise levels will be measured once again at the receptor locations for comparison to the predicted levels with and without

¹¹ Environmental Statement, ch.8 Air Quality, paragraph 8.5.22

¹² WebTAG 3.3.5

mitigation. Monitoring will also be carried out at the locations recommended in the TWAO Inspector’s Report¹³. In addition, unsolicited feedback will be used to inform the analysis.

- 5.69 The Environmental Statement prepared for the TWAO submission also concluded that *“the proposed scheme will not have a significant effect”*¹⁴ on nitrogen dioxide and a *“negligible impact”*¹⁵ on particulate matter.
- 5.70 As the forecast **air quality** impacts are low - and to minimise costs - as emissions are proportional to distance travelled, rather than directly monitor nitrogen dioxide and particulate matter themselves, changes in distances travelled by those accessing the station (based on postcode from the passenger survey) will be monitored.
- 5.71 The MSBC states that, *“An assessment of accidents is not justified because of the low level of mode shift from highway, although what impact there is will be positive.”*¹⁶ However, HCC process STATS19 data on behalf of the police, giving them access to details of all injury accidents recorded on the police STATS19 forms in Hertfordshire (including Highways Agency roads). Therefore, it is proposed that **accidents** are monitored through collation of data on accidents within the vicinity of the affected stations recorded in such a manner.

Economic Evaluation

- 5.72 At the ex-ante stage, assumptions and estimates were used in the economic appraisal to derive a Benefit-Cost Ratio (BCR) for the scheme. The aim of the economic evaluation is to assess the scheme’s value for money ex-post through a re-evaluation of the BCR using outturn values in place of assumptions and estimates. Data for this part of the evaluation will be collected in the following categories from the Monitoring and Evaluation Framework:
 - Costs
 - Delivered Scheme
 - Outturn Appraisal Assumptions
- 5.73 The DfT’s Transport Appraisal Guidance (WebTAG) methodology has been applied to assess the economic benefits of the project.
- 5.74 Figure 5.1 shows the structure of the models used, starting with the transport modelling software and finishing with the Appraisal Model, which produces the Transport Economic Efficiency (TEE), Public Accounts (PA) and Analysis of Monetised Costs and Benefits (AMCB) tables.

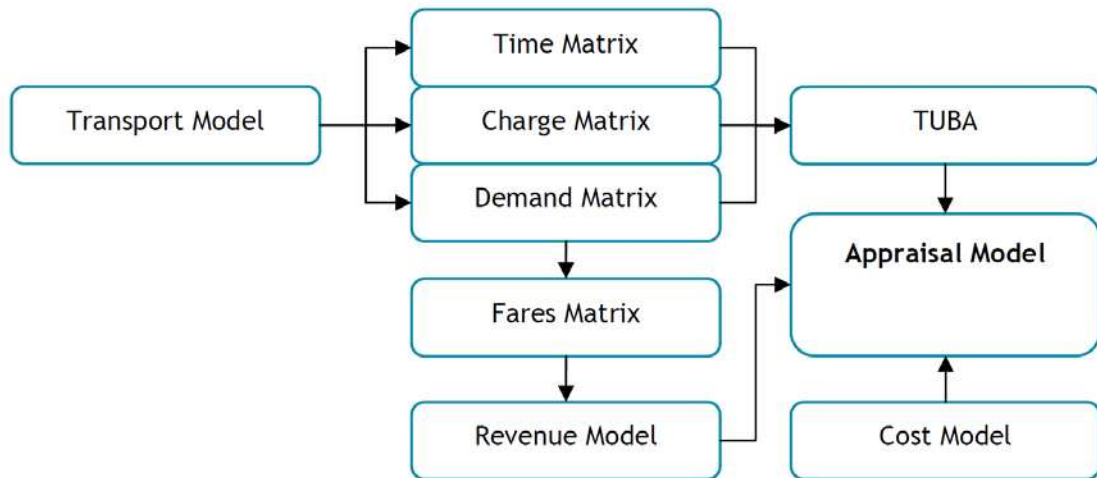
¹³ Croxley Rail Link Report to the Secretary of State for Transport, A. Pykett, paragraph 8.76

¹⁴ Environmental Statement, ch.8. Air Quality paragraph, 8.5.17

¹⁵ Environmental Statement, ch.8. Air Quality paragraph, 8.5.20

¹⁶ MSBC Executive Summary, Table 2, p. vii

FIGURE 5.1 ECONOMIC APPRAISAL MODEL STRUCTURE



- 5.75 Table 5.4 shows the steps of the modelling process used for the economic appraisal for the BAFFB and how each step will be revisited for the economic evaluation so that estimates and assumptions can be updated with outturn information where possible.
- 5.76 As WebTAG is revised and updated from time to time, there will also need to be an exercise to compare the ex-ante and ex-post appraisals both with and without these changes.

Summary

- 5.77 The next section of this document (section 6) provides further details on *what* information will be collected and *when* for each of the evaluation categories specified in the DfT Framework and discussed above, organised by the stages in the logic map (Figure 3.1). Table 5.5 demonstrates how each of those categories maps to the three types of evaluation, the logic map stage, the research questions and hence the evaluation objectives, illustrating the linkages between them.

TABLE 5.4 ECONOMIC EVALUATION

	WebTAG Methodology Used to Appraise Economic Benefits for BAFFB	Economic Evaluation After Year 5 From Scheme Opening
1.	Modelling and comparing the “Do Something” preferred option scenario against the “Do-Minimum” scenario.	<p>Create an ex-post “Do Something” scenario by updating the model to reflect outturn values for:</p> <p>CRL service characteristics.</p> <p>Current demand and hence impact on forecast growth.</p> <p>Also update “Do-Minimum” scenario to reflect any changes to, for e.g. complete and now committed schemes.</p> <p>Use the ex-post model to generate new outputs for the forecast year for use in TUBA.</p> <p>Compare outturn data with that forecast by the ex-ante model for year 5 to assist in validating mode choice and abstraction estimates and assumptions.</p>
2.	Estimating the capital and operating costs of the project based on a detailed design and quantity assessment.	<p>Update the Cost Model with:</p> <p>Outturn values for capital cost.</p> <p>Outturn values for operating costs up to year 5 after scheme opening.</p> <p>If applicable, revised estimated operating costs for post year 5 based on outturn values up to that year.</p>
3.	Using TUBA to assess the impacts of the project on business and consumer user benefits.	Input Time, Charge and Demand matrices to TUBA derived from the ex-post Transport Model. This will provide user benefits for the appraisal spreadsheet model.
4.	Using a suite of spreadsheet models and a stop to stop fare matrix to analyse changes in fare revenue across different public transport services.	<p>Compare forecast revenue in year 5 to outturn values.</p> <p>Update model with outturn values to re-forecast revenue over whole appraisal period and compare to ex-ante.</p>
5.	Creating a spreadsheet model to appraise the capital and operating costs, and non-user benefits.	<p>For the ‘One year After’ report, using forecast and outturn scheme costs along with rail travel demand one year after scheme opening, estimate the year one outturn benefit for comparison against the forecast.</p> <p>For the Final Rpeort, update the Appraisal Model with outturn values from the above model components to produce ex-post TEE, PA and AMCB tables for comparison to ex-ante results.</p>

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TABLE 5.5 EVALUATION APPROACH SUMMARY

Evaluation Type	Evaluation Category	Logic Map Stage	Research Questions	Evaluation Objectives
Process Evaluation	<ul style="list-style-type: none"> ▪ Scheme Build ▪ Delivery Process ▪ Costs ▪ Delivered Scheme 	<ul style="list-style-type: none"> ▪ Inputs ▪ Outputs 	<p>A1. Was the scheme delivered on time and within budget?</p> <p>A2. What contributed to the successes and are there any lessons to be learnt?</p>	<p>A. The resources committed to make the project a reality have been utilised and managed effectively;</p>
Impact Evaluation	<ul style="list-style-type: none"> ▪ Travel Demand ▪ Travel Behaviour ▪ Travel Times & Reliability ▪ Impacts on the Economy ▪ Impacts on Carbon ▪ Impacts on Noise ▪ Impacts on Local Air Quality ▪ Impacts on Accidents 	<ul style="list-style-type: none"> ▪ Short Term Outcomes ▪ Medium Term Outcomes ▪ Impacts 	<p>B1. Are patronage levels in line with the forecasts?</p> <p>B2. Are travellers using the scheme in the anticipated manner? (e.g. Time of day, direction, length)</p> <p>B3. If differences are evident, for what reasons have these occurred?</p> <p>C1. Has the scheme resulted in Watford being a better place to live and work?</p> <p>C2. Does the scheme promote social inclusion through improved accessibility?</p> <p>C3. Has the scheme resulted in less car km travelled and hence a reduction in congestion and emissions?</p> <p>C4. How are the impacts distributed between those who gain and those who lose?</p>	<p>B. The scheme has resulted in the forecast levels of patronage and hence the associated changes related to other modes;</p> <p>C. Through the presence and use of the scheme, the anticipated benefits have been realised;</p>
Economic Evaluation	<ul style="list-style-type: none"> ▪ Costs ▪ Delivered Scheme ▪ Outturn Appraisal Assumptions 	<ul style="list-style-type: none"> ▪ Inputs ▪ Outputs ▪ Impacts 	<p>D1. Is the service commercially sustainable?</p> <p>D2. Are the borrowing repayments covered?</p> <p>D3. Do the outturn costs and benefits demonstrate that investment in the project was justified?</p>	<p>D. The scheme has been a valuable investment in the area.</p>

6 Data Requirements & Collection Methods

- 6.1 This section provides information on the data that will be collected to satisfy each of the requirements in the DfT guidance under standard monitoring, enhanced monitoring and fuller evaluation.
- 6.2 The information is provided in table format and for each DfT requirement, the following is noted:
- Reason for collection (and the relevant research question) - Whether the requirement relates to:
 - Standard monitoring
 - Enhanced monitoring
 - Fuller evaluation and specifically whether:
 - Process evaluation
 - Impact evaluation
 - Economic evaluation
 - Scheme objective
 - Tasks and data collection needed to establish a baseline.
 - This is mainly concerned with ensuring that baseline data is identified, collected and recorded so as to be easily identified and retrieved when it is required for reporting at a future date.
 - If the requirement will be monitored during construction, and if so, additional notes on the approach.
 - If the requirement will be reported on in the 'One Year After' report specified in the DfT guidance, and if so, additional notes on the approach.
 - If the requirement will be reported on in the Final Report specified in the DfT guidance, and if so, additional notes on the approach.
- 6.3 For the latter three points above, where the requirement is related to a project management process or fuller evaluation, the additional notes build upon the detail in section 5.
- 6.4 As the M&E Manager role will be performed by the Project Manager (see section 8 for more information), the PM is referred to in the following tables. However, note that it is assumed that the PM may delegate tasks to other members of the team at the point of implementation.

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TABLE 6.1 INPUTS

Reason for Collection	DfT Requirements	Baseline	Monitor During Construction	Report on in 'One Year After' Report	Report on in Final Report
Standard Monitoring A1, A2	Scheme Build <i>Programme/project plan assessment, including measures of delivery at key milestones (e.g. implementation log);</i>	Project plan to be provided by the Main Works Contractor to CMG.	✓ Progress against plan reviewed by the CMG at the Monthly Contract Progress Meeting	✓ Report on how well the project progressed compared to plan. Review with the CMG the level of success of corrective actions taken and the lessons learnt.	✓ Include 'One Year After' content for information.
Standard Monitoring A2	Scheme Build <i>Stakeholder management approaches and lessons learnt from this;</i>	Stakeholder management plan to be documented by the SEG.	✓ Stakeholder management actions will be reviewed by the SEG at their monthly meetings.	✓ A review of the impacts and level of success of the actions that have arisen as an output of the SEG meetings.	✓ Include 'One Year After' content for information.
Standard Monitoring A2	Scheme Build <i>Risk management effectiveness (assessing impacts from the risk register);</i>	Risk Register to be documented by the Main Works Contractor's Risk Manager and reviewed with CMG.	✓ Risk Register and the status of actions will be reviewed at least monthly by the Main Works Contractor's own Risk Manager and at the monthly Contract Progress Meeting with CMG.	✓ Review the success or otherwise of the chosen mitigation approaches as documented by the risk management process.	✓ Include 'One Year After' content for information.

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Reason for Collection	DfT Requirements	Baseline	Monitor During Construction	Report on in 'One Year After' Report	Report on in Final Report
Standard Monitoring A1	Scheme Build <i>Assessment of whether the scheme is on track to deliver the anticipated benefits and details of any benefits realised.</i>	PM to document the Baseline Report	✓ During construction, progress on realising benefits will be the same as progress against the project plan.	✓ Report on progress against the Baseline Report	✓ Include 'One Year After' content for information.
Standard Monitoring A1, A2, D3	Outturn Costs <i>Outturn investment costs broken down into elements in a similar form as for the Major Scheme funding bid.</i>	PM to ensure that correct version of forecast capital costs are stored in the M&E files.	✓ CMG fortnightly budget review meetings with Main Works Contractor with monthly budget reporting to the Project Board.	✓ Analysis of the estimated costs versus outturn costs to identify areas of over and under spend and the reasons for this.	✓ Include 'One Year After' content for information.
Standard Monitoring A1, A2, D3	Outturn Costs <i>Analysis of manifestation of identified risk in the elements of investment costs.</i>	As above	✓ As above	✓ As above	✓ As above
Standard Monitoring A1, A2, D3	Outturn Costs <i>Identification of cost elements with savings and identification of the reasons for cost savings.</i>	As above	✓ As above	✓ As above	✓ As above
Standard Monitoring A1, A2, D3	Outturn Costs <i>Analysis of cost elements with overruns and identification of the reasons for cost overruns.</i>	As above	✓ As above	✓ As above	✓ As above

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Reason for Collection	DfT Requirements	Baseline	Monitor During Construction	Report on in 'One Year After' Report	Report on in Final Report
Standard Monitoring A2, D1, D3	Outturn Costs <i>Outturn operating costs; including evidence of differences between outturn and forecasts and identification of any reasons for the differences.</i>	PM to ensure correct version of forecast operating costs are stored in M&E files.	–	✓ Headline update only, as there will be limited data at this time.	✓ Full report on differences between outturn and forecasts and identification of reasons for the differences.
Standard Monitoring A2, D1, D3	Outturn Costs <i>Outturn maintenance or other capital costs compared with forecasts and any unanticipated costs identified. The causes of any variations from forecast costs should be analysed.</i>	PM to ensure correct version of forecast costs are stored in M&E files.	–	✓ As above	✓ As above

Reason for Collection	DfT Requirements	Baseline	Monitor During Construction	Report on in 'One Year After' Report	Report on in Final Report
Fuller Evaluation - Process Evaluation A2	<p>Delivery Process</p> <p><i>Scheme context - A detailed description of the context at the time of planning. Significant changes in the context should be documented during scheme construction to help determine whether similar results may be expected in other areas or whether the results are site specific.</i></p>	Create Scheme Context baseline document through update of the MSBC Scheme Context data categories.	<p style="text-align: center;">✓</p> <p>PM to update as necessary following SEG meetings.</p>	<p style="text-align: center;">✓</p> <p>Update Scheme Context document where new information is available. Identify where changes have occurred in comparison to the baseline and if these have had - or have the potential to have - any impact on the success of the scheme.</p> <p>Include feedback from stakeholders and delivery partners to complement the data.</p>	<p style="text-align: center;">✓</p> <p>Include 'One Year After' content for information.</p>

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Reason for Collection	DfT Requirements	Baseline	Monitor During Construction	Report on in 'One Year After' Report	Report on in Final Report
<p>Fuller Evaluation - Process Evaluation</p> <p>A1, A2</p>	<p>Delivery Process</p> <p><i>Scheme inputs - An assessment of the critical success factors and key obstacles to resourcing the scheme (to be considered in its widest sense of capital and revenue investment, staffing, skills / expertise, leveraging resources, securing approvals, accessing fit for purpose materials and services).</i></p>	<p>PM to raise risks relating to resourcing critical success factors for inclusion in the project risk register.</p>	<p>✓</p> <p>Critical success factors and key obstacles to resourcing the scheme will be raised as risks and managed via the risk management process.</p>	<p>✓</p> <p>Review the success or otherwise of the chosen mitigation approaches as documented by the risk management process.</p> <p>Gather feedback from stakeholders and delivery partners via the SEG.</p> <p>Gather feedback via a lessons learnt session with the project team members on the effectiveness of governance processes.</p>	<p>✓</p> <p>Include 'One Year After' content for information.</p>
<p>Fuller Evaluation - Process Evaluation</p> <p>A1, A2</p>	<p>Delivery Process</p> <p><i>Risk management - An assessment of the effectiveness of the risk management strategy and mitigation measures on key risks; for example, safety during construction, delays and any negative (perceived or real) impacts on transport users, local communities and businesses during construction. Depth (sic) case studies may be required to investigate significant risks or issues experienced during construction.</i></p>	<p>Risk Register to be documented by the Main Works Contractor's Risk Manager and reviewed with CMG. Key risks to be identified by the Risk Manager and CMG.</p>	<p>✓</p> <p>Risk Register and the status of actions will be reviewed at least monthly by the Main Works Contractor's own Risk Manager and at the monthly Contract Progress Meeting with CMG. (As key risks will be subject to a greater level of analysis ex-post, also review that suitably granular information is being recorded for this purpose.)</p>	<p>✓</p> <p>Review the success or otherwise of the chosen mitigation approaches as documented by the risk management process.</p>	<p>✓</p> <p>Include 'One Year After' content for information.</p>

TABLE 6.2 OUTPUTS

Reason for Collection	DfT Requirements	Baseline	Monitor During Construction	Report on in 'One Year After' Report	Report on in Final Report
Standard Monitoring A1, A2	Delivered Scheme <i>A full description of implemented scheme outputs; including a clear map of the overall scheme and maps of individual elements if appropriate;</i>	Baseline is the scheme specification submitted for Full Approval.	✓ Use project's change control process ('Compensation Events' in the NEC3 Professional Services and Engineering & Construction Contracts) to identify changes and update scheme design documentation where required.	✓ Report on any changes to scheme outputs and their (potential) impacts.	✓ Include 'One Year After' content for information.
Standard Monitoring A1, A2	Delivered Scheme <i>Identification of any changes to the scheme since funding approval. For example, changes to route and/or design of the scheme and details of the reasons for any such changes;</i>	Baseline is the scheme specification submitted for Full Approval.	✓ Use project's change control process ('Compensation Events' in the NEC3 Professional Services and Engineering & Construction Contracts) to identify changes and update scheme design documentation where required.	✓ Report on any changes to scheme outputs and their (potential) impacts.	✓ Include 'One Year After' content for information.
Standard Monitoring A2, D1	Delivered Scheme <i>If relevant, identification of any changes to assumptions on fare levels or provision of services by operators and provision of any evidence and/or analysis available for the reason for any such changes;</i>	Baseline is the scheme specification submitted for Full Approval.	–	✓ Changes to fare levels and services compared to the baseline will be identified through the quarterly revenue reports and the 4-weekly PoS reports respectively. Reasons for changes will be obtained through discussion with LUL.	✓ Changes to fare levels and services compared to the baseline will be identified through the quarterly revenue reports and the 4-weekly PoS reports respectively. Reasons for changes will be obtained through discussion with LUL.

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Reason for Collection	DfT Requirements	Baseline	Monitor During Construction	Report on in 'One Year After' Report	Report on in Final Report
<p>Standard Monitoring</p> <p>A1, A2</p>	<p>Delivered Scheme</p> <p><i>Identification of changes to mitigation measures (e.g. on landscape, noise mitigation, etc.) with a clear description of the changes and the reasons for implementation;</i></p>	<p>Baseline is the scheme specification submitted for Full Approval.</p>	<p>✓</p> <p>Use project's change control process ('Compensation Events' in the NEC3 Professional Services and Engineering & Construction Contracts) to identify changes and update scheme design documentation where required.</p>	<p>✓</p> <p>Report on any changes to scheme outputs and their (potential) impacts.</p>	<p>✓</p> <p>Include 'One Year After' content for information.</p>
<p>Standard Monitoring</p> <p>Scheme Objective</p> <p>B1, B2, C4, D1</p>	<p>Delivered Scheme</p> <p><i>An assessment of whether the scheme has reached the intended beneficiaries.</i></p>	<p>Baseline is the scheme specification submitted for Full Approval.</p>	<p>–</p>	<p>✓</p> <p>Evaluate through results of passenger travel surveys at new and newly served stations, along with feedback from project team, stakeholders and delivery partners via the SEG and lessons learnt sessions.</p>	<p>✓</p> <p>Evaluate through results of passenger travel surveys at new and newly served stations.</p>

Reason for Collection	DfT Requirements	Baseline	Monitor During Construction	Report on in 'One Year After' Report	Report on in Final Report
<p>Fuller Evaluation - Process & Impact Evaluation Scheme Objective</p> <p>A1, B1, B2, B3, C4, D1, D3</p>	<p>Delivered Scheme</p> <p><i>Scheme outputs - Evidence that the scheme has been delivered to the quality standard expected and meets the requirements set out in the business case, including the needs of stakeholders and end users.</i></p>	-	<p>✓</p> <p>Upon completion of construction, an evaluation of whether the scheme has been delivered to the quality standard expected will be conducted based upon the evidence collected from the activities of CRAG during construction.</p>	<p>✓</p> <p>Evaluation will be based upon a combination of:</p> <ul style="list-style-type: none"> • Station access counts and ticket barrier demand data at Ascot Road and Watford Hospital which will provide information on whether the scheme is being used by end users as intended - and; • Feedback obtained from stakeholders via the SEG. 	<p>✓</p> <p>Evaluation will be based upon the results of the passenger travel surveys - which will provide information on whether the scheme is being used by end users as intended.</p>
<p>Fuller Evaluation - Process & Impact Evaluation</p> <p>ALL</p>	<p>Delivered Scheme</p> <p><i>Assessment of causal pathway - Evidence that the scheme has been delivered as intended and is on track to deliver the intended outcomes. In cases where the outputs differ from what was anticipated it is important to understand why and what the impacts of this will be on the delivery of the outcomes.</i></p>	-	-	<p>✓</p> <p>Re-visit logic maps via meetings with project team, key stakeholders and delivery partners to verify progress as planned and/or possible deviations.</p>	<p>✓</p> <p>Arrange a 'lessons learnt' session with project team, key stakeholders and delivery partners to review the steps in the ex-ante logic map, re-draw to represent what has actually occurred and conduct a gap-analysis.</p>

Monitoring & Evaluation Plan

TABLE 6.3 OUTCOMES

Reason for Collection	DfT Requirements	Baseline	Monitor During Construction	Report on in 'One Year After' Report	Report on in Final Report
Standard Monitoring B1, B2, B3	Travel Demand <i>Road traffic flows in the corridors of interest, including analysis of the difference between outturn results and scheme forecasts at both route and screenline level.</i> <i>Counts of pedestrians and cyclists</i>	October 2013 - Conduct and analyse results of station access counts and Analyse ATC counts at existing Watford Met station and on the A412 corridor. (ATC volume counts are conducted by HCC for one week every quarter.)	–	✓ Results of station access and ATC counts at new stations and on the A412 corridor, conducted in October 2017, compared to October 2013.	✓ Results of station access and ATC counts at new stations and on the A412 corridor along with passenger travel surveys at new and newly served stations, conducted in October 2021, compared to October 2013 and 2017.
Standard Monitoring Scheme Objective B1, B2, B3	Travel Demand <i>Patronage of the public transport system in the area of interest... including analysis of the difference between outturn results and scheme forecasts at both route and screenline level (i.e. identification of abstraction from pre-existing services);</i>	PM to ensure correct version of forecast patronage from the modelling conducted for the business case is stored in the M&E files.	–	✓ Compare forecast with the data collected for use in calculating payments of surplus revenue to HCC.	✓ Compare forecast with the data collected for use in calculating payments of surplus revenue to HCC.
Standard Monitoring Scheme Objective B1, B2, B3, C3	Travel Times & Reliability <i>Travel times in the corridors of interest, including analysis of the difference between outturn results and scheme forecasts at route level.</i>	CRL - Baseline travel time will be as per the scheme's design (route distance divided by vehicle speed). Highway - Baseline journey time data from Dec 13 Traffic Master data for the A412.	✓	✓ Analysis of: <ul style="list-style-type: none"> • Four-weekly measure of actual km service is operated vs. scheduled (i.e. PoS). • Annual Traffic Master data for A412. 	✓ Updated analysis of: <ul style="list-style-type: none"> • Four-weekly measure of actual km service is operated vs. scheduled (i.e. PoS). • Annual Traffic Master data for A412.

Reason for Collection	DfT Requirements	Baseline	Monitor During Construction	Report on in 'One Year After' Report	Report on in Final Report
Standard Monitoring Scheme Objective B1, B2, B3, C3	Travel Times & Reliability <i>Variability of travel times in the corridors of interest, and if applicable, analysis of the difference between outturn results and scheme forecasts at route level.</i>	CRL - Baseline as per scheme based on vehicle speed and route length. Highway - Baseline journey reliability data from Dec 13 Traffic Master data for the A412.	✓	✓ As above	✓ As above
Fuller Evaluation - Impact Evaluation Scheme Objective B1, B2, B3, C3, C4	Travel Behaviour <i>Mode shift - Build on the evidence generated through the measure of travel demand ... by demonstrating that assumptions about mode shift have been realised and understanding unintended effects.</i>	October 2013 - Conduct and analyse results of passenger travel surveys at existing Watford Met station.	-	-	✓ Results of passenger travel surveys at new and newly served stations conducted in October 2021, compared to October 2013 and 2017.
Fuller Evaluation - Impact Evaluation Scheme Objective B1, B2, B3, C3	Travel Behaviour <i>Changes in destination - Some schemes will lead to changes in trip destinations.</i>	October 2013 - Conduct and analyse results of passenger travel surveys at existing Watford Met station.	-	-	✓ Results of passenger travel surveys at new and newly served stations conducted in October 2021 compared to October 2013 and 2017.

Monitoring & Evaluation Plan

TABLE 6.4 IMPACTS

Reason for Collection	DfT Requirements	Baseline	Monitor During Construction	Report on in 'One Year After' Report	Report on in Final Report
Standard Monitoring Scheme Objective C2	Impacts on the Economy <i>Travel times / accessibility changes to businesses</i>	Baseline exists as a combination of the scheme's forecast accessibility plots and planned service frequency using the PTAL method (Public Transport Accessibility Level). PM to ensure correct versions are stored in M&E files.	–	✓ Update PTAL analysis with actual service frequency obtained from LUL and compare to baseline.	✓ Update PTAL analysis with actual service frequency obtained from LUL and compare to baseline.
Standard Monitoring C1	Impacts on the Economy <i>Changes to employment levels</i>	PM to summarise CRL relevant findings from the output of the proposed 'Updated Economic Assessment for Watford' study.	–	✓ Revisit 'Updated Economic Assessment' data sources and analyse changes.□□□□	✓ Revisit 'Updated Economic Assessment' data sources and analyse changes.
Standard Monitoring C1	Impacts on the Economy <i>Changes to rental values</i>	Document commercial and domestic rent levels from data collected by WBC, local estate agents and contacting local landlords.	✓ Update data on a quarterly basis. (Indicates if values rise before project completion.)	✓ Continue to collect data quarterly and provide an analysis of changes evident	✓ Continue to collect data quarterly and provide an analysis of changes evident

Reason for Collection	DfT Requirements	Baseline	Monitor During Construction	Report on in 'One Year After' Report	Report on in Final Report
Fuller Evaluation - Impact Scheme Objective C1, C2, C3	<i>Impacts on the Economy</i> <i>Congestion relief</i>	Highway km travelled obtained from October 2013 passenger travel surveys at existing Watford Met station. October 2013 station access counts. 2013 HCC ATC data.	–	✓ Comparison of October 2017 access counts to October 2013 to provide an interim indicator of change. Comparison of 2017 and 2013 HCC ATC data. Triangulate with results of interviews conducted with local major employers and district council representatives.	✓ Changes to highway km driven obtained from results of passenger travel surveys at new and newly served stations conducted in October 2021. Comparison of 2021, 2017 and 2013 HCC ATC data. Triangulate with results of interviews conducted with local major employers and district council representatives.
Fuller Evaluation - Impact Scheme Objective C1, C2	<i>Impacts on the Economy</i> <i>Increasing access to job opportunities and local services.</i>	Baseline exists as a combination of the scheme's forecast accessibility plots and planned service frequency using the PTAL method (Public Transport Accessibility Level). PM to ensure correct versions are stored in M&E files.	–	✓ Update PTAL analysis with actual service frequency obtained from LUL and compare to baseline. Triangulate with results of interviews conducted with local major employers and district council representatives.	✓ Update PTAL analysis with actual service frequency obtained from LUL and compare to baseline. Triangulate with results of interviews conducted with local major employers and district council representatives.
Fuller Evaluation - Impact C1	<i>Impacts on the Economy</i> <i>Facilitating local development.</i>	Review number and types of local planning applications.	–	– (Considered to be not enough time passed for there to be an impact. However, can discuss plans during interviews conducted with local major employers and district council representatives.)	✓ Review number and types of local planning applications. Triangulate with results of interviews conducted with local major employers and district council representatives.

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Reason for Collection	DfT Requirements	Baseline	Monitor During Construction	Report on in 'One Year After' Report	Report on in Final Report
Fuller Evaluation - Impact Evaluation C1	Impacts on the Economy <i>Jobs created by the scheme, directly and indirectly</i>	–	✓ Direct jobs - Jobs created information from construction contractors.	✓ Direct jobs - Jobs created by on-going operation of the scheme through information from TfL. Indirect jobs - Conduct interviews with local major employers and district council representatives.	✓ Direct jobs - Jobs created by on-going operation of the scheme through information from TfL. Indirect jobs - Conduct interviews with local major employers and district council representatives.
Standard Monitoring - Carbon Impacts C1	Carbon Impacts <i>Effect of the scheme on carbon in the area of interest... and analysis of the difference between outturn results and scheme forecasts</i>	Baseline exists as the scheduled km of the service (proportional to carbon emissions).	–	✓ Changes to services that result in a change in train operating km compared to scheme forecast (and hence a change in carbon emissions).	✓ Changes to services that result in a change in train operating km compared to scheme forecast (and hence a change in carbon emissions).
		Highway km travelled obtained from October 2013 passenger travel surveys at existing Watford Met station. October 2013 station access counts.	–	✓ Comparison of October 2017 access counts to October 2013 to provide an interim indicator of change.	✓ Calculations based on changes to highway km driven by those accessing the station (obtained from results of passenger travel surveys at new and newly served stations conducted in October 2021) and WebTAG carbon emission factors.

Reason for Collection	DfT Requirements	Baseline	Monitor During Construction	Report on in 'One Year After' Report	Report on in Final Report
Fuller Evaluation - Impact C1	Carbon Impacts <i>Analysis of changes to travel behaviour should be used to supplement the analysis of carbon outlined in the standard monitoring section.</i>	Above information to be triangulated against results of October 2013 passenger survey.	–	✓ Comparison of October 2017 access counts to October 2013 to provide an interim indicator of change.	✓ Above information to be triangulated against results of October 2021 passenger survey.
Enhanced Monitoring C1	Noise Impacts <i>Effect of the scheme on noise levels at important receptor locations and analysis of the difference between outturn results and scheme forecasts.</i>	As part of the Environmental Assessment, measurements have been taken at 12 receptor sites and estimates of the noise increases have been made. Baseline measurements also to be taken at locations recommended in the TWAO Inspector's Report. PM to ensure correct version of measurements and estimates are stored in M&E files.	–	✓ Measure noise levels at receptor locations for comparison to the predicted levels with and without mitigation.	✓ Measure noise levels at receptor locations for comparison to the predicted levels with and without mitigation.
Fuller Evaluation - Impact Scheme Objective C1	Noise Impacts <i>This can be further developed by measuring the experience of community members and their perceptions of these issues.</i>	–	–	✓ Collate unsolicited public feedback.	✓ Collate unsolicited public feedback.

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Reason for Collection	DfT Requirements	Baseline	Monitor During Construction	Report on in 'One Year After' Report	Report on in Final Report
Enhanced Monitoring Scheme Objective C1	Air Quality Impacts <i>Effect of the scheme on local air quality in the area of interest and analysis of the difference between outturn results and scheme forecasts.</i>	Highway km travelled obtained from October 2013 passenger travel surveys at existing Watford Met station. October 2013 station access counts.	–	✓ Comparison of October 2017 access counts to October 2013 to provide an interim indicator of change.	✓ Changes to highway km driven by those accessing the station (obtained from results of passenger travel surveys at new and newly served stations conducted in October 2021).
Fuller Evaluation - Impact C1	Air Quality Impacts <i>This can be further developed by measuring the experience of community members and their perceptions of these issues.</i>	Above information to be triangulated against results of October 2013 passenger survey.	–	✓ Comparison of October 2017 access counts to October 2013 to provide an interim indicator of change.	✓ Above information to be triangulated against results of October 2021 passenger survey.
Enhanced Monitoring C1	Accident Impacts <i>Effect of the scheme on traffic accidents in the area of interest and analysis of the difference between outturn results and scheme forecasts.</i>	Collate STATS19 data within a cordon encompassing Watford Met, the newly served stations (Watford Junction and High St.) and the sites of Ascot Road and Watford Hospital stations.	–	✓ Comparison of the baseline to the latest available data along with an analysis of whether any changes can be attributed to the scheme.	✓ Comparison of the baseline to the latest available data along with an analysis of whether any changes can be attributed to the scheme. Calculation of economic (dis)benefits and comparison to that forecast in the ex-ante appraisal.
Fuller Evaluation - Impact C1	Accident Impacts <i>This can be further developed by measuring the experience of community members and their perceptions of these issues.</i>	–	–	✓ Collate unsolicited public feedback.	✓ Collate unsolicited public feedback.

Reason for Collection	DfT Requirements	Baseline	Monitor During Construction	Report on in 'One Year After' Report	Report on in Final Report
Fuller Evaluation - Economic D1, D2, D3	Outturn Appraisal Assumptions <i>Comparison of the model forecast and appraisal assumptions with outturn values - for example GDP, fuel prices, fares.</i>	Sensitivity analysis of the appraisal assumptions to ascertain those that are the most influential for testing with outturn data.	–	–	✓ Re-assess appraisal model using outturn data.
Fuller Evaluation - Economic D3	Outturn Appraisal Assumptions <i>Analysis of the outturn Transport Economic Efficiency (TEE) benefits and Benefits Cost Ratio compared with those projected in the Business Case.</i>	Sensitivity analysis of the appraisal assumptions to ascertain those that are the most influential for testing with outturn data.	–	–	✓ Re-assess appraisal model using outturn data.

7 Delivery & Dissemination Plan

Delivery

7.1 Figure 7.1 shows an outline delivery plan for monitoring and evaluation activities.

Evaluation Audience

7.2 There are a number of stakeholders who have an interest in the findings of the monitoring and evaluation exercise, each with differing needs. Table 7.1 summarises these stakeholders and the types of evidence that they will be interested in being provided with.

TABLE 7.1 EVALUATION AUDIENCE

Stakeholder	Role	Evidence Required
Department for Transport	Majority funder	<ul style="list-style-type: none"> ▪ Value for Money
Hertfordshire County Council	Lead promoter	<ul style="list-style-type: none"> ▪ Value for Money ▪ Commercially sustainable ▪ Socially beneficial
London Underground Limited	Service provider / joint promoter	<ul style="list-style-type: none"> ▪ Commercially sustainable ▪ Socially beneficial
Watford District Council	Section 106 funding	<ul style="list-style-type: none"> ▪ Regeneration impacts ▪ Socially beneficial
Three Rivers District Council	Section 106 funding	<ul style="list-style-type: none"> ▪ Regeneration impacts ▪ Socially beneficial
Local politicians	Promoting the needs of the local populace	<ul style="list-style-type: none"> ▪ Regeneration impacts ▪ Socially beneficial
Supporters / Objectors	Supporting or objecting to the scheme	<ul style="list-style-type: none"> ▪ Evidence that (dis)proves their position

Dissemination Plan

7.3 Below is a brief description of each of the proposed reports that have been included in the plan in Figure 7.1. Table 7.2 cross-references these reports to the stakeholders to show for whom each will be produced.

7.4 The following two reports are required as per the DfT guidance:

- I** 'One Year After' report:
 - *An initial report based on data collected at least one year (but less than two years) after scheme opening; with a report published within two years of scheme opening.*
- I** Final Report:

Monitoring & Evaluation Plan

- *A final report based on both ‘one year after’ data and further data collected approximately five years after scheme opening; with a report published within six years of scheme opening*

7.5 The following reports will also be produced:

- **Baseline Report** - this will collate the results from all monitoring base-lining activities and will provide the basis for comparison for the items that will be reported on in the ‘one year after’ and final report.
- **Quarterly Monitoring Reports (QMR)** - reports on progress made in producing the outputs. This will capture any risks of or actual deviations from the planned outputs, along with analysis of the impact and actions and owners to rectify or mitigate as appropriate.
- **Monitoring summary & outputs report** - following completion of construction, this will collate the results of monitoring activities conducted during construction along with a report on the extent to which the actual outputs meet the planned outputs.
- **Quarterly revenue reports** - these form part of a formal process between LUL and HCC for calculating revenue surplus. Content will also be used for monitoring a number of the outcome categories. For example, ticket barrier demand data will be used in the monitoring and evaluation of travel demand and travel behaviour changes.

TABLE 7.2 AUDIENCE REPORTING REQUIREMENTS

	Baseline Report	QMR	Monitoring summary & outputs report	Quarterly revenue reports	‘One Year After’ report	Final Report
DfT	✓	✓	✓		✓	✓
HCC	✓	✓	✓	✓	✓	✓
LUL			✓	✓	✓	✓
Watford District Council					✓	✓
Three Rivers District Council					✓	✓
Local politicians					✓	✓
Supporters / Objectors					✓	✓

FIGURE 7.1 OUTLINE DELIVERY PLAN

Financial Year:	2Q13/14	3Q13/14	4Q13/14	1Q14/15	2Q14/15	3Q14/15	4Q14/15	1Q15/16	2Q15/16	3Q15/16	4Q15/16	1Q16/17	2Q16/17	3Q16/17	4Q16/17	1Q17/18	2Q17/18	3Q17/18	4Q17/18	1Q18/19	2Q18/19	3Q18/19	4Q18/19	1Q19/20	2Q19/20	3Q19/20	4Q19/20	1Q20/21	2Q20/21	3Q20/21	4Q20/21	1Q21/22	2Q21/22	3Q21/22	4Q21/22	1Q22/23				
Before Construction Commences																																								
▪ Conduct station access counts		█																																						
▪ Conduct passenger travel surveys		█																																						
▪ Complete baseline report		█																																						
▪ Full Approval application made		█																																						
▪ Full Approval received		█																																						
▪ Quarterly Monitoring Reports	█	█	█																																					
During Construction & Operations¹⁷																																								
▪ Quarterly Monitoring Reports				█	█	█	█	█	█	█	█	█	█																											
▪ Monitoring and outputs report														█																										
▪ Quarterly revenue reports															█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	
'After Year 1' report																																								
▪ Data collection																█	█	█																						
▪ Conduct station access counts																	█																							
▪ Analysis																		█																						
▪ Reporting																			█																					
Final report																																								
▪ Data collection																																								
▪ Conduct station access counts																																								
▪ Conduct passenger travel surveys																																								
▪ Analysis																																								
▪ Reporting																																								

¹⁷ Timescales based on CRL Phase 3 Project Initiation Document (May 2013)

8 Resourcing & Governance

Governance Structure & Resources

- 8.1 Monitoring and evaluation (M&E) makes use of a large amount of information that is generated as part of project management (for example, risk management), but also requires communication with many different streams within or related to the project and its stakeholders (for example, implementing the passenger surveys). The M&E Manager will take ownership of these cross-functional activities to manage them and ensure completion. They will also have responsibility for delivering the M&E plan and managing quality assurance and risks associated with it.
- 8.2 The M&E Manager role will fall within the remit of the HCC Project Manager, Tom Duckmanton, who leads the Croyley Rail Link Assurance Group (CRAG) in Figure 8.1. The M&E manager will be supported in delivering the day-to-day remit by the Assistant Project Manager, Roxanne Glaud, who leads the Finance, Funding and Legal Agreements workstream in Figure 8.1. The Assistant Project Manager will be able to draw on the resources of the multi-disciplinary consultancy teams available to HCC.
- 8.3 The remit and review of data collection will have the technical support of HCC Data Collection Manager, Sue Jackson, who will review all completed reports submitted to the Assistant Project Manager and ultimately to the M&E Manager.
- 8.4 The HCC Project Manager reports to the Project Director, Richard Boutal, and will be a member of the Stakeholder Engagement Group and the Sponsor Steering Group. The role also meets regularly with the Project Board. Therefore, when performing the M&E obligations, the role will have access to suitable levels of authority.
- 8.5 This governance arrangement will require review at Phase 4 once construction is complete and the service is in operation.

Budget

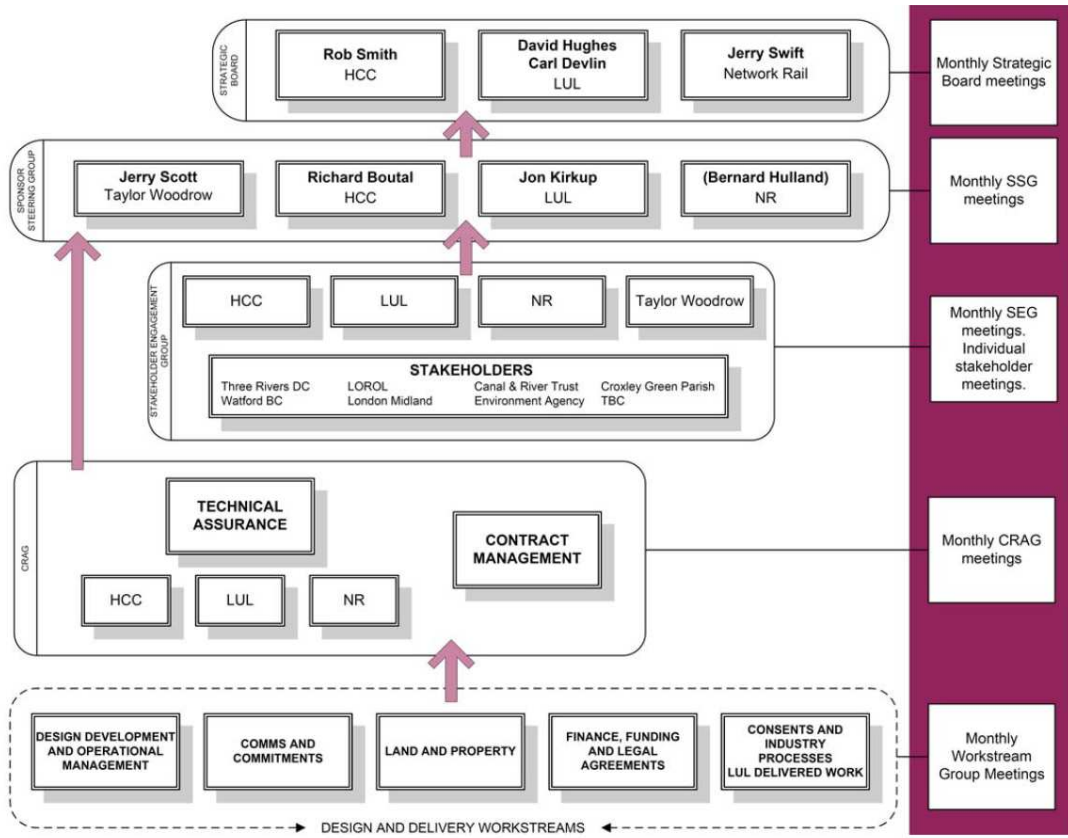
- 8.6 The costs associated with monitoring and evaluation activities have been considered and the cost plan for the project includes an allowance of XXXXXXXX (in Q2 2011 prices) for these. This budget has been borne in mind throughout this document when considering the scope of what can be effectively measured.
- 8.7 Table 8.1 provides an estimate of the budget allocation broken down as per the activities in section 6. (Note that these figures are assumed to include all elements, such as planning, analysis and reporting and not just the measurement activity itself.)

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TABLE 8.1 ESTIMATED BUDGET ALLOCATION

Inputs	
• Standard Monitoring	
○ Scheme Build	
○ Outturn Costs	
• Fuller Evaluation	
○ Delivery Process	
	Sub-Total: XXXXXXX
Outputs	
• Standard Monitoring	
○ Delivered Scheme	
• Fuller Evaluation	
○ Delivered Scheme	
	Sub-Total: XXXXXXX
Outcomes	
• Standard Monitoring	
○ Travel Demand	
○ Travel Times & Reliability	
○ Travel Behaviour	
• Fuller Evaluation	
○ Travel Behaviour	
	Sub-Total: XXXXXXX
Impacts	
• Standard Monitoring	
○ Impacts on the Economy	
○ Carbon Impacts	
• Enhanced Monitoring	
○ Noise	
○ Air Quality	
○ Accidents	
• Fuller Evaluation	
○ Outturn Appraisal Assumptions	
	Sub-Total: XXXXXXX
	TOTAL: XXXXXXX

FIGURE 8.1 PHASE 3 GOVERNANCE STRUCTURE



Glossary

AMCB	Analysis of Monetised Costs and Benefits
ATC	Automatic Traffic Count
BAFFB	Best And Final Funding Bid
CMG	Contract Management Group
CRAG	Croxley Rail Link Assurance Group
CRL	Croxley Rail Link
DC	Direct Current
DfT	Department for Transport
HCC	Hertfordshire County Council
LUL	London Underground Limited
M&E	Monitoring and Evaluation
Met	London Underground Metropolitan Line
MSBC	The Major Scheme Business Case
NEC3	New Engineering Contract 3rd Edition
NR	Network Rail
PA	Public Accounts
PoS	Percentage of Scheduled kilometres operated
PTAL	Public Transport Accessibility Level
QMR	Quarterly Monitoring Reports
SEG	Stakeholder Engagement Group
STATS19	Police form used to record incidents for 'Reported Road Casualties Great Britain', the official statistical publication of the UK Department for Transport on traffic casualties
TEE	Transport Economic Efficiency
TEMPRO	Trip End Model presentation Program
TfL	Transport for London
TWAO	Transport and Works Act Order
VfM	Value for Money

Watford Met	Current station in Watford at the terminus of the Metropolitan Line. Officially called 'Watford', but colloquially referred to as 'Watford Met'
WebTAG	DfT's Transport Appraisal Guidance (WebTAG) methodology

APPENDIX

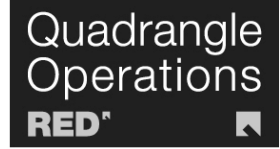
A

2013 PASSENGER TRAVEL SURVEY FORM

TRAINS GOING OUT QUESTIONNAIRE

Quadrangle Operations
 The Butlers Wharf Building
 36 Shad Thames
 London SE1 2YE
 Tel No: 020 7357 8522

SERIAL NO:



Private & Confidential
 October 2013

Watford Met Line JN 7962

Q1. Where did you start this particular leg of your journey today? Please provide postcode (as much as possible), address or town.

Q2. And where will you finish this particular leg of your journey? Please provide postcode (as much as possible), address or town.

Q3 Are either of the above your home postcode/address?

1. Q1. <input type="checkbox"/>	2. Q2. <input type="checkbox"/>	3. No <input type="checkbox"/>
---------------------------------	---------------------------------	--------------------------------

IF CODE 3 AT Q3

Q3a. Please provide your home postcode. *Interviewer state if necessary We don't need your full address, but the full Postcode would be helpful.*

Refused

Q4. Apart from this one, which other rail stations will you change at to complete this particular journey?

Enter up to 3 stations mentioned

1. _____
 2. _____
 3. _____

Q5. What was the main purpose of this trip today? (Single code)

Travel to work	Other work related travel	School	Higher Education	Shopping	Leisure/ Entertainment	Personal business	Medical related	Other
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>	7. <input type="checkbox"/>	8. <input type="checkbox"/>	9. <input type="checkbox"/> (specify below)

Specify... _____

Q6. How often do you make this trip (the trip you are making today)? (Single code)

5 or more times a week	2 to 4 times a week	Once a week	2 to 4 times a month	About once a month	About once every few months	Less often	This is the first time
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>	7. <input type="checkbox"/>	8. <input type="checkbox"/>

Q7. What ticket type are you using to make this trip? (*Single code*)

PAYG Oyster	Single	Return	1 day Travelcard	7 day Travelcard	1 month Travelcard	Season/annual	Other
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>	7. <input type="checkbox"/>	8. <input type="checkbox"/> (specify below)

Specify _____

Q8a. How did you travel to Watford Met station? (*Multi code*)

Car as driver	Car as passenger	Bicycle	Walk	Bus	Motorcycle	Taxi	Other
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>	7. <input type="checkbox"/>	8. <input type="checkbox"/>

IF CODE 1 OR 2 AT Q8a (*travelled by car*)

Q8b. And where did you park? (*Single code*)

Car park	Other	Didn't park – dropped off
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>

ASK ALL

Q9a. Is this your usual mode of travel to Watford Met station? (*Single code*)

Yes	No
1. <input type="checkbox"/>	2. <input type="checkbox"/>

IF CODE 2 AT Q9A (*Not normal mode of travel*)

Q9b. How do you normally travel? (*Multi code*)

Car as driver	Car as passenger	Bicycle	Walk	Bus	Motorcycle	Taxi	Other
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>	7. <input type="checkbox"/>	8. <input type="checkbox"/>

IF **NOT** CODE 1 OR 2 AT Q8A (*Normal travel NOT by car*)

Q10. Do you have a car available that you can use on a daily basis to get from your home to your local station? (On the outward leg of your journey) (*Single code*)

Yes	No, not at all	Refused/Not applicable
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>

IF CODE 1 AT Q10

Q10a. Is there a reason you don't use it?

ASK ALL

Q11. Could you have made your entire journey by car today?

Yes	No, not at all	Refused/Not applicable
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>

IF CODE 1 AT Q11

Q11a. Is there a reason you didn't make the journey by car?

IF **NOT** CODE 3 AT Q8A (Did not code by Bike)

Q12. Do you have a bicycle available that you could use to get from your home to your local station? (Single code)

Yes	No	Refused/ Not applicable
1. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>

IF CODE 1 AT Q12

Q12a. Is there a reason you don't use your bicycle to travel to the station?

Q13. Which age category do you fall into? (Give explanatory 'thank you leaflet' to those in 16-19 category)

16-19	20-24	25-34	35-44	45-59	60-64	65-74	75+
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>	7. <input type="checkbox"/>	8. <input type="checkbox"/>

Q14. Which of these best describes your current employment status? (Multi code- read out)

Employed full time	Employed part time	Self employed	Retired	Unemployed	In FT education	In PT education	Looking after home	Other
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>	7. <input type="checkbox"/>	8. <input type="checkbox"/>	9. <input type="checkbox"/> (Specify below)

Specify _____

Q15. Do you have any longstanding illness, disability or infirmity that affects your mobility? (Single code)

Yes	No	Refused
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>

Interviewer circle gender **M** **F**

Encumbered **Y** **N**

Q16. If respondent travelling in a group, how many people in the group _____

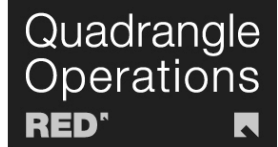
Time(HH:MM 24hr) : Date(DD/MM/YY) / /

Interviewer signed: _____ Int Number

TRAINS COMING IN QUESTIONNAIRE

Quadrangle Operations
 The Butlers Wharf Building
 36 Shad Thames
 London SE1 2YE
 Tel No: 020 7357 8522

SERIAL NO:



Private & Confidential
 October 2013

Watford Met Line

JN 7962

Q1. Where did you start this particular leg of your journey today? Please provide postcode, address or town.

Q2. And where will you finish this particular leg of your journey? Please provide postcode, address or town.

Q3 Are either of the above your home postcode/address?

1. Q1. <input type="checkbox"/>	2. Q2. <input type="checkbox"/>	3. No <input type="checkbox"/>
---------------------------------	---------------------------------	--------------------------------

IF CODE 3 AT Q3

Q3a. Please provide your home postcode. *Interviewer state if necessary **We don't need your full address, but the full Postcode would be helpful.***

Refused

Q4. Apart from this one, which other rail stations will you change at to complete this particular journey?

Enter up to 3 stations mentioned

1. _____
 2. _____
 3. _____

Q5. What was the main purpose of this trip today? (*Single code*)

Travel to work	Other work related travel	School	Higher Education	Shopping	Leisure/ Entertainment	Personal business	Medical related	Other
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>	7. <input type="checkbox"/>	8. <input type="checkbox"/>	9. <input type="checkbox"/> (please specify)

Specify _____

Q6. How often do you make this trip? (*Single code*)

5 or more times a week	2 to 4 times a week	Once a week	2 to 4 times a month	About once a month	About once every few months	Less often	This is the first time
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>	7. <input type="checkbox"/>	8. <input type="checkbox"/>

Q7. What ticket type are you using to make this trip? (*Single code*)

PAYG Oyster	Single	Return	1 day Travelcard	7 day Travelcard	1 month Travelcard	Season/annual	Other
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>	7. <input type="checkbox"/>	8. <input type="checkbox"/> (please specify)

Specify _____

Q8a. And how will you travel onwards from Watford Met station? (*Multi code*)

Car as driver	Car as passenger	Bicycle	Walk	Bus	Motorcycle	Taxi	Other
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>	7. <input type="checkbox"/>	8. <input type="checkbox"/>

IF CODE 1 OR 2 AT Q8a (*travelled by car*)

Q8b. And where have you parked? (*Single code*)

Car park	Other	Didn't park – will be picked up
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>

ASK ALL

Q9a. Is this your usual mode of travel from Watford Met station? (*Single code*)

Yes	No
1. <input type="checkbox"/>	2. <input type="checkbox"/>

IF CODE 2 AT Q9A (*Not normal mode of travel*)

Q9b. How do you normally travel? (*Multi code*)

Car as driver	Car as passenger	Bicycle	Walk	Bus	Motorcycle	Taxi	Other
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>	7. <input type="checkbox"/>	8. <input type="checkbox"/>

IF **NOT** CODE 1 OR 2 AT Q8A (*Normal travel NOT by car*)

Q10. Do you have a car available that you can use on a daily basis to get from your home to your local station? (On the outward leg of your journey) (*Single code*)

Yes	No, not at all	Refused/Not applicable
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>

IF CODE 1 AT Q10

Q10a. Is there a reason you don't use it?

ASK ALL

Q11. Could you have made your entire journey by car today?

Yes	No, not at all	Refused/Not applicable
1. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>

IF CODE 1 AT Q11

Q11a. Is there a reason you didn't make the journey by car?

IF **NOT** CODE 3 AT Q8A (*Did not code by Bike*)

Q12. Do you have a bicycle available that you could use to get from your home to your local station? (*Single code*)

Yes	No	Refused/ Not applicable
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>

IF CODE 1 AT Q12

Q12a. Is there a reason you don't use your bicycle to travel to the station?

Q13. Which age category do you fall into? (*Give explanatory 'thank you leaflet' to those in 16-19 category*)

16-19	20-24	25-34	35-44	45-59	60-64	65-74	75+
2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>	7. <input type="checkbox"/>	8. <input type="checkbox"/>	9. <input type="checkbox"/>

Q14. Which of these best describes your current employment status? (*Multi code- read out*)

Employed full time	Employed part time	Self employed	Retired	Unemployed	In FT education	In PT education	Looking after home	Other
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>	6. <input type="checkbox"/>	7. <input type="checkbox"/>	8. <input type="checkbox"/>	9. <input type="checkbox"/>

Specify _____

Q15. Do you have any longstanding illness, disability or infirmity that affects your mobility? (*Single code*)

Yes	No	Refused
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>

Interviewer circle gender **M** **F**

Encumbered **Y** **N**

Q16. If respondent travelling in a group, how many people in the group _____

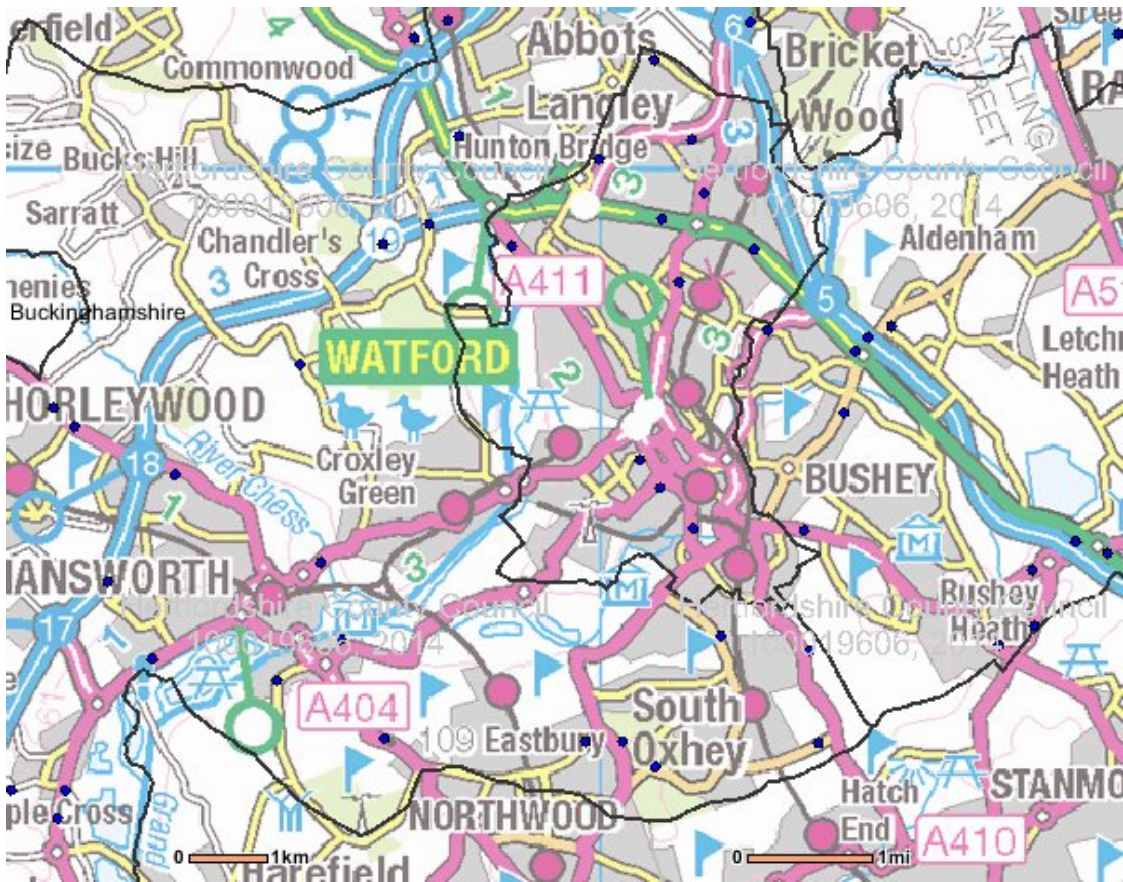
Time(HH:MM 24hr) : Date(DD/MM/YY) / /

Interviewer signed: _____ Int Number

APPENDIX

B

ATC LOCATIONS



The ATC locations map is also available from the following website:

www.hertsdirect.org/trafficcounts

