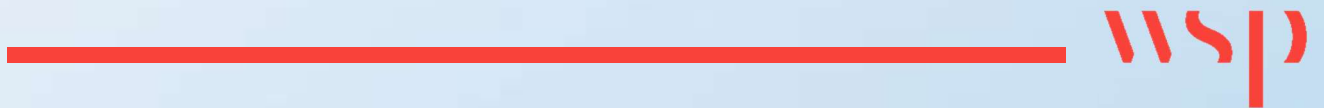


# Appendix F

## APPRAISAL SPECIFICATION REPORT





Leicestershire County Council

---

**NORTH AND EAST MELTON  
MOWBRAY DISTRIBUTOR ROAD  
APPRAISAL SPECIFICATION  
REPORT - FBC**





Leicestershire County Council

---

# APPRAISAL SPECIFICATION REPORT - FBC

**TYPE OF DOCUMENT (VERSION) CONFIDENTIAL**

**PROJECT NO. 70050156**

**DATE: OCTOBER 2021**

WSP

WSP House  
70 Chancery Lane  
London  
WC2A 1AF

Phone: +44 20 7314 5000

Fax: +44 20 7314 5111

WSP.com

---

CONFIDENTIAL



# QUALITY CONTROL

---

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	Draft to DfT	Revised Draft with new analytical programme	Revised Draft with new analytical programme	
Date	29/10/2019	06/05/2020	19/10/2021	
Prepared by	John Collins	John Collins	John Collins	
Signature				
Checked by				
Signature				
Authorised by				
Signature				
Project number				
Report number				
File reference				

# CONTENTS

---

<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
1.1	BACKGROUND	1
1.2	STRUCTURE OF THE REPORT	1
<b>2</b>	<b>PROJECT DEFINITION</b>	<b>2</b>
2.1	SCHEME DESCRIPTION	2
2.2	GEOGRAPHIC LOCATION	2
<b>3</b>	<b>TRANSPORT MODELLING AND FORECASTING</b>	<b>3</b>
3.1	INTRODUCTION	3
3.2	OVERVIEW OF THE TRANSPORT MODEL	3
3.3	PROPOSED MODEL UPDATE AND FORECASTING FOR FBC	5
<b>4</b>	<b>APPRAISAL FOR FBC</b>	<b>7</b>
4.1	BACKGROUND	7
4.2	ECONOMY	7
4.3	ENVIRONMENT	7
4.4	SOCIAL	8
4.5	PUBLIC ACCOUNTS	9

# 1 INTRODUCTION

---

## 1.1 BACKGROUND

The North and East Melton Mowbray Distributor Road (NEMMDR) is part of the Department for Transport's (DfT) Large Local Majors programme. An Outline Business Case (OBC) was submitted to the DfT in December 2017, with funding approval provided in May 2018.

The final stage in the DfT approval process is submission of a Full Business Case (FBC), which is anticipated to be submitted sometime between May and July 2022.

This document is the Appraisal Specification Report (ASR) for the Full Business Case (FBC) for the NEMMDR scheme. This ASR will:

- define the scope, methodology and assumptions in the transport appraisal for the FBC, and how it will be supported by the available transport modelling framework;
- provide a platform for agreement of the analytical approach, to be agreed as soon as possible, and to provide timely, agreed inputs to the appraisal process; and
- continue to be a live document and will be updated with any DfT feedback received.

## 1.2 STRUCTURE OF THE REPORT

The structure of the ASR is as follows:

- Chapter 2 – Project Definition
- Chapter 3 – Transport Modelling and Forecasting
- Chapter 4 – Scheme Appraisal
- Chapter 5 – Modelling Programme

## 2 PROJECT DEFINITION

---

### 2.1 SCHEME DESCRIPTION

The NEMMDR scheme consists of construction of a new 7.1km single carriageway road, extending from the A606 Nottingham Road to the A606 Burton Road via radial roads to the east of Melton Mowbray. It will create new junctions with the radials on its route, one railway crossing and one river crossing.

The scheme objectives include improvement to north-south connectivity and alleviation of congestion within Melton town centre; both for existing residents, and to help solve longer-distance through traffic issues.

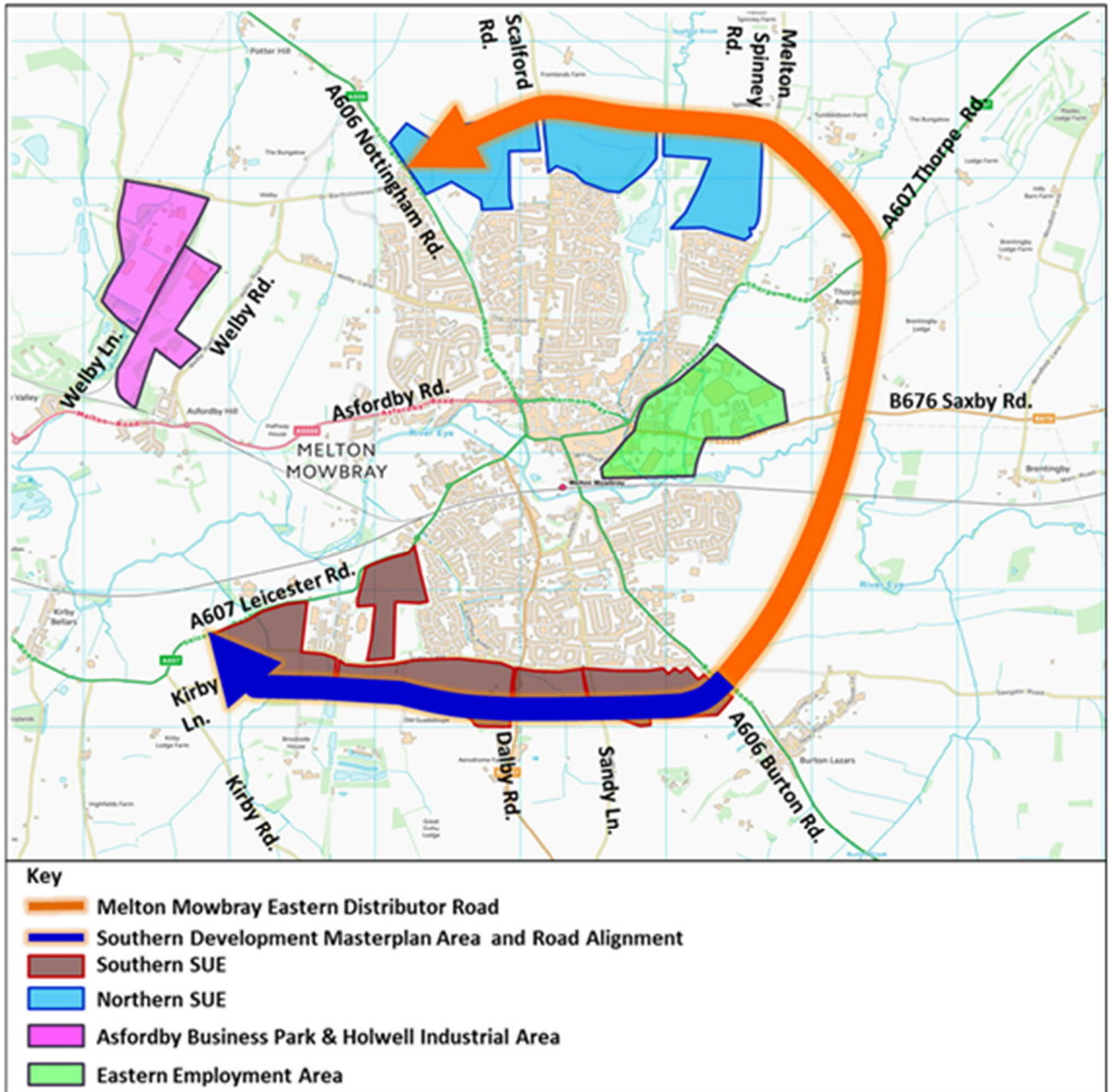
As described in the OBC, there is a considerable need for additional housing across Leicester and Leicestershire. As the main urban area in the borough, Melton Mowbray is a key focus for significant growth. The NEMMDR will support delivery and acceleration of a nationally significant level of housing and employment; more than 3,600 jobs and 8,200 new houses by 2036, with 3,300 dwellings and 2,300 jobs in the short term to 2026 including the sustainable urban extensions to the North and South of the town. A Southern Link between the A606 Burton Road and the A607 Leicester Road has been given approval as part of the Housing Infrastructure Fund, however for the HIF funding to be released, funding approval for the NEMMDR needs to be in place (i.e. passed through the FBC approval process).

### 2.2 GEOGRAPHIC LOCATION

The proposed scheme is located to the north and east of Melton Mowbray extending from the A606 Nottingham Road to the A606 Burton Road, crossing Scalford Road, Melton Spinney Road, the A607 Thorpe Road and the B676 Saxby Road.

A schematic route of the NEMMDR is shown in Figure 1 below (this also shows the proposed Southern Link).

Figure 1: Melton Mowbray Distributor Road





## 3 TRANSPORT MODELLING AND FORECASTING

---

### 3.1 INTRODUCTION

The Leicester and Leicestershire Integrated Transport Model (LLITM) has been developed for forecasting the effects of transport and land-use policies and plans on the transport system and environment across Leicester and Leicestershire, and has been specifically developed for use in developing major transport schemes / development assessments, such as the NEMMDR.

LLITM has a base year of 2014 incorporating a combination of mobile phone and roadside interview information to support estimates of travel demand in the area. This model was used for assessment of NEMMDR for the OBC and it is intended to use this platform for reassessment as part of the FBC process.

### 3.2 OVERVIEW OF THE TRANSPORT MODEL

LLITM is maintained by Leicestershire County Council (LCC) and consists of the following interlinked programs:

- SATURN - Highway Assignment Model;
- Emme - Public Transport Model;
- DELTA - Land-use Model;
- CTripEnd - Trip-end Model
- EASE - Environmental Module; and
- Emme - Demand Model.

The model has been built in accordance with the Department for Transport's modelling and appraisal guidance (TAG), has been independently assured, and developed as a key tool to secure wider-ranging infrastructure funding for LCC.

The model has been developed with LCC and Highways England TAME/TPG input, which has been an important part of its development; from the definition of RSI locations and cordons, based on scheme impacts from previous modelling, to the definition of calibration and validation screenlines to meet the scheme's needs.

The current version of the model comprises important elements to align TAG requirements as follows:

- highway matrices developed from mobile phone data, and validated against a set of 119 RSIs across the County, for journey purpose and trip length data;
- a public transport model based on consistently derived, County-wide ETM data;
- consistent 2-week ATCs<sup>1</sup>, across the city, county and its market towns, collected in 2014 and early 2015 to enable base year validation;
- TAG values of time incorporated, and refreshed income segmentation;

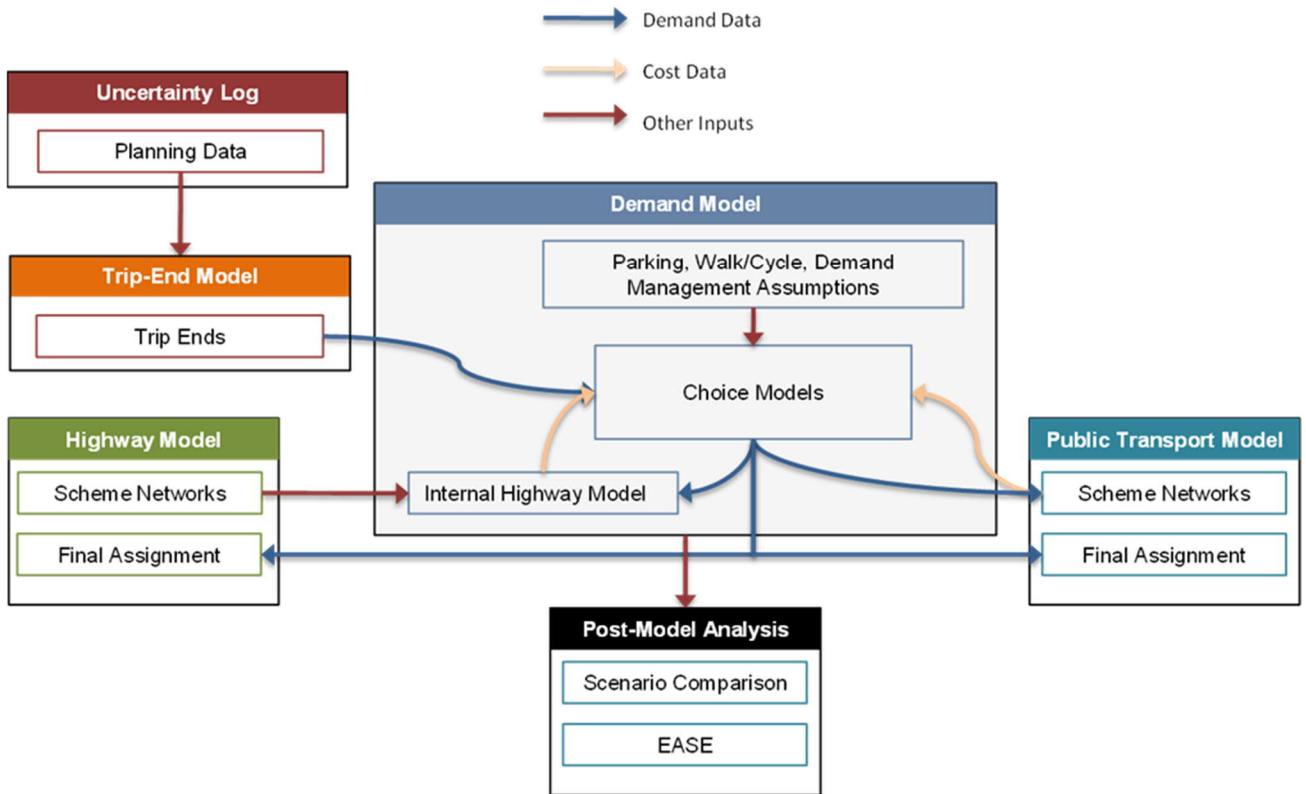
---

<sup>1</sup> 2-week ATCs are the minimum accepted for traffic count data; long-term monitoring ATCs have also been used where available and appropriate

- updated forecasting to NTEM v7.2 (and RTF18 for LGV/HGV);
- a simplified, updated parking model, and recalibrated P&R models; and
- updated demand model realism testing.

Figure 2 below represents a schematic diagram of the structure of the current LLITM model.

**Figure 2 - LLITM Model Structure**



A DELTA land-use model was used to derive the reference case forecasts for the OBC appraisal, this model however has not been updated subsequently and will not be used for the FBC forecasts and appraisal. For the FBC, updated planning data will inform a revised uncertainty log. The uncertainty log and trip-end model will be used to generate residential and employment travel demand which will be translated into trips between locations by mode and frequency using the demand model.

These trips are assigned to their respective highway and public transport networks to determine route choice. The entire process recognises the interdependency between demand, travel choices and travel costs by looping runs of each of the models until the relationship between trip patterns and trip costs are stable.

The routing and traffic analysis for the NEMMDR is derived from a final assignment of trips to the highway networks; from which economic appraisal, following a full VDM run of the model, is carried out.

Local calibration and validation checks / updates of the model were made to support the OBC and reported in a Local LMVR.

Key documents that were provided to support the OBC included general LLITM reports such as the Highway Model LMVR, PT Model LMVR, Demand Model Report and Forecasting Report. This documentation was also supplemented by locally focussed documents including:

LLITM 2014 Base Local Melton Highway LMVR;

LLITM 2014 Base OBC Forecasting Report; and

LLITM 2014 Base NEMMDR OBC EAR.

### 3.3 Proposed Model Update and Forecasting for FBC

#### **Model Base Year:**

The model base year will remain as 2014 as reported in the OBC.

The supply side model has continued to undergo further development since the OBC submission with changes made to the base year network coding to address convergence issues more widely in the model, with further network refinement in the local area to improve the model representation of routing and flows within Melton Mowbray. It should be noted the base demand remains as previously reported.

The work carried out, although relatively limited, will impact (and improve) the representation in the model of the traffic conditions in the Melton Mowbray area. Updated reporting of the fit of the model in the local area will be provided as part of the OBC (either as an update to the previously issued Local LMVR or an addendum to this), which will provide the latest calibration and validation statistics in the area.

The final revised base model run has been carried out following the release of the July 2021 TAG update, so any potential changes to the base can be captured. The revised base year model and reporting (LMVR Addendum) can be made available for review by DfT in November 2021.

#### **Model Forecasting:**

For the FBC a revised set of forecasts will be developed; following a similar general methodology to the OBC submission (excluding use of the DELTA land-use model), updated as follows:

- the forecasts will be updated to refresh the uncertainty logs for demand and supply;
- the forecast demand models will be re-run using the updated forecast assumptions, with forecast years of 2025 (opening year), 2031, 2041 and 2051 (although these forecast years will be kept under review as the updated uncertainty log is completed);
- the forecast models will be based on the July 2021 TAG data book for parameterisation; and
- 'low' and 'high' growth demand scenarios will be developed in-line with TAG Unit M4 advice, to understand the impact of alternative growth outcomes.

The forecasts for the 'without scheme' and 'with scheme' cases will be developed in-line with TAG; referencing the updated uncertainty logs, including infrastructure improvements and developments as identified by their uncertainty rating. A detailed discussion note covering the assumptions used in the forecasts will be provided to DfT to accompany this ASR to agree the underlying assumptions before starting the forecasting process.



The forecasting of trip demand will be based on the latest available planning data from the planning authorities within the modelled area together with the two sources of traffic forecast growth factors:

- National Trip End Model (NTEM) v7.2 data set and use of CTripEnd; and
- National Transport Model growth factors (RTF18) as published by the DfT, which is applicable for the derivation of traffic growth factors relating to light goods vehicles (LGV), and other goods vehicles classes 1 and 2 grouped together as heavy goods vehicles (HGV).

The updated model forecasts are expected to be available in January 2022; these will be reported in an updated NEMMDR forecasting report, including details of overall growth forecasts and forecast scheme impacts by comparing the without scheme and with scheme model runs. It is anticipated the revised forecasting report will be available for DfT to review in February 2022.

## 4 APPRAISAL FOR FBC

---

### 4.1 Background

The analysis supporting the scheme appraisal for FBC will follow a similar methodology to that for the OBC, with updated model forecasts as outlined in the previous section.

To ensure the analysis is proportionate, consideration has been given to the most appropriate methods to employ for each sub-objective, and these are highlighted in the following sections.

### 4.2 Economy

#### **Business Users and Transport Providers**

A TUBA assessment will be used to capture these impacts based on the with and without scheme forecasts described in Section 3 above. The assessment will employ the version of the TUBA software that aligns with the July 2021 TAG data book. Results of the core scenario and low and high growth sensitivity tests will be reported.

Consideration will be given to updating the assessment of delays during construction for the core scenario if the latest traffic management measures proposed for scheme delivery are significantly different to those assumed for OBC.

#### **Reliability Impact on Business Users**

These impacts will be captured using the methodology outlined in TAG Unit A1.3 for urban roads using updated outputs from the model as outlined in Section 3 above. It is anticipated this assessment will be carried out for the core scenario only.

#### **Regeneration/Wider Impacts**

These impacts will be assessed qualitatively, potentially supported by a WITA assessment to provide quantification of some elements of wider impacts (e.g. agglomeration, increased output in imperfectly competitive markets, etc.).

### 4.3 Environment

#### **Noise**

The default assumption is that these impacts will rely on the analysis carried out for the OBC (which is aligned with TAG Unit A3 advice) as it would be disproportionate to carry out further analysis given their limited impact on the value for money case. This assumption will be re-evaluated when revised forecast flows are available for the with and without scheme cases and these will be compared with the equivalent OBC forecasts to confirm the differences are likely to be immaterial.

#### **Air Quality**

The default assumption is that these impacts will rely on the analysis carried out for the OBC (which is aligned with TAG Unit A3 advice) as it would be disproportionate to carry out further analysis given their limited impact on the value for money case and the significant amount of work that would be required to update this analysis. This assumption will be re-evaluated when revised forecast flows are available for the with and without scheme cases and these will be compared with the equivalent OBC forecasts to confirm the difference are likely to be immaterial.

## **Greenhouse Gases**

The impact on greenhouse gases will be captured using TUBA based on the with and without scheme forecasts described in Section 3 above. The assessment will employ the version of the TUBA software that aligns with the July 2021 TAG data book. Results of the core scenario and low and high growth sensitivity tests will be reported.

## **Landscape; Townscape; Historic Environment; Biodiversity; Water Environment**

The impact on these sub-objectives will be assessed using the methods outlined in TAG Unit A3. The analysis for FBC will refresh the OBC analysis accounting for any further evidence gathered and/or change in scheme design (for a number of these assessments there is likely to be minimal or no change since OBC).

## **4.4 Social**

### **Commuting and Other Users**

A TUBA assessment will be used to capture these impacts based on the with and without scheme forecasts described in Section 3 above. The assessment will employ the version of the TUBA software that aligns with the July 2021 TAG data book. Results of the core scenario and low and high growth sensitivity tests will be reported.

### **Reliability Impacts on Commuting and Other Users**

These impacts will be captured using the methodology outlined in TAG Unit A1.3 for urban roads using updated outputs from the model as outlined in Section 3 above. It is anticipated this assessment will be carried out for the core scenario only.

### **Physical Activity**

The assessment of these impacts will use the analysis carried out for the OBC (in-line with TAG Unit A4.1), which used the active mode appraisal health benefits toolkit. Given the relatively limited effect on the value for money of the scheme of these impacts it is considered disproportionate to update this analysis for FBC.

### **Journey Quality**

The assessment of these impacts will be based on the analysis carried out for OBC using qualitative methods (in-line with TAG Unit A4.1), with updates as necessary to account for any further evidence gathered and/or change in scheme design.

### **Accidents**

The assessment of accident benefits will be updated to reflect the revised forecast traffic flows described in Section 3. The analysis will use COBA-LT with appropriate accident rates following guidance in TAG Unit A4.1. It is anticipated this analysis will be carried out for the core scenario only.

### **Security; Access to Services; Affordability; Severance; Option and non-use values**

The impact on these sub-objectives will be assessed using the methods outlined in TAG Unit A4.1. The analysis for FBC will refresh the OBC analysis accounting for any further evidence gathered and/or change in scheme design (for a number of these assessments there is likely to be minimal or no change since OBC).

## 4.5 Public Accounts

### Cost to Broad Transport Budget

The cost impacts of the scheme will be captured in the appraisal following a similar methodology to that in the OBC. The costs will be aligned to those in the FBC Financial Case in terms of capital costs, with whole life costs (including maintenance etc.) included and appropriate adjustments made to the price base, discounting etc. It is anticipated that an Optimism Bias of 3% will be included in line with TAG Unit A1.2 for schemes at FBC stage.

### Indirect Tax Revenues

A TUBA assessment will be used to capture these impacts based on the with and without scheme forecasts described in Section 3 above. The assessment will employ the version of the TUBA software that aligns with the July 2021 TAG data book. Results of the core scenario and low and high growth sensitivity tests will be reported.

## 4.6 Distributional Impact Analysis

The distributional impact analysis will be updated to account for changes in social impact assessment since the OBC for those elements in scope, taking on board feedback from DfT at OBC related to mapping and reporting for some elements of the analysis.

## 4.7 Reporting

An updated Economic Appraisal Report will be produced in February 2022 with associated TAG worksheets and tables including revised TEE, PA, AMCB and AST for DfT to review. The analysis will also be reported in the Economic Case of the FBC to be submitted to the DfT in May-July 2022.

# 5 PROGRAMME

Figure 3 Modelling Programme







WSP House  
70 Chancery Lane  
London  
WC2A 1AF

[wsp.com](http://wsp.com)

CONFIDENTIAL