# Edinburgh Tram - York Place to Newhaven FBC
# Response to Scott-Moncrieff Model Review

**Finance**
**Resources Directorate**
**6 March 2019**

## 1. Introduction

1.1 This note sets out a response to observations made in Scott-Moncrieff's review of York Place to Newhaven Financial Model and provides additional sensitivity analysis for members consideration.

1.2 This should be considered alongside the financial model review provided by Scott-Moncrieff and other supporting documentation when assessing the Final Business Case for the proposed tram line from York Place to Newhaven.

## 2. Background

2.1 On 26 February 2019, Nick Bennett, Partner at Scott-Moncrieff wrote to the City of Edinburgh Council, setting out the findings of the review of the financial model for the proposed tram line from York Place to Newhaven. This letter was made available to elected members ahead of Transport and Environment Committee consideration of the Final Business case on Thursday 28 February 2019.

2.2 The review examined version 24 of the financial model and was carried out in line with a scoping and assignment plan and covered the following:

- The competence, capabilities and objectivity all external specialist parties involved in inputting to the financial model
- The assumptions and data used to construct the financial model
- The model's architectural integrity and functionality

2.3 The letter states that Scott-Moncrieff are satisfied with the integrity of the financial model and the competence, capability and objectivity of specialists used.

2.4 The letter also raises a number of observations in relation to the work carried out, and this note provides further information in relation to these.

## 3. Main Points

3.1 Scott-Moncrieff's observations, together with responses from the Tram project team are set out below.

**Sensitivity Analysis**

3.2 Scott-Moncrieff observe that the sensitivity analysis included in the Final Business Case does not include a scenario wherein the dividend from Lothian Buses is reduced. Furthermore, there is no worst case or cumulative scenario.

3.3 In response to this observation, the Council engaged Steer (external advisors regarding passenger projections) to consider a range of different patronage scenarios. Steer's analysis is included in Appendix 1.

3.4 In addition, the Council considered a range of scenarios for the Lothian Buses extraordinary dividend, group tax relief and interest rates. These were combined with Steer's analysis and input into the financial model. The results are set out in Appendix 2.

3.5 The worst case cumulative scenario on the base cost of £207.3m shows a £85.5m cumulative deficit which will not be repaid until 2045. At an increased cost of £257.6m, this cumulative deficit increases to £131.9m with a repayment date of 2051. However, it is considered that these scenarios are highly unlikely based on Steer's assessment, the current strength of Lothian Buses business, work currently underway to secure a lower interest rate and savings in operational contracts.

**Optimism Bias**

3.6 Scott-Moncrieff note that reference case review carried out by Oxford Global Projects (Budzier and Flyvbjerg) and the fact that the Council has modelled the impact of applying optimism bias at a P80 level (20% chance of cost overrun).

3.7 Their letter highlights the fact that applying optimism bias at a P95 level (5% chance of cost overrun) would increase the forecast project cost to £334.8m, but points out that Oxford Global Projects analysis state that this would be highly unlikely given the work undertaken in relation to the project.

3.8 For completeness, the Council has run the financial model with the P95 optimism bias figure. The effect would be a £68m deficit, which would not be repaid in full until 2042.

**Financial Model Data**

3.9 It is recognised that some of the assumptions in the model are based on 2017 data. This is because the operational costs and revenues in the model are based on the actual costs and revenues of Edinburgh Trams Limited, and 2017 is the most recent full year for which there are audited accounts.

3.10 However, to ensure that costs remain as up to date as possible, figures have been validated against interim results for 2018.

**Indexation Rates**

3.11 The letter states that the financial model uses a number of different indexation rates such as CPI, RPI and RPIx throughout the model and confirms that they are used consistently across similar income streams.

3.12 Furthermore, the Council has confirmed its choice of indexation rate as being appropriate with relevant external specialists.

**Edinburgh Tram Inquiry**

3.13 Scott Moncrieff note that whist the Final Business Case incorporates lessons learned from the first phase of tram, the Council has not attempted to quantify any expenditure implications arising from the Edinburgh Tram Inquiry.

3.14 This approach is considered appropriate for the following reasons:

- The team involved in developing the Final Business Case, have experience from completing the first phase and have sought to embed lessons learned in the business case. Examples include the use of a standard form of contract, the "one dig" approach to construction and the large work sites

- The Council has been closely following the Inquiry, incorporating further lessons into the project for the line to Newhaven

- The Inquiry will make recommendations to the Scottish Government, who will consider how to implement those recommendations. When available, the Council will consider the Inquiry's recommendations and how they should be incorporated into the project. One part of the consideration by the Council will be the cost of implementing them.

**Withdrawal of the UK from the European Union**

3.15 Finally, Scott-Moncrieff note the significant financial uncertainty surrounding Brexit and that potential impacts have not been modelled or specifically referred to within the Final Business Case.

3.16 However, while not specifically referred to as Brexit risks, the Council's risk and sensitivity work has considered the following potential implications of Brexit:

- Exchange rate fluctuations – There is a risk that the value of Sterling will fall further against the Euro. This is mitigated against by the fact that the majority of labour and materials will be sourced from the UK, with any residual exchange rate risk being borne by the Infrastructure and Systems contractor.

- Labour market shortages – There is a risk that reductions in migrant labour from the EU will result in labour shortages, delays and additional costs to the project. The financial impact of this risk will be borne by the Infrastructure and Systems contractor insofar as it relates to their works. However, any impact on the Swept Path contract would need to be managed by the Council. It should be noted that both contractors have a substantial UK base and the majority of labour is likely to be sourced locally.

- Interest rate changes – There is a risk that interest rates will increase to a level higher than has been assumed in the Final Business Case. This is partially

mitigated by the fact that the 4.1% assumed in the financial model is higher than the rate that could be achieved at the present time and includes an element of Brexit risk. The Council's Treasury section is currently exploring borrowing options with a view to securing a deal towards the end of the Early Contractor Involvement stage of the project, depending on market conditions.

- Impact on Tourism – There is a risk that European tourism could be affected with trips to and from Edinburgh Airport reducing. The impact of a reduction in airport passengers is shown in sensitivity analysis carried out in the Final Business Case and further considered in the cumulative sensitivities shown above. However, there is also potential for the number of global tourists to increase if the value of Sterling remains low or even decreases. This would have a beneficial impact on the business case.

- Economic downturn – A potential impact of Brexit is for an economic slowdown which could result in job losses and a reduced pace of economic growth. This would reduce the number of tram passengers, which has been modelled in the Final Business Case and in the cumulative sensitivities shown above.

## 4. Recommendations

4.1 To note the contents of this briefing note.

**Appendix 1: Final Business Case Sensitives Memo**

| | | | |
|---|---|---|---|
| To | CEC | **Memo** | |
| Cc | | | |
| From | Steer | | |
| Date | 4 March 2019 | | |
| Project | Edinburgh Tram Full Business Case | Project No. | 232776-02 |

# FBC Demand Sensitivities

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## Introduction

This note sets out suggested demand sensitivities for the FBC considering:

- The Central Case
- An FBC 'upside scenario' – a realistic upside case.
- An FBC 'downside scenario' – a realistic downside case
- An FBC 'worst case' – for the purposes of sensitivity analysis

The scenarios above have ben constructed for each of the key Edinburgh Tram demand segments; the Airport, remainder of the 'existing corridor' and Newhaven.

For each segment a brief narrative is presenting setting out the basis for the central assumption and proposed upside and downside cases.

## Airport Demand

**Base demand**

The base demand is taken from 2018 Edinburgh Tram airport demand [as estimated in late 2018 based on YTD data].

**Forecast Assumptions**

Underlying Airport demand growth is based on Edinburgh Airport's latest masterplan forecasts.

The Masterplan assumes air passenger growth of 6.9%, 5.8% and 4.5% in the years 2019, 2020 and 2021, before reducing to a growth rate of around 3% thereafter.

Tram 'central' forecasts also take account of the fact that future growth will be largely driven by international passengers, who have a higher propensity to use public transport (as business and leisure trips will be destined for the city centre and that, by definition, international passengers do not have the option of driving their own car).

The tram forecasts are prudent insofar as they assume no increase in tram mode share, either from bus or from car-based options (e.g. car and park, taxi, kiss and ride). This is prudent given:

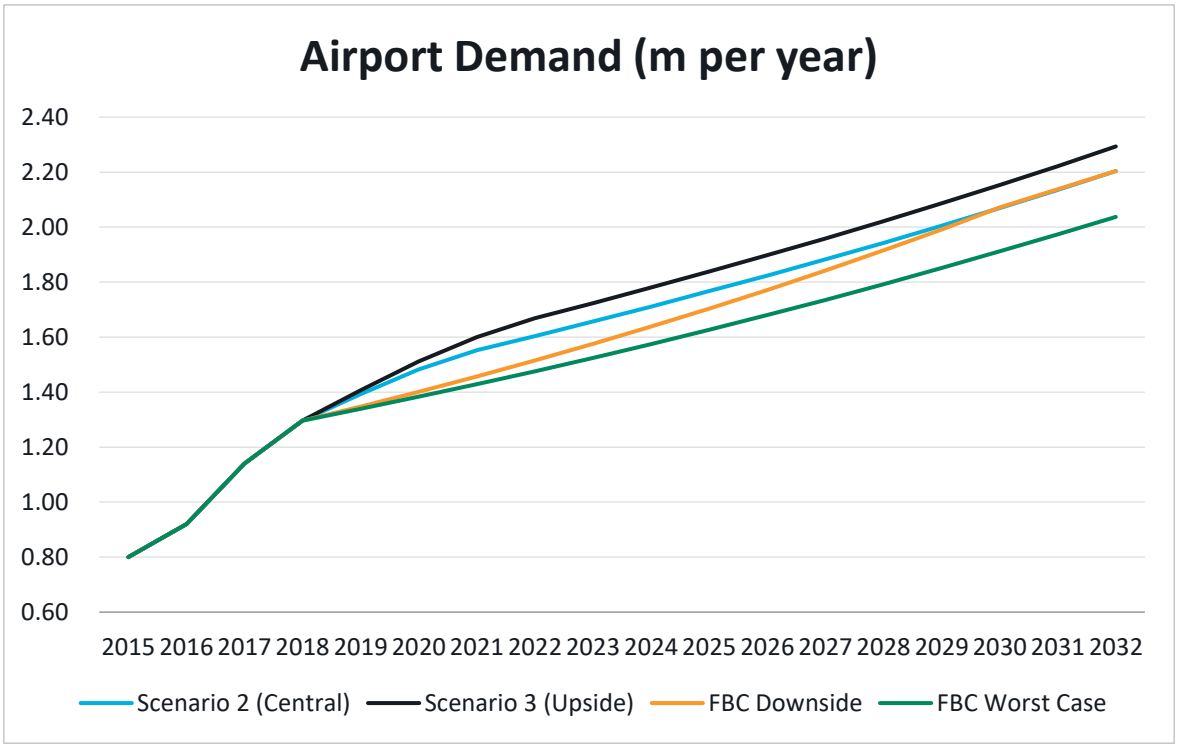
- Recent tram demand from the Airport has grown at a rate that has outstripped that of underlying Airport passenger growth, suggesting that tram is increasing its share of overall Airport surface access demand.
- The opening of the domestic arrivals' terminal funnels passenger towards the tram, whereas previously all arrivals would effectively have to walk past the Airlink 100 bus to access the tram.
- Tram journey times are consistent and reliable, whereas those for bus and car-based options will be affected by congestion. As congestion is expected to worsen over time, this should increase the relative attractiveness of tram.

**Potential Upsides and Downsides**

- **Suggested Upside** – This considers that tram gain an increase in 1% mode share per annum (from bus) over the next five years, and then maintain that share over the remainder of the appraisal period. The underlying drivers of demand are as per the central case.
- **Suggested downside** – Airport growth in forecast to be greatest in the near term (up to 2021), before then reverting to a trend growth of around 3.3% per annum. Recognising that there is some short-term uncertainty, the sensitivity assumed the average rate of 4% per annum between 2019 and 2030 i.e. that the near-term growth would be moderated (Tram airport demand would be 6% lower than the central case by 2021) then recovers to reach the same 'end state' by 2030.
- **Worst Case** – A worst case assumes the 3.3% growth through to 2030, whereby near-term growth is as half the Masterplan / Central case level, and that, and that this growth is not recovered.

The central case and sensitivity scenarios are presented below.

**Figure 1: Airport Demand Scenarios**



## Existing System – Corridor Demand

**Base demand**

The base demand is taken from 2018 Edinburgh Tram airport demand [as estimated in late 2018 based on YTD data].

**Forecast Assumptions**

Edinburgh Trams Business Plan (developed early 2018) assumed 5% growth per annum for the years 2018 to 2022.

Actual growth in 2018 was 10%.

The Central forecasts assume an annual growth rate of just over 3% per annum, such that the combined growth (10% in 2018, plus >3% to 2022) represents the same 'end state' position as the ET business plan (5% per annum over the same period).

The central case therefore assumes a significant tapering of growth compared to recent years and is therefore considered prudent.

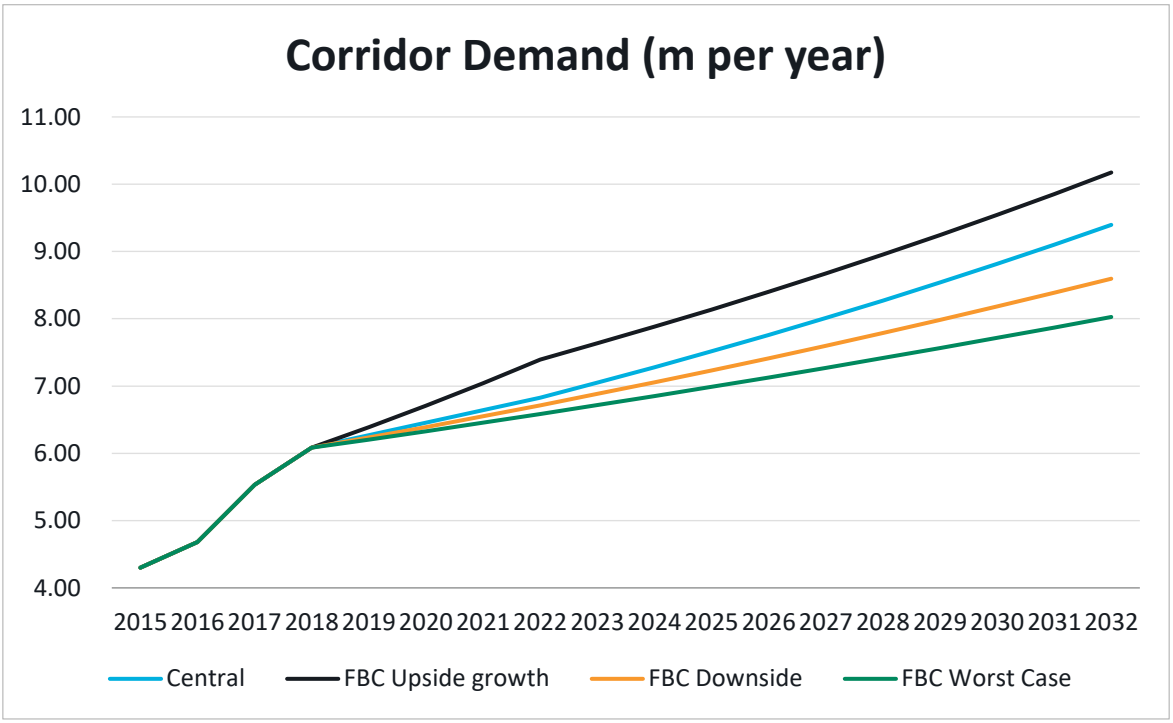
Growth between 2022 and 2032 is informed by the transport model, and the average growth rate is 3.2% per annum. This reflects the substantive planned growth in the corridor.

**Potential Upsides and Downsides**

In the context of recent actual growth (10% in 2016, 20% in 2017 and 10% in 2018 – cumulative growth of around 40% over 3 years) the forecast growth rate of around 3% per annum to 2032 is considered prudent (54% over 14 years).

- Suggested Upside – An upside case would consider the near-term growth being 5% up to 2022 (in line with ET business plan) before reverting to the central case trend growth.
- Suggested downside and Worst Case – We consider growth of just over 3% per annum to be prudent, given recent trends and the significantly increase in planned employment and residential development within the corridor. A downside case of growth at 2.5% has been considered and a worst case of 2% (from 2019 to 2032).
- The central case and sensitivity scenarios are presented overleaf.

**Figure 2: Corridor Demand Scenarios**




## Newhaven Demand

**Base demand**

There is no base Newhaven demand.

**Forecast Assumptions**

Demand for the Newhaven section is based on the JRC modelling suite.

The key model inputs related to demand, network, journey times and planning assumptions have all been reviewed and, where appropriate, updated as part of the FBC.

The model inputs, assumptions and outputs were also subject to independent audit and deemed reasonable and plausible.

The fact that the modelling suite that has been shown to forecasts demand for the existing system at levels very close to actual also lends confidence the its application for the Newhaven section.

**Potential Upsides and Downsides**

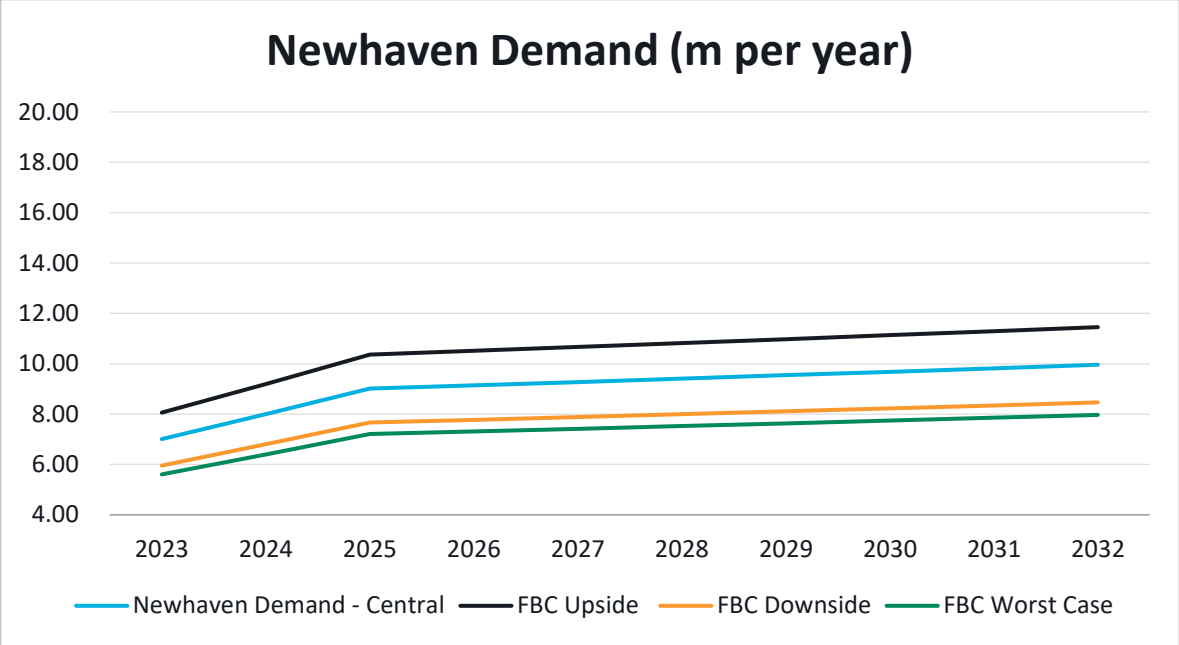
Given that there is no actual 'base' demand for Newhaven, and that there is more inherent uncertainty when forecasting demand for an entirely new section of route, the range around the 'central case' should be correspondingly larger.

We therefore suggest that a +/-15% presents a realistic range estimate around the central case, and this forms the FBC upside and downside scenarios.

An 'FBC worst case' of -20% is presented.

The central case and sensitivity scenarios are presented below.

**Figure 3: Newhaven Demand Scenarios**



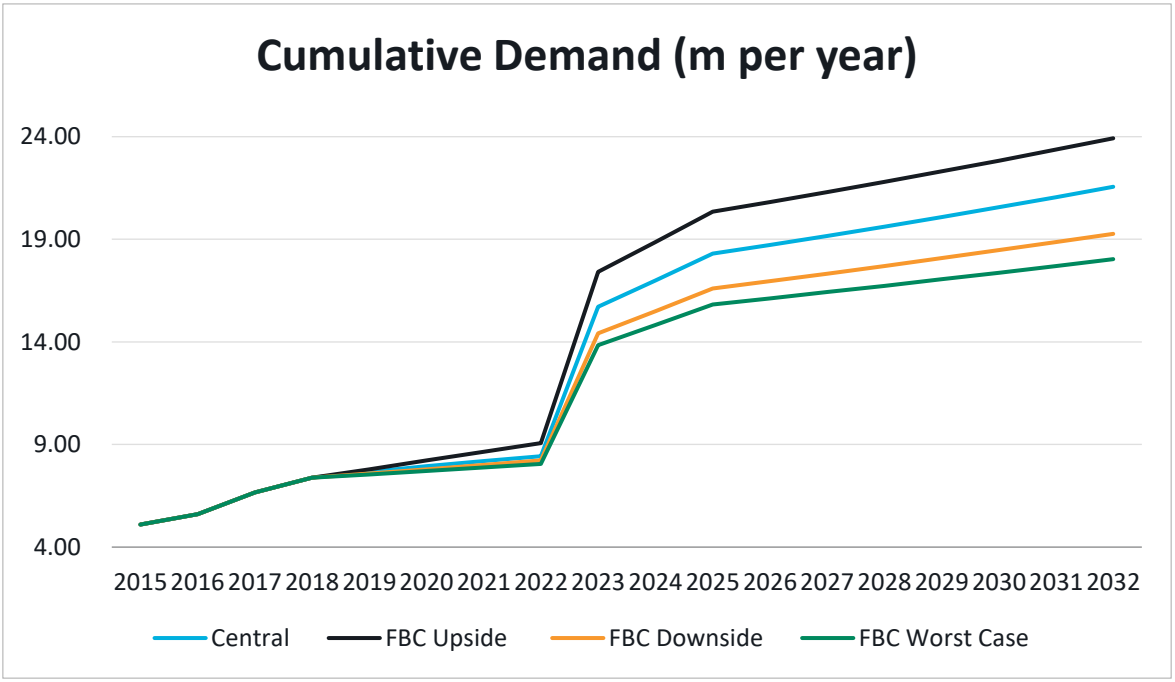

## Cumulative Upside and Downside Scenarios

The Figure below presents the cumulative upside and downside demand scenarios.

This shows that:

- Central case demand is 21.5m by 2032.
- Under the upside case demand would be 23.9m – around 11% higher than central
- Under the downside case demand would be 19.3m – around 11% lower than central
- Under a 'worst case' demand would be 18.0m – just over 16% lower than central

**Figure 4: Cumulative Demand Scenarios**



## Appendix 2 – Sensitivity Analysis

### Sensitivities tested

| | UPSIDE | DOWNSIDE | WORST |
|---|---|---|---|
| Airport patronage | Increase in 1% of mode share p.a. over bus for next 5 years and then maintain this share over remainder of appraisal period | Tram airport demand is 6% lower than the central case by 2021 then recovers to reach the same 'end state' by 2030 | Near-term growth (to 2021) is as half the Central case level, and that this growth is not recovered. i.e. 3.3% growth to 2020 |
| Existing Corridor patronage | Near-term growth being 5% up to 2022 (3% in central case) before reverting to the central case trend growth | Growth at 2.5% (3% in central case) from 2019 to 2032 | Growth at 2% (3% in central case) from 2019 to 2032 |
| Newhaven patronage | +15% of central case | -15% of central case | -20% of central case |
| LB Extraordinary Dividend | As assumed currently | £10m received over period | £1m received in 2019 only |
| Group tax relief | As assumed currently | 75% of assumed | 50% of assumed |
| Interest rate | -50 basis points | + 50 basis points | + 100 basis points |

### Results - £207.3m base case

| SCENARIOS | UPSIDE | | DOWNSIDE | | WORST | |
|---|---|---|---|---|---|---|
| | Deficit to be funded (£m) | Deficit repaid by (year) | Deficit to be funded (£m) | Deficit repaid by (year) | Deficit to be funded (£m) | Deficit repaid by (year) |
| Airport patronage | 1.0 | 2026 | 3.6 | 2027 | 4.4 | 2028 |
| Existing Corridor patronage | 0 | N/A | 2.4 | 2027 | 3.0 | 2027 |
| Newhaven patronage | 0.8 | 2026 | 4.2 | 2035 | 9.2 | 2036 |
| LB Extraordinary Dividend | 1.9 | 2027 | 7.2 | 2029 | 13.2 | 2031 |
| Group tax relief | 1.9 | 2027 | 3.7 | 2027 | 6.5 | 2028 |
| Interest rate | 0 | N/A | 5.1 | 2028 | 9.0 | 2029 |
| **Cumulative scenario** | **0** | **N/A** | **36.9** | **2039** | **85.5** | **2045** |

**Results - £257.6m (P80 Reference Class)**

| SCENARIOS | UPSIDE | | DOWNSIDE | | WORST | |
|---|---|---|---|---|---|---|
| | Deficit to be funded (£m) | Deficit repaid by (year) | Deficit to be funded (£m) | Deficit repaid by (year) | Deficit to be funded (£m) | Deficit repaid by (year) |
| Airport patronage | 11.1 | 2036 | 18.0 | 2037 | 26.1 | 2038 |
| Existing Corridor patronage | 9.6 | 2035 | 22.8 | 2038 | 28.9 | 2039 |
| Newhaven patronage | 9.5 | 2029 | 37.1 | 2040 | 44.3 | 2041 |
| LB Extraordinary Dividend | 14.8 | 2037 | 24.8 | 2038 | 33.8 | 2038 |
| Group tax relief | 14.8 | 2037 | 18.8 | 2037 | 24.2 | 2037 |
| Interest rate | 7.6 | 2035 | 26.8 | 2038 | 38.9 | 2039 |
| **Cumulative scenario** | **1.8** | **2026** | **74.5** | **2043** | **131.9** | **2051** |