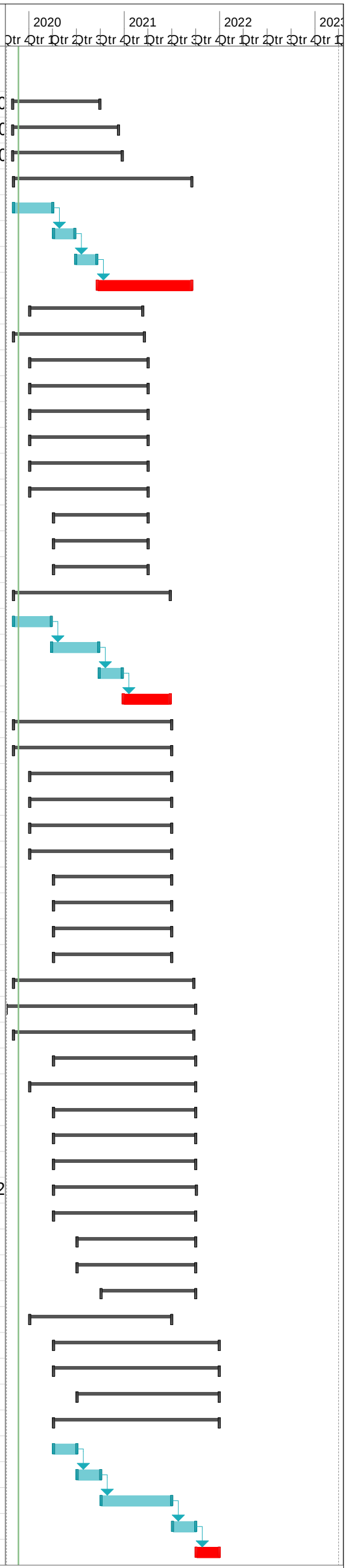
Annex 6 - Medium Case Delivery Schedule

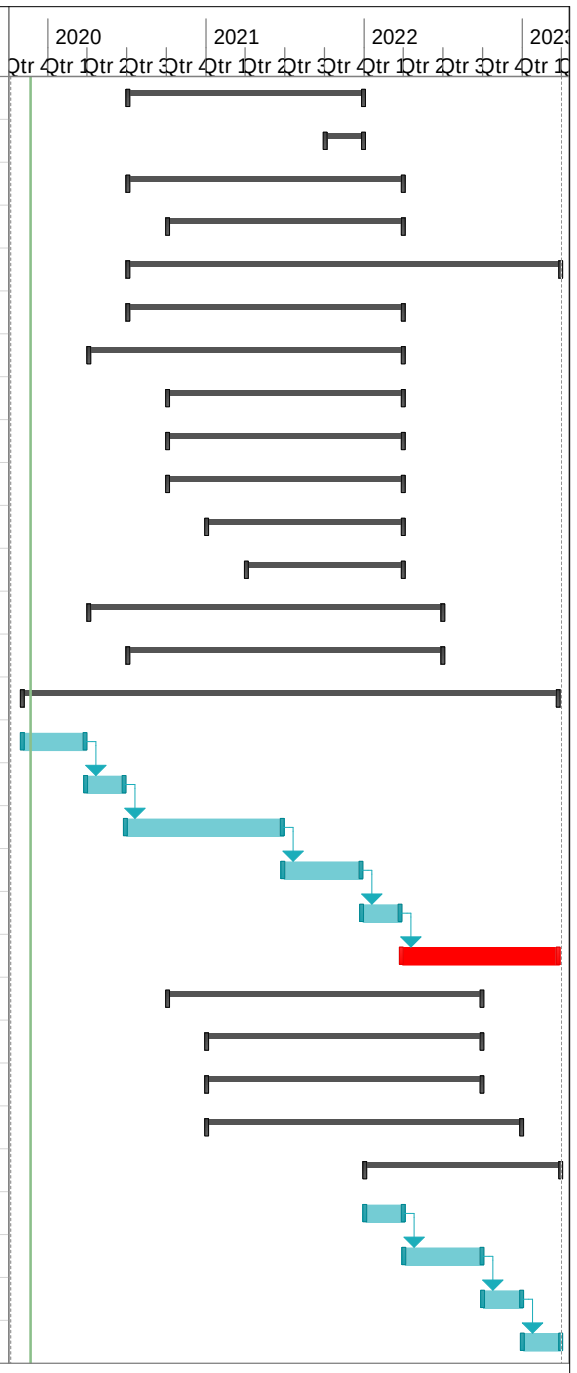
ID	Norwich TCF Delivery Schedule - Medium Case	Duration	Start	Finish
1	**Medium Case Delivery Schedule**			
2	Mhub 14 - Easton	238 days	Fri 01/11/19	Tue 29/09/20
7	5 - King Street	290 days	Fri 01/11/19	Thu 10/12/20
12	59 - Thorpe Road Contraflow (Clarence Road to Carrow Road)	300 days	Fri 01/11/19	Thu 24/12/20
17	1 - Castle Meadow / St Stephens Street / Red Lion Street	490 days	Mon 04/11/19	Fri 17/09/21
18	Detailed Design	22 wks	Mon 04/11/19	Fri 03/04/20
19	Consultation (inc Scheduled Monument Consenting)	3 mons	Mon 06/04/20	Fri 26/06/20
20	Tender Period	12 wks	Mon 29/06/20	Fri 18/09/20
21	Construction	52 wks	Mon 21/09/20	Fri 17/09/21
22	20 - Wroxham Road (Allens Avenue - Blue Boar Lane)	310 days	Mon 06/01/20	Fri 12/03/21
27	16 - Unthank Road Shops and Mhub (No. 13)	360 days	Mon 04/11/19	Fri 19/03/21
32	Mhub 20 - Airport P+R	325 days	Mon 06/01/20	Fri 02/04/21
38	Mhub 21 - Vulcan Road	325 days	Mon 06/01/20	Fri 02/04/21
44	31 - Marriotts Way to Hellesdon Road	325 days	Mon 06/01/20	Fri 02/04/21
49	21 - Blue Pedalway: Denton Road Crossing	325 days	Mon 06/01/20	Fri 02/04/21
54	49 - Yarmouth Road (School Avenue - Pound Lane)	325 days	Mon 06/01/20	Fri 02/04/21
59	48 - Yarmouth Road - Pound Lane	325 days	Mon 06/01/20	Fri 02/04/21
64	Mhub 24 - Sprowston	260 days	Mon 06/04/20	Fri 02/04/21
69	Mhub 15 - Queens Hills	260 days	Mon 06/04/20	Fri 02/04/21
74	Mhub 2 - Norwich Bus Station	260 days	Mon 06/04/20	Fri 02/04/21
79	3 - Tombland	430 days	Mon 04/11/19	Fri 25/06/21
80	Detailed Design	21 wks	Mon 04/11/19	Fri 27/03/20
81	Consultation	26 wks	Mon 30/03/20	Fri 25/09/20
82	Tender Period	13 wks	Mon 28/09/20	Fri 25/12/20
83	Construction	26 wks	Mon 28/12/20	Fri 25/06/21
84	6 - Chapel Field North / East	435 days	Mon 04/11/19	Fri 02/07/21
90	Mhub 4 - Wymondham Railway Station	435 days	Mon 04/11/19	Fri 02/07/21
96	24 - Dereham Road / Longwater Lane	390 days	Mon 06/01/20	Fri 02/07/21
101	44 - Vera Road - Rye Avenue Crossing	390 days	Mon 06/01/20	Fri 02/07/21
107	38 - Ketts Hill Roundabout	390 days	Mon 06/01/20	Fri 02/07/21
112	15 - Unthank Road (Colman Hospital Section)	390 days	Mon 06/01/20	Fri 02/07/21
117	51 - Yarmouth Road (School Lane - Girlings Lane)	325 days	Mon 06/04/20	Fri 02/07/21
122	21 - Sprowston Road (Shipfield to Outer Ring Road)	325 days	Mon 06/04/20	Fri 02/07/21
127	Mhub 5 - Wymondham Cross	325 days	Mon 06/04/20	Fri 02/07/21
132	Mhub 25 - Sprowston Road North	325 days	Mon 06/04/20	Fri 02/07/21
137	40 - Yellow Pedalway Extension to Horsham St Faiths	495 days	Mon 04/11/19	Fri 24/09/21
143	7 - Railway Station Mhub (No. 1) and Foundry Bridge Junction	520 days	Mon 07/10/19	Fri 01/10/21
148	2 - Magdalen Street / Anglia Square Mhub (No. 3)	495 days	Mon 04/11/19	Fri 24/09/21
154	42 - Cromer Road / Aylsham Road (Fifers Lane - Gilmore)	390 days	Mon 06/04/20	Fri 01/10/21
159	9 - Grapes Hill Roundabout	455 days	Mon 06/01/20	Fri 01/10/21
165	Mhub 22 - Mile Cross	390 days	Mon 06/04/20	Fri 01/10/21
170	34 - Dereham Road inbound approach to Grapes Hill	390 days	Mon 06/04/20	Fri 01/10/21
175	Mhub 19 - Dereham Road (nr Druro Place)	390 days	Mon 06/04/20	Fri 01/10/21
180	14 - South Park Avenue	390 days	Tue 07/04/20	Mon 04/10/2
185	21 - Sprowston Road (Shipfield to Tillett Road East)	390 days	Mon 06/04/20	Fri 01/10/21
191	Mhub 6 - Hethersett	325 days	Mon 06/07/20	Fri 01/10/21
196	52 - Thorpe / Yarmouth Road (Heathside Road - School Lane)	325 days	Mon 06/07/20	Fri 01/10/21
201	Mhub 27 - Rackheath	260 days	Mon 05/10/20	Fri 01/10/21
206	Mhub 29 - Plumstead Road	390 days	Mon 06/01/20	Fri 02/07/21
211	18 - St Stephens R/B to City College	455 days	Mon 06/04/20	Fri 31/12/21
216	25 - Dereham Road - Richmond Road (inc. Bowthorpe link)	455 days	Mon 06/04/20	Fri 31/12/21
221	53 - Purple Pedalway : Lion Wood	390 days	Mon 06/07/20	Fri 31/12/21
226	43 - Boundary Junction	455 days	Mon 06/04/20	Fri 31/12/21
227	Feasibility Studies - Modelling Required	13 wks	Mon 06/04/20	Fri 03/07/20
228	Detailed Design	13 wks	Mon 06/07/20	Fri 02/10/20
229	Consultation	39 wks	Mon 05/10/20	Fri 02/07/21
230	Tender Period	13 wks	Mon 05/07/21	Fri 01/10/21
231	Construction	13 wks	Mon 04/10/21	Fri 31/12/21



Project: TCF Delivery Schedule
Date: Sat 23/11/19

Task	Inactive Summary	External Tasks
Split	Manual Task	External Milestone
Milestone	Duration-only	Deadline
Summary	Manual Summary Rollup	Progress
Project Summary	Manual Summary	Manual Progress
Inactive Task	Start-only	
Inactive Milestone	Finish-only	

ID	Norwich TCF Delivery Schedule - Medium Case	Duration	Start	Finish
232	4 - Pink Pedalway - Palace Street	390 days	Mon 06/07/20	Fri 31/12/21
237	13 - University Drive	65 days	Mon 04/10/21	Fri 31/12/21
239	26 - Dereham Road / Breckland Road (Costessey/Bowthorpe works	455 days	Mon 06/07/20	Fri 01/04/22
244	35 - Pink Pedalway : Salhouse Road	390 days	Mon 05/10/20	Fri 01/04/22
250	Mhub 7 - Thickthorn Park and Ride	715 days	Mon 06/07/20	Fri 31/03/23
255	45 - St Augustine's Gate inbound approach	455 days	Mon 06/07/20	Fri 01/04/22
260	17 - Newmarket Road (Eaton Road to Christchurch Road)	520 days	Mon 06/04/20	Fri 01/04/22
265	Mhub 18 - Dereham Road (nr Hotblack Road)	390 days	Mon 05/10/20	Fri 01/04/22
270	22 - Sprowston Road (Magdalen Road - Denmark Road)	390 days	Mon 05/10/20	Fri 01/04/22
275	Mhub 26 - Sprowston Road South	390 days	Mon 05/10/20	Fri 01/04/22
280	50 - Yarmouth Road (Girlings Lane - School Avenue)	325 days	Mon 04/01/21	Fri 01/04/22
285	Mhub 28 - Salhouse Road	260 days	Mon 05/04/21	Fri 01/04/22
290	10 - City Centre west/east through traffic restriction	585 days	Mon 06/04/20	Fri 01/07/22
295	33 - Dereham Road / Old Palace Road / Heigham Road	520 days	Mon 06/07/20	Fri 01/07/22
301	12 - Cross Valley Link	885 days	Mon 04/11/19	Fri 24/03/23
302	Feasibility Studies	21 wks	Mon 04/11/19	Fri 27/03/20
303	Detailed Design	13 wks	Mon 30/03/20	Fri 26/06/20
304	Consultation / Planning	52 wks	Mon 29/06/20	Fri 25/06/21
305	Additional Design in response to planning	26 wks	Mon 28/06/21	Fri 24/12/21
306	Tender Period	13 wks	Mon 27/12/21	Fri 25/03/22
307	Construction	52 wks	Mon 28/03/22	Fri 24/03/23
308	41 - Norwich Airport Access / Industrial Estate Link	520 days	Mon 05/10/20	Fri 30/09/22
313	27 - Purple Pedalway : Earlham Green Lane - Dereham Road	455 days	Mon 04/01/21	Fri 30/09/22
318	32 - Dereham Road outbound approach to Larkman Lane with Mhu	455 days	Mon 04/01/21	Fri 30/09/22
323	Mhub 10 - Norfolk and Norwich University Hospital	520 days	Mon 04/01/21	Fri 30/12/22
328	Mhub 11 - Norwich Research Park	325 days	Mon 03/01/22	Fri 31/03/23
329	Detailed Design	13 wks	Mon 03/01/22	Fri 01/04/22
330	Consultation	26 wks	Mon 04/04/22	Fri 30/09/22
331	Tender Period	13 wks	Mon 03/10/22	Fri 30/12/22
332	Construction	13 wks	Mon 02/01/23	Fri 31/03/23



Project: TCF Delivery Schedule
Date: Sat 23/11/19

Task	Inactive Summary	External Tasks
Split	Manual Task	External Milestone
Milestone	Duration-only	Deadline
Summary	Manual Summary Rollup	Progress
Project Summary	Manual Summary	Manual Progress
Inactive Task	Start-only	
Inactive Milestone	Finish-only	

Annex 7 – Outline Benefits Realisation Plan

Annex 7 – Outline Benefits Realisation Plan

The table below presents an outline benefits realisation plan for the '**Transforming Norwich**' programme.

<table>
<tr><th>Benefit</th><th>Realisation – How and When</th></tr>
<tr><td>Our programmes for Public Transport and Walking / Cycling improvement are rated as "High" Value for Money. Every pound we invest will give the following productivity benefits.

<table><tr><td></td><td>Bus</td><td>Walk/cycle</td></tr><tr><td>Low</td><td>£3.27</td><td>£2.63</td></tr><tr><td>Medium</td><td>£2.42</td><td>£2.66</td></tr><tr><td>High</td><td>£2.34</td><td>£2.39</td></tr></table></td><td>Review of actual delivery cost versus target cost for schemes for each mode in April 2023.</td></tr>
<tr><td>The number of people using buses in Greater Norwich will increase by 6%, accounting for c.4,000 additional bus trips each day.</td><td>Annual review of bus patronage undertaken in partnership with bus operators.</td></tr>
<tr><td>Investment in the Airport to City Centre corridor will benefit 12,300 residents (68% of the total population on the corridor), who live in the most and second most deprived quintile of the UK, by giving them better access to employment and training.</td><td>Review number of people and demographic split within 400m of each corridor in April 2023.

Review % of corridor improvements actually implemented against envisaged programme.</td></tr>
<tr><td>Investment in the City Centre will benefit 9,596 residents (88% of the total population on the corridor) living in the most and second most deprived quintiles in the UK, of which 20% come from BAME backgrounds, by giving them better access to employment and training.</td><td>Review number of people and demographic split within 400m of each corridor in April 2023.

Review % of corridor improvements actually implemented against envisaged programme.</td></tr>
<tr><td>Investment in the Easton to City Centre corridor will benefit 9,157 residents (40% of the total population on the corridor) living in the most deprived quintile in the UK, by giving them better access to employment and training.</td><td>Review number of people and demographic split within 400m of each corridor in April 2023

Review % of corridor improvements actually implemented against envisaged programme.</td></tr>
<tr><td>60 bus stops will be upgraded across Greater Norwich with a further 24 new bus stops being installed as part of the mobility hubs.</td><td>Capture and report actual figures of new and upgraded bus stops in April of each year up to April 2023.</td></tr>
</table>

Benefit	Realisation – How and When
The number of people using Park & Ride in Greater Norwich will increase by up to **20%.**	Work with Park & Ride operator to capture actual patronage in April of each year up to April 2023, plus an additional survey in April 2024. Regular review meetings are held between the County Council and the Park & Ride operator.
6.6 miles of new bus lanes are added	Capture and report actual new bus lanes added each year up to April 2023.
7.2 miles of new cycle lanes of which **4.4** miles will be new segregated cycle lanes.	Capture and report actual new cycle lanes added in April year up to April 2023.
99 junctions benefit from enhanced levels of traffic light priority for buses.	Capture and report actual junction improvement added each year up to April 2023.
The number of people walking on a regular basis in Greater Norwich will increase by **18%**, accounting for **8,869** people walking each day.	Undertake annual pedestrian survey, and report
33 mobility hubs will be provided, bringing benefits of improved walking and cycling access to shared mobility services to **52,786 people** living within 400m of the improvement corridors.	Capture and report actual number of Mobility Hubs added each year up to April 2023. Report actual number of people they serve within 400m of the corridors in April 2023.
More than 100 additional car club vehicles will be provided in Greater Norwich.	Capture and report actual new car club vehicles added each year up to April 2023.
Air pollution (nitrogen dioxide) in Castle Meadow, the most polluted area of the city, will be reduced by up to **eight micrograms/m^3**, or **15%** of current pollution levels in this location.	Use existing monitoring stations to monitor air quality levels and report in April of each year until April 2024.
Air pollution (nitrogen dioxide) at Norwich Station, will be reduced by up to **seven micrograms/m^3**, or **18%** of current pollution levels in this location.	Use existing monitoring stations to monitor air quality levels and report in April of each year until April 2024.
Air pollution (nitrogen dioxide) on Chapel Field Road will be reduced by up to **six micrograms/m^3**, or **16%** of current pollution levels.	Use existing monitoring stations to monitor air quality levels and report in April of each year until April 2024.
Greenhouse gas emissions will be reduced by	Undertake an appropriate level of traffic

Benefit	Realisation – How and When
around **1,600 tonnes** of carbon dioxide equivalent annually within the City region.	surveys in April 2023 along key corridors to capture changes in traffic numbers, and then calculate changes in greenhouse gases. Report findings by October 2023.
Greenhouse gas emissions by Park and Ride buses will be reduced by **64%** (the remaining 36% is due to electricity production elsewhere in the UK, and is expected to decrease as generation becomes more efficient and carbon neutral).	Confirm when new electric bus fleet is operational.
A quarter of existing bus passengers on the TCF corridors will see their average travel time reduce by between 2 and 5 minutes.	Work with bus operators to monitor reduction in bus travel times on an annual basis, and report each year in April until April 2024. Timetable changes should reflect changes in journey times.
We will remove **1,300** single occupancy vehicles from the road network in the morning peak period	Undertake annual survey of total traffic on each key corridor in AM peak period and confirm changes from baseline. Undertake survey of % of single occupancy vehicles within overall traffic numbers and report in October of each year until October 2023.

Annex 8 – Transforming Norwich Cultural Assets Map

Annex 9 – Feedback from SOBC

ANNEX 9

Transforming Cities Fund - Norwich
Feedback from DfT to Draft Strategic Outline Business Case

Strategic Case

DfT Feedback	Response / Action
Overall Summary	
There is a clear vision for what Norfolk are trying to achieve. However, there needs to be more focus on the detail. At the moment, the strategic case is quite high level and focuses on the big picture of what Norfolk are trying to achieve	This has been noted and more detail has been provided in the Strategic Case, specifically for the Greater Norwich area.
The interconnected schemes of TCF, HIF, and FMZ need to be separated out – there is a tendency for these to merge within the strategic case	This has been noted and these have been separated out.
The context is set out in the strategic case and the objectives are clearly set out and analysed; however, these are high level and could benefit from a bit more detail and focus	More detail has been provided on this.
The identification of the issues/problems are well evidenced; however, clearer linking to how the proposed solutions/schemes will address these problems is needed	Linkages between issues / problems and proposed solution / schemes has been expanded in more detail.
Evidence is well used to back up the challenges and covers a broad range of metrics	Noted
Schemes themselves would benefit from a bit more detail in terms of costings and how they will address the challenges	Schemes now have more detail and in costs and issues they address.
Policy Comment	
On walking and cycling, clarification is needed on the map provided on page 56 on which routes are already constructed and which will benefit from TCF funding. Could assurance also be provided that the cycling and walking infrastructure will be delivered to established design standards? DfT intends to publish updated design guidance for cycling infrastructure later this year	Figure 35 provides a map showing current walking and cycling infrastructure, as well as the construction we will deliver though '**Transforming Norwich**'. Design standards adopted by Norfolk County Council for walking and cycling schemes is now clearly set out.

DfT Feedback	Response / Action
There is a reference to 'smart ticketing' and working with First Bus, who have the intention that by 2022, they will have implemented a contactless price cap on day and weekly tickets. There is also wording from First that they intend to explore moving this to an inter-operator scheme. The approach appears to be solely focussed on bus, and it is not clear which ticketing solution is being suggested (the assumption from the language is cEMV). It will be important to understand the proposed technical solution, and whether this is a stop-gap solution until the TfN smart ticketing scheme is potentially scaled out, or whether this system would be interoperable with the TfN scheme. There is no information on the financial costs of the smart ticketing work. The commercial arrangements to enable multi-operator ticketing will be key to the success of delivering the smart ticketing aspect of the bid, and it would be useful for commitment levels to be increased as the business case develops	The Strategic Case now provides more detail on the capping of individual and multiple operator fares.
We would suggest that the 'Transforming the bus network' theme considers the use of ultra-low emission buses, and bus charging infrastructure. This and the 'Transforming the passenger experience' mobility hubs could also include charging infrastructure for electric car clubs, taxis, and buses	Noted.
Prioritisation and Option Development	
A clear sifting and prioritisation process has been followed; however, it's not clear why deliverability was not pass/fail	Deliverability considered a number of separate elements, including public and political acceptability, readiness of the scheme, any requirements for planning consent and ability to deliver within the Transforming Cities timescales. Consideration of these elements ultimately led to a pass/fail determination for each scheme as to whether it is included in our programme or not. This approach is detailed in the Strategic Case.

DfT Feedback	Response / Action
There seem to be several schemes included which do not fit with the key ambitions/criteria of TCF for a variety of reasons. This includes retrofitting buses, car club infrastructure schemes, car share demonstration and cargo bikes. Market provision may be more appropriate for a number of these –TCF schemes should be focused on fixed infrastructure-focused rather than on specific vehicles given the aims of the fund	Retrofitting of buses, funding towards cargo bikes and car share demonstration schemes have been removed from our '**Transforming Norwich**' programme in terms of a funding request from government. We will look to promote car sharing through our behaviour change programme, which will be funded and delivered by Norfolk County Council. In terms of the car club, we have included electric charging infrastructure within our High funding programme.
The SOBC is not clear on mobility hubs - clarity is needed on the additional benefits these provide	More information on mobility hubs and their benefits are now provided.
Some bus schemes seem to be revenue – e.g. Dereham Road to Ernest Gage Avenue – as a capital fund TCF should not be used to fund such measures	None of our bus infrastructure schemes require revenue funding. This particular example is a capital scheme. It is noted and understood that TCF funding should only be used for revenue schemes.
Some highways schemes do not appear to include much public transport or cycling/walking provision	All our highways schemes are designed to incorporate benefits to public transport, walking and cycling where at all possible. We have added more detail to the scheme descriptions.
Stakeholder / Public Views	
A letter from FirstBus has been provided; however, it's unclear if there is evidence of an organised campaign for/against any schemes	Annex 5 provides more information on stakeholder engagement and provides details on feedback we have received on our schemes.
Did any public consultations take place or are they planned? – if so, it would be good to include the result of these in an annex	Section 6.6 outlines the findings of public consultation undertaken, as well as future plans for consultation.
Alignment with TCF Objectives	
Support the local economy and boost productivity	
The package appears to have a good fit with this TCF objective	Noted.
The corridors chosen focus on their interconnectivity with the city centre, and also on linking areas of deprivation, new housing, and areas of employment outside of the city centre	Noted.
There is evidence that the bid would improve access to employment, congestion of bus services, and reliability of Park and Ride	Noted.
However, it's not clear that these would not happen without TCF funding	This is covered in 'The Impact of Not Changing' section of the Strategic Case.
Reduce carbon emissions	
The package appears to have a moderate fit with this TCF objective	Noted.

DfT Feedback	Response / Action
Proposals include low carbon buses and cycling and walking provisions; however, there is also a focus on cars (car club, removal of through-traffic in specific areas. This traffic would have be rerouted – what impact will this have?)	Our approach to highway modelling is outlined in Section 3.7.
Air quality improvements	
The package appears to have a moderate fit with this TCF objective	Noted.
There is an expectation that cleaner buses, new cycling and walking links and better connectivity will lead to improved air quality through modal shift	Noted.
There are some aspects of the measures that look to improve public transport e.g. transforming the bus network – this could result in modal shift and have an improvement on air quality	Noted.
Support housing delivery	
The package appears to have a moderate fit with this TCF objective. There are connections/references to supporting the strategically planned development of over 27,000 homes	Noted.
However, this development is potentially a HIF funded scheme and therefore the housing is not dependent on the TCF	HIF funding has been sought to fund supporting highway infrastructure for growth.
Interconnectivity is likely to be improved by the TCF schemes; however, there is no evidence that housing delivery is more likely to happen with the TCF interventions	Linkages between housing delivery and Transforming Norwich is outlined in Section 2.5.
Aligned to Future of Mobility Grand Challenge	
The use of smart data seems to have been outsourced to the FMZ bid with full confirmation as to how this objective will be taken forward following the outcome of the FMZ application	Noted.
Little detail provided on mobility systems/technology outside of the mobility hubs proposals in the 'Transforming the passenger experience' package and the provision of high quality travel information	More detail is provided in Section 2.4 of the Strategic Case.
Identification of ageing population and emerging technologies and recognition of the need to cater for these identified throughout the Strategic case. Scenario planning against sharing and automation completed and a recognised preferred future, as well as a dystopian one. However, scenario testing before creating in-depth investment plans	Our Equality Impact Assessment outlines a consideration of this – See Appendix 2

DfT Feedback	Response / Action
may have been the best route in case a scenario raises real difficulties with some of the options that cannot be addressed or mitigated	
Wider social / economic benefits	
Thought has been given to the socio-economic landscape, in particular, how to connect areas of deprivation with educational/employment hubs	Noted.
Can links be drawn between public health and active travel schemes?	Section 2.8 outlines our joint working with Public Health on active travel schemes.

Economic Case

DfT Feedback	Response / Action
There are some outstanding questions regarding the Appraisal Specification Report (ASR). Some of these have been addressed by the updated ASR submitted with the SOBC but others still need to be answered. Technical feedback (to be provided shortly) will pick this up	There has been dialogue between the County Council and DfT on the ASR and other issues.
There is a lot of uncertainty at this stage on VfM – proxy estimates from other schemes at a local and national level have been used – most of these are 'High' VfM	VfM assessments are outlined for our programme, avoiding the need to provide proxy estimates from other local/national schemes.
The main impacts have been set out in a narrative form; however, not much consideration has been given to highways disbenefits. Some unexpected impacts have been set out within the case, such as increased rail demand – the case needs to be clearer on how some schemes will improve access to the rail station to justify this	Highways disbenefits are now outlined in our application.
The approach needs to be proportionate in terms of quantifying dependent development	We have tried to be proportionate throughout the development of our Economic Case.
Further detail is required on how the interdependencies between modes will be mitigated as there is no multi-modal model. Is the SATURN model appropriate for certain impacts (e.g. digital/smart)? How will these be modelled?	This is outlined in the Economic Case and supporting Technical Notes.
Some of the appraisal focuses on potential complementary policies – these should be included in the baseline	This has been noted.
Further details are required on the spreadsheet based model for bus schemes, including which demand elasticities will be used	This is outlined in the Economic Case and supporting Technical Notes.
Will wider economic impacts be modelled using WITA or via the consultants' own tool?	This is outlined in the Economic Case.
It is unclear if additionality or land use change models are appropriate or have been fully validated or approved by DfT. E.g. using TfN models – is geographic coverage similar?	Additionality and Land use change models have been used to carry out only a high level analysis and do not impact on the BCR of the programme.
Cost estimates for each package have been provided; however, the costs for each scheme are very high-level and are broken down into fairly wide ranges – further details should be provided in the November submission. Further details are also required on inflation – this seems to use 2.5% per annum but no evidence	Scheme costs are provided in greater detail. Information on the rate of inflation and the reasons behind this is provided.

has been provided on why this rate has been chosen	
There seem to be some assumptions that operator investment will definitely come forward, whereas this is uncertain. Sensitivity tests would be more appropriate here	A firm commitment to investment from First Bus is provided in their letter of support. Information on sensitivity tests is outlined in Section 3.10.
Optimism bias has been applied at programme level – this is incorrect	Noted.
Overall summary	
There is substantial uncertainty around the VfM of programme given that no emerging appraisal outputs have been provided. Impacts have been outlined qualitatively, although it appears the most likely ones have been set out. There needs to be more details on modelling in general and how the interdependencies between schemes and modes will be mitigated given the lack of a multi-modal model	More detail has been provided on the modelling undertaken and interdependencies between schemes and modes.

Financial Case

DfT Feedback	Response / Action
The Financial case is largely outline and requires further development ahead of the November submission	This has been further developed.
Further detail/clarity is required on the costs of schemes, the viability of measures and how the benefits will be maintained beyond the Fund period without further support from DfT	More detailed information has been provided on the costs and descriptions of schemes. In addition, the Strategic Case outlines steps that will be made to secure benefits beyond the TCF funding period, such as through behaviour change, mobilty hubs and the implementation of a new TfN Strategy.
Further details required on cost of risk as a % of base cost and how inflation has been estimated	Risk allowance has been outlined in more detail.
Further work is required on local contributions ahead of November submission – FirstBus have committed £13m in principle and there is a local commitment from Norfolk County Council (table 22), but it is unclear if this is committed or estimated	Further information is provided.

Management Case

DfT Feedback	Response / Action
Outline deliverability plans have been provided – these will need to be built upon ahead of the November submission	More detail has been provided.
A high level overview of key programme risks has been identified, however, this is at an early stage and requires further development	More detail has been provided.
Governance is clearly set out	Noted.
There is some reference to assurance framework but this is vague and needs to be more fully explained	More detail has been provided.
There are clear stakeholder engagement plans but it is unclear if stakeholder interests have been mapped	More detail has been provided.

Commercial Case

DfT Feedback	Response / Action
Some evidence of a procurement strategy has been provided but this is not fully developed	More detail has been provided.

Annex 10 – DfT Checklist

Transforming Cities Fund

Tranche 2: Strategic Outline Business Case (SOBC) Submission

All TCF Tranche 2 submissions must be supported by:

1) A completed SOBC coversheet pro-forma **(Part One)**
2) A checklist to highlight where key information can be found in the SOBC, including a Section 151 Officer Declaration **(Part Two)**
3) An SOBC as defined in the Department's Transport Business Case Guidance and any supporting annexes as necessary

The checklist details some key items we would expect to be included within the SOBC. In summary the SOBC should be submitted with a high, medium and low scenario, detailed costings and appraisal, and a firm delivery plan in place for construction.

Part One: Coversheet pro-forma

Promoting Authority	Norfolk County Council
Contact Please provide a contact name for enquiries relating to this submission.	Bid Manager Name: [redacted] Position: Transport for Norwich Manager Email: [redacted] Phone: [redacted]

1. **Summary of programme**

Norwich is the heart of our regional economy and part of the Fast Growth Cities network. As Norwich grows, travel patterns are becoming more dispersed and new developments harder to connect.

Our '**Transforming Norwich**' programme recognises that shaping a future of clean and shared mobility requires large, sustained and targeted investment in buses, cycling and walking to make them more competitive than single-occupancy vehicle use in terms of time, cost and convenience. Our programme is the first stage in implementing a much longer-term transport strategy as we move towards a cleaner, more sustainable transport network within the city region

Our programme will invest in six transport priority corridors, in addition to the city centre, that will deliver the maximum impact in terms of:

- improving people's productivity and social mobility by unlocking access to employment and education opportunities;
- increasing the efficiency of travel and transport and improve the impact transport has on carbon emissions, air quality and public health;
- using emerging technology to prepare the city region for a future of shared and clean mobility.

We will make this happen through three linked approaches across the city:

- Transforming the bus network;
- Transforming the city centre;
- Transforming the passenger experience.

2. Funding request and profiling (£000s)

HIGH SCENARIO	2019/20	2020/21	2021/22	2022/23	Total (£)	% total
Requested DfT funding	608	38,775	48,979	42,797	131,159	78%
LA contribution	700	980	1,238	1,082	4,000	2%
Third Party contribution		9,707	12,262	10,713	32,682	20%
Total	**1,308**	**49,462**	**62,479**	**54,592**	**167,841**	

MEDIUM SCENARIO	2019/20	2020/21	2021/22	2022/23	Total (£)	% total
Requested DfT funding	608	32,010	28,935	12,827	74,380	75%
LA contribution	700	1,432	1,294	574	4,000	4%
Third Party contribution		9,201	8,317	3,688	21,206	21%
Total	**1,308**	**42,643**	**38,546**	**17,088**	**99,585**	

LOW SCENARIO	2019/20	2020/21	2021/22	2022/23	Total (£)	% total
Requested DfT funding	608	26,067	23,598	8,487	58,760	70%
LA contribution	700	1,479	1,339	482	4,000	5%
Third Party contribution		9,504	8,603	3,094	21,201	25%
Total	**1,308**	**37,050**	**33,540**	**12,063**	**83,961**	

3. Value for Money

Please provide a short description of your assessment of the value for money of the programme including your estimate of the Benefit Cost Ratio. Please do so for each of your Low, Medium and High packages.

This should cover both monetised and non-monetised costs and benefits. The full assessment, as set out in the TCF Tranche 2 Guidance should be provided in the SOBC. Valuation of any dependent development, should be reported here, separately from the central value for money evidence and supporting evidence, and a full description of the approach taken should be included in the SOBC.

Low:

At a programme level, the monetised Level 1 economic benefits (based on transport modelling outcomes) show that the low programme produces an initial Benefit to Cost Ratio (BCR) of 1.65 from a PVC of £67.71m (2010 prices, discounted to 2010). According to DfT guidance and criteria the BCR of 1.65 yields 'Medium' VfM.

Excluding highway disbenefits, the BCR is 3.04, representing 'High VfM'.

For public transport schemes, the Benefit Cost Ratio is 4.26, representing 'Very High' VfM.

For walking and cycling schemes, the Benefit Cost Ratio is 2.63, representing 'High' VfM.

Medium:

At a programme level, the monetised Level 1 economic benefits (based on transport modelling outcomes) show that the medium programme produces an initial Benefit to Cost Ratio (BCR) of 1.55 from a PVC of £84.56m (2010 prices, discounted to 2010). According to DfT guidance and criteria the BCR of 1.55 yields 'Medium' VfM.

Excluding highway disbenefits, the BCR is 2.63, representing 'High' VfM.

For public transport schemes, the Benefit Cost Ratio is 3.02, representing 'High' VfM.

For walking and cycling schemes, the Benefit Cost Ratio is 2.66, representing 'High' VfM.

High:

At a programme level, the monetised Level 1 economic benefits (based on transport modelling outcomes) show that the high programme produces an initial Benefit to Cost Ratio (BCR) of 0.90 from a PVC of £145.87m (2010 prices, discounted to 2010). According to DfT guidance and criteria the BCR of 0.90 yields 'Poor' VfM.

Excluding highway disbenefits, the BCR is 1.53, representing 'Medium' VfM.

For public transport schemes, the Benefit Cost Ratio is 2.93, representing 'High' VfM.

For walking and cycling schemes, the Benefit Cost Ratio is 2.39, representing 'High' VfM.

	Low	Medium	High
Benefit to Cost Ratio	1.65	1.55	0.90
Value for money category	Medium	Medium	Poor

4. **Section 151 Officer Declaration**	
As Section 151 Officer for Norfolk I declare that the scheme cost estimates quoted in this bid are accurate to the best of my knowledge and that Norfolk • has allocated sufficient budget to deliver this scheme on the basis of its proposed funding contribution; • accepts responsibility for meeting any costs over and above the DfT contribution requested, including potential cost overruns and the underwriting of any funding contributions expected from third parties; • accepts responsibility for meeting any ongoing revenue and capital requirements in relation to the scheme; • accepts that no further increase in DfT funding will be considered beyond the maximum contribution requested and that no DfT funding will be provided after 2022/23; • Confirms that the authority has the necessary governance and assurance arrangements in place and the authority can provide, if required, evidence of a stakeholder analysis and communications plan in place.	
Name: [redacted]	Signed: [redacted]

Submission requirements

Submission deadline: 6pm on 28 November 2019

Please email this coversheet and checklist together with a copy of the SOBC (including supporting material) to:

tcfproprosals@dft.gov.uk

Please note that the size limit for attachments to a single incoming email to DfT is 20MB. If your submission is larger than this please either submit separate emails, use a zip folder, or convert large files to an alternative format. We would prefer it if annexes are separated out into individual pdf documents and clearly labelled.

Please provide three hardcopies to:

[redacted]
Head of English Devolution Team
Transforming Cities Fund Business Cases
Department for Transport
2/18, Great Minster House
33 Horseferry Road
London SW1P 4DR

Hardcopies do not need to be sent by 28 November 2019 but can arrive shortly after.

Part Two: Checklist

Please complete this checklist by referencing locations where the relevant material can be found in the SOBC document.

Strategic Case

Item	Section/Page
A detailed description of the physical scope of the programme	Sections 2.2, 2.7 and 2.8
The objectives of the programme	Section 2.6
A description of the process by which the programme came to be identified as the preferred option for meeting those objectives including why alternative options were discarded	Section 2.7
The impact the programme would have on other transport works i.e. rail networks and SRN	Section 2.7 and Section 6.7
Details of public consultation activities on the programme to date, and key findings including how any key questions/concerns have been addressed	Section 2.9 and 6.6
Evidence of stakeholder support (e.g. letters from bus/train companies, businesses, public bodies, MPs, or positive/negative press, etc.)	Annex 5

Economic Case

Modelling

Where modelling has been used to appraise the TCF schemes, the following supporting documentation is required as part of the SOBC submission. It is noted that not all of the documents listed will apply to all cities. For some schemes, we recognise that these documents and the items listed below have been provided and reviewed in advance of the submission, as part of our co-development process. Please can you indicate where this is the case by referencing when the report was sent). Where changes have been requested, please ensure that the reporting is updated. Please refer to the latest TAG unit for general reporting guidance, and units M1.2, M3.1/M3.2, and M2 for detailed guidance.

Item		Highway	Bus	Walk/Cycle
An Existing Data and Traffic Surveys Report to include:				
	Details of the sources, locations (illustrated on a map), methods of collection, dates, days of week, durations, sample factors, estimation of accuracy, etc.	Appendix 11- NNDR 5.9 LMVR – Section 3, Appendix 10 - A47 LMVR – Section 4.12	N/A	Appendix 7 AMAT Technical Note section 2.2.1 and section 2.71
	Details of any specialist surveys (e.g. stated preference).	Existing models have been used therefore no specialist surveys required.	N/A	N/A
	Traffic and passenger flows; including daily, hourly and seasonal profiles, including details by vehicle class where appropriate.	Appendix 17 - NWL OSR – Section 2.1	N/A	N/A
	Journey times by mode, including variability if appropriate.	Appendix 17 - NWL OSR – Section 6.3	N/A	N/A
	Details of the pattern and scale of traffic delays and queues.	Appendix 11 – NNDR LMVR - Base year observed traffic speed and delay is shown in the journey time validation graphs included in Appendix T	N/A	N/A
	Desire line diagrams for important parts of the network.	Appendix 17 - NWL OSR – Section 6.1	N/A	N/A
	Diagrams of existing traffic flows, both in the immediate corridor and other relevant corridors.	Appendix 17 - NWL OSR – Section 6.1	N/A	N/A
An Assignment Model Validation Report to include:				

Item		Highway	Bus	Walk/Cycle
	Description of the road traffic and public transport passenger assignment model development, including model network and zone plans, details of treatment of congestion on the road system and crowding on the public transport system.	Appendix 3 - TN1 – Section 4		
	Description of the data used in model building and validation with a clear distinction made for any independent validation data.	Appendix 3 - TN1 – Section 5.1		
	Evidence of the validity of the networks employed, including range checks, link length checks, and route choice evidence.	Appendix 17 - NWL OSR – Section 6.1, Appendix 10 - A47 LMVR – Section 4.3		
	Details of the segmentation used, including the rationale for that chosen.	Appendix 3 - TN1 – Section 4.3		
	Validation of the trip matrices, including estimation of measurement and sample errors.	Appendix 17 - NWL OSR – Section 6.1		
	Details of any 'matrix estimation' techniques used and evidence of the effect of the estimation process on the scale and pattern of the base travel matrices.	Appendix 10 - A47 LMVR – Section 4.13		
	Validation of the trip assignment, including comparisons of flows (on links and across screenlines/cordons) and, for road traffic models, turning movements at key junctions.	Appendix 3 - TN1 – Section 5.2		
	Journey time validation, including, for road traffic models, checks on queue pattern and magnitudes of delays/queues.	Appendix 3 - TN1 – Section 5.2		
	Detail of the assignment convergence.	Appendix 12 - NWL LMVR (see section on model convergence)		
	Present year validation if the model is more than 5 years old.	Appendix 12 - NWL LMVR presents the latest update to the model (see section on validation)		
	A diagram of modelled traffic flows, both in the immediate corridor and other relevant corridors.	Appendix 17 - NWL OSR – Section 6.2		
A Demand Model Report (if applicable) to include:				
	Where no Variable Demand Model has been developed evidence should be provided to support this decision (e.g. follow guidance in WebTAG M2 Variable Demand Modelling – section 2.2).	N/A A multi modal model has not been used for this assessment.		
	Description of the demand model.	N/A A multi modal model has not been used for this assessment.		
	Description of the data used in the model building and validation.	N/A A multi modal model has not been used for this assessment.		
	Details of the segmentation used, including the rationale for that chosen. This should include justification for any segments remaining fixed.	N/A A multi modal model has not been used for this assessment.		

Item		Highway	Bus	Walk/Cycle
	Evidence of model calibration and validation and details of any sensitivity tests.	N/A A multi modal model has not been used for this assessment.		
	Details of any imported model components and rationale for their use.	N/A A multi modal model has not been used for this assessment.		
	Validation of the supply model sensitivity in cases where the detailed assignment models do not iterate directly with the demand model.	N/A A multi modal model has not been used for this assessment.		
	Details of the realism testing, including outturn elasticities of demand with respect to fuel cost and public transport fares.	N/A A multi modal model has not been used for this assessment.		
	Details of the demand/supply convergence.	N/A A multi modal model has not been used for this assessment.		
A Forecasting Report to include:				
	Description of the methods used in forecasting future traffic demand.	Appendix 4 - TN2 – section 5		
	Description of the future year demand assumptions (e.g. land use and economic growth - for the do minimum, core and variant scenarios).	Appendix 4 - TN2 – section 5		
	An uncertainty log providing a clear description of the planning status of local developments	Appendix 13 - 'Uncertainty Log v1.7.xlsx'		
	Description of the future year transport supply assumptions (i.e. networks examined for the do minimum, core scenario and variant scenarios).	Appendix 4 - TN2 – section 4		
	Description of the travel cost assumptions (e.g. fuel costs, PT fares, parking).	Appendix 4 - TN2 – section 4.1.2		
	Comparison of the local forecast results to national forecasts, at an overall and sectoral level.	Appendix 4 - TN2 – Section 5		
	Presentation of the forecast travel demand and conditions for the core scenario and variant scenarios including a diagram of forecast flows for the do-minimum and the scheme options for affected corridors.	Appendix 4 - TN2 – Sections 6 and 7		
	If the model includes very slow speeds or high junction delays evidence of their plausibility.	Appendix 5 - TN3 – Section 7.3		
	An explanation of any forecasts of flows above capacity, especially for the do-minimum, and an explanation of how these are accounted for in the modelling/appraisal.	Appendix 5 - TN3 – Section 7.3		
	Presentation of the sensitivity tests carried out (to include high and low demand tests).	Section 3.5 SOBC		
A Junction Modelling Report (if available) to include:				
	Description of the model software, data used, network coding and scenarios generated	Detailed junction modelling has not been carried out at this stage.		

Item		Highway	Bus	Walk/Cycle
	Description of matrix generation and validation of model	Detailed junction modelling has not been carried out at this stage.		
	Presentation of results	Detailed junction modelling has not been carried out at this stage.		

Where traditional transport models have not been used to appraise the TCF schemes, the following supporting information and documentation is required.

A Spreadsheet-based (or any other form) Report/Technical Note (if available) to include:		**Highway**	**Bus**	**Walk/cycle**
	Description of the model, including the design of it and the rationale for its use and how the model is fit for assessing TCF schemes	N/A	Section 3.8 SOBC	Appendix 7 AMAT Technical Note
	Details of all assumption used and data sources	N/A	Section 3.8 SOBC	Appendix 7 AMAT Technical Note
	Details of the calibration and validation of the model	N/A	The model was built with observed data and adopted DfT published statistics (such as the demand elasticity values) and therefore no calibration/validation was required. Total annual bus passengers confirmed with First Bus	Appendix 7 AMAT Technical Note
	Details of model testing (if applicable)	N/A	Checking and approval plan for the model development and application is available upon request	N/A to AMAT

Appraisal

Cost Benefit Analysis

Item	Highway	Bus	Walk/cycle
A clear explanation of the underlying assumptions used in the Cost Benefit Analysis.	Appendix 5 - TN3 – Sections 3 and 4	Section 3.8 SOBC	Appendix 7 AMAT Technical Note
Information on local factors used. For example the derivation of growth factors and annualisation factors in TUBA (to include full details of any calculations).	Appendix 5 - TN3 – Section 3.3	Section 3.8 SOBC	Appendix 7 AMAT Technical Note
A diagram of the network (if COBALT used).	COBALT has not been used		
Information on the number of junctions modelled (if COBALT used), for both the do-minimum and the do-something.	COBALT has not been used		
Details of assumptions about operating costs and commercial viability (e.g. public transport, park and ride, etc.). *In terms of the operating costs and commercial viability of the public transport network and Park and ride, the current Park and Ride operates without any subsidy from the County Council and measures identified within the TCF programme will support the continued growth of the services. The level of planned investment from Private Bus operators reflects markets confidence in the viability of public transport within Norwich.*			
Full appraisal inputs/outputs (when used, **COBALT and/or TUBA input and output files in text format should be supplied**).	Appendix 19	Appendix 14	N/A
Evidence that TUBA/COBALT warning messages have been checked and found to be acceptable.	Appendix 5 - TN3 – section 8.1	Section 3.12 SOBC	
Spatial (sectoral) analysis of TEE benefits.	Appendix 5 - TN3 – Section 5	Appendix 16	
Details of the maintenance delay costs/savings.	Sections 3.12 and 3.13 SOBC		
Details of the delays during construction.	This has not been modelled due to the scale of schemes with the programme.		
Appraisal tables (AMCB, PA, TEE) **in excel format.**	Appendix 18		

Economic Case Assessment

Item	Section/Page
A comprehensive Appraisal Summary Table **in excel format**	Appendix 18
Assessment of economic impacts	**Section 3.13 SOBC**
Economic impacts worksheets, including supplementary evidence such as Active Mode Appraisal Toolkit worksheets or Greenhouse Gases worksheets etc	Appendix 1 Appendix 2 Appendix 8
Assessment of environmental impacts, to include an environmental constraints map	Appendix 1
Environmental impacts worksheets: *For this SOBC a full WebTAG appraisal including the accompanying workbooks for air quality and greenhouse gases has not be produced. At this strategic stage of the proposals and their development the level of detail and production of information such as traffic data is not sufficient to fully inform a full assessment, and at this stage this approach would not be considered proportionate. Nevertheless, the potential effects on air quality and greenhouse gases have been assessed and quantified and full details of the approach used and the potential benefits to be realised by the package of measures proposed within the SOBC is presented in Appendix 1.*	
Assessment of safety impacts and the assumed accident rates presented (when used, COBALT output should be provided)	Assessment of safety impacts and accident rates has not been assessed at this stage
Assessment of social impacts	Appendix 2
Assessment of distributional impacts	Appendix 2
Social and distributional impacts worksheets (including DI screening pro forma); *We have reviewed the requirements for the submission of the SOBC in respect of the DI screening proforma. The EqIA details the social and distributional impacts on people living along the transport corridors, and across the protected characteristic groups. However, at SOBC submission level we do not have more detailed impacts of the scheme in terms of equality and accessibility. This is something we will be progressing as we move our delivery programme forwards.*	
Cost pro forma	Appendix 18
Data and assumptions log	Appendix 3 – TN1 Section 5.1

Management Case

Item		Section/Page
Governance structure *including SRO, Project Board, Project Manager, and other key roles, and resourcing levels*		Section 6.4 SOBC
Detailed programme plan		SOBC Annex 6
Risk management	Detailed risk register	Section 6.9 SOBC