

**Inspector's clarification questions on the NEAs' additional evidence base documents****EB/079 North Essex Rapid Transit System: from Vision to Plan**

*Q1 Para 5.1 of EB/079 says that the capital costs shown in Table 5-1 do not explicitly include costings for Park and Ride sites or specific structures along the route. How is it envisaged that these items would be costed and funded?*

The first sentence under Section 5.1 sets out that costs for a Park and Ride site or interchange hub (as appropriate) at each Garden Community have been included in the capital costs. The subsequent reference to the table not including the provision of Park & Ride is an error. There is a £6m allowance for each Garden Community which covers a transit hub/park and ride site; this allowance is included in the North Essex Authorities Infrastructure Order of Costs Estimate (EB/087) and North Essex Authorities Section 1 Viability Assessment Update Appendices (EB/086(2/2)) as being developer funded for Colchester Braintree Borders and West of Braintree and part developer funded for Tendring Colchester Borders (with the remainder covered by Government Grant (see question 18)).

The £6 million allowance for a transit hub / park and ride site on each garden community is included in the capital cost estimates presented in the RTS report. Specific structures are not explicitly costed, but the per-km benchmark costs of other comparable schemes include such structures. These specific items will be costed during detailed engineering feasibility works. They will be funded in line with the rest of the RTS scheme.

*Q2 Do the capital costs shown in Tables 5-1 & 5-3 to 5-7 in EB/079 include any allowance for contingencies or optimism bias?*

The upper estimates include optimism bias at 44%. Due to the extent of the scheme and that it is at the strategic planning stage, it was considered appropriate to use a distance-based estimate benchmarked against other BRT schemes. However, as part of the development of Route 1 which is being advanced using HIF funding, the engineering team independently provided costs estimates, which fell with the distance-based estimates. Hence, the cost estimates being used are considered reasonable at this early stage. The only exception is the 3x £6m costs for transit hubs / park and ride sites, which have not been adjusted for optimism bias in the report (i.e. they are consistent in both the upper and lower bounds).

*Q3 Para 5.1 of EB/079 refers to two recent UK BRT schemes selected as cost comparators. For each of the comparator schemes please provide the following information:*

*(i) Total route length;*

*(ii) Total capital cost;*

(iii) Whether capital cost is forecast or outturn;

(iv) If capital cost is forecast, what contingency / optimism bias allowance(s) it includes.

<b>UK BRT Scheme / Information</b>	<b>Bristol</b>	<b>Leigh – Salford</b>
i. Total route length	50km	22km
ii. Total capital cost	£230m	£122m
iii. Whether capital cost is forecast or outturn	Outturn	Outturn
iv. If capital cost is forecast, what contingency / optimism bias allowance(s) it includes	n/a	n/a

Q4 The para following Table 5-10 in EB/079 refers to revenue from government. From which government funding source(s) would that revenue come?

The references to 'revenue from government' in the report would better read 'concessionary income'.

The demand modelling that produces the annual demand forecast presented in Table 5-9 does not differentiate between paying and non-paying passengers (i.e. between passengers who pay fares and passengers who avail of concessionary travel). Therefore, the forecast demand includes a mix of both types of passengers.

To estimate the purely commercial revenue (i.e. excluding concessionary income), we multiply these passengers by an average commercial yield of £1.50 calculated as follows:

$$\text{Average commercial yield} = \frac{\text{Commercial revenue excluding concessionary income}}{\text{All passengers including concessionary passengers}}$$

This revenue estimate, calculated on the basis of commercial-only revenue, is used in 5.4 Commercial Viability, including Table 5-15. It is important to note therefore that the estimates of commercial viability presented in the report do not include any concessionary income / revenue from government.

However, it is expected that passengers eligible for concessionary travel would be able to use their passes on the RTS service. This would mean that the operator would receive concessionary income, and its revenue would in reality be higher than that shown in Tables 5-9 and 5-10. The intention in Table 5-11 is to show the higher revenue amount that the operator would receive in reality. The concessionary income would

come from Essex County Council, as the Concessionary Travel Authority for the area. Under the English National Concessionary Travel Scheme, the Department for Transport provides Essex County Council with funding for concessionary travel.

*Q5 The third para in section 5.3 of EB/079 refers to industry experience of the typical annual cost of operating a bus.*

*(i) Please provide the source document(s) for the figures given here.*

The provided estimates of bus operating costs are based on industry experience from the Go-Ahead Group. The basis for such numbers is publicly available bus company accounts with turnover and fleet sizes as reported by all publicly listed transport groups. The cost range is at the higher end than the average for UK bus industry, which is reasonable, as guided busways would have higher costs (due to longer hours per vehicle) and vehicle specification.

*(ii) Do these figures include the cost of purchasing the bus?*

These figures include the cost of depreciation – therefore they inherently include the bus purchase cost. The upfront capital cost of the bus purchase would need to be funded through finance or leasing, but this is also included in the cost range presented in the report.

*Q6 The second para in section 5.6 of EB/079 says that because part of the route will run on dedicated infrastructure, it will be possible to restrict access to that infrastructure. Does this imply that Essex County Council would own the dedicated infrastructure, in order to be in a position to restrict access to it?*

Yes.

**EB/080 Modal Share Strategy for the North Essex Garden Communities**

*Q7 Para 4.6 of EB/080 gives population densities of 54 people /ha for Houten and 140 people/ha for Freiburg's Vauban district. What will be the overall population density in persons/ha of the three proposed GCs in North Essex?*

Population density is expected to vary between the individual GCs, responding to the local context, and within each one so as to facilitate the delivery of mixed land uses and characterful places. The masterplans for the GCs will be developed to inform site-specific Development Plan Documents (DPDs), which will follow adoption of the Section 1 Local Plan and wider public consultation.

These DPDs will set out in more detail the structure of each GC and anticipated densities, which themselves will be based upon the developable area allocated through the Local Plan and the number of dwellings that are proposed for delivery within that area. As described in various documents within the Local Plan evidence base, including the Garden Communities Charter, it is a key principle that density will vary across the individual sites in order to maximise the opportunity for the provision and use of sustainable transport.

*Q8 Items 13 & 14 in the table on p65 of EB/080 indicate that "Parking levels must reflect accessibility by public transport" and that "On-plot parking should be avoided and the cost of parking should not be included in the sale price of properties". Do the NEAs intend that these will be policy requirements for the proposed GCs?*

As set out in the Mode Share Strategy produced by the NEAs, the control of parking levels to reflect public transport accessibility and the avoidance of on-plot parking will be designed into the GC masterplans. As already noted, masterplans for the GCs will be developed in order to inform DPDs, which will follow adoption of the Section 1 Local Plan and wider public consultation. The DPDs will set out in more detail the proposed physical structure and layout of each GC, including how car (and cycle) parking will be allocated and managed. Although there will need to be significant further work on this issue, which will then be embedded in the DPD and any future consents, the NEAs consider that the inclusion of such a level of detail is not appropriate for a strategic plan.

*Q9 Tables 7-2, 7-3 & 7-4 in EB/080 indicate that the strategic transport model forecasts cars taking a share of between 65% and 71%, and public transport a share of between 29% and 35%, of motorised trips at the GCs in 2078. But the mode share targets in Figures 7-1, 7-2 & 7-3 appear to require a more even split between cars and public transport in 2078. What is the reason for this apparent discrepancy?*

As set out in the Mode Share Strategy the targets for each GC are deliberately more progressive than the model forecasts. The reasons for this are:

- The model is strategic, which means it focuses on 'between zone' movements, rather than localised (internal) trips that will be a defining characteristic of each of the Garden Communities. Internal trips will represent a significant proportion of overall movement within the GCs, with 33% being assumed across the Local Plan evidence base. This is considered conservative in the context of average internalisation of 28% within existing Essex towns and up to 53% of trips recorded as being made 'internally' in Clacton-on-Sea (see table below).

<b>Location</b>	<b>Population (2011 Census)</b>	<b>Trip internalisation</b>
<b>Brentwood</b>	<b>52,586</b>	<b>21%</b>
<b>Clacton-on-Sea</b>	<b>50,548</b>	<b>53%</b>
<b>Braintree</b>	<b>41,634</b>	<b>32%</b>
<b>Canvey Island</b>	<b>38,170</b>	<b>27%</b>
<b>Billericay</b>	<b>34,274</b>	<b>19%</b>
<b>Wickford</b>	<b>33,486</b>	<b>17%</b>
<b>Stanford-le-Hope</b>	<b>28,725</b>	<b>19%</b>
<b>Witham</b>	<b>25,353</b>	<b>32%</b>
<b>Maldon</b>	<b>21,462</b>	<b>36%</b>
<b>Average</b>	<b>-</b>	<b>28%</b>

Source: North Essex Garden Communities, Transport Demand Analysis and Transport Scheme Review, PBA, 2017

- The proposed mix of land uses and community facilities within each GC; the high-quality facilities for walking, cycling and public transport that are being planned to improve connectivity for new and existing residents; and the approach to street hierarchy set out in the Mode Share Strategy (specifically intended to discourage short distance car trips, and to be enshrined in DPDs for each GC) means it is reasonable to assume that a high level of trip internalisation can be achieved within the GCs. This is not factored into the strategic model for the reason stated above.
- The strategic transport model's focus on motorised modes of travel, and its inherent reliance upon input data derived from past trends (notably average 'trip rates' derived from TRICS, and uplifted by NTEM traffic forecast data) means the forecasts it generates are based chiefly on assumptions that foresee long-term increases in car use by default. These past trends and future projections offer a clear indication of what could happen, in travel demand terms, through a perpetuation of the previous housing and employment land allocations and transport planning strategies. However, it is that pattern that the GCs – through their considered design, location and

enhanced transport connectivity – are seeking to change. While the strategic transport model remains a useful tool for predicting possible future impacts associated with the growth delivered in the GCs, it cannot accurately forecast linked trips (such as Park & Ride, or people cycling a longer distance to a transport hub so as to catch rapid transit/rail connections) and underestimates the potential for non-car-based modes of travel.

- The evidence presented in the Mode Share Strategy on the range of local sustainable transport, smarter choices, place-shaping, and urban design features seeks to demonstrate how the GCs will be different, in both their design and delivery, from existing residential and employment centres in North Essex. The mode share targets assume these interventions are delivered in the GCs and will be secured through the development of masterplans and DPDs.

**EB/081 Employment Provision for the North Essex Garden Communities**

Q10 Please provide an electronic copy and a hard copy of the previous scenario-based economic analysis carried out for Cebr for NEGC Ltd, which is referenced at para 2.4 of EB/081.

This will be provided by electronic copy with this submission, with a hard copy to follow.

**EB/082 North Essex Authorities: Build Out Rates at the Garden Communities**

Q11 In Chart 7 on p25 of EB/082, please clarify how the values for “Housing delivery, authority average”, as shown in the graph, have been calculated.

Chart 7 demonstrates the relative buoyancy of the North Essex Housing Market Area in comparison to the rest of Essex. The values are annual averages of the respective areas using the data below.

	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Braintree	428	448	301	176	182	409	523	291	491
Colchester	518	673	1012	617	712	943	933	912	1,048
Chelmsford	200	233	235	274	471	826	792	1,002	1,008
Tendring	319	217	232	244	204	267	245	658	565
<b>North Essex HMA average</b>	<b>366</b>	<b>392</b>	<b>445</b>	<b>327</b>	<b>392</b>	<b>611</b>	<b>623</b>	<b>715</b>	<b>778</b>
Basildon	468	182	700	622	119	678	816	412	341
Brentwood	162	394	132	213	105	159	111	150	213
Castle Point	115	110	56	75	45	202	123	114	150
Epping Forest	176	368	304	115	299	229	267	157	526
Harlow	107	116	384	152	74	201	225	340	347
Maldon	108	37	91	119	76	68	230	243	166
Rochford	85	42	93	43	243	167	148	117	299
Southend-on-Sea	144	183	328	254	204	322	222	480	521
Thurrock	88	288	343	311	323	309	634	603	855
Uttlesford	522	298	518	545	390	463	554	722	966
<b>Rest of Essex average</b>	<b>197</b>	<b>201</b>	<b>294</b>	<b>245</b>	<b>187</b>	<b>279</b>	<b>333</b>	<b>334</b>	<b>438</b>

*Housing delivery in each of the districts in the North Essex HMA has continued to increase for the period 2018/2019 amounting to 3,891 new homes at an annual average of 973 homes (Braintree 555; Chelmsford 1,256; Colchester 1,165; Tendring 915).*

**EB/086(1/2) North Essex Authorities Section 1 Viability Assessment Update (Hyas)**

*Q12 Para 4.11 of EB/086(1/2) says that the residential build cost assumptions have been adjusted to accommodate a split of 80% houses and 20% flats.*

*(i) Were any flats included in the GC schemes assessed in the previous 2017 Hyas Report (EB/013/1/2), and if so, what was the proportion?*

There was no specific inclusion of 'flats' as part of the calculation of residential build costs in the 2017 Hyas report (EB/013/12).

*(ii) If no flats were included in the 2017 assessment, what is the reason for including them now?*

It has always been anticipated that there would be a proportion of flats as part of the overall housing mix of the Garden Communities. The reason for including this now is to acknowledge that there is expected to be a proportion of flats, and that the BCIS data used as the basis of the updated residential build cost calculations indicates higher build costs for flats than other housing types. Including both rates for housing and flats adds additional detail and robustness to the viability calculations, and build costs are more reflective of the anticipated type of development.

*Q13 Para 4.11 of EB/086(1/2) goes on to say that, related to this adjustment "and the wider update to site enabling and preparation costs, plot external costs have been adjusted to 10% of build costs". This is a reduction from the 15% allowed for plot external costs in the previous 2017 Hyas Report. Please explain more fully the reasons for this change, including the relevance to it of "the wider update to site enabling and preparation costs" referenced in para 4.11.*

The site enabling and preparation costs are supplementary to the core build costs to account for wider site works beyond the curtilage of individual buildings, including earthworks, drainage, landscaping, highways (estate roads), utilities and others.

A more detailed review of all scheme costs has been included within the North Essex Authorities Infrastructure Order of Costs Estimate (EB/087) prepared by Gleeds. Certain enabling and site preparation works have now been calculated based upon the full site area (hectares) of each Garden Community, together with an additional extra allowance of +10%. These are set out and itemised for each site under category 4 "Utilities - Scheme-Wide Enabling Works" (within the main tables under Sections 2, 3 and 4) in the Gleeds report (EB/087). This updated approach and the new cost information now picks up some of the enabling works costs which had previously been considered to be within the 15% on plot externals. It does not however fully replace or cover all related costs such as the provision of gardens, garages and incidental infrastructure such as estate roads and incidental open spaces. The detail of these cannot be known at this early stage of scheme design and masterplanning and will evolve further through more detailed work to accompany preparation of the DPDs. Overall it has been considered that an adjustment from 15% to 10% for the plot based enabling costs is reasonable to avoid double-counting, to better reflect the more detailed understanding and analysis provided in EB/087 and to provide a more appropriate, balanced view of site wide and plot based costs.



**EB/086(2/2) North Essex Authorities Section 1 Viability Assessment Update Appendices (Hyas)**

*Q14 Paras 4.31-4.34 of EB/086(1/2) set out the approach to land purchase costs, based on the assumption that land will be purchased two years before it is required for development. Para 4.33 indicates that the overall modelling includes the associated borrowing costs for the land purchases.*

*(i) Where are the associated borrowing costs for the land purchases shown in the viability worksheets in EB/086(2/2)?*

These are included as part of the overall finance costs for each separate scenario (for example section entitled 'Finance Costs' first appearing on page 12 in EV/086 (2/2) which presents the detailed workings for West of Braintree Scenario 1A). The same section is repeated for each subsequent scenario and for each site. These finance cost calculations are based upon the scheme cash position each year, therefore applied to carry-over negative cash balances and in-year values.

*(ii) Please provide the calculations which underpin the associated borrowing costs for the land purchases as shown in the viability worksheets.*

The scheme cashflows apply finance costs at the rate specified (6%) on all negative cash balances. The scheme cashflows are based upon an annual consideration of all scheme costs including land purchase payments versus returns. These are calculated annually and cumulatively. Once the scheme cashflow turns positive, finance costs are no longer applied. Land purchase costs are therefore considered alongside all other development/related costs set against returns on a composite and rolling basis. Specific borrowing costs for land (only) are not itemised within the viability modelling as the analysis applies finance costs to the composite cashflows. Extracting land costs and associated finance costs (only) would require additional assumptions to be made and complexity to be introduced relating to how returns would be used during the course of delivery, for example whether to pay back land costs before or faster than infrastructure costs. The costs of borrowing for land is fully accounted for in the modelling in any event.

*Q15 In EB/086(2/2), the Assumptions and Cashflows sheets for each of the GCs show that the affordable housing component of each proposed GC is split between 60% Affordable Rent and 40% Intermediate Housing. This appears to be a change from the position in the 2017 Hyas Report Appendices (EB/013/2/2) which show a split of 80% Affordable Rent and 20% Intermediate Housing.*

*(i) What is the rationale for this change in the split between Affordable Rent and Intermediate Housing?*

As set out in Figure 4.9 in EB/086(1/2), the change has been made to reflect paragraph 64 of the (current) National Planning Policy Framework and the national policy expectation that 10% of large sites should be low cost home ownership products. Providing 40% of the 30% affordable housing as shared ownership/intermediate tenures equates to 12% of all housing, whereas only 20% of the 30% would have been 6%, and been contrary to national policy. Whilst it is recognised that the Section 1 Local Plans are not being considered against the current NPPF, the approach mindful of the preparation of DPDs which would need to apply this requirement. Section 1 does not define a specific tenure split within the 30% overall affordable housing requirement thus providing flexibility. The approach sets out an overall average tenure mix across the entire development programme for viability testing purposes only, but does not restrict delivering alternative tenure mixes over shorter defined time periods.

*(ii) How does the tenure mix used in EB/086(2/2) relate to that shown in Appendix E to the Gleeds Infrastructure Order of Costs Estimate (EB/087)?*

The tenure mix shown in Appendix E of EB/087 does not relate to that in EB/086(2/2). Appendix E is an extract that Gleeds have included from the previous AECOM Concept Feasibility Study (EB/008/4/4, Appendix 2) for information only. This has been repeated in the document to illustrate certain social infrastructure standards, but other information within that Appendix (such as tenure mix and unit size mix) do not relate to the wider current viability work as set out in EB/013/2/2.

*Q16 Tables 2.5 & 4.5 of the AECOM IPPD Report (EB/088) identify all “Investment in early phase bus/transit services” as occurring in the first three phases of development at West of Braintree GC and in the first two phases at Colchester Braintree Borders GC. But in the corresponding viability worksheets (EB/086(2/2)), that investment is phased throughout the whole development period at each GC. What is the reason for this discrepancy?*

The viability work (EB/086(2/2)) was evolving in tandem with the finalisation of the IPPD (EB/088). The approach in the AECOM IPPD Report should ideally reflect the reference to ‘early phase’ investment in such services for all 3 sites and therefore the profile for Tendring Colchester Borders within that report should be similar to the other 2 sites, and then be carried over into the viability worksheets (EB/086(2/2)). The Hyas report has been based upon the North Essex Authorities Infrastructure Order of Costs Estimate (EB/087) as the definite statement of cost information, informed by the phasing in the AECOM IPPD. The viability worksheets are not consistent on this item but should have been. The total costs are £3.7m for Tendring Colchester Borders, £5.4m for West of Braintree and £10.5m for Colchester Braintree Borders. These costs are fully accounted for in all of the viability worksheets, it is just the relative timing which differs. Bringing forward the timing would have an impact on the cashflow, but as the values are relatively low, and that no additional costs are being introduced (apart from a small element of additional finance costs associated with earlier costs), overall the impact on viability would be relatively minor and immaterial.

Q17 Figure 4.9 of EB/086(1/2) makes it clear that the “Grant” appraisal scenarios for the Tendring Colchester Borders and Colchester Braintree Borders GCs assume that certain infrastructure items are paid for by Government grant. For the “Grant” scenarios for each of those GCs as set out in EB/086(2/2), please identify:

*(i) the infrastructure items that are assumed to be paid for by Government grant;*

For each set of worksheets, the relevant infrastructure items that are assumed to be paid for by Government Grant are referenced in the tables but with no associated capital cost.

For Colchester Braintree Borders this includes:

- Transport (CBB3): New junction with A12 & associated highways;
- Transport (CBB4): A12 realignment works (beyond core scheme);
- Transport (CBB5): A12 Kelvedon capacity & junction signalisation.

For Tendring Colchester Borders this includes:

- Transport (TCB1): A120-A133 Link Rd;
- Transport (TCB4): RTS - on site network (part funding with developer contributions);
- Transport (TCB5): RTS - off site network (part funding with developer contributions);
- Transport (TCB6): Park & Ride & RTS Interchange facilities (part funding with developer contributions).

NB: some of these infrastructure items will serve a wider public purpose than just the garden communities because the benefits to the local and strategic transport infrastructure will be enjoyed by people living and working outside the garden communities as well as those living and working within them.

*(ii) any associated costs, eg professional fees, that are also assumed to be paid for by Government grant;*

There are no other associated costs included specifically within the Grant scenario calculations in EB/086/2/2 that are assumed to be paid for by Government grant. As the individual infrastructure components referred to in the response to Q18(i) are not ascribed capital construction costs in the Viability ‘Grant’ scenarios, there are no additional calculations of fees (at 10%) or contingencies (at scenarios of 10%, 20% and 40%) to these specific items within the Grant scenario calculations.

*(iii) the total costs assumed to be paid for by Government grant.*

As per the response to Q18 (ii), the total costs for the delivery of the specific infrastructure would need to be calculated separately by setting out the capital cost of the specific items together with their associated costs, such as allowances for professional fees and the alternative contingency scenarios. For reference purposes the equivalent total costs if adopting the same assumptions as the Hyas viability worksheets (EB/086(2/2)) have been included as Appendix A to this response.

*Q18 In the 2017 Hyas Report Appendices (EB/013/2/2), the Baseline Appraisals for each of the GCs contain an infrastructure allowance of £5.0m for a Country Park. Why is there is no such specific allowance in the 2019 Hyas viability worksheets (EB/086(2/2))?*

The approach to open space has been comprehensively revised between the 2017 and 2019 evidence base material. The IPPD (EB/088) sets out a new approach of providing 8 hectares of open space per 1,000 population for each Garden Community which is then costed in the North Essex Authorities Infrastructure Order of Costs Estimate (EB/087) at a combined cost rate of £140,000/hectare. This differs to the previous approach which was based upon a value for open space calculated on a per unit basis (£2750/unit) as per North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016 (EB/008(4/4)) with the separate additional allowance for Country Parks.

The IPPD and Infrastructure Order of Cost Report are considered to be the most up to date and appropriate sources of information on costings and so have been applied to the updated viability work. The provision of any specific Country Parks will be considered further through the preparation of the DPDs and more detailed masterplanning, and their costs are covered by the broad allowance for open space as included in the appraisals.

*Q19 For the purposes of comparison, please provide the Reference Case viability worksheets for Colchester Braintree Borders GC (CBB 1A, 1B & 1C), which are said to show a negative cashflow.*

These can be provided but they will not show a comparable residual land value similar to the other scenarios, as costs will merely be escalating as finance costs increase due to the cashflow never getting positive.

**EB/087 North Essex Authorities Infrastructure Order of Costs Estimate (Gleeds)**

*Q20 The third paragraph on p6 of EB/087 refers to AECOM's IPPD Draft Report dated July 2019. Are there any significant differences between that Draft AECOM Report and the IPPD Final Report by AECOM, also dated July 2019 (EB/088)? If so, please provide a copy of the Draft Report.*

EB/087 was being prepared and finalised alongside and in close coordination with EB/088 throughout July 2019, with both documents only being marked final at the same time upon completion. Therefore the body text within EB/087 set out that it was working with the latest draft material as it had not yet been formally defined as 'final'. As a result we do not consider it necessary to provide any earlier drafts. Close joint working was occurring throughout the process to ensure both studies were consistent. A difference has been highlighted with the phasing of the contribution to public transport figures referred to at Question 16, but the NEA are not aware of other discrepancies and the above inconsistency relates to a relatively minor cost item.

*Q21 In Sections 2, 3 & 4 of EB/087, many of the Transport infrastructure costs are said to be "based on AECOM IPPD background work, [with] amendments to these costs as advised by the NEA".*

Where there is reference to 'as advised by the NEA' this refers to Gleeds taking advice either from officers within the NEAs or where other technical inputs have been provided by consultants working on behalf of the NEAs to consider relevant specific technical aspects such as transport. This is usual for such work.

*(i) Is the AECOM background work referred to additional to that published in the IPPD Final Report (EB/088)? If so, please provide a copy of the relevant background work.*

The 'background work' refers to the assessment work that AECOM were doing as part of preparing the IPPD (EB/088) and included consideration of and updates to their original considerations as set out in the North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept (EB/008(4/4)). This does not refer to any explicit additional or separate document or defined standalone source of material.

*(ii) What amendments to costs were advised by the NEAs, and what was the basis for those amendments?*

For the transport infrastructure costs Essex County Council (ECC) with their technical advisors Jacobs provided professional opinion on transport infrastructure requirements and costs. The reference to 'amendments' relates to the evolution of the values from initial evidence available in 2017, further consideration by AECOM during the preparation of the IPPD, and additional input from ECC and Jacobs to provide an up to date position on these items.

*(iii) Each of the transport infrastructure cost elements in these sections of EB/087 bears a reference number (eg WoB5, TCB2a, CBB12). Where do these reference numbers come from?*

The previous 2017 viability work did not itemise costs or use common language which at times made it difficult to specify individual items. For the 2019 update the NEA have added clearer references to make it easier to identify separate items. The references are set out at Appendix B.

*Q22 In Sections 2, 3 & 4 of EB/087, costs for on-site and off-site Rapid Transit Scheme provision and for Park & Ride and interchange facilities are identified, amounting to a total of £206.8M across the three proposed GCs combined (including a 10% risk element). The costs are said to relate to the low end of the high investment scenario identified in EB/079. However, the low end of the high investment scenario at Table 5-7 of EB/079 is £243.8M for all RTS routes, excluding Park and Ride and contingencies – £37M more than the amount identified in EB/087. Please explain the reason for this apparent discrepancy.*

The total of £206.8M is the low end of the costs for the routes most directly associated with each garden Community, namely Route 1 (TCB of £54.7m), Route 2 (CBB of £65m) and Route 3 (WoB of £87.1m) as set out in Tables 5-3, 5-4 and 5-5 of the Rapid Transit Study (EB/079). The difference relates to the exclusion of Route 4 (£37m) as set out in Table 5-6 of EB/079. The cost of Route 4 is therefore not picked up by the viability assessments and is anticipated would be funded by other sources. Further work is being carried out on sources of funding and funding options. The NEA have no reasons to believe that funds will not become available to build Route 4.

*Q23 In Section 4 of EB/087, a contribution to A120 improvement is included in the Strategic highways cost element for Colchester Braintree Borders CB (CBB6).*

This contribution provides an allowance for an element of private sector contribution from the garden communities towards the delivery of the A120 improvement, but recognises that this is a strategic highways improvement not solely related to the Colchester Braintree Borders Garden Community. It is included as an initial working assumption in the absence of detailed costing or agreements being in place. ECC would in any event pursue funding for the improvement from Government with or without such private sector funding but recognise that any related business case would be improved by private sector contributions where these are reasonable and affordable. ECC consider it appropriate in this instance for Colchester Braintree Borders to include this allowance as an initial working assumption. It is also worth noting that West of Braintree also includes a similar working assumption for contributions to strategic highways (of £31.2m), part or all of which could also be considered for the A120 improvement.

*(i) How much of that total Strategic highways cost element (£31.5M) would be allocated as a contribution to A120 improvement?*

The working assumption is that all of the Colchester Braintree Borders contribution (£31.5m) and the majority of the West of Braintree contribution would be allocated to the A120.

*(ii) Does “A120 improvement” in this context refer to the Route D option currently under consideration by the Department for Transport?*

Yes.

*(iii) What proportion of the total cost of the A120 improvement does £31.5M represent?*

The combination of contributions from the two Garden Communities could amount to circa £50m as contributions. Essex County Council advise that Highways England completed a recosting exercise for the proposed A120 (option D) in Summer 2019. The construction cost is estimated at £522 million. Cost reductions will assist the case for RIS2 funding.

It is important to note that ECC would seek Government funding for the improvement irrespective of amounts secured as private sector contributions. Therefore these allowances have been included to adopt a prudent approach, but they may not be required in practice depending upon the funding terms associated with the delivery of the improvement and the extent to which such contributions can properly be justified. ECC contributed £5m to the feasibility work to progress the new A120 scheme. Technical work on ECC's approach to determining its favoured A120 route option was signed off by Highways England through a Stage Gate Assessment Review of the options evaluated. This review is part of Highways England's Product Control Framework approach to major projects which ECC has been following in order to ensure that the project could be delivered by Highways England once funding has been secured. ECC has therefore engaged Highways England throughout the route option process to ensure delivery can proceed as soon as funding is secured.

*Q24 In Section 4 of EB/087, a total of £73M is identified for “Widest realignment of A12 as part of improvements” and “A12 capacity improvements around Kelvedon” (CBB4 & CBB5). These schemes are said to be “based on Jacobs HIF review and funding bid”.*

Item 6.9 of the table for Site 3 (Colchester Braintree Borders) in Section 4 of EB/087 defines a capital cost of £62.1m for Widest realignment of A12 (CBB4) and £20.1m for the A12 capacity improvements around Kelvedon (CBB5). These therefore combined are £83.1m.

*(i) Please provide full details of these schemes.*

Details of these schemes are included as part of the bid to the Housing Infrastructure Fund bid.

The HIF bid relates to works associated with upgrading the A12 in north Essex which Highways England are committed. The A12 Junction 19 to 25 Road Investment Strategy (RIS) scheme will upgrade the road from 2-lane to 3-lane dual carriageway between Chelmsford and Marks Tey. However, in order to provide for the level of housing proposed at the Garden Community, the HIF bid is for the following key infrastructure components over and above the planned A12 improvements:

- a. A12 Realignment – This additional realignment of the A12 will provide capacity for further growth to enable the full potential of the CBBGC, and which would not otherwise have been delivered through the existing A12 RIS1 scheme/funding envelope.
- b. Dual 4 lane carriageway - Widening of the A12 between Junctions 23 and 24 at Kelvedon Bypass to accommodate additional traffic flows from the new development
- c. A new grade separated junction including local road upgrades. The new junction would replace the existing Junction 25, provide improved access to the realigned A12 and facilitate the provision of Rapid Transit.
- d. Traffic signals at J23 - Provision of traffic signal at Junction 23 to allow controlled access to the A120 from the A12

The transport elements subject to the HIF bid would be managed and delivered by Highways England as part of their committed Roads Investment Strategy scheme via dedicated governance and project management structures.

*(ii) Would £73M meet the full costs of these schemes?*

The same matters apply as to the response to Q18 (ii), whereby additional allowances are needed to address fees, contingency and land costs associated with the capital works.



**EB/088 North Essex Garden Communities: Infrastructure Planning, Phasing and Delivery (AECOM)**

*Q25 Footnote 1 on p9 of EB/088 says that core open space provision of around 8ha per 1,000 population has been assumed for each GC. It then indicates that core provision of 7.5ha / 1,000 plus, where appropriate, country park provision of 4ha to 8ha / 1,000 is typical for GCs. Do the NEAs propose that country parks will be provided in association with the North Essex GCs?*

Country Parks or similar will be considered where appropriate and to be defined via the DPD and further site masterplanning.

*Q26 In the Land Use Budgets for the GCs shown in Tables 2, 4 & 7 in EB/088, there is a category of Mixed Use. I assume the Mixed Use category includes some residential development, because there is also an entry in each table for Dwellings in Mixed Use. What other types of development are included within the Mixed Use category in the Land Use Budget tables?*

The mixed use category is a 'catch all' to include residential uses along with retail, leisure, employment, health and community space. The framework for developing the final mix will be set in the DPD.

*Q27 The alignment of the widened A12 now shown in Figure 15 in EB/088 is different from the potential alignment shown in the previous 2017 Concept Framework (Figure 14 in EB/088). What is the basis for the A12 alignment now shown in Figure 15 in EB/088?*

Figure 15 in EB/088 is a more up to date view of the potential alignment and supersedes information in the 2017 Concept Framework. It has been included to better appreciate route opportunities and constraints and work undertaken by ECC and Jacobs as part of the preparation of the HIF bid. It is however still an assumption for testing and formal route alignments will need to be further tested and consulted on by Highways England as part of the wider A12 improvement programme. Highways England will consult on options for the A12 alignment during October to November 2019. It is anticipated that Highways England will make a preferred route announcement on the A12 widening project in Summer 2020. The A12 works will be permitted through a Development Consent Order and the current programme expects this to be submitted in 2022, with start of physical construction in Spring 2023 with works anticipated to be complete by 2027/28. The above programme may be dependent on the timing of any General Election.

*Q28 Tables 3, 5 and 8 under sections 2.5, 3.5 and 4.5 of EB/088 do not appear to include the proposed town centres shown in Figures 3, 9 & 15 of EB/088 as infrastructure requirements.*

*(i) Is this intentional?*

The tables do not show land uses or consider 'town centres' to be itemised elements of infrastructure (whilst they are important in delivery and placemaking terms, they are treated separately to items like schools, utilities, highways, etc).

*(ii) If so, how will the town centres be provided?*

Town Centres will be delivered as part of wider development implementation, either through the master developer or more likely through specialist developers for the relevant plots. The framework for the town centres and the timing of delivery will be developed further as part of the DPD process.

## SD/001/b – Additional Sustainability Appraisal of North Essex Local Plan Section 1: Main Report

Q29 At para 4.42 the SA Main Report refers to new higher-capacity trains being introduced on the Great Eastern main line from 2019/20.

(i) *Have those new trains now been introduced?*

The new trains are currently being introduced, starting with rural services out of Norwich. The new Stadler Intercity trains are presently undergoing local testing. It is expected that the new Intercity trains will be introduced from autumn 2019. The new Bombardier suburban trains that will provide most services to/from Essex are undergoing testing at Bombardier's test track and are expected to be introduced during 2020. Greater Anglia plan to phase out the entire current fleet over the next 18 months, and replace with the new rolling stock (Greater Anglia Stakeholder News, Issue 34, August 2019).

(ii) *How much additional capacity do they provide compared with the situation before their introduction?*

The additional seating capacity per train between the old and new rolling stock is identified below.

Table 13: Percentage change in seating between old and new rolling stock		
Suburban	17% to 36% increase in seating	164 – 305 extra seats
Inter-city	22% increase in seating	139 extra seats
Note: Suburban services is shown as a range as there are a number of different rolling stock types currently running with each having a varied seating capacity		

*(Source: Great Eastern Main Line Study, Network Rail, July 2019)*

### 3: Percentage change in seating between old and new rolling stock

In terms of train services, the intercity trains will run the Norwich to Liverpool St route calling at Colchester and Manningtree with some services calling at Chelmsford. The suburban trains will serve all other stations along the GEML as well as the above. These trains will make more frequent station stops and have a higher seating capacity than the longer distance Intercity trains.

(iii) *Are the NEAs aware of any other capacity improvements planned for the GEML or other rail line(s) serving the North Essex area? If so, please provide details.*

The Great Eastern Mainline Study (GEML Study, Network Rail, July 2019) examined capacity requirements along the GEML including the north Essex area. The study includes a number of enhancement options for consideration and are summarised in table 13 of the study which is copied below. The GEML Taskforce (which includes Essex County Council) is working with Network Rail and with guidance from DfT to prepare a Strategic Outline Business Case (SOBC) to support investment in the line. It is expected that the SOBC will be considered for investment via the Rail Network Enhancement Pipeline (RNEP) process with the “Decision to Develop” being considered during 2020. The GEML taskforce partners are also working with Network Rail to refine scheme options. In addition to the projects listed in table 13 below (from the GEML Study), Network Rail is examining options to deliver capacity at London Liverpool Street and Transport for London is undertaking similar work at London Stratford.

Table 13: Summary of enhancement options identified and key drivers		
Future enhancement options that may be required for the GEML	Driver for scheme	Summary of proposed further actions
Bow Junction remodelling	To provide any additional services on the GEML supporting growth without changes to service calling patterns and journey times.	Consider further development of the scheme following the monitoring of the impact of new train capacity and short-term growth. Platform capacity at London Liverpool Street to be assessed.
Loops between Chelmsford and Witham (Beaulieu Park Station scheme option)	To provide additional services between Shenfield and Witham without changes to service calling patterns and journey times.	Undertake a further timetable and service options review for the route. This can be taken forward as part of the development of Beaulieu Park station to identify wider opportunities and utilisation of the proposed infrastructure.
Haughley Junction doubling	To provide capacity for forecast rail freight from the port of Felixstowe to the West Midlands and the North and increase the performance and reliability of passenger services.	Completion of Outline Business Case and delivery by 2024 subject to further development and funding.
Loops south of Colchester, & Shenfield – Colchester headway reduction accompanied by 3 or 4 tracking solution from Chelmsford – Shenfield*	To provide additional services between Shenfield and Colchester without changes to service calling patterns and journey times.	Further assessment of the scheme to be included in a more detailed timetable assessment of the route.
Ipswich to Haughley Junction – 3 or 4 track solution	To support the provision of an hourly fast service between London and Norwich in 90 minutes and increase the reliability of passenger and freight services.	Further timetable assessment of 'trade offs' in providing the additional fast Norwich service. Followed by investigation of potential scope of the scheme.
Trowse Bridge, Norwich	To support the potential increased services to Ely and Cambridge and to improve the reliability and resilience of existing services to and from Norwich.	Further assessment to determine the benefits of the scheme and appropriate timescales for development.

Source: Great Eastern Main Line Study, July 2019, p. 35

The GEML Study also indicates that a further, more detailed, assessment, which involves a concept timetable looking to adapt the existing timetable for future growth, will be investigated. This will help determine more clearly the priority of enhancements for when the timetable is

allowed greater flexibility. Options around service provision and new infrastructure for the proposed new station at Beaulieu could provide an opportunity for this.

#### Chelmsford North East Bypass and Beaulieu Rail Station HIF Bid

In August 2019, the Government announced that ECC had been successful in securing £218 million to deliver the Chelmsford North East Bypass and Beaulieu Railway Station through the Housing and Infrastructure Fund (HIF). The new station is to be located to the north of Chelmsford and will provide access to the Great Eastern Main Line. The scheme will provide a new station and passing loops to enable trains to pass each other at the new station and make the whole line more reliable. It will relieve crowding at the busy Chelmsford railway station and act as a transport interchange to encourage sustainable travel by bus, cycle, electric vehicles and on foot.

(The HIF Bid will also provide funding for a Chelmsford North East Bypass to run between the A12 and A131, and will complement the funded Highways England's A12 Junction 19 to 25 improvements at Boreham Interchange. The bypass will enhance access to and increase the catchment area of the new Beaulieu railway station).

The HIF programme requires works and spend to be implemented by April 2024 and therefore ECC has continued to evolve more detailed proposals and work on delivery of the infrastructure components, along with the developers at North East Chelmsford, in advance of the funding decision. ECC is now actively working with Government to progress the scheme through further due diligence and into contract. At this stage the timetable for delivering the new Beaulieu Railway Station is as follows:

Governance for Railway Investment Programme (GRIP) Stage 3: Single option selection and development	May 2020
GRIP Stage 4: Obtain consents (Transport and Works Act Order and Network Change)	April 2021
GRIP Stage 5-8: Detailed design, construction, testing and commissioning. Handover to Network Rail	Complete by December 2025

Chelmsford NE Bypass delivery programme:

Preliminary design	Autumn 2019 – Winter 2020
Public engagement	Spring 2020
Planning application	Early 2021
Construction start	Late 2022
Project completion	2024

Q30 Paras 4.46-4.47 of the SA Main Report refer to the Millennium Slipways scheme at Galleys Corner roundabout, which is said to have funding in principle.

(i) Does the scheme have full, confirmed funding, and if so, from what source?

Funding has been secured for the Millennium Way slips with £4.95m from the DfT National Productivity Investment Fund for the Local Road Network, and additional funding secured from Essex County Council (£3.5m), Braintree District Council (£2.5m), and Highways England (£3m), which has enabled the scheme to progress.

(ii) When is the scheme intended to be implemented?

A planning application (CC/BTE/34/19) was submitted to Essex County Council on 24 May 2019 and is currently being assessed. The Main Works (construction) are expected to start in Spring 2020 and a total construction period of around 15-18 months.

Q31 A number of other road infrastructure schemes are listed at para 4.46 of the SA Main Report. Bullet point 2 refers to “New route of A120 to provide a free-flow link in place of Galleys Corner roundabout”; bullet point 6 refers to “Bypass for A120”; -and bullet point 10 refers “Realignment and upgrading of A120 route and junctions”.

(i) Are these three bullet points all referring to the same A120 (Route D) scheme that is under consideration by the DfT for inclusion in the RIS2 programme?

All of the road infrastructure schemes bulleted at para. 4.46 of the main SA report are drawn from the ‘Strategy-specific infrastructure assumptions’ shown for each strategy option in the NEA paper ‘Identification of Spatial Strategy Alternatives’ (Appendix 6).

The three bullet points cited in Q32 relate to different spatial strategy options. The road infrastructure descriptions were transposed from the relevant ‘Site Information Forms’ (Appendix 4). The NEAs engaged with each site promoter via a Site Information Form to confirm what would be likely to be provided as part of development coming forward at different scales of development and to gain a declaration that the proposal is viable in light of stated infrastructure requirements and other aspects of sustainable development. Site promoters have set out further details of strategic infrastructure upgrades through their consultation responses.

None of the three bullet points relate to A120 option D as delivery of the full scheme requires grant funding from Highways England.

(ii) If not, please provide details of what each scheme entails.

As above.

(iii) Is it known when in 2019 the approved RIS2 programme will be announced by the DfT?

The announcement is expected to take place by the end of 2019. If successful, this would likely be followed by a Preferred Route Announcement by Highways England. Provided that the scheme progresses as planned, and funding is made available, it is anticipated that the Development Consent Order would be submitted 2021/22, that construction could commence in 2023 and the road be open for use by 2026.

*Q32 In para 4.46 of the SA Main Report bullet point 3 refers to “RIS funded A12 upgrading 2022 to 2025”, and bullet point 5 refers to “New junctions, widening and re-routing of A12”.*

*(i) Are these bullet points both referring to the same A12 scheme that has approved funding under the RIS1 programme?*

No, these were transposed from the Site Information Forms submitted by different site promoters as below.

*(ii) If not, please provide details of what each scheme entails.*

Bullet point 5 - NEAGC2

New junctions and widening of A12.

Bullet point 3 - VE01

RIS funded A12 upgrading 2022 to 2025 - we understand that the scheme is likely to be built in 2 phases, the first from Chelmsford to the Kelvedon junction, and then the second phase to the north. The Kings Dene scheme connects directly into this infrastructure as part of the local road network.

Site promoters have set out further details of strategic infrastructure upgrades through their consultation responses. For NEAGC2, the scheme is published at section 4.2 Indicative masterplan and land use budget.



*Appendix 4 to Additional SA – Site Information Forms*

*Q33 In Appendix 4 to the Additional SA, the site information forms for the proposed GCs in the Section 1 Plan (NEAGC1, NEAGC2 & NEAGC3) all say, in their Viability sections, that RTS links will require external funding from transport operating companies.*

(i) Which element(s) of the RTS scheme will that external funding be needed to pay for?

There is no expectation of capital investment from transport operating companies. The Additional SA reference should refer to 'external funding' not 'external funding from transport operating companies'.

The RTS has been costed based on out turn costs from comparable schemes. This has identified low and high ranges. The spreadsheet provides breakdown of the costs by section. HIF funds will contribute £33m to Route 1. In addition, a £2m S106 contribution from the Colchester Northern Approach Road park and ride route will be used and a £10m contribution (excluding additional allowances for fees and contingencies) from the Tendring Colchester Borders has been factored into the viability assessments.

Meanwhile, the landowner of Easton Park Garden Community (in Uttlesford District Council) has confirmed they will fund the infrastructure on the section of Route 3 between Stansted Airport and Great Dunmow.

Since no other external funding for RTS has yet been bid for, the full costs of Routes 2 and 3 and the majority of funding for Route 1 have been factored into the garden community viability assessments. Over the Local Plan period (and beyond) it is expected there will be numerous opportunities to bid for central government funding (either directly to the DfT or to the Housing Infrastructure Fund or its equivalent). The work carried out to date, which has developed the concept much further, substantially increases the chances of success, as demonstrated with the successful TCBGC HIF bid.

In addition, options for pooling S106, using Community Infrastructure Levy or setting up a Strategic Infrastructure Tarff (if permitted) would seek to draw in funding from non-Garden Community developments.

(ii) How much external funding will be needed for each of those element(s)?

As implied in the answer to (i), the majority of funding requirements have been built into the viability assessments. Nevertheless, the funding strategy will be seeking external central government grants and other developer contributions reflecting the benefits of RTS to the wider community.

**EB/083 Habitats Regulations Assessment North Essex Authorities Strategic S1 Local Plan**

*Q34 Para 7.12 of the HRA Report refers to a final draft of the Essex Coast RAMS and a draft Supplementary Planning Document which will facilitate the delivery of the RAMS. Please provide copies of these two documents. (If there is now a final version of the Essex Coast RAMS, please provide it rather than the draft).*

Final Essex Coast RAMS and draft SPD attached.

## Appendix A

### Colchester Braintree Borders Grant Equivalent

Infrastructure	Capital Cost	Prof. Fees @ 10%	Totals with contingencies		
			@ 10%	@ 20%	@ 40%
Transport (CBB3): New junction with A12 & associated highways	£41.3m	£4.1m	£49.5	£53.7m	£61.9m
Transport (CBB4): A12 realignment works (beyond core scheme)	£62.1m	£6.2m	£74.4m	£80.6m	£93m
Transport (CBB5): A12 Kelvedon capacity & junction signalisation	£20.9m	£2.1m	£25.1m	£27.2m	£31.4m
Totals	£124.3m		£149m	£161.5m	£186.3m

### Tendring Colchester Borders Grant Equivalent

Infrastructure	Capital Cost	Prof. Fees @ 10%	Totals with contingencies		
			@ 10%	@ 20%	@ 40%
Transport (TCB1): A120-A133 Link Rd;	£41m	£4.1m	£49.2m	£53.3m	£61.5m
Transport (TCB4): RTS - on site network (part funding with developer contributions*)	£16.6m	£1.7m	£19.9m	£21.6m	£24.9m
Transport (TCB5): RTS - off site network (part funding with developer contributions*)	£38.1m	£3.8m	£45.7m	£49.5m	£57.2m
Transport (TCB6): Park & Ride & RTS Interchange facilities (part funding with developer contributions*)	Included in TCB4				
Totals	£95.7m		£114.8m	£124.4m	£143.6m

\*Note that the TCB Housing Infrastructure Fund Bid also included private sector contributions as part of the funding of the RTS. Assumptions were included that £10m of contributions would be secured from the TCB Garden Community itself, nominally split in the Hyas Viability Grant Scenarios (EB/086/2/2) as £2m contributions to the on-site RTS network, £5m contribution to the off-site network and £3m contribution to the Park & Ride/interchange. An additional £2m has already been secured via S106 for part of the network, and contributions will be sought via other sites and means.

## Appendix B

## Tendring Colchester Borders Transport &amp; Movement Infrastructure

Infrastructure	Cost	Summary	
<b>Highways</b>			
TCB1	New major road link between A120 and A133 which includes an at-grade roundabout on the A133 and a grade separated junction with the A120.	£41m	Assuming a circa 2.5km 40mph single carriageway link road (with scope for future dualling) with a new grade segregated junction with the A120, one intermediate at grade junction to provide access to the Garden Community and a new junction with the A133. Item included within Housing Infrastructure Fund (HIF) bid.
TCB2	A133 Boulevard improvements & site access points.	£5m	General improvements to the A133 corridor alongside the Garden Community site including two new at grade site access junctions formed with A133 / Boundary Rd (University) and Bromley Rd.
TCB3	Wider highways improvements	£3m	Improvements to other off-site highways including improvements to Greenstead roundabout and A133 Hare Green roundabout.
<b>Rapid Transit</b>			
TCB4	On site new segregated Primary Rapid Transit System (Route 1)	£10.6m	Provision of dedicated RTS route through site including stops and related improvements/facilities. As per Rapid Transit Study (Jacobs, June 2019). 100% of Route 1 assumed to be funded of the 'higher investment scenario', at the low end of the range to which scenario testing is then applied to uplift by additional allowance for contingency/ optimism bias. Note Park & Ride/Interchange (TCB6) £6m cost is related to this item. Viability Grant scenario assumes £2m developer contribution from TCB.
TCB5	Off site – contribution towards wider Rapid Transit System implementation	£38.1m	Contribution towards implementation of an off-site wider RTS network to integrate the new system into the wider Colchester area, including appropriate highway improvements/dedicated road-space, junction improvements and prioritisation measures. As per Rapid Transit Study (Jacobs, June 2019). 100% of Route 1 assumed to be funded of the 'higher investment scenario', at the low end of the range to which scenario testing is then applied to uplift by additional allowance for

			contingency/ optimism bias. Viability Grant scenario assumes £5m developer contribution from TCB.
TCB6	Park & Ride & Interchange	£6m	Provision for transit interchange including associated park & ride as appropriate. Viability Grant scenario assumes £3m developer contribution from TCB
<b>Sustainable Transport</b>			
TCB7	New Active Modes Connections	£5m	To include Active Modes improvements and connections as per the Movement & Access Study including new Greenways and improvements to Salary Brook trail.
TCB8	Travel Plan measures	£3.7m	Travel plan measures (smarter choices, car clubs, charging points, etc) to promote modal shift to sustainable travel patterns. Based upon allowance of £500 per residential unit.
TCB9	Investment in early phase bus/transit services	£3.7m	Other subsidies to local bus services and related public transport improvements.

### Colchester Braintree Borders Transport & Movement Infrastructure

Infrastructure		Cost	Summary
<b>Highways</b>			
CBB1	Marks Tey Station area & Stane St improvements	£25.8m	Improvements around Marks Tey Station and junctions between existing A120 and A12 Junction 25. Includes works to station entrance and integration of rapid transit/[public transport into the local road network, station entrance & drop off facilities. Includes works to Stane St around the station environs and some improvements to the station infrastructure.
CBB2	On site new bridge structures over railway	£30.2m	Provision of 2 new vehicular and 3 new pedestrian/cycle bridges over existing railway line to provide connectivity within the core Garden Community site.
CBB3	New junction with A12	£41.3m	Related to A12 wider improvements and potential realignment. Provision of a new grade segregated junction on the A12 to access the new Garden Community and associated road connections to local network. Item included in HIF bid.

CBB4	Wider realignment of A12	£62.1m	Cost to implement wider realignment of A12 beyond schemes previously consulted upon by Highways England. Assumed additional cost for physical implementation beyond that of previous options. Item included in HIF bid.
CBB5	Capacity Improvements to A12 at Kelvedon	£20.9m	Additional capacity improvements in between Junction 23 and 24 of the A12 around Kelvedon to accommodate longer term requirements. Includes signalisation of Junction 23 aligned with potential provision of re-routed A120. Item included in HIF bid.
CBB6	Contribution to A120 improvements	£31.5m	Contribution towards delivery of the A120 improvements (re-alignment as per options presented by ECC). Based upon per unit contribution of £1,500 per residential unit on a roof tariff payment basis.
<b>Rapid Transit</b>			
CBB7	On site new segregated Primary Rapid Transit System (Route 1)	£26.6m	Provision of dedicated RTS route through site including stops and related improvements/facilities. As per Rapid Transit Study (Jacobs, June 2019). 100% of Route 2 assumed to be funded of the 'higher investment scenario', at the low end of the range to which scenario testing is then applied to uplift by additional allowance for contingency/ optimism bias. Note Park & Ride/Interchange (CBB9) £6m cost is related to this item.
CBB8	Off site – contribution towards wider Rapid Transit System implementation	£32.4m	Contribution towards implementation of an off-site wider RTS network to integrate the new system into the wider Colchester area, including appropriate highway improvements/dedicated road-space, junction improvements and prioritisation measures. As per Rapid Transit Study (Jacobs, June 2019). 100% of Route 2 assumed to be funded of the 'higher investment scenario', at the low end of the range (£32.4m including interim routes) to which scenario testing is then applied to uplift by additional allowance for contingency/optimism bias.
CBB9	Park & Ride & RTS interchange	£6m	Provision for transit interchange including associated park & ride as appropriate.
<b>Sustainable Transport</b>			
CBB10	New Active Modes Connections	£3.1m	To include Active Modes improvements and connections as per the Movement & Access Study including measures A2 (rural hinterland connections); A3 (Church

			Lane to Marks Tey station link); A4 (off site cycle links); and allowance for other walking & cycling network improvements.
CBB11	Travel planning measures	£10.5m	Travel plan measures (smarter choices, car clubs, charging points, etc) to promote modal shift to sustainable travel patterns. Based upon allowance of £500 per residential unit.
CBB12	Investment in early phase bus/transit services	£10.5m	Other subsidies to local bus services and related public transport improvements

### West of Braintree Transport & Movement Infrastructure

Infrastructure	Cost	Summary	
<b>Highways</b>			
WoB1	Improvements to existing A120 junction & connection with B1256	£7.4m	Phased improvements to existing junction and connections with B1256. Includes upgrade to improve safety at B1417/B1256 and B1256/Blake End Rd junctions (£2.6m); New on-slip access from the A120 junction (£3m); new signal control/roundabout junction to provide direct site access from B1256 (£1.8m).
WoB2	New Western access from A120	£7.9m	To include all movement junction on the A120 B1417 and bridge widening (£7m) and junction improvements at Stebbing Green (£0.9m)
WoB3	Full Junction upgrade to A120	£10.2m	Full junction upgrade to connect main site access with above upgrades to the A120/B1417
WoB4	Contribution to off site strategic highways improvements	£31.3m	Contribution towards delivery of wider off site network improvements including the A120 improvement/re-alignment scheme and potential improvements to western stretch of A120/M11. Based upon per unit contribution of £2,500 per residential unit.
<b>Rapid Transit</b>			
WoB5	On site new segregated Primary Rapid Transit System (Route 1)	£16.9m	Provision of dedicated RTS route through site including stops and related improvements/facilities. As per Rapid Transit Study (Jacobs, June 2019). 100% of Route 3 assumed to be funded of the 'higher investment scenario', at the low end of the range to which scenario testing is then applied to uplift by additional allowance

			for contingency/optimism bias. Note Park & Ride/Interchange (WoB7) £6m cost is related to this item.
WoB6	Off site – contribution towards wider Rapid Transit System implementation	£64.2m	Contribution towards implementation of an off-site wider RTS network to integrate the new system into the wider Colchester area, including appropriate highway improvements/dedicated road-space, junction improvements and prioritisation measures. As per Rapid Transit Study (Jacobs, June 2019). 100% of Route 3 assumed to be funded of the 'higher investment scenario', at the low end of the range (£64.2m including interim routes) to which scenario testing is then applied to uplift by additional allowance for contingency/ optimism bias.
WoB7	Transit Hub/Interchange	£6m	Provision for transit interchange including associated park & ride as appropriate.
<b>Sustainable Transport</b>			
WoB8	New Combined pedestrian / cycle greenways through site	£2.9m	To include new Greenways as part of the green infrastructure design & layout.
WoB9	Improvements to Flitch Wy east of Pods Lane and Rayne to retain rural character	£4.2m	Flitch Way east of Pods Lane and Rayne to retain rural character and setting. A 2km all-weather surfaced section from River Brain to Pods Lane in Rayne with sensitive lighting to improve connectivity to Braintree.
WoB10	Improved shared footpath/cycleway between Rayne and Blake End along B1256	£8.6m	Improvements to enable off road walking/cycling along this key route.
WoB11	New pedestrian/cycle bridge	£6.5m	Additional bridge link for non-vehicular movement provided in combination with improvements to junction at A120.
WoB12	Existing pedestrian bridge improvements	£4.4m	Upgraded connection to improve permeability.
WoB13	Travel Plan measures	£6.3m	Travel plan measures (smarter choices, car clubs, charging points, etc) to promote modal shift to sustainable travel patterns. Based upon allowance of £500 per residential unit (higher than other sites due to more remote location).
WoB14	Bus/Transit Service subsidies	£5.4m	Initial subsidies to support running costs of initial bus & transit services.



WoB15	Bus only slip road as part of improvement works to A120 junction.	£1.6m	To provide dedicated bus only connection with site as part of phased improvements to transport.
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