Housing Infrastructure Fund

Business Case - HIF/FF/000365/BC/01 - Tendring Colchester Borders Garden Community

Bid Details

Lead Authority

Essex County

Is it a joint bid with other Local Authorities?

No

Contact Details

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Telephone number	[redacted]

Are you an agent making this submission on behalf of one or multiple Local Authorities?

No

Are the contact details provided above for the lead responsible officer for the project at the local authority?

Yes

Project Summary

What is the name of the scheme

Tendring Colchester Borders Garden Community

Please provide an Executive Summary for your proposal

Unique location

Essex is the largest county bordering London, with excellent rail and road connectivity. Essex hosts two major airports (London Stansted and London Southend), three major shipping ports (Tilbury, Harwich and London Gateway) and two universities (Essex and ARU).

Essex has an ambitious housing growth strategy to enable over 180,000 additional homes in the next 20 years (Att.1.1.2a pp.30-35). Essex County Council (ECC) as the lead bid co-ordinator is committed to housing growth and has established a new team to drive this agenda (Att.1.1.2b pp.12-13).

Colchester and Tendring enjoy a buoyant housing market. However, growth has put pressure on affordability - the ratio of median house prices to median workplace-based incomes is 8.89 and 8.95 respectively (Att.1.1.2c).

Our project will unlock the Tendring Colchester Borders Garden Community, one of three garden communities in the shared Section 1 of Braintree, Colchester and Tendring Local Plans, and the largest and most ambitious project in the Garden Towns Villages & Cities programme run by MHCLG.

However, there is a market failure. The scale of infrastructure required cannot be provided incrementally through developer contributions; it requires funding to give certainty on infrastructure delivery to facilitate and future proof the delivery of this exciting new community.

Our HIF ask

This HIF bid ask is for £98.8m to provide a Link Road between the A120 and A133 and a Rapid Transit System (RTS) connecting this new community with Colchester town centre, releasing capacity for wider growth. This HIF investment will facilitate the delivery of 7,500 new homes of which 6,500 are directly unlocked. (Att. 1.1.2d)

The emerging shared Section 1 of the Local Plans require certainty over infrastructure funding to deliver the ambition of this garden community. Smaller-scale development – which may be proposed as an alternative if this HIF bid is unsuccessful – would not accord with the emerging planning policy position.

Our delivery arrangements

Braintree District Council, Colchester Borough Council, Tendring District Council and Essex County Council (‘the Councils’) have been collaborating at both political and corporate levels for several years to establish an agreed strategic approach to large-scale plan-led housing and employment growth.

Housing

The majority of the site (Att.1.1.2e) is owned by two landowners with one main option holder. Negotiations are ongoing to bring the scheme forward. Delivery preference is for a 'master developer' approach to implement strategic infrastructure enabling developers to take serviced land to deliver new housing.

The Councils have established a wholly-owned company called North Essex Garden Communities Ltd. (NEGC Ltd.) with a dedicated team to take an active role in delivery and ensure that growth occurs both at pace and to the quality to satisfy place-making ambitions.

Infrastructure

ECC have a demonstrable track record of delivering large-scale infrastructure enhanced by strong working relationships with Department for Transport, Highways England and the South East Local Enterprise Partnership.

Delivery will be through a robust partnership, making use of ECC's existing long-term relationships with Ringway Jacobs and Highways England.

Schemes are run through defined Programme & Project Boards, to tight budgets and timing constraints; these programmes would be managed in the same way.

Future vision and outcomes

The delivery of the link road and RTS will unlock 6,500 additional high-quality homes, bringing benefits in the emerging Local Plan period to 2033, sustaining high quality housing growth on this site for the following 30 years and enabling wider growth across Colchester. Essex is one of the best places in the UK to deliver Government's aspirations for quality housing at scale, community integration, connectivity, economic growth and improved living standards.

This HIF bid is key to delivering this future vision for Essex.

Please provide an overview of the project, including your project scope for the infrastructure and for the wider project

Homes

The housing site

The Link Road and the RTS will collectively unlock 6,500 new homes on Tendring Colchester Borders Garden Community (TCBGC), a new and exciting development of around 7,500 homes that will be comprehensively planned and accessible through a range of sustainable transport choices (Att.1.1.2e). An 'infrastructure-first' approach gives more confidence to existing communities that the appropriate level of infrastructure will be delivered at the right time and in the right locations.

Local Plan vision and context

The wider project is articulated in the emerging shared Section 1 of Braintree, Colchester and Tendring Local Plans (Att.1.1.3a). The councils recognise that addressing growth at scale must be founded on a vision of how and where change should occur. The vision for North Essex has identified it as a location for significant growth over the period to 2033 and beyond, and one which embraces the need to build a well-designed community. At the heart of the vision are three new garden communities (Att.1.1.3a pp.40-42, pp.43-46) to provide a steady and long-term supply of new housing in current and future Local Plan periods. A particular ambition for these three garden communities is a long-term sustainable transport system that provides excellent access to jobs and services to support economic growth.

Timely provision of infrastructure is a key requirement of its inclusion in Local Plans. The Examination in Public (EiP) for the shared Section 1 is currently paused following initial hearing sessions in January and May 2018 and requests from the Planning Inspector for further information The EiP is expected to resume in Autumn 2019 with a target of adoption in 2020 (further details about the Local Plan can be found in: the Strategic Case, question 2.2.2; the Management Case, questions 7.3.3 and 7.4.3 and in summary in Att.1.1.3b).

Infrastructure

There is a strong and clear focus on the provision of the right infrastructure for TCBGC, with appropriate connections, flexibility, future proofing and sustainable transport provisions.

A120-A133 Link Road

Of key importance is the connection of the Garden Community to the Strategic Road Network. The A120 and A133 which pass to the north and south of this new community provide vital transport links across this part of Essex. The A120 connects towns from east to west as well as linking into the A12 - a major freight route through Essex and Suffolk - with the A133 as the main commuter route from Clacton-on-Sea into Colchester. TCBGC sits in the space between the A120 and A133; the Link Road (Att.1.1.2d) will provide access for construction traffic, road access to development outlets and some local relief from through traffic, thus generating capacity in the wider network to allow the development to build out. The Link Road will unlock 4,000 homes.

Rapid Transit System (RTS)

A key feature of these garden communities is a sustainable transport system providing access to jobs and services to support economic growth. Therefore, this new community will also be served by a bus Rapid Transit System (RTS) linking to the University of Essex, through the Knowledge Gateway employment zone to Colchester town centre and key destinations including the rail stations and hospital (Att.1.1.2d). Provision of a high-quality RTS with dedicated sections and priority measures at key junctions will provide reliable and improved journey times. The solution will provide a public transport alternative with all the quality and reliability benefits of a tram system, albeit based on affordable and deliverable bus-based technology. The RTS is fundamental to the planned longer-term modal shift strategy across the three garden communities and this initial phase will lay the groundwork and deliver a persuasive case in support of realising this ambition, with potential to expand the RTS across the whole of the A120 corridor. The RTS will unlock 2,500 homes.

Site Details

How many housing sites will the funding bring forward?

2

Please provide a list of the housing sites that the funding will bring forward, including the amount of units to be delivered on each site, the lower tier or unitary authority the site is in and the current land ownership

Site name	No of units	Local authority	Current ownership	Planning status	Planning reference
Tendring (Colchester) Borders Garden Community	3750	Colchester	Land is currently in limited private ownership. Two main landowners - Gooch and Hunter under option to Mersea Homes.	None	
Commentary					
The site is contained in the shared Section 1 of the North Essex Authorities' emerging Local Plans which are currently the subject of a joint Examination, with anticipated adoption of the shared Local Plans in 2020.					

Site name	No of units	Local authority	Current ownership	Planning status	Planning reference
(Tendring) Colchester Borders Garden Community	3750	Tendring	Land is currently in limited private ownership. Two main landowners - Gooch and Hunter under option to Mersea Homes.	None	
Commentary					
The site is contained in the shared Section 1 of the North Essex Authorities' emerging Local Plans which are currently the subject of a joint Examination, with anticipated adoption of the shared Local Plans in 2020.					

Please provide site boundaries for all housing sites

(see final page of document)

Please attach scheme plan(s) for your proposal - these should include plans of housing sites and infrastructure

Filename	Description
1.1.2 d - TCBGC Link Road and Rapid Transit System.jpg	Map showing TCBGC Infrastructure
1.1.2 e - TCBGC.jpg	Map showing TCBGC Boundary

What is the total size of the development (in hectares)?

425.00 ha

Of the total development size, what is the total housing area (in hectares)?

200.00 ha

How much of the total housing area is on:

Brownfield land

0.00 ha

Public sector land

0.00 ha

What are the proposed tenures of the homes to be delivered?

Affordable sale	12 %
Affordable rent	18 %
Market sale	70 %
Market rent	0 %
Other	0 %

Infrastructure Requirements

Please provide further details on the HIF infrastructure requirements and their link to the delivery of housing

Infrastructure Type	Other (Rapid Transit Route Infrastructure)	**Description**	Segregated RTS routes and/or bus priority measures for bus based RTS services between TCBGC and key destinations in Colchester alongside RTS terminals and a new park and choose site (which combines park and ride with integrated transport choices).
HIF Funding	£45,055,638	**Link to housing**	The creation of RTS is fundamental to delivering the vision for sustainable living. With standard investment in sustainable travel (which would be expected as a matter of course) growth at TCBGC will be limited due to traffic congestion in Colchester and on the strategic road network. RTS creates significant modal shift which allows the full TCBGC to be constructed. In addition, RTS is a tangible benefit that is likely to lead to greater local support for the development.
Sites benefitting	Tendring (Colchester) Borders Garden Community, (Tendring) Colchester Borders Garden Community		

Infrastructure Type	Road / highway - other	**Description**	Provision of a new single carriageway link road between the A120 and A133 to the eastern periphery of the proposed Tendring Colchester Borders Garden Community
HIF Funding	£65,747,900	**Link to housing**	A link road which connects between the A120 and A133 is required to provide additional highways capacity to directly serve the Garden Community and to relieve existing pressure from the local road network around the sites environs, thus providing capacity to accommodate growth. Provision of a full link road - rather than a spine road – is required for this site's inclusion in Local Plans, thus facilitating delivery of new homes.
Sites benefitting	Tendring (Colchester) Borders Garden Community, (Tendring) Colchester Borders Garden Community		

Please outline, in further detail, the direct link between the infrastructure scheme(s) and how this unlocks the homes

There is a clear and direct link between the infrastructure schemes and how these unlock the homes identified in our bid.

Deliverability and soundness of Local Plan

A successful HIF bid would provide a strong confident position on 'deliverability' and plan soundness to demonstrate a proactive approach and show that funding opportunities were both suitable and available. This would address key questions raised by the Local Plan Inspector on viability and deliverability as part of further evidence gathering (Att.1.1.3b).

Without the HIF funding it is unlikely that this development will come forward; the site needs this significant infrastructure investment to enable it to build out to scale and any proposals for a smaller development on this site – which may be proposed if this HIF bid is unsuccessful – would not accord with the emerging planning policy position as it will be unable to deliver the broader strategic interventions such as the Link Road and Rapid Transit System (RTS).

Infrastructure mitigates impact of new housing

Transport modelling has shown that building homes at Tendring Colchester Borders Garden Community (TCBGC) leads to an increase in flow and journey times on local routes through Colchester and a worsening of congestion spots along the A133 approach. This worsening is considered significant after 1,000 homes have been built, which determined the deadweight. The infrastructure is necessary to unlock more ambitious levels of housing building at TCBGC.

When only the link road was added to the transport model, growth at TCBGC could continue up to 5,000 homes. Past this point there is a sharp deterioration in network performance. This is particularly indicated by the model rerouting trips away from Colchester as the journey times have deteriorated so significantly. The link road alone only unlocks partial growth at TCBGC.

However, when the RTS is added into the model, the transport modelling shows that growth up to and beyond 7,500 homes can be accommodated. It achieves this by driving a change in modal shift. Furthermore, including RTS fully meets wider aims for TCPA garden community principles for sustainable travel and contributes to wider health and
quality of life objectives.

Addressing a cashflow challenge

There is a market failure in the ability of the private sector to deliver upfront infrastructure of this scale. This is primarily due to the high infrastructure requirements set against local sales values; alongside core infrastructure requirements expected on any new development of this size, there is a need for ‘abnormal’ big ticket infrastructure items which form the basis of this bid. The link road will also provide main site access and strategic access to the surrounding highways network as it builds out.

Scheme viability

The approach to create Garden Communities is predicated upon the delivery of appropriate infrastructure in a timely manner. The Link Road and RTS elements are key early requirements but are costly. Scheme viability is challenging where infrastructure is to be funded up front by developers and the provision of funding would enable the scheme to come forward and deliver on its full potential.

Stimulating market demand

The infrastructure, in particular the RTS will improve the connectivity of the site into Colchester, via the University of Essex, through Colchester Town Centre, Colchester Town and North rail stations, Colchester General Hospital and the Northern Gateway. Provision of the Link Road and RTS will therefore significantly improve the site’s accessibility and desirability, stimulating occupier demand and strong build-out rates.

Therefore, for the reasons outlined above, funding towards the provision of the infrastructure detailed in this bid is directly linked to the delivery of 6,500 additional homes to achieve a significant overall development of 7,500 homes.

Wider Development Impacts

Please provide a summary of what impact the scheme will have on the Transport Network

The development of options for the A120-A133 Link Road (LR) and the rapid transit system have been set out in respective option assessment reports (OARs), which have been included in Annex B of this bid.
In both OARs there is a recognition that the highway network in and around Colchester does not operate satisfactorily with the scale of development planned without a combination of significant highway capacity and public transport improvements. Consequently, to deliver the largest near-Colchester development (that is Tendring Colchester Borders Garden Community – TCBGC) an integrated package of transport improvements is required in order to meet core housing, transport, environmental and sustainable economic growth objectives.
The creation of the LR:
• distributes traffic from TCBGC onto the A120 and A133;
• provides access to the TCBGC business zone;
• provides access to a new 'park and choose' (which includes 'park and ride'); and
• increases highway capacity on the local strategic highway network.
Meanwhile plans for a RTS and extended 'park and choose' (providing a wide range of sustainable transport choices in addition to a bus interchange) for Colchester have been emerging over the last two years as a feasible option to accommodate the transport impact of significant housing development beyond that achievable by the link road alone, as well as meet environmental and sustainable economic growth objectives securing the well-being of Colchester as it grows from a mid- to large-sized town.
At the TCBGC a RTS will provide a fast and reliable public transport alternative to access key destinations in Colchester. Hence the RTS will relieve impact on the congested highway network and unlock further housing at the TCBGC.
The TCBGC RTS also supports ECC's long-term aspiration to create a North Essex RTS extending from Stansted Airport to Colchester with a spur to Chelmsford. Such a system would fill gaps in the intra-regional public transport system.

Does the new housing development generate a need for new school places and how this will be accommodated

Education impacts have been calculated in accordance with population and pupil generation forecasting undertaken with Essex County Council and revised through emerging concept development work (not yet finalised – will be updated version of Att.1.4.2.7a pp.15-29). The Garden Community will generate the need for the provision of 9 x Early Years Facilities, 4 x 2 Form Entry Primary Schools and 1 x 8 Form Entry Secondary School.

These facilities are integrated into the overall approach to ensure that they are phased in accordance with housing and population growth, sited at appropriate locations across the site to be available locally and stimulate sustainable travel, walking and cycling. The approach will be evolved through further detailed modelling, Development Plan Document and planning application/Local Development Order preparation.

The first primary school will be required by the 300th house, with subsequent primary schools required roughly every 1,400 units. These will be accompanied by Early Years facilities. The secondary school is likely to be built in phases with the initial phase operational as part of the first or second phase of development.

The funding of education has been considered as part of the site wide viability & cash-flow modelling and assumed to be developer funded. As these are all infrastructure costs to the scheme, funding support would have a beneficial impact on scheme viability, albeit provision will be sequenced throughout the development period.

No attachments

How have you assessed that no new utility infrastructure (electricity capacity, water, waste water, gas and telecoms) will be required for this scheme and future housing delivery, or, how additional utility infrastructure will be delivered without HIF funding?

There has been ongoing engagement with utility providers as part of the preparation of the Local Plans, which include and define the location of the Garden Community. The associated Infrastructure Delivery Plans identify the scope, scale and location of new

facilities aligned to the scale and location of future population growth.

Planning policy for infrastructure provision and specifically for development on the Garden Community will require new and improved utilities as part of the scheme and wider strategic capacity for growth.

AECOM have undertaken technical feasibility and costing work as part of the feasibility process (not yet finalised – will be updated version of Att.1.4.2.7a pp.15-29). New provision and upgrades have been considered and included in the viability and cash-flow modelling work aligned to the project. This includes connections into existing networks, reinforcement works and new on-site provision. Significant elements will be required in early phases of development.

The funding of utility provision has been considered as part of the site wide cash-flow modelling and assumed to be developer funded. Works will be delivered either via the master-developer approach to provide serviced development plots and/or working with utility companies to secure improvements to strategic capacity & networks.

Thought has also been given to future proofing the transport infrastructure and supporting the distribution of utility infrastructure by providing ducting and, where appropriate, multi-service utility tunnels as part of the transport schemes. This will be achieved by the transport design team engaging early on with developer teams and statutory utilities. In doing so, the risk of transport infrastructure being damaged by utility works soon after being constructed is minimised; and it helps reduce cost of laying infrastructure for utilities.

No attachments

What consideration have you given to ensuring that the health and care services locally will align with the additional homes to be built?

Essex County Council's (ECC) Public Health team have a designated lead on the healthy places agenda. This includes engaging with healthcare providers especially the NHS who provide much of the healthcare estates and infrastructure in Essex.
The lead has developed strong working relationships with the multiple partners required to ensure that health and care service providers locally are aware of, and engaged in, the planning for additional homes.
The Public Health team are invited to a variety of healthcare provider estates groups including that at an STP level (see 1.4.4.2). Public Health and local planning teams engage with strategic estates teams at NHS Improvement, Clinical Commission Groups (CCG) estates teams and STP estates leads to ensure that health providers are engaged with the local plan process including contributing to both the policy development and subsequent Infrastructure Delivery Plan.
In addition, for the strategic new settlements, several specific groups have been established to address need that will arise from these additional homes. These groups are made up on both health and wellbeing teams, healthcare estates teams, strategic estates leads, CCG estates teams and planning. They provide the opportunity to discuss issues and challenges arising from this anticipated growth.
One specific group has been identified by the TCPA as a 'good practice' example due to its innovative approach to addressing these issues. This includes submitting a 'single response' to proposals on behalf of the health economy. This group comprises of the CCG, acute providers, mental health providers, ambulance services, commissioned providers and Public Health.
ECC is also addressing workforce need that will be required to support the additional homes including essential worker housing need.
Private developer funding has currently been identified for circa 6000sqm healthcare space at the TCBGC site (report not finalised –will be updated version of Att.1.4.2.7a p15-29)

Have you engaged with your Sustainability and Transformation Partnership?

In addition to the work described in 1.4.4.1 (What consideration have you given to ensuring that the health and care services locally will align with the additional homes to be built?), Essex County Council's Public Health team is engaging with relevant STP programmes estates and infrastructure groups. They are also on STP local workforce groups to ensure that the anticipated new growth is considered as part of the workforce planning for the future.

If you have any further information to support your project overview, which has not already been captured in the above, please include this here

Employment sites
Whilst this bid relates primarily to the relationship between investment in infrastructure and housing growth, it is also important to set out the wider economic objectives and the related impacts that investment could achieve in relation to local employment growth and economic prosperity.

Colchester Borough Council has set out a vision for Colchester to be 'the best-connected borough in the East of England, offering all businesses and all new residential developments world-class, future-proofed connectivity and to drive the uptake of digital technology to make the best of its potential for delivering economic growth and job creation'.

The Tendring Colchester Borders site lies directly adjacent to the University of Essex, which is a major employer and a significant driver of the local knowledge economy. The area is identified in the Local Plan as a Strategic Economic Area (SEA) to drive future local economic growth in particular opportunities associated with the growth plans for the University.

The Colchester campus accommodates around 13,000 students and is growing rapidly. The University's Strategic Plan 2013-19 set out an aspiration to increase student numbers over the Plan period by 50%, and the next strategic plan period is likely to see a further expansion of student numbers. The University was named University of the Year at the Times Higher Education Awards in November 2018

The expansion of the University is closely linked with the development of further business facilities on University land. Located immediately to the southwest of the Tendring Colchester Borders site, the University of Essex Research Park/ Knowledge Gateway is an 11.8ha site on the campus with the potential to provide 37,160 sq m. commercial accommodation, intended to support the University's links with businesses. The Research Park/ Knowledge Gateway has evolved over a number of years with recent public funding helping to create the Parkside Office Village facility and other workspace

Demand for workspace on the campus is partly driven by businesses developed by university alumni and academics, particularly building on the University's research expertise in data science, suggesting considerable further potential for locally-based growth as well as inward investment. Ultimately, the University state that the Research Park/ Knowledge Gateway aims to create up to 2,000 jobs.

The University has invested £50m so far in creating the Knowledge Gateway research and technology park which brings together supporting infrastructure, academic researchers, space for start-ups, and opportunities for anchor tenants to establish new regional centres on the campus.

Ambitious hi-tech businesses are already based at Parkside Office Village alongside Essex Chambers of Commerce, the Haven Gateway Partnership, the Institute for Analytics and Data Science, the Economic and Social Research Council (ESRC) Business and Local Government Data Research Centre, and the Essex Business School.
Essex is now one of the leading universities in the UK for working with business through Innovate UK's flagship Knowledge Transfer Partnership programme. It is working with more than 20 companies based across London, Essex and Suffolk allowing forward-thinking businesses to connect with research expertise in artificial intelligence, machine learning and virtual reality.

Work has also started on a £12m Innovation Centre, funded in partnership with Essex County Council and the South East Local Enterprise Partnership's Local Growth Fund.

Linked to some extent with the University's expansion, Colchester offers scope for expansion as a retail and service centre, linked with a growing tourism and accommodation offer. In particular, the Borough Council has promoted Colchester as a centre for the creative and media industries, linked with public investment in ultra-fast broadband and building on the University connections

To the north of the Garden Community lies the Severalls Business Park, which is the main employment zone for Colchester located directly off the A120. This provides a wide mix of office, industrial, storage and manufacturing activities.

The Garden Community itself makes provision for employment generating uses towards the south of the site in proximity to the existing University of Essex and Knowledge Gateway and for B1, B2 and B8 businesses to the north of the site close to the A120.

The importance of employment has been recognised from the outset. It also means that the Garden Community will be designed to anticipate mid-21st century lifestyles to the full. The improvements in accessibility brought about by investment in the Link Road and importantly the rapid transit network to link the site to the University and on into Colchester Investment will contribute greatly to achieving wider economic ambitions.

Filename	**Description**
1.1.2 a - Essex Growth and Infrastructure Framework 2016-2036.pdf	Essex Growth and Infrastructure Framework
1.1.2 b - Building for the future - the role of county concils in meeting housing need (1).pdf	Building for the Future - the role of County Councils in meeting housing need
1.1.2 c - Median House Prices to Median Workplace-based Earnings.xls	Median House Prices to Median Workplace Based Earnings
1.1.2 d - TCBGC Link Road and Rapid Transit System.jpg	Map showing TCBGC Link Road and Rapid Transit System
1.1.2 e - TCBGC.jpg	Map showing TCBGC Boundary
1.1.3 a -Shared Section 1 Publication Draft June 2017.pdf	Publication Draft Stage of Colchester Borough Local Plan 2017-2033
1.1.3 b - Local Plan summary and update.docx	Local Plan Summary and Update
1.1.3 c Median prices - ONS to March 2018.xls	Median Prices ONS to March 2018
1.4.2.7a - AECOM Options_and_Evaluation.pdf	Aecom Options and Evaluation
1.5.1a - A133 Summary Leaflet.pdf	1.5.1a: Project Summary
Overarching_1_v2(no crops).pdf	Summary of all Essex CC HIF bids

Strategic Case

Strategic Approach

How will this scheme support your long term housing and economic growth ambitions? Please refer to any development plans and / or associated planning guidance policies

This scheme is essential to deliver our long-term ambitions for housing and economic growth, set out in the emerging shared Section 1 of Braintree, Colchester and Tendring Local Plans (Att.1.1.3a). A successful HIF bid would provide a strong confident position on 'deliverability' and plan soundness to address key questions raised by the Local Plan Inspector (Att.1.1.3b).

HIF-enabled infrastructure directly unlocks 6,500 homes on Tendring Colchester Borders Garden Community (TCBGC), contributing a significant number of homes in the emerging Local Plan period to 2033 and beyond. Furthermore, strong local economic growth alongside population and housing growth is an important policy driver and a key component of Garden City principles.

The infrastructure unlocks the housing and the housing drives economic growth – providing one job per home will create 7,500 new jobs form this garden community alone

Long-term housing ambitions
Essex is a county with appetite for ambitious housing growth. We expect over 180,000 more homes in Greater Essex over the next 20 years with 144,000 within the County Council area. Essex County Council (ECC) is committed to facilitate growing communities and new homes, set out in our Organisation Strategy 2017-21.

Affordability and housing need
The North Essex area of Braintree, Colchester and Tendring (known collectively as the North Essex Authorities, NEAs) has seen significant growth in its population, housing stock and economy over recent years. It is well-placed and connected to key growth points in the wider region including London, Cambridge and Stansted Airport; as a result, it is forecast to continue to grow. However, this growth has put pressure on the affordability of housing - the ratio of median house prices to median workplace-based incomes is 8.89 in Colchester and 8.95 in Tendring.

Objectively Assessed Housing Need (OAHN) for Colchester is 920 dwellings per annum (dpa) (1095 dpa under standard methodology) and for Tendring 550 dpa (749 dpa under standard methodology) (Att.2.1.1a). Over the last three years Colchester has seen an average of 964 dpa and Tendring an average of 489 dpa (Att.2.1.1b), demonstrating strong local delivery but indicating a need for a new approach to sustain delivery levels and meet future housing need.

Garden communities - a strategic approach to growth
The NEAs, together with Essex County Council (ECC), recognise that population, housing and economic growth do not stop at administrative boundaries. Settlement patterns, migration flows, commuting and strategic infrastructure needs all have significant influences within, between and beyond local authority areas. It is for these reasons that the NEAs and ECC have been working proactively and collaboratively across the wider area, responding to this opportunity through the implementation of a plan-led approach to growth.

The revised National Planning Policy Framework (NPPF) sets out that the "supply of new homes can often be best achieved through planning for larger scale development." The high housing need identified for North Essex, the constraints that exist in many existing urban areas and the desire to support a sustainable form of development in the long term has led to the inclusion in the shared Section 1 of Local Plans of three new major settlements that follow the principles of garden communities (Att.1.1.3a pp. 40-42).

We need the Link Road and Rapid Transit System to meet housing ambitions

This scheme is essential to deliver our long-term housing ambitions, with a successful HIF bid securing TCBGC's inclusion in Local Plans. The infrastructure directly unlocks 6,500 homes on TCBGC, contributing 2,500 homes in the emerging Local Plan period to

2033 and a further 5,000 homes over the following 30 years.

Long-term economic growth ambitions

Colchester Borough is the dominant urban centre within the Essex Haven Gateway having developed a strong economy, linked to its “central place” functions and to the town’s historic character, cultural activities and the university. Major retail and leisure services are also located within and adjacent to Colchester town. The Councils Economic Development Strategy 2015-21 seeks to develop and enhance local economic prosperity, and acknowledges the need for new strategic employment locations, building upon local assets such as the University of Essex, Knowledge Gateway and Severalls Business Park.

Tendring District has a diverse economy with employment across a range of activities. The economy and labour market across the western part of Tendring district is influenced by its relative proximity to Colchester and good transport links to London. The interior of the District is largely rural and is characterised by a high-quality environment, interspersed with small settlements.

When assessing housing requirements, an analysis of economic forecasts was undertaken together with demographic projections to establish the inter-relationship between population growth, new jobs and the number of new homes needed to accommodate this growth. Employment Land Needs Assessments have been carried out by each authority which set out the amount of employment land that is required within the Plan period.

A key ambition for the area is to strengthen and diversify local economies to provide more jobs and to achieve a better balance between the location of jobs and housing, reducing the need to travel and promoting sustainable growth.

Delivering strong local economic growth alongside population and housing growth is a key local policy driver as set out in the shared Section 1 of the emerging Local Plans and is a key component of Garden City principles. Such growth underpins the local political commitment to garden communities as a means to secure a strong economic future for the area.

We need TCBGC to meet economic ambitions
Braintree, Colchester and Tendring commissioned work to explore employment opportunities associated with the development of innovative garden communities - based on the likely demographic profile of these new communities - and to develop quantified scenarios for future employment growth. The consultants concluded that garden communities have the potential to deliver one job per household, in line with the Garden Communities Charter, and to support employment growth in surrounding areas (Att.2.1.1c p.73; Att.2.1.1d p.12).

TCBGC is located at a key point along the A120 ‘economic corridor’, running from the M11 in the west across to the international port of Harwich on the east coast. This corridor is recognised within the South East LEP Strategic Economic Plan (2014) as providing distinctive investment opportunities in low carbon and renewables sectors, offshore wind energy, manufacturing, and logistics. TCBGC is considered to perform the best in employment terms given the opportunities provided by its location adjacent to the University of Essex.

Employment forecasts for the three authorities factor in the longer-term aspirations for employment growth arising from the positive spin-offs associated with garden communities. These will be designed to fit to modern ways of working such as the growth of home-working enabled by enhanced digital connectivity.

Rapid Transit System (RTS) key piece of the jigsaw
A particular challenge is to provide North Essex with a sustainable transport system that provides good access to jobs and services, to support economic growth ambitions. Growth promoted on large-scale new developments such as the TCBGC provides the opportunity to deliver strategic transport infrastructure projects that can significantly improve connectivity across and within the area; it can also drive changes to travel patterns and behaviour, reducing reliance on the private car.

The strategic importance of RTS, which forms part of this bid, should not be underestimated; it not only directly unlocks 2,500 homes on TCBGC but will act as a catalyst to deliver this wider sustainable transport ambition, driving growth across the wider North Essex area.

What is your assessment of local housing requirements in your area and how will this scheme address these needs? Please refer to any data and evidence sources you have, including local housing need

Assessment of housing need

Objectively Assessed Housing Need (OAHN)

The North Essex authorities have committed to plan positively for new homes and to significantly boost the supply of housing to meet the needs of the area. To meet the requirements of national policy to establish the number and type of new homes, the authorities commissioned Peter Brett Associates to produce an Objectively Assessed Housing Need (OAHN) Study building on earlier work (Att.2.1.1a).

Initial and detailed analysis in the report suggested that a Housing Market Area comprising Braintree, Colchester, Chelmsford and Tendring Council areas forms a sound basis for assessing housing need.

The total requirement across north Essex, excluding Chelmsford City Council's area, is 2,186 new homes per year comprising of OAHNs of 920 dwellings per annum for Colchester and 550 dwellings per annum for Tendring (and 716 dwellings per annum for Braintree). This generates the need for 43,720 new homes in the Local Plan period to 2033.

Over the last three years Colchester have seen an average of 964 dwellings per annum and Tendring an average of 489 dwellings per annum, demonstrating strong local delivery but indicating a need for a new approach to sustain delivery levels and meet future housing need (Att.2.1.1b; Att.2.1.2a; Att.2.1.2b). Consideration to Local Housing Need as calculated by the standard methodology – 1095 for Colchester and 749 for Tendring – when plans are reviewed will increase this challenge.

The need for affordable homes

Both Colchester and Tendring suffer from poor affordability – the ratio of median house prices to median workplace-based incomes is 8.89 and 8.95 respectively – emphasising the need to ensure that there is sufficient supply of new homes to meet need (Att.1.1.2c).

Affordable housing need in North Essex is calculated in accordance with PPG in the Strategic Housing Market Assessment (SHMA) (Att.2.1.2c). The resulting figures were 267 dwellings per annum for Colchester and 151 dwellings per annum for Tendring (and 212 dwellings per annum for Braintree) – generating the need for 12,600 affordable homes over the Local Plan period to 2033. These figures represent, respectively, around 30%, 27% and 29% of the overall housing requirement for each district as recommended in the OAHN Study. The garden communities need to be mixed and balanced communities and will be expected to provide 30% affordable housing.

The Inspector in his correspondence in June 2018 has endorsed the figures as representing the objectively-assessed housing need for the area and that the housing requirements submitted in policy SP3 were soundly based (Att.2.1.2d).

How the scheme will address these needs – short and long-term

Tendring Colchester Borders Garden Community (TCBGC) has potential to deliver up to 7,500 additional homes of which 6,500 are directly linked to this HIF bid; provision of a Link Road and Rapid Transit System (RTS) facilitated by this HIF bid will create the network capacity and enable the modal shift for TCBGC to achieve its full ambitions.

In the Submission Draft Shared Section 1 of the Local Plans the Garden Communities were forecast to deliver a minimum of 2,500 units each within the plan period, therefore 7,500 in total, around 15-20% of the total requirement.

Importantly, this HIF bid will not only support delivery of new homes in the current Local Plan period; once established, the Garden

Communities will deliver a regular supply of new housing into the future, likely to comprise a higher overall proportion of future needs as they will be able to supply a steady high number of units throughout future plan periods. In this case, TCBGC will deliver a further 5,000 homes in addition to the 2,500 homes in the emerging Local Plan period to 2033. Achieving policy-compliant levels of affordable housing will help to deliver 2,250 affordable homes on this site.

Delivering at pace

The NEAs are fully aware that the delivery approach and a broader range of housing tenures can be used to boost the average build rate by building at a scale and at an output that suits the investor/provider market. At this stage, housing delivery on TCBGC is modelled for private sale and affordable housing only. However, work has been prepared to consider other tenures, build out rates and interventions, including:

• Build to Rent/PRS. There is considerable opportunity to increase the level of good quality rented accommodation at each of the Garden Communities providing they is well managed and sustainable. The Build to Rent market and opportunity for PRS, the site's location and proximity to the town centres and public transport will be key to how attractive it is as an option and its potential to be developed at scale.

• Custom/Self build. Currently custom/self-build accounts for around 6% of the UK market with the greatest concentrations in the South East, East of England and South West (just under 50% of the total). This is expected to rise to 7% and possibly up to 10% by 2021. Using a configurable/volume custom build approach, and with a strong market and supportive context, it could account for up to 10% of the total homes built on TCBGC.

• Older Persons accommodation. Future housing projections (local demographics) support a significant increase in older persons accommodation between now and 2033. In order to introduce older persons accommodation at scale (outside of an affordable classification) would require a reasonable level of infrastructure to enable the delivery of this type of accommodation.

The conclusions at the Draft Analysis Stage of the Independent review of build out – 'The Letwin Review' (Att.2.1.2e) – support this position that there is further scope to increase output through other tenures to enhance the average annual build out rate above typical thresholds suggested and meet broader needs. Evidence collected as part of this review points to large sites, for example Great Kneighton in Cambridge and Great Western Park in South Oxfordshire achieving delivery rates upwards of 350 dpa and as high as 550 dpa (Att.2.1.2f). More locally, the NE Chelmsford Garden Village Consortium have assumed seven outlets at 50 completions each year, so 350 market completions, with a further 35 percent affordable housing, so 473 in total. Delivery at pace on a site of this scale is possible.

Early and upfront investment in key infrastructure as per this HIF bid could play a key role to achieve these uplifts in future years.

In conclusion, this HIF bid is critical to providing the confidence on infrastructure funding as required by the Planning Inspector and therefore enabling the Garden Communities to be included in the shared Section 1 of the Local Plans. It will address known infrastructure needs and address a key cashflow challenge in securing the early provision of capital intensive enabling works, thus bringing forward development at scale to make a sizeable impact on the housing need in Colchester and Tendring, including affordable housing.

Filename	Description
2.1.1 a - OAHN Study Nov 2016 Update.pdf	Objectively Assessed Housing Needs Study November 2016
2.1.1 c - SQW Employment and Demographic Study.pdf	NEGC Employment and Demographic Studies April 2017
Copy of 2.1.1 b - Live_Table_122- Net housing additions.xlsx	Net Housing Additions
2.1.1 d - Garden Communities Charter.pdf	Garden Communities Charter
Copy of 2.1.2 a - CBC Housing Trajectory for HIF Bid.xlsx	Colchester Borough Council Housing Trajectory
2.1.2 b - TDC Housing Trajectory for HIF Bid.docx	Tendring District Council Housing Trajectory
2.1.2 c - SHMA Study Dec 2015 Update.pdf	SHMA Study Dec 2015
2.1.2 d - Inspector letter on OAHN.pdf	Letter from Inspector on OAHN
2.1.2 e - Letwin Review Draft Analysis Stage.pdf	Letwin Review Draft Analysis
2.1.2 f - Letwin Review Build out Rates - Annexes.pdf	Letwin Review Build Out Rates - Annexes
2.2.1 a - Lord Kerslake NEGC Peer Review.pdf	NEGC Peer Review
2.2.1 b Inspector Section 1 Post Hearing Letter to NEAs 8 June 2018.pdf	Inspector Section 1 post-hearing letter to NEAs 8 June 2018

Local Support

How will this scheme demonstrate effective joint working? E.g. with neighbouring local authorities and other local partners, Private sector organisations, Local Enterprise Partnerships etc.

The approach to date is an exemplary example of positive and proactive joint working between the Councils to plan for growth in a strategic way, unconstrained by administrative boundaries. Considerable progress has been made over recent years through the effective joint working which has achieved:

• Coordinating the Council's approach to Local Plans, including the confirmation, publication and Examination in Public of the Shared Section 1 of the Local Plans

• Becoming part of the Garden Towns Villages & Cities programme run by the Ministry of Housing, Communities & Local Government (MHCLG). North Essex Garden Communities is the largest and most ambitious project in the programme which provides direct access to other Garden Towns with associated learning and knowledge/information sharing opportunities.

• Since 2015, securing over £2m of capacity funding and support from MHCLG to support in bringing forward the design, planning and technical work necessary to evolve and bring forward the proposals. This is in addition to £2m of capacity funding and in-kind commitment that the partnership Councils have also contributed.

• Council commitment to:

o leading the delivery of the Garden Communities including approvals for and the subsequent establishment of NEGC Ltd.

o funding the delivery vehicle to deliver the Garden Communities, (subject to Business Plans being agreed, affordability and value for money)

o considering the potential establishment of a locally led development corporation – which could become the first in the UK.

• Building relationships with land owners and promoters and establishing necessary structures to lead on the delivery of the proposals.

• Developing stewardship arrangements for the long-term maintenance of public amenities.

• Direct high-level engagement with Government on the potential for direct infrastructure investment, the use of new delivery powers such as those enabled via the Neighbourhood Planning Act 2017 in respect of locally led development corporations, and

opportunities for comprehensive land assembly.
The programme also benefits from innovation in collaborative working with the North Essex Garden Communities Peer Review led by Lord Kerslake (Att.2.2.1a) stating that “This is an excellent example of cooperation between Councils”, and the planning Inspector supporting the approach in terms of satisfying the Duty to Cooperate (Att.2.2.1b pp.2-4).
Beyond the key Councils involved, the existing stakeholder picture is a comprehensive and well-managed. The Councils (with NEGC Ltd.), are working with a wide range of statutory organisations and local business groups such as the Haven Gateway and South East Local Enterprise Partnership. In addition, the future delivery at the scale envisaged interfaces with the expansion plans for many key bodies such as the University of Essex, Stansted Airport, Harwich/Felixstowe ports.
The Councils have key statutory and regulatory roles and such are leading with ongoing liaison and joint working on shared issues. NEGC Ltd. has a complementary key focus on delivery, distinct from the wider roles of the founding Councils enabling the opportunity for a wider discussion with key individuals / groups and an emphasis on aligning the work to achieve broader aims and objectives across the North Essex area.
A list of stakeholder groups is set out below:
• Political (MPs / Members / parish and town councils)
• Officials (Government Departments, Civil Servants / Senior Officers)
• Transport bodies (Highways England, Network Rail, Rail operators)
• Local Interest & Pressure Groups
• Social & Community Groups
• Business Groups
• Education & Skills
• Health
• Statutory groups (Police/Fire, Transport, Utility, Environment, Heritage etc.)
• Housing & Construction sector
• Economic (national/regional (LEPs & corridors)/local)
The Councils and NEGC will need to continue to interface with these key stakeholder groups.

Please demonstrate local support for your scheme (for example in Local Plans and policies)

Colchester (CBC), Tendring (TDC) and Braintree (BDC) (collectively the North Essex Authorities – NEAs) are responsible for taking forward their respective Local Plans and are promoting the allocation of the Garden Community sites through this process.

To effectively plan across the whole of North Essex, the NEAs initiated a joint approach to strategic plan-making. This included a joint evidence base on strategic matters (such as housing, the economy, transport and the natural environment) and promotion of the Garden Community approach to deliver North Essex’s growth requirements.
Plan-making began in 2015 when CBC and TDC held separate public consultations on future growth options in their respective areas; CBC through an ‘issues and options’ consultation and TDC through amendments to their emerging plan. Both included the concept of a new settlement to the east of Colchester.

Both councils, working with BDC, and Essex County Council (ECC) as a strategic partner, furthered the Garden Community proposals through public consultation and stakeholder engagement, resulting in the inclusion of two other new settlements; the Colchester Braintree Borders Garden Community and the West of Braintree Garden Community. An important part of the rationale for Garden Communities is capturing the strong public feeling for an infrastructure-led approach to new housing, which has come across in the NEAs’ public consultations. Alternative options to the spatial strategy proposed were reviewed in light of consultation responses, sustainability appraisal, and other evidence base work.

The Tendring Colchester Borders Garden Community site was identified and approved for inclusion in their shared Section 1 of Local Plans. For CBC and TDC this governance process involved numerous stages of agreement at both Local Plan Committee (CBC and TDC) and full Council (TDC). As part of both the preparation of the Local Plan and subsequent Examination, the NEAs have agreed a number of Statements of Common Ground with stakeholders (Att.2.2.2a-p, Att 2.2.3 uploaded into the following section) including:
• Essex County Council

• Highways England
• Natural England
• Environment Agency
• North East Essex CCG, Mid Essex CCG and Colchester Hospital
• Maldon District Council
• Uttlesford District Council
• University of Essex
• Greater Anglia (train operating company)
• Anglian Water
• Numerous land owners/promoters

The shared Section 1 was submitted to the Planning Inspectorate in October 2017 with Examination hearing sessions in January and May 2018.

On conclusion of the hearing sessions, the NEAs were informed by the Inspector that whilst the approach to housing need was sound, further work was needed to ensure the Garden Community proposals contained in Section 1 could be taken forward. Since receipt of the Inspector's initial findings, the NEAs have recommitted to the Garden Community approach with CBC resolving to proceed with the Local Plan on the understanding that in the absence of external funding for critical infrastructure, alternative growth options would be reconsidered.

The NEAs have been working towards addressing the Inspector's concerns and are in regular contact with the Inspector, sending monthly update reports and agreeing to reconvene Examination hearing sessions in Autumn 2019. This would lead to adoption of the Local Plans in early 2020.

Following adoption, the NEAs have committed to preparing development plan documents (DPDs) for the three Garden Communities. These DPDs will be the product of engagement with local communities and will contain the detailed strategies, policies and proposals needed to guide the development of the Garden Communities.

As part of the joint working approach the NEAs are exploring the locally-led new town development corporation model, with strong support from MHCLG.

Can you provide evidence of support for your proposal from the following:

	Support	**Further Details**
Local MP(s)	Yes	Giles Watling MP; Bernard Jenkins MP; Will Quince MP

Filename	**Description**
2.2.3 Jenkin MP.pdf	Letter of Support from Bernard Jenkins MP
2.2.3 Giles Watling MP.pdf	Letter of Support from Giles Watling MP
2.2.3 Will Quince MP.pdf	Letter of Support Will Quince MP

	Support	Further Details
Local community	Yes	Development at the scale proposed is transformational at a local level. Some stakeholders are reserving judgement until the sites make adequate process through the Local Plan examination process to test and confirm their suitability. The Councils are seeking an inclusive approach going forward with local communities to ensure the schemes do deliver on the stated ambition.

Filename	Description
Letter of Support - HIF - Colchester Tendring borders_9151875.pdf	Fisher Jones LLP

	Support	Further Details
Local Enterprise Partnership(s)	Yes	SELEP

Filename	Description
SELEP Letter of Support.pdf	Letter of Support SELEP

	Support	Further Details
Supporting upper tier local authorities	Yes	Formal signed off support from Leader of Essex County Council.

Filename	Description
HIF Application to BID CMA FINAL APPROVED -14.03.19.docx	Essex County Council Cabinet Member Approval (CMA)

	Support	Further Details
Supporting lower tier local authorities	Yes	Support from by way of Statements of Common Ground and Letters of support from: Colchester Borough Council, Tendring District Council, Uttlesford District Council, Maldon District Council, Chelmsford City Council Colchester Borough Council.

Filename	Description
2.2.2 h - SoCG Maldon DC.pdf	SOCG Maldon District Council
2.2.2 o - SoCG Uttlesford DC (WoBGC) update.pdf	SOCG Uttlesford District Council
CCC letter of support all HIF Bids 15.3.19.pdf	SOCG Chelmsford City Council
2.2.3 TDC Letter of Support HIF.pdf	Tendring District Council
Letter of Support Colchester BC.pdf	Letter of Support Colchester Borough Council

	Support	Further Details
Any other key stakeholders	Yes	Highways England, GLA, Environment Agency, Support from developers, Go Ahead Anglian Water, Natural England, University of Essex, G120 Consortium, Essex Chambers of Commerce.

Filename	Description
2.2.2 c - SoCG ECC & Highways England & GA.pdf	SOCG ECC and Highways England and GA
2.2.2 a - SoCG Andrewsfield Consortium (WoBGC).pdf	SOCG Andrewsfield Consortium WoBGC
2.2.2 b - SoCG Anglian Water.pdf	SOCG Anglian Water
2.2.2 d - SoCG Environment Agency.pdf	SOCG Environment Agency
2.2.2 e - SoCG G120 Consortium (CBBGC).pdf	SOCG G120 Consortium
2.2.2 f - SoCG Galliard Homes (WoBGC) update.pdf	SOCG Galliard Homes (WoBGC)
2.2.2 i - SoCG Mersea Homes (TCBGC).pdf	SOCG Mersea Homes
2.2.2 k - SoCG Natural England.pdf	SOCG Natural England
2.2.2 l - SoCG NEECCG & Colchester Hospital.pdf	SOCG NEECCG & Colchester Hospital
2.2.2 m - SoCG RF West (CBBGC).pdf	SOCG RF WEST (CBBCG)
2.2.2 n - SoCG University of Essex (TCBGC).pdf	SOCG University of Essex
2.2.3 Essex Chambers of Commerce.doc	Letter of Support from Essex Chambers of Commerce
2.2.2 j - SoCG Mid Essex CCG.pdf	SOCG Mid Essex CCG
HIF Letter of support GLA - Colchester - March 2019 - final.pdf	Letter of Support GLA
20 Mar 19 - Letter - Essex County Council.pdf	Letter of Support - Sherwood Family

Meeting housing policy objectives

How will your scheme support the Government's ambitions for housing, as set out in the Housing White Paper?

Step 1 - Planning for the right homes in the right places

Up-to-date, sufficiently ambitious plan

• Following the conclusion of the Shared Section 1 Examination in Public (EiP) sessions, the Local Planning Authorities received three letters from the Planning Inspector, concluding that approach to housing need was sound, but that further work was needed so that the Garden Communities proposals contained in Section 1 could be found sound

• A successful HIF bid will provide substantial evidence to the Inspector on the deliverability of this site.

• HIF represents a key step in the progress of the Local Plan across the three local authorities in North Essex

Honest assessment of need for new homes and working with neighbouring LPAs

• As evidenced in 2.2.1, the approach to date provides an exemplary example of positive and proactive joint working between the Councils to plan for growth in a strategic way, unconstrained by administrative boundaries. The Councils are thinking strategically to do what they consider to be the right spatial planning approach for current and future generations.

• Strong partnership working between Colchester and Tendring (and Braintree) on meeting housing need which has resulted in a Shared Section 1 Local Plan.

• TCBGC offers an opportunity for Tendring and Colchester to work together to meet a substantial portion of their housing need both in proposed plan period to 2033 and beyond

Making enough land available in the right places – Garden Communities

• The programme across three sites is the largest project currently within the MHCLG Garden Towns & Villages programme

• Development has potential for scale (up to 7,500 homes).

Step 2 - Building homes faster

Ensure infrastructure is provided in the right place at the right time
• New communities are dependent on infrastructure to get development off the ground and sustain pace of delivery. TCBGC is a good example of where the provision of key infrastructure can increase scale and pace of ambitions.
• The premise of this HIF bid is that large scale infrastructure is needed upfront.
Supporting developers to build out more quickly
• The Garden Communities provide an excellent opportunity to accelerate the delivery of new homes through comprehensive planning and the early provision of supporting infrastructure, reducing risk and allowing developers to concentrate on building homes.

Taking steps to address skills shortage
• The Councils are engaging with the Essex Employment and Skills Board to explore the employment and skills opportunities and legacy that will arise from the NEGC developments.

Step 3 – Diversifying the market

Backing Small- and medium-sized builders to grow
• The scale of development will allow for delivery of multiple tenures (private market sale, affordable housing, custom build, starter homes) which could draw in SME builders as these housing markets can operate independently of each other and so SMEs would not be in direct competition with volume housebuilders.
• TCBGC will provide an ideal opportunity to enable delivery from a wide variety of SMEs suppliers working alongside larger housebuilders.

Building more homes for private rent
• The approach is seeking to deliver across a broad range of housing types and tenures - this includes consideration of Private Rented and Buy-to-Rent - which not only meets broader Government ambitions, but also provides a key opportunity to deliver at greater pace than in the past.

Supporting housing associations and local authorities to build more homes
• TCBGC provides a development of scale and depending on delivery model agreed could involve more direct provision of housing or delivery through a housing association partner.
Boosting productivity and innovation by encouraging modern methods of construction
• The approach is seeking to deliver across a broad range of housing types and tenures with innovation and long-term resilience as a key part of the design and place-making process. This includes incorporation of Modern Methods of Construction (MMC), potentially accompanied by investment in local production capacity, and discussions are ongoing with Homes England to identify a site for an MMC factory.
• Opportunities for innovation across the North Essex Garden Communities are being actively explored under three themes of 'People; Place; & Operation' to ensure they can accommodate and make full advantage of new and modern approaches that can add value. Opportunities could range from new forms of transport through to implementing the 'Smart City' agenda such as via technology and sensors.
• We already have experience in Essex using MMC – Swan in Basildon and Weston Homes in Braintree – and will ensure that lessons learnt from this early-adopter are incorporated into the use of MMC at TCBGC.

Step 4 – Helping people now

Supporting people to buy their own home and making home affordable to those priced out of the market
• Affordability is an issue in both Colchester and Tendring with house prices many multiples of workplace-based earnings.
• Increasing supply across a variety of tenures will help more people to access housing either through buying their own home on the open market or through affordable sale as well as providing opportunities to access private and affordable rented homes - affordable

housing on the site is expected to be policy compliant at 30%

Encouraging development of housing that meets the needs of future population
• Given the long-term nature and overall scale of the ambition for Garden Communities we full and active consideration to new and innovative aspects of community life and place management, supporting Garden City

Principles to improve the quality of life for both new and existing residents.
• The new homes will be of high quality, with design features that can adapt over the course of a person's life.

Scheme Objectives

What are the overaching objectives of the scheme? Objectives should be SMART - specific, measurable, achievable, relevant and time constrained

- 1. Enable the delivery of 7,500 new homes between 2023 and 2050
- 2. Enable the completion of 6,500 additional homes by 2050 which would not be possible without HIF investment
- 3. Support delivery of 7,500 homes to Town and Country Planning Association (TCPA) garden community principles, in particular with an integrated and accessible transport system that supports a shift from private to public transport (modal shift)
- 4. Connect 7,500 new homes with 1,000,000+ jobs within a 90-minute commute
- 5. Provide the opportunity to unlock 2,500 new homes up to 2033 and 5,000 new homes on Tendring Colchester Borders Garden Community after 2033

Please list the criteria (critical success factors - CSFs) against which you will assess the successful delivery of the project and the evaluation of options

- Strategic fit and need – i.e. how well the scheme: (1) meets local housing need and (2) fits with our wider strategic vision, programmes and projects. In particular it needs to help us deliver quality developments at pace and in line with Garden Community principles.
- Value for Money – i.e. how well the scheme: (1) maximises the return on the required spend (benefits optimisation) in terms of economy, efficiency and effectiveness from the perspective of Essex and Colchester and Tendring local authorities and wider society and (2) minimises associated risks.
- Potential achievability – i.e. how well the scheme: (1) is likely to be delivered in view of the organisation's ability to assimilate, adapt and respond to the required level of change and (2) matches the level of available skills which are required for successful delivery.
- Supply-side capacity and capability – i.e. how well the scheme: (1) matches the ability of the service providers to deliver the required level of services and business functionality and (2) appeals to the supply-side; and (3) provides the ability to clawback funding from developers as they build out to recycle into future infrastructure improvements and facilitate further housing growth
- Potential affordability – i.e. how well the scheme: (1) meets the sourcing policy of Essex and Colchester and Tendring local authorities and (2) demonstrates the availability/reliability of additional funding sources that form part of this bid.

Rationale for intervention

What is the market failure being addressed? Please provide a detailed account of why the existing arrangements, both financial and delivery, are not sufficient to deliver the scheme and the rationale for government intervention (HIF funding)

The market failure that this HIF bid addresses is one of transport capacity restraints and developer cashflow/viability challenges. The market failure can be summarised as follows:
(i) Need to build new homes to meet housing need
(ii) Infrastructure needed to build these new homes
(iii) HIF can help to mitigate a major planning risk
(iv) Developers cannot pay for this infrastructure upfront

(v) NEGC Ltd or the Councils cannot pay for this infrastructure

Need to build new homes to meet housing need

As evidenced in 2.1.2, Objectively Assessed Housing Need (OAHN) is 920 dwellings per annum (dpa) for Colchester and 550 dpa for Tendring. Over the last three years Colchester has seen an average of 964 dpa and Tendring an average of 489 dpa, demonstrating strong local delivery but indicating a need for a new approach to sustain delivery levels and meet future housing need. Consideration to Local Housing Need as calculated by the standard methodology – 1095 for Colchester and 749 for Tendring – when plans are reviewed will increase the challenge.

Tendring Colchester Border Garden Community (TCBGC) has potential to deliver up to 7,500 new homes contributing substantial housing numbers in current and future plan periods.

Infrastructure needed to build these new homes

There is a cap on the amount of housing that can be built on site before there is an unacceptable impact on the local transport network. Transport modelling identifies significant capacity constraints on the A120 and A133; the provision of a link road will help to dissipate traffic flows across two routes and the RTS will further improve traffic flows by improving access to the adjoining University of Essex and Knowledge Gateway employment zone and into Colchester. This will encourage existing and new communities to make travel choices away from the car and towards public transport.

Dependent development testing identified a significant worsening after 1,000 homes had been modelled, which determined the deadweight for this bid. Introducing the Link Road, the transport model shows that homes on TCBGC could continue to grow to up to 5,000 homes although past this point there is a sharp deterioration in network performance. Introducing a Rapid Transit System (RTS), the transport model shows that homes on TCBGC could continue to grow beyond 5,000 homes to achieve the full ambition for 7,500 homes on this site. RTS is vital to secure modal shift, release capacity from the highways network and deliver on broader sustainability objectives. To ensure behaviour change in sustainable transport this is required to be in place from the very early stages.

By providing the infrastructure up front this would provide an approach to capturing value and recycling it back into the scheme via a rolling infrastructure fund (or equivalent) to deliver further improvements over the course of the overall development providing security of funding beyond 2033 to support the sustainable delivery of 7,500 new homes.

In addition, the infrastructure improves broader connectivity in the local area, and more widely across Colchester. The site lies adjacent to the University of Essex and the Knowledge Gateway business park, and the infrastructure will play a complementary role to support and boost these major local generators of economic activity across this part of Essex.

HIF key to resolve planning risk

The initial modelling undertaken for the Examination in Public on the TCBGC site revealed that in order to deliver policy requirements, the level of infrastructure and quality of place in line with Garden City principles, viability would be strengthened by early upfront investment in major strategic infrastructure. The initial analysis had included a working assumption that funding for the Link Road would not be funded by developer contributions from the scheme (although allowances were included for a point of access from it) and RTS would be funded up to £10m.

This has in part been identified through the Local Plan examination process, and initial findings of the Inspector who has requested additional evidence with respect to viability. Such evidence needs to demonstrate that the site has a ‘reasonable prospect’ of delivery and could provide ‘competitive returns’ to landowners to enable the land to be brought forward. The Inspector also explicitly referenced a concern over the commitment of funding to strategic infrastructure for the delivery of the garden communities. A successful HIF bid would resolve this uncertainty for the Inspector and give clear confidence that funding would be forthcoming to overcome concern. It would be key to resolve this element of planning risk.

Developers cannot pay for this infrastructure upfront

HIF is required to close the funding gap and pay for key infrastructure works up front. Despite land values indicating good market demand, the sites are not viable if they are expected to bear the full costs of the transport infrastructure up front along with their other infrastructure commitments on this new greenfield site.

In addition to cashflow and viability models prepared for the Local Plan, and to test a public sector- led funding and delivery model, an independent financial and economic model has been specifically developed for the bid based on the latest available information with respect to the proposed HIF scheme infrastructure costs and the costs of the housing development. All information on costs and Gross Development Value as well as all assumptions input into the model are described in detail later in this bid in the Economic and Financial cases.

Two scenarios have been assessed to demonstrate the need for the HIF funding. These two scenarios can be described as follows:
• Scenario 1: The identified transport infrastructure subject to the HIF bid is included as a developer cost; and
• Scenario 2: The identified transport infrastructure is funded by HIF.

The above scenarios are identical in all other respects and include all costs, fees and developer profit related to the housing and commercial developments, land costs and finance costs as outlined in the financial case in section 6.1.7 and section 6.1.8. The resulting cash flow for each of these scenarios can be seen in Att.6.4.1 as part of section 6.4.
As noted in Section 6.4, the results of scenario 1 clearly identify that without HIF funding the site is not viable, with a residual value well below zero. This is the case even at standard agricultural land values without the inclusion of any hope or expectation by the land owner.

For scenario 2, when the infrastructure subject to the bid is assumed to be funded through the HIF, the development is viable with a positive residual value at 0% inflation at reasonable land value prices (see section 6.1.10).

As such, the receipt of HIF and allocation towards the package of infrastructure measures as set out in this bid reduces the capital cost and early investment obligations that the scheme has to bear and therefore transforms the project into a viable and deliverable proposition.

NEGC Ltd or the Councils cannot pay for this infrastructure
Essex County Council, Colchester and Tendring Councils have been considering their scope for direct investment in the schemes, but do not have existing capital funds to deliver this infrastructure in advance. Working through NEGC Ltd the Councils are exploring options to secure third party funding from a range of sources, including potential Government funding sources (such as PWLB) and/or private finance, and have initiated a process of soft market testing with funders and institutional investors to take consideration forward. Other government funding initiatives could become available but, given the status of the site in the emerging Local Plans, funding via HIF provides an immediate opportunity to address a known need in a timely manner to support the wider level of local and national ambition for housing growth.

No attachments

Additional Information

If you have any further information to support your strategic case, which has not already been captured in the above, please include this here

None.

No attachments

Options Appraisal

Outline of options

Please provide a summary of all options considered during co-development related to the extent of HIF funding required. Please set out the rationale for why these options were discounted in favour of the preferred option

Overview

The development of options for the A120-A133 Link Road (LR) and the rapid transit system have been set out in option assessment reports (OARs), which have been included in Annex B. The preferred option of the LR and RTS can be seen the figure in Att.3.1.1a – which is useful to refer to whilst reading this section of the bid.

In both OARs there is a recognition that the highway network in and around Colchester does not operate satisfactorily with the scale of development planned without a combination of significant highway capacity and public transport improvements. Consequently, to deliver the largest near-Colchester development (that is Tendring Colchester Borders Garden Community – TCBGC) an integrated package of transport improvements is required in order to meet core housing, transport, environmental and sustainable economic growth objectives.

To arrive at the preferred HIF option, we considered the following:
1. Link Road: variations including the replacement with a spine road
2. RTS: system extent and modal options
3. Combination: How the LR and RTS work together
4. Do Less: Identify the contribution of only the LR (compared to both the LR and RTS).

Link road option development
The precise alignment of the LR does not significantly affect the strategic modelling predictions or the cost of the scheme so there was not a requirement to vary this aspect for HIF option development (although the chosen alignment, of course, takes into account numerous planning factors). The creation of the LR:
• increases highway capacity on the local strategic highway network.
• distributes traffic from TCBGC onto the A120 and A133;
• provides access to the TCBGC business zone;
• provides access to a new ‘park and choose’ (which includes ‘park and ride’); and

While the creation of the LR is required in the emerging shared Section 1 Local Plans, we nevertheless considered whether a spine road providing access only would be sufficient. If a spine road providing access to the TCBCG was created to the south this would load traffic onto the A133, which is a congested route into Colchester. It would not meet the advantages of the LR bulleted above and it would severely limit the growth of TCBGC including the opportunity for job creation. Meanwhile if a spine road provided only access to the A120 to the north of the site, this would load traffic onto the regional A120/A12 route which has limited capacity. Hence this too would limit any growth at TCBGC and not meet the advantages of providing a full LR. Furthermore, it would significantly lengthen trips to the University and town centre with the likelihood that traffic in Colchester would worsen. Also considered was an access road connecting to the east side of Colchester, however, this more severely limits the potential for growth at TCBGC. Consequently, it was considered that an acceptable do less option could not be devised for the LR – and if one was devised it would not be policy compliant.

The table (attached 3.1.1b) summarises the above options and the extent to which they were considered to meet highway objectives.

General Arrangements of the A120-A133 Link Road can be found in Att.3.1.1d

Rapid transit system option development
Introduction to RTS

Plans for a RTS and extended ‘park and choose’ provision for Colchester have been emerging over recent years as a feasible option to accommodate the transport impact of significant housing development – as well as meet environmental and sustainable economic growth objectives securing the well-being of Colchester as it grows from a mid to large sized town.

‘Park and choose’ is an extension of a ‘park and ride’ facility. As well as including ‘park and ride’, through space for parking and access to the RTS, it would include a transport interchange offering a range of other sustainable travel options to serve local residents, visitors and workers to TCBGG. For example, it could include cycle hire alongside travel information for walking routes. In time, it could be developed to be a control hub for autonomous vehicle operations.

Technology options for Colchester RTS

The core Colchester RTS is based on work undertaken for the Colchester Rapid Transit study in 2016 (Att.3.1.1c). A key part of that study was the initial identification of alignments into central Colchester which were separate from the A133 and A134, and with the possibility for segregation, junction improvements and traffic calming to facilitate the operation of the RTS. In other words, a possibility of weaving RTS into the existing road network was established.

In 2017, the North Essex Rapid Transit Study (Att.3.1.1d) considered the wider public transport requirements of the North Essex Garden Communities; and included initial consideration of possible RTS links between Colchester and Braintree. This study found that a high-level economic case could be found for such an ambitious RTS, but the study avoided committing to a single technological option, such a light rapid transit, guided bus or bus rapid transit.

Consequently, as part of the co-development process for the purposes of this HIF bid, an options assessment has been carried out (Annex B ii) which confirmed that as the basis for this bid, the RTS should be based on bus technology – often referred to as bus rapid transit or BRT – for reasons of deliverability and finance. This also draws on an increasing evidence base showing that well-designed and high quality BRT can achieve close to or equivalent modal shift as light rapid transit and thus present better value for money in many cases.

The table attached 3.1.1e summarises the assessment that was carried out to arrive at conclusion that a RTS should be based initially on bus technology (BRT) – recognising that each option can meet broader strategic objectives. With ECC and stakeholders a conscious decision has been made, however, to continue to use the term RTS because the aim is to create a mass transit system of a quality comparable to the latest tram systems.

Route options for Colchester RTS

Having established the technology alongside the vision, a traffic engineering study was then carried out to refine route options that could be delivered. In keeping with good practice, on some sections, more than one option was developed recognising that public consultation should be carried before final route decisions are made. For some sections of the route a practical and deliverable option was identified alongside a more challenging option. The traffic engineering feasibility study is presented in Appendix 3.1.1f.

Combining LR and RTS

Whilst considering the development of LR and RTS schemes discretely we also considered them operating alongside each other. If either was omitted the full growth at TCBGC would not be reached. For the LR alone, public transport use would not be maximised; for the RTS alone the problem of how to meet private vehicle access needs would be neglected. Consequently, the preferred option combines both the LR and RTS.

The preferred option of the LR and the core Colchester RTS can be seen in Att.3.1.1a.

Do Less

Whilst a do less option which was compliant with draft Local Plan policies could not be found, the least bad option would be to construct only the LR. Hence the do less option chosen includes only the LR and omits RTS. When this option was modelled, however, it was assumed there would still be standard bus connections operating on the existing road network so that a reasonable

comparison can be made between the prefered and do less options.

Please summarise shortlisted options considered and how these meet the required objectives of the scheme detailed earlier in the business case.

	With requested HIF funding	With a reduced amount of HIF funding	Do nothing (no HIF funding)
HIF Funding Required	£98,803,539	£66,747,900	£0
Total scheme cost	£2,378,258,756	£1,584,834,900	£494,918,314
Housing units delivered	7500	5000	1000
Estimated % affordable	30 %	30 %	30 %
Units started up to 2022	0	0	450
Units started 2023 - 2025	450	450	550
Units started 2026 - 2030	2,000	2,000	0
Units started 2031 - 2035	2,050	2,050	0
Units started in future years	3,000	500	0
Amount of LA funding (inc. LGF)	£0	£0	£0
Amount of other Central Govt. funding	£0	£0	£0
Amount of private sector funding	£2,279,455,217	£1,518,087,000	£494,918,314
Amount of other public sector funding	£0	£0	£0

1. With requested HIF funding

A two lane dual carriageway link road will be created on the eastern boundary of the TCBGC site. At the northern end there will be a grade-separated junction with the A120 and at the southern end an at-grade junction with the A133. Vehicle access will be provided at points along the LR, which will provide the primary vehicle access to TCBGC.

Option 1 also includes the creation of the infrastructure required for core RTS route linking TCBGC and key destinations in Colchester. Note that the HIF bid requests infrastructure funding and the RTS service itself would only commence in 2026. There RTS infrastructure comprises:
• Segregated route section on TCBGC
• Partially segregated route section between TCBGC and Colchester town centre
• Segregated route section between Colchester town centre and Colchester North park and ride via Colchester train station
• Provision for 15 quality terminals
• Provision of park and choose site on TCBGC

When assessed against the scheme objectives, using a five-point scoring system (0-4), the Preferred Option scores a total of 20 out of 20 (See Att.3.2.1a) as this option will:
• Enable the delivery of 7,500 new homes between 2023 and 2050
• Enable the completion of 6,500 additional homes by 2050 which would not be possible without HIF investment
• Support delivery of 7,500 homes to Town and Country Planning Association (TCPA) garden community principles, in particular with

an integrated and accessible transport system that supports a shift from private to public transport (modal shift)
• Connect 7,500 new homes with 1,000,000+ jobs within a 90-minute commute
• Provide the opportunity to unlock 2,500 homes up to 2033 and 5,000 new homes on Tendring Colchester Borders Garden Community after 2033

What strategic risks do the shortlisted options carry?

Description	Likelihood	Impact
Part One of the North Essex Local Plans is found unsound which would require significant reworking of garden community plans and would significantly delay implementation. The Councils are addressing the various matters raised by the Planning Inspector and will provide a considerable amount of additional robust evidence. Having confidence on infrastructure funding via HIF would support the case on deliverability.	Low	High
Further masterplanning and preparation of a Development Planning Document setting more detail for the site is not adopted and/or unforeseen objections emerge. A considerable amount of work has already been undertaken with respect to feasibility and conceptual design. Masterplanners have been commissioned. The Councils are fully behind the preparation of a masterplan and DPD.	Low	High
Securing planning consent may be delayed or not secured. The Councils are fully engaged and supportive through the inclusion of the sites in the emerging Local Plans. This will define clear policy requirements which subsequent applications will need to adhere to. The intended strong public sector role in delivery will also minimise risk of divergence.	Low	High
Environmental assessment identifies mitigation measures of issues which affect design and cost of infrastructure delivery. Initial feasibility work has been undertaken to identify key constraints. Proposals will be expected to mitigate against any matters that emerge. The site is large enough to enable masterplanning to work around any specific issues that may arise.	MediumLow	Low
Delivery of all other site wide infrastructure required to deliver housing at the Garden Community – risk of major cost items being missed or costs underestimated. The proposals have been evolving for several years with considerable work on feasibility and infrastructure requirements. Proposals have been costed by specialist consultants. A full set of infrastructure has been identified, costed and included in the Economic & Financial Case. Contingencies are also included to address any unknowns.	MediumLow	High
Market values could be lower than assumed and this could therefore impact on the viability / pace of delivery of the Garden Community. Market values have been sought from several sources. In practice, there is an expectation that a high quality place based development will achieve higher values but the Financial Case is based on caution. The scale and duration of the project is such that it will need to ride downturns in value that will be compensated by upturns. The Financial Case is therefore predicated on present value (and cost) with no assumptions over growth or a Garden Community 'premium'. This helps to create a more robust platform to proceed.	Low	MediumHigh
Landowner expectations might be unrealistically high in the context of the costs associated with opening up the site and the overall viability. This could affect the achievement of the emerging policy and delay the pace of delivery. Highways England has a strategy to deliver the road to programme including the use of statutory powers where necessary and there is a strategy to take forward the delivery of the Garden Community itself (see Commercial Case) that addresses any issues relating to securing control over delivery	Low	MediumHigh

What are the constraints related to this shortlisted option?

- Implementation by 2024 will necessitate a streamlined approach to detailed option assessment and consultation, on sections where choices remain or where stakeholders of the public might like alternative design or routeing to be considered. This haste could mean second best options are selected for implementation or impact on satisfaction with the consultation process.
- The RTS route in Colchester town centre omits introducing segregated sections in Colchester town centre where is it not considered practicable to implement a fully segregated route before 2024. However, the long term aspiration remains to create a fully segregated RTS route through the town centre. In the transport model for this HIF bid, however, we have used the assumption that the town centre section will remain unsegregated – hence we are not introducing any optimism that a completely segregated route will be delivered.

Please provide details of any inter-dependencies related to this shortlisted option

- As currently designed the LR and RTS do not address their physical interaction. On current concept plans the RTS crosses the LR at its eastern most point to reach one of the proposed park and choose sites on TCBGC. This has been considered a detail that is appropriately addressed in next level of optioneering involving wider consultation. For example, optioneering and consultation will need to consider pedestrian, equestrian and cycle access across the link road alongside access between the park and ride facility and the business and town centre zones in the garden community.
- The HIF funding will create a largely segregated route on which the first RTS services will run by 2026 in order that the first people moving to TCBGC have high quality public transport alternatives. The exact date when the first RTS route becomes operational will depend on the build out of the garden community.
- Prior to the RTS route becoming operational in 2026, large sections of infrastructure will be able to be utilised by existing bus services. There will be a need to jointly plan continued shared use of RTS infrastructure with existing bus operators – and in particular avoid any adverse implication or crowding of the RTS network which would undermine its effectiveness.

  Hence there is an interdependence with bus operators whereby we need to be aware to apply local lessons on bus operations in Colchester, consider and plan for impacts on current bus services and recognise that current operators could be potential bidders of any tender to operator RTS services and wish to influence design. (While a decision on the operational model of RTS has not yet been taken it is likely to involve tendering the opportunity to run the service opposed to ECC directly running services.)
- For RTS to succeed it will need to be fully integrated with, in particular, public realm improvements and signage strategies for Colchester and TCBGG in order to maximise the use of the service – by enabling access from RTS interchanges to final destinations. The RTS cost has included a cost to support ‘last mile’ access but it need to be joined up with other improvements in Colchester (particularly local transport investment at smaller developments in Colchester.

Please provide details of the exit strategy for the shortlisted options

- Governance mechanisms for the LR and RTS are being set up. This will follow ECC policies and practices with respect to scheme development including the use of gateways. These gateways will be review and reaffirm the case for continued investment in design and a final gateway prior to implementation. The governance will channel issues should the case for investment fall away due to significant changes costs or benefits or changes in the strategic drivers for the amount of housing.
- Once built the LR would be adopted into the ECC road network (except the A120 junction which will be incorporated into the Highways England network). Given that the LR provides strategic as well as local development benefits it is unlikely that any exit strategy would be required once constructed.
- The RTS route will be on adopted public highway. We have also demonstrated that a successful RTS can be delivered before putting the bid forward. Nevertheless, should a worst case occur and commencing the full vision for RTS be delayed, the infrastructure would be utilised by existing bus operators and still provide benefit to sustainable travel objectives for Colchester.

2. With a reduced amount of HIF funding

A two lane, dual carriageway link road will be created on the eastern boundary of the TCBGC site. At the northern end there will be a grade-separated junction with the A120 and at the southern end an at-grade junction with the A133. Vehicle access will be provided at

points along the LR, which will provide the primary vehicle access to TCBGC.

When assessed against the scheme objectives, using a five-point scoring system (0-4), the Preferred Option scores a total of 10 out of 20 as this option will:

- Enable the delivery of 5,000 new homes between 2023 and 2050
- Enable the completion of 4,000 additional homes by 2050 which would not be possible without HIF investment
- Not enable full delivery of homes to TCPA garden community principles
- Connect 5,000 new homes with 1,000,000+ jobs within a 90-minute commute
- Provide the opportunity to unlock 2,500 homes up to 2033 and 2,500 new homes on Tendring Colchester Borders Garden Community after 2033

What strategic risks do the shortlisted options carry?

Description	Likelihood	Impact
Part One of the North Essex Local Plans is found unsound which would require significant reworking of garden community plans and would significantly delay implementation. The Councils are addressing the various matters raised by the Planning Inspector and will provide a considerable amount of additional robust evidence. Infrastructure funding would help make the case on deliverability albeit it would not fully accord to the wider evidence base and emerging full extent of the scheme. Deliverability would be put at risk.	MediumHigh	High
Further masterplanning and preparation of a Development Planning Document setting more detail for the site is not adopted and/or unforeseen objections emerge. A considerable amount of work has already been undertaken with respect to feasibility and conceptual design. Masterplanners have been commissioned. The Councils are fully behind the preparation of a masterplan and DPD, albeit not of a smaller non Garden Community development.	MediumHigh	High
Securing planning consent may be delayed or not secured. The Councils are fully engaged and supportive through the inclusion of the sites in the emerging Local Plans, but will need to see that the option can deliver on full policy requirements/ambitions. There is a higher risk that a smaller scale proposal would not be found acceptable.	MediumHigh	High
Environmental assessment identifies mitigation measures of issues which affect design and cost of infrastructure delivery. Initial feasibility work has been undertaken to identify key constraints. Proposals will be expected to mitigate against any matters that emerge. The site is large enough to enable masterplanning to work around any specific issues that may arise.	MediumLow	Low
Delivery of all other site wide infrastructure required to deliver housing at the Garden Community – risk of major cost items being missed or costs underestimated. The proposals have been evolving for several years with considerable work on feasibility and infrastructure requirements. Proposals have been costed by specialist consultants but have to date been primarily based on a larger scale of development. There is an increased risk of delivery given that high costs will need to be covered by a smaller amount of development which would bring viability into question.	MediumHigh	High
Market values could be lower than assumed and this could therefore impact on the viability / pace of delivery of the Garden Community. Market values have been sought from several sources. In practice, there is an expectation that a high quality place based development will achieve higher values but the Financial Case is based on caution. The scale and duration of the project is such that it will need to ride downturns in value that will be compensated by upturns. The Financial Case is therefore predicated on present value (and cost) with no assumptions over growth or a Garden Village ‘premium’. The site would be less desirable without the Link Road or RTS being in place from the outset	MediumHigh	High
Landowner expectations might be unrealistically high in the context of the costs associated with opening up the site and the overall viability. This could affect the achievement of the emerging policy and delay the pace of delivery. Highways England has a strategy to deliver the road to programme including the use of statutory powers where necessary and there is a strategy to take forward the delivery of the Garden Community itself (see Commercial Case) that addresses any issues relating to securing control over	MediumHigh	MediumLow

delivery.

What are the constraints related to this shortlisted option?

- Option 2, the LR only, would not be policy compliant with the RTS. Should the LR option be pursued alone there would be a requirement to address the discord with draft Local Plan policies, which is likely to impact severely on delivery timescales.
- Implementation by 2024 will necessitate a streamlined approach to detailed option assessment and consultation, on sections where choices remain or where stakeholders of the public might like alternative design or routeing to be considered. This haste could mean second best options are selected for implementation or impact on satisfaction with the consultation process.

Please provide details of any inter-dependencies related to this shortlisted option

- Further work would be needed on access arrangements between the link road and TCBGC. This has been considered a detail that is appropriately addressed in next level of optioneering involving wider consultation. For example, optioneering and consultation will need to consider pedestrian, equestrian and cycle access across the link road alongside access to the business and town centre zones in the garden community. In addition, without RTS, consideration will be need to be given to alternative bus access to TCBGC.

Please provide details of the exit strategy for the shortlisted options

- Governance mechanisms for the LR and RTS are being set up; which would be adapted to cover the LR only. This will follow ECC policies and practices with respect to scheme development including the use of gateways. These gateways will be review and reaffirm the case for continued investment in design and a final gateway prior to implementation. The governance will channel issues should the case for investment fall away due to significant changes costs or benefits or changes in the strategic drivers for the amount of housing.
- Once built the LR would be adopted into the ECC road network (except the A120 junction which will be incorporated into the Highways England network). Given that the LR provides strategic as well as local development benefits it is unlikely that any exit strategy would be required once constructed.

Please summarise any economic appraisal conducted for this shortlisted option, relative to the do nothing (no HIF funding) option

- This option has been fully modelled in both the economic model and transport models to determine the full economic impact of the option. The transport modelling has demonstrated that only 5,000 homes at TCBGC can be accommodated with the proposed transport infrastructure.
  As for Option 1, the NPV of housing benefits, including the health impacts of affordable housing and non-transport external impacts of housing have been modelled using the TCBGC Housing Economic and Financial Model, using site-specific land valuation data from NEGC consultant verified by Lambert Smith Hampton. This modelling has also been used to confirm the viability of the housing developments.
  The details of the economic modelling conducted have been presented in open answers of the Economic Case.
  A full economic appraisal was conducted for the Do Less option consistent with the Preferred Option with the headline results as follows (all prices are in 2019 factor prices discounted to 2019):
  • 4.1.1 NPV of additional housing benefits (after additionality): £676.4 m
  • 4.1.2 NPV of current use land value (before additionality): £4.2 m
  • 4.1.3 NPV of residential land value (before additionality): £1,043.3 m
  • Gross Development Value (GDV): £2,044.8 m
  • Development Costs: £1,001.5
  • 4.1.5 Additionality: 65%
  • 4.2.1 NPV of external impacts of additional housing: -£61.0 m
  • Amenity value: -£20.2 million
  • Transport user benefits: -£41.9 million
  • Transport changes in vehicle operating costs: -£2.7 million

- Transport carbon emissions: -£0.6 million
- Transport indirect taxes: £1.1 million
- Health: £1.6 million
- 4.3.1 NPV of infrastructure impacts: £84.2 million
- Transport user benefits: £81.2 million
- Transport changes in vehicle operating costs: £3.87 million
- Transport carbon emissions: £1.0 million
- Transport indirect taxes: -£1.9 million
- Commercial land value uplift: £39.1 million
- Amenity value of commercial land: -£4.4 million
- 4.4 Private sector developer costs: -£253.4
- 4.4 HIF infrastructure costs (including optimism bias): £66.7 m
- Total PVB: £479.4 m
- Total PVC: £66.7m
- NPV: £412.7 m
- BCR: 7.2

Note that the BCR is higher for the Full option relative to the Do Less option.

These values are based NPV 2019 real prices

3. Do nothing (no HIF funding)

Option 3 is a do minimum option without the provision of locally significant infrastructure in the form of the LR and RTS.

When assessed against the scheme objectives, using a five-point scoring system (0-4), the Preferred Option scores a total of 4 out of 20 as this option will:

- Enable the delivery of 1,000 new homes between 2023 and 2050
- Not enable the completion of any HIF-funded additional homes
- Not enable full delivery of homes to TCPA garden community principles
- Connect 1,000 new homes with 1,000,000+ jobs within a 90-minute commute
- Provide the opportunity to unlock 1,000 homes up to 2033 but no homes after 2033

What strategic risks do the shortlisted options carry?

Description	Likelihood	Impact
Part One of the North Essex Local Plans is found unsound which would require significant reworking of garden community plans and would significantly delay implementation. The Councils are addressing the various matters raised by the Planning Inspector and will provide a considerable amount of additional robust evidence. However in the absence of funding for strategic infrastructure, the Inspector has questioned the deliverability of the proposals.	High	High
Further masterplanning and preparation of a Development Planning Document setting more detail for the site is not adopted and/or unforeseen objections emerge. A considerable amount of work has already been undertaken with respect to feasibility and conceptual design. Masterplanners have been commissioned. The Councils are fully behind the preparation of a masterplan and DPD for a Garden Community but would not support the preparation of a DPD for a much smaller non Garden Community type of development	High	High
Securing planning consent may be delayed or not secured. The Councils are fully engaged and supportive through the inclusion of the site in the emerging Local Plans as a Garden Community but not as a smaller scale development.	High	High

What are the constraints related to this shortlisted option?

- Not applicable - this is the Do Nothing Option.

Please provide details of any inter-dependencies related to this shortlisted option

- With the Do Nothing Option 1,000 homes could be delivered on this site. However, there is an interdependency with the shared Section 1 of the local plans and at this level of development the site may not be included.

Please provide details of the exit strategy for the shortlisted options

- Not Applicable this is the DO Nothing Option

Please summarise any economic appraisal conducted for this shortlisted option, relative to the do nothing (no HIF funding) option

- n/a

Options Summary

Please summarise why the preferred option, with the requested HIF funding, has been chosen and why the other shortlisted options have been discounted - this should make reference to advantages and disadvantages of the options in relation to scheme objectives and CSFs

Assessment against objectives
Option 1 (preferred with Link Road and Rapid Transit System) – scores 20/20 against the scheme objectives compared to 10/20 for Option 2 (Link Road only). Meanwhile Option 3 (do nothing) scores 4/20.
Objectives 1 and 2 help assess how far the options enable the target level of housing for TCBGC, with and without considering deadweight – that is, 7,500 homes and 6,500 homes, respectively.
Transport analysis of Option 3 shows a significant increase in flow and journey times on local routes through Colchester and a worsening of congestion spots along the A133 approach by 2033. Through dependent development testing we identified a significant worsening after 1,000 homes had been modelled, which determined the deadweight – which agreed with predictions from earlier Local Plan modelling. Therefore, it would be expected that Option 3 makes limited headway against the Objectives 1 and 2. When the LR was added to the transport model, the impact was considered tolerable. Post 2033, the transport model shows that homes on TCBGC could continue to grow to up to 5,000 homes. Past this point there is a sharp deterioration in network

performance. This is particularly indicated by the model rerouting trips away from Colchester as the journey times have deteriorated so significantly. Consequently Option 2 could only be scored at a mid-way point against Objectives 1 and 2.
Option 1 showed that growth in trips across Colchester could be managed up to 2033, as per Option 2, from the perspective of impact on the highway network. However, Option 1 allows growth beyond 5,000 homes and avoids the problems seen in Option 2. This rests on the assumption that crowding and any delays that could arise from greater use of public transport are effectively managed and the segregated RTS route impacts minimally on strategic local highway routes. On the basis that these issues are able to be managed, Option 1 fully meets Objectives 1 and 2.
Objective 3 then considers how far Options meet wider aims for TCPA garden community principles for sustainable travel. While it is only in Option 1 that these principles can be fully met, it has been assumed the other options would be able to follow some of the principles.

Objective 4 makes a connection with economic growth. The assessment against this objective considered the extent to which the options connect new housing with jobs and economic opportunities in the surrounding region. In addition, consideration was given to facilitating access jobs at TCBGC. Option 3 scored the lowest since car and public transport journey times are longest in these options, setting aside the fact that it would only be acceptable to build 1,000 homes. Option 2 scored midway recognising that the public transport journey times would not improve but up to 5,000 homes there would be tolerable vehicular access. However, only in Option 1 could the Objective 4 be fully met. Through the RTS, all TCBGC residents, whether or not they have access to a car, would be able to swiftly connect to opportunities in Colchester and via the rail station to which RTS connects to opportunities in the wider region, including London. Meanwhile vehicle journey times to TCBGC are improved compared to Options 2 and 3. In addition, the accessibility advantages of Option 3 work in reverse to support business growth at TCBGC.
Objective 5 specifically considers support for longer term growth post 2033. This scoring is consistent with the assessment against Objectives 1 and 2. The other consideration against this objective, is very long-term growth and adaptability. Transport modelling across North Essex has shown that housing growth is limited by highway capacity and there are constraints on how far highway capacity can be improved. Without a significant shift to sustainable travel, a deterioration in quality of life, environment and local economic indicators could be expected. Hence creating homes now, without RTS and trying to achieve a step change in sustainable travel, would undermine long term growth.

Assessment against critical success factors
The first CSF considers strategic fit and need. Option 3 (do minimum) fails to deliver on local housing need and avoids taking action to improve significantly either the strategic road network or sustainable transport options. Option 2 meets housing supply needs by 2033, but not beyond, and supports the more efficient use of strategic road network. However, building only the LR without RTS would not be compliant with emerging shared Section 1 Local Plan policies for Colchester and Tendring districts. As described, the LR only option does not address the underlying need to secure significant changes in travel behaviour to enable successful long-term growth. It is also noted that without RTS the opportunities of those without access to a car will be diminished. Option 1 fully meets the first CSF, however, through a creating the infrastructure required for a sea change in public transport choice in Colchester. Furthermore, The RTS route in Option 1, provides the first route of a wider RTS network for North Essex. This wider RTS network will enable continued long-term growth, health, quality of life and productivity.
The second CSF considers value for money. From an economic appraisal perspective, the link road does demonstrate albeit low value for money without the housing development. This shows that the LR is providing strategic transport efficiency benefits, consistent with reasons given for pursuing this scheme. However, the LR would not have a sufficiently strong case without also taking into account the development at TCBGC that it unlocks (which is why it is appropriate to consider as part of the HIF bid). The preferred option, however, provides greater benefit especially when the full growth at TCBGC is considered. This is because RTS provides a viable transport alternative for drivers in Colchester contributing to an overall more efficient travel choices. It should also be noted that the RTS covers operating and maintenance costs so can be considered a sound long-term investment.
The third CSF considers potential achievability. ECC has a strong track record in delivering major infrastructure schemes including those involving joint work with Highways England, which the LR does at the intersection with the A120. In addition, the partnership working evident in the bid between CBC, TDC and ECC illustrates a consistent and supportive approach to these schemes. Through the Essex Highways contract, ECC has ready access to experienced engineering and contract management teams, which have been involved in the bidding process. Hence should the bid be successful, the skills and resources are available to achieve delivery. The

other aspect of this CSF, however, is the ability to use the RTS infrastructure to create an RTS service. This is considered achievable since ECC has already established the North Colchester park and ride service. In addition, consultant and engineering teams that comprise Essex Highways have recent experience of developing successful bus rapid transit schemes in Bristol and the West Midlands.
The fourth CSF considers supply-side capacity and capability. As above, the schemes are considered deliverable and, hence, able to support house building. It should be noted, however, that the preferred option of the LR and RTS together would be more successful that the LR alone in ability to obtain claw-back from developers. With RTS, the garden community will grow further and become a more significant local centre with RTS.
The fifth CSF considers potential affordability. This overlaps with the supporting statements in second and third CSFs. It is, however, worth adding that £2m S106 has already been secured for RTS from other development in Colchester, reflecting the local importance of RTS to managing the transport network. A further £10m contribution is written into the infrastructure plans for TCBGC.

Please provide a summary of the impact should funding not be received

Without HIF funding and appropriate transport mitigation, it has been demonstrated that it would be possible to deliver a maximum of 1,000 homes at Tendring Colchester Borders Garden Community (TCBGC). This would be contrary to the strategic approach to growth as set out in the emerging shared Section 1 Local Plans as the ability to deliver viable, Garden Community style development together with investment in strategic infrastructure would be compromised.

In terms of delivery, without this funding to implement these works it would leave responsibility on the private sector land promoters to deliver the site in an acceptable manner. The viability and deliverability of the proposals would be questionable in light of the viability work undertaken as part of this bid and as part of the evidence base for the emerging shared Section 1 Local Plans.

This aligns with initial findings from the Planning Inspector who has questioned deliverability and the funding of strategic infrastructure improvements across North Essex. Should the bid be unsuccessful, then it would be anticipated that this would form part of the Inspectors final consideration of the emerging shared Section 1 Local Plans. Should the Local Plans be found unsound or incapable of being modified to be made sound, the Councils would need to embark on a new process of plan making likely to take several years until a new strategic approach would be in place.

The approach could revert back to a traditional method of private sector led planning applications to be determined by the Councils, with likely protracted and extended timescales and difficulties in securing necessary policy elements. Even were matters to continue, in order to deliver housing on the site there would likely be a need for compromise on other planning requirements such as delivering affordable housing, delivering a step change in modal shift (with the provision of a strategic Rapid Transit System) and other obligations such as promoting local stewardship and ownership of assets. Compromises such as these would be resisted by the Councils likely resulting in long and protracted planning processes, ongoing negotiations and stalled development.

Without key public sector investment and active role in the delivery of strategic infrastructure related to the Garden Community, it would be anticipated that there would be less of a rationale for a dedicated public sector led delivery vehicle (such as development corporation) and a reduced scope to use such powers as CPO to ensure delivery occurred to meet policy objectives (and implement more effective mechanism to capture value).

There may also be additional damage to relationships with key stakeholders, with a lower level of ambition now being pursued contrary to the approach to date which has involved a greater level of housing growth. Government and Council backing as part of the Garden Towns & Villages programme may be seen to have been for little purpose.
Without HIF funding not only will TCBGC be affected but it could be expected to impact on strategic developments across North Essex authorities.

Consequently, not receiving funding would be a substantial blow to long term house building in Essex and the ability of government to support the creation of sustainable communities which deliver quality of life and health benefits.

If you have any further information to support your options appraisal, which has not already been captured in the above, please include these here

NONE.

Filename	Description
3.2.1a - TCBGC - Options assessment against objectives.docx	Options Assessment against objectives
3.1.1e - Summary of Rapid Transit System options.docx	Summary of Rapid Transit System Options
3.1.1b - Summary of Link Road options.docx	Summary of Link Road Options
3.1.1 d - North Essex Rapid Transit Study.pdf	North Essex Rapid Transit Study
3.1.1 c - Colchester Rapid Transit Final Report 2016.pdf	Colchester Rapid Transit Final Report 2016
3.1.1 a - Link Road and Rapid Transit System with stops.jpg	Link Road and Rapid Transit System with stops

Economic Case

Net Present Value (NPV) of housing benefits

Please provide the estimated NPV (in 2018/19 prices) of the additional housing benefits (as monetised using land value uplift) of the preferred option relative to the do-nothing option

£1,259,695,222

Please provide the estimated NPV (in 2018/19 prices) of the current use land value for the scheme overall (before additionality adjustments)

£6,686,337

Please provide the estimated NPV (in 2018/19 prices) of the site specific residential land value for the scheme overall (before additionality adjustments)

£1,793,252,736

Please provide the undiscounted values used to estimate the residential land value calculation across all sites

GDV (compliant with the Economic Case guidance)	£6,549,061,401
Build costs	£1,226,985,440
Externals	£184,047,816
Professional fees	£98,158,835
Sales costs	£176,406,633
Finance costs	£28,250,591
Contingencies	£49,079,418
Developer profit	£999,637,585
Please provide the additionality % assumed for the scheme (deadweight and displacement)	71%

Please provide a detailed explanation of the method and assumptions used to derive the deadweight and displacement estimates. As part of this, an estimate of deadweight for each site individually must be provided, by illustrating how the homes/each site are linked to the infrastructure

Deadweight

According to TAG Unit A2.2, the purpose of dependency testing is to determine at what point proposed site-specific developments will breach a “reasonable level of service” on the transport network.

The definition of dependency focuses on the impact of land use development on the existing transport network and based on that impact a transport authority decides if a transport scheme is required.

To test the dependency and identify the amount of housing growth at Tendring Colchester Garden Community that is ‘dependent’ on investment, the following scenarios have

been analysed in the Colchester multi modal AM peak transport model described in Section 4.2.2:

- 2033 Baseline scenario: without the development and without transport schemes;
- 2033 P scenario: with the development (500 homes at TCBGC) and without transport schemes;
- 2033 P scenario: with the development (1,000 homes at TCBGC) and without transport schemes; and
- 2033 Q scenario: with the development (2,500 homes at TCBGC) and without transport schemes.

In carrying out the analysis, the model was cordoned to provide network statistics local to the wider Colchester area. The cordon that was used is shown in Appendix 4.9.3d – which is the forecast modelling report. This appendix also includes further figures which guided the interpretation of deadweight.

Base Year versus 2033 Baseline

A key premise for the deadweight identification was that the Colchester highway network is already congested and would be beyond capacity by 2033 with full Local Plan development growth without significant infrastructure investment. This premise is critical to understanding why the draft Local Plan identifies that development at TCBGC would not be policy compliant without the LR and RTS. There are also other essential infrastructure requirements to the west required to accommodate the Colchester Braintree Borders Garden Community (however, on purpose, these are not being considered in this note to avoid introducing a dependency with the A12 Colchester Braintree Borders Garden Community HIF bid).

Consequently, the first step in the deadweight analysis was to compare the base model calibrated to 2014 with the 2033 baseline – which includes all Local Plan growth except TCBGC. Plots in Appendix 4.9.3d show the volume per capacity of highway link (VoC) between these scenarios. These show the network coming under increasing pressure particularly on routes in Colchester and the A12. This is pattern of network pressure is also consistent with findings from the Local Plan transport modelling assessment.

Introducing deadweight

We then added in growth at TCBGC incrementally to consider the impact arising from TCBGC – at 500, 1000 and 2500 homes. The network statistics for these scenarios are shown in the table below. For each additional number of homes at TCBGC there is an additional number of trips loaded onto the network. An interesting (and at first puzzling) pattern was observed that overall travel time of vehicles in the 1,000 homes scenario is lower than in the 500 homes scenario and the travel distance is higher.

Table: Network statistics for the various sizes of TCBGC

Scenario	Total Number of Trips	Total Vehicle Time (veh*hr)	Total Vehicle Miles (veh*km)	Average Network Speed (km/hr)
2033 Baseline scenario	35,856	5,479	185,376	35.34
2033 P scenario (500 Homes at TCBGC)	36,314	5,945	188,979	35.00
2033 P scenario (1,000 Homes at TCBGC)	36,667	**5,879**	**189,093**	35.06
2033 Q scenario (2,500 Homes at TCBGC)	37,907	5,971	192,793	34.98

In reviewing other indicators, however, it appears that at 1,000 homes the network becomes so congested that circuitous routes are being taken (on longer routes with higher speeds) or there is a reluctant shift to public transport because car journey times in Colchester are deteriorating. (Remember that the network statistics only provide an average for a cordon of the highway in the wider Colchester area.) When trips from 2,500 homes at TCBGC are added, the network statistics do worsen slightly since there is nowhere else for the trips to go.

In addition, as can be seen in other strategic models more generally, once critical levels of trips are reached (for which there is not sufficient network capacity) model can behave erratically. That we were seeing this at the 1,000 level provided, perhaps counter intuitively, an indication that 1,000 homes might be an appropriate deadweight.

This supposition was reinforced when the VoC indicators were considered (also shown in the Appendix 4.9.3d). Since the network is already at capacity, VoC does not get steadily worse linearly. Rather it has reached a critical point at which only minimal change can be perceived on a visual inspection of plots.

The table below shows the VoC values taken from the modelled scenarios on key strategic routes through Colchester. Serious consideration was given to arguing a case for zero deadweight given the number of key strategic inks operating above 85% of capacity in the AM peak.

Table: Congestion level of major strategic and local significant roads in Colchester – 2033 P scenarios (500 and 1,000 homes at TCBGC) and Q scenario (2,500 homes at TCBGC)

	Direction	Traffic Flow			Capacity	VoC		
		2033 P scenario (500 homes)	2033 P scenario (1,000 homes)	2033 Q scenario (2,500 homes)		2033 P scenario (500 homes)	2033 P scenario (1,000 homes)	2033 Q scenario (2,500 homes)
Major strategic roads								
A12	EB	3,665	3,651	3,660	4,520	0.81	0.81	0.81
	WB	4,529	4,530	4,537	4,520	1.00	1.00	1.00
Cymbeline Way	EB	1,587	1,590	1,625	1,600	0.99	0.99	1.02
	WB	1,383	1,378	1,421	1,600	0.86	0.86	0.89
A133	EB	1,630	1,647	1,677	1,600	1.02	1.03	1.05
	WB	658	751	931	1,600	0.41	0.47	0.58
Cowdray Avenue	EB	1,029	1,014	1,041	1,200	0.86	0.84	0.87
	WB	1,114	1,161	1,158	1,200	0.93	0.97	0.96
Ipswich Road	NB	1,178	1,255	1,231	1,200	0.98	1.05	1.03
	SB	938	929	983	1,200	0.78	0.77	0.82

Local significant roads								
A137	NB	809	692	743	750	1.08	0.92	0.99
	SB	468	490	463	750	0.62	0.65	0.62
High Street/East Hill	EB	659	666	603	600	1.10	1.11	1.01
	WB	102	117	107	600	0.17	0.20	0.18

However, since it was at 1,000 homes that we perceived that capacity constraints started to severely impact on route choice and model behaviour, the highway authority decided that deadweight at 1,000 home could be accepted.

We also considered the traffic flow profile throughout the day, also shown in the Appendix. This shows that the PM peaks exhibits similar levels of traffic to the AM peak and that there is not a significant drop in traffic levels during the interpeak period, which limits potential of peak spreading. Therefore, although, an AM peak model was being used, this provide a reasonable overall indication of the impact on the highway network.

Since a multi modal model was being used, we also found it informative to consider the use of public transport from TCBGC and how this changed; as without network improvement change could be attributed to worsening highway journey times. (Note that in the model with RTS, TCBGC was connected to Colchester with a direct bus link.) With 500 homes, public transport use on buses was reasonably high, but comparable with the expectation for Colchester, However, at 1,000 homes significant deterioration in car journey times must be occurring the drive the switch to bus use.

Table 4-4: PT share at TCBGC

	2033 P scenario (500 Homes at TCBGC)	2033 P scenario (1,000 Homes at TCBGC)	2033 Q scenario (2,500 Homes at TCBGC)
PT share at TCBGC	9.5%	10.5%	12.5%

Investigating deadweight further through journey time analysis

Having interpreted a range of indicators to suggest that the deadweight level could be set at 1,000 homes, as from this point unacceptable deterioration was perceived, we then set up journey time routes in the model to test this hypothesis to see if there was significant deterioration as a result of TCBGC trips (with no mitigation measures).

The journey time routes that we used are shown in Appendix 4.9.3d. They included two east-east routes, a route on the A12 and a north-south route. The journey times are shown in the table below.

Table: **4-3: Journey time analysis for different size of development**

Journey time route		Journey time for different size of development (in minutes)				Journey Time Difference from Baseline scenario (in minutes)		
		2033 Baseline scenario	2033 P scenario (500 Homes at TCBGC)	2033 P scenario (1,000 Homes at TCBGC)	2033 Q scenario (2,500 Homes at TCBGC)	2033 P scenario (500 Homes at TCBGC)	2033 P scenario (1,000 Homes at TCBGC)	2033 Q scenario (2,500 Homes at TCBGC)
A12 (up to Colchester Park and Ride (A12 J28)	**EB**	07:29	07:33	07:29	07:29	**00:04**	**00:00**	**00:00**
	WB	10:51	11:36	11:26	11:37	**00:45**	**00:35**	**00:46**
A12 to the University of Essex via Cymbeline Way and Cowdray Avenue	**EB**	18:41	23:17	26:35	26:58	**04:36**	**07:54**	**08:17**
	WB	17:16	19:04	17:53	18:41	**01:48**	**00:37**	**01:25**
A12 to the University of Essex via Lexden Road and A134	**EB**	24:41	27:03	27:19	29:12	**02:22**	**02:38**	**04:31**
	WB	22:58	23:12	23:33	24:11	**00:14**	**00:35**	**01:13**
B1026 to A134	**NB**	18:50	19:02	19:10	19:02	**00:14**	**00:35**	**01:13**
	SB	21:01	22:23	21:49	22:26	**01:23**	**00:49**	**01:25**

As it can be seen in the above table, introducing 500 homes at TCBGC leads the model to predict a journey time increase of more than 4 minute on the route via Cymbline Way, while with 1,000 homes almost 8 minutes. With more than 1,000 homes journey time will increase further. Similarly, a development size between 500 and 1,000 homes will increase the journey time on the route via Lexden Road by more than 2 minutes, while with more than 1,000 homes this increase could be doubled.

Consequently, it was considered that the journey time analysis confirm unacceptable delay was being added to the highway network with only 1,000 homes at TCBGC in

scenarios without infrastructure improvements. Development levels in the P scenario were therefore set at 1,000 homes for TCBGC.

Homes unlocked with only the LR

Since the HIF bid comprises two elements – the LR and RTS – we used the approach developed for the deadweight to identify the amount of housing that could be unlocked by the LR alone (the do less option) and to check that the LR and RTS together (the preferred option) alleviated the transport problems identified.

This analysis is reported in Appendix 4.9.3d an uses the 2051 version of the transport model. This provides a justification for setting the level of housing to be unlocked by the LR only at 5,000 homes; and confirms that the preferred option of the LR an RTS together allows TCBGC to grow to 7,500 homes. (In fact, slightly beyond as growth to 7,800 homes was modelled in the transport model).

Displacement

The scheme is located in an area of particularly strong local demand as evidenced (in Section 5 Commercial Case) through the consistently high rates of new housing being delivered in Colchester; the high turnover of existing private stock; and growth resilience in house prices relative to comparators.

The high levels of housing growth seen in Colchester Borough, and to a lesser extent, Tendring District are reflected in their anticipated housing needs forecasts. Forecasts show that both Colchester and Tendring are expected to continue to grow in the coming decades and accordingly as local planning authorities they continue to permit new developments and allocate new sites for residential development in their Local Plans to meet those growth requirements. These residential permissions and allocations are shown in the respective housing trajectories contained in the appendices. As an illustration of the proportion of growth expected from the scheme subject to this bid, it will account for approximately 13% to 16% of Colchester's annual housing requirements and approximately 23% to 27% of Tendring's annual housing requirements. Taking 275 units as the mid-point annual housing supply emanating from Tendring Colchester Borders Garden Community (i.e. 137.5 homes in each district), this scale of delivery represents 18.6% of the annualised objectively assessed housing need across the two districts (1,476 units).

	Annualised objectively assessed housing needs (OAHN)	Future housing supply emanating from Tendring Colchester Borders Garden Community (assuming 250-300dpa range)	Future housing supply emanating from other sites permitted or allocated in the Local Plan
Colchester Borough	920	125-150 (13.6%-16.3% of OAHN)	770
Tendring District	556	125-150 (22.5%-27% of OAHN)	406

Tendring Colchester Borders Garden Community will therefore only be a minority contributor (albeit a substantial one in terms of the total number of new homes delivered) to the overall objectively assessed housing needs in both authorities' administrative areas. The outstanding amount of growth required to meet housing requirements will need to be met through the delivery of other housing sites.

The fact that the Garden Community will only ever provide a limited proportion of new housing in the districts demonstrates the complementary nature of the scheme. For example, the Garden Community is anticipated to deliver a high proportion of affordable housing, and enable wider diverse future supply through private rental housing, self/custom build housing, and other specialist housing products. Other schemes coming forward in the districts (apart from the Colchester Braintree Borders Garden Community which is situated to the west of Colchester) are very likely to deliver a higher proportion of housing for market sale.

The reason for this is two-fold: the other schemes are likely to be smaller in scale and therefore less able to provide/cross-subsidise housing other than that for market sale; but also because the other sites will likely be delivered through a developer-led approach which has traditionally been focused on private sales over other forms of tenures. Indeed, these reasons are contributory factors in the Councils supporting the Garden Community approach above traditional forms of delivery.

The differing nature of housing products available at the Garden Community compared to the other sites which will inevitably come forward during the delivery timescale of the Garden Community, evidences a reduced potential for displacement than if the scheme were to be focused on providing a similar level of private market sales.

On the balance of evidence, we have allowed for displacement at 18.6%. This estimate reflects the proportion of the two districts' annual housing supply delivered by the Tendring Colchester Borders Garden Community site. In the absence of the Garden Community, an alternative site or sites would need to be identified to deliver the circa 275 units per annum (18.6% of requirement) that are needed in the area. Without considering the availability and suitability of alternative site(s), it could therefore be argued that by enabling development at the Garden Community, 275 units per annum are not required to come forward elsewhere. Considering the other evidence presented above, an estimate of 18.6% is considered a robust expectation of displacement caused by development at the Tendring Colchester Border Garden Community site.

Please provide a detailed explanation of the method and assumptions underlying the estimates of NPV of residential land value, NPV of current use value, and NPV of additional housing benefits above, as outlined in the Economic Case guidance

This section should be read with reference to the economic models contained in Attachment 4.1.7a – Economic Models.

Net Present Value (NPV) of Housing Benefits

The NPV of Housing Benefits (or net private value of housing) is the private benefit associated with a change in land use, represented by the change in land value arising from the land moving from its current use to a more productive use. In this case, the change is defined as the value of the land in its new residential use minus the value of the land in its existing agricultural use. This can be represented by the equation:

Net private value of housing = Residential land value – Existing land use value

The NPV of residential land value – before deadweight and displacement – was calculated as £1.793 billion and the existing land use value as £6.7 million for a total net private value of housing of £1.787 billion. After deadweight and displacement this is equal to a NPV of £1.260 billion.

The methodology and assumptions for calculating each of these elements – residential land value and existing land use value – are outlined below.

Existing Land Use Value

The existing land use value is based on data published by MHCLG (May 2017: *Land Value Estimates for Policy Appraisal*), which excludes hope value. The value from MHCLG for South East Local Enterprise Partnership is £22,500 per hectare in 2017 factor prices, which has been adjusted by 7.2% annual land value inflation to 2019 prices of £25,837 per hectare.

The resulting total NPV of the existing land use value, before deadweight and displacement, on a total of 199.8 hectares of agricultural land is £6.7 million.

The gross area for the site (including commercial and general areas) is 425 hectares. If the existing land use value is taken across the entire gross area of the site, the existing

land use value increases to £14.2 million. This has a negligible impact on any related calculations.

Residential Land Value

The residential land value is the equivalent to the Gross Development Value (GDV) of the site minus the costs incurred by the developer and a minimum level of profit for developing the site. This can be expressed by the formula outlined below:

Residential land value = GDV – (developer costs + fees + profit)

Gross Development Value

The calculation of Gross Development Values (GDV) was advised by independent property development specialists Lambert Smith Hampton (LSH) and Hyas Associates Ltd, and based upon further inputs provided by Cushman & Wakefield. An approach to GDV was adopted that is consistent with that specified in DCLG's Appraisal Guide (2016), characterised by the formula below:

GDV = House prices x number of dwellings

As per a combination of local market evidence collated by LSH and Cushman & Wakefield (as used by Hyas), house prices were valued at £3,564 per sq m. This value was assumed to be consistent across private and affordable housing types in order to capture the full economic value of development (as per Annex A of the 'Housing Infrastructure Fund: Forward Funding: Business Case Guidance'). The size of housing units was differentiated between tenure types. Based on the 'North Essex Local Plans (Section 1) Viability Assessment', (Hyas 2017) the private housing is assumed at 100 sq m of net internal area (NIA) and affordable housing at 80 sq m. As such, the house prices were estimated at £356,400 (private) and £285,120 (affordable).

The number and trajectory of residential units developed at the site was informed by the trajectory as set out in the 'North Essex Local Plan Strategic Part 1 Viability Report v1' (Hyas, 2017). The total volume of housing accommodated at the site was 7,493 units. The proportional split between tenure types was assumed at 70% private and 30% affordable (of which 60% were affordable rent and 40% were affordable shared ownership, to accord with emerging national policy requirements for a minimum of 10% from large sites providing affordable sale products). Housing completions are assumed to begin in 2023 and continue until 2050, with a relatively flat and constant profile of completions across the period (250 dwellings per year 2025-2034 and 300 dwellings per year 2035-2049, slight fluctuations either side).

Based on the house price data and proposed scale of housing delivery, LSH estimated a GDV of £2.5 billion, as outlined in the table below:

Tenure	£ per Unit	Units	GDV (£)
Private	356,400	5,245	1,869,353,640
Affordable (Rent)	285,120	1,349	384,552,749
Affordable (Shared Ownership)	285,120	899	256,368,499
Total		7,493	2,510,274,888

NB: numbers may not multiply out due to rounding issues

Appreciation in house prices was estimated at 7.2% per annum in nominal terms, as per historic twenty-year house price growth trends in Colchester and Tendring based on UK House Price Index data. Adopting this assumption leads to a GDV estimate of £10.4 billion (undiscounted, nominal terms). This estimate reduces to £6.5 billion in undiscounted real values once the GDP deflator has been applied. In NPV terms, GDV is estimated at of £3.3 billion (discounted real prices) across 199.8ha.

Development Costs

Developer costs with respect to the development of the land plots are based values set out in the 'North Essex Local Plan Strategic Part 1 Viability Report v1' (Hyas, 2017), which were drawn from original work done by Cushman & Wakefield and BCIS indices. These developer costs include the base build costs of the houses plus on-plot externals such as immediate access, garden, utility connections, incidental open space and estate roads. This excludes infrastructure costs considered as abnormals and section 106/community infrastructure levy (CIL) costs such as contributions to the building of schools, community health facilities, external utilities, internal primary roads and all external infrastructure. These costs are considered under "private sector developer contributions" and are included in section 4.4.1 of this proposal document with a detailed explanation in section 4.4.2.

The costs associated with development of the sites are outline below, including a detailed explanation of the derivation of costs across each cost item.

House Build Costs

Housing construction costs were estimated at £1,281 per sqm, based upon BCIS values as adjusted to relate to an appropriate housing mix. Given house sizes of 100 sq m of NIA for private housing and 80 sq m of NIA for affordable housing, the build costs for housing units were estimated at £128,100 and £102,480 for private and affordable housing respectively. Based on the build cost per unit and quantum of housing development, the total build costs for the scheme are estimated at £902 million.

Tenure	Build cost £ per unit	Quantity	Total Build Cost (£)
Private	128,100	5,245	671,897,310
Affordable (Rent)	102,480	1,349	138,218,875
Affordable (Shared Ownership)	102,480	899	92,145,917
Total		7,493	902,262,102

NB: numbers may not multiply out due to rounding issues

The build costs were adjusted to reflect the timing of construction, assuming a build profile that precedes the completion profile described above by one-year. Build cost inflation was adopted in line with RICS (2018) 'BCIS General Civil Engineering Cost Index for June' and is illustrated in the table below. From 2023, the long-run build cost inflation was assumed to be 3.9%.

2019	2020	2021	2022	2023
3.1%	3.2%	3.9%	5.0%	3.9%

Adopting these assumptions, the total build costs for the scheme are estimated at £1.844 billion in undiscounted nominal values, reducing to £1.227 billion in undiscounted real values (following the application of the GDP deflator). In NPV terms, the real discounted values are estimated at £670 million.

Externals

Basic build costs are inflated by 15% to cover any external works, service connections, gardens, fencing and roads, as per guidance in MHCLG's (2018) 'Land Value Estimates for Policy Appraisal: May 2017'. Based on build costs of £902 million, the cost of externals are estimated at £135 million. Factoring build cost inflation and the trajectory of development, the total build costs for the scheme are estimated at £277 million in undiscounted nominal values and £184 million in undiscounted real values (following application of the GDP deflator). In NPV terms, the real discounted values are estimated at £101 million.

Contingency

Contingencies are estimated using a benchmark of 4% of total build costs. This is the mid-point of the 3-5% range as considered appropriate in relation to typical contingencies deployed by housebuilders on their pure house construction activity. Based on total build costs of £904 million, contingencies are estimated at £36 million. Factoring build cost inflation and the trajectory of development, the contingency allowance for the scheme is estimated at £74 million in undiscounted nominal values and £49 million in

undiscounted real values (following application of the GDP deflator). In NPV terms, the real discounted values are estimated at £27 million.

Professional Fees

Professional fees are estimated using a benchmark of 8% of total build costs. This benchmark is in line with advice in MHCLG's (2018) 'Land Value Estimates for Policy Appraisal: May 2017'. Based on total build costs of £902 million, professional fees are estimated at £72 million. Factoring build cost inflation and the trajectory of development, the professional fees for the scheme are estimated at £147 million in undiscounted nominal values and £98 million in undiscounted real values (following application of the GDP deflator). In NPV terms, the real discounted values are estimated at £54 million.

Sales Costs

Sales costs are estimated using a benchmark of 3% of total sales price (i.e. the sales price that materialise rather than the theoretical economic GDV associated with all houses being valued at market rates). This benchmark is in line with advice in MHCLG's (2018) 'Land Value Estimates for Policy Appraisal: May 2017'. Based on total sales value of £2.3 billion, sales costs are estimated at £68 million. Factoring house price inflation and the trajectory of development, the sales costs for the scheme are estimated at £281 million in undiscounted nominal values and £176 million in undiscounted real values (following application of the GDP deflator). In NPV terms, the real discounted values are estimated at £88 million.

Developer Profit

Developer profit is estimated using a benchmark of 17% of GDV. This benchmark is in line with advice in MHCLG's (2018) 'Land Value Estimates for Policy Appraisal: May 2017'. Based on realised sales, a GDV of £2.3 billion allows for £383m of developer profit. Factoring increased GDV as a result of build cost inflation, house price inflation and the trajectory of development, the scale of developer profit resulting from the scheme is estimated at £1.6 billion in undiscounted nominal values and £1.0 billion in undiscounted real values (following application of the GDP deflator). In NPV terms, the real discounted values are estimated at £496 million.

Finance Costs

Finance costs are estimated using a benchmark of 6% debit rate for borrowing. Based on the estimated cash flow balance for the development scheme, finance costs are estimated at £93 million. Based on the change in cash flow when considering nominal and real values, the finance costs for the scheme are estimated at £29 million in undiscounted nominal values and £28 million in undiscounted real values (following application of the GDP deflator). In NPV terms, the real discounted values are estimated at £23 million.

Summary

Combining house build costs (NPV £670m), externals (NPV £101m) and contingency (NPV £27m), the total build costs are estimated at £797m NPV.

Combining professional fees (NPV £54m), sales costs (NPV £88m) and finance costs (NPV £23m), the total fees element of developer costs are estimated at £164m NPV.

Developer profit is estimated at £496m NPV.

The total on-plot developer costs including fees, sales costs and profit is therefore £1,458 million NPV. The equation for the NPV of residential land value (before displacement and deadweight) can therefore be written as:

NPV of Residential Land Value = £3,251 million – (£797 million + £164 million + £496 million) =

NPV of Residential Land Value = £3,251 million –£1,458 million =

NPV of Residential Land Value = £1,793 million

Appraisal Period, Discounting and Inflation Assumptions

As per the guidance (MHCLG, June 2018: HIF FF: Business Case Guidance), a 60-year appraisal period 2018/19 to 2077/78 has been used.

All prices are in factor prices (as opposed to market prices), as per guidance (HIF FF FAQ, Oct. 2018).

Land value appreciation has been applied to the sales prices and GDV of the housing over time. A nominal rate of 7.2% was applied to both the residential and current use land values. In line with the guidance (HIF Economic Case – pre-submission checklist for bidders), this is based on 20-years of local market data from the UK House Price Index for Colchester and Tendring local authorities. This is close to the benchmark value of 7% suggested by the guidance (DCLG, 2016: DCLG Appraisal Guide, paragraph C14).

For nominal infrastructure construction inflation, forecast RICS data from *BCIS General Civil Engineering Cost Index* (#1191) has been used to 2022 and then a long term rate calculated from data for the years 2005 to 2022 (3.5%). For housing and commercial construction, forecast RICS data from the *BCIS General Building Cost Index* (#11111) has been used to 2022 and a long term rate calculated based on data for the years 1985 to 2022 (3.9%).

Sensitivity tests have been conducted around the nominal value for land value appreciation and are outlined in detail in Section 4.6.

The GDP deflator (DfT, November 2018: *WebTAG Databook Annual Parameters*) for each year of the appraisal period has been used to convert nominal prices to 2018 real prices.

As per the guidance (MHCLG, June 2018: HIF FF: Business Case Guidance), the discount rate is applied at 3.5% for years 1-30 and 3% for years 31-60 to convert real prices to present values.

Do Less Option

In the event that only the link road is delivered, the total quantum of housing that could be delivered at the site is 5,000 units. Given that 1,000 units are deadweight, HIF investment in the link road only would unlock a maximum of 4,000 units. Taking into account displacement at 18.6%, the additional number of units unlocked by HIF investment is estimated at 3,255; approximately half of the 6,493 additional units unlocked by the link road in tandem with the RTS scheme. Based on the same approach to calculating GDV and development costs as described above under the full development option, the following bullets summarise the housing analysis under the Do Less option (all values in discounted real values for direct comparison with results of full development analysis elsewhere in Section 4.1.7):

- ***GDV***

  £2,044,769,133 (NPV)

- ***Build costs***

  £481,412,550 (NPV)

- ***Externals***

  £72,211,882 (NPV)

- ***Professional fees***

  £38,513,004 (NPV)

- ***Sales costs***

  £55,078,249 (NPV)

- ***Finance costs***

  £12,442,764 (NPV)

- ***Contingencies***

  £19,256,502 (NPV)

- ***Developer profit***

  £312,110,080 (NPV)

Incorporating these values into the residential land value formula as specified at the outset of Section 4.1.7, the NPV of site-specific residential land value for the scheme overall is estimated at:

NPV of Residential Land Value = £2,045 million – (£573 million + £106 million + £312 million) =

NPV of Residential Land Value = £2,045 million –£991 million =

NPV of Residential Land Value = £1,054 million

A smaller quantum of housing units delivered in the Do Less option gives rise to a smaller development footprint. The resulting total NPV of the existing land use value (based on agricultural land values), on a total of 133 hectares of agricultural land is £4.2 million.

The gross area for the site (including commercial and general areas) is 425 hectares. If the existing land use value is taken across the entire gross area of the site, the existing land use value increases to £14.2 million. This has a negligible impact on any related calculations.

Based on the following equation:

Net private value of housing = Residential land value – Existing land use value

The net private value of housing of £1.054 billion (NPV).

Net Private Value of Housing = £1,054 million (NPV) - £4.2 million (NPV)

Net Private Value of Housing = £1,050 million (NPV).

After deadweight (20%) and displacement (18.6%) this is equal to an NPV of £683 million.

The economic models underpinning the analysis presented above for the Full and Do Less Options are contained within Attachment 4.1.7a – Economic Models.

Filename	Description
4.1.7 a - HIF Model - A133_A120 Model_Full Development_140319.xlsm	4.1.7a Hif Model Full Development
4.1.7 b - HIF Model - A133_A120 Model_Do Less Option_140319.xlsm	HIF Model Do Less

NPV of external impacts of additional housing

Please provide the estimated NPV (in 2018/19 prices) of external impacts of additional housing from the preferred option relative to the do-nothing option

Type	Summary of impact	NPV of impact
Amentity Value	Converting agricultural land and urban fringe land to residential land could reduce amenity for local people. However, the development will provide 129ha of high quality open space for amenity. This positive impact has not been monetised.	£-32,700,000
Transport User Impacts	Transport costs imposed on existing users of the network by residents of the unlocked housing.	£-80,300,000
Health Impacts	Providing affordable housing could improve public health conditions by reducing overcrowding and homelessness	£2,600,000

Please provide a detailed explanation of the method and assumptions underlying these estimates, as outlined in the Economic Case guidance

Amenity Value

The site is currently agricultural land within the urban fringe of Colchester. It is previously undeveloped land. The DCLG Appraisal Guide (2016), pivoting from Eftec analysis in DCLG's 'Valuing the external benefits of undeveloped land' (2006), reports that the amenity benefit of Urban Fringe land and agricultural (intensive) land is £1,797 and £208 per ha in 2016 prices. Taking the average of these two values generates an amenity benefit of land in its existing use at the proposed site (£1,003). Converting to 2019 prices and assuming the benefit accrues in perpetuity results in an amenity value of £234,000 per hectare for each. This amenity value is lost with development.

Multiplying the amenity value by the number of additional hectares of development (141 ha) generates an amenity cost of £32.7 million. Under the Do Less option, the number of additional hectares of development falls to 87ha, generating a lower amenity cost of £20.2 million.

However, it should be noted that the development site will deliver a garden community to high quality standards. This will include some 129ha of open space that can be

enjoyed by existing residents in the wider area as well as the residents of the garden community itself. This is likely to result in a positive amenity impact. However, in line with the DCLG Appraisal Guide, this impact has not been monetised here.

Transport User Impacts

Introduction

According to TAG Unit A2.2, transport external costs (TECs) refer to the costs imposed by dependent transport users on all other users, such as increased levels of congestion, due to additional trips which are dependent on the transport scheme. For this appraisal, the impacts on user benefits, carbon emissions and indirect taxes are included in TECs. Transport user benefits/costs refer to the impact on journey times and vehicle operating costs (VOC), while changes in carbon emissions are the result of changes in the travel demand as well as the speed and distance of travel. Indirect taxes refer to the impact on fuel duty, which is an impact on central government revenues and so are report in section 4.4.1.

The following equation, as described in TAG Unit A2.2 paragraph B.1.5, can be used to estimate the transport external costs of a land use development:

$$TEC = \sum_{ij} t_{ij}^{0} \left(c_{ij}^{1} - c_{ij}^{0}\right)$$

where,

$ti_{j_{t_{ij}}}$: the number of trips between zones i and j

$ci_{j_{c_{ij}}}$: the cost per trip between zones i and j

The impacts of the additional dependent travel demand on existing road users is measured by the changes in costs taken from the transport model and input into DfT's TUBA software to calculate the above equation.

Transport modelling

Assignment model

A calibrated multimodal EMME transport model has been used to assess the changes in costs on the network due to the impact of the proposed transport schemes.

The base year model (2014), upon which the forecast year model has been developed, combines a highway and a PT model. The highway model has been created by combining the A120 SATURN and the Colchester SATURN models and importing them into EMME. The A120 SATURN is the more recently validated model being consistent with Highways England's South East Regional Transport Model (SERTM). The A120 SATURN model had been used to provide the OD data for our area of coverage in North Essex, since it had been more recently validated than the Colchester SATURN model. However, the A120 SATURN network included mainly key strategic routes around Colchester, therefore it was supplemented by the network from the Colchester SATURN model.

In addition, a PT network has been coded directly into EMME, which includes bus routes and rail. It should be noted that the PT model has not been fully validated as it does not meet WebTAG guidelines for accuracy due to limitation in obtained public transport data of sufficient detail. However, the model predicts bus passenger levels well on busier bus routes, in accordance with WebTAG accuracy, and overall bus and train passenger flows have been sense-checked. It is considered fit for purpose identifying change of trips on to the proposed RTS, which is the purpose of the modelling.

Mode choice model

The EMME model assigns trips to either the highway network or public transport network. A separate model choice model is used to instruct EMME on how many trips should be assigned to the highway and public transport networks, respectively. Thus the mode choice model enables the mode-share impacts of transport schemes to be forecasted since, in different scenarios, the attractiveness of public transport compared to the highway alters – particularly in the scenarios with the RTS.

An incremental mode choice model was chosen, which is the preferred approach set out in WebTAG guidance. An incremental mode choice model has the advantage of pivoting from the base shares. The model form is as follows:

$$share_{PT}^{DS} = \frac{trips_{PT}^{DM} * e^{-\lambda * (GC_{PT}^{DM} - GC_{PT}^{DS}) * damp}}{trips_{PT}^{DM} * e^{-\lambda * (GC_{PT}^{DM} - GC_{PT}^{DS}) * damp} + trips_{HW}^{DM} * e^{-\lambda * (GC_{HW}^{DM} - GC_{HW}^{DS}) * damp}}$$

where,

$\lambda_{business} = 0.0333$

$\lambda_{commuting} = 0.0229$

$\lambda_{other} = 0.0260$

The lambda (λ_{λ}) values were calibrated using a cost-bin regression approach, based on the mode shares and generalised cost differentials of trips to, from and within the Colchester urban area.

The damping factor is 1.0 for trips up to 30km and tapers off above that distance. This ensures that small changes in generalised costs on longer trips have less influence on mode shares than on shorter trips.

Forecast models

The methodology for assessing TECs of the dependent development follows the guidance in TAG Unit A2.2. The assessment of TECs requires two transport model runs:

- Do-Something network (with A120-A133 Link Road or A120-A133 Link Road and RTS) without the dependent travel demand (scenario S); and
- Do-Something network (with A120-A133 Link Road or A120-A133 Link Road and RTS) with the dependent travel demand (scenario R).

The Do-Something network was based on the base year network described above with the addition of the proposed HIF funded infrastructure. The following forecast years has been considered:

- 2026 opening year;
- 2033; and
- 2051.

The forecast for the total number of trips in 2026, 2033 and 2051 combines:

- Forecasts at Local Plan developments in Colchester, Braintree, Tendring and Uttlesford derived from TRICS data; and
- Background growth taken from NTEM

The study has combined the preferred options for developments found in the draft Local Plans for Colchester, Braintree, Tendring and Uttlesford districts into a single uncertainty log of developments. The log provides information on development growth expected across the four districts mentioned, as well as the North Essex garden communities (NEGC). The assumptions made are consistent with the Local Plan traffic modelling studies for Braintree, Colchester and Tendring (Jacobs, 2017) and further information can be found in these studies. Forecasts contain trips from both residential and employment developments.

The NTEM data for background growth between 2014 and 2033 is used to increase the number of trips in the base matrix of total trips. However, the scenario with the whole development but without the transport scheme (scenario Q) has been controlled to total trip end growth from the NTEM data set across the study area, as described in TAG Unit A2.2.

Distribution of trips in forecast models

In most cases, the distribution of trips to and from a development is based on the model zone in which it is located taken from the base model. Exceptions are where a development occurs at a greenfield site where the base distribution is not similar. This occurs at the garden community developments and Easton Park, where a synthetic distribution was required.

The form of the model implemented was a that known as a 'Tanner' function, and takes the following general form

$$\text{Weight} = c_m^{\alpha} * ^{-\beta_m * c_m}$$

in which *c* refers to the generalised cost and *m* refer to the modes public transport (PT), car and good vehicles. The values of the parameters used are

$$\alpha = 0.5$$
$$\beta_{\mathrm{PT}} = 0.02$$
$$\beta_{\mathrm{car}} = 0.07$$
$$\beta_{\mathrm{GV}} = 0.02$$

The Tanner function has the advantage of not forcing unrealistically short trips onto the public transport and highway modes. These parameters were arrived at by finding the least squares between modelled and observed trips for the following movements:

- Internal – Internal;
- Internal – External; and
- External – Internal.

That is, all movements except External – External trips. Intra-zonal generalised costs were taken as half the minimum non-zero generalised costs for each origin row in the matrix.

The weight matrix for each purpose and mode is furnessed to the base or forecast trip-ends. Though in practice, the synthetic distribution was only used for the trips to and from the four garden community zones: this ensured the usable parts of the prior matrices were retained.

Model outputs

The cost and demand data from the transport model was then output for use in TUBA for all relevant forecast years and AM time period (AM weekday average hour (0700-1000)). The output cost (time and distance) and demand matrices (skims) were then formatted for inclusion in TUBA.

A technical note on the forecast year modelling undertaken specifically for this HIF bid is included in Appendix 4.9.3d, which provides further information on the model outputs.

TUBA assessment

The calculation of the monetised impact of the changes in network costs (journey times and distances) is undertaken using the DfT's TUBA software (v1.9.12). The TUBA

assessment takes as inputs the cost and demand data generated by the transport model.

The standard economic parameters prescribed by DfT in the WebTAG Data Book were used in all cases. According to the specific HIF guidance (MHCLG, June 2018: HIF FF: Business Case Guidance), the appraisal period set for the HIF bids at 60 years from 2019, that is 2019 to 2078.

In addition to the modelled time period (AM peak), the TUBA assessment includes the impacts during PM peak period. This has been calculated after applying factors to expand modelled 08:00-09:00 traffic to 3-hour AM and PM peak periods in the East Colchester area.

A weighted factor was calculated using two 2018 continuous traffic counters in East Colchester so that factors could be applied for the 07:00-10:00, and 16:00-19:00 periods. The two counters used are located on the A133 and the A137, as shown in Figure 1. A counter on Ipswich Road was also considered for use but was excluded due to issues with the data during October 2018.

Figure 1: Locations of the counts used to calculate the factors **PLEASE SEE ATTACHMENT FOR FIGURE 1.**

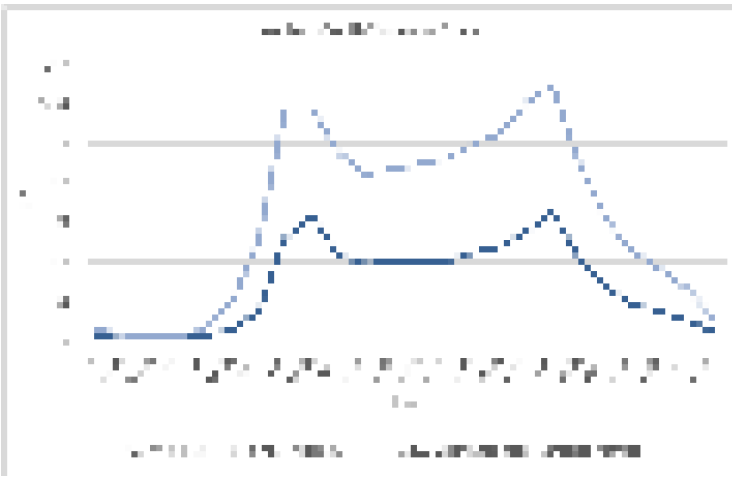


Figure 2: Flows at the selected traffic counts

Table 1: Factors calculated using the weighted averages of the traffic counts

Combined A133 and A137 (Weighted Average)	08:00-09:00	07:00-10:00	16:00-19:00
Two-way flow	1,806	4,885	5,018
Calculated factor		2.71	2.78

It should be noted that a standard TUBA assessment provided outputs in 2010 market prices discounted to 2010. However, as per the requirement of the HIF Bid (MHCLG, June 2018: HIF FF: Business Case Guidance), the results from TUBA are adjusted to 2019 factor prices discounted to 2019. This adjustment has been undertaken outside TUBA using the GDP deflator (1.16) to uplift prices to 2019, the standard discount factor (3.5%) to change to a 2019 base year and the indirect taxation factor (1.19) to move from market to factor prices. These values were taken from the WebTAG Data Book.

In addition, it should be noted that there was a certain amount of noise in the model in zones external to the wider Colchester area, where the effects of the schemes would be more significant. The cordon was created as shown in the figure below.

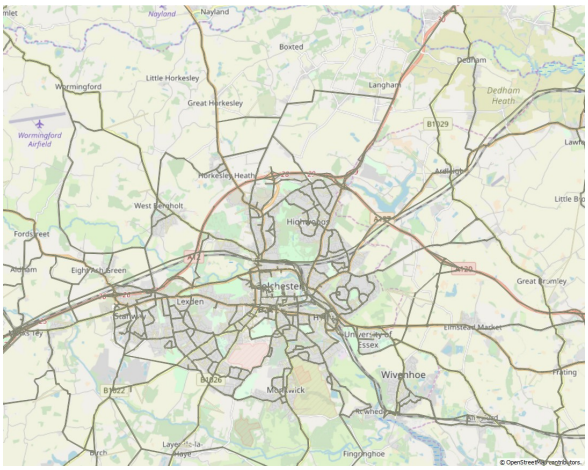


Figure 3: Cordon area for TUBA assessment

Using the cordon, TUBA output excluded trips with origins and destination external to the cordon area (i.e. external-external trips). We then ran TUBA with remaining trips, with origin and destination both within the cordon (internal-internal trips); or with either an origin or destination in the cordon (internal-external and external-internal trips).

We then ran TUBA with only internal-internal trips to consider the contribution being made to benefits (and disbenefits) by each group of trips. Since we were still concerned noise external to the cordon area was distorting the results, we considered only the proportion of internal-external and external-internal trips estimated to be in the cordon area. We have run sensitivity tests, however, based on increasing the proportion of benefit/disbenefit from the internal/external and external/internal trips. In this way, the TUBA results alongside the sensitivity tests are considered to have reasonably identified a likely range for the benefits/disbenefits.

Results

The outputs from the TUBA assessment are summarised in the following tables. The tables show the disbenefit arising from traffic generated from dependent housing increasing journey times and vehicle operating costs for the existing road users over the 60-year appraisal period.

Table: Transport External Costs by type (£ millions, 2019 factor prices discounted to 2019) – scenarios with the A120/A133 link road and RTS and 7,800 homes (Option 1 – preferred)

Transport External Costs	£ millions, 2019 factor prices discounted to 2019
Time savings	-£78.0
Changes in vehicle operating costs	-£2.9
Carbon emissions	-1.2
Indirect taxes	1.8
Total	**-£80.3**

Table: Transport External Costs by type (£ millions, 2019 factor prices discounted to 2019) – scenarios with the A120/A133 link road and 5,000 homes (Option 2 – do less)

Transport External Costs	£ millions, 2019 factor prices discounted to 2019
Time savings	-£97.3
Changes in vehicle operating costs	-£6.3
Carbon emissions	-1.3
Indirect taxes	2.6
Total	**-£102.3**

The total impact on TECs for the scenario with £80 million for the scenario with the LR and RTS; but this rises to £102 million in the scenario with only the LR. These relatively high impacts are considered reasonable given the number of houses and jobs unlocked by the proposed infrastructure – 6,500 homes with the LR and RTS and 4,000 homes with only the LR. The values also support the case for the preferred option being the LR and RTS together. With this infrastructure in place there is noticeably less disbenefit on existing users despite the increased amount of housing.

By far the largest impact of the additional traffic will be on existing user journey times. There is also a slight negative impact on existing user vehicle operating costs, with analysis indicating an increase in both fuel and non-fuel VOCs. This means that existing users are suffering from increased fuel consumption through increased congestion and/or journey length as well as increased maintenance through longer journey lengths as traffic re-routes to avoid congestion. In addition, there is a slight increase in carbon emissions implying that vehicles are using additional fuel as a result of the increased traffic congestion and/or journey length resulting in higher emissions. TUBA also provides outputs with respect to the impact on indirect taxes (fuel duty), which represent an impact on Central Government revenues through fuel duty receipts. Indirect taxes are reported in section 4.4.1. All these impacts are considered reasonable given the magnitude of the increase in traffic due to the unlocking of the dependent housing and associated commercial development.

Health Impacts

The DCLG Appraisal Guide (2016) advocates that the provision of affordable rented housing can generate health benefits valued at £2,400 in present value terms over thirty years (2011 prices, inflated to £2,791 in 2019 prices). This benefit is based on the contribution of affordable rented housing to reducing homelessness and overcrowding. The

development scheme supported by funding is expected to create 7,493 homes. Of this quantum, 30% of homes or 2,248 units will be affordable homes. Of this affordable housing, 60% will be provided as affordable rent (1,349 units). Based on an additionality rate of 70.5%, some 951 affordable rent units are dependent on HIF funding. Applying the health benefit benchmark of £2,400 to the quantum of additional affordable rent homes attributable to HIF funding (951 units), the health impacts of HIF funding are estimated at £2.6 million in NPV terms over a thirty-year appraisal. A thirty-year appraisal has been adopted to value health impacts in line with the DCLG Appraisal Guide.

Under the Do Less option, the quantum of housing is lower and the quantum of affordable rent homes attributable to HIF funding also falls (to 586 units). As such, the health impacts of HIF funding are estimated to fall as well (to £1.6 million in NPV terms over a thirty-year appraisal period).

Filename	Description
Economic Case 4.2.2 main text.docx	Text for 4.2.2
Attachments for Economic Case Section 4.2.2 Figures 1,2,3.docx	Attachment includes 4.2.2: Figure 1, Figure 2, Figure 3

NPV of infrastructure impacts

Please provide the estimated NPV (in 2018/19 prices) of infrastructure impacts, and any other monetised impacts not captured above, from the preferred option relative to the do-nothing option

Type	Summary of impact	NPV of impact
TUBA Outputs	Transport benefits for existing users of the network arising from HIF funded transport infrastructure.	£262,700,000
Commercial Land Value Uplift	By providing the conditions that allow land to be upgraded from agricultural use to commercial use, HIF investment could support conversion of land to more productive economic use.	£75,300,000
Amenity Value	Converting agricultural land and urban fringe land to residential land could reduce amenity for local people. However, the development will provide 129ha of high quality open space for amenity. This positive impact has not been monetised.	£-4,900,000

Please provide a detailed explanation of the method and assumptions underlying these estimates, as outlined in the Economic Case guidance (incl annex A)

Transport Impacts

Introduction

Transport impacts related to user benefits, carbon emissions and indirect taxes (fuel duty) have been monetised using the Department for Transport (DfT) TUBA software (v1.9.12), which takes demand and cost (time and distance) data from transport modelling and standard economic parameters from DfT as inputs.

These benefits arise in the preferred option and the do less option. The benefits for the preferred scenario have been identified by comparing the ‘P scenario with 1,000 homes

at TCBGC' against the 'S scenario with 1,000 homes and the LR and RTS schemes'. The benefits for the do less scenario have been identified by comparing the 'P scenario with 1,000 homes at TCBGC' with the 'S scenario with 1,000 homes and the LR only'.

Note the infrastructure costs are set out in the following section. Hence the NPV of transport infrastructure impacts shown above has not deducted costs.

Transport modelling

See section 4.2.2.

TUBA assessment

See section 4.2.2.

Results

The outputs from the TUBA assessment are summarised in the following tables.

Table: Transport External Costs by type (£ millions, 2019 factor prices discounted to 2019) – scenarios with the A120-A133 link road and RTS

Transport Impacts	£ millions, 2019 factor prices discounted to 2019
Time savings	£253.9
Changes in vehicle operating costs	£11.6
Carbon emissions	3.3
Indirect taxes	-6.1
Total	**£262.7**

Table: Transport External Costs by type (£ millions, 2019 factor prices discounted to 2019) – scenarios with the A120-A133 link road

Transport Impacts	£ millions, 2019 factor prices discounted to 2019
Time savings	£188.4
Changes in vehicle operating costs	£9.0
Carbon emissions	2.3
Indirect taxes	-4.3
Total	**£195.4**

The total present value impact of the infrastructure on user benefits (time savings plus VOCs) is about £263m in the preferred scenario with both the link road and RTS; and about £196m in the scenario with the A120/A133 link road. The magnitude of this impact is in line with expectations given that it does not include the transport benefits associated with dependent housing.

Both the preferred and do less options have benefits which exceed their implementation and operating costs. The sensitivity analysis explores this further and presents transport only benefit cost ratio (BCR) information. Given that the LR provides benefits on the strategic road network, which is currently congested, it would be expected that a significant amount of benefit could be associated with the LR. However, with an estimated transport BCR of 2.2, it would not be a scheme that would come forward ahead of other strategic road schemes in North Essex given other priorities to improve the A12 and A120 corridors to the west of Colchester. That there is a transport BCR of 2.2 gives credence, however, to the strategic case of the usefulness of the LR.

Whilst the benefits for both the LR and RTS are greater the transport BCR dips slightly to 1.8. In the main this is due to a high level of maintenance and infrastructure operating costs having been included. However, if RTS was treated as a standalone scheme, without including benefits from the LR, it would have a far weaker case to be implemented. This makes sense since the RTS draws significant patronage for dependent development at TCBGC – which is its real usefulness. Without dependent development (which is not considered in this section), it would be expected that less benefits is associated with the RTS compared to the LR.

Other Monetised Impacts – Land Value Uplift associated with Commercial Development

An assessment of land value uplift was undertaken based on the potential for the transport schemes to unlock commercial development at the site. The assessment was predicated on a GDV estimate of £195 million, developed through discussion with independent property development specialists LSH and background work undertaken by Cushman & Wakefield and integrated into the viability work undertaken by Hyas. The following assumptions underpin the analysis:

Capital Value	GIA sqm	GIA:NIA %	NIA sqm	Rent per sqm	Net Rent	Yield	Void and Rent Free Period	GDV	GDV per GIA sqm
Employment B1/Offices	53,130	80%	42,500		-	6.75%	18	-	0
Employment B2B8 / Industrial	68,000	97%	65,960	86	5,672,560	6.00%	18	86,033,827	1,265
Retail and Leisure	59,500	80%	47,600	166	7,877,800	6.50%	18	109,380,223	1,838
Total	180,630		156,060		13,550,360			195,414,050	

Factoring land value inflation at 7.2% per annum (using the UK House Price Index data presented in Section 4.1 as a proxy) and the trajectory of development, the GDV for the commercial element of the scheme are estimated at £836 million in undiscounted nominal values and £518 million in undiscounted real values (following application of the GDP deflator).

To ascertain net development value, the costs of development, fees and developer profit were subtracted from the GDV value above, based on the following assumptions (many of which are consistent with those adopted in the residential land value uplift calculation described in Section 4.1):

- Build Costs – based on background work undertaken by Cushman & Wakefiled and incorporated into the Hyas viabilty work, build costs varied across commercial land uses as follows:
    - B1(a) Offices – n/a (fr the purposes of this analysis office space has not been attributed a cost or value) ;
    - B2/B8 Industrial - £804 per sq m f GIA

- Retail and Leisure - £759 per sq m f GIA

Applying these build costs to the GIA estimates for commercial development, the build costs were estimated at £100 million.

Land Use	GIA (Sq M)	Build Cost per Sq M	Total Cost (£)
Employment B1/Offices	n/a	n/a	n/a
Employment B2 B8 / Industrial	68,000	804	54,672,000
Retail and Leisure	59,500	759	45,160,500
Total	127,500		99,832,500

Factoring build cost inflation at 3.9% per annum (as per the BCIS data presented in Section 4.1) and the trajectory of development, the total build costs for the commercial element of the scheme are estimated at £206 million in undiscounted nominal values and £136 million in undiscounted real values (following application of the GDP deflator).

- Externals – estimated at 15% of build costs, as per MHCLG's (2018) 'Land Value Estimates for Policy Appraisal 2017'. Based on build costs of £100 million, the cost of externals are estimated at £15 million. Factoring build cost inflation and the trajectory of development, the total build costs for the scheme are estimated at £31 million in undiscounted nominal values and £20 million in undiscounted real values (following application of the GDP deflator).

- Professional fees are estimated using a benchmark of 8% of total build costs. This benchmark is in line with advice in MHCLG's (2018) 'Land Value Estimates for Policy Appraisal: May 2017'. Based on total build costs of £100 million, professional fees are estimated at £8 million. Factoring build cost inflation and the trajectory of development, the professional fees for the scheme are estimated at £17 million in undiscounted nominal values and £11 million in undiscounted real values (following application of the GDP deflator).

- Sales costs are estimated using a benchmark of 3% of total sales price. This benchmark is in line with advice in MHCLG's (2018) 'Land Value Estimates for Policy Appraisal: May 2017'. Based on total sales value of £195 million, sales costs are estimated at £6 million. Factoring house price inflation and the trajectory of development, the sales costs for the scheme are estimated at £25 million in undiscounted nominal values and £16 million in undiscounted real values (following application of the GDP deflator).

- Finance costs are excluded from the analysis on the basis that they are captured as part of the residential land value uplift assessment within Section 4.1.

- Contingencies are estimated using a benchmark of 4% of total build costs, as per the residential approach. Based on total build costs of £100 million, contingencies are estimated at £4 million. Factoring build cost inflation and the trajectory of development, the contingency allowance for the scheme is estimated at £8 million in undiscounted nominal values and £5 million in undiscounted real values (following application of the GDP deflator).

- Developer profit is estimated using a benchmark of 17% of GDV. This benchmark is in line with advice in MHCLG's (2018) 'Land Value Estimates for Policy Appraisal: May 2017'. Based on realised sales, a GDV of £195 million allows for £33m of developer profit. Factoring increased GDV as a result of build cost inflation, commercial price inflation and the trajectory of development, the scale of developer profit resulting from the scheme is estimated at £142 million in undiscounted nominal values and £88 million in undiscounted real values (following application of the GDP deflator).

Using these assumptions, the net development value is given by:

Commercial land value = GDV – (developer costs + fees + profit)

The NPV for commercial land values based on a consistent approach to appraisal period, discounting and inflation assumptions as listed in 4.1.7 is therefore:

NPV of Commercial Land Value = £254 million [PV of GDV] – (£88 million [PV of build costs, externals, contingency] + £15 million [PV of sales costs and professional fees] + £43 million [NPV of developer profit]) =

NPV of Commercial Land Value = £254 million – £146 million =

NPV of Commercial Land Value = £108 million

Following application subtraction of existing land use value for commercial land (£1.4 million) and application of deadweight and displacement at the same scale as for residential development (i.e. 13.3.% and 18.6% respectively), the NPV of commercial land value uplift is estimated at £75 million.

Under the Do Less option, the scale of commercial development achievable at the site reduces in line with reductions in residential development (i.e. by around one-third, from 127,000 sq m to around 88,000 sq m). The resulting NPV of commercial land value uplift is estimated at £39 million.

Amenity Value

The site is currently agricultural land within the urban fringe of Colchester. It is previously undeveloped land. The DCLG Appraisal Guide (2016), pivoting from Eftec analysis in DCLG's 'Valuing the external benefits of undeveloped land' (2006), reports that the amenity benefit of Urban Fringe land and agricultural (intensive) land is £1,797 and £208 per ha in 2016 prices. Taking the average of these two values generates an amenity benefit of land in its existing use at the proposed site (£1,003). Converting to 2019 prices and assuming the benefit accrues in perpetuity results in an amenity value of £234,000 per hectare for each. This amenity value is lost with development.

Multiplying the amenity value by the number of additional hectares of commercial development (21 ha) generates an amenity cost of £4.9 million. Under the Do Less option, the number of additional hectares of development falls to 14 ha, generating a lower amenity cost of £3.3 million.

Filename	Description
Attachments for 4.3.2.docx	4.3.2 Assumptions used in analysis

NPV of scheme costs

Please provide the estimated NPV (in 2018/19 prices) of infrastructure scheme costs (and revenues) as incurred by the following groups under the preferred option relative to the do-nothing option, ensuring no double counting of any costs included in prior answers – NPV of housing benefits, NPV of external impacts of additional housing, and NPV of infrastructure impacts

Type		Total Nominal Amount	NPV (18/19 constant prices)
HIF funding	Cost	**£98,803,538**	**£82,592,396**
	Revenue	**£0**	**£0**
Central Government	Cost	**£197,662**	**£59,898**
	Revenue	**£0**	**£0**
Local Authority	Cost	**£790,649**	**£240,922**
	Revenue	**£0**	**£0**
Other public sector	Cost	**£0**	**£0**
	Revenue	**£0**	**£0**
Private sector (not developer contribution)	Cost	**£29,286,531**	**£9,638,193**
	Revenue	**£0**	**£0**
Private sector (developer contribution)	Cost	**£701,860,801**	**£297,811,902**
	Revenue	**£0**	**£0**
Optimism Bias applied to *Total Public Sector Costs*	Cost	**£14,968,777**	**£12,433,982**
Optimism Bias applied to *Total Private Sector Costs*	Cost	**£6,192,980**	**£3,051,572**
Real Net Present Public Sector Cost		**£95,327,198**	
Real Net Present Private Sector Cost		**£310,501,667**	

Please provide a detailed explanation of the method and assumptions underlying all estimated costs, as outlined in the Economic Case guidance

Introduction and general assumptions

Scheme costs have been appraised over a 60-year period commencing in 2018/19. Hence all implementation, maintenance and operational costs for the LR and RTS have been estimated up until 2078/79. The accumulation of costs over this time period have been calculated with TUBA alongside scheme impacts reported in Sections 4.2 and 4.3. It should be noted, however, that operational revenue from the RTS has not been considered. Estimates of this revenue and impact on wider public transport services is discussed in Section 4.4.

It is also worth noting that a simplifying assumption has been made that there is no do minimum cost associated with Option 3. It is considered in this option that there would be no LR or RTS constructed and hence there would be no cost incurred by the public sector. In reality, should a limited amount of housing be constructed as estimated by deadweight, there would be maintenance and operational costs to consider even though it would be expected that infrastructure costs would be met by the private sector, which could include a sum for maintenance and operation. For example, these costs could be incurred on access roads or bus services. Nevertheless, any such costs would be small compared to the preferred LR and RTS schemes.

As the LT and RTS infrastructure has a life of over 60 years no residual asset value or costs have been considered as there is no expectation that any aspect of the schemes would be sold or incur decommissioning costs. Thus, an assumption has been made that any buildings and shelters associated with RTS park and choose and the other 15 terminals will be renewed and maintained during the 60-year period.

In WebTAG Unit A1-1 (DfT, May 2018, p.3.2.5), it is advised that land gifts by a private sector developer should be taken into account and recorded as a negative cost to the public sector and cost to the private sector. Since the mechanism for transferring ownership of the land on which the LR and RTS will run within the NEGC boundary has not been decided, no adjustment has been made for such land transfer costs. This is discussed further in Section 4.5 and could indicate an over-estimation of public sector costs.

In the table in Section 4.4.1, TUBA has taken into account the effects of inflation to provide a real price. This reflects that a sum of money in 2018/19 will be worth less than the same sum of money in ten years' time, say, because of the effects of inflation. Hence the nominal price, which is sum of all scheme costs, must be deflated to taken into account that inflation will be steadily devaluing costs measured in 2018/19 prices over the 60-year appraisal period.

To do this a price base year of 2010 has been chosen (which is the TUBA default) alongside an inflation index. The real price is then the nominal price deflated by the change in the inflation index between that year and the base year. Within TUBA the deflation is based on HMT's GDP deflator. Since the bid asks for NPV in 2018/19 prices, 2010 TUBA output is then adjusted to 2018/19 prices using inflation.

TUBA also makes an adjustment for discounting, that is the preference for a sum of money now rather than the same sum of money at a later date. This calculation is carried with TUBA following the deflation to real prices. The output is the real present value of the scheme costs. The net present value (NPV), in the case of scheme costs, is then any revenue minus costs. In the case to completing the table it has been assumed that revenue refers to income rather than revenue costs over the life of the scheme.

The following paragraphs provide details on how those scheme costs that have been able to be quantified have been compiled alongside the approach to risk and optimism

bias.

Link road scheme costs

Implementation

The schemes implementation costs were estimated in 2018 prices and considered:

- Project development and design fees
- Construction cost including preliminary works such as ground clearance
- Utility diversions with statutory undertakers
- Land purchase cost outside NEGC boundary
- Part One compensation claims

As mentioned, land purchase costs within the NEGC boundary has not been considered as it is expected that an arrangement will be made with land owners to provide the land at nominal cost given that the transport infrastructure is required to unlock the housing value on the remainder of their land. Hence the land purchase costs refer to additional land which will need to be acquired to provide the junction of the LR with the A120. Meanwhile Part One claims anticipate possible compensation claims arising from the impact of the LR.

It should be noted that both construction inflation and background inflation has been taken into account in providing the costs reported in other sections of this bid, such as the financial section. However, since TUBA carried out its own adjustment for background inflation, only construction inflation has been left in for the purpose of entering nominal costs into TUBA.

During the course of developing the scheme cost estimates there was continual appraisal of risks and also cross-discipline risk workshops carried out, reported elsewhere in the bid. This approach identified the likelihood of risks and appropriate levels of contingency necessary for the purposes of this bid. A Monte Carlo risk analysis was also applied to inform the calculation for appropriate amounts of contingency to inform risk. From this approach contingency of 35% was agreed for the purposes of this bid to be added to the total of the above scheme costs. This was considered commensurate with the specific nature of the Link Road infrastructure, the stage of design that had been reached and matched experience of allowances for potential cost over-runs on other schemes delivered by ECC. Risk is highly related to the circumstances of each project and would therefore differ for other site delivery and infrastructure matters.

All the implementation costs are expected to be incurred by the HIF bid, and hence have been added to that row in the table in Section 4.1.1. The table below shows scheme costs prepared for TUBA in 2018 prices.

Link Road Implementation Costs

Year	Design and planning	Construction and utilities	Land	Part one
2018	0	0	0	0
2019	41,197	476,938	7,128	6,611
2020	145,401	1,683,310	25,156	23,334
2021	533,138	6,172,138	92,240	85,556
2022	1,744,816	20,199,726	301,878	280,003
2023	2,908,027	33,666,210	503,130	466,671

We then considered optimism bias, which is recommended to be set at 44% for this type of road scheme based on WebTAG (DfT, July, 2017, Unit A1-2, para. 3.5.7). However, against this we considered the fact that a quantified risk assessment had been carried out and whether it would be appropriate to reduce optimism bias.

However, since both the LR and RTS are in relatively early stages of scheme design it was considered appropriate to use 44% optimism bias for the economic appraisal. But as a sensitivity test we have reduced optimism bias to 15%. We chose this level since WebTaG (ibid, para. 3.5.10) advises that the DfT does not expect to see an optimism uplift below 15% in for this type of road scheme at Stage 1 design.

Maintenance and operational costs

As the scheme is developed, costs referenced here will be further refined once we complete detailed design. Operational costs to the public sector of the LR have been considered negligible and have therefore been excluded. While in reality there could be a small marginal cost, it is not considered sufficient to influence the broad economic appraisal of scheme cost. In addition, overall efficiency gains in operations in the public sector could be expected over the next sixty years with advances in technology, data analytics and automation. Other operational costs applicable to drivers have been considered in previous sections. Hence, for the LR only maintenance costs are considered.

Rather than consider a linear incurrence of costs uniformly spread across the 60-year periods, an attempt has been made to estimate when costs related to road resurfacing, lighting and signalling would be incurred. In addition, the costs have been split between central government at 20% to over the A120 intersection on the Highway England road network and local government at 80% to cover the remainder of the link road. The costs assume that one quarter of the LR is resurfaced every eight years alongside assumptions for lighting, structures and signalling costs based on maintenance of similar road infrastructure by ECC.

In addition, the cost of maintenance shown in the table optimism bias has been applied at 44% keeping it in line with optimism bias applied for the implementation costs.

Table of maintenance cost assumptions for the LT (prices in 2010)

Year	Highways	Structures	**Road lighting**	**Signals**	**Subtotal**
2018					0
2023					0
2028					0
2033	62500		10000		72500
2038		20000		75000	95000
2043	62500		10000		72500
2048		20000		75000	95000
2053	62500		10000		72500
2058		20000		75000	95000
2063	62500		10000		72500
2068		20000		75000	95000
2073	62500		10000		72500
2078					0

TOTAL	**312500**	**80000**	**50000**	**300000**	**742500**
LA cost (80%)	*250000*	*64000*	*40000*	*240000*	*594000*
HA cost (20%)	*62500*	*16000*	*10000*	*60000*	*148500*

RTS scheme costs

Implementation

The design of RTS began with a comparison of costs incurred in other bus based RTS schemes. Then following a feasibility study the costs were developed and refined further by the ECC Highways Major Projects team. This approach ensured that the costs were related to recent experience of delivering bus priority measures in Colchester.

The implementation costs consider construction and statutory utilities together. In addition, an element was added to reflect a greater uncertainty on design solutions separate to contingency. Construction inflation has also been included in the costs entered into TUBA, but not background inflation as this is handled within TUBA.

Since the RTS scheme involves a series of traffic priority measures to create a segregated route for RTS vehicles and other buses where they do not impact on RTS services, it is anticipated that engagement and consultation costs could be higher than standard schemes. Therefore, design and planning has been estimated at 12% of scheme costs. Also included is a sum for a possible compensation claim where the RTS will run along land previously acquired by ECC and secured for future development of RTS.

As for the LR, risks have been continually appraised during the design of the scheme and a quantified risk assessment has been carried out. It was considered appropriate to set the same 35% contingency budget.

The implementation costs in 2018 prices adjusted for TUBA but without optimism bias are given in the table below. It should be noted that £12m of costs are from S106 private developer contributions. Hence, in TUBA, costs have been apportioned accordingly.

Year	Design and planning	Construction and utilities	Land	Part one
2018	0	0	0	0
2019	35,608	279,520	0	2,996
2020	125,676	986,540	0	10,573
2021	460,814	3,617,312	0	38,768
2022	1,508,118	11,838,476	0	126,876
2023	2,513,530	19,730,794	0	211,460

The same approach to optimism bias taken for the LR has been applied to the RTS infrastructure. We have set it at 44% but carried out a sensitivity tests with optimism bias altered.

Maintenance and RTS infrastructure operation

These costs refer to all costs to keep the infrastructure in good order and operational for RTS services. i.e. all maintenance and operational costs other than the running of the RTS services per se. Instead of applying the same approach to maintenance costs assumed for the LR, costs incurred on other bus based RTS schemes were reviewed.

Overall maintenance and infrastructure operational costs are assumed to be significantly higher than for the LR. This is considered reasonable based on:

- The need for traffic and parking enforcement
- Operational management of bus priority measures which will be additional to existing traffic management systems
- The need to maintain high standards of the perception of RTS services
- Incorporation of green elements and sustainable designs
- Replacement, maintenance and regular cleaning of shelter and park and choose infrastructure.

In addition, rather than intermittently incurring maintenance cost as profiled for the LR it was considered that RTS maintenance and infrastructure operations would have a more uniform spend profile. Accordingly, the following maintenance costs have been assumed in the economic case, which will be incurred per annum. The intention is that this cost is recovered from operating revenue, however, for the time being it is entered as a local government cost.

RTS components	Annual cost (£)
Route sections	306000
Park and Ride 1	81855
Stops	27285

Operational costs

It is considered appropriate that RTS economic appraisal considers the operating costs for the service as a private sector cost. The cost, however, will be offset by income generated from RTS patronage. Initial estimates given in the following section show that it expected that RTS will be profitable given the demand predicted by the transport model. In addition, these assumptions have been tested with potential operators of RTS, who recognise the commercial potential of the route once the infrastructure ensuring bus priority is in place. Consequently, for the purpose of the HIF appraisal, which is focussed on infrastructure, no inclusion of service operating costs has been made.

It recognised this is a large simplifying assumption. However, the HIF bid is focussed on securing the infrastructure to be built by 2024. Once there is certainty on the infrastructure being delivered further work will be carried out on identifying the appropriate operating model. Only after this further work can more reliable estimates of the welfare impacts of different operating models be assessed. In particular, the assessment would wish to consider impacts on rail and existing bus operations.

For the moment, to keep the focus on the delivery of infrastructure, service operation is simply assumed to be deliverable by the private sector once the infrastructure is built with subsidy for the first years of operations provided from NEGC developer budgets, which are included in the cost plans of NEGC.

Private Sector Developer Contributions

This line item is included to cover all costs associated with site abnormals and S106 contributions required to deliver the development scheme. These are summarised in the table below:

Developer-funded Requirement		Calculation Basis	Cost to Developer
Enabling Works	Site preparation and enabling costs (based on generic cost per residential unit)	£13,898 per unit	104,137,714
Social Infra	Education	£7,500 per unit	56,197,500
	Community and Health	£1,150 per unit	8,616,950
	Open Spaces, Leisure and Sports	£4,400 per unit	32,969,200
	Environment/Waste (includes noise attenuation and recycling points)	£525 per unit	3,933,825
On-Site Infra	On Garden Community RTS Trunk	n/a	5,000,000
	Add New Signalised Access onto A133	n/a	5,000,000
	R1 - A120-A133 Link Road	n/a	0
	Travel Plan measures	£500 per unit	3,746,500
	RTS Orbital/Branch	n/a	12,525,000
Off-Site Infra	132kV Connection to Primary Substation from Grid	n/a	9,000,000
	Potable water 5km trunk mains, waste upgrade & 2.5km connection	n/a	10,000,000

	Gas - upgrade to network, telecoms network	n/a	5,000,000
	Walking/Cycling & Greenways	n/a	5,000,000
	Off Garden Community RTS Trunk	n/a	5,000,000
	Interim Highway Improvements (Including to Greenstead Roundabout)	n/a	3,000,000
	Bus Service Subsidies & Other Public Transport	n/a	3,700,000
	Employment Support	£1,000 per unit	7,493,000
	Open Space Endowment	£2,100 per unit	15,735,300
Total (with RTS Trunk Elements)			296,054,989
Total (without RTS Trunk Elements)			286,054,989

Note that the £10 million of costs allocated to ‘On Garden Community RTS Trunk’ and ‘Off-Garden Community RTS Trunk’ are already captured in the costs analysis above, and are therefore not considered in the follow-on analysis below.

Within this context, a contingency factor of 10% was applied across these wider infrastructure components in line with background advice from AECOM & Cushman & Wakefield (£28.6m) to generate total infrastructure costs £314.7m in undiscounted terms. With nominal inflation applied at 3.5% p.a. for civil engineering, the nominal value of the total infrastructure costs is estimated at £573.2m. Following application of the GDP deflator, the real value is estimated at £403.5m. In present value terms, the real value of total infrastructure costs is estimated at £243.8m.

In addition to infrastructure costs listed above, delivery of the above infrastructure is assumed to incur professional fees at 8% of total infrastructure costs and master developer profit at 15% of total infrastructure costs. This relates to some £25.2m in professional fees and £47.2m in master developer profit. Added to the total infrastructure costs of £314.7m , the private sector developer contribution to unlock the site is estimated at £387.0m in undiscounted terms. With nominal inflation applied, this increases to £689.9m. In real terms, these private sector costs are estimated at £482.0. The present value of the real costs is estimated at £287.1m.

No attachments

Non-monetised impacts

Are there any impacts it is not feasible or proportionate to monetise?

Yes

Details, including an indicative scale of impact and why these have not been monetised

Viability of running RTS services

In the quantified economic appraisal in the previous sections, questions on the operation of the RTS services, that is high quality bus-based services, were not included. This reflects that the service would only commence by 2026, once the first new homes at TCBGC have been constructed; and there is not yet a preferred operating model. Nevertheless, there has been a considerable amount of investigation into the viability of the running RTS services. Hence, if the RTS infrastructure is funded, it would be done with utmost confidence that RTS services can be run commercially.

Cost of operations

To estimate the operating cost, modified estimates of bus operating costs based on TfL bus tender values for gross cost contracts have been used. The contracts include the provision of vehicles, so no capital cost or renewal cost is required for vehicles for bus-based options. The TfL cost estimate is £2.18 per vehicle km. On the basis of advice received from a bus operator by NEGC, we have reduced this by 12.5% to account for lower costs outside of London, resulting in a cost estimate of £1.91 per vehicle per km.

Our cost estimate is based on a service operating:

- along 13.5km of route length
- 18 hours per day
- 364 days a year

The cost estimates for 2033 are based on a 10 minute headway (6 journeys per hour in each direction). As demand increases, it will be necessary to increase this frequency over time to accommodate the passenger growth. The cost estimate in 2051 is based on the assumption that the headway will have decreased to 7.5 minutes, meaning 8 journeys per hour in each direction. This increased frequency is not included in the demand modelling and would in practice work to further increase demand. Its exclusion represents a conservative assumption.

The 2033 cost estimate is approximately £2 million per annum. However, there is some existing cost associated with the existing Colchester Park and Ride service and having removed this (by estimating it using the same methodology), a total incremental annual spend of £1,741,000 has been estimated to deliver RTS services of the standard and frequency implicit in the vision. The 2051 cost estimate is £2,415,000 per annum.

It should be borne in mind with regard to these cost estimates that:

- We envisage that the core of this RTS scheme will comprise a “trunk” corridor from TCBGC to North Colchester P&R, and our estimates of operating costs are based on this trunk corridor. The infrastructure provision within the garden communities would allow for complementary connecting and/or branch services, but the cost of these is not included in these estimates.
- This cost estimate is based on provision of a standard double deck bus service – provision of a more attractive vehicle may add to this cost.

Load factors in the peak hour have been examined to establish the extent to which this level of service provision would be sufficient. With an assumed capacity of 100 passengers per vehicle, and passengers spread evenly across the peak hour, the available capacity is not exceeded at any point up to 2051.

Revenue and income

To calculate daily passenger demand from the peak hour modelled demand, we have used the factors implied from the demand counting exercise on the A133 and A137 as set out in the table below. This provides the time of day factors shown in the table. These are summed and multiplied by an annualization factor for all weekdays. While it is reasonable to speculate that the inter-peak demand for a rapid transit service might be lower than that obtained from a road survey, our factoring up of the peak hour RTS demand

remains conservative, because we have not included non inter-peak off peak demand or weekend demand. Total peak hour boarders of the RTS service are multiplied by an annualization factor of 2,600. Our modelling of the RTS service assumes two separate routes, one largely consistent with the existing route from the town centre to the northern Park and Ride site, and the other from the town centre to TCBGC. Due to a modelling limitation, it is not possible to identify interchanging passengers in the boarders – these passengers would not be charged twice to use RTS, and we have thus adjusted total revenue down by 20% to account for these interchanging passengers.

To convert the demand forecast into a passenger revenue forecast, we have multiplied the demand by the DfT statistical estimate of average operating revenue per journey on bus services in England, scaled down to include only passenger fare revenue (i.e. to exclude income from concessionary travel and grant income). We have used the most recently available estimates (2016/17). According to DfT statistics, average yield per passenger journey in 2016/17 in English non-metropolitan areas (i.e. non-legacy PTE areas) was £1.74. 57% of revenue was from fares income. Thus, the average fare yield per passenger was almost exactly £1. Our revenue estimate is presented in current prices.

	2033	2051
Peak hour boarders	1,292	1,679
AM peak period factor	2.71	
Inter-peak factor	4.48	
PM peak period factor	2.78	
Annualisation factor (weekdays only)	261	
Overall annualisation factor (single peak hour to all year - based on weekdays only)	2601	
Total boarders per annum (000s)	3,361	5,398
Average yield	£1	
Total revenue per annum (£000)	£3,353	£5,385
Adjustment for interchanging passengers (20%)	£671	£1,077
Total adjusted revenue per annum (£000)	£2,683	£4,308
Operating cost per annum (£000)	£1,741	£2,415
Maintenance cost per annum (£000)	£415	
Operating profit (£000 – current prices)	£527	£1,478

Profitability

As can be seen in the table above, our modelling indicates that by 2033 the RTS service would be profitable. The modelling occurs at two fixed points in time, the first being 2033, at which point the RTS service would be well established. In practice we would not expect this profitability to be observable from the first day the service being in operation. We would expect to see a gradual ramping up of demand over time, as passengers alter their travel behaviour. Hence, it would be reasonable to assume that the service might require an operating subsidy for several years after its introduction. It should be noted that the TCBGC cost plan includes funding for such subsidy in the first years of RTS operations.

The profitability calculation includes consideration of the annual maintenance costs for the RTS infrastructure – thus from these estimates it would appear that, regardless of the eventual operating model, revenue from the RTS service could be expected to meet infrastructure upkeep.

Effect on wider public transport

It is recognised that the shift of some trips to RTS will have some knock-on effects on other public transport services. For example, if RTS causes more people to use other public transport services such as connecting bus services or trains, then there might be crowding and delay disbenefits to consider. Conversely, some routes might experience a decrease in patronage which could result in

benefits to journey experience by reducing crowding. In both the above cases there could be service provision, income and profitability impacts that need to be considered.
To investigate the impact of RTS on existing bus and rail services, we have extracted from the model the total passenger kilometres travelled by each mode, which are presented in the following tables.

2033 Total km travelled per vehicle type (AM peak)
Bus Rail RTS
2033 P scenario (without the development, without transport schemes) 112,639 413,112 0
2033 S scenario (without the development, with transport schemes) 119,423 410,476 3,371
2033 R scenario (with the development, with transport schemes) 117,927 411,292 4,404

2051 Total km travelled per vehicle type (AM peak)
Bus Rail RTS
2051 P scenario (without the development, without transport schemes) 119,830 442,266 0
2051 S scenario (without the development, with transport schemes) 125,359 440,241 3,793
2051 R scenario (with the development, with transport schemes) 146,434 459,462 9,853
As can be seen from the above tables, total passenger kilometres by bus will increase, even without the garden community in place. RTS will not have a negative impact on existing bus services, rather they will be enhanced, especially the ones that are used by people to access the system. On the other hand, the LR will provide extra highway capacity, therefore people are likely to shift from rail to car, and as a result some rail routes might experience a decrease in patronage. However, as the size of the development increases, the network becomes more congested, thus trips will shift back to rail.
Hence, there is a complex interplay between public transport services that can be considered in economic appraisal. Because of this complexity, it was felt that the most appropriate course of action was to remove consideration of wider impacts of RTS from the quantified section of the economic appraisal. In essence, the RTS is a local scheme providing a solution to manage new demand from TCBGC. Its case rests on the RTS solving traffic management and congestion issues which would otherwise arise. The wider impacts on public transport will be locally contained.
In the next stage of design, full consideration of wider impacts on public transport will be considered in order to optimise the role of RTS in the context of the public transport network and how and where public subsidies are provided. This will consider the RTS route to and from TCBGC but also the ambition for other RTS routes across North Essex.

Environment
The appraisal approximates the impacts of greenhouse gas emissions in TUBA. However, it should be recognised that more accurate estimates can be provided with further analysis of transport model outputs. In addition, there are other environmental and air quality benefits arising from the scheme, especially the RTS element.
Despite expected advances in engine technology addressing NOx and particulates, there is concern over other environmental aspects of vehicle traffic. The RTS solution provides for more efficient movement of people whereby environment impacts can be collectively managed.
The RTS vehicles are intended to be fully electric, immediately introducing environmental advantages compared to private cars, when considered collectively. In addition, it would be expected that RTS technology would adapt to respond to future environmental concerns as and when they emerge, which will keep its environmental lead. Such advantages can be seen in current bus operations where investment has been made alongside air quality objectives.
In addition, the design intent for RTS infrastructure is for it to be climate adapted. In particular, this should involve introducing sustainable, drainage leading to benefits for water management.

Other benefits
It should also be recognised that RTS extends garden community design principles to residents' experience of travel in the surrounding area. The contributes to health, productivity and social inclusion.

In addition, RTS and the LR provide tangible benefit for existing residents of Colchester, which is likely to assist in public support for

the scheme.

Sensitivity Analysis

Please describe sensitivity analysis conducted (if not covered above)

Sensitivity analysis has been undertaken to determine the impact of changes to the following key assumptions:

- House/land price inflation;
- Scale of deadweight;
- Development trajectory/build-out rate.

House/Land Price Inflation

House and land price inflation is a key determinant of the housing impact of HIF funding. The core scenario presented above assumes that house prices will grow by 7.2% per annum in line with UK House Price Index data for Colchester and Tendring over the past twenty years. Whilst this figure is in line with the recommended 7% figure recommended in the DCLG Appraisal Guide (2016), it is acknowledged that there is considerable uncertainty about future trends for house prices, particularly over extensive development periods such as the forecast build-out for the proposed Garden City scheme.

As such, sensitivity tests were undertaken to understand the impact of changes to house/land price inflation on the NPV of housing impacts. All other assumptions were kept constant with the core scenario, except for build cost and civil engineering inflation which were also reduced to 0% (from 3.9% and 3.5% respectively) under the 0% house/land price inflation scenario. The table below outlines the scale of impacts:

Housing Impact Metric	7.2% Inflation	No Inflation	4% Inflation	5% Inflation	6% Inflation
Gross Development Value of Housing (£m, NPV)	3,251	976	1,866	2,216	2,641
Net Development Value of Housing (£m, NPV)	1,793	307	657	944	1,293
Current Land Use Value (£m, NPV)	7	3	4	5	5
Land Value Uplift (£m, NPV)	1,787	304	653	939	1,287

The analysis demonstrates that land value uplift is positive across all inflation scenarios and increases with inflation rate.

Scale of Deadweight

The core scenario considers 1,000 units to be deadweight; these units are expected to come forward even in the absence of HIF investment and are therefore not dependent on the transport scheme. The additional housing impact unlocked by HIF investment relate to the residual housing units that are dependent on the scheme, once displacement is

accounted for. Holding all other assumptions as constant (including displacement), the impact of changing the deadweight assumption is outlined in the table below:

Housing Impact Metric - increasing deadweight	1000 units	1500 units	2000 units	3747 units
Gross Development Value of Housing (£m, NPV)	3,251	3,251	3,251	3,251
Net Development Value of Housing (£m, NPV)	1,793	1,793	1,793	1,793
Current Land Use Value (£m, NPV)	7	7	7	7
Land Value Uplift (£m, NPV) (pre-additionality)	1,787	1,787	1,787	1,787
Land Value Uplift (£m, NPV) (post-additionality)	1,260	1,163	1,066	727

The analysis demonstrates that even if 50% of all housing units at the site are considered deadweight (i.e. 3,747 units), the land value uplift post-additionality remains very positive.

Development Trajectory/Build Out

The housing impact of HIF investment is also subject to variations in the development trajectory assumed for the site. Build out rates in the core scenario were informed by LSH and the trajectory that informed the Shared Section 1 Local Plans, together with all other information relating to potential build out rates such as performance on other schemes. A quicker or slower build-out rate could have significant impacts on the housing impact of HIF investment, as timing of housing completions influence the sales value and build costs of each unit. Within this context, the table below outlines the housing impact of HIF investment under the core scenario against two alternative trajectories:

- Accelerated build-out: assuming 400 units are delivered each year between 2023 until full development.
- Decelerated build-out: assuming 150 units are delivered each year between 2023 and full development.

Housing Impact Metric -build rates	Core	Accelerated	Decelerated
Gross Development Value of Housing (£m, NPV)	3,251	3,006	3,876
Net Development Value of Housing (£m, NPV)	1,793	1,502	2,414
Current Land Use Value (£m, NPV)	7	6	8
Land Value Uplift (£m, NPV)	1,787	1,496	2,406

The analysis demonstrates that land value uplift increases where the build-out rate is decelerated. This is because the house price growth forecast of 7.2% per annum is greater than build cost inflation (3.9%) leading to a disproportionate impact on sales values and therefore gross development value as the appraisal period progresses. Therefore by delaying housing until later on in the appraisal period, gross development value and therefore net development value increases, resulting in increased land value uplift.

Transport impact and infrastructure impact sensitivity testing

As mentioned in earlier sections, sensitivity tests for the transport economics appraisal have been used to explore:

- Changing the level of benefits arising by increasing the proportion of benefits from internal/external trips
- Changes in costs by altering the level of optimism bias
- Including public transport operating costs to run the RTS service

By altering the proportion of benefits from internal/external trips by +/- 25% the disbenefits identified in Section 4.2 alter as shown in the table below. The disbenefits, however, associated with the dependent housing remain in a sensible range.

Impacts of additional housing

Impacts of additional housing		
	NPV (LR)	**NPV (LR & RTS)**
25% increase in disbenefits	-£127.8	-£97.4
25% decrease in disbenefits	-£76.7	-£58.5

Altering the proportion of benefits from internal/external trips by +/- 25% also alters the benefits identified for the infrastructure impacts in Section 4.3. However, we have also considered these changes side by side with changing costs by decreasing optimism bias to 15% and increasing optimism bias to 66% as set out in Section 4.4. By considering these side by side we have also been able to consider the BCR of the schemes (without dependent development). The results of these sensitivity tests are shown in the tables below.

Infrastructure impact (LR & RTS)

	PVB	PVC	NPV	BCR
Current case	**£262.7**	**£142.7**	**£120.0**	**1.8**
15% optimism bias	£262.7	£113.9	£148.8	2.3
66% optimism bias	£262.7	£164.5	£98.2	1.6
25% increase in benefits (44% optimism bias)	£328.4	£142.7	£185.7	2.3
25% decrease in benefits (44% optimism bias)	£197.0	£142.7	£54.4	1.4
Worse case: 25% decrease in benefits, 66% optimism bias	£197.0	£164.5	£32.6	1.2
Best case: 25% increase in benefits, 66% optimism bias	£328.4	£113.9	£214.4	2.9

Infrastructure impact

Infrastructure impact (LR)				
	PVB	**PVC**	**NPV**	**BCR**
Current case	**£195.4**	**£89.8**	**£105.6**	**2.2**
15% optimism bias	£195.4	£71.7	£123.7	2.7
66% optimism bias	£195.4	£103.5	£91.9	1.9
25% increase in benefits (44% optimism bias)	£244.2	£89.8	£154.4	2.7
25% decrease in benefits (44% optimism bias)	£146.5	£89.8	£56.7	1.6
Worse case: 25% decrease in benefits, 66% optimism bias	£146.5	£103.5	£43.0	1.4
Best case: 25% increase in benefits, 66% optimism bias	£244.2	£71.7	£172.5	3.4

These sensitivity tests show that in a worse case scenario that the schemes still provides a positive net present value. Hence the case for RTS and LR is sufficiently robust

should assumptions used in the modelling alter.

The final sensitivity test has considered wider impacts on public transport operations. A simplifying assumption was used in TUBA runs that the RTS service would operate cost neutrally (and evidence for this was presented in Section 4.4. However, in reality there would be abstraction of trips from other public transport modes. Consequently, TUBA was run to include such operating parameters and consider the net affect across public transport.

Optimism bias

Please describe how optimum bias has been applied in line with the Green Book guidance (and where relevant DfT WebTAG guidance (if not covered above))

As noted in Section 4.4.2, optimism bias has been set at 44% which is the recommended level for an Economic Assessment of this type of road-based scheme (LR and RTS) based on WebTAG (DfT, July, 2017, Unit A1-2, para. 3.5.7). However, against this we considered the fact that a quantified risk assessment had been carried out for the specific purposes of this bid.

Hence, with regard to WebTaG (ibid, para. 3.5.10) it was decided that a sensitivity test would be applied using an optimism bias of 15%. The 15% level was recognises that the DfT does not expect to see an optimism uplift below 15% in for a road scheme of this type at Stage 1.

For consistency with the treatment of implementation costs, optimism bias was also applied to maintenance costs at 44%.

Optimism bias was applied to costs associated with LR and RTS, irrespective of funding source. As a result, an optimism bias cost component was specified for both public and private sector contributions to scheme costs in Section 4.4.1. This is in line with HIF guidance which suggests that MHCLG will expect optimism bias to be applied to public sector costs and where private sector contributions are considerable.

No additional optimism bias has been applied to the development scheme, but contingency allowances are included in the Economic and Financial Cases across both build costs and for strategic infrastructure. These are set at rates reflective of the type of infrastructure being provided, the majority of which is relatively standard for this type of development.

Risk Analysis

Please describe how risk has been assessed and appraised in line with HMT Green Book guidance (if not covered above). The risk analysis should focus both on the risks to the delivery of the infrastructure and the delivery of housing

Infrastructure

Given the very early stage of delivery for the A120-A133 Link Road and Rapid Transit System a risk workshop was held during development of the HIF bid in December 2018.

The workshop was an early opportunity for key individuals and disciplines from the HIF team (including representatives from ECC and Essex Highways designers, technical specialists, planners and delivery managers) to identify key delivery risks and to allow their quantification in a proportionate manner.

The output from the risk workshop is a quantified risk register, with each risk given a unique risk reference and risk category, along with a description, risk rating (based on probability and impact), mitigation measure, risk owner and financial risk quantification.

In line with the HMT Green Book and following the risk workshop, a quantitative risk analysis was carried out using a Monte Carlo Simulation approach (using @RISK), based on the quantified probability and three-point estimates recorded in the project risk register. This resulted in a p50, mean and p80 risk values. The p50 means that there is a 50% chance of being above or below; p80 means there is an 80% chance of being below and a 20% chance of being above. Following our analysis of these figures and Project Board sign off, the financial case uses the p50 value.

The output from the quantitative risk analysis was used to inform the level of contingency to be included alongside the infrastructure delivery costs, specific to the infrastructure works set out in this bid.

Housing

Risk/contingency for the individual cost items for the housing and commercial development scheme costs has been addressed directly in relevant sections as follows:

- **On-plot residential developer build costs: section 4.1.7;**
- **Commercial building developer costs: section 4.3.2; and**
- Other private sector developer contributions: section 4.4.2.

All risk and contingency assumptions are based upon advice provided by professional cost, infrastructure and planning advisors and accord with industry standard approaches**.**

A separate exercise to identify the risks associated with delivery of the Garden Community housing has been undertaken, however quantitative risk analysis on these risks has not been undertaken. Nevertheless, these risks do have a unique risk reference and risk category, along with a description, risk rating (based on probability and impact), mitigation measure and risk owner.

Supporting material and additional economic considerations

Please provide any other information not covered above to support the economic case

The above sections have set out information and assumptions on which the economic case has been developed from the perspective of both housing and transport economics.

Annex B draws together the transport appraisal conducted for the HIF bid, including presentation of standard DfT appraisal tables.

Filename	Description
Attachments for Economic Case Sensitivity Case 4.5.2 a,b,c.docx	Attachments for Non Monetary Impacts 4.5.2
Attachments for Economic Case Sensitivity Case 4.6.1 a,b,c.docx	Attachments for Sensitivity Case 4.6.1.a b c

Please attach all economic modelling done as part of the economic case (other than that provided in specific questions)

Filename	Description
4.1.7 a - HIF Model - A133_A120 Model_Full Development_140319.xlsm	HIf Model Full Development
4.1.7 b - HIF Model - A133_A120 Model_Do Less Option_140319.xlsm	HIF Do Less

Schemes with Transport Impacts

For any transport modelling conducted, please refer to Annex B of the guidance and attach

Filename	Description
Annex B i - LR OAR.pdf	Annex B File 1
Annex B ii - RTS OAR.pdf	Annex B File 2
Annex B iii - Transport Model Development.pdf	Annex B File 3
Annex B iv - Transport Model Forecasting.pdf	Annex B File 4
Annex B v - DfT Tables for Transport Appraisal.pdf	Annex B File 5

Commercial Case

Market analysis

Please provide details of how the proposed scheme fits with the local housing market and with local demand. Please provide supporting evidence of relevant value assumptions in the area

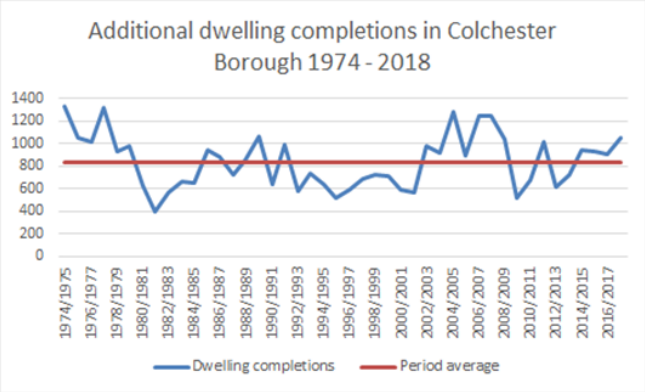
The strategic and local housing market areas

The scheme sits within a strategic housing market area which has been defined as including the districts of Tendring, Colchester, Braintree, and Chelmsford. These districts all fall within the same housing market area due to the high containment levels of migration within the area (69% of moves are internal) and the high levels of internal commuting within its boundaries (83% of commutes are within the area).

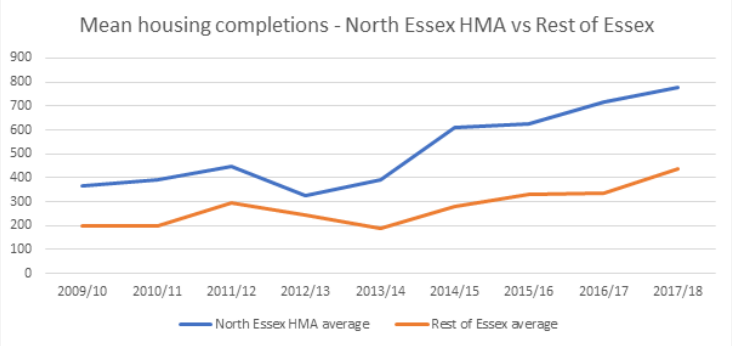
Being situated adjacent the urban area of Colchester, the scheme benefits from its buoyant housing market as is demonstrated by the consistently high levels of housing growth in Colchester seen over the past couple of decades with rates exceeding regional and national comparators. The proposed Garden Community therefore lies within a local housing market with high levels of local demand and new supply.

In terms of general housing activity within the area, the level of turnover has levelled out at approximately 5% of the private housing stock since 2014, which compares favourably with the regional and national comparators and reflects the resilience of the local new build market.

During recent history Colchester Borough has seen an average annual increase in its new housing stock of over 840 dwellings with more recent years providing new housing of over 1,000 units per year, well in excess of the National Planning Policy Framework 'objectively assessed housing needs' requirements (920 dwellings per year).



In terms of local comparators, the average annual housing completions with the North Essex housing market area (HMA) (the NEAs plus Chelmsford) has significantly surpassed average annual completions for the rest of Essex in every recent year.



Colchester's housing growth has been achieved through numerous strategic housing developments in and around the town. These sites have provided a consistent level of supply demonstrating both the Council's appetite for growth and the strength of the local housing market's ability to absorb new housing. Key sites and approximate delivery rates (many delivered in tandem with each other) include:

- Former Colchester Garrison – circa 236 dwellings per annum (over 11 years)
- Lakelands – 62 dpa (over 8 years)
- Turner Rise – 66 dpa (over 5 years)
- Former Flaktwoods/Tufnell Way – 125 dpa (over 2 years)
- North Colchester – multiple adjacent sites including the former Severalls Hospital – 60 dpa (over 2 years but ongoing) & Chesterwell – 45 dpa (over 3 years but ongoing)

Most of these strategic sites, have largely been built out and it is anticipated the Garden Community will provide a new stream of strategic development supply to Colchester and Tendring in the coming decades. These high levels of strategic growth, both recent and current, demonstrate the propensity for the housing market area to absorb significant amounts of new housing over a prolonged period.

Full details of future housing supply can be found in the appendix which includes housing trajectories for Colchester Borough and Tendring District.

Local House Prices and Trends

The local housing market has been strong, with price growth exceeding national averages, whilst still delivering strong rates of new house building as detailed above. The table below illustrates average per annum value increases over the last (recorded) year (to Jan 2018), then at 5, 10, and 20 year averages. This shows that values for both

Colchester and Tendring have outperformed the national averages across all time frames and by some margin.

Average Price Change per annum (arithmetic)	House Price Index - Land Registry			
	Tendring	Colchester	England & Wales	UK
20 years pa	8.07%	8.08%	7.30%	6.59%
10 years pa	2.19%	3.48%	2.46%	2.14%
5 years pa	7.89%	8.19%	6.29%	6.01%
1 year	8.17%	6.40%	4.16%	4.38%

Local house prices data suggests a resilient local housing market reflecting the relative affordability of new homes in North Essex compared to districts to the west, towards London and Cambridge. This resilience is demonstrated by the gradual increase in house sale prices over recent years.

More recent data extracted from Hometrack's Housing Intelligence System demonstrates the current state of the local housing market. Key highlights are:

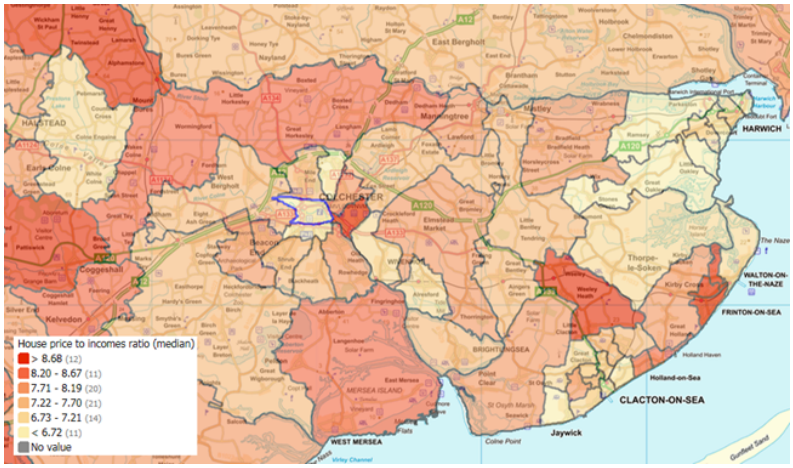
- The average house price in Colchester was £286,406 in August 2018, compared to £282,046 in August 2017.
- The average lower quartile house price in Colchester was £200,000 in August 2018, compared to £195,500 in August 2017.
- The overall change in average house prices in Colchester between August 2017 and August 2018 increased by £4k or 1.5%. The overall lower quartile prices increased over this period with the average increase being £5k or 2.5%.

Such changes reflect the current housing market uncertainty yet has not constrained the level of local supply with multiple developers locally active and sites still delivering across the area.

Affordability

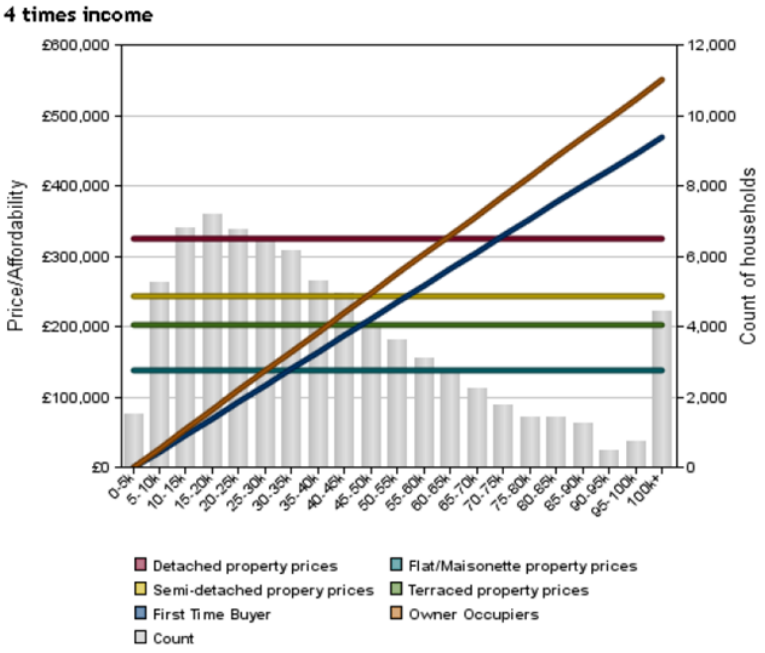
Although the housing market area offers a level of affordability not generally found to the west of Braintree due to the inflationary effects of closer proximity to Cambridge and London, the housing market is still unaffordable to a large proportion of households. For example, a first-time buyer of a flat/maisonette at an average purchase price of £141,176 will need to be earning an income of £30-35k and for a terraced property at £203,00 an income of £45-£50k is needed. The average salary in Colchester £24,908 (ONS).

The map below shows affordability in Colchester and Tendring by median income ratio for all property types, with deep red representing house price to income ratio being in excess of 8.68 x income, with the lightest colour scaling down to 6.72 x income ratio.



This is best demonstrated in the Price/Affordability chart below which shows the number of households in different household income bands in the area compared to the lower quartile price for different property types in the same area. In essence the chart shows that the level of unaffordability experienced by first time buyers is similar to that

experienced by those who already own a home and are looking to move.



In terms of the percentage of households which are unable to access different housing products, the general trend of unaffordability (based 25% deposit and securing a mortgage at 4 x income) is apparent across all property types. The proportion of households priced out of the market varies from 43% of first-time buyers being unable to afford a flat to 85% of first time buyer households being priced out of purchasing a detached property.

The local housing register covering the districts currently has 3,583 households waiting to be housed in suitable accommodation.

Demographics

Whilst Colchester Borough and Tendring District are contiguous and within the same housing market area, they have markedly different demographic profiles. The key differences between the two districts is that Colchester Borough has a typically younger population, more people of working age, and fewer older people than Tendring District. Both district

	% 0-15 years	% 15-64 years	% 65+ years
Colchester Borough	18.5	64.6	16.9
Tendring District	16.3	55.1	28.7

A corollary of this difference, and within the context of the districts' population growth forecasts, is that there is a diverse range of housing needs across the two local authority areas which translates into strong latent local demand for new housing. The Garden Community being situated between the two districts is therefore in a prime location to be able to accommodate this population growth and provide maximum absorption of new build properties by delivering the range of housing the areas need over the coming decades.

No attachments

Delivery strategy

Please provide details of who will be delivering the infrastructure

ECC's highway delivery arm 'Essex Highways' (a combination of ECC and Ringway Jacobs) will oversee delivery of the A120-A133 Link Road and Rapid Transit System. Essex Highways have an established Major Projects Manual which sets out proven processes which the Project Delivery Team will follow to deliver the scheme. The Project Manager and Project Delivery Team will report to the Project Board described in 7.2.1.

The emerging Shared Section 1 Local Plans for Braintree, Colchester and Tendring will provide the statutory protection for the A120-A133 Link Road and Rapid Transit System.

ECC will commission Ringway Jacobs to provide ongoing development of the infrastructure designs to “illustrative” status through the Highways Strategic Transformation (HST) Contract 2012 (Essex CC Highways Partnership Contract). Essex Highways will use these illustrative designs to obtain the necessary planning consents and engage contractors through an agreed procurement route. Essex Highways will then undertake Contract Management (including possible site supervision) of the infrastructure schemes via a dedicated Contract Team, making the use of existing local or national procurement routes for these services.

In relation to the Rapid Transit System we propose the same arrangement but with specialist aspects of equipment like ‘Real Time Signals’, information panels or bespoke shelters designed ‘in advance’ and procured outside the main schemes or as standalone contracts. We see major advantages with this conjoined within the Rapid Transit System sections. This would allow the alignment of any vehicle modifications for ‘Bus Gates’ but also closer alignment to working with all Bus companies affected. Essex Highways can call on a number of approved ‘Self Delivery’ partners for such specialist equipment.

Procurement strategy

Please provide details of engagement with contractors to date and the procurement strategy for delivery of the infrastructure scheme

Due to being in the very early stages of design development for the A120-A133 Link Road and Rapid Transit System, to date there has been no direct engagement with Contractors. However, internal discussions on a suitable procurement strategy for both infrastructure elements have been undertaken, with a summary and recommendations provided below.

We have undertaken a review of procurement and delivery options for the link road and Rapid Transit System. This brought together ECC’s contemporary experiences of delivering highway projects in the county and Ringway Jacobs’ wider experiences of designing, procuring and delivering similar schemes for Essex and other local authorities. Procurement and delivery options have been informed by guiding principles:

- Deliver the scheme to meet the 2024 spend deadline
- Provide ECC with cost certainty
- Deliver value for money for the taxpayer.

To date ECC have called upon the services of Jacobs for design, environmental assessment and business case development through their Joint Venture organisation Ringway Jacobs’ existing term contract. These services are expected to exist over the duration of the project’s development.

Currently the Official Journal of the European Union (OJEU) is the publication in which all public-sector infrastructure tenders valued above £4,104,394 must be advertised if not

covered by an existing framework agreement. In developing the procurement strategy, we have considered the merits of available framework agreements but have ruled them out for the reasons provided below.

Essex Highways Partnership

Essex County Council have the ability to undertake smaller highway interventions / works through their long-term collaboration partnership with Ringway Jacobs, and as such this could be a suitable delivery vehicle for some of the smaller Rapid Transit System interventions. Through this partnership, Ringway Jacobs provide professional consultancy services and deliver the county's highways maintenance works as well as self-delivery of highways projects up to £500,000 or up to £2m subject to Council approval. Ringway Jacobs have a dedicated labour force and an established supply chain for the delivery of their highway services. Works are delivered via their 10 year (with 5-year extension option) bespoke NEC highways maintenance & services contract which commenced in 2012. If the Rapid Transit System interventions were to be delivered as small work packages then the Essex Highways Partnership would be a suitable procurement vehicle, however it would require multiple small procurements and the could potentially result in programme issues.

Eastern Highways Alliance Framework 2

ECC is a Board member of the Eastern Highways Alliance. The Eastern Highways Alliance Framework 2 (EHAF2) is a wide-ranging framework which covers structural work, surfacing, road works and capital schemes for highways. EHAF2 is divided into two lots, with Lot 2 covering schemes between £1m and £20m. EHAF2 provides the potential to direct award or hold mini competitions. It also has the flexibility to award construction package orders or time charge orders for consultancy or Early Contractor Involvement (ECI) services. Schemes above £20M can also be included subject to approval from the Eastern Highways Alliance Board.

The EHAF2 commenced in 2016 for a period of four years, due to expire in 2020 before the link road would be procured and built. The EHA may choose a different upper threshold for the replacement framework to reflect inflation and the types of scheme that the Alliance members wish to deliver but this is not certain at this stage.

It is considered that Lot 2 covering schemes between £1m and £20m would be most appropriate given the estimated value of the Rapid Transit System interventions. This is a viable delivery route which should be investigated further once the phasing's and timings associated with implementation of the RTS is better understood

Highways England's New Routes to Market Framework

Highways England has recently procured its replacement of the Collaborative Delivery Framework under NEC4 standard terms, to deliver the Roads Investment Strategy between 2018 and 2024. Costain, Galliford Try and Skanska have won places on the £2.8bn East of England lot to deliver schemes in excess of £100m, with John Graham Construction and VolkerFitzpatrick on the £350m lot to deliver smaller schemes.

Highways England have informed us that we would have flexibility in the procurement exercise in terms of tender specification and evaluation. However, we would be subject to a fixed market, with contractors procured on the basis of delivering schemes to Highways England standards which could add extra cost and over-engineering to an ECC led

project. For this reason, it is not recommended for the link road or RTS at this stage.

The National Civil Engineering and Infrastructure Framework - Scape

Balfour Beatty is the only available contractor on this framework. The contract operates on a negotiated target cost basis. The contractor does a 6-week feasibility study to assess the project, before developing a design and a negotiated price. As there is no separate tender period this does have the advantage of saving potentially 3 months, but it adds substantial risk in terms of price certainty and risk transfer. For this reason, it is not recommended for the link road or RTS at this stage.

Public Procurement Regulations / OJEU Options

Given the value of the works and the comments made above in relation to suitable Frameworks the current procurement strategy is to use an appropriate OJEU route. The Open Procedure option has been ruled out due to the high number of tenders that could be expected and the particular skills and experience that may be required of potential bidders. The Competitive Dialogue option is considered more appropriate for complex contracts where contracting authorities are not objectively able to define the technical means capable of satisfying their needs or objectives. This does not apply here.

“Restricted” and “Competitive Negotiation” options remain open to ECC and suitable for the link road. The Restricted and Accelerated Restricted procedure is a two-stage process. The first stage allows the contracting authority to set the minimum criteria relating to technical, economic and financial capabilities that the potential bidders have to satisfy. Following evaluation of the first stage responses, a minimum of five bidders (unless fewer qualify) are invited to tender in the second stage. This process is typically used to appoint consultants or contractors on traditionally procured projects. The Accelerated Procedure is identical except that the timescales for each stage are reduced. This can only be used where the authority can demonstrate that this is needed as a matter of urgency.

The Competitive Negotiation option can be used where minimum requirements are able to be specified but negotiations with bidders may be needed to improve the initial tenders. This is particularly relevant where the contract includes design or innovative solutions and where the technical specifications cannot be established with sufficient precision.

Within this procedure, bidders initially submit tenders based on the information issued by the contracting authority. The contracting authority is then able to review the tenders it has received and negotiate with the bidders, following which the tenders will be resubmitted. This procedure may therefore be useful where the requirements are well developed initially, and full tender documents can be produced but there may be advantage in retaining the ability to hold negotiations if there are certain aspects which bidders raise.

ECC’s preferred option at this stage is for both the link road and RTS is a Restricted or Competitive Negotiation.

The following delivery procedures are available under these OJEU options:

- Design and Build (D&B) – preferred for the A120-A133 Link Road
- Early Contractor Involvement (ECI) – preferred for the RTS
- traditional two-stage procurement (design and construction as separate packages)

Design and Build (D&B)

D&B provides early price certainty and accelerates scheme delivery where the project is relatively low risk. There may be a cost premium to pay for the transfer of the full design risk to the contractor at this stage of the project.

The “illustrative” design for the link road would provide sufficient information to the contractor to provide reasonable cost certainty, stimulate innovation and ensure thinking on construction phasing happens at the optimum stage of the project. Developing a design to 50 to 60% before going to D&B would also get the scheme to market quicker. This approach is considered of interest to many contractors.

The challenge with this approach is to avoid the temptation of developing a design that is too detailed (beyond 70%). Where this has happened previously, a prudent contractor has priced for the need to revisit the design (and therefore ECC pay for that element of the design detail twice) or not enough, resulting in issues only being uncovered on site. In such situations, contractors have often sought to make claims, even if it is now “their” design.

Early Contractor Involvement (ECI)

This option involves tendering the preliminary design to an ECI contractor. They then develop a design, progress planning consents and provide a target cost. This approach would get their buy-in to the way that the scheme would be constructed early and enable this detail to be provided during the planning application. This approach is often useful where scheme promoters need to provide extra reassurance to community and environmental stakeholders that the scheme can and will be built in a way that it is sensitive to local concerns. This is especially useful where the scheme is complex. The downside of this approach from our experience is that this increases the risk of price escalation and does not provide the promoter with an easy alternative to deliver the scheme with a different contractor. It is concluded that the link road does not warrant the specialist expertise of an ECI contractor, however the RTS could benefit from ECI given its relative complexity and the constrained nature of some of the locations around Colchester. RTS would also benefit from early technical input which could help minimize disruption and optimize delivery and result in a scheme which is built in a way that it is sensitive to local concerns.

Traditional Procurement Method

This option would involve Essex Highways or another contracted organisation developing a preliminary and then detail design with appropriate construction management advice

to aid constructability. A contractor would then be procured on the basis of this design to construct the works. While this option provides a level of cost certainty the client retains full design risk which could result in an increase to outturn costs. For this reason, it is not preferred for either the link road or RTS.

Current Preferred Strategy for the A120-A133 Link Road:

ECC's preferred option to secure the services of a Contractor at this stage is Restricted or Competitive Negotiation via OJEU. Design and Build is currently considered the most appropriate delivery mechanism. The procurement strategy will be reviewed periodically through the design development of the link road.

Current Preferred Strategy for the Rapid Transit System Interventions:

ECC's preferred option to secure the services of a Contractor at this stage is Restricted or Competitive Negotiation via OJEU. Design and Build is currently considered the most appropriate delivery mechanism, however an alternative option could be ECI which may benefit from having early input from a Contractor. The procurement strategy will be reviewed periodically through the design development of the RTS interventions.

Please outline the procurement strategy to ensure build out of the wider scheme, including engagement with development partners to date, including use of SPVs, other joint ventures and legal proposals to bring forward homes

The delivery of this ambitious vision of the Garden Communities across North Essex, of which the Tendring Colchester Borders Garden Community site plays a key part, will require a positive and active approach by both the public and private sectors. The approach outlined below covers both delivery through private developers as well as potential for delivery through other forms of public/private sector joint ventures, or via a public sector led delivery model such as a Locally-Led Development Corporation which could also include a joint venture approach. The market has demonstrated through active promotion of the site that whichever of these options is the chosen route to delivery, the housing is ultimately deliverable, with the public sector willing to take an interventionist role if necessary especially during economic downturns. The approach clearly relies upon the sites coming forward through the shared Section 1 Local Plans, with such plans being found sound and adopted by the Councils.

Notably, and different from standard development approaches, The Councils have taken a proactive, leadership approach to delivery of the 3 Garden Communities planned across the North Essex area. The approach reflects an anticipated need for strong public-sector involvement and direction, but with flexibility to integrate appropriate partnership approaches and sharing of project risk and reward where these may be more appropriate and/or could deliver on the programme objectives.

A dedicated and resourced delivery structure has been put in place by the Councils to provide a coordinated and structured mechanism to take the proposals forward. This delivery structure was approved by The Councils' respective Cabinets and Council Committees in November and December 2016 with North Essex Garden Communities Ltd (NEGC) formally established on 30th January 2017 (Company No: 10319743). In addition, site specific 'Local Delivery Vehicles' (LDVs) were also created on 30th January 2017 to potentially act as separate operating companies tasked with the delivery of each individual Garden Community.

NEGC was established as a wholly owned public entity between the Councils to act as the body to guide the proposed Garden Communities through the design process and into implementation, providing ultimate oversight and scrutiny of the delivery. It operates in a commercial way, while maintaining high standards of integrity and social purpose. As a private limited company, it is controlled by Board Members who have a duty to promote the success of the company for the benefit of its shareholders as a whole. The

Shareholders are Essex County Council (Essex), Braintree District Council (Braintree), Colchester Borough Council (Colchester) and Tendring District Council (Tendring) (together referred to as “The Councils”) with each holding a 25% shareholding. Directors of NEGC have been appointed by each of the respective Councils and are senior political representatives (Leaders or equivalent). Cllr John Spence OBE currently acts as the Chairman of the NEGC Board.

In accordance with approved Cabinet decisions across the 4 Councils, ‘in principle’ commitment has been secured to consider a direct role with project funding and delivery. Subsequent business cases would be required to determine a detailed set of funding requirements; including the scale of funding required, timescales, risks, security and repayment profiles. This further work would need to be presented back to the Councils and include full consideration of the most appropriate future funding mix including opportunities for leveraging in private sector and other sources of funding.

The Councils with NEGC Ltd have put in place a dedicated team to deliver with commercial, planning, communications and delivery skills. A technical consultancy team is also in place to support NEGC Ltd including legal, corporate finance, transport, property and viability advisors and master-planners.

Delivery is likely to require a ‘strategic master developer’ approach to implement strategic infrastructure and enable developers to take serviced land and deliver new housing. This would enable the above landowners/promoters to bring forward their own sites in conjunction with a ‘strategic master developer’ approach. Notwithstanding the agreement to a formal mechanism and structure, the anticipated approach to delivery is based upon the following broad sequence.

1. Work with existing landowners/promoters to secure appropriate controls and/or take ownership of the land through whatever means necessary (via negotiation or compulsory purchase);
2. Bring forward proposals in line with an approved masterplan and secure necessary approvals);
3. Undertake pre-development and facilitating works;
4. Deliver infrastructure works to meet requirements of the masterplan, planning application/s and conditions;
5. Create serviced development plots;
6. Market the development sites and seek the best price achievable in the open market, consistent with the achievement of desired design and quality standards;
7. Arrange development agreements including licenses with the successful bidders;
8. Supervise the construction to ensure standards are achieved;
9. Distribute the receipts in accordance with the terms of and associated land, funding or delivery partner agreements; and
10. Ensure that public facilities and assets are adopted and/or transferred to appropriate bodies to secure their long-term stewardship.

For the delivery structure to succeed, deliver on the vision and realise the potential, there will need to be close working between The Councils, Government, landowners, developers, funding & delivery partners as well as local communities.

As part of this approach, discussions and negotiations have been ongoing with key landowners and site promoters for several years. Good working relationships exist with all key stakeholders, setting strong foundations to agree and implement an appropriate delivery structure as the sites make progress through the plan making stage.

The majority of land for the wider housing scheme is controlled by 2 main landowners (Gooch & Hunter), with most under option to Mersea Homes who have been actively promoting the land for development through the planning system for many years.

Mersea Homes are a local family run housebuilder active on multiple sites across the local area. Whilst they are primarily local housebuilders, they are active on a number of strategic sites, including implementing a 1,600-unit scheme in North Colchester (Chesterwell), and at Ipswich Garden Suburb (with circa 800 homes recently approved out of a total strategic site of 3,500 units).

Mersea Homes are committed to the delivery of the New Garden Community at Tendring Colchester Borders and have been engaging with the Councils over the past few years to explore potential options, including joint venture options, the Council led delivery proposals, direct delivery and funding roles. Such discussion and negotiations are continuing via a structured dialogue, led by NEGC with wider legal and corporate financing support.

The Councils have jointly worked to build working relationships with the relevant landowners and promoters of the sites with a view to securing a controlling interest in the land. Commercial negotiations for the land deals is ongoing; and it is anticipated that land agreements will be entered into between the relevant landowners / developers and the delivery structure.

There is however no obligation for either party to accept a deal on any terms, and any deals will need to be both reasonable and reflective of the nature of the project, including its infrastructure and placemaking requirements, which will be informed by the conclusion of the Local Plan Examination in Public and confirmation on specific policy requirements and wording.

The emphasis to date has been on exploring the acquisition of land voluntarily. It remains the preferred option that land deals will be entered into. Discussions have been ongoing for some time, and as a result the Board of NEGC Ltd (and subsequent Cabinets across each of the Councils involved) have agreed that should negotiations not proceed satisfactorily, a CPO approach should be initiated either by the relevant local Authorities and / or by a future Development Corporation. With regards the latter, the Neighbourhood & Planning Act has recently changed the climate and timetable for the possible use of compulsory purchase powers. The establishment of a Development Corporation would establish a clear and strong purpose and support the case for a CPO. However, CPO remains a last resort, and negotiations are continuing in a positive manner, with the powers only ever being used as a fallback option. That does not, however, prevent authorities starting the process of preparing for a CPO alongside negotiations.

Whilst NEGC Ltd has been established for circa two years and a structure put in place which could form the basis of a delivery structure, negotiations with landowners and

promoters to date have not concluded on a defined fixed mechanism. It has also been recognised that any potential delivery structure would need to adapt to local circumstances and adopt the most appropriate structure to deliver on the vision and objectives.

Over recent years there has also been an evolution in the potential the tools available to the Councils to take a direct lead on delivery of such projects. As such, the Councils have agreed that NEGC should explore the establishment of a locally-led new town style 'Development Corporation' as enabled by the Neighbourhood Planning Act 2017 and the establishment of the formal Regulations in 2018. The Councils consider that a locally-led Development Corporation could have great potential to provide a strong and focused body responsible for delivery with wide ranging powers in terms of land acquisition, funding and planning. Such an approach could also enable a flexible route to consider partnership working with the private sector, either acting within or alongside the structure on specific delivery components but backed and supported by stronger in-house powers.

In terms of the short-term approach to evolve the delivery mechanism and ensure housing can come forward to programme, the Councils via NEGC will continue to take a lead role with preparing for delivery, with responsibility for bringing the Garden Community projects forward through further design and planning stages, and into implementation. The structure would facilitate the delivery of infrastructure and disposal of serviced plots to house builders/commercial developers potentially in combination with the public sector led delivery structure who would be responsible for physical building construction costs and property sales, within approved design parameters. The approach does not preclude the opportunity for other public and private sector stakeholders to directly deliver development should they wish; however, it does enable the Councils and the delivery project vehicles to manage their risks.

The precise procurement approach will need to adapt and fit to the delivery model. For example, to accord with necessary rules and regulations in awarding and delivering contracts between the public and private sectors. It is anticipated that should a public body be directly involved in the delivery of the wider scheme then the approach would align with the relevant statutory framework governing how such a body can operate. This may require the body to adopt the approach as per the Council/s concerned and/or as may be set out within separate formal regulations. Such approaches have been successfully deployed locally for example by the Councils involvement in and implementation of development activity via local housing companies.

Please attach any supporting evidence from contractors / developers which support your proposal

Filename	Description
Mersea Homes HIF support Letter 20.3.19.pdf	Letter of Support Mersea Homes
EX879395.pdf	Land Register 1
Official Copy (Register) - EX879393.pdf	Land Register 2
Official Copy (Register) - EX830899.pdf	Land Register 3

Implementation timescales

Please provide an overview of the implementation timescales for your procurement strategy

A120-A133 Link Road:

Dates below are derived from the high-level delivery programme supporting this bid.

- Finalise Procurement Strategy and Contract Management Approach – Restricted or Competitive Negotiation OJEU route; NEC3 or 4 Options A or C – 2020
- Finalise Illustrative Design – Q4 2020
- Finalise NEC Engineering and Construction Contract documents including relevant z clauses – Q1 2021
- Issue Selection Questionnaire – Q1 2021
- Evaluate Selection Questionnaire and Approve Contractors to be invited to Tender (ITT) – Q2 2021
- 4-month Tender period – Q2 to Q3 2021
- 2-month Tender evaluation – Q4 2021
- Award – Q2 2022.

Rapid Transit System

- Finalise Procurement Strategy and Contract Management Approach – Restricted or Competitive Negotiation OJEU route; NEC3 or 4 Options A or C – 2020
- Finalise Illustrative Design – Q4 2020
- Finalise NEC Engineering and Construction Contract documents including relevant z clauses – Q1 2021
- Issue Selection Questionnaire – Q1 2021
- Evaluate Selection Questionnaire and Approve Contractors to be invited to Tender (ITT) – Q2 2021
- 4-month Tender period – Q2 to Q3 2021
- 2-month Tender evaluation – Q4 2021
- Award – Q2 2022

(Note that sections of RTS might delivered through Essex CC Highways Partnership Contract. In addition, there are sub workstreams for route, terminals and park and

choose infrastructure.)

Please provide an overview of your phasing and implementation strategy for the wider scheme

The approach to housing implementation will align with and follow the route to securing planning approval for the Garden Community alongside definition of the most appropriate delivery model.

In relation to planning, the Garden Community site forms a key part of the shared Section 1 Local Plans for Colchester and Tendring. Following initial Examination in Public sessions in 2018, the Councils and scheme promoters are drawing together additional evidence to enable the Examination to be re-open in Autumn 2019, to enable the Inspector to consider and report back to enable plan adoption in 2020.

Master-planners have been procured by the Councils to take forward conceptual design work to evolve into a more detailed masterplan for the site working with the main scheme promoters. Work has continued to evolve proposals to greater detail than initial Concept Frameworks prepared in 2016. Further master planning will form the basis of the preparation of a site-specific Development Plan Document (DPD) to be produced (Preferred Option) by the end of 2020. This will be consulted on, finalised into a submission draft for examination late 2021/early 2022 and adopted to finalise the policy position by Summer 2022.

In parallel to the policy evolution, the master-planning will generate material for potential submission alongside as outline planning application/s for the wider housing scheme which will be able to be approved shortly after adoption of the DPD. This then enables Reserved Matters applications for specific infrastructure and initial phases of housing and other development on the Garden Community site, albeit this could also be approached as a hybrid with site wide outline and first phase detail applications to allow for consideration in tandem. It is anticipated that planning approvals would be in place to commence wider on-site infrastructure and enabling works in 2022/23, with housing activity by end 2022/early 2023, and completions later in 2023.As the Councils working with and through NEGC are evolving an approach to establish a locally led Development

Corporation, this would enable the planning work to be integrated into a site wide Local Development Order which would effectively give permission to the development and would act as a core implementation tool. This could provide a speedier alternative to traditional planning.

Clearly the approach to securing consent for the infrastructure works subject to this bid will need to align with such broader activity, but it is recognised that in order to deliver to the timescales of implementation of such works, certain aspects will need to come forward as separate applications/consents. These will occur in parallel to the wider evolution of policy and scheme design, with a degree of frontloading to the consideration of the route of the Link Rd and RTS (through the Garden Community site) to define and secure these in a timely manner and enable prompt start on site.

In relation to delivery model, ongoing joint working is occurring with the main scheme promoters to define the most appropriate delivery route to combine the strengths and opportunities collectively provided by the public and private sectors working together.

The main scheme promoters (Mersea Homes) are willing and able to deliver the site and have been proceeding on that basis as part of their approach to land promotion via the local plan process. Negotiations have been ongoing for several years to consider opportunities for a form of public-private partnership approach, and the main promoters are willing to evolve a joint venture potentially within or outside of any formal wider delivery structure such as a development corporation that may be set up. They are mobilized to deliver on the agreement they have with landowners to move forward into implementation, with them (potentially via a separate operating company) being established to lead and act as a strategic master-developer, implement strategic infrastructure and site opening up works, directly delivering elements of the housing (as Mersea Homes) but also partnering and selling serviced land plots to other housebuilders to extend supply and generate wider income from land sales. This is similar to the approach Mersea Homes are successfully implementing at Chesterwell (North Colchester).

In tandem the Councils are advancing work to enable the establishment of a locally led development corporation, to evolve the current structure already in place through NEGC Ltd and site specific LDVs which already exist as wholly public owned private limited companies. This approach includes continuing work to prepare a suitable mandate and outline business case to confirm the extent of powers and functions to be bestowed into a locally led development corporation (work ongoing through 2019/20), to be approved by NEGC Ltd Board and the respective Councils to lead to a submission to Government around formal creation of the body towards the middle of 2020. It is anticipated that designation would be made during the second half of 2020. A range of activity would however be ongoing through NEGC Ltd in terms of gearing up for full operational activity, such as ongoing work with master planning, infrastructure planning, securing long term funding, and wider corporate implementation matters around legal and corporate functionality.

Subject to progress with landowners and scheme promoters work will be ongoing with respect to potential site wide CPO, to enable the Development Corporation to make an Order upon establishment, for subsequent Inquiry and confirmation towards the latter half of 2021. The aim being to have resolved land control issues to enable final approvals and implementation soon after.

Once the scheme is underway it will be implemented through a phased approach to provide strategic infrastructure in line with needs and to open up suitable subsequent phases of development, with ongoing land sales to house-builders/other developers to build up a strong delivery route. This will be undertaken across various entry points to the development to provide a range of distinctive character areas, typologies and housing products with multiple outlets at a small number of key parts of the site to maximise overall build out rates.

Contract management approach

Please provide details of your approach to contract management and any details of any arrangements already in place - this should include charging mechanisms

Due to the infrastructure elements being in the very early stages of design development the exact details in relation to a contract management approach have not yet being defined. However, high-level consideration has been given to the approach which could be taken for each of the infrastructure elements, as defined below:

A120-A133 Link Road

ECC will commission Ringway Jacobs to provide ongoing development of the design to “illustrative” status through the Highways Strategic Transformation (HST) Contract 2012 (Essex CC Highways Partnership Contract). This contract was tendered via the OJEU tender process and its ongoing performance and value for money is managed via the Contract Board.

As noted the preferred procurement route is to tender the A120-A133 Link Road on a Design & Build (D&B) contract through an OJEU Restricted / Competitive Negotiation route using the illustrative design as its basis. Either NEC3 or NEC4 Engineering and Construction Contract options could be used for this contract. The decision on which contract will be used will be subject to ECCs legal and procurement advice at the time. The decision making around the replacement Eastern Highways Alignment Framework 2 by 2020 will provide some useful learning for ECC. It has Board level input into this framework, and this could move to NEC4.

Considering the contract options available under the NEC, it is likely that either Option A (priced lump sum contract with activity schedule) or Option C (target cost contract with activity schedule) would be used. The current preference is for Option C. This enables out-turn financial risks to be shared between the client and the contractor in an agreed proportion, with this used to incentivise the contractor to deliver more efficiently and innovatively to meet the pre-determined KPIs. We have not ruled out Option A at this stage. The downside is that whilst it provides the client with greater cost certainty it can be seen by contractors as too risky – as the risk of carrying out the work at the agreed prices is largely borne by the contractor. This needs careful consideration in the light of prevailing external factors at the time of procurement.

Rapid Transit System

Similar to the link road, ECC will commission Ringway Jacobs to provide ongoing development of the RTS. As noted the preferred procurement route for RTS is an ECI approach, contracted through an OJEU Restricted / Competitive Negotiation route. Either NEC3 or NEC4 Engineering and Construction Contract options could be used for this contract. The decision on which contract will be used will be subject to ECCs legal and procurement advice at the time. It is likely that Option C (target cost contract with activity schedule) would be selected as this approach lends its self to ECI and also incentivises both the Contractor and Employer to work collaboratively to deliver innovatively and efficiently. Contract Management would be dictated by the agreed phasing however the internal Ringway Jacobs team can flex to whichever approach is selected.

Please provide details of the proposed key contractual clauses

A120-A133 Link Road

As noted above, the contract management approach is to use either NEC3 or NEC 4 Option A (Lump Sum) or Option C (Target Cost) to execute the Design and Build contract.

This will incorporate standard clauses, which will be supplemented with appropriate Z-Clauses to ensure compliance with ECC governance, project objectives and outcomes, and other scheme specific nuances (Z-Clauses are additional conditions which cater for the specific needs of an individual project or client). Examples of Z-Clauses could include Key Performance Indicators (KPI), early completion bonuses or specifics in relation to value engineering. In preparing the contract documents we will draw upon contemporary learning of project delivery in Essex and Ringway Jacobs / Jacobs' wider expertise elsewhere in England, including similarly sized D&B road projects.

Rapid Transit System

The approach for the RTS aspects would follow a similar approach to the A120-A133 Link Road (as set out above), however advanced procurement of specialist equipment maybe selected so Clauses would be amended to suit in this respect. This selection of key contractual clauses will be most likely predicated on the desire for financial and programme savings.

Additional information

Please provide details of the proposed key contractual clauses

Previous Project Experience and Track Record of Successful Delivery:

Infrastructure Delivery:
ECC and its integrated Highways and Transportation Team have a track record of successfully developing and delivering major interventions to support high levels of growth. ECC has developed a Major Projects Manual to deliver its capital portfolio of schemes in a robust and repeatable manner. This has enabled ECC to deliver (or is, in the process of delivering) nearly £200m of local transport improvement schemes since 2014 through securing South East Local Enterprise Partnership, DfT, developer and ECC funding. This has enabled the Highways Integrated Contract to grow from £40m in 2012 to £140m in 2017.

ECC has demonstrated strategic and collaborative working with Highways England (HE) to plan for key infrastructure that will unlock further economic growth for Essex, for instance on the M11, the A12 and the A120, with ECC currently progressing plans for the M11 Junction 7a to unlock new substantial housing associated with the Harlow Garden Town. Collaborative working with HE will be particularly important for the A120-A133 Link Road which has a major junction with the A120 Trunk Road and is the responsibility of HE.

ECC also has a strong history of delivering major £100m+ highway schemes in the county. Since 2000 these have included the A120 Braintree-Stansted dual carriageway for HE, the A130 dual carriageway linking Chelmsford and South Essex between the A12, A132 and A127, the A131 Great Leighs Bypass and the A13/A130 Sadlers Farm Improvement for the London 2012 Olympics.

ECC have also been successfully aligned with the HE on the two Major DfT (NPIF) awards in the County linked to Strategic junction improvements on M11 Junction 8 as well as the A120 Millennium Slips in Braintree. ECC 's bid was one of the highest awards in the Country. In delivering across Essex we have also been able to flex the Alliance Contract into adjacent Districts, Unitaries and also adjacent County Councils and have brought best practice from Essex into a number of related Contracts, via Ringway Jacobs, with Buckinghamshire, Cheshire East, Central Beds and TfL

Testament to the hard work and endeavour over a number of years, Essex Highways were successful in securing the Transport Local Authority of the Year 2017 at the National Transport Awards.

On RTS, ECC has created successful park and ride services including in North Colchester and at Chelmsford. This demonstrates its ability negotiate and procure such services. In addition, ECC has worked closely with operators to develop on-demand public transport demonstrations. Through the ECC Essex Highway contract, ECC will be able to draw on specialist bus rapid transit advice

from consultant teams working on significant BRT projects including those in Birmingham, Bristol and Brisbane.

Housing delivery
The establishment of NEGC Ltd has directly involved appointing a team with sufficient commercial and delivery experience to take the programme forward. This was in response to a key known need and a direct recommendation set out in the Kerslake peer review of the approach in 2016. This flagged the need for sufficient skills to be in place to deal with large scale complex projects such as this. As a result, the key appointment of a Managing Director secured a key individual with direct experience of capital investment in large scale infrastructure works (having worked on Heathrow T5 and Gatwick expansion, including implementation of on airport rapid transit service) and the delivery of large scale mixed use developments (having led the promotion and delivery of the Manydown scheme at Basingstoke, including asset management, scheme advancement through planning, and securing a funding and delivery partner. The wider NEGC approach has been to create a small team of commercially minded and experienced in-house resources, supplemented by the best available consultant team (across legal, corporate finance, delivery structures, property & CPO, viability, master-planning, utilities and transport planning). The core team have wide knowledge and experience and demonstrable track record of delivery.

No attachments

Financial Case

What are the total scheme costs?

£2,378,258,756

Will the infrastructure costs be 100% funded through HIF?

No

Please provide a summary of the total infrastructure costs of the project

Description	Type	Cost	HIF Funding
All professional fees, preparation (design and planning) for the A120-A133 Link Road	Preparation costs (design and planning)	£3,788,114	£3,788,114
All professional fees, preparation (design and planning) for the Rapid Transit System Interventions	Preparation costs (design and planning)	£3,247,093	£3,247,093
Construction of A120-A133 Link Road and associated works, including preliminaries and inflation	Infrastructure	£42,090,147	£42,090,147
Construction of Rapid Transit System Interventions and associated works, including preliminaries, anticipated statutory undertakers diversions and inf	Infrastructure	£27,059,112	£15,059,112
Statutory Undertakers Diversions associated with implementation of the A120-A133 Link Road	Infrastructure	£4,080,207	£4,080,207
Part 1 Claims associated with implementation of the A120-A133 Link Road	Other	£640,000	£640,000
Part 1 Claims associated with implementation of the Rapid Transit System Interventions	Other	£290,000	£290,000
Land Acquisition to north of A120 outside the bounds of the Garden Community (associated with implementation of the A120-A133 Link Road)	Land (exc. Sunk costs)	£690,000	£690,000
HIF Bid development	Sunk costs	£400,000	£400,000
Contingency (based on Monte Carlo Risk Analysis)	Contingency	£28,518,866	£28,518,866

Please provide a summary evidencing how you have assumed these costs

A120-A133 Link Road
Construction Estimate:
The construction cost estimate for the link road has been prepared using an estimating technique based on a three-dimensional design which has been prepared. The design which has been developed also makes allowances for typical highways design elements such as carriageway make-up, fencing, earthworks, lighting, signage and road markings and vehicle restraint systems. The rates used are based on a database of highways projects and represent the average price of the lowest tenders. The rates used, reflect construction projects of a similar size and nature and the baseline is assumed to be at 3rd Qtr (Quarter) 2018.

The link road construction estimate also includes inflation from the assumed baseline (3rd Quarter 2018) to 1st Quarter 2023 (assumed mid-point of construction phase). The Building Cost Information Service (BCIS) General Civil Engineering Cost Index has

been used to calculate inflation.
See Att.6.1.4 - Link Road Order of Magnitude Cost Estimate Rev 1

Preparation Costs:
Given the very early stage of development of the link road, an allowance equivalent to 9% of the forecast out-turn construction cost has been assumed for all pre-construction related activities (I.e. design, consultation, planning and procurement).

Statutory Undertakers Diversions:
Gattica Associates Ltd, a specialist in utility relocation and co-ordination, were commissioned to undertake an assessment of the impact the proposed link road would have on exiting Statutory Undertakers equipment, and the likely costs of diversions and protectionary works.

Land and Part 1 Claims:
The Land Compensation Act 1973 – Part 1 Estimates – assesses whether a change in the physical factors (noise, smell, dust, fumes, vibration, artificial lighting and the discharge of solid or liquid substances) as a result of the use of the public works, could affect the market value of surrounding residential properties.

Lambert Smith Hampton (LSH) a leading UK market focused commercial property and real estate consultancy were commissioned to undertake an estimate of the likely Part I Claims liability resulting from implementation of the link road. LSH were of the opinion that approximately 100 residential properties may be able to sustain a Part 1 claim as a result of the physical factors arising out of the use of the link road.

LSH were also commissioned to undertake an assessment of land acquisition costs associated with land required for the link road which is not in the curtilage of the Garden Community.

Rapid Transit System
Construction Estimate:
The construction estimate for the Rapid Transit System has been developed based on typical unit length rates from comparable transit schemes and includes an allowance for statutory undertakers diversions. Likewise, estimates for the Park and Choose infrastructure have been taken from the cost to implement other sites in the locality.
The Rapid Transit System construction estimate also includes inflation from 3rd Quarter 2018 to 1st Quarter 2023 (assumed approximate mid-point of construction phase). The Building Cost Information Service (BCIS) General Civil Engineering Cost Index has been used to calculate inflation.

Preparation Costs:
Given the very early stage of development of the rapid transit elements, an allowance equivalent to 12% of the forecast out-turn construction cost has been assumed for all pre-construction related activities (I.e. design, consultation, planning and procurement).
Land and Part 1 Claims:
LSH were of the opinion that approximately 80 residential properties may be able to sustain a Part 1 claim as a result of the physical factors arising out of the use of the Rapid Transit System.
Given that all of the Rapid Transit System Interventions are either within the curtilage of the Garden Community or within the existing highway boundary, LSH have advised that lands costs should be set to nil.
Other
Sunk Costs:
Sunk costs related to development of the bid, including the initial design and development of both the A120-A133 Link Road and Rapid Transit System interventions have been included.
Contingency:
Contingency specific for the purposes of this bid has been calculated based on the approach set out in the HMT Green Book. A quantified risk register has been produced which includes risks associated with the delivery of the link road and rapid transit system

and a quantitative risk analysis has been carried out using a Monte Carlo Simulation approach (using @RISK). The contingency/risk value which has been included in the infrastructure cost breakdown has been derived from the Monte Carlo assessment, but also includes an allowance for potential risks which are yet to be identified, but which could materialise as the schemes are developed.

No attachments

Can you provide detailed costing for the housing element of the wider project that forms part of your total scheme costs?

Yes

Description	Type	Cost
Housing Build Costs	Construction	£902,262,102
On-Plot Externals	Construction	£135,339,315
Contingency/Risk on construction items at 4% of housing build costs	Contingency	£36,090,484
Fees on construction items at 8.0% of housing build costs	Professional fees	£72,180,968
Sales fees at 3.0% of sale price	Other	£67,617,192
Profit for plot developer at 17% of GDV	Allowance for developer profit	£383,164,086
Site preparation and enabling costs (S106 and CIL)	Infrastructure	£400,562,400
Commercial Build costs	Construction	£99,832,500
Commercial Externals at 4% of Build costs	Construction	£14,974,875
Commercial Contingency/Risk on construction items at 4.0% of construction costs	Contingency	£3,993,300
Fees on commercial construction items at 8.0% of construction costs	Professional fees	£7,986,600
Sales Fees on commercial at 3.0% of sale price	Professional fees	£5,862,421
Developer Profit on commercial at 17.0%	Allowance for developer profit	£33,220,388
Land costs (including hope/expectation)	Land (exc. sunk costs)	£10,980,827
Finance costs on all development costs	Finance costs	£93,387,759

Please provide a summary evidencing how you have assumed these costs

Note that the costs presented in 6.1.7 are based on a scenario with no inflation. This is consistent with the original approach adopted in the viability appraisals developed by Hyas for North East Garden Communities and considered agreed through the Examination in Public process. This is a common approach to the standard viability foapproach for developments, but those over long-time horizons will experience multiple property cycles. The impact of assuming some level of inflation is summarised at the end of this section.

House Building Costs:
A build cost per unit rate of £1,281 per sq m based upon BCIS (blended median new build Housing & Flats). Given a blended average unit size of 94 sq m, the build cost per unit was estimated at £120k.

Commercial Build Costs:
Build cost rates of £804 per sq m for B2/B8 and £759 per sq m for retail/leisure as set out in the Cushman & Wakefield inputs as part of concept development & feasibility work (and included in Hyas Viability work for emerging shared Section 1 Local Plans).

Externals:
Calculated at 15% of building costs, as per guidance in MHCLG's 'Land Values for Policy Appraisal'.

Contingency:
Calculated at 4% of house building costs, as per the mid-point in the contingency range of 3-5% based upon housebuilders adopting such typical contingency rates to new build construction, as advised by Hyas.

Professional Fees:
Calculated at 8% of house building costs, as per guidance in MHCLG's 'Land Values for Policy Appraisal'.

Sales Costs:
Set at 3% of total sales value, as per guidance in MHCLG's 'Land Values for Policy Appraisal'.

Developer Profit:
Set at 17% of GDV, as per guidance in MHCLG's 'Land Values for Policy Appraisal'.

Infrastructure:
Capturing all site preparation, enabling costs and S106 commitments identified for the site from emerging work being done by AECOM, with cost consultancy input from Gleeds, and technical transport consideration by Jacobs and Integrated Transport Planning (ITP). The list of required activities/items encompassed by the infrastructure cost type is outlined below:

• Enabling Works: Site preparation and enabling costs, based on generic cost per residential unit of £14k per unit
• Social Infra: Education, based on generic cost per residential unit of £7.5k per unit
• Social Infra: Community and Health, based on generic cost per residential unit of £1.15k per unit
• Social Infra: Open Spaces, Leisure and Sports, based on generic cost per residential unit of £4.4k per unit
• Social Infra: Environment/Waste (includes noise attenuation and recycling points), based on generic cost per residential unit of £525 per unit
• On-Site Infra: Provision of on-site rapid transit system trunk route, £5m (assuming HIF investment is forthcoming)
• On-Site Infra: New signalised accesses onto A133, £5m (primary access at £2.5m, secondary access at £2.5m)
• On-Site Infra: R1 - A120-A133 Link Road, £0m (assuming HIF investment is forthcoming)
• On-Site Infra: Travel Plan measures, based on generic cost per residential unit of £500 per unit
• On-site Infra: Provision of on-site rapid transit system orbital/branch route, £12.525m
• Off-Site Infra: Connection to primary substation from Grid, £9m
• Off-Site Infra: Potable water 5km trunk mains, waste upgrade & 2.5km connection, £10m
• Off-Site Infra: Gas - upgrades to network, telecoms network, £5m
• Off-Site Infra: Walking/Cycling and Greenways, £5m
• Off-Site Infra: Off-site rapid transit trunk route, £5m (assuming HIF funding is forthcoming)
• Off-sire Infra: Interim Highway Improvements (Including to Greenstead Roundabout), £3m
• Off-site Infra: Bus Service Subsidies and Other Public Transport, £3.7m
• Off-Site Infra: Employment Support, £1k per unit
• Off-Site Infra Open Space Endowments, £2.1k per unit
• Contingency/Risk at 10%, applied to all cost items
• Professional Fees at 8%, applied to all cost items
• Master Developer Profit at 15%, applied to all cost items.

Finance Costs:
Finance costs will be incurred at a rate of 6% (as per MHCLG Guidance in 'Land Values for Policy Appraisal') for all periods of balance deficit.

Inflation Assumptions:
The table attached at 6.1.8a outlines the impact of varying the 'no inflation' assumption that underpins the core development cost data contained in 6.1.7. The following inflation and cost sensitivities were undertaken:
• Nominal Cost inflation estimates:
o including build cost inflation based on the long-term nominal inflation rate of 3.9% per annum for general buildings, based on RICS 'BCIS General Building Cost Index' (June 2018). Applied to building costs.
o including civil engineering cost inflation based on the long-term nominal inflation rate of 3.5% per annum for civil engineering, based on RICS 'BCIS General Building Cost Index' (June 2018). Applied to infrastructure costs.
o Including land value appreciation, house price growth and commercial rent growth at 7.2% per annum. This value approximates the nominal growth in house prices in Tendring and Colchester based on the UK House Price Index for the last twenty years. It is also in line with the recommended value suggested in the DCLG Appraisal Guide. Used to calculate developer profit and sales costs.
• Real Cost inflation estimates: through application of GDP deflator to nominal cost estimates

The analysis in attachment 6.1.8a demonstrates that development costs in nominal and real terms could be significantly greater than under a no inflation scenario. This information is underpinned by analysis contained in the financial cashflow models provided in Attachment 6.4.1a – Financial Cashflow Models.

Filename	Description
Att Finance TCBCG 6.1.8a.docx	Analysis of impact of no inflation assumption

Please provide a detailed cost plan for the scheme proposed to be fully or part funded by HIF.

Filename	Description
6.1.9 - TCBGC Cost Plan.xlsx	TCBCG Cost Plan

Please provide detail on how the land cost included in your scheme costs has been arrived at and the basis of this assumption (if you have included these costs in either your infrastructure or housing costs)

Land costs related to infrastructure

Initial land estimates for the infrastructure schemes – Link Road and Rapid Transit System (RTS) – have been provided by Lambert Smith Hampton (LSH), based on preliminary land take estimates. Their report is contained in 6.1.11.
For the Link Road, based on land areas alone, LHS have estimated the total land cost to be £690,000. For the RTS, LSH have estimated the total land cost to be £0 as either in public sector ownership or on the site of the new garden community.

Land costs related to housing
The viability analysis undertaken to date is predicated on land acquisition costs at the rate of agricultural land value. For the south-east, this is estimated at £25,837 per ha (2019 prices), pivoting from MHCLG's benchmark agricultural land value for the South East Local Enterprise Partnership area (£22,500 per ha in 2017 prices, inflated by 7.2% per annum using UK House Price Index data for Colchester/Tendring). This land cost therefore excludes any hope or expectation value from the perspective of land owners.

Under a no inflation scenario, the viability assessment suggests the development achieves a surplus when land is purchased at agricultural land values. This is based on the assumption that land is purchased one year in advance of incurring build costs and two years in advance of accruing capitalised values. In these circumstances, two sensitivity tests have been undertaken to ascertain the

scale of land costs (per ha) that could be incurred before the development achieves a net neutral viability position (i.e. neither surplus or deficit):

• Based on the profile of land purchase as outlined above (i.e. land is purchased one year in advance of incurring build costs and two years in advance of accruing capitalised values), land acquisition costs can increase to £218,000 per ha.

• Based on a profile of land purchase upfront (i.e. in 2020), land acquisitions costs can be increased to £97,000 per ha.

Please attach any evidence to support how the land cost has been assumed

Filename	Description
6.1.11a - A120-A133 Link Road - Part 1 Claims Report - LSH.pdf	A120 A133 Link Road Part 1 claims report LSH
6.1.11b - Rapid Transit System - Part 1 Claims Report - LSH.pdf	Rapid Transit System Part 1 Claims LSH
6.1.11c - Essex Garden Communities - Land Acquisition Costs Report.pdf	Essex Garden Communities - Land Acquisition Cost Report

Funding and Financing Sources

Have you applied for or received, other public funding or financing for the scheme?

No

What are the overall funding sources for the infrastructure scheme?

Description	Source	Total amount	Amount secured	Amount to secure	18/19	19/20	20/21	21/22	22/23	23/24	Future years
	HIF (this bid)	£98,803,539	£0	£98,803,539	£0	£803,539	£2,000,000	£10,000,000	£33,000,000	£53,000,000	£0
Section 106	S.106	£12,000,000	£2,000,000	£10,000,000	£0	£0	£1,000,000	£1,000,000	£3,000,000	£7,000,000	£0

What is the proposed funding and financing strategy for the infrastructure scheme? If funding sources have not been secured you should also provide commentary of how this is expected to be secured and progress against this - please reference the above table in your answer

To ensure that the infrastructure scheme is fully funded, our HIF ask includes a contingency that has been calculated based on the approach set out in the HMT Green Book. A quantified risk register has been produced which includes risks associated with the delivery of the link road and rapid transit system and a quantitative risk analysis has been carried out using a Monte Carlo Simulation approach (using @RISK). The contingency/risk value which has been included in the infrastructure cost breakdown has been derived from the Monte Carlo assessment, but also includes an allowance for potential risks which are yet to be identified, but which could materialise as the schemes are developed.

From this approach contingency of 35% was agreed for the purposes of this bid; this was considered commensurate with the specific nature of the infrastructure, the stage of design that had been reached and matched experience of allowances for potential cost over-runs incurred on other schemes delivered by ECC.

A contribution is expected from the site developers towards the provision of the Link Road (accesses only) and RTS infrastructure and would be secured alongside the overall agreement that will be put in place to deliver all other infrastructure (schools, open space, leisure, community facilities, affordable housing, etc). The nature of such an agreement will relate closely to the delivery approach being applied.

Should the project advance under a traditional approach as per an outline planning application/s, then it is anticipated that a S106 Agreement would be secured. As the project is not at such a stage in the planning process, detailed arrangements are not in place and there is flexibility as to how and when such an agreement may be finalised. It is understood that one of the following mechanisms could be adopted:

• S106 monies upfront to align with the timing of delivery. Under such a situation it would be anticipated that overall scheme viability would need to be considered and potentially developer contributions to other infrastructure/policy requirements flexed to accommodate such an early payment;

• To ease cashflow, S106 monies could accrue on a rolling '£ per unit' basis as housing units are completed. This would require one of the public sector stakeholders to put up the required capital at the point of need, to be repaid overtime. This would effectively take the form of a loan facility to be repaid as development is implemented;

• Similar to the above, S106 monies could accrue at defined thresholds (i.e. after x number of housing units).

An alternative approach could be to establish a local CIL or Strategic Infrastructure Tariff which could also align with some form of revolving local infrastructure fund, with some pump priming to address the upfront capital need and longer-term payback through receipts generated by implementing development on the site. Initial considerations by the Councils indicate that some form of Levy could provide a suitable mechanism to secure wider contributions to the implementation of the area wide RTS (i.e. a wider system for broader benefit across Colchester and beyond, linking in to other Garden Communities).

A further alternative would relate to whether the Councils move ahead with a locally led development corporation structure (or equivalent), or some form of partnership approach between the public and private sectors. Under such scenarios it may be that the delivery body, potentially wholly Council owned, provides the additional capital as part of its overall approach to scheme and

infrastructure delivery. Such an approach may negate the need for any form of S106 or repayment mechanism, as the funding would form part of the overall investment approach to the delivery of the Garden Community alongside the HIF investment, and longer-term value capture/recycling approach to receipts.

No attachments

What are the overall funding sources for the housing scheme (excluding this bid)?

Description	Source	Total amount	Amount secured	Amount to secure	18/19	19/20	20/21	21/22	22/23	23/24	Future years
Private Sector (Developer)	Private Sector (Developer)	£2,174,067,459	£0	£2,174,067,459	£0	£0	£9,812,633	£13,275,171	£34,010,169	£42,755,737	£2,074,213,749
Private Sector Debt	Private Sector (Debt)	£93,387,758	£0	£93,387,758	£0	£0	£0	£588,758	£1,420,594	£3,546,438	£87,831,968

What is the proposed funding and financing strategy for the housing scheme? If funding sources have not been secured you should also provide commentary of how this is expected to be secured and progress against this - please reference the above table in your answer

As set out in this bid, the housing scheme is currently being promoted by the private sector through the Local Plan/s. As such, in the absence of a more proactive role of the public sector, the project would be led and funded directly by the private sector through traditional routes of development finance and a blend of equity and investment products aligned to the business needs and model being deployed by the lead promoter. Mersea Homes would therefore be expected to raise funding from the market to initiate work on strategic infrastructure to take the site forward into delivery.

However, given the overall scope, scale and timescales involved with a site of this magnitude, it is anticipated that some further dedicated structure would need to be put in place by the developers which could then act directly as a ‘strategic master developer’. Mersea Homes are playing such a role with the Chesterwell scheme in north Colchester that is currently being delivered (1,600 units). Mersea Homes could do this for the Tendring Colchester Border site on their own or they may seek to either pass the site on to a suitable other body or bring in some form of strategic partner/funder to work with them to deliver and fund the strategic works. Such an approach would enable Mersea Homes to maintain a key role in directly investing in housing delivery, acting as a traditional housebuilder to take plots on an ongoing basis, construct and dispose them to the market. Given the scale of the site, they would operate alongside other housebuilders (potentially 5-6 active outlets at any one time) to enable multiple products to be made available to the market, and to ensure a suitable build-out rate to enable a sufficient income stream to come forward to repay debt or related expectations on strategic infrastructure cost outlays. There are various market opportunities to secure such a delivery and funding partner as per other models and entities involved in many large-scale sites in the South East and London.

Notwithstanding how Mersea Homes decide to proceed, the scheme will need a structured approach and strong public sector involvement to ensure it comes forward to meet the required timescale, to the quality required by policy and to ensure delivery of necessary infrastructure. Therefore, alongside the private sector led model, the Councils have been considering the full implications of taking a more proactive and direct role in scheme delivery. NEGC Ltd has been leading the Councils consideration of their direct role in scheme delivery, including the potential scope and scale of finance required to deliver a locally led delivery model.

The Councils have therefore, via NEGC, initiated work to understand and set out future needs to move forward and get delivery ready, in particular across the following areas:

- Project resources/delivery team
- Legal support
- Corporate financing & delivery support
- Planning (master planning and evidence gathering)
- Community engagement and communications

In terms of the approach to funding, this will be closely related to scheme progress and changes in risk. Should the Inspector find the shared Section 1 Local Plans sound enabling them to be formally adopted, this will provide an important milestone in providing greater certainty that the garden community programme can proceed. Until this point, funding partners will treat the opportunity with an appropriate level of risk. After this point the risk profile will reduce and be further influenced by related key milestones such as the approval of infrastructure funding commitments (such as per this bid), confirmation on the delivery model and associated

powers (for example creation of a locally led Development Corporation), and progress with Compulsory Purchase Order (to ensure creation of the asset). Funding providers and the Councils will be monitoring the categorisation of risk and market attractiveness of the proposition as the project moves between each milestone.
The approval of Section 1 of the Local Plan/s is likely to be a pre-requisite for establishment of a suitable delivery model, including the level of agreement between the current scheme promoters/developers and the public sector and overall approach to longer term funding for the delivery of capital investment to a broader time horizon.
NEGC Ltd has prepared financial models to consider revenue and capital implications going forward and therefore understand the scale of funding needed over the necessary timescales. Currently there are two parts or elements of the funding position for NEGC over the immediate period.
For the initial short-term period, the approach is being funded by grant funding from the Councils, Government and key partners. This is anticipated to continue and is set out in the NEGC Business Plan for the timescale up until reaching the milestone of the receipt of the Inspectors letter/report or adoption of the Local Plan/s.
NEGC have initiated soft market testing to explore medium term financing arrangements for the anticipated levels of project expenditure and current position on risk. These are seeking to explore a move away from a reliance on Council and Government grant funding given the amount already provided and desire to move the project to gear up towards delivery phase.

The soft market testing is exploring both the appetite and potential terms likely to be associated with an appropriate medium-term finance product. Such discussions have been positive with market interest in the proposal albeit at present indicative only and not formalised by relevant parties. The position appears clear that based upon the current scheme parameters including the proposed approach to delivery (with a strong public sector role) there is strong appetite from the market to get involved.

At the point that Section 1 of the Local Plan/s are adopted the risk level would decrease as the likelihood of getting planning permission increases. At the point that the DPDs/LDO/OPAs are in place, it is considered that the level of risk will be low (especially in the context of a Development Corporation to provide a suitable corporate structure, governance and clarity on planning process, and importantly control of an asset base). At that point there would be less need (depending on size/complexity of proposition) for specific support or a guarantee to be given to funders by either Government and/or the Councils.

The intention would be to refinance and pay off the medium-term finance facility from 2022/23 onwards given that at that point in time it is likely that a suitable delivery model (potentially a locally led Development Corporation) would be fully operational, and that agreements to the secure the land (either via negotiation or CPO) would have been finalised and implemented.

From then on, the project would have entered a more structured delivery phase to include capital investment in the acquisition of land and the delivery of strategic infrastructure to prepare serviced plots for disposal to the market. At that point a longer-term funding facility would be in place, again considering the options for Government and/or private market funding or partnering with a suitable delivery body who would be able to bring suitable finance into the project.

Options are still open here in terms of the most appropriate approach and delivery structure. It could be that the delivery model becomes the strategic master developer, either directly as part of the core development corporation structure, or as a separate operating company within or outside of a development corporation. Alternatively, a strategic partner or transfer of land/asset base may be considered, including options similar to those in use by the DIO or other Councils that have secured delivery partners to help bring forward land under their control for strategic development. This could move funding requirements and commitments away from the public sector entity, albeit would involve a different balance being taken on risk and reward. Further work will be ongoing from 2019/20 to take the proposals more formally to the market to consider the optimum route forward, working closely with Government to test and evolve options.

No attachments

Gross Development Value

How much is the assumed Gross Development Value (GDV) for the scheme?

£2,449,320,438

Please provide a breakdown of the assumed GDV of the scheme in relation to the below:

Private sale	£1,869,353,640
Rent income	£192,276,374
Affordable sales income	£192,276,374
Commercial income	£86,033,827
Other	£109,380,223

Please provide a summary evidencing how you have assumed the GDV subject to this bid

Note that the GDV presented in 6.3.2 is based on a scenario with no inflation. This is consistent with the approach adopted in the original viability appraisals developed and being considered through the Examination in Public process. The impact of assuming some level of inflation is summarised at the end of this section.

The GDV estimates outlined above were developed in conjunction with advice from independent property consultant Lambert Smith Hampton and wider information and advice such as that provided by Cushman & Wakefield. The key assumptions utilised in the derivation of the GDV estimates are outlined below.

Development Quantum

The quantum of residential and commercial development anticipated at the site is:
• 7,493 housing units (based upon latest concept development which will be expected to change on an ongoing basis as masterplanning proceeds)
• 0 sq m of B1 commercial floorspace (gross internal area) - as a working assumption for the purposes of the Economic & Financial sections of this Business Case. There will be B1 space, but assumed as cost/value neutral.
• 68,000 sq m of B2/B8 commercial floorspace (gross internal area)
• 59,500 sq m of retail/leisure commercial floorspace (gross internal area)

Note that for commercial development, the Net Internal Area (NIA) estimates are derived from Gross Internal Area (GIA) estimates (see table below). GIA was converted to NIA using a factor of 20% across all commercial uses except warehousing/storage, where a factor of 3% was deemed more appropriate.

Residential Tenure Mix and Commercial Development Type Split

The site will deliver affordable housing provision in line with the local planning authority targets (i.e. 30% affordable units). The split of affordable housing between shared ownership and affordable rent reflects a 40%/60% split between tenure types across all sites:
• Total private housing units: 5,245
• Total affordable housing units: 2,248; of which,
o Affordable rent units: 1,349
o Shared ownership units: 899

The commercial development type mix for the non-residential component of the development schemes is outlined in the table below, which demonstrates a mix of commercial development types, including B1, B2/B8, retail and leisure. (See Attachment 6.3.3a)

Residential Capital Values

Residential capital values were valued at a base rate of £3,564 per sq m. Adjustments of 25% and 50% were applied to shared ownership and affordable rent properties respectively, whilst private rents were valued at the full capital value rate. Based on unit size estimates of 100 sq m per private unit and 80 sq m per affordable unit, the average house value by tenure was estimated at:
• Private Sale: £356,400;
• Affordable Rent: £142,560;
• Shared Ownership: £213,840.

Commercial Rental Values

Commercial rental values vary according to type of commercial development, as outlined below:
• B1/Business Park/Generic Employment Land: n/a
• B2: £86 per sq m per annum
• B8: £165.5 per sq m per annum

Gross Development Values

For residential components of the development scheme, the tenure-specific capital values outlined above were applied to the housing mix also outlined above, to generate GDV as per the table at Att: 6.3.3b.
For commercial development, the GDVs were estimated by converting rental returns to capital values using net yield rates, as outlined in the table at Att: 6.3.3c.

Inflation Assumptions:

The table below outlines the impact of varying the 'no inflation' assumption that underpins the core development cost data contained in 6.3.2. The following inflation and cost sensitivities were undertaken:
• Nominal Cost inflation estimates:
o Including land value appreciation, house price growth and commercial rent growth at 7.2% per annum. This value approximates the nominal growth in house prices in Tendring and Colchester based on the UK House Price Index for the last twenty years. It is also in line with the recommended value suggested in the DCLG Appraisal Guide. Applied to residential and commercial values
• Real Cost inflation estimates: through application of GDP deflator to nominal cost estimates
The analysis demonstrates that GDV in nominal and real terms could be significantly greater than under a no inflation scenario. (see Attachment 6.3.3d). This information is underpinned by analysis contained in the financial cashflow models provided in Attachment 6.4.1a – Financial Cashflow Models.

Filename	Description
Att Finance TCBCG 6.1.8a.docx	Attachments for section 6.3.3 Please provide a summary evidencing how you have assumed the GDV

Please provide a cashflow for both the infrastructure and the overall development or housing scheme (if available). Please provide details on any growth and inflation assumptions made

Filename	Description
Finance Model and Cash Flow_Final_ALL_CASHFLOWS.xlsx	TCBCG Cashflow Infrastructure and Housing

Recovery

Do you aim to recover any of the funding (to be retained locally)?

Yes

Please provide assumed profile of recovery

Up to 2020	£0
2020-2025	£0
2025-2030	£21,132,511
2030-2035	£0
Future years	£109,668,007

How will the funding be recovered?

Based on the financial model developed for this HIF bid, it is expected that the recovery and recycling of the HIF funding is achievable, with the profile depending largely on the growth in future housing prices and the mechanism adopted. The recovery profile outlined in this section above represents a conservative approach to recovery. Note that depending on the actual rates of land value appreciation and the details of the recovery agreements, HIF funding could be recovered sooner than this (see Att. 6.6.1).

There is a sequence for a potential recovery/recycling process for the project that creates an overall threshold :
1. Section 1 of the Local Plan(s) adopted by the Local Planning Authorities (LPAs)
2. DPDs for the project adopted by the LPAs
3. Planning approvals and viability assessments of the project to determine the appropriate amount of planning obligations
4. Delivery of the identified planning obligations audited by the LPAs
5. Delivery of any additional infrastructure or initiatives that would provide social and economic benefit to the project and the surrounding area audited by the LPAs

Any identified surplus in excess of thresholds determined through the planning process could then be subjected to recovery and recycling through discussions with Homes England or its successor.
The mechanism will be influenced by the planning and delivery route being deployed and the nature of direct role that the public sector will play in scheme delivery. Where the private sector delivers the housing scheme via traditional planning processes then recovery could be secured via the planning process (such as Section 106 agreements) as:
1. contributions to accrue on a rolling '£ per unit' basis as housing units after the threshold identified by the sequence above is completed, similar in form to a 'roof tariff' type of approach; or
2. contributions to accrue as lump sum repayments at defined points after the threshold identified by the sequence above is completed (either time limited or at trigger points in terms of quantum of housing delivered, with a long stop date).

The application of a threshold-based approach to contributions would enable the impact on scheme cashflow to be minimised thus improving the scope to secure future payback. Both approaches would need to be considered in light of overall scheme viability and wider requirements to address policy objectives as being set by the Local Plans.

The financial analysis indicates that the ability of the scheme to recycle funding under current day circumstances (zero inflation world) would be challenging. As such, any recovery/clawback mechanism could be aligned with a wider scheme viability review mechanism, potentially linking payback to material changes in scheme viability during implementation and in particular house price inflation. Such review mechanisms are common in long term developments.

As a further alternative, negotiations around a public/private sector partnerships approach, potentially via a joint venture would be based upon a clear appreciation of the role of capital investment to the project (via HIF). The nature of such an agreement would be to ensure such early investment was factored in to the sharing of risk and reward, and ultimately be accounted for in returns accruing back to the public sector, commensurate to its role in enabling delivery of the scheme. The precise nature of recovery/recycling would be subject to the scope and form of any such legal agreement between the key parties.

Should the scheme advance via a more active public sector role in direct delivery, potentially via a development corporation or equivalent, then the approach to the recycling of funding would take a different form where value capture would be retained in full by the delivery body. The approach and process would be similar to that outlined above and subject to audits by the Councils concerned.

How do you intend to use recycling to support future housing delivery in your area?

Monies secured will be recycled into the scheme to safeguard and ensure that it can continue to deliver new housing at an increased pace and to the required quality of Garden Community principles. It will also be key to provide a wider range of accessible and affordable housing that can enable the broadest range of potential occupiers across multiple tenures thus boosting build-out rates.

As such it is envisaged that monies would be recycled to help support and advance the Garden Communities across North Essex, to be administered via an appropriate structure aligned to the nature of the delivery model or via an agreed locally accountable governance structure. A funding programme would be established to define suitable projects and activities, to be prioritised and phased in line with the profile of receipts. Suitable projects and related funding would be administered, monitored and potentially directly implemented by the delivery model/structure, or potentially via one or more of the Councils. The approach would also seek to maximise other sources of funding to supplement monies being recycled, therefore exploring opportunities for match funding (to align with local, national or international initiatives) and therefore seeking to expand and enhance the overall funding capacity.

The following activities are anticipated be considered via the approach:

• Broadening the range of housing tenures to be made available, thus enhancing build-out and take up rates. This may require certain subsidies to be provided to ensure a wide range of housing products can be viably delivered across the site;
• Supporting the development of local business space, such as through the development of workspace, managed facilities or offering subsidies to support private sector led direct development;
• Wider economic development initiatives such as local training, business support, promotion and place marketing to stimulate local economic growth;
• Enabling the acquisition of assets for inclusion in the local stewardship body, therefore providing a strong portfolio and asset base to enable high quality maintenance and management of open space, community facilities and potentially revenue generating assets such as local retail or employment space;
• Investment in wider infrastructure and place-making quality, potentially to bring forward the supply of new services and facilities than may otherwise be the case and/or by investing in the public realm & civic buildings.

Should a full land value capture model be implemented, a similar approach would be deployed, albeit with wider consideration of suitable contributions from the overall uplift into such a fund, alongside wider consideration of equitable sharing of risk and reward between the key stakeholders involved.

Additional Information

If you have any further information to support the Financial Case for your project, which has not already been captured in the above, please include this here

Given the status of the project it is not yet possible to establish a definitive recovery/recycling profile at this stage. However, to illustrate the potential for full recovery/recycling of the HIF funding a number of scenarios have been tested using the financial model looking at the implications of various factors on the profile including, i) the rate of land value appreciation, and ii) the percentage of any residual value in a particular year that contributes to recovery/recycling. The results of these tests indicate that full recovery/recycling could be expected under all scenarios but with varying profiles, except in a zero-inflation world (where circa 38% of HIF funding could be recovered). These profiles vary from full recovery/recycling by 2030 assuming 7.2% land value appreciation (in line with last 20 years of local data) and 100% of any residual value going to recovery/recycling, to full recovery/recycling by 2034 with only c. 5.2% land value appreciation and 50% of the residual contributing to recovery/recycling.

The approach to recovery/recycling is explained further in the response to Question 6.5.3 and is anticipated to be via a recycling approach whereby monies recovered or offset are used to provide wider infrastructure and/or scheme benefits. The precise approach

and use of such monies will be determined as the wider financial and viability modelling is undertaken as the project evolve.

See Att.6.6.1 for further details.

Filename	Description
6..6.1 a - Tendring_Colchester_HIF_Recovery Profiles.xlsx	6.6.1a Recovery Profiles

Management Case

Project Dependencies

Description	Critical	Outside of direct control
Local Plan Status: The Shared Section 1 of the Local Plans has been through the following stages: Issues and Options; Preferred Options; Publication Draft Local Plan; and Submission. Section 1 of the emerging Local Plans includes a commitment to plan and deliver three new Garden Committees including Tendring Colchester Borders Garden Community which is the subject of this bid. Examination by the Planning Inspectorate (PINS) is currently paused, expected to re-open in Autumn 2019. Adoption of Local Plans is critical to delivery of housing on the Garden Community sites. Key Issues: The Inspector found that the approach to assessing housing need was sound but that further work would need to be undertaken so that the Garden Community proposals could be found sound. The three local authorities – Braintree, Colchester and Tendring – have resolved to continue with examination of Section 1 and are compiling further evidence for when the examination re-opens. Close out by: Subject to the outcome of the Examination in Public, adoption of the Shared Section 1 Local Plan is expected in 2020.	Yes	Yes
Link Road - Planning Consent Status: The proposed scheme falls principally within the remit of ECC as Highway Authority and therefore within the remit of the Town and Country Planning Act 1990 (the connection to the A120 - part of the Strategic Road Network – is listed as a separate dependency). Regulation 3 of the Town and County Planning General Regulations 1992 relates to the determination of a planning application and indicates that a development proposed and to be constructed by the Local Highway Authority should be determined by the County Planning Authority. Therefore, a planning application for the proposed works should be prepared for submission to ECC. Upon determination, this would enable the Compulsory Purchase Order (CPO) application to be submitted and planning constraints to be known to determine environmental mitigation planning. Key Issues: The route for the link road is not currently contained in an adopted Local Plan with the Development Plan Document (DPD) not expected to be adopted until Q2 2022/23, follow adoption of the Shared Section 1 of the Local Plans in Q2 2020/21. Application for the link road will therefore be determined in advance of policy. Close out by: ECC submission by Q2 2020. Determination by Q4 2020. Critical: Yes Outside Direct Control: Yes Link Road – Junction with the A120 Status: The connection to the A120 - part of the Highways England (HE) Strategic Road Network – is required at the northern end of the Link Road. The form and locations of the connection to the A120 requires consent from HE and this consent is critical to the successful delivery of the link road. Key Issues: No issues envisaged. ECC as the Highway Authority have strategic partnership arrangements with HE, working with them on major schemes in the past. HE are aware of proposals for the link road and an overarching Memorandum of Understanding is included as an attachment to this bid.	Yes	Yes
Link Road - Land Negotiations and Compulsory Purchase Order (CPO) Status: Land needs to be acquired in order to construct the link road. The route as proposed runs though the Tending Colchester Borders Garden Community. The land required is under the same option agreement as land for the housing. It is expected that this land will be available for the link road through negotiation or compulsory purchase. The land required for the grade-separated junction connecting to the A120 is unregistered, and land is also required to the north of the A120 which is beyond the boundary of the Garden Community. It may be necessary to CPO this land if it cannot be acquired through negotiation. Key Issues: There is potential for delay acquiring the unregistered land. We will follow the standard procedure in this case to establish ownership, ultimately acquiring the land and holding the compensation payment in a holding account if investigations cannot establish the owner. If ownership is established during this process, we will follow the CPO route to acquire the land. Close out by: Q2 2021 by ECC.	Yes	Yes

Rapid Transit System (RTS) – Traffic Orders Status: Outside the site of the Tendring Colchester Borders Community, the proposed scheme uses both existing and protected corridors of land. The proposed route has been chosen to omit some challenging sections in the town centre where is it not considered practicable to implement a fully segregated route. While the long-term aspiration is to create a fully segregated RTS route, we have omitted these sections which would, initially, be controversial to implement since they would require radical changes to traffic movement in Colchester Key Issues: No issues envisaged. The implementation of the scheme will require the use of multiple traffic orders as the route is built. ECC as the Highways Authority has the power to grant these traffic orders Close out by: Q1 2024	Yes	No
Rapid Transit System (RTS) - Land Negotiations / Compulsory Purchase Order (CPO) Status: Land needs to be acquired for the RTS route inside the Tendring Colchester Borders Garden Community. The land required is under the same option agreement as land for the housing. It is expected that this land will be available for the RTS through negotiation or compulsory purchase. Key Issues: No issues envisaged. Provision of RTS is a key infrastructure requirement for the site, without which the Tendring Colchester Borders Garden Community is unlikely to be included as a site in the Local Plan. We expect the main developer to agree to CPO for a nominal sum. Close out by: Q2 2022 by ECC.	Yes	Yes
Assessment timescales for HIF bids Status: The HIF bid is due to be submitted to MHCLG on 22nd March 2019. Current indications are that assessment of the bids and a resultant decision will be released within a 12-week period. Whilst the outcome of the bid is awaited, work on delivery of the A120-A133 Link Road and Rapid Transit System will be progressing at risk in order to meet a challenging programme. Key Issues: If there is a significant delay in receiving the outcome of the bid, then ECC may decide that they cannot continue to progress the scheme at risk due to cash flow uncertainty. Close out by: 12 weeks post bid submission by MHCLG	Yes	Yes

Project governance, organisation structure and roles

Please outline the authority's approach to governance and oversight of the delivery of the proposal. This should include how you will work with any other key delivery partners (such as other landowners)

Introduction

We have developed an effective approach to governance and oversight for the delivery of growth in North Essex. This involves:

Scrutiny and oversight from Members and Senior Officers at Essex County Council (ECC), Colchester Borough Council (CBC), Braintree District Council (BDC) and Tendring District Council (TDC) as well as Government through MHCLG, DfT, Homes England and Highways England.

A Delivery Board for the North Essex Garden Communities Local Plan Growth Area (homes, jobs, placemaking and infrastructure) which constitute the majority of the housing within this bid.

Planning Performance Agreements to govern delivery of the major housing sites. The delivery of housing would be monitored through annual housing delivery reports.

We have also developed effective governance for the production of this HIF bid, some of which will continue post-award, as detailed below:

Continuation of the HIF Programme Board already in existence to enable ECC to manage all of its bids post-award. It will provide oversight and ensure sufficient resource, shared efficiencies and lessons learned are applied across each of the projects awarded funding.

Separate project boards focusing on the technical detail of the A120-A133 Link Road and Rapid Transit System. Common representatives will sit on the delivery and infrastructure specific boards to ensure holistic joined up thinking.

Stakeholder Groups including statutory bodies, neighboring local authorities, politicians, community groups, businesses, developers and landowners amongst others.

The organisational chart in 7.2.3 illustrates this structure in more detail. Further information on how this works in practice and the roles of key individuals is described below.

HIF Programme Board
The Programme Board has supported the resourcing and development of high-quality business cases during both the expression of interest and co-development stages. Post funding award, the Programme Board will ensure that Essex's programme of infrastructure projects and related projects remain focused on achieving their objectives and realising their agreed outputs to bring forward essential housing and economic growth. The Board will be responsible for authorising ongoing funding and ensuring sufficient quality and quantum of resource to implement the schemes. The Board will be responsible for resolving any conflicts and issues escalated by the Project Boards and / or Project Delivery Teams and escalating any conflicts with other corporate activity. The Programme Board can escalate issues and decisions further to ECC's Investment Board and political leadership group as required. The Board will also take a holistic overview of Essex's schemes and housing needs to provide oversight and ensure shared efficiencies and lessons learned are applied across each of the projects awarded funding.

The Programme Board will typically meet quarterly with other meetings (virtually and formally) as required to make effective decisions. The Programme Board will continue to be staffed by leading officials from across ECC's Localities (Housing) and Highways & Transportation directorates and its supply chain.

Tendring Colchester Borders Garden Community Delivery Board

The Delivery Board's responsibilities will include:

Setting the strategic direction for the ongoing growth in east Colchester.
Defining the scope and setting the timescales for major project milestones.
Providing the Tendring Colchester Borders Garden Community Programme Manager and infrastructure related Project Managers with the strategy and decisions required to enable the overall scheme to proceed to schedule and resolve any challenges.
Securing necessary approvals through the partner statutory authorities.
Approving the project scope of work, programme and budgets, as well as subsequent changes.
Signing off project stage gates and authorising the start of the next stage.
Monitoring project risks, providing guidance and taking any appropriate action to mitigate risks.

We intend to appoint a Programme Manager to deliver the Tendring Colchester Borders Garden Community in 2019.
The Chair of the Tendring Colchester Borders Delivery Board will be responsible for providing guidance and support to the Programme Manager as required. They will ensure that the delivery of housing, employment allocations, open space, schools, infrastructure etc is progressing in line with the originally envisaged schedule and that key deliverables and milestones agreed by the Delivery Board are achieved.

Other members of the Tendring Colchester Border Garden Community Delivery Board will include Andrew Cook (Executive) and Ian Turner (Project Manager) for the A120-A133 Link Road and Rapid Transit System schemes within ECC.

Other key representatives are expected to include:

Colchester Borough Council

Leader of the Council

Relevant Cabinet Members from CBC (to be confirmed)

Strategic Director of Policy and Place, Ian Vipond

Tendring District Council

Leader of the Council

Relevant Cabinet Members from TDC (to be confirmed)

Corporate Director of Planning and Regeneration, Ewan Green

Essex County Council

ECC's Cabinet Member for Infrastructure

ECC's Cabinet Member for Planning and Economic Development

ECC's Director for Transport and Infrastructure

ECC's Director for Economic Growth and Localities

Other

Four representatives of the Tendring Colchester Borders Garden Community Consortium

Infrastructure Project Boards
An appropriate governance structure is also essential to the successful delivery of the ongoing design, planning and construction activities related to the A120-A133 Link Road and RTS.

The A120-A133 Link Road and RTS Project Manager from ECC (Ian Turner) and his Project Delivery Teams (described in 7.3.1) will continue to report regularly to Project Boards already established for A120-A133 Link Road and RTS. Formal meetings will be held typically at two monthly intervals and progress updates and requests for guidance and action as and when required.

Each Project Board provides direction to the Project Manager and their project delivery teams. The Boards are responsible for resolving any conflicts escalated by the project delivery teams and escalating any conflicts with other corporate activity. Each Project Board will escalate issues and decisions further to the Tendring Colchester Borders Garden Community's Delivery Board, ECC's Investment Board and / or the Political Leadership Group as required.

Both the A120-A133 Link Road and RTS will have common executive oversight through Andrew Cook. Andrew is ECC's Director Highways and Transport and has been the Programme Sponsor for all of Essex's HIF bids to date. He will provide Government and the Political Leadership team at ECC with a single point of accountability for both projects. He is responsible for appointing the Project Management team including the PM and Project Board. He will continue to ask the challenging questions concerning value for

money, provide advice when needed, escalate issues and make recommendations to the Political Leadership team and Government if and when required.

Both the A120-A133 Link Road and RTS Project Boards will be chaired by the Senior Responsible Owner (SRO) – Chris Stevenson. As ECC's Head of Network Development, Chris has ultimate responsibility and delegated authority for ensuring effective delivery of the scheme on time and on budget. Chris has also been the ECC Programme Manager for the Housing Infrastructure Fund submissions. Chris will ensure that both schemes are progressing in line with the originally envisaged project programme and that key deliverables and milestones agreed by the Project Board are achieved.

The Project Board membership follows established project management principles, with additional roles to reflect the multiple contributors to the success of the project. In addition to Andrew, Chris, Ian and the Tendring Colchester Borders Garden Community Delivery Manager (to be appointed), the following members are common to both project boards ensuring holistic decision making:

Nicola Marshall, Programme Manager, Commissioning Delivery, ECC – provides coordinated management of projects, liaises with internal ECC functions (such as finance) and change management, all to achieve the aims and objectives associated with external funding requirements.

The Infrastructure Project Board membership will also include:

ECC Senior User – Liz Burr (Head of Network and Safety/Traffic Manager, ECC) will represent the needs of the Highway Authority in terms of how the link road and other roads will be operated.

ECC Senior Customer – Peter Massie (Head of Highways Commissioning) will represent the needs of the Highway Authority in terms of embedding whole life cost asset management and maintenance into design and construction decisions.

Senior Supplier – Cliff Malone (ECC Framework Director, Jacobs) will continue to ensure appropriate multi-disciplinary resources from within Ringway Jacobs and Jacobs are provided to support the successful funding, design and planning of the Link Road.

Whilst delivery of the infrastructure schemes will be managed by ECC, representatives may be required from CBC and TDC at the project boards. Discussions regarding these arrangements will take place as the schemes progress.

Both infrastructure delivery boards will continue to use technical input from a Stakeholder Reference Group to understand the wider implications of the project, in particular the interface with developers, landowners, Highways England, Environment Agency, transport user groups etc. ECC already have a joint programme board with Highways England which meets on a regular basis to collaboratively plan and manage the interfaces of Highways England's A12, A120 and M11 schemes and ECC interventions near the Strategic Road Network.

ECC will also take a proactive approach to engaging with landowners with the aim to negotiate the transfer of land in the first instance. ECC have a clear approach within their Major Projects Manual to acquiring land, involving the identification of land ownership, preparation of land acquisition plans (including safeguarding), negotiation and if necessary compulsory purchase order. For the link road, the land required is almost entirely in the ownership of the option-holding developer who support the delivery of the link road. For land to the north of the A120 which is not within the Garden Community boundary and is also unregistered, ECC will follow standard procedure for unregistered land and acquisition. For the Rapid Transit System, the land required for the interventions is either owned by ECC (i.e. within the existing highway boundary) or is entirely in the ownership of the option-holding developer who supports it's the RTS implementation.

Engagement with developers and landowners will also be aided by ECC's participation on the Tendring Colchester Borders Garden Community Delivery Board.

North Essex Garden Communities

As set out elsewhere in this document, NEGC Ltd has been established to provide a coordinated approach to the evolution and delivery of Garden Communities across North Essex, acting as a wholly public sector owned private limited company. The NEGC Board oversees and provides strategic direction to the overall programme and is made up of senior political representatives from each of the North Essex Authorities including Essex County Council. The Board meets quarterly and agrees the direction and approach as guided by a formal approved Business Plan.

The day-to-day working of NEGC is overseen by the company's Group Managing Director and supported by a dedicated Programme Delivery Team who coordinate all work and programme-related activity, including overall programming and budget management.

The work of the core NEGC team also involves close joint working with a range of internal and external stakeholders, including officers from the Councils and key partners across a number of key areas.

The Programme workstreams will focus on the following specific areas:

Planning & Infrastructure: to advance masterplanning (from a delivery perspective) and project infrastructure requirements and dependencies.

Commercial & Delivery: to evolve a commercial delivery and land model, financial analysis, legal and corporate financing and tax considerations, including input to the evolution of associated Business Cases.

Economic & Engagement: to evolve an economic strategy and manage programme-wide external engagement, communications and public relations activity.

Stewardship & Innovation: to evolve an appropriate approach to innovation and a local approach to long term stewardship, including the management and governance of local community assets.

Task & Finish project groups are set up, as appropriate, and report into the workstreams to take forward specific pieces of work. An overarching Steering Group oversees and monitors the work across the workstreams, including the budget, enabling input into the NEGC Board. This is led by the Group Managing Director of NEGC and comprises of Senior Officers from the Councils, together with key staff in NEGC and external stakeholders, including representatives from Homes England.

Additionally, a number of specialist groups are in place formed by the Council leads on key statutory functions to ensure there is close working between the NEGC programme and the wider statutory functions of the Councils. This approach ensures that there is distinction between the operational activities of NEGC, such as in relation to the evolution of land use proposals and its business model, and the statutory functions/duties and wider roles of the Councils. The statutory function groups will enable close communication, regular structured liaison and effective joint working between NEGC and The Councils across the following themes:

Finance: to establish regular liaison between the programme and Council finance representatives (s151 Officers).

Legal: to establish regular liaison between the programme and Council legal representatives (Monitoring Officers).

Planning: to consider the approach alongside statutory planning functions of The Councils with respect to plan making and development management.

Transport: to consider the approach alongside statutory transport functions and initiatives.

Each Council also draws together specific inputs to the programme via internal project groups to ensure coordination across

separate Council officers who are working with NEGC. The operational structure is set out in Att. 7.2.1a.

Please provide details of the authority's resourcing for the proposal

Essex County Council, Colchester Borough Council and Tendring District Council are all well-resourced to deliver the proposal and effective governance arrangements are already in place to develop both the infrastructure projects that are the subject of this business case.

In addition to the Project Manager and Project Boards described in 7.2.1, we have strong, well-established multi-organisational and multi-disciplinary teams ready to deliver housing growth in North Essex. We describe the make-up of each of these Project Delivery Teams below.

Housing

Each authority has the resources in place to be confident that the housing delivery set out in this business case can be delivered.

Essex County Council

ECC is committed to facilitate new homes and communities, as laid out in its Organisation Strategy 2017-21. ECC has invested in a new housing growth team to drive this agenda. ECC's Head of Housing Growth, Lee Heley, will ensure that ECC's housing policy and ambition is central to the delivery of the housing and the supporting HIF infrastructure. Lee is supported by a Housing Growth Team with significant experience in large project delivery.

Colchester Borough Council

Within its Policy and Place Directorate, CBC has a well-resourced Planning and Strategic Housing Policy Team. In addition, CBC has an extensive team of specialists including dedicated officers for urban design, heritage, transport, archaeology and landscape planning, as well as an experienced development management team to take forward the development of master planning and the subsequent management of planning applications (or whichever planning mechanism is used for the Garden Communities). These disciplines have worked together on a variety of strategic projects in the Borough. CBC also shares a strategic planning resource with Braintree District Council and Tendring District Council.

Tendring District Council

TDC has an experienced Planning and Strategic Housing Policy Team operating within its Planning and Regeneration Directorate. TDC's development management team has substantial experience working on strategic development sites as well as the delivery of complex regeneration schemes. TDC also shares a strategic planning resource with Braintree District Council and Colchester Borough Council.

North Essex Garden Communities Ltd

In 2017 the NEAs and ECC formed a new body to progress the delivery of the Garden Community programme's key objectives and ensure the delivery of the three new settlements. NEGC Ltd has been established as a private limited company wholly owned by the Councils to act as the body to guide the proposed Garden Communities through the design process and into implementation, providing oversight and scrutiny of the delivery.

The following provides an overview of the current team and supporting resources:

• Employees: Group Managing Director, Head of Programme; Programme Manager; Communications Manager; Delivery Team Administrator;

• Expert contractors: Commercial; Procurement; MMC/Construction; Finance; Engagement & Marketing;

Consultants: Economic Strategy; Delivery & Financial; Tax; Planning & Property; Legal; Land & Valuation; Masterplanning & Transport; PR & Communications; Company Secretary.

Infrastructure

Each Project Delivery Team will be tasked with delivering the link road and Rapid Transit System through the necessary stages to completion. This will involve negotiating with the key stakeholders and partners in the development and maintaining key lines of communication between the promoter, stakeholders, SELEP, MHCLG, DfT, Homes England and Highways England.

ECC's North Essex Transport Planning Liaison Lead, Alan Lindsay, will ensure a joined-up approach to both HIF funded schemes. Alan has been extensively involved in the preparation of evidence for the development and examination of the Shared Local Plans.

Key members of the Infrastructure Project Delivery Team will include:

• Supplier Project Managers – Individual Project Managers to be confirmed (Jacobs) will oversee the design of the link road and Rapid Transit Interventions. It will be necessary to have a sperate Project Manager for both the link road and Rapid Transit System. The roles would then evolve into a project assurance lead, with the Jacobs Project Managers or other representatives of Essex Highways providing oversight of the design and construction on behalf of ECC.
• Development Management Lead – Matthew Bradley (ECC) will work with Colchester and Tendring and developers to manage the impacts and interfaces of the new housing growth. In particular Matthew will work with Colchester and Tendring to ensure appropriate planning obligations are developed to recoup HIF funding from development to enable this to be used for future infrastructure works. This builds on the role that Matthew has undertaken in support of the Shared Section 1 of the Local Plans preparation and Examination.
• Planning & Consents Lead - Suki Coe, (Planning Director, Jacobs) will continue to provide advice on the planning and consenting regime for the link road.
• Support from Ringway Jacobs / Jacobs on design, environment, transport planning and modelling, commercial management and communications.
• Support from Lambert Smith Hampton is available for estate/land consultancy services.
Additional discipline specialist expertise will be requested to attend the Project Delivery Team as and when required. Moving into project implementation, Essex County Council's PM (or a named deputy) will be responsible for the administration of the contract management arrangements described in the Commercial Case. The Project Manager will be supported by a Supervisor and site-based supervision team. The Project Manager and Supervisor will also provide a site presence to deal with all contract variations/issues and early warnings/compensation events.

Please attach an organogram depicting the governance structure and/or roles and responsibilities within the authority

Filename	Description
7.2.3a - A120-A133 LR RTS HIF Governance Structure vFINAL.pptx	TCBCG Organagram

Project management arrangements and project plan

Please provide details of the overall project management delivery arrangements for the project, including any challenges or constraints to delivery of the project

The overall project management delivery arrangements for the housing and infrastructure delivery is set out in the organogram included in Section 7.2.3. There are currently no concerns about the capacity of ECC or its supplier to appropriately resource or manage delivery of the infrastructure projects.
The Essex County Council Project Manager (Ian Turner) will be responsible for organising, controlling and delivering both the A120-A133 Link Road and Rapid Transit System (RTS) elements that make up the Tendring Colchester Borders Garden Community Housing Infrastructure Fund (HIF) project. The Project Manager will lead and manage the project delivery teams and is responsible for the day to day co-ordination of the project. The key project delivery teams reporting to Alan are the Essex County Council and Essex Highways teams developing the highways design for the A120-A133 Link Road, the first phase of delivery for RTS and the HIF business case for both of these integrated infrastructure elements.
The Essex County Council Project Manager will be supported by two separate Supplier Project Managers from Jacobs who will oversee the ongoing design and development of the infrastructure elements. Support from Ringway Jacobs or Jacobs will be provided across all discipline areas.
To deliver the link road and Rapid Transit System, ECC will use the Essex Highways Major Projects Contract Manual. This is a tailored application of Highways England scheme delivery to the local authority environment. It involves three broad stages of project delivery moving from Stage 1 (Problem Identification) to Stage 2 (Scheme Identification) to Stage 3 (Delivery).
Both of the infrastructure projects are currently at the end of Stage 2 – Scheme Identification, however clear preferred options for both of the elements are yet to be determined. Looking forward the project's design will be further developed through the relevant sub-stages, including: Stage 3A (Preliminary Design), Stage 3B (Legal Orders), Stage 3C (Illustrative Design), Stage 3D (Design & Build Tender Management), Stage 3E (Construction Administration) and Stage 3F (Post Completion and Close Out).
From a housing perspective, the approach to date provides an example of positive and proactive joint working between the Councils

to plan for growth in a strategic way, unconstrained by purely administrative boundaries or parochial issues. Considerable progress has been made over recent years through the effective joint working which has achieved:

• Coordinating the Council's approach to Local Plans, including the confirmation, publication and Examination in Public of the shared 'Part 1' of the Local Plans which sets out the shared strategy to growth in North Essex and preferred locations for new Garden Communities.
• Becoming part of the Garden Towns Villages & Cities programme run by the Ministry of Housing, Communities & Local Government (MHCLG). North Essex Garden Communities is the largest and most ambitious project in the programme. Being part of this programme provides direct access to other Garden Towns with associated learning and knowledge/information sharing opportunities.
• Since 2015, securing over £2m of capacity funding and support from MHCLG to support in bringing forward the design, planning and technical work necessary to evolve and bring forward the proposals. This is in addition to £2m of capacity funding that the partnership Councils have also contributed to the programme.

It is expected that these management delivery principles will continue throughout delivery of the infrastructure and housing.
The Councils set out their approach in the North Essex Garden Communities Charter (AECOM, 2016) which set out a range of key themes and principles to be delivered through the new Communities. These have been translated into policy controls within the emerging Local Plan/s, both in a general sense to guide the development of the sites, but also with site specific policies to provide further detail and control.
Clearly the project will be informed by the conclusion of the Local Plan/s Examination in Public and confirmation on policy requirements and wording. Current efforts are focused on addressing matters raised by the Planning Inspector and undertaking additional evidence gathering to enable the Examination to be reopened and firm conclusions to be drawn. Work has been ongoing throughout 2018 and will continue into 2019 to consider and address matters. This is being prepared by the Councils directly as part of their statutory plan making functions and need for associated evidence. This will enable the Examination to be reopened later in 2019, with Inspectors findings by early 2020 with potential adoption towards the middle of 2020.
Challenges to Delivery of the Infrastructure Projects
Many of the challenges and constraints to deliver of the infrastructure projects are set out in Section 7.1.1 and relate issues outside of the control of ECC. The key challenge to successful delivery of the infrastructure projects will be early and collaborative engagement with the developer, stakeholders and landowners. Engendering strong support for the schemes and minimising potential concerns and objections will be key to successful delivery.

Please summarise your project delivery plan to deliver the infrastructure, this should include your anticipated land ownership / control strategy

A120-A133 Link Road
Essex County Council would be responsible for the delivery of the A120-A133 Link Road and would undertake the following activities to design, achieve consent for and construct the scheme.
Option Appraisal and Develop Design to Pre-Planning Consultation: Q2 2019 – Q1 2020
- Consideration of high level constraints in order to define an optimal route (i.e. environmental, geological, land, water etc..)
- Liaison with Highways England to agree a suitable connection with the A120 (form and location)
- Development of the outline highways design to Design Freeze 1 in preparation for the pre-planning consultation activity. This will include highways alignment, drainage, structures, geotechnical, lighting and environmental, and will interact with engagement with key stakeholders, the on-site environmental surveys and land access negotiations running in parallel to this activity.
- Deliverables: Outline highways design and consultation materials
- Responsibility: Jacobs consultancy under the governance of Essex County Council.
Ground Investigation and Surveys: Q2 2019 – Q1 2020
- Specification, procurement and undertaking ground investigation to support the development of the design
- Full suite of environmental surveys to enable preparation of an Environmental Statement and to support the planning submission
- Topographical survey to enable the scheme to be designed in a 3D environment
- Deliverables: Topographical Survey, Ground Investigation Survey

- Responsibility: Jacobs consultancy scoping/procuring contractor through ECC's existing contract with Ringway Jacobs.
Pre-Planning Consultation: Q1 2020
- Planning for and undertaking a pre-planning consultation with local residents and stakeholders.
- Discussions with the local authority planners in advance of the planning application
- Deliverables: Consultation reporting, including Statement of Community Involvement
- Responsibility: Consenting experts from Jacobs consultancy supporting ECC's project and legal teams.
Develop Design to Planning Application: Q1 2020 – Q2 2020
- Further development of the preliminary design enabling fixity of the red line boundary and commencement of full planning application activities (detailed below). Regular meetings, conversations and a pre-planning application are undertaken throughout this phase to limit risk of design changes post-planning.
- Deliverables: Preliminary highways design including all necessary documents and drawings to support submission of a planning application for the scheme
- Responsibility: Jacobs consultancy under the governance of Essex County Council.
Planning Application: Q2-3 2020
- Prepare and submit for a planning application. This should have been supported by a pre-planning application and ongoing discussion with the planning authority.
- Deliverables: Full set of drawings and documents as required by the planning authority
- Responsibility: Consenting experts from Jacobs consultancy supporting ECC's project and legal teams.
Land Negotiations and Compulsory Purchase Order: Q4 2019 – Q2 2021
- Ongoing discussions with landowners as soon as a preferred route has been selected. ECC's land agent will commence negotiations with land owners to maximise the chances of avoiding the CPO route.
- Preparation for the CPO to be undertaken whilst awaiting the outcome of the planning application. This will be run in parallel to the continued land negotiations – due to the land required for the Link Road being in the same parcel as that optioned to the developer, it is anticipated that most can be acquired for a nominal fee (£1) but the CPO will increase the perception that the scheme is 'a reality'.
- Deliverables: CPO and supporting schedules
- Responsibility: Consenting experts from Jacobs consultancy supporting ECC's project and legal teams.
Illustrative Design / Procurement: Q4 2020 – Q1 2022
- Further develop the highway design to an illustrative design stage sufficient for a Design & Build procurement strategy.
- Development of a full suite of Contract and Tender documents (i.e. NEC Option A) to allow procurement to commence.
- Deliverables: Illustrative highways design and full set of contract and tender documents
- Responsibility: Jacobs consultancy under the governance of Essex County Council. Decision-making responsibility lies with ECC and the cabinet member with portfolio responsibilities for transport infrastructure.
Final Design & Construction: Q1 2022 – Q1 2024
- Contractor design to be completed to allow construction to commence
- Deliverables: Completed design & constructed scheme (in phases)
- Responsibility: Design & Build contractor under supervision of ECC and delegated TCBGC supervisors/Project Managers.

Rapid Transit System (RTS)
ECC would be responsible for the delivery of the Colchester RTS, which will be mostly segregated, excluding a segment in Colchester Town Centre, which will run with regular traffic albeit with some priority. ECC would also be responsible for the delivery of stops along the route, as well as a new 'Park and Choose' facility at the southern boundary of the CTBCG. ECC would undertake the following activities to design, achieve consent for and construct the scheme and supporting measures.
HIF Bid Submission (22nd March 2019)
HIF Bid Confirmation (12 weeks for a decision)
Option Appraisal and Develop Design to Pre-Planning Consultation: Q2 2019 – Q4 2019
- Consideration of high level constraints in order to define an optimal route (i.e. environmental, geological, land, water etc.)
- Engagement and consultation as detailed below
- Development of the outline highways design to Design Freeze 1 in preparation for the pre-planning consultation activity. This will include highways alignment, drainage, structures, geotechnical, lighting and environmental, and will involve engagement with key

stakeholders, the on-site environmental surveys and land access negotiations running in parallel to this activity.
- Selection of optimal RTS stopping locations
- Selection of location and outline services at the new Park and Choose facility
- Deliverables: Outline highways design and consultation materials
- Responsibility: Jacobs Consultancy under the governance of Essex County Council.

Preliminary Design

Ground Investigation and Surveys: Q2 2019 – Q1 2020
- Specification, procurement and undertaking ground investigation to support the development of the design
- Full suite of environmental surveys to enable preparation of an Environmental Statement and to support the planning submission
- Topographical survey to enable the scheme to be designed in a 3D environment
- Deliverables: Topographical Survey, Ground Investigation Survey
- Responsibility: Jacobs consultancy scoping/procuring contractor through ECC's existing contract with Ringway Jacobs.

Develop Design to Planning Application: Q1 2020 – Q2 2020
- Further development of the preliminary design enabling fixity of the red line boundary and commencement of full planning application activities (detailed below). Regular meetings, conversations and a pre-planning application are undertaken throughout this phase to limit risk of design changes post-planning.
- Design of RTS stops and access to stops
- Design of Park and Choose facility in CTBGC
- Deliverables: Preliminary highways and other designs including all necessary documents and drawings to support submission of a planning application for the scheme
- Responsibility: Jacobs Consultancy under the governance of Essex County Council (with subcontractors as required for specialist tasks).

Engagement and action planning control

Pre-Planning Consultation: Q1 2020
- Planning for and undertaking a pre-planning consultation with local residents and stakeholders.
- Discussions with the local authority planners in advance of the planning application
- Deliverables: Consultation reporting, including Statement of Community Involvement
- Responsibility: Consenting experts from Jacobs consultancy supporting ECC's project and legal teams.

Planning Application: Q2-3 2020
- Prepare and submit for a planning application. This should have been supported by a pre-planning application and ongoing discussion with the planning authority.
- Deliverables: Full set of drawings and documents as required by the planning authority
- Responsibility: Consenting experts from Jacobs consultancy supporting ECC's project and legal teams.

Land Negotiations and Compulsory Purchase Order: Q4 2019 – Q4 2020
- Ongoing discussions with landowners as soon as a preferred route has been selected. ECC's land agent will commence negotiations with land owners to maximise the chances of avoiding the CPO route.
- Preparation for the CPO to be undertaken whilst awaiting the outcome of the planning application. This will be run in parallel to the continued land negotiations – due to the land required for the Link Road being in the same parcel as that optioned to the developer, it is anticipated that most can be acquired for a nominal fee (£1) but the CPO will increase the perception that the scheme is 'a reality'.
- Deliverables: CPO and supporting schedules
- Responsibility: Consenting experts from Jacobs consultancy supporting ECC's project and legal teams.

Illustrative Design / Procurement: Q1 2021 – Q1 2022
- Further develop the highway design to an illustrative design stage sufficient for a Design & Build procurement strategy.
- Development of a full suite of Contract and Tender documents to allow procurement to commence.
- Deliverables: Illustrative designs and full set of contract and tender documents
- Responsibility: Jacobs consultancy under the governance of Essex County Council. Decision-making responsibility lies with ECC and the cabinet member with portfolio responsibilities for transport infrastructure.

Final Design & Construction: Q1 2022 – Q1 2024
- Contractor design to be completed to allow construction to commence

- Deliverables: Completed design & constructed scheme (in phases)
- Responsibility: Design & Build contractor under supervision of ECC and delegated TCBGC supervisors/Project Managers.

Please provide details of your project delivery plan to deliver the homes unlocked by the infrastructure. Please detail any expected controls or levers you will put in place to ensure the delivery of housing comes forward on the sites

The Councils recognise from the outset that the delivery of this ambitious vision of the Garden Communities across North Essex will require a positive and active approach by both the public and private sectors.

The site has only been included within the emerging Local Plan on the basis that it can provide a high-quality development, at a sufficient scale to contain a wide range of supporting services and facilities, and enable the provision of strategic infrastructure to both address impacts caused by the development but also support other improvements across the wider area, such as through the provision of rapid transit.

The Councils set out their stall in terms of the North Essex Garden Communities Charter (AECOM, 2016) which set out a range of key themes and principles to be delivered through the new Communities. These have been translated into policy controls within the emerging Local Plan/s, both in a general sense to guide the development of the sites, but also with site specific policies to provide further detail and control.

Clearly the project will be informed by the conclusion of the Local Plan/s Examination in Public and confirmation on policy requirements and wording. Current efforts are focused on addressing matters raised by the Planning Inspector and undertaking additional evidence gathering to enable the Examination to be reopened and firm conclusions to be drawn. Work will continue into 2019 to consider and address matters. This is being prepared by the Councils directly as part of their statutory plan making functions and need for associated evidence. This will enable the Examination to be reopened later in 2019, with Inspectors findings by early 2020 with potential adoption later in 2020.

The Councils are fully aware of the importance and significance of putting in place the Local Plan/s and are ensuring such resources and corporate attention is placed on taking matters forward in an appropriate manner. These are governed by internal budget setting and governance procedures within each of the Councils, maintaining the integrity of statutory functions, processes and decision making. Given the strategic significance of the Garden Communities to the Local Plan/s, senior planning officers are allocated from each of the Councils to work on the project, supplemented by a centralised project management resource (within Colchester BC) to ensure appropriate coordination and joint working is implemented. Other Council officers across economic development, transport and infrastructure, finance and legal teams are working on the project to advance the separate thematic considerations. Whilst key decisions are made individually by each Council, a strong joint working process is in place to draw together key officers and directors to consider matters of joint importance and to share information and consider appropriate joint ways forward.

In addition, NEGC Ltd is assembling a broader body of evidence to address certain aspects, including a detailed articulation of the potential public sector led delivery route, either via a locally led development corporation structure, or other forms of partnering with landowners/developers and scheme funders. The Business Plan sets out key workstreams underway, provides the governance structure and budgetary oversight to deliver the necessary workload.

Subject to the Local Plans being found sound, these policy controls will guide future planning stages. The Councils will move quickly to prepare a more detailed site-specific Development Plan Document (DPD) to provide a further layer of policy control. This will evolve current conceptual ideas into a more specific masterplan for the site, enabling more detailed thematic policies to be set out to guide subsequent delivery. The preparation of the DPD will draw from evidence already prepared for the Local Plan/s, supplemented and updated as necessary with additional detail such as on housing & employment mix and phasing, transport infrastructure, sustainability appraisal, updated viability evidence. The approach will draw heavily on community and stakeholder engagement delivered to take forward the debate once the principle of development has been secured thorough the Local Plan process. Work will come forward to evolve proposals to greater detail than initial Concept Frameworks prepared in 2016. The master planning will form the basis of the preparation of a site-specific Development Plan Document to be produced (Preferred Option) by the end of 2020. This will be consulted on, finalised into a submission draft for examination late 2021/early 2022 and subject to being found sound adopted to finalise the policy position by Summer 2022.

Work undertaken on the DPD will be directly transferable into the preparation of material to secure planning approvals for development on the site, enabling work to be undertaken in tandem on policy and applications. A site wide (or suitably phased) outline planning application will be prepared for submission (or a local Development Order if under the remit of a Development Corporation) as the core consenting order. The preparation of such material will be undertaken by the delivery body, either by the

private sector working separate to but alongside the public sector, via some form of joint venture vehicle, or via the public sector directly should it have either acquired or be in the process of acquiring the land (voluntarily or compulsorily). This would enable the determination of applications/s (LDO and/or outline planning application/s) to occuralongside or shortly after adoption of the DPD around the middle of 2022.

Consideration will be given to progressing initial phases of housing & employment development and/or infrastructure specific applications/reserved matters alongside the site wide approach to enable speedy start on site.

The Councils working with NEGC Ltd have assembled a technical team to take forward the DPD, master planning and development management processes, including an urban design team led by Prior & Partners but including a blend of architects (including practices such as Macreanor Lavington, Alexandra Steed Urban, Schulze+Grassov, HAT Projects, Mole Architects, Mikhail Riches) to provide a blend of approaches and enable distinctiveness in placemaking. The team also includes specialist community engagement practice Fluid who will implement participative local engagement with local communities and stakeholders. Separate consultants are also in place on transport (ITP, with Jacobs supporting ECC), property advice (GVA), corporate finance (Grant Thornton), legal support (Dentons). The approach is based upon a core project management resource (anticipated to be held and managed via NEGC), with a team of expert consultants drawn in to undertake technical work and evolve proposals. Subject to the pace of progress, the core team resource would expand accordingly to fit the scope and needs of the programme.

The Councils through NEGC have been delivering a structured approach to evolving proposals over recent years and have a Business Plan to give structure to the approach for the period 2019/20, with in principle support for a higher-level approach to 2020/21 and 2021/22. The production, approval and monitoring of Business Plan activity is governed by the NEGC Ltd company shareholders agreement and overseen by the NEGC Ltd Board. Given the continual evolution of the programme's delivery approach, the current Business Plan documentation is being kept under regular review and is included as a standing item on all future Board meetings.

The programme to date has been supported through a combination of MHCLG capacity funding (grant) and additional equal contributions from each of the four Councils. As at the end of 2018/19, the NEGC programme had received £3.2m funding from the MHCLG scheme and £2.4m funding from the Council shareholders. The level of funding commitment from the Councils together with the backing form Government show the level of commitment from all parties to undertake the necessary work required.

As set out in this document, the Councils have fully recognised that taking the programme forward during 2019/20 and beyond will be a resource intensive as the workload steps up to fund all necessary technical work to progress the shared Section 1 Local Plans, begin a three-sequence programme of public engagement and to develop a locally-led development corporation proposition including developing the schemes to delivery ready status. As such, 2019/20 is being considered as a year of preparation towards the delivery of the garden communities potentially through the establishment of a locally-led development corporation.

Key activities during 2019/20 will ensure that the programme is able to get on site as soon as is practically possible subject to and after the adoption of the shared Section 1 Local Plana. Essentially the work in 2019/20 will be a precursor and so enable the more detailed master planning work including public engagement and site-specific infrastructure/utilities planning that will need to be progressed in 2020/21 onwards. In addition, the further supporting work on transport infrastructure and economic growth workplan across the North Essex area during 2019/20 will provide the foundation for the programme to be progressed in 2020/21 onwards.

The level of funding required to deliver the programme workstreams contained in 2019/20 is planned to be funded by the Councils, additional anticipated Government funding and from a combination of funds carried forward from 2018/19 and other stakeholders who benefit from the work undertaken. North Essex is the largest programme in the MHCLG Garden Towns / Villages scheme. From the end of the 2020 period, it is anticipated that assuming a positive resolution of the Local Plan, the project will enter a new phase of financing, moving away from annual funding and Govt capacity funding awards to a more structured longer-term approach to resourcing (by it via a combination of investment and equity), with the potential involvement of external funding and delivery partners.

For the structure to succeed, deliver on the vision and realise the potential, there will need to be close working between The Councils, Government, landowners, developers, funding & delivery partners as well as local communities.

As part of this approach, discussions and negotiations have been ongoing with key landowners and site promoters for several years. Good working relationships exist with all key stakeholders, setting strong foundations to agree and implement an appropriate delivery structure as the sites make progress through the plan making stage.

The majority of land for the wider housing scheme is controlled by 2 main landowners (Gooch & Hunter), with most under option to Mersea Homes who have been actively promoting the land for development through the planning system for many years. Mersea Homes are a local housebuilder active on multiple sites across the area including implementing a 1,600-unit scheme in North

Colchester (Chesterwell), and at Ipswich Garden Suburb (with circ 800 home recently approved out of a total strategic site of 3,500 units).
Mersea Homes are committed to the delivery of the New Garden Community at Tendring Colchester Borders and have been engaging with the Councils over the past few years to explore potential options, including joint venture options, the Council led delivery proposals, direct delivery and funding roles. Such discussion and negotiations are continuing via a structured dialogue, led by NEGC with wider legal and corporate financing support.
The emphasis to date has been on acquiring land voluntarily and it is anticipated that land agreements will be entered into between the relevant landowners / developers and the delivery structure. Discussions have been ongoing for some time, and as a result the Board of NEGC Ltd (and subsequent Cabinets across each of the Councils involved) have agreed that should negotiations not proceed satisfactorily, a CPO approach should be initiated either by the relevant local Authorities and / or by a future Development Corporation. Confirmation of the shared Section 1 Local Plans and policy expectations therein will be a key influence and therefore it is anticipated that CPO will be initiated in tandem to a undertaking final discussions as to landowner/developer capacity to deliver on policy ambitions. Ideally all parties will be able to agree mutually acceptable terms, but ultimately CPO will provide a safeguard.
Initial consideration has already been given to potential property cost estimates and these are already being factored into NEGC led delivery financial models. Further analysis and consideration, including initiation of statutory processes will occur in 2020/21 with a potential CPO Inquiry to be held in 2021/22 to fix timescales for control of the land and delivery approach.
The Councils with NEGC Ltd have put in place a dedicated team to deliver, with commercial, planning, communications skills, supported by a broader technical consultancy team. Whilst NEGC Ltd has been established for circa 2 years and a structure put in place which could form the basis of future delivery, negotiations with landowners and promoters to date have not concluded on a defined fixed mechanism. It has also been recognised that any potential delivery structure would need to adapt to local circumstances and adopt the most appropriate structure to deliver on the vision and objectives. Ongoing joint working will occur between the Councils and with the main scheme promoters to define the most appropriate delivery route to combine the strengths and opportunities collectively provided by the public and private sectors working together.
In tandem the Councils will continue to advance work to consider and enable the establishment of a locally led development corporation, to evolve the current structure already in place through NEGC Ltd and site specific LDVs which already exist as wholly public owned private limited companies. This approach includes continuing work to prepare a suitable mandate and outline business case to confirm the extent of powers and functions to be bestowed into a locally led development corporation (work ongoing through 2019/20, led by NEGC Ltd with key support from Dentons, Grant Thornton and GVA). A proposed mandate would be considered by NEGC Ltd Board and the respective Councils, and subject to approval would lead to a submission to Government in 2020, and designation around the end of 2020. A range of activity is ongoing through NEGC Ltd in terms of gearing up for full operational activity, including financial modelling, considering the most appropriate legal structures, soft market testing with potential funding partners and wider corporate implementation matters around Council roles, legal and corporate functionality.
Once the scheme is underway it will be implemented through a phased ‘strategic master developer’ approach to provide strategic infrastructure in line with needs and to open up suitable subsequent phases of development, with ongoing land sales to house-builders/other developers to build up a strong delivery route. This will be undertaken across various entry points to the development to provide a range of distinctive character areas, typologies and housing products with multiple outlets at a small number of key parts of the site to maximise overall build out rates. The approach would step up in terms of resource and technical needs and be considered via the Business Planning process to ensure the delivery body was suitably geared up to deliver, as approved by the appropriate body, potentially the Board of the Development Corporation and with the approval of an appropriate Oversight Authority/structure.

Please summarise your maintenance strategy for ongoing costs for the scheme

Approach to Maintenance:
Essex Highways operates an asset led approach meaning that decisions for maintenance both capital and revenue are made using available data. Additionally, a risk-based approach is well embedded, operating for over 10 years to determine reactive defect repairs, and additionally to inform capital programmes. Capital investment is determined using a combination of lifecycle planning, condition data, low risk defects, customer requests and demands on the network overall. Additional factors such as future usage and development are also considered in determining maintenance programmes. Treatments and materials are selected to provide required service performance, and to provide best value and whole life cost. In support of our asset led approach, we were successful

in gaining the ISO55001 Asset Management Systems standard in March 2017 which has been sustained to date.
Following scheme opening, the infrastructure will be added to Asset Management Database and becomes part of the Essex Asset Management Plan.

Designing for Maintenance:
Throughout the design of the link road and Rapid Transit System interventions the principle of design for maintenance will be employed to maximise safety and minimise cost through maintaining this new asset. As part of the development process, Essex Highway's asset management team will be engaged to ensure that the maintenance of the link road and Rapid Transit System will fit adequately into their long-term strategy for the wider strategic road network.
Design of any carriageway will be undertaken so that a 25-year design life is specified. Structures, specifically on the link road junction with the A120, will have a 120-year design life. Drainage systems will also be designed for climate change factors on top of base design specifications.

Project milestones

Please provide actual or estimated dates for the following infrastructure delivery milestones:

First infrastructure planning permission granted	31/12/2020
Last infrastructure planning permission granted	31/12/2020
All land assembly completed (if required)	30/06/2021
Project infrastructure works started	31/03/2022
Project infrastructure works completed	31/03/2024

Please provide actual or estimated dates for the following housing delivery milestones:

First residential units commenced	30/06/2023
Last residential units commenced	30/06/2050
First residential completion	31/12/2023
First residential completion	30/06/2050

Please attach an outline delivery programme for your proposal and the key milestones required to achieve it

Filename	Description
Link Rd RTS Programme.pdf	Delivery Programme

Please list planning references for the infrastructure works

A planning application has not yet been submitted for the A120-A133 Link Road or any of the interventions which make up the Rapid Transit System.

In line with the project delivery plan set out is Section 7.3.2 planning applications for the infrastructure would be submitted in Q2 or Q3 2020. In order to reach this milestone, the link road and RTS will have been developed to a sufficient level of design in order to determine land-take requirements and a sufficient level of stakeholder engagement will also have taken place.

Please list all statutory powers or consents required and already obtained to deliver the HIF works

Due to the early stage of design development, no statutory powers or consents have been obtained for the A120-A133 Link Road or any of the interventions which make up the Rapid Transit System.

It is anticipated that the following consents and powers will be required as the infrastructure schemes progress:
A120-A133 Link Road.

Planning Consent:
Although the link road has a direct connection to the A120 which is part of the strategic trunk road network, it is considered that the scheme would be developed and delivered by ECC as the Highway Authority. Following construction of the link road it is considered likely that the slip roads to and from the A120 would be handed to the Secretary of State (SoS) as Highway Authority. It is therefore concluded that the works fall within the remit of the Town and Country Planning Act 1990. Regulation 3 of the Town and County Planning General Regulations 1992 relates to the determination of a planning application and indicates that a development proposed and to be constructed by the Local Highway Authority should be determined by the County Planning Authority. Therefore, a planning application for the proposed works would be prepared for submission to ECC.
Land Acquisition / Compulsory Purchase Order
The land required for the construction of the new link road may become available through negotiation, however, we would consider running a compulsory purchase order process in parallel to the negotiations once planning permission has been granted in order to avoid unnecessary delays. If necessary, the CPO would be published following approval of the planning application for the scheme.
Side Road Orders
This is a statutory order under Sections 14 and 125 of the Highways Act 1980 which authorises a highway authority to make alterations to roads or other highways affected by a new road. This would set out roads to be improved, roads to be stopped up, new roads to be constructed, and where relevant private means of access to be stopped up and new means of access to be provided.
Public Right of Way Orders
Where the link road crosses existing Public Rights of Way, Orders under Section 119 of the Highways Act 1980 will be required where it is necessary to divert them.

Rapid Transit System:
It is considered that the Rapid Transit System interventions which are not located on the Garden Community are covered by permitted development rights as they would be located solely on land controlled by ECC.
For interventions on the Garden Community, it is likely that the statutory powers and consents described for the link road would equally apply.

Stakeholder management

Please summarise how the key delivery partners will work together effectively

Key Delivery Partners:
Key partners for the delivery of the schemes include:
• Essex County Council – the local authority responsible for the county's highways
• North Essex Garden Communities (NEGC) – a company set up in 2017 comprised of a consortium of councils to take forward proposals for garden communities across North Essex
• Tendring District Council – tier 2 local authority in the vicinity of the schemes
• Colchester Borough Council - tier 2 local authority in the vicinity of the schemes
• Essex Highways - a partnership between Essex County Council and Ringway Jacobs that maintain and improve the highways network in Essex
• Ringway Jacobs – Essex County Council's technical partner for highways schemes
• Eastern Highways Alliance – an alliance of 11 local highways authorities in the East of England
• Supply chain partners – contractors employed to deliver the schemes
• Highways England – government-owned company responsible for operating, maintaining and improving England's motorways and major A roads
• Developers – developer organisations chosen to implement the North Essex Garden Communities, particularly the Tendring Colchester Borders Garden Community
Key Partners speaking with one Voice:
A communications plan will detail key messages throughout the lifecycle of the scheme. This will be a live document that will be updated as the scheme progresses. After each update, the communications plan will be circulated with all key delivery partners to ensure that they are all receiving and consequently transmitting messages which are consistent right across the board.

At project milestones, representatives from each of the key partner organisation will be briefed by the project team. This briefing can be in person or a briefing note can be circulated to the representatives. The representatives from each delivery partner organisation will then be responsible for sharing the information to the relevant teams.

Consistency across Schemes:

Regular meetings will be held between key delivery partners to share information about progress of projects (for example, housing developers sharing designs with the infrastructure developers) to ensure the compatibility of the housing with the infrastructure and continued consistency of objectives as the schemes develop.

More widely, with the potential for numerous infrastructure and housing projects being delivered concurrently during the delivery of the link road and rapid transit system, it will be important to maintain a dialogue between the organisations responsible for them. To that effect, a communication working group will be set up to give the provide a regular platform for representatives from the key delivery partner organisations and from other infrastructure or housing schemes in the area to discuss progress and any key information that needs to be shared to ensure the smooth and successful delivery of the schemes.

Scheme Monitoring:

Effectiveness of delivery, and as such the effectiveness of the key delivery partners working together, will be monitored by the Project Board.

The Project Board is responsible for the direction and overall management of the scheme. It is chaired by the Senior Responsible Owner and made up of the Executive and Senior User for each of the partner statutory authorities, the Project Assurance Lead and the Business Change Lead. Project Board meetings are normally held every six weeks. The Project Manager reports regularly to the Project Board, keeping members informed of progress and highlighting any issues or concerns.

The responsibilities of the Project Board include:

• Setting the strategic direction of the project;
• Defining the scope and setting the timescales for major project milestones;
• Approving the appointment of the Project Manager;
• Providing the Project Manager with the strategy and decisions required to enable the scheme to proceed to programme and resolve any challenges;
• Securing necessary approvals through the partner statutory authorities;
• Approving the project scope of work, programme and budgets, as well as any subsequent changes;
• Signing off completion of each stage of the project and authorising the start of the next stage; and
• Monitoring project risks and taking any appropriate action to mitigate risks.

Maximising the effectiveness of Housing Delivery:

The approach to the delivery of the wider housing and mixed use is likely to take the form of a ‘strategic master-developer’ type role. This will either be via the current developer (likely in partnership with others) or via a strong public sector led approach, potentially involving a locally led Development Corporation. The approach will deliver serviced development plots to the market at a steady and constant pace over the lifetime of the project. Serviced land will be made available to a wide range of developers and housing providers who will undertake the final stage in terms of physical construction of the homes/buildings and sales to occupiers/consumers. This enables bodies such as housebuilders to focus on their areas of expertise (building and selling homes) without exposing them to the wider challenges of infrastructure funding and need for patient capital.

Partnership working will be secured via planning tools (such as via Planning Performance Agreements and other mechanisms) and cover joint working on policy development, masterplanning and the evolution of detailed proposals. This will take forward positive joint working that has been ongoing to implement a joint planning approach across the area between the Councils and other bodies. Full and participative coordination will continue with an anticipated strong role for NEGC to lead workstreams relating to planning, infrastructure, funding, communications, stewardship, innovation and other key elements required to deliver the scheme. This level of control will help to ensure that a broad range of housing providers can come forward to accord with multiple Government programme objectives – such as by providing self-build opportunities, larger scale custom build, sites for PRS, opportunities for SME builders and direct contractor delivery. It will also help to accelerate and enhance build out rates by removing some of the blockages that can limit the pace of development from traditional schemes.

Please summarise how you will work with the other key stakeholders to ensure project success (i.e. local residents / businesses)

Key stakeholders have been identified through a stakeholder mapping exercise. Stakeholders broadly fit into one or more of the following groups:

- Delivery partners
- Business
- Disability groups
- Education
- Environmental interest
- Walking, Cycling and Horse-riding (WCH - formerly Non-Motorised Users)
- Political (MPs, county council, local council)
- Development
- Network users/traffic generators (includes Emergency Services and transport operators etc..)
- Community (includes residents and residents' associations; landowners, parish councils etc..)
- Statutory (i.e. utilities and Historic England, etc)

The way we work with stakeholders will differ depending upon which group(s) they are associated with as different stakeholder groups have differing levels of interest and influence.

Delivery partners:

We will work closely with delivery partners as set out in our response to Section 7.5.1.

Business:

Businesses will be likely to benefit from the schemes once they have been introduced but they may experience some disruption during construction so the work we do with them will change throughout the process. We will mainly keep in contact with businesses via email to update on the scheme progress but will also set up a business forum to provide the opportunity for constructive dialogues to be held with business representatives throughout the project lifecycle.

For example, the business forum will be used to hold workshops early in the scheme development to share the initial plans and gather feedback on how the plans could affect their businesses. This will enable the project team to take into account the views of businesses to help shape the design development. There is also the opportunity to proactively engage business breakfasts or meetings arranged by the Federation of Small Businesses to update and gain feedback on any issues relating to the delivery of the scheme.

Disability Groups:

To enable us to consider the requirements of people with disabilities at a formative stage we will have early contact with disability groups, with the view to holding a meeting with disability representatives to discuss the plans and gather their feedback. This approach has been developed from our previous work proactively engaging residents with sensory impairments on the Chelmsford City Growth Package, which was recently nominated for the British Construction Industry's 'Community Engagement of the Year' award. We will aim to ensure that all materials online, on social media and distributed in relation to the scheme will be fully accessible.

Education:

As with local businesses, educational establishments such as schools, colleges and universities will likely benefit from the schemes once they have been implemented but there may be some disruption during construction, so it will be important to meet with educational establishments to explain the long-term benefits of the schemes and get their feedback on how we could minimise disruption for them during construction.

We will engage separately with the University of Essex and Knowledge Gateway. We are planning stations for the Rapid Transit System at the University and Knowledge Gateway, so we will work closely with both organisations to develop the plans, using their knowledge of the area and take into consideration their feedback at a formative stage.

Environmental Interest:

Environmental interest groups such as the Essex Wildlife Trust will have an interest in aspects of the scheme such as how we are planning to minimise the impact on the environment through the design and during construction. It is also often invaluable to be able to gather local knowledge from such groups. We will therefore run an environment forum to engage on a regular basis with environmental interest groups. Some statutory stakeholders such as Natural England will be invited to the environment forums.

Political:

Keeping local authority councillors and Members of Parliament informed of progress enables them to respond to constituents who

contact them about the schemes and can also gather political support and backing for the scheme. Political stakeholders will be briefed either in person or via a paper/email briefing in advance of any major public announcement or contact with their constituents which they could be contacted about.

Development:

We will coordinate with home builders to ensure our scheme helps to deliver the predicted housing numbers with minimal disruption and at speed. This will involve face-to-face meetings with engineers to ensure scheme construction and the need for building materials to be moved onto development sites do not clash.

Network Users / Traffic Generators:

Key businesses, transport providers and emergency services will be invited to a workshop early in the development of the schemes to discuss how the design could be altered to better cater for their requirements. A separate workshop will be held for the same users to discuss how their operations may be affected during construction and how we plan to keep disruption to a minimum.

We will engage with members of the public that use the network by advertising information events in the local area and updating the scheme websites when new information becomes available. The Essex County Council customer contact centre will be briefed to deal with telephone enquiries about the schemes and an email address may be set up for people to contact if they have comments, queries or concerns. A website will host information on the scheme with social media from local councils and other accounts pushing people towards this information stream.

Community:

We plan to work closely with communities and community representatives to ensure they are kept informed of the progress of the schemes and build positive relationships that foster a constructive dialogue.

Community representatives such as parish councils and residents' associations will be invited to join a community forum which will provide a platform for information sharing – the project team sharing information about the schemes and the community representatives imparting their local knowledge. Community representatives will also be included in stakeholder mailouts when information is released, for example at key project milestones or when consultation on designs are launched.

We will work with landowners and residents closely to gather their views and incorporate them into the design where possible. Letter drops will be used initially to introduce the residents to the schemes that are relevant to them and we will provide the opportunity for residents to join a mailing list if they would like to be kept up-to-date with the development of the schemes and will circulate emails as new information becomes available.

Letter drops may be used to target small or wide areas depending upon the requirements at different stages of the project, for example a letter to all residents within X km of the link road will be sent a letter informing them of the start of a consultation period, whereas letters will be sent specifically to landowners to request access to land for surveys and one-to-one meetings as required.

Advertising for information events will also be displayed in hubs of residential areas (such as Post Offices, village halls and schools) and the scheme website will be a central location for the latest information that residents will be able to access at any time.

Statutory:

We will work with statutory bodies as set out in planning requirements for the schemes.

Public Sources of Information:

A dedicated webpage will be created and updated with the latest information to keep people up-to-date with the progress of the schemes.

Public information events will be held during any consultation or engagement periods that are held during the lifecycles of the schemes.

Project assurance

What are your project assurance processes, such as gateways reviews, to ensure project delivery against the business case?

ECC has well established processes (ECC's Major Projects Handbook) to govern the development of projects through their design and construction lifecycle, with appropriate internal assurance for projects to move to the next phase of development.

To supplement these well-established internal processes, we propose to commission independent reviews at each of the remaining OGC Gateways™ in a proportionate manner. ECC is familiar with organisations such as Local Partnerships, an independent organisation (a joint venture between Her Majesty's Treasury and the Local Government

Association) that could be commissioned to undertake Gateway Reviews, with these scaled and weighted according to a level proportionate to reflect the stage and complexity.

Recommendations and findings (with a supporting assurance report) provided by Local Partnerships or a similar organisation at each Gateway will be reviewed by the SRO and Project Board for action inform ECC investment boards and key decisions.

The outcome of these reviews will be provided in Quarterly Reports to the MHCLG and other Government departments / agencies where relevant.

This HIF bid Business Case and its review by MHCLG and Homes England is considered to represent OGC Gateway 1. Post award of HIF monies, ECC and partners would update relevant information in relation to the housing and where relevant the transport business case. This outline business case update would include a more mature understanding of cost and risk relevant to the stage of design, with this information being used to inform the optimal delivery strategy. OGC Gateway 2 would involve an independent due diligence review of the updated Business Case covering all 5 cases. In particular, it would assess the proposed delivery strategy (governance and procurement), continued alignment of housing and transport objectives and that funding availability is confirmed for the whole project and continues to represent value for money.

OGC Gateway 3 – Final Investment Decision:

This would be undertaken prior to ECC placing the relevant investment contracts for the construction of both the A120-A133 Link Road and Rapid Transit projects. The gateway would include a consideration of the updated final business case including scheme costs following the completion of the tendering process. In addition to validating the continued value for money this would seek to assure that the Contractor / ECC-led site supervision teams are well placed to deliver the scheme according to terms outlined in the contract. This information would be provided by the SRO to ECC's S151 Officer and Political Leadership Team for Cabinet Sign off.

During ongoing project delivery ECC's Project Manager will report to the Project Board on delivery to milestones, the management of risk and performance against cost, quality and safety requirements. Contractors and ECC/Network Rail's Site Supervision teams will make use of earned value management, risk management, cost loaded programmes and leading / lagging indicators to monitor and evaluate performance and enact improvement and feedback lessons learned where required.

OGC Gateway 4 – Readiness for Service:

It is considered that this OGC Gateway would be adequately covered by existing ECC assurance processes for bringing both the Rapid Transit System and A120-A133 Link Road into service.

Finally, considering benefits realisation, ECC is committed to an outline monitoring and evaluation process in line with the HM Treasury Magenta Book (see section 7.6.2 for more details on monitoring and evaluation).

Please provide details of your proposed internal monitoring approach for the scheme

Essex County Council (ECC)'s Commissioning Manager will be responsible for monitoring and evaluating the scheme's desired outcomes through design, construction and following its completion.

ECC's Commissioning Manager has already set up a proportionate approach to monitoring the progress of both infrastructure schemes via project boards, monthly template reporting and escalation of issues if, and when required to the political leadership team and / or capital investment board. As the focus moves from business case development to further design and construction the nature of the metrics will change. While each scheme will be delivered by different organisations, ECC will select a set of common reporting metrics (with the option for additional scheme specific metrics) for ease of dashboard reporting, with these evolving as the projects move from design and into delivery. The Project Boards for both schemes will manage issues and risks arising by exception, with escalation in line with ECC's corporate risk management strategy where required.

The safe delivery of the link road and Rapid Transit System interventions to time, cost and quality requirements will be the responsibility of Essex Highways. The Essex Highways Major Projects Contracts Manual will be used to provide a proven approach to managing and monitoring the delivery of the scheme. ECC will appoint a NEC PM and a site supervision team to manage the contract with the appointed contractor. The NEC PM will report to the Link Road Project Board on a regular basis (typically monthly). This will include achievement of delivery milestones, the management of risk and performance against cost, quality and safety requirements. The site supervision team will provide quality control and on-site assurance. They will make use of earned value management, risk management, Primavera P6 cost loaded programmes and leading / lagging indicators supplied by the contractor. They will work with the contractor to manage early warnings and risk reduction in line with the NEC.

Following completion of each scheme, ECC and CCC will review performance of each scheme and the wider housing project in line with a Monitoring and Evaluation Plan. As both the wider housing project and scheme design matures, ECC's Commissioning Manager will review and update the initial Monitoring and Evaluation Plan developed. Metrics will include amongst others:

- Housing unit starts;
- Housing unit completions;
- Commercial floorspace planned;
- Commercial floorspace constructed;
- Full time equivalent jobs created; and,
- Land and property outputs, such as follow on investment associated with the housing sites
- Transport outputs such as traffic flows on the link road and surrounding roads, users of the park and ride and passengers making use of RTS.

A sum of £100k has been considered appropriate for the monitoring and evaluation plan for both schemes. This is additional to the labour costs of the time associated with the Commissioning Manager, Project Board and site supervision teams references above.

Risk Management

Please outline key risks to delivery and mitigations including known delivery constraints and blockages

Number	1	**Likelihood**	Medium high	**Impact**	Medium high
Description	Planning conditions require additional mitigation for protected species, specifically Great Crested Newts resulting in additional expenditure and land requirements				
Mitigation	Detailed ecological assessment and surveys and early discussions with planners and environment stakeholders				

Number	2	**Likelihood**	Medium high	**Impact**	Medium high
Description	Statutory Undertakers C2, C3 or C4 estimates may be late or inaccurate incurring additional costs and programme delays				
Mitigation	1) Request data early in programme 2) Update C3 estimates as required 3) Fully understand all the timescales involved for each utility company				

Number	3	**Likelihood**	Medium low	**Impact**	High
Description	Local plan rejected for Garden Village and/or political support changes leading to inability to deliver infrastructure				
Mitigation	Work closely with Local Plan authorities and ensure compatibility between HIF bid and Local Plan				

Number	4	**Likelihood**	Medium low	**Impact**	High
Description	Inability to deliver RTS interventions in Colchester due to constrained locations, public/political pressure or historic bus-related issues. The full scope of RTS as set out in the HIF bid is not realised, hence the full benefits are not realised				
Mitigation	Early engagement with stakeholder and the public. Detailed review of Rapid Transit interventions and viability assessment at an early stage in the process to ensure deliverability				

Number	5	**Likelihood**	Medium low	**Impact**	High
Description	Link Road connection with A120 is not accepted by Highways England leading to redesign, cost increases and programme delay				
Mitigation	Early engagement with Highways England, including entering into Memorandum of Understanding				

Number	6	**Likelihood**	Medium low	**Impact**	Medium high
Description	Stopping up / diversion of PROWs and SROs are objected to and lead to Public Inquiry				
Mitigation	Early engagement with stakeholders and work to build the case for required orders. Include mitigation in planning application. Scheme safeguarded corridor to be included in Local Plan				

Number	7	**Likelihood**	Medium low	**Impact**	Medium high
Description	Scheme doesn't obtain planning permission, resulting in further redesign to satisfy objections and additional cost				
Mitigation	Early engagement with all stakeholders, including County and City council planning officers				

Number	8	**Likelihood**	Medium low	**Impact**	Medium high
Description	Planning conditions are overly onerous and require additional design or land to discharge				
Mitigation	Engage early with planners before submission of planning application and work with planners to agree conditions				

Number	9	**Likelihood**	Medium low	**Impact**	Medium high
Description	Construction works may cause unpalatable local impacts resulting in reputational damage to the council				
Mitigation	1) Early stakeholder engagement 2) Review of suitable construction techniques 3) Continue to review buildability of the design 4) Produce construction strategy report				

Number	10	**Likelihood**	Medium low	**Impact**	Medium high
Description	Unforeseen ground conditions or contaminated ground resulting in unplanned remediation or stabilisation works				
Mitigation	1) Conduct desk top study 2) Carry out GI surveys as soon as land access available				

Number	11	**Likelihood**	Medium high	**Impact**	High
Description	Ability of the construction sector to implement the housing scheme (skills & labour availability) resulting in programme delay and cost over-runs				
Mitigation	Government support to construction sector skills development. Local support for construction training activity via local higher/further education.				

Number	12	**Likelihood**	Medium high	**Impact**	High
Description	Unforeseen costs associated with implementation of the Garden Community bringing its viability into question				
Mitigation	Inclusion of risk/contingency allowance. Careful contract management to deliver value for money				

Number	13	**Likelihood**	Medium low	**Impact**	High
Description	Local Plans and DPDs not agreed by Districts, fail at examination or there is significant slippage in the timescales that are beyond the tolerance of the programme.				
Mitigation	Regular engagement with Councils and review of Local Plan documents and evidence by programme team / consultants. North Essex Authorities with the production of the additional evidence required by the Planning Inspector and to ensure the programme remains on track. Scheme deisgn can occur outside of the plan making process to come forward in parallel.				

Number	14	**Likelihood**	Medium low	**Impact**	High
Description	Disruption to property market and values bringing its viability into question				
Mitigation	Ongoing review of market demand and property considerations. Scheme design to include multiple tenures and ability to flip between products to maintain delivery of homes under alternative tenures to meet market demand/capacity considerations.				

Number	15	**Likelihood**	Medium low	**Impact**	Medium high
Description	Finance cannot be secured to deliver the full (housing) scheme, resulting in housing components not coming forward to programme				
Mitigation	Approach designed so it is sufficiently attractive to the wide market (de-risking and clear Council backing). Ongoing lobbying of the Government for infrastructure funding / financial flexibility. Progress towards establishing a strong public sector delivery model to provide clarity, certainty and minimise risk. Land purchase will be asset backed and at market value. Clear priorities of work undertaken by the Commercial & Delivery Workstream.				

Please outline your approach to managing risk

Infrastructure

Our project managers, project delivery teams and Project Board members are responsible for a proactive risk management culture and set of procedures, which ensures that risks are continuously identified, owners assigned, and mitigation measures put in place. The project delivery team and stakeholders have systematically reviewed the risks identified during the co-development of the two infrastructure schemes by identifying both specific risks and generic risks associated with the design, procurement and construction inherit in similar infrastructure schemes. This has been undertaken in accordance with the Risk Management Plan, which is underpinned by ISO 31000 and Management of Risk (MoR) Best Practice to foster a culture of continuous proactive management of risk and uncertainty.

RACI Matrix

This risk management methodology will continue in the ongoing design, consenting and construction of the two pieces of infrastructure, with regular reviews to check the status of each risk and regulate their control and mitigation. For each scheme the following RACI matrix is relevant for risk management:

• Accountable: ECC Project Manager

• Responsible: Design Project Manager for the A120-A133 Link Road and Rapid Transit System interventions, with periodic facilitator support from our risk managers

• Consulted: Cost Estimators / Change Managers / Project Delivery Leads and Stakeholders (where relevant)

• Informed: Project Board members / Programme schedulers / Cost Estimators and Change Managers.

Risk will be managed at a project level using the specific and appropriate tools and procedures.

Approach to Risk Management on the A120-A133 Link Road and Rapid Transit System:

At key stages of the link road and Rapid Transit System development, formal facilitated Risk Identification Workshops will be held with attendees from all project disciplines, including representatives from ECC and other key stakeholders.

We have used these workshops during co-development to draw up and review risk registers to identify the range and extent of risks that could adversely affect the delivery of the link road and the Rapid Transit System. These sessions have identified and will continue to identify the likelihood of each risk occurring and the relative quantifiable impact in terms of cost and programme. The risk register will continue to be maintained throughout the project as a live document and reviewed on an ongoing basis through similar workshops. The most significant risks will have Risk Management Plans developed. Risks can also be identified at any time outside of these formal lines of communication and will be highlighted to the project manager if this occurs.

Each risk identified has been classified and qualitatively assessed and the appropriate risk response (mitigation) selected. The risk register is reviewed and updated by the project management team on a regular basis, whereby risk management is addressed, and

risks are re-assessed.
A Risk Status Report is produced and presented at Progress Meetings and the Project Board meetings, where any risks that need escalating are discussed, to allow appropriate and timely Senior Management support and/or intervention.
All risks are currently owned by a combination of the project delivery partners. As the project develops it is expected that some of these risks will be transferred to contractors constructing the infrastructure depending on who is best placed to manage and own the risk.
In conjunction with Risk Management, Issue Management has enabled issues and appropriate controlling actions to be identified and managed/controlled. The progress and resolution of these actions are monitored by the Risk Manager.
If considered appropriate by the promoting authority, it may be that the management of risk is considered separately on the A120-A133 Link Road and Rapid Transit System due to their low level of dependence and connectivity. This way the management of risk would be more focussed and dedicated.

North Essex Garden Communities
To support the successful delivery of the wider North Essex Garden Communities (NEGC) Programme, the NEGC Programme Team maintains a high-level Strategic Risk Register on behalf of and regularly reported to the NEGC Board.
The Strategic Risk Register focuses on the key risks the Board have identified as the most significant areas that need to be monitored and reported to them on a regular basis. These risks are set out in accordance with the Treasury Green Book approach to risk appraisal and are categorised as follows:
• Strategic;
• Economic;
• Commercial;
• Financial Case; and
• Management.
The Register uses a RAG (red, amber, green) rating system to highlight the total score of the recommended probability and impact of these strategic risks and also details the mitigation that has been put in place to manage these concerns. The programme's workstreams which include representatives from multiple key stakeholders and input form technical advisors also monitor and assess risk topics and ratings to ensure they reflect the current position.
These key risks are monitored and updated as the programme progresses and reflect the impact of the key workstreams and activities of NEGC. Any changes to the status of each of the risks are reported to the Board with appropriate responses and mitigation strategies
A copy of the Quantified Risk Assessment for the A120-A133 Link Road and Rapid Transit System is attached (see Att.7.7.2a)

Please attach a copy of your current risk register for the scheme

Filename	Description
7.7.3a - Infrastructure & Housing Risk Register - Feb 2019.xlsx	Risk Register TCBCG

Additional information

If you have any further information to support the Management Case for your project, which has not already been captured in the above, please include this here

Previous Project Experience and Track Record of Successful Delivery:
ECC and its integrated Highways and Transportation Team have a track record of successfully developing and delivering major interventions to support high levels of growth. ECC has developed a Major Projects Manual to deliver its capital portfolio of schemes in a robust and repeatable manner. This has enabled ECC to deliver (or is, in the process of delivering) nearly £200m of local transport improvement schemes since 2014 through a combination of SELEP Local Growth Fund, DfT, developer and ECC funding. ECC has also successfully secured over £200m of South East Local Enterprise Partnership funding and has grown the Highways Integrated Contract from £40m in 2012 to £140m in 2017.
ECC has demonstrated strategic and collaborative working with Highways England (HE) to plan for key infrastructure that will unlock further economic growth for Essex, for instance on the M11, the A12 and the A120, with ECC currently progressing plans for the M11

Junction 7a to unlock new substantial housing associated with the Harlow Garden Town. Collaborative working with HE will be particularly important for the A120-A133 Link Road which has a major junction with the A120 Trunk Road and is the responsibility of HE.
ECC also has a strong history of delivering major £100M+ highway schemes in the county. Since 2000 these have included the A120 Braintree-Stansted dual carriageway for HE, the A130 dual carriageway linking Chelmsford and South Essex between the A12, A132 and A127, the A131 Great Leighs Bypass and the A13/A130 Sadlers Farm Improvement for the London 2012 Olympics.
Testament to the hard work and endeavour over a number of years, Essex Highways were successful in securing the Transport Local Authority of the Year 2017 at the National Transport Awards.
The establishment of NEGC Ltd has directly involved appointing a team with sufficient commercial and delivery experience to take the programme forward. This was in response to a key known need and a direct recommendation set out in the Kerslake peer review of the approach in 2016. This flagged the need for sufficient skills to be in place to deal with large scale complex projects such as this. As a result, the key appointment of a Managing Director secured a key individual with direct experience of capital investment in large scale infrastructure works (having worked on Heathrow T5 and Gatwick expansion, including implementation of on airport rapid transit service) and the delivery of large scale mixed use developments (having led the promotion and delivery of the Manydown scheme at Basingstoke, including asset management, scheme advancement through planning, and securing a funding and delivery partner. This provides a demonstrable track record of bringing large housing development successfully through the planning system and into delivery, working successfully with a broad range of public and private sector partners.
The wider NEGC approach has been to create a small team of commercially minded and experienced in-house resources, supplemented by the best available consultant team (across legal, corporate finance, delivery structures, property & CPO, viability, master planning, utilities and transport planning). The core team have wide knowledge and experience and demonstrable track record of delivery of large scale, complex housing and infrastructure projects.

Filename	Description
7.7.2a - A120-A133 Link & RTS - QCRA - Feb 2019.pdf	Quantified Risk Assessment
7.2.1a - NEGC Governance Chart.docx	Att 7.2.1a NEGC Governance Chart

Project Sign Off

Please set out how you have considered your duties under the Equalities Act 2010 (Public Sector Equality Duty) and State Aid risks

Equalities Act 2010:

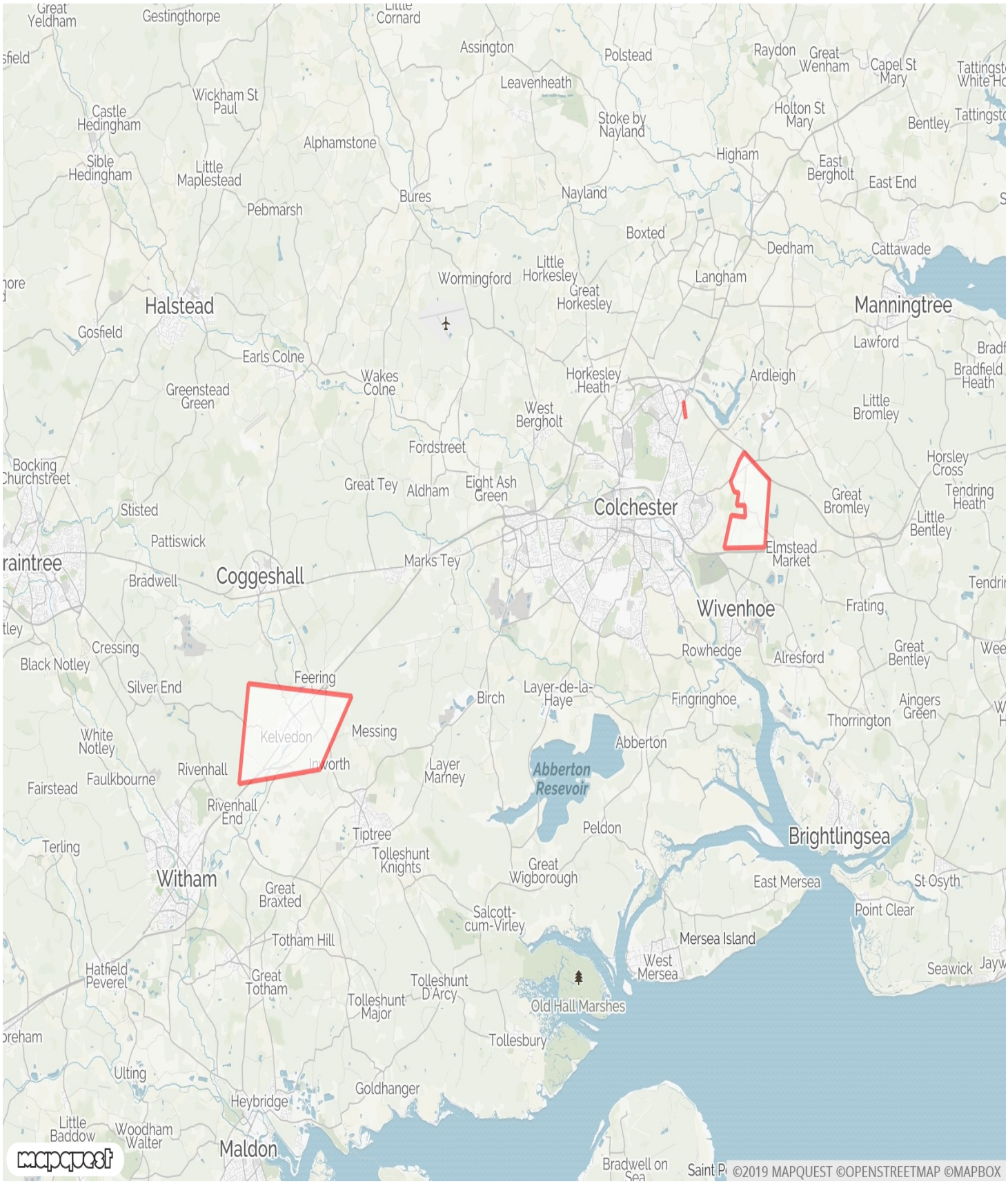
We have produced an Equalities Impact Assessment (EQiA) for this project and bid. We concluded that the changes would have a universal impact and would not disproportionately impact any equalities group.

State Aid:

The bid does not breech State Aid regulations. ECC is in the process of obtaining external independent legal advice to confirm this position.

Please attach your Section 151 officer sign off for your proposal

Filename	Description
S151 sign off - Colchester Tendring HIF bid.pdf	Section 151 Sign Off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Gestingthorpe
Little Cornard
Assington
Polstead
Raydon
Great Wenham
Capel St Mary
Leavenheath
Wickham St Paul
Castle Hedingham
Stoke by Nayland
Holton St Mary
Bentley
Alphamstone
Higham
East Bergholt
Sible Hedingham
Little Maplestead
East End
Bures
Nayland
Pebmarsh
Boxted
Dedham
Cattawade
Little Horkesley
Wormingford
Langham
Great Horkesley
Halstead
Manningtree
Gosfield
Lawford
Earls Colne
Bradfield Heath
Wakes Colne
Horkesley Heath
Ardleigh
Greenstead Green
West Bergholt
Little Bromley
Fordstreet
Horsley Cross
Great Tey
Aldham
Eight Ash Green
Tendring Heath
Colchester
Great Bromley
Stisted
Little Bentley
Pattiswick
Elmstead Market
Marks Tey
Bradwell
Coggeshall
Wivenhoe
Frating
Cressing
Rowhedge
Great Bentley
Black Notley
Alresford
Feering
Silver End
Birch
Layer-de-la-Haye
Fingringhoe
Aingers Green
Thorrington
Kelvedon
Messing
White Notley
Abberton
Inworth
Layer Marney
Rivenhall
Faulkbourne
Abberton Reservoir
Fairstead
Rivenhall End
Peldon
Tiptree
Brightlingsea
Terling
Tolleshunt Knights
Great Wigborough
Witham
East Mersea
St Osyth
Great Braxted
Point Clear
Salcott-cum-Virley
Totham Hill
Mersea Island
Hatfield Peverel
West Mersea
Seawick
Great Totham
Tolleshunt D'Arcy
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