
Housing Infrastructure Fund

Business Case - HIF/FF/000288/BC/01 - Beaulieu Station and North East Bypass: Chelmsford

Bid Details

Lead Authority

Essex County

Is it a joint bid with other Local Authorities?

No

Contact Details

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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

Beaulieu Station and North East Bypass: Chelmsford

Please provide an Executive Summary for your proposal

Essex has major ambitions for housing growth: to enable over 180,000 new homes in the next 20 years. Essex is a growing, attractive and competitive place for people to live and for business to locate. The County hosts two major London airports at Stansted and Southend, three major shipping ports at Tilbury, Harwich and London Gateway, and Essex and Anglia Ruskin universities. The County borders London with excellent connectivity to the Capital.

Chelmsford and Braintree enjoy a buoyant housing market (Att. 1.1.2a) with excellent demand, developer investment appetite and strong house and land values. Chelmsford City Council delivers over 1,000 homes a year, including 300 a year in the North East (NE) Chelmsford growth corridor towards Braintree. The inspector found Chelmsford's Local Plan sound in February 2019 - subject to main modifications that do not affect either housing numbers or site allocations. NE Chelmsford Garden Community continues the highly successful development already underway at Beaulieu.

This bid is for £217.9m capital funding for Beaulieu Station and Chelmsford North East Bypass, to support 14,109 new homes in four popular communities in the Chelmsford to Braintree corridor:

- NE Chelmsford Garden Community (10,559)
- Broomfield (450)
- Great Leighs (1,100)
- Great Notley (2,000)

10,500 homes depend on the Station and Bypass (Att. 1.1.2b). Of the total 14,109 homes only 3,609 would come forward without the infrastructure, due to market failure. Further development in NE Chelmsford cannot proceed without the Station and Bypass. Development on the site with planning permission in NE Chelmsford (Beaulieu) is capped at 2,500 homes without the Station through a Section 106 agreement (Att. 1.1.2c, p44). Chelmsford's Local Plan Policy S11 (Att. 1.1.2d) requires the Station and the Bypass for further phases of proposed development. The new homes in the four sites put pressure on the existing road network, requiring the Bypass. The Station also needs the Bypass as modelling suggests that the Station will attract 1000+ trips from existing settlements in the peak hour when it opens, limiting the capacity for traffic from new homes.

However, the Station is too expensive for the sites to pay for through developer contributions and there is no alternative public or private sector investment. The Bypass is a cashflow and viability issue. The new road unlocks the homes on these four sites and supports the Station. However, the sites cannot provide enough funding to pay for the road until they are built out in 2036. Developer contributions to road improvements will fund dualling of the Bypass to unlock further growth from the 2030s. Without HIF funding, 10,500 homes and the implementation of Chelmsford's Local Plan is at risk.

Chelmsford and Braintree are ready to deliver new homes. There is an established NE Chelmsford Garden Village Consortium leading the Garden Community, a planning performance agreement is in place for the site and a Garden Community bid submitted to government. Chelmsford and Braintree Councils have a long history working with Countryside, the main developer. They also work closely with site promoters at Broomfield, Great Leighs and Great Notley, and the breadth of developers across the sites gives resilience to our delivery rates.

Infrastructure delivery will be through robust local and regional partnerships. Partners in Essex have been developing the preparatory work for the Station and Bypass for over a decade and they are now integral to the spatial strategy of housing growth in Chelmsford's Local Plan. ECC has a demonstrable track record of delivering large-scale infrastructure projects enhanced by strong working relationships with Department for Transport and Network Rail (NR). Schemes are run through defined programme and project boards, to tight budgets and time constraints; these infrastructure programmes will be managed in the same way.

The infrastructure unlocks wider benefits. Beaulieu Station relieves Chelmsford Station and reduces car trips into the City,

supporting housing growth within the town. Beaulieu Station's passing loops also improve resilience on the Great Eastern Main Line to Norwich, supporting housing along the whole route.

In summary, the delivery of the Station and Bypass will enable 10,500 new homes. The scheme will both immediately benefit this locality in the current plan period to 2036 and sustain high quality housing growth in this corridor for the next thirty years. Essex is one of the best places in the UK to achieve Government's aspirations for housing development at scale, facilitating community integration, connectivity, economic growth, and improving living standards for all.

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

The project supports 14,109 new homes in four popular communities in the Chelmsford to Braintree corridor: NE Chelmsford Garden Community (10,559); Broomfield (450); Great Leighs (1,100); Great Notley (2,000).

10,500 homes depend on the Station and Bypass (Att. 1.1.2b). Of the total 14,109 homes only 3,609 would come forward without the infrastructure.

Chelmsford City Council (CCC)'s Local Plan to 2036 sets out this growth. The inspector found it sound in February 2019 (subject to main modifications which do not affect the amount of housing or site allocations - Att. 1.1.3a). CCC's spatial strategy (Policy S9) describes growth along the corridor.

Homes

- NE Chelmsford Garden Community includes four phases: completing 3,059 homes remaining of 3,600 with consent at Beaulieu; 3,000 homes on Phase 1 of NE Chelmsford by 2036; and Phase 2 (2,500) and Phase 3 (2,000) after 2036.
- Broomfield village on the edge of Chelmsford will grow by 450 homes by 2024.
- Great Leighs will nearly double in size with 1,100 more homes delivered between 2021 and 2036.
- Great Notley is a successful garden village in adjacent Braintree District. Braintree's Strategic Section 2 Local Plan proposes expanding the community by 1,750 homes by 2033, with site capacity for 2,000 homes.

Infrastructure

The Option Assessment Report (OAR - Att. 3.1.1) details the development of the Station and Bypass. Chelmsford's Local Plan (Att. 1.1.3b) requires the Station and Bypass to ensure the delivery of its NE Chelmsford Garden Community (p144) and the Bypass for the sites in Great Leighs (pp 151, 155, 158) and Broomfield (p161). Each site is required to contribute to the Bypass, as set out in Chelmsford's Infrastructure Delivery Plan (Att. 1.1.3c pp119-121) and a Statement of Common Ground between Chelmsford and Braintree (Att. 1.1.3d, p6).

The new Station will be at the southern end of the NE Chelmsford Garden Community, on the Great Eastern Main Line (GEML) from London and Norwich. Passengers living there will access the station from local walking, cycle and road links and those living in Broomfield, Great Leighs and Great Notley will be able to drive to the station. The commute time into Liverpool Street will be about 40 minutes.

The Station will have three platforms, car parking, a public transport interchange, cycling facilities and a turnback/passing loop for trains. The layout provides operational resilience on the network from Norwich to London that currently operates near capacity, which would support housing growth along the length of the line. The Station will be a rail head so some services can start and terminate at Beaulieu as they do today at Chelmsford. This will ensure excellent journey times into London for the new communities. It also releases pressure at Chelmsford's Station and road network, supporting wider housing growth in the city.

The Station has £22m of developer funding linked to Beaulieu's Section 106 agreement. This imposes a cap on development above 2,500 homes without the station in place, demonstrating the importance of the station to the growth of the Garden Community.

The Station also needs the Bypass to unlock 8,400 of the homes in our bid to mitigate traffic impacts from the station and the new housing developments. HIF would fund the completion of a new single carriageway from the A12 at Boreham to the A131 at a new

Chatham Green roundabout (north of Broomfield) and dual the A131 from Chatham Green to Deres Bridge roundabout (south of Great Leighs). The route from Great Leighs to Braintree (A131) is already dual carriageway (Att. 1.1.2b).

ECC has studied the need for the Bypass since 2005. The OAR describes historic work that led to developing a safeguarded corridor through public consultation and the Local Plan process.

We will use developer contributions from unlocked homes to dual the Bypass and improve the A12 at Boreham in the early 2030s to unlock the last phases of NE Chelmsford.

Site Details

How many housing sites will the funding bring forward?

9

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
Part A – Site 1: NE Chelmsford – Beaulieu	3059	Chelmsford	Countryside Zest (Countryside and L&Q)	Outline	09/01314/EIA

Commentary

Outline permission for 3,600 homes (541 delivered to end 18/19 leaving a residual 3,059). Section 106 agreement caps development at 2,500 homes before Beaulieu station or an alternative transport strategy is in place.

Site name	No of units	Local authority	Current ownership	Planning status	Planning reference
Part A – Site 2: NE Chelmsford Phase 1	3000	Chelmsford	NE Chelmsford Garden Village Consortium (Channels, Columbia Threadneedle Investments, Countryside, L&Q, Ptarmigan, Hanson)	None	

Commentary

Allocated in Chelmsford's Draft Submission Local Plan – examination commenced 20 Nov 2018. The Inspector found the Plan sound in February 2019, subject to main modifications not affecting the quantum of housing development or the site allocations.

Site name	No of units	Local authority	Current ownership	Planning status	Planning reference
Part A – Site 3: NE Chelmsford Phase 2	2500	Chelmsford	NE Chelmsford Consortium	None	

Commentary

Land allocated in Chelmsford's Draft Submission Local Plan. The housing number for this site will be determined following a review of the Local Plan, commencing in 2022.

Site name	No of units	Local authority	Current ownership	Planning status	Planning reference
Part A – Site 4: NE Chelmsford Phase 3	2000	Chelmsford	Hanson	None	
Commentary					
Highlighted as potential further growth in Chelmsford City Council's NE Chelmsford Garden Village Prospectus (November 2018)					

Site name	No of units	Local authority	Current ownership	Planning status	Planning reference
Part B – Site 1: Great Leighs – Land at Moulsham Hall	750	Chelmsford	Great Leighs Holdings	None	
Commentary					
Allocated in Chelmsford's Draft Submission Local Plan					

Site name	No of units	Local authority	Current ownership	Planning status	Planning reference
Part B – Site 2: Great Leighs – Land East of London Road	250	Chelmsford	Great Leighs Holdings	None	
Commentary					
Allocated in Chelmsford's Draft Submission Local Plan					

Site name	No of units	Local authority	Current ownership	Planning status	Planning reference
Part B – Site 3: Great Leighs – Land North and South of BanTERS Lane	100	Chelmsford	Stuart Willis, Mark Thomasin-Foster and Mark Stevens. They have signed a SoCG with Chelmsford and the above Great Leighs sites for the Chelmsford Local Plan	None	
Commentary					
Allocated in Chelmsford's Draft Submission Local Plan					

Site name	No of units	Local authority	Current ownership	Planning status	Planning reference
Part C – Site 1: North of Broomfield	450	Chelmsford	Bloor Homes	None	
Commentary					
Allocated in Chelmsford's Draft Submission Local Plan					

Site name	No of units	Local authority	Current ownership	Planning status	Planning reference
Part D – Site 1: Land East of Great Notley, South of Braintree	2000	Braintree	Bellway, Bloor and Martin Grant Consortium primary control. Smaller plots owned by 8 private landowners.	None	
Commentary					
Allocated in Braintree's Draft Submission Local Plan					

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
Chelmsford_1.2.4c_Part B - Sites 1 2 and 3 Great Leighs.pdf	Part B Site 1, 2 & 3
Chelmsford_1.2.4d_Part C - Site 1 Broomfield Map.pdf	Part C Site 1
Chelmsford_1.2.4a_Part A - Site 1 NE Chelmsford - Beaulieu Map.pdf	Part A Site 1
Chelmsford_1.2.4b_Part A - Sites 2 3 4 NE Chelmsford Map.pdf	Part A Site 2, 3 & 4
Chelmsford_1.2.4g_Beaulieu_Station interchange sketch 370-SK001-B.pdf	Beaulieu Station
Chelmsford_1.2.4e_Part D - Site 1 Great Notley Map.pdf	Part D Site 1
Chelmsford_1.2.4f_Chelmsford NE Bypass General Arrangement Plan.pdf	North East Bypass Arrangement
Chelmsford_1.2.3_Location_Map_Sites_Only.pdf	Site Boundaries - Read in conjunction with polygons.

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

1,020.00 ha

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

480.27 ha

How much of the total housing area is on:

Brownfield land

109.00 ha

Public sector land

0.00 ha

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

Affordable sale	12 %
Affordable rent	20 %
Market sale	61 %
Market rent	0 %
Other (Self build homes and specialist residential homes for older people.)	7 %

Infrastructure Requirements

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

Infrastructure Type	Road / highway - other	Description	Single carriageway Chelmsford NE Bypass (including 1 intermediate roundabout) between A131 at Chatham Green and Radial Distributor Road 1 (RDR1). Dualling of A131 from Chatham Green to Deres Bridge roundabout at Great Leighs with junction improvements.
HIF Funding	£93,360,101	Link to housing	Chelmsford's Local Plan and Infrastructure Delivery Plan establishes the link between these sites and the need for the Chelmsford NE Bypass and subsequent dualling of the A131 and Bypass Each of these sites is responsible for providing funding. Braintree District Council have also confirmed in writing the link between Part D and the A131 improvements.
Sites benefitting	Part A – Site 2: NE Chelmsford Phase 1, Part A – Site 3: NE Chelmsford Phase 2, Part A – Site 4: NE Chelmsford Phase 3, Part B – Site 1: Great Leighs – Land at Moulsham Hall, Part B – Site 2: Great Leighs – Land East of London Road, Part B – Site 3: Great Leighs – Land North and South of Banters Lane, Part C – Site 1: North of Broomfield, Part D – Site 1: Land East of Great Notley, South of Braintree		
Infrastructure Type	Rail	Description	3-platform station incorporating a central loop to allow the turn back of services as required. The station also incorporates a public transport interchange, multi-storey car parking, cycle parking and highway access.
HIF Funding	£124,501,000	Link to housing	Beaulieu (09/01314/EIA)'s outline planning permission for 3,600 homes of which 541 are complete, leaving 3,059, subject to a Section 106 agreement which establishes a cap on development above 2,500 homes without the station in place. This cap is also relevant to subsequent, adjacent phases of development at NE Chelmsford. These are promoted by a consortium including the same developers of Beaulieu Park, and the same concerns about sustainable transport exist. The need for contributions from these NE Chelmsford sites is also established through the Local Plan and Infrastructure Delivery Plan.
Sites benefitting	Part A – Site 1: NE Chelmsford – Beaulieu, Part A – Site 2: NE Chelmsford Phase 1, Part A – Site 3: NE Chelmsford Phase 2, Part A – Site 4: NE Chelmsford Phase 3		

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 Station and Bypass and 10,500 homes that depend on them.

Planned development between Chelmsford and Braintree would put unacceptable stress on the transport network without the Station and Bypass. The planning authorities will not grant permission on sites without assured delivery of this infrastructure. Our modelling shows the corridor can only support 3,609 new homes without the Bypass or the Station: with both schemes and our approach to recouping developer contributions for future dualling from the mid 2030s it can deliver 14,109 homes.

Beaulieu Station

Chelmsford's Local Plan, examined in December 2018, requires the Station and Bypass to unlock site allocations in North East (NE) Chelmsford (Att. 1.1.3b). The Infrastructure Delivery Plan (IDP – Att.1.1.3c) notes that the station is essential for housing growth in

this location:

- “a new station serving the Beaulieu Park development is proposed. This will have wider benefits for a number of other developments in the Local Plan, including growth in North Chelmsford in particular. This is considered to be an essential item.” (Att. 1.1.3c p32)
- Infrastructure requirements associated with NE Chelmsford include “financial contributions to delivery of the full CNEB [i.e. Bypass], Beaulieu Station and community space and facilities...” (Att. 1.1.3b p144).

The Section 106 agreement (Att. 1.1.2c p46) for the outline planning permission (09/01314/EIA) for 3,600 homes at Beaulieu Park states: “in the event that the rail station is not completed by the occupation of the 2,500th residential unit the developer shall prepare the alternative transport strategy for approval by the County Council and shall not occupy more than 2,500 residential units and more than 25,000 square metres of commercial floorspace within the Business Park until the alternative transport strategy has been approved and implemented.”

However, there is no alternative transport strategy developed. If the HIF bid is unsuccessful Chelmsford would have to complete an early review of the Local Plan to attempt to find alternative sites and transport solutions, putting at risk the City’s spatial strategy and the delivery of NE Chelmsford Phase 1, 2 and 3 (7,500 homes).

The Bypass

Chelmsford’s Local Plan (Att. 1.1.3b pp 144, 151, 155, 158, 161) and IDP (Att. 1.1.3c pp 119-121) identify three developments and their indicative funding for “financial contributions to delivery of the Chelmsford North East Bypass” (Att. 1.1.3b pp 151-161). These include North East Chelmsford (as identified above); Great Leighs; and Broomfield. This is to adequately mitigate the impact of new homes on the performance of local and strategic roads.

As Braintree’s IDP (Att. 1.3.3a) has not been finalised for transport, Braintree District Council have said: “We would seek an amendment to policy LPP18 (Att. 1.3.3b) to ensure reference is made to the strategic importance of the A131/A130 corridor, and that there is a requirement of appropriate financial contributions towards the Chelmsford North East Bypass as part of a wider contribution to the strategic road network”.

The developments require the infrastructure but cannot pay for its full cost. NE Chelmsford Garden Community cannot pay for the additional £124.5m cost of the Station: there is a viability gap. The Bypass is a viability and cashflow issue. Transport modelling shows that new developments will need the Bypass once the Station – which draws traffic – and 5,663 homes associated with Beaulieu’s permission and partial build out of sites at Broomfield, Great Leighs and Great Notley are complete. However, developers will not have sold enough homes to pay for the road by then, stopping further development. The funds that we will collect from these four sites for transport will be invested to upgrade the Bypass to a dual carriageway, to unlock the last two phases on NE Chelmsford.

Wider Development Impacts

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

The Economic Case includes a series of Department for Transport - Annex B documents to describe the local model development, demand model development and forecasting, as well as the resulting economic appraisal. Att. 4.9.3 provides a commentary on each of the Annex B checklist items and the corresponding document uploaded with our bid.

In summary, it will be quicker to drive to Beaulieu Station than Chelmsford Station from the north: about 8 minutes faster without the Bypass and 12 minutes faster with it. Beaulieu station could remove about 900 car trips from the city centre during the morning peak, easing congestion. It will be quicker and safer to walk within Chelmsford station as more passengers use Beaulieu (pedestrian delays will fall by 17%). Car journeys will also be attracted to the new Station for new rail journeys due to the improved accessibility.

There is no significant increase in crowding for existing passengers as new trains introduced from 2019 provide 20% more capacity. We have quantified slight increases in travel times for passengers on the line as some trains will stop at the new station. However, the passing loop incorporated in the design will also provide reliability benefits for the train operator making the line from London to Norwich more resilient for passengers.

In combination, the above leads to circa 1,000 additional car journeys predicted in peak hours near Beaulieu Station and NE Chelmsford. This area of the network struggles for road capacity/reliable performance at locations on the B1008, A1016, A130 and Boreham Interchange during peak periods and is forecast to do so between 2025 and 2036. The Bypass provides vital access to the Station from the A131 and the A12. It removes traffic from the city centre, the B1008 in Broomfield village and rural routes to the east and west. Additional capacity provided for Station and housing access (as well as for strategic north-south movements) will also lead to reassignment from A130 Essex Regiment Way, leading to its possible downgrading to a more local/sustainable corridor.

Post 2036, dualling of the Bypass is required to cater for the full allocation of homes build-out (Chelmsford Phase 3) as predicted volumes on the Bypass Corridor would exceed 1,500 vehicles by direction per peak hour.

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

In addition to the new secondary school which opens in September 2019, housing growth at the NE Chelmsford Garden Community and Broomfield justifies building a further new secondary school. The school needs a site of at least eight hectares (ha) in the NE Chelmsford Garden Community.

The NE Chelmsford Garden Community requires two new primary school sites each of 2.1 ha, in addition to the primary school at Beaulieu that opened in September 2018. These needs are identified in the adopted North Chelmsford Area Action Plan (Att. 7.1.1d, p23).

Development in Broomfield can be accommodated within existing primary schools with some expansion. At Great Leighs, a new two form entry primary school is planned.

The growth of Great Notley is expected to provide early years, childcare, primary and secondary education facilities on site (Att.1.3.3b p55). Notley High School has sufficient site area to add a further four forms of entry. This could cater for demand from Great Notley, central Braintree and approximately 1.3 forms of entry capacity from Great Leighs. A new 2.7ha primary school site will be required early in the lifetime of the development (Att. 1.3.3a, p21).

Funding will predominantly come from developer contributions.

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?

Chelmsford and Braintree's Infrastructure Delivery Plans (IDPs) have been informed through engagement with utilities providers. In

terms of foul sewerage, Anglian Water Services (AWS) assumes that all developments of more than 10 properties will require some form of network enhancement. As such, the Chelmsford IDP earmarks the north of Broomfield and NE Chelmsford sites for network enhancement at its used water facilities. In addition, wastewater treatment works (known as water recycling centres or WRCs) at Great Leighs will need enhancements to enable development at Great Leighs before 2024. In Braintree District, the WRCs at Coggeshall and White Notley require additional treatment capacity, impacting development at Great Notley. AWS does not expect that there will be a requirement for further investment within the next asset management plan period (2020 to 2025) at Chelmsford WRC to accommodate the scale and timing of housing growth in the central and urban Chelmsford area.

Chelmsford and Braintree form part of the Essex Water Resource Zone (WRZ). This WRZ has sufficient surplus supply over forecast demand until at least 2040, accounting for growth defined in 2013. Therefore, water resource development is not required as a result of the growth forecast within these areas. Separately, a £1m enhancement to a potable water facility in NE Chelmsford is also planned by Essex & Suffolk Water. Once funding has been confirmed, there will be a lead-in time for the necessary upgrades to be completed.

Generally, infrastructure for residential growth is funded by AWS and Essex & Suffolk Water through their 5-year Asset Management Plans (2015-2020, 2020-2025 etc), with these approved by the water industry regulator – Ofwat in advance.

No extraordinary drinking water, gas, electricity or telecoms infrastructure is considered necessary.

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?

The first phase of Beaulieu secured a new surgery for 4 GPs through its Section 106 agreement. Chelmsford's Infrastructure Delivery Plan (IDP) requires developer contributions in North Chelmsford to increase capacity for local Primary Care facilities. Mitigation is also needed to address health needs associated with growth in Great Leighs and Broomfield (Att. 1.1.3c).

Braintree's IDP (Att. 1.3.3) notes that growth at Great Notley is likely to require additional GP premises - either a new facility or funding towards significant extension of current facilities. This extra capacity could also cater for growth along the A131 corridor in Chelmsford.

Essex County Council's Public Health team has a Healthy Places Lead to engage with healthcare providers. The Lead has developed strong working relationships to ensure that local health and care service providers are aware of, and engaged in, the planning for new homes in Essex. This includes using health data to support modelling for future health requirements including health workforce planning.

Public Health and local planning teams are engaging with strategic estates teams and lead personnel at NHS Improvement, Clinical Commissioning Group (CCG) and the Sustainability and Transformation Partnership within the local plan process, including contributing to policy development and subsequent IDPs.

Specific groups meet to address the health needs of strategic developments in Essex. Group members include health and wellbeing teams, healthcare estates teams, strategic estates leads, CCG estates teams and planners. They provide the opportunity to discuss issues and challenges arising from this anticipated growth. The Town & Country Planning Association considers the approach in Essex as 'good practice', particularly the single response from the health economy to strategic developments, which includes the CCG, acute providers, mental health providers, ambulance services, commissioned providers and Public Health.

Have you engaged with your Sustainability and Transformation Partnership?

The developments fall within Mid and South Essex Sustainability and Transformation Partnership (STP). The county's Public Health team is engaged with the STP programmes estates and infrastructure group to ensure that future provision is adequate for the growing local community and that supportive matters including the local workforce is sufficient to meet anticipated new growth.

One of the priorities of the STP is to enable the three main hospitals of Basildon, Southend and Chelmsford to work together as one. Chelmsford's Broomfield Hospital sits next to the Broomfield housing site in our bid and is the closest hospital for all of the developments in our bid. The public expressed concerns at the NHS Mid and South Essex STP's proposals in 'Your care in the best place' (page 42) that current transport infrastructure to and between hospitals is insufficient to transfer patients in an emergency situation over long distances.

The full HIF ask will help reduce congestion on the approach to Broomfield Hospital, which sits on the B1008 that runs parallel to the new Bypass. It will do this in two ways: it enables all of the 450 homes at the North of Broomfield site to come forward which is expected to provide Section 106 funding for a new access road to Broomfield Hospital, further increasing resilience and capacity for traffic to and from the hospital. Our traffic modelling also shows that the Chelmsford NE Bypass will reduce traffic from parallel roads including the B1008 which is the main access road to Broomfield Hospital.

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

Vision Documents

We have produced overarching and project specific vision documents which help to explain the need for HIF funding and how these schemes contribute to the growth ambition of Essex. The following documents are attached:

- Essex County Council Vision Document on Essential Infrastructure to Support Growth – Gateway to Global Growth (Att. 1.5.1a)
- Programme specific Vision Document: Investing in Essex (Att. 1.5.1b)
- Project specific Vision Document: Chelmsford North East Bypass and Beaulieu Station Housing Infrastructure Fund: Accelerating housing growth in the heart of Essex (Att. 1.5.1c)
- North East Chelmsford Garden Community: A new connected community in the Heart of Essex (Att. 1.5.1d).

Economic Growth

In addition to the strong housing rationale for HIF investment, both schemes align well with employment and industrial strategies at all scales.

Chelmsford City Council's Employment Land Review (2015) (Att. 1.5.1e) indicates that there is a relatively limited availability of land supply in Chelmsford City Centre to accommodate future employment growth particularly in the context of increasing demand for residential growth. There is a risk that a lack of quality office space could lead to a struggle to retain existing firms and bring in new investment in the long-term.

There is an opportunity for growth in North Chelmsford (the Local Plan proposes 45,000m² of employment space at Strategic Growth Site 4 (Att. 1.1.3b p142) over and above the 40,000m² of employment space already with planning permission) to deliver much needed Grade A office and other employment space that can meet the needs of both Chelmsford and the wider Essex market. The provision of accommodation in a location served by a new railway station with connections to London, Essex and East Anglia as well as existing and potentially improved road connections to the M11 and A120 corridors (via the Chelmsford NE Bypass) will help Chelmsford make a strong contribution to Essex's and the East of England's potential within the context of the Industrial Strategy.

To understand this potential, Lichfields assessed the wider economic impacts of Beaulieu station and the business park development proposed. Key headlines are summarised here with the full report included as Attachment 1.5.1f.

Commercial floor space and jobs

40,000 m² of business park space and 22,300 m² of other commercial and employment uses is allocated within Beaulieu as a result of the North Chelmsford Area Action Plan. Lichfields' study suggests the following impacts:

- With the station in place the mix of business (B1a/b) versus industrial land use would change to reflect the enhanced connectivity and attractiveness of the site for office suppliers. This would be unique within Essex and one of very few business parks in the UK with such high quality connectivity by rail and road; this could be expected to enhance the image and attractiveness of Chelmsford and

the surrounding area as a business location.

- There would likewise be an expected intensification of the mixed-use area and demand for ancillary services such as retail. Both of these would create additional jobs.
- The station would accelerate the build out and occupation of this floor space by up to three years.
- Beaulieu could support around 2,500 net additional jobs and generate nearly £250m Gross Value Added (GVA) per annum once the station is fully constructed and operational.
- An additional £0.5m in business rates per annum in perpetuity on top of that expected without the station in place.
- Lichfields applied a 10% displacement factor to the calculation of these new employment benefits. Their work assumed that new employment and commercial floorspace could displace some jobs from existing local businesses.

As noted above, Chelmsford's Local Plan also allocates 45,000 m2 of business park space in North East Chelmsford beyond 2036. Similar acceleration and increase in the value of jobs could be expected.

Braintree's Local Plan Section 2 Policy LPP2 (Att. 1.5.1g, p 35) allocates 18.5ha of Innovation and Enterprise Business Park for uses in the business (B1), general industrial (B2) and warehousing and distribution (B8) use classes west of the A131 at Great Notley, and up to 3ha of employment land east of Great Notley as part of the proposed 2,000 home community. This employment land would build on the existing 19.5 ha Skyline 120 Business Park that benefits from its juxtaposition with the A120 and A131, providing high quality connectivity to Chelmsford, Stansted, Colchester and Suffolk.

Lichfields' work did not include the additional impacts of the Bypass, but it would be reasonable to assume that these would be strengthened with an even more accessible location, with reduced journey times to the A12, A120 and M11 corridors.

Filename	Description
Chelmsford_1.1.2b_Location_Map_Sites_Infrastructure.pdf	Executive Summary: Chelmsford Location Map
Chelmsford_1.1.2c_Beaulieu S106 (selected pages).pdf	Executive Summary: Beaulieu S106 (part)
Chelmsford_1.1.2d_Chelmsford Local Plan Policy S11.pdf	Executive Summary: Chelmsford Local Plan Policy
Chelmsford_1.1.2a_Housing_Market_Area_Map.docx	Executive Summary: Chelmsford Housing Market Map
Chelmsford_1.1.3b_Local Plan Growth Areas 4, 5 and 6.pdf	Project Overview: Local Plan Growth Areas
Chelmsford_1.1.3c_Chelmsford Infrastructure Delivery Plan June 2018 Update.pdf	Project Overview: Chelmsford Infrastructure Delivery Plan
Chelmsford_1.1.3d_SOEG03 HMA Authorities.pdf	Project Overview: HMA
Chelmsford_1.1.3a_EX 045 Inspector's Post Hearing Advice Note (1).pdf	Project Overview: Planning Inspectors Advice
Chelmsford_1.3.3a_Braintree_IDP_Final_Report.pdf	Att: 1.1.3a Link between Infrastructure & Housing
Chelmsford_1.3.3b_Braintree_Publication_Draft_LP_Section_2_June_17_Policy LPP18.pdf	Att: 1.3.3b Link between Infrastructure & Housing
Chelmsford_1.5.1a_Essex Vision - 190308.pdf	ECC Vision Document: Essential Infrastructure to Support Growth – Gateway to Global Growth
Chelmsford_1.5.1d_North East Chelmsford Garden Community.pdf	North East Chelmsford Garden Community: A new connected community in the Heart of Essex
Chelmsford_1.5.1e_Chelmsford Employment Land Review 2015.pdf	Chelmsford City Council's Employment Land Review (2015)
Chelmsford_1.5.1f_Beaulieu_Station_Economic_Impact_Assessment.PDF	Lichfield Economic Assessment - Beaulieu Park
Chelmsford_1.5.1g_Braintree Local Plan Policy LPP2.pdf	Braintree Local Plan Section 2 Policy LPP2
Chelmsford_1.5.1c_Beaulieu and CNEB_Project_Vision.pdf	Chelmsford HIF Project Vision Document
Chelmsford_1.5.1b_Overarching_Essex_HIF_Vision.pdf	Overarching Essex HIF Vision Document for all 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 Chelmsford City's Local Plan, and Braintree's Local Plan (LP). The scheme unlocks 10,500 homes across four sites along the Chelmsford to Braintree corridor. Successful housing delivery is already underway at Beaulieu previously allocated within the North Chelmsford Area Action Plan. The scheme will enable the market to deliver new homes at pace and create a long-term pipeline of supply north east (NE) of Chelmsford.

Long term housing ambitions

Essex is a Home 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 as laid out in our Organisation Strategy 2017-21.

Chelmsford and Braintree enjoy a buoyant housing market with excellent demand, developer investment appetite and strong house and land values. Since 2014, Chelmsford's housing delivery has increased from 826 to over 1,000 homes a year (MHCLG live tables), demonstrating the ability to reliably deliver growth at scale. Strong economic growth underpins Chelmsford's and Braintree's expected household population growth from 2015 to 2037 – up by 16,700 in Chelmsford, and up by 18,300 in Braintree (Att. 2.1.1a, p117 & 120). However, the scale of economic growth has put pressure on affordability: in Chelmsford, house prices are 11.4 times the median workplace wages, in Braintree District it is 9.5. (Source: ONS, Housing affordability in England & Wales 2017).

Local Plan: housing growth at scale

Chelmsford and Braintree are in the same housing market. The two planning authorities, along with Colchester and Tendring, completed a joint Strategic Housing Market Assessment (SHMA, Att. 2.1.1a). Chelmsford's objectively assessed need (OAHN) was assessed at 805 homes a year (Att. 2.1.1b, p75) and at examination (December 2018) the council committed to building in total nearly 22,000 new homes in the period 2013-2036, circa 1,000 a year (Att. 2.1.1c – Policy S8). Braintree expects to see 716 new homes a year to meet objectively assessed need (Att 2.1.1d – Policy SP3, p19).

Chelmsford and Braintree are planning for housing development at scale. Given the number of new homes required over the next twenty years in both places, the constraints within urban areas, and the greenbelt across the south of Chelmsford, the planning authorities have chosen to concentrate some development on major expansions to successful places. This approach is in line with the 2018 National Planning Policy Framework (NPPF), which states the “supply of new homes can often be best achieved through planning for larger scale development.”

Spatial strategy: locating growth between Chelmsford and Braintree.

Chelmsford City (CCC) and Braintree District Councils have agreed to focus large scale development in the corridor between the two places. Nearly 7,000 people commute into Chelmsford from Braintree daily (including 540 people just from Great Notley – Att. 2.1.1e), and over 2,000 commuters travel in the opposite direction (OAHN Study, 2016 – Att. 2.1.1b p5). NE Chelmsford Garden Community will be an urban extension on Chelmsford's NE boundary. Development will also expand villages along the existing roads that form the corridor between Chelmsford and Braintree: Broomfield (on the B1008), Great Leighs and Great Notley Garden Village (A131). Developing to the NE of Chelmsford also protects green belt to the south of the city.

The location of major new development builds on successful delivery at Beaulieu and Channels in Chelmsford. CCC has given developers planning permission for 750 homes at Channels (10/01976/OUT); 3,600 homes at Beaulieu Park (09/01314/EIA), 40,000m² of business park floorspace and Beaulieu station, with phased delivery of this allocation into the late 2020s. To March 2019, 541 homes have been built at Beaulieu (Att. 2.1.1f).

Chelmsford's new Local Plan opens up development to the north of Beaulieu in the corridor towards Braintree. Policy S9 (Att. 2.1.1g) proposes the NE Chelmsford Garden Community of 3,000 homes and 45,000m² of business park / office space. CCC has applied to the Government's Garden Community programme for this settlement. The NE Chelmsford Garden Community prospectus (Att. 1.5.1d) identifies the potential for NE Chelmsford to deliver major housing growth over the next 35 years, which will increase Chelmsford's urban area by nearly 40% (840 more hectares). These homes include Beaulieu (3,600 homes), Channels (750), and NE Chelmsford Phase 1 (3,000) before 2036: after that point substantial further growth will come in a second phase of 2,500 homes, followed by a third phase of 2,000 new homes.

Policy S9 also allocates 1,100 further homes in the expanding village of Great Leighs and 450 homes in Broomfield to deliver by 2036. The Bypass mitigates enough of the traffic impacts on the network from these developments to make them wholly acceptable. Developer contributions for the single carriageway Bypass are also identified. Braintree District's Section 2 LP proposes development of 2,000 homes in the same corridor, adjacent to CCC, next to the successful Great Notley Garden Village. 1,750 homes will be complete within the Plan period to 2033 and 250 thereafter.

Transport infrastructure unlocks long term housing ambitions

Partners in Essex have worked on Beaulieu Station and the Bypass for over a decade because they are essential to the delivery of housing in the Chelmsford to Braintree corridor to 2036 and beyond. The existing planning permission on Beaulieu is capped at 2,500 homes and 25,000m² of commercial space without its station. Chelmsford's LP and IDP also include Beaulieu station – which already has planning permission - as a key piece of infrastructure to unlock growth. Furthermore, it reduces pressures on the city centre's constrained station (see Strategic Case Additional Information), itself a hub for the 2,814 new homes planned in the existing urban area to 2036. Trains will be able to pass at Beaulieu, improving journey reliability, and so supporting housing development along the line. Development at the scale set out in the Local Plan will not come forward without these strategic transport infrastructure projects.

The Bypass relieves the pressure that would otherwise fall on the B1008 and the current A130/A131 as a result of development at NE Chelmsford Garden Community, and the villages along the corridor: Broomfield, Great Leighs and Great Notley. Braintree District Council have noted in their Statement of Common Ground with Chelmsford (Att. 1.1.3d) that they: "would seek an amendment to the (Att. 2.1.1h) policy LPP18 (Great Notley – Land east of London Road) to ensure reference is made to the strategic importance of the A131/A130 corridor, and that there is a requirement of appropriate financial contributions towards the CNEB [i.e. Bypass] as part of a wider contribution to the strategic road network". This would be reflected in policy LPP18 with an additional bullet point on the list of Development will be expected to provide: "Appropriate contributions to the A131 CNEB [i.e. Bypass]."

Our modelling shows that the Bypass also relieves the pressure that will come from Braintree commuters when Beaulieu Station opens. The town has an infrequent branch line rail service, and so Beaulieu station will draw traffic.

Housing growth and the Station and Bypass deliver our economic ambitions

Chelmsford's £3bn local economy is thriving. The City is a premier commercial centre in the South East. 15,000 residents commute to London each day, and almost as many travel into Chelmsford. Chelmsford is in the golden radius of half an hour from central London, supporting a strong local economy. It takes 35 minutes from Chelmsford station to London Liverpool Street and 36 minutes to Colchester in the other direction. It is only 35 minutes to Stansted airport by bus or car.

The economy supports 85,000 jobs now and we expect strong economic growth over the next two decades, with 725 new jobs each year to 2036, a £2.1m increase in GVA and a 25.5% increase in labour productivity. (Chelmsford Economic Strategy, Att. 2.1.1i p4) Economic forecasts predict that the contribution the Chelmsford economy makes to the UK will reach £5bn by 2035. Chelmsford has excellent financial and business services firms linked to the City of London, it hosts Anglia Ruskin University and has advanced manufacturing companies at the cutting edge of technology as part of Marconi's legacy.

However, infrastructure constraints in Chelmsford City Centre mean continued economic growth relies on accessible development to the North East of Chelmsford. Chelmsford's Employment Land Review (2015) (Att. 1.5.1e) indicates that there is a relatively limited

availability of land supply to accommodate future employment growth particularly in the context of increasing demand for residential, and there is a risk that a lack of quality office space could lead to a struggle to retain existing firms and bring in new investment in the long-term. As a result, increasing employment land in NE Chelmsford is critical to continued economic growth. The Station and Bypass support economic growth by creating a location that is ultra-connected to Essex, London and the East of England. It enables residents to travel to jobs in Chelmsford, commute to London and across Essex by rail, as well as along the A12, A131, A120 and M11 corridors by car. And it enables businesses located in Chelmsford and Braintree to benefit from a wider pool of labour.

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

Essex has a strong and growing economy close to London, which creates powerful demand for new homes in the county and means house prices are high compared to local incomes.

Chelmsford and Braintree are developing Local Plans under National Planning Policy Framework (NPPF) 2012 so assess need for new homes locally. Chelmsford and Braintree assessed the number of new homes needed by 2037 together with Colchester and Tendring as part of a single housing market area. Nearly 7,000 people commute into Chelmsford from Braintree daily and over 2,000 commuters travel in the opposite direction (Att 2.1.1b p9).

Population growth is one driver of housing need. Chelmsford's and Braintree's populations will grow by 27,000 and 24,300 respectively to 2037. In Braintree growth is driven by people moving into the district (21,000) rather than natural change (2,600). Chelmsford is more balanced: 10,200 natural change and 16,700 moving in. This growth in population would lead to 15,700 more households in Chelmsford and 14,500 more households in Braintree, using the official 2014-based demographic projections to 2037. However, affordability is poor: the ratio of median workplace earnings to median house prices was 11.4 in Chelmsford and 9.5 in Braintree in 2017, well above the national average (data released in April 2018).

The Objective Assessed Housing Need (OAHN) study (Att. 2.1.1b, p81) proposes a 15% uplift on household projections for Braintree, due to past housing land supply constraints when the regional spatial strategy gave Braintree a low target, and because affordability is poor. The study also proposes an uplift of 20% in Chelmsford due to possible supply constraints in the past, poor affordability and relatively high house prices.

As a result, the OAHN (Att. 2.1.1b p75) is 805 homes each year from 2013-2036 in Chelmsford and 716 each year from 2013-2033 in Braintree (14,320 total).

The need for affordable homes

The Strategic Housing Market Assessment (SHMA) shows that Chelmsford needs 175 new homes each year to be affordable, with 212 in Braintree. (Att. 2.1.1a, pp81-2). Most new affordable homes will need to be for social or affordable rent rather than shared ownership (Att. 2.1.1a, p64).

Housing supply in Local Plans

Chelmsford City Council and Braintree District Councils are committed to plan positively for new homes and to help significantly boost the supply of housing locally.

The Inspector found Chelmsford's Local Plan sound in February 2019, subject to main modifications which do not impact on the amount of housing development or the site allocations in the Plan (Att. 1.1.3a). Chelmsford's Local Plan seeks to deliver around 1,000 homes a year, in total nearly 22,000 new homes in the period 2013-2036. This scale of development is 20% more housing than objectively assessed need.

Braintree's Strategic Section 1 Local Plan (Policy SP3, Att. 2.1.1d) prepared jointly with Colchester and Tendring proposes 716 homes a year, which equates to 14,320 in total in the district (2013-2033). The Joint Strategic Section 1 Local Plan was examined in public in January and May 2018. The Inspector concluded in his report of 27 June 2018 that the housing figures represent the objectively-assessed housing need and the housing requirements are soundly based, demonstrating confidence in the projections of the number of new homes required.

In line with national guidance, Chelmsford and Braintree expect to review Local Plans every five years under the revised NPPF 2018. NPPF 2018 includes the Government's standardised methodology for projecting housing need, called local housing need (LHN). The standard method projects 835 per year in Braintree. For Chelmsford, the minimum annual need figure calculated using this standard method based on the 2014-based projections (976) and the 2016-based projections (812) are both above the proposed housing requirement (805) being taken forward by the authority. The difference is marginal (0.9%) compared to the 2016-based projections and more significant (17.5%) based on the 2014-based projections. However, the Council is proposing to allocate nearly 20% more land than required by its objectively assessed housing need (i.e. proposed housing requirement of 805 a year) to significantly boost the supply of homes and provide flexibility in this period of transition and uncertainty.

Meeting housing need

Substantial long-term increases in housing supply calls for a new approach. Local planning authorities are focused on developing new Garden Communities and expanding existing ones to drive delivery in this Local Plan period and the next, setting up a long-term pipeline of supply.

Chelmsford and Braintree's spatial strategies in their Local Plans mean they can accommodate significant housing growth.

In addition to 3,600 new homes at Beaulieu and 750 new homes at Channels with planning permission, the North East (NE) Chelmsford Garden Community will deliver 1,950 market and 1,050 affordable homes in the period to 2036. The total development represents 37% of the overall Local Plan delivery for 2013-2036 identified above. This is the largest proportion of housing delivery in Chelmsford City.

Braintree will deliver 2,000 homes east of Great Notley (of which 1,750 would be by 2033), which is the second largest development in the District, after the West of Braintree Garden Community.

We are confident that our strategy for large sites and Garden Communities can also deliver at pace. Chelmsford falls within the 'golden radius' commuter belt; 30 minutes into London. Despite the volume of housing building currently being constructed in the area, demand has remained high.

Across Chelmsford's Plan period (2013 – 2036) we assume completions rates of 350 per year for the development with planning permission at Beaulieu and NE Chelmsford (Att. 2.1.1f).

In the first 10 years post allocation we have assumed delivery of an average 319 homes a year for both the permitted development at Beaulieu and the NE Chelmsford allocation. Unlike many strategic sites, which have a single lead developer with their own strategy, NE Chelmsford has five leading interests to ensure variety: Countryside, L&Q, Threadneedle, Hanson, and Ptarmigan. Hanson, Threadneedle and Ptarmigan have interests on the majority of the allocated site and they will be disposing parcels to four to five builders (not Countryside or L&Q), which may include outlets already building at Channels. Current completion rates per outlet has shown this to be achievable.

The NE Chelmsford Garden Village Consortium have assumed seven or eight outlets: two or three on Ptarmigan land, two on Hanson land and Threadneedle/Countryside and L&Q with two or three outlets. This is realistic due to high demand in Chelmsford, the success of Beaulieu, and the completion of Channels as NE Chelmsford comes forward, so four builders will be looking for new opportunities and it is likely they will want to purchase land at NE Chelmsford.

Countryside and L&Q as Countryside Zest have maintained sales rate at Beaulieu Park of 60 – 84 a year, well above the usual 50 per outlet per year (Att. 2.1.2). 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.

Looking further afield, the Letwin Report (June 2018) has a range of comparable sites to NE Chelmsford which show delivery at pace on large sites is realistic and achievable, for example sites in Wokingham and near Cambridge.

Filename	Description
Chelmsford_2.1.2_North East Chelmsford Completions December 2018.pdf	2.1.2 Chelmsford Completions

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 delivery of new homes in the Chelmsford-Braintree corridor will build on the joint working that is already in place. This is set out in the Management Case.

Chelmsford's Local Plan was examined in November 2018. The Inspector noted on 8 February 2019 that they "consider that the Local Plan is a plan which could be found sound subject to main modifications" (Att. 1.1.3a). The modifications to the Plan to not affect the quantum of development or the site allocations. CCC and their development partners are well advanced in preparing the master planning frameworks for each location. This approach is already agreed by CCC's Development Policy Committee.

For the new homes planned as part of NE Chelmsford Phases 1 and 2 (3,000 and 2,500 homes), the submission (Att. 1.5.1d) to Government for Garden Community Status represents land owners and developers of the new community including Channels, Columbia Threadneedle Investments, Countryside, L&Q, Ptarmigan Land and Hanson.

A NE Chelmsford Garden Community Delivery Board provides strategic guidance, oversight and act as a resolution forum to ensure the timely delivery of the NE Chelmsford Garden Community and its supporting infrastructure. Membership includes Chelmsford City Council (CCC), Essex County Council (ECC) and development partners, via the NE Chelmsford Garden Village Consortium. The Board will meet initially in spring 2019.

A NE Chelmsford Community Liaison Group will sit alongside the Board (see 7.5.1). It will give the opportunity for the local community to engage with new communities as the Garden Community develops over the next 20+ years. Membership will comprise of CCC, ECC, the developer Consortium, Parish Councils and local neighbourhood and interest groups.

CCC and ECC have signed a Memorandum of Understanding (MoU) with the NE Chelmsford Consortium to demonstrate the developers' commitment to building a policy compliant scheme with 35% of affordable housing, and the completion of Beaulieu's on site road infrastructure by 1000th dwelling, as agreed. (Att. 2.2.1a). Option agreements are enclosed as Att.5.3.3g-i.

Collaboration has also been a hallmark of Braintree and CCC's Local Plan development, which has enabled a successful duty to cooperate process. This has included shared evidence bases, such as the Strategic Housing Market Assessment and Objectively Assessed Housing Need for Chelmsford, Braintree, Colchester and Tendring. A more formal relationship is now developing between Chelmsford and Braintree to focus on the housing growth set out in this bid.

Infrastructure

Effective joint working will continue with infrastructure providers including Network Rail (NR) and Highways England. CCC's Local Plan Hearings in November 2018 included Statements of Common Ground (SoCG) with NR & Abellio Greater Anglia (SoCG 24) and Highways England (SoCG 22) (Att. 2.2.1b & c).

We have agreed a MoU for Beaulieu station with ECC, CCC, Countryside Zest, NR (Att. 2.2.1d). We will continue to review its content during design and construction.

We will use Development Services Agreements (DSA) to specify ECC's high level requirements of NR for each stage of the station project, building on the DSA in place to select a single option. NR's Infrastructure Projects team will continue to report progress through the Project Board providing the opportunity for oversight from NR Operations, ECC (including via Jacobs' rail advisory team), CCC and Countryside Zest as key stakeholders. The Project Board (see Management Case) will continue to integrate the role that the Beaulieu station scheme plays in NR's future ambitions for the Great Eastern Main Line (GEML), through its work for a GEML Task Force (Att. 2.2.1e) made up of MPs, Members, Officers, South East Local Enterprise Partnership (SELEP) and the New Anglia LEP. SELEP has also allocated £12m of funding to Beaulieu station through its ability to support the region's' housing and economic growth ambitions (Att. 2.2.1f p3)

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

We can show strong local support for the proposed infrastructure schemes. The concept of Beaulieu Station, the Chelmsford North East (NE) Bypass and substantial growth in NE Chelmsford has long been endorsed in local planning policy. They are a feature of the adopted Local Development Framework 2001-2021 (Core Strategy, Development Control Policies Development Plan and the North Chelmsford Area Action Plan) which were subject to extensive public consultation from 2005 – 2006 and 2007 – 2009.

Outline planning permission is already in place for Beaulieu Station (Att. 7.1.1b).

Chelmsford City Council (CCC) has since completed three stages of consultation on the draft Local Plan. The feedback was used to refine the Plan at each stage, before submission to the Secretary of State in June 2018.

Examination Hearing Sessions were held in November and December 2018. The Inspector noted in February 2019 that the Plan could be found sound subject to main modifications, which do not affect the amount of development or site allocations in the Local Plan (Att. 1.1.3a).

Consultation was carried out as follows at venues including Broomfield Hospital and village halls at Broomfield, Great Leighs, Little Waltham, Great Waltham, Boreham, Springfield:

Issues and Options: 19 November 2015 – 21 January 2016 with 1,300 visitors attending 25 venues

Preferred Options: 30 March 2017 – 11 May 2017 with 2,400 visitors attending 13 venues

Pre-Submission: 31 January 2018 – 14 March 2018 with 1,600 visitors attending 13 venues.

At each stage CCC consulted statutory bodies, including Parish Councils in Broomfield, Great & Little Leighs, Springfield, Little Waltham, and Boreham, close to the north Chelmsford allocated sites.

Alongside CCC planning officers, at Preferred Options and Pre-Submission consultation an infrastructure engineer from Essex County Council (ECC) attended to answer transport queries including those about the Bypass and Beaulieu station. CCC also worked with ECC to consult on the Bypass' safeguarded corridor route through these consultations.

Consultation feedback

Detailed reports of the feedback received to the three consultations are contained within the Regulation 22 Consultation Statement, published in June 2018 alongside the Submission Local Plan.

The Issues and Options consultation tested the vision and spatial principles and set out how growth could be accommodated on an area basis but without proposing specific sites. Of 3 options, there was greatest support for concentrating development within or close to the urban areas of Chelmsford, including at NE Chelmsford, Great Leighs and Broomfield. Whilst expressing this support, many respondents (inc statutory bodies) emphasised the importance of improved infrastructure including the timely provision of the Bypass & new Station.

Similar responses were received to the Preferred Options and Pre-Submission consultations, where respondents highlighted that existing proposals for the Bypass and Station, as set out in previous Local Plans, had not materialised, but that they were essential to bringing forward successful development to the north and NE of Chelmsford. Further detail on the specific feedback is provided in Att. 2.2.2.

Braintree District Council have stated that in relation to its strategic Local Plan site at Great Notley – Land east of London Road that it "would seek an amendment to policy LPP18 to ensure reference is made to the strategic importance of the A131/A130 corridor, and that there is a requirement of appropriate financial contributions towards the Chelmsford North East By Pass as part of the wider contribution to the strategic road network."

Throughout the Local Plan consultations, there has been strong and consistent support to deliver the Bypass & the new railway station. With these essential items of infrastructure in place, new homes, jobs and economic growth to the north of Chelmsford can be secured and be supported by more sustainable modes of transport.

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

	Support	Further Details
Local MP(s)	Yes	<p>The joint letter below in two parts is signed by Pirti Patel, John Whittingdale, Kemi Badenoch & Vick Ford,</p> <p>Our local Essex MPs are fully supportive of this bid.</p> <p>The MP for Chelmsford Vicky Ford met the Rail Minister in February 2019 to highlight how vital the new station at Beaulieu is for her constituency's housing and economic ambitions, unlocking growth north east of Chelmsford, and how it relieves pressure on the city centre and improves resilience on the line, to also support housing growth more widely.</p>
Filename Vicky Ford.pdf IMG_1111.PNG IMG_1112.PNG		Description Letter of Support From Vicky Ford & Kemi Badenoch Joint MP's Letter Part 1 Joint MP's Letter Part 2
	Support	Further Details
Local community	Yes	<ul style="list-style-type: none"> - As demonstrated in our above response the local community has been extensively engaged through the development of the Chelmsford Local Plan. Issues and Options: from 19 November 2015 to 21 January 2016 1,300 visitors attended 25 venues to consider issues and options. At the Preferred Options stage between March and May 2017 2,400 visitors attended 13 venues and between January to March 2018 1,600 visitors attended 13 venues for the pre-submission stage of the local plan. - A tabulated summary of feedback in relation to each of the specific sites is included as Att. 2.2.2. - The existing purchasers of properties on Beaulieu and Channels sites have purchased properties knowing the Station and Bypass are planned and marketing by developers shows the infrastructure is popular.
Filename Chelmsford_2.2.2_Summary of Chelmsford Local Plan Consultation.docx		Description Summary of Chelmsford LP Consultation

	Support	Further Details
Local Enterprise Partnership(s)	Yes	The South East Local Enterprise Partnership is fully supportive of this bid. On 15 February the SELEP Accountability Board resolved to approve £12m of Local Growth Funding to the scheme subject to the award of HIF monies to the project (Att. 2.2.1f). This builds on SELEP's support at the Expression of Interest stage and is evidence by a letter of support enclosed with this bid. SELEP see the importance of the road and station to the economic ambitions of the City and County, as well as the benefits of unlocking housing growth North East of Chelmsford.
Filename Beaulieu Park HIF project 01.03.2019.pdf		Description SELEP Letter of Support
	Support	Further Details
Supporting upper tier local authorities	Yes	Attached is the formal support and sign off of our HIF bid by the Leader of the Council. Essex County Council (ECC) is the accountable body of the bid. ECC Leader (David Finch), Cabinet Member for Transport (Kevin Bentley) and Cabinet Member for Planning and Economic Growth (Gagan Mohindra) and the Chief Executive (Gavin Jones) are all fully supportive of this bid. ECC has invested heavily in officer time and consultant resource to ensure a high-quality bid that brings together the council's housing ambitions with strong technical transport analysis and delivery capability.
Filename HIF Application to BID CMA FINAL APPROVED -14.03.19.docx		Description Formal sign off and support of HIF bids from Leader of the Council.

	Support	Further Details
Supporting lower tier local authorities	Yes	<ul style="list-style-type: none"> • Chelmsford City Council and Braintree District Councils are fully supportive of the bid. Roy Whitehead (Leader, CCC) and Graham Butland (Leader, BDC) have written letters of support. • The City and District Councils are key partners in the development and delivery of the housing and infrastructure elements of the bid. The City Council's Local Plan relies on the delivery of Station and Bypass. The City is represented on the delivery bodies overseeing the infrastructure and housing. • Chelmsford and Braintree are part of single housing market areas with Colchester and Tendring councils, developing joint strategic housing market assessment. These councils also support the bid. • The schemes also benefit new and existing residents and businesses of Maldon and Uttlesford through improved access to the rail and strategic road networks. It also has the support of their Leaders (see letters attached).
Filename		Description
MDC Chelmsford HIF Bid letter of support 060218.dot		Maldon District Council: Letter of Support
CCC letter of support 11.1.19.pdf		Chelmsford City Council: Letter of Support
ECC BDC CCC HIF bid support letter headed.doc		Uttlesford District Council: Letter of Support
HIF Braintree DC.pdf		Braintree District Council: Letter of Support

	Support	Further Details
Any other key stakeholders	Yes	<p>We have letters of support from the following key stakeholders:</p> <ul style="list-style-type: none"> • Network Rail. • Greater Anglia • Countryside Zest, North East Chelmsford Garden Village Consortium, Bloor Homes Eastern, Great Leighs Estates Ltd and Moulsham Hall Estates Ltd. <p>These supplement the Statements of Common Ground agreed with Chelmsford as part of Local Plan development, which can be found in the Commercial Case (Att. 5.3.3 various).</p> <ul style="list-style-type: none"> • Chelmsford Business Board and Essex Chamber of Commerce. <p>We also include Memoranda of Understanding agreed with Highways England as part of the recent Chelmsford Local Plan Examination in 2018.</p> <p>Further support from Abellio Greater Anglia is included in the Statement of Common Ground agreed for the Local Plan (Att. 2.2.1 b).</p>
Filename		Description
Countryside Letter 2.pdf		Countryside Letter of Support
190315_Beaulieu NR letter of Support_v1 0.pdf		Network Rail Letter of Support
2.2.3 Barton Willmore on behalf of Bloor homes.pdf		Broomfield developer support letter
2.2.3 Melville Dunbar on behalf of Gt Leighs and Moulsham Hall.pdf		Great Leighs developer support letter
2.2.3 DLBP on behalf of NE Chelmsford Consortium.pdf		NE Chelmsford Consortium Support letter
2.2.3 Mou Highways England ECC.pdf		Highways England MoU
2.2.3 Chelmsford Business Board Letter of Support.pdf		Chelmsford Business Board
2.2.3 Essex Chamber of Commerce Letter of support - HIF Fund Chelmsford North and Beaulieu Park.doc		Essex Chamber of Commerce
2.2.3 Great Notley letter of support.pdf		Alan Martin letter
HIF Chelmsford - March 2019 - final.pdf		Greater London Authority
Highways England Letter of Support.PDF		Highways England Letter of Support
Overarching_1_v2(no crops).pdf		Summary of all Essex CC HIF bids.
Essex County Council Beaulieu Park HIF bid - GA letter of support 210319.pdf		Greater Anglia Letter of Support

Meeting housing policy objectives

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

This scheme supports the Government's ambitions for housing as set out in the Housing White Paper Fixing Our Broken Housing Market. The scale of our planned housing growth and complements the goal of the White Paper to deliver 300,000 homes a year by increasing long term housing supply in the county, including affordable housing of at least 30 percent. We are a home county excited by the prospect of over 180,000 homes in Greater Essex over the next two decades.

The scheme enables us to deliver three core elements of the White Paper. We need to plan for the right homes in the right places.

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

Up-to-date, sufficiently ambitious Local Plans

As the White Paper sets out, out the first step is to develop an up-to-date, sufficiently ambitious plan: The housing sites in North East

Chelmsford represent the largest development location in Chelmsford's Local Plan, which the inspector examined in December 2018 and found sound subject to main modifications (which do not affect the quantum of development or site allocations). The Station and the Bypass enable Chelmsford to deliver their housing ambitions set out in that Plan - around 1,000 homes a year, or nearly 22,000 new homes between 2013-2036. This scale of development is 20 per cent more housing than objectively assessed need. The spatial strategy enables delivery of projections of housing growth following the standard methodology – with development in North East (NE) Chelmsford as the backbone of Local Plan delivery. Chelmsford City Council (CCC) and Braintree District Council offers an opportunity for both authorities to meet a substantial portion of their housing need beyond the current Local Plan Periods (mid 2030s onwards).

Garden communities: making enough land available in the right places:

The scheme supports the Government's plans to expand Garden Communities in England. This programme faces the challenge of aligning major new infrastructure with the development of new communities at scale. This bid enables us to create a new Garden Community at NE Chelmsford by providing the two major pieces of infrastructure it requires – the station and Bypass. CCC has submitted a bid to government that sets out ambitions for a new community of 11,850 homes over the next 35 years, increasing the city's urban area by nearly 40%. Development in the Garden Community also helps to protect the green belt, which covers the southern portion of the Chelmsford administrative area.

The scheme will also enable the growth of Great Notley Garden Village, a community that has developed over the last 25 years south of Braintree. The village will nearly double in size again during the next Local Plan period, enabled by this scheme.

Step 2: Building homes faster

Ensure infrastructure is provided in the right place at the right time

This bid forms part of the commitment in the White Paper to the Housing Infrastructure Fund to ensure infrastructure is provided in the right place at the right time. This bid will unlock 10,500 extra homes through investment in the Bypass and Beaulieu Station.

Step 3: Diversifying the market: Backing Small- and medium-sized builders to grow

The White Paper highlights the need for a diverse and vibrant group of house builders. To deliver this scale of developments effectively over the next twenty years and beyond, we need to support a diversified housing market in Essex. The White Paper includes the expectation (para. 1.33) that Local Authorities will diversify the market by encouraging the sub division of large sites to help smaller house builders gain a foothold in the market. Sir Oliver Letwin's review of large sites (June 2018) has expanded on this proposal in detail, showing how acceleration occurs by diversifying the market, rather than leaving a site for one firm to build out one product.

The NE Chelmsford Garden Village Consortium has assumed seven or eight outlets on the Garden Community. The site is part owned by Countryside Zest, a joint venture between the Essex-based developer Countryside Properties, and L&Q. The site is also owned by Threadneedle, Hanson, and Ptarmigan, who will dispose parcels of land to four or five further developers, to ensure that the high planned delivery rates can be maintained, in line with the White Paper ambitions, with the potential for local firms to take land to develop.

Boosting productivity and innovation by encouraging modern methods of construction

CCC has adopted guidance on modern methods of construction (Building for Tomorrow: Guidance on Sustainable Design and Construction and Sustainable Development, Supplementary Planning Document (SPD), June 2013). Paragraph 9.9 of the SPD encourages modern methods of construction which provide off-site pre-fabrication or construction.

Policy HO1 (p187) of the new Chelmsford Local Plan requires a minimum of 5% self-build homes (which can include custom housebuilding) within development of more than 100 dwellings. Policy LPP 37 (p37) of Braintree's Part 2 Local Plan requires 2% of homes to be available for self or custom builders on sites of 500 dwellings or more. This HIF bid helps to bring forward large sites in both districts where these modern methods of construction can be practised.

Scheme Objectives

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

- Enable the delivery of 14,000+ new homes between 2019 and 2051, of which 32% will be affordable.
- Enable the completion of 10,500 additional homes by 2051 which would not be possible without HIF investment
- Support delivery of 10,500+ homes to Town and Country Planning Association (TCPA) garden community principles, in particular with an integrated and accessible transport system that supports a shift to from private to public transport (modal shift).
- Connect 10,500+ new homes with 1,000,000+ jobs within a 60-minute commute
- Provide the opportunity to unlock thousands of new homes between Chelmsford and Braintree after 2036

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 both the perspective of Essex and Chelmsford 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, (2) appeals to the supply-side; and (3) provides the ability to clawback funding from developers as they build out, to pay for future dualling of the Chelmsford North East Bypass and thereby facilitate further housing growth.
- Potential affordability – i.e. how well the scheme: (1) meets the sourcing policy of both Essex and Chelmsford 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)

There is a clear market failure that requires government intervention to unlock 10,500 homes.

Chelmsford and Braintree have strong market demand and need housing growth. Outlets on current developments in North East (NE) Chelmsford sell between 60 and 84 homes a year, well above the 50 a year expected on developments even in strong markets (Att. 2.1.2).

However, there is a viability gap in funding for the Station. The financial returns from development are too low to fund the £124.5m shortfall for Beaulieu Station. The Bypass has a cashflow issue. We need the Bypass to unlock the homes, before funding from the completed homes can pay for the Bypass. We also need to recycle receipts from developers to dual the Bypass in the 2030s for later phases of the NE Chelmsford Garden Community.

Beaulieu Station

Beaulieu Station is required to unlock the NE Chelmsford Garden Community, but the Station is too expensive for the sites in NE Chelmsford to bear through Section 106 and the Community Infrastructure Levy (CIL).

The NE Chelmsford Garden Community needs the Station. Development of the 3,600 allocation at Beaulieu is limited to 2,500 homes without the Station completed. Subsequent phases of growth in adjacent NE Chelmsford would be subject to this cap as the

same sustainable transport issues would apply. There is no plan B for an alternative transport strategy (as noted in our Additional Information) and the wider urban area transport network has only 4% capacity in peak periods. Chelmsford Station will not be able to cope with the forecast growth in journeys from this and other developments. The Station alone unlocks the 1,100 homes at Beaulieu, and then the Bypass, makes possible the 5,500 homes in NE Chelmsford Phases 1 and 2. Without Beaulieu Station, Chelmsford would have to review its Local Plan.

The station costs are robust, as shown in the Financial Case. Beaulieu Station will cost £157m. We have raised £22m from developers already building at Beaulieu park, and £12m from the South East LEP's Local Growth funding. This leaves a funding gap of £124.5m.

The project has evolved since the original costing of £34m was developed in 2014. An operational review of the scheme by Jacobs and Network Rail (NR) in parallel in 2015 showed that a simple two-platform solution was no longer operationally feasible.

NR then developed options to meet the rail industry's functional requirements to 2043. The Station is now more complex and involves three platforms, a passing loop with turnback facilities and the need to realign track vertically and horizontally to meet safe, acceptable standards. The track and signal work explain the significant increase in costs for the station. NR have not over-specified the work required, nor unnecessarily inflated costs. It is important that an additional station does not increase journey times to Colchester, Ipswich and Norwich, requiring this layout to enable trains to pass each other. This improvement offers wider benefits, supporting housing growth along the train line. The development of costs and requirements follow a rigorous and standard process for developing changes to the rail network called the GRIP (Governance for Railway Investment Projects) Stage process. We have used costs developed and signed off by NR in their GRIP 2 work.

The development cannot afford to pay for the full station costs. NE Chelmsford has already raised £22m through the Section 106 agreement for the Beaulieu development. To 2036 NE Chelmsford, Great Leighs and Broomfield will raise a further £35.3m through Chelmsford's Community Infrastructure Levy (CIL). However, this is not enough funding to pay for the £124.5m funding gap for the Station, plus money will not be available in full for two decades, other infrastructure across Chelmsford has calls on the funding, and only 2,500 of the homes can be built without the Station (or an alternative) being in place (See Att. 2.5.1 for a calculation of strategic CIL).

Other funders cannot pay for the Station. Essex County Council (ECC) cannot meet the £124.5m gap. The Local Growth Fund contribution cannot be increased given that SELEP have allocated their tranche three funding for schemes up to 2021 with no additional funding confirmed by government. NR is currently unable to fund the remaining shortfall. There will be future funding for rail improvements, in particular the Control Period Six (CP6) Enhancements programme. However, the Beaulieu Station scheme would be considered against other rail enhancements across Great Britain for a limited funding pot through another round of business cases. The case to unlock housing is stronger than the transport case alone. Trying to take the scheme through this route would result in additional uncertainty and delay, creating a major risk to the delivery of local homes.

In the absence of Beaulieu Station, additional unfunded investment in Chelmsford Station (and the links to it) would be needed to safely cater for increased demand from 8 million passengers today to 12-14 million by 2033. Chelmsford Station is a capacity constrained viaduct location and currently the busiest two platform station outside of Greater London.

Chelmsford North East Bypass

The Bypass market failure is a cashflow issue. We will see funding from housing development to invest in the Bypass, but we need the Bypass in advance of housing development.

The four sites need the Bypass.

CCC's LP and infrastructure development plan (IDP) make clear that the four sites in the Chelmsford to Braintree corridor need the Bypass. North East Chelmsford is expected to contribute £30m, Great Leighs £6.1m and North Broomfield £2.5m towards the cost of road improvements over the period of the LP to 2036 (Att. 1.1.3c pp119-121). Braintree District Council have noted in a Statement of Common Ground with Chelmsford that they: "would seek an amendment to policy LPP18 (Great Notley – Land east of London

Road) to ensure reference is made to the strategic importance of the A131/A130 corridor, and that there is a requirement of appropriate financial contributions towards the CNEB [i.e. bypass] as part of a wider contribution to the strategic road network” (Att. 1.1.3d).

The sites need the Bypass before they can afford to pay for them.

However, the four sites will only generate the income to pay for the Bypass in time to complete the road by 2036. Whereas the transport modelling completed for this bid shows the planned housing growth and the Station put an unacceptable load on the transport network by 2036. This means that we can only build 3,600 homes at Beaulieu and 2,664 homes across other sites before we need the Bypass, which is too few homes to generate the returns that pay for the road. This dilemma creates a cashflow issue for the sites, which puts the delivery of 5,500 homes in NE Chelmsford at risk.

Neither ECC nor CCC have the capital funding to deliver this infrastructure in advance. Other government funding initiatives could be available, but this would involve further delay and uncertainty given the competitive nature and primary focus of the bid on transport user benefits rather than unlocking homes.

HIF will enable us to invest in the road to unlock the homes and mitigate the impact of the station on the road network. We will use developer contributions to dual the Bypass and contribute to improvements to the A12 at the Boreham Interchange, to unlock further development from the mid 2030s onwards. In conjunction with the Station, the Bypass supports the sustainable delivery of 14,109 new homes, all with excellent choice and connectivity to a wide range of jobs, amenities and transport modes.

In summary, we need government intervention to overcome the market failures of viability (Station) and cashflow (Bypass) to unlock 10,500 homes.

Filename	Description
Chelmsford_2.5.1_Strategic CIL and S106 contributions (1).docx	2.5.1

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

Transport Problems

The following is some further detail on the transport context in Chelmsford and the nature of existing problems that mean that mitigation is needed. More detail is provided in the Option Assessment Report attached to the bid (see Att. 3.1.1).

The existing A130 between the Boreham Interchange and the A131 was originally built in the 1980s to access development in Springfield, remove strategic traffic from the city centre and improve journey times between Chelmsford, A120, Stansted Airport and the M11 Corridor. Mixing these strategic journeys with a growing urban area is now sub-optimal for residents and road users. Issues include community severance, road safety, congestion and journey time reliability.

As Chelmsford continues to grow, the form and function of these roads will need to cater for increased walking, cycling and public transport, and integrate NE Chelmsford with existing communities and services. These changes require extra road capacity to relieve these sections. There is neither the desire nor the space to expand the city centre’s road network in its historic heart, widely reported to be at 96% capacity at peak times (Att 2.6.1a, p14). Instead, options that keep traffic away from the urban area meet our housing and economic objectives.

Chelmsford station is the busiest two platform station outside London with 8.5 million passenger trips per year. Chelmsford Station serves both the growing city and the surrounding heart of Essex. Good access to rail services for London and the East of England is an important driver for the housing market and economic productivity. Growing communities either have infrequent/expensive

(Braintree) or no rail service (Great Dunmow, Maldon) resulting in rail-heading to Chelmsford Station and further pressure on the road network, car parks and station circulation areas and platforms. Chelmsford Station has been recently upgraded with a second access, improved ticket hall, public transport interchange, park and ride services and cycle storage. Greater Anglia is also investing in a new train fleet providing a likely 20% increase in passenger capacity on the GEML from 2019, and capacity for up to 27 trains per hour into London by 2024 (Att. 2.6.1b). There is an opportunity to cater for increased demand from housing growth if users can access a station. But the existing station at Chelmsford is located on a 2-platform viaduct station making constraining further upgrades by their cost and complexity.

ECC's Future Transport Network Strategy (Att. 2.6.1a) for Chelmsford provides a solution to these problems. A focus on strategic roads to bypass Chelmsford, and public transport such as rail and park and ride to intercept traffic on the periphery will allow public transport, walking and cycling within the urban area to make better use of the space available. Beaulieu Station and the Chelmsford NE Bypass are key components of this plan.

Transport Opportunities

The committed and funded works at A12 Junction 19 (A130, A138, B1137 Boreham Interchange) being undertaken by Countryside Properties are enabling and complementary to the phasing of the Chelmsford North East Bypass (CNEB) as detailed in the HIF bid. Indeed the works needed at J19 are for connecting the CNEB to the A12 via the RIS One J19 to J25 scheme. If however the HIF bid is successful it will provide the opportunity to accelerate the phasing of works at the J19 (Boreham Interchange).

Filename	Description
Chelmsford_2.1.1a_EB019_Strategic_Housing_Market_Assessment_2015.pdf	2.1.1a
Chelmsford_2.1.1b_EB 048 Objectively Assessed Housing Need Study November 2016.pdf	2.1.1b
Chelmsford_2.1.1c_Chelmsford Local Plan Policy S8.pdf	2.1.1c
Chelmsford_2.1.1d_Braintree Local Plan Policy SP3.pdf	2.1.1d
Chelmsford_2.1.1e_Great Notley Travel to Work Census Data.xlsx	2.1.1e
Chelmsford_2.1.1f_EB063c Development Comparison - Beaulieu, Channels, and proposed NE Chelmsford.pdf	2.1.1f
Chelmsford_2.1.1g_Braintree Local Plan Policy LPP18.pdf	2.1.1g
Chelmsford_2.1.1h_Chelmsford Economic Strategy.pdf	2.1.1h
Chelmsford_2.1.1i_Local Plan Policy S9.pdf	2.1.1i
Chelmsford_2.2.1c_SOCC 22 Statement of Common Ground with Highways England, ECC and CCC (1).pdf	2.2.1c
Chelmsford_2.2.1d_MOU Beaulieu Park FINAL SIGNED COPY - redacted.pdf	2.2.1d
Chelmsford_2.2.1e_Network-Rail-GEML-Study.pdf	2.2.1e
Chelmsford_2.2.1f_summary of decisions 15.02.19 final.pdf	2.2.1f
Chelmsford_2.2.1b_SOCC 24 Proposed Station at Beaulieu (NE Chelmsford).pdf	2.2.1b
Chelmsford_2.5.1_Strategic CIL and S106 contributions (2).docx	2.5.1
Chelmsford_2.6.1a ECC Chelmsford Future Transport Network.pdf	2.6.1a
Chelmsford_2.6.1b_Strategic-Business-Plan-2019-2024-Summary-Anglia.pdf	2.6.1b
Chelmsford_2.2.1a_MoU Chelmsford Garden Village 15.3.19.pdf	Chelmsford Garden Village MOU

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

Option Assessment History pre-HIF

Option assessment during co-development has brought together 2 schemes that have long been considered necessary to deliver the housing, economic growth and transport ambitions for Chelmsford & the heart of Essex:

- Beaulieu Station: Subject to its own scheme development and appraisal, most recently in ECC's Capital Business Case for South East Local Enterprise Partnership (SELEP) funding (approved by SELEP February 2019 – Att. 2.2.1f) & Network Rail's GRIP 2 study (2016). The concept of a new station and substantial growth in North East (NE) Chelmsford has long been endorsed in local planning policy. It features in the adopted Local Development Framework 2001-2021 for Chelmsford and again in the Local Plan - which the Inspector found sound in Feb 2019 (subject to main modifications which do not impact on the amount of housing or site allocations). Outline planning consent for a new railway station, car parking, public transport interchange, access roads and landscaping was granted on 29 May 2013.
- Chelmsford NE Bypass: The scheme was subject to a design review in 2015/16 resulting in a refresh of the safeguarded corridor following public consultation in 2017 and 2018. It is also part of the Local Plan - found sound in Feb 2019 (subject to main modifications that do not affect the amount of housing or site allocations).

Full detail on the history of option development is provided in the Option Assessment Report (Att. 3.1.1). This demonstrates how: (i) how the Bypass concept was developed from regional studies from 2002 and ECC studies from 2005, including the appraisal and consultation on route alignments, junctions and capacity (single vs. dual carriageway); and (ii) the concept of a station has developed since 1998, including work undertaken to evaluate rail against other public transport options, the specification of station requirements and design development.

The design evolved from a four platform solution during the 2000s to a down scoped two platform solution in 2012. However following an operational review of that two platform option in 2015 by Jacobs and Network Rail (separately & in parallel), it was identified that this was no longer acceptable to Network Rail and the Train Operating Company given the operational constraints it created on a busy two track main line railway.

Network Rail's GRIP 2 feasibility study (March 2017 – Att. 6.1.4a) considered various operational solutions in terms of their feasibility and cost taking forward a limited number of options for more detailed study at GRIP 3 (ongoing, reporting later in 2019). The GRIP 2 study recommended a three platform station option with passing loops, with the sub-options now being assessed by Network Rail having no impact on the housing unlocked, and relatively small impacts on capital cost. This three platform station option was taken forward to the option short-list for more detailed appraisal as part of HIF.

Option Assessment during HIF Co-Development

Given the ongoing work undertaken by Network Rail as part of the GRIP process, option assessment at the start of the HIF co-development phase concentrated solely on the Bypass. This work took the safeguarded corridor, and considered 5 sub options (illustrated within the Option Assessment Report):

- a) Dual carriageway upgrade of the A131 south of the Great Leighs Bypass (Deres Bridge) to Chatham Green - a point where a future Bypass would join from the south;
- b) Single carriageway Bypass between Radial Distributor Route (RDR) 1 and A131 Chatham Green with intermediate roundabout junction for RDR2;
- c) a and b combined;
- d) Dual carriageway Bypass between RDR1 and A131 Chatham Green with intermediate roundabout junction for RDR2; and
- e) a and d combined.

An initial appraisal was undertaken in Summer 2018 to allow the team to further develop a single option for further scheme development of the Bypass (design, cost, risk and programme) and more detailed appraisal, alongside the railway station option. This initial appraisal considered:

- Performance against Chelmsford NE Bypass specific scheme objectives (based on a blend of scheme objectives from the 2015 scheme development work and the amount of housing delivered and accelerated within Chelmsford and Braintree);
- Likely economic benefits associated with housing (BCR and NPV); and
- Affordability.

Benefits were appraised on assumptions regarding accelerated and dependent development and the likely land value uplift using Ministry of Housing, Communities & Local Government (MHCLG) Ready Reckoners for the relevant districts. Appraisal against objectives used a four-point scale between +2 and -1.

This appraisal concluded that options c and e both deliver the highest amount of dependent housing (10,500 extra homes) in the Chelmsford-Braintree corridor, assuming the station was also provided. They both improved connectivity and capacity between the A131 and A12/Chelmsford and relieved the potential bottleneck on the A131 between Chatham Green and the dualled Great Leighs Bypass.

Ultimately Option c was short-listed for further appraisal. Compared to Option e it was cheaper to construct and performed well against the objectives for the same quantum of housing. Option e would provide capacity for housing growth beyond 2036 upfront, however that road space although beneficial is not essential now. Option c could be delivered through HIF and safeguard the future delivery of the dual carriageway to provide the capacity for future growth through the following means:

- The design team have developed a single carriageway bypass design within the safeguarded corridor that could be readily upgraded to dual standard with minimal departures from standards.
- There is also the ability to use developer contributions for the Bypass as housing comes forward in the Chelmsford-Braintree corridor, to provide funding for dual carriageway capacity in the 2030s.

This allows ECC and CCC to deliver the same level of growth over the long-term. While option e would also be expected to generate wider transport benefits (such as reduced journey times and safety), these are not the primary objective of HIF.

The appraisal concluded that option d was the third best option, delivering 9,600 extra homes assuming that the station was also provided. It was inferior because it would create an inconsistent network for road users with a single carriageway bottleneck on the A131 between the two sections of dual carriageway. This could impact the delivery of homes in Great Leighs and Great Notley should congestion increase.

Option b placed fourth. It delivered even fewer homes (8,600 extra homes) assuming that the station was provided. Similar to option d it would not increase capacity on the existing A131 between the Bypass and Great Leighs. Again, this could impact on the level of growth in Great Leighs and Great Notley because of the traffic congestion. It also scored less well than dual carriageway options in terms of promoting a safe and secure travelling environment and future proofing and safeguarding the subsequent dualling of the Bypass, reducing the capacity for longer-term growth.

Option a would bring forward little dependent development in comparison to the other options (3,275 extra homes assuming the station was also provided). This was because it would not improve access to the largest allocations in NE Chelmsford or increase capacity & reduce journey times from Great Leighs and Braintree to the A12.

With option c shortlisted, subsequent option appraisal during HIF co-development has considered the benefits of a combined Beaulieu station and Bypass option c scheme against the schemes as individual interventions. This has been based on the scheme objectives using a +3 to -1 five-point scale, critical success factors and value for money. Our rationale for selecting the preferred option and discounting the alternative options is described in the Options Summary below

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)	With reduced HIF funding (even less)
HIF Funding Required	£217,861,101	£124,501,000	£0	£93,360,101
Total scheme cost	£4,115,729,500	£1,643,707,989	£1,055,923,188	£1,509,867,733
Housing units delivered	14109	5663	3609	5509
Estimated % affordable	32 %	32 %	32 %	32 %
Units started up to 2022	1,214	1,114	1,114	1,114
Units started 2023 - 2025	1,934	1,664	1,583	1,664
Units started 2026 - 2030	3,470	2,433	912	1,849
Units started 2031 - 2035	2,991	452	0	882
Units started in future years	4,500	0	0	0
Amount of LA funding (inc. LGF)	£12,050,000	£12,050,000	£0	£0
Amount of other Central Govt. funding	£0	£0	£0	£0
Amount of private sector funding	£3,885,818,399	£1,507,156,989	£1,055,923,188	£1,416,507,632
Amount of other public sector funding	£0	£0	£0	£0

1. With requested HIF funding

Forward fund the delivery of Beaulieu station and Chelmsford North East Bypass option c.

This option is in strong alignment with all objectives, scoring 15/15.

It facilitates 14,109 homes (Beaulieu: 3,059; NE Chelmsford – Phase 1: 3,000, Phase 2: 2,500; Phase 3: 2,000; Broomfield: 450; Great Leighs: 1,100; and Great Notley; 2,000) between now and 2051, of which:

- 10,500 of these are additional homes (circa 32% affordable) which would not come about without HIF investment.
- 10,509 of these (Beaulieu and NE Chelmsford Phases) would be delivered to Garden Community principles.
- 10,509 of these (Beaulieu and NE Chelmsford Phases) would be within a 60-minute commute of 1 million+ jobs. A new station with headline journey time figures to London Liverpool Street of less than 40 minutes is very marketable. The Station and Bypass provide prospective home owners with the flexibility of a wide range of jobs and amenities within the Garden Community, Chelmsford, Essex, Eastern England and Greater London. Work on wider economic impacts (see 1.5.1) suggests that Beaulieu's Business Park is expected to field jobs with more variety and higher value given its location by the A12 and a railway station connected to London.

This option provides the full potential to unlock thousands of new homes between Chelmsford and Braintree before and after 2036. This is because:

- (i) the Station also needs the Bypass to mitigate the impacts of traffic from it and 3,600 homes at Beaulieu to provide capacity for the rest of the Local Plan growth;
- (ii) developer contributions from dependent housing can be used to dual the Bypass and release further housing capacity (only this option provides the method to create a virtuous circle of investment in infrastructure first); and
- (iii) Beaulieu station helps to relieve capacity constraints at a busy Chelmsford station, enabling the city centre to deliver future housing growth beyond 2036.

What strategic risks do the shortlisted options carry?

Description	Likelihood	Impact
<p>This option provides the confidence for housing developers to invest further in their plans for Beaulieu Park and the NE Chelmsford Garden Village to bring forward high quality homes and places early (with the current S106 cap of 2500 homes at Beaulieu Park removed) to maximise the benefits of new rail services as a highly marketable asset to the new homes on sale.</p> <p>The HIF investment would also be subject to risks associated with any housing development project, namely cost overruns, delays and housing market downturns. However, Chelmsford is a buoyant part of the national housing market and such issues are likely to hit other areas first. In addition, the growth in NE Chelmsford and the south of Braintree is backed by a breadth of developers and sale price points, providing greater resilience and choice. Such characteristics have enabled Chelmsford to deliver a sustained annual quantum in excess of 1,000 homes in recent years.</p>	Low	MediumHigh
<p>The option provides the complete funding envelope to progress both infrastructure schemes as quickly as possible. It also provides the forward funding that can be recovered from developers to provide further CNEB dualling to provide the capacity for further growth beyond the Local Plan Period – creating a virtuous circle of investment. Whilst both schemes are relatively mature, further work on design, costing and consents is needed. Through a combination of the NE Chelmsford Garden Village Programme Board, infrastructure specific Project Boards and robust delivery processes with ECC and Network Rail we believe that there is the necessary governance and capability to deliver successful projects and mitigate issues as they arise.</p> <p>To meet 2023 spending timescales, their delivery is already on a critical path. We are prepared to progress some of the work “at risk” to deliver, but timely decision making by Government on HIF spending and subsequent consents is imperative.</p>	MediumHigh	MediumHigh

What are the constraints related to this shortlisted option?

- The lack of flexibility in allocated HIF spending profile is the biggest constraint. There is little flexibility in the programme to respond to delays in decision making processes outside of Essex County Council (ECC)’s and Network Rail (NR)’s control. This adds some risk and cost into each scheme because of the need to commence procurement of subsequent stages of railway station delivery activities towards the end of the preceding stage. This does risk abortive work occurring, however, this is mitigated by ensuring that the technical design activities do not overlap.
- To provide further mitigation it will be necessary to review the delivery strategy for Beaulieu station specifically at two additional points in the programme outside the normal stage gate reviews which occur at the conclusion of each GRIP stage. At these review points the most appropriate procurement route will be agreed and implemented based on the constructability assessment of the selected option and an assessment of programme risk.
- The March 2024 spend deadline means that we have had to adopt a phased approach to deliver the Bypass. This means construction of the sections with fewer constraints first (where the Garden Village Consortium owns the land), with this happening alongside the Compulsory Purchase Order application for the central section between NE Chelmsford and the A131.

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

- Countryside Zest (CZ) must deliver Radial Distributor Road 1 to link the A12 Boreham Interchange with the station access road and A130 Essex Regiment Way. This is expected by 2021 (see Management Case and Letter from CZ) and is a low risk. Most of the housing growth depends on Chelmsford's Local Plan being declared sound. The Inspector noted in February 2019 that the Plan is one that could be found sound subject to main modifications (Att. 1.1.3a). The modifications to the Plan do not impact on the quantum of housing development or the site allocations contained within the Plan. The Station has outline planning consent but needs to secure a Transport and Works Act Order for a small portion of land outside railway control, full planning consent and Network Change. These are not considered unnecessarily complicated for this scheme, but a dependency remains nonetheless. Access to the Great Eastern Main Line for construction of the station will need to be negotiated and agreed with the Train Operating Company, by Network Rail and will be considered alongside all the other requests and plans for such access. The Bypass needs: planning consent, Hanson to finish and remediate quarry extraction (although is a partner within the North East (NE) Chelmsford Garden Village Consortium), and Essex County Council (ECC) to secure land through negotiation or a Compulsory Purchase Order, for the section between NE Chelmsford and the A131 and for some of the A131 dualling.

Please provide details of the exit strategy for the shortlisted options

- We understand that this response should only present the positive exit strategy. The project will work closely with the train operator as it develops to integrate the station with the operation of the wider network. It is targeted to have the Station ready for operation in time for timetable change in December 2025. Network Rail's GRIP process used as the governance framework provides the opportunity to assess the project's health at suitable intervals and close out specific workstreams when complete. The activities to achieve this are as follows:
 - Commission the signaling systems
 - Staff training for station operation
 - Train Driver awareness training
 - Station opening publicity
 - Office of Road and Rail (ORR) sign-off
 - Completion of Operation and Maintenance manuals/Health & Safety File and transfer to the Train Operating Company.

Likewise, Essex County Council's Major Project Manual provides a similarly robust approach to the design and delivery of the Chelmsford North East Bypass with stage gates to pass.

Following the delivery of both schemes, the focus would shift to delivery of the further housing phases overseen by the North East Chelmsford Garden Community Board.

2. With a reduced amount of HIF funding

Forward fund the delivery of Beaulieu station only is the next best alternative, scoring 6/15.

It facilitates 5,663 homes resulting it being in slight (+1) positive alignment with Objective 1: (Beaulieu: 3,059; Broomfield: 378; Great Leighs: 826; and Great Notley: 1400) between now and 2051.

It allows the full Beaulieu allocation to come forward but as the Station and new homes generates extra traffic, it does not allow NE Chelmsford Phase 1 and subsequent phases to come forward given the unacceptable congestion impacts highlighted by traffic modelling without the Bypass. It also does not allow all of the homes between NE Chelmsford and Braintree to come forward for this same reason.

It is in slight (+1) positive alignment with Objective 2, enabling the completion of 2,054 extra homes. It removes the barrier to growth at Beaulieu which could otherwise not proceed.

It is in slight (+1) positive alignment with the objective to deliver new homes to Garden Community principles. It supports the delivery of the full allocation (the remaining 3,059 homes) at Beaulieu to these standards.

It is in moderate (+2) alignment with the objective to connect new homes with the widest range of jobs with a 60-minute commute.

The Station is very marketable and opens up substantial job opportunities in Greater London. The benefits of rail in improving accessibility to Stratford and Liverpool Street far outweigh the benefits of reduced road journey times to job catchment areas in the East of England. However, it does not score as well as Option 1 as fewer homes are built to benefit.

Option 2 has a slight (+1) positive impact in relation to unlocking thousands of new homes between Chelmsford and Braintree after 2036. It helps to relieve capacity at Chelmsford station and thereby provides headroom for future housing growth in the city centre post 2036. However, it does not provide the mechanism to deliver further growth in NE Chelmsford or between there and Braintree.

What strategic risks do the shortlisted options carry?

Description	Likelihood	Impact
<p>This option provides the confidence for housing developers to invest further in their plans for Beaulieu Park and the NE Chelmsford Garden Village to bring forward high quality homes and places early (with the current S106 cap of 2500 homes at Beaulieu Park removed) to maximise the benefits of new rail services as a highly marketable asset to the new homes on sale.</p> <p>The HIF investment would also be subject to risks associated with any housing development project, namely cost overruns, delays and housing market downturns. However, Chelmsford is a buoyant part of the national housing market and such issues are likely to hit other areas first. In addition, the growth in NE Chelmsford and the south of Braintree is backed by a breadth of developers and sale price points, providing greater resilience and choice. Such characteristics have enabled Chelmsford to deliver a sustained annual quantum in excess of 1,000 homes in recent years.</p>	Low	MediumHigh
<p>The option provides the remaining funding to complete the station as quickly as possible. Whilst the station GRIP 3 design is being developed, further work on design, costing and consents is needed. Through a combination of the Essex HIF Programme Board, NE Chelmsford Garden Community Delivery Board, Beaulieu Station Project Board, robust delivery regime within ECC and the underpinning of Network Rail’s GRIP process we believe that there is the necessary governance and capability to deliver a successful project and mitigate issues as they arise.</p> <p>To meet March 2024 spending timescales, their delivery is already on a critical path. We are prepared to progress some of the work “at risk” to deliver, but a decision made on HIF spending and subsequent consents within the time frames set out previously by Government is imperative.</p>	MediumHigh	MediumHigh
<p>The traffic modelling has demonstrated that the Station and additional development at Beaulieu to its 3,600 permission is likely to create another limit on homes in NE Chelmsford without the early provision of a Bypass. The traffic modelling shows that the Section 106 funding from developers would be needed to build the Bypass up front to mitigate all the impacts of development, which would place viability pressures on NE Chelmsford, thus stunting local housing growth.</p>	High	MediumHigh

What are the constraints related to this shortlisted option?

- The lack of flexibility in allocated HIF spending profile is the biggest constraint. There is little flexibility in the programme to respond to delays in decision making processes outside of Essex County Council (ECC)’s and Network Rail (NR)’s control. This adds some risk and cost into each scheme because of the need to commence procurement of subsequent stages of railway station delivery activities towards the end of the preceding stage. This does risk abortive work occurring, however, this is mitigated by ensuring that the technical design activities do not overlap.
- To provide further mitigation it will be necessary to review the delivery strategy for Beaulieu station specifically at two additional points in the programme outside the normal stage gate reviews which occur at the conclusion of each GRIP stage.

At these review points the most appropriate procurement route will be agreed and implemented based on the constructability assessment of the selected option and an assessment of programme risk.

Another constraint for this option is that without the Bypass, there is not the capacity on the road network to bring forward the NE Chelmsford development. The Bypass needs all the development to come forward to fund it, but it is needed in advance given the traffic impacts of Beaulieu Station and the remaining 3,059 homes planned at Beaulieu, alongside background traffic growth.

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

- CZ must deliver Radial Distributor Road 1 to link the A12 Boreham Interchange with the station access road and the A130 Essex Regiment Way. This is expected by 2021 (see Management Case and Letter from CZ) and is a low risk.

Most of the housing growth depends on Chelmsford's Local Plan being declared sound. The Inspector noted in February 2019 that the Plan is one that could be found sound subject to main modifications (Att. 1.1.3a). The modifications to the Plan do not impact on the quantum of housing development or the site allocations contained within the Plan.

The Station has outline planning consent but needs to secure a Transport and Works Act Order for a small portion of land outside railway control, full planning consent and Network Change. These are not considered unnecessarily complicated for this scheme, but a dependency remains nonetheless.

Access to the Great Eastern Main Line for construction of the station will need to be negotiated and agreed with the Train Operating Company, Abellio Greater Anglia, by Network Rail and will be considered alongside all the other requests and plans for such access.

Please provide details of the exit strategy for the shortlisted options

- The project will work closely with the train operator as it develops to integrate the station with the operation of the wider network. It is targeted to have the Station ready for operation in time for timetable change in December 2025. Network Rail's GRIP process used as the governance framework provides the opportunity to assess the project's health at suitable intervals and close out specific workstreams when complete. The activities to achieve this are as follows:
 - Commission the signaling systems
 - Staff training for station operation
 - Train Driver awareness training
 - Station opening publicity
 - ORR sign-off
 - Completion of Operations & Maintenance manuals/Health & Safety File and transfer to the Train Operating Company.

Following the delivery of the station, the focus would shift to delivery of the further housing phases at Beaulieu by Countryside Zest.

At the same time, Essex County Council would continue to explore alternative funding options to bring forward the Chelmsford North East Bypass. If these were not successful, then only 5,663 homes of the 14,109 homes in our bid could be delivered. Chelmsford City Council would have to instigate a Local Plan review early in the life of the new Local Plan to determine an alternative spatial strategy for future growth and how to pay for it.

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

- The delivery of the station only using HIF funding, has been modelled in the Chelmsford Traffic Model and Beaulieu Station Rail Demand model to determine the maximum extent of development which could be built under these circumstances. As the Chelmsford Infrastructure Development Plan has indicated that the North East (NE) Bypass could be feasibly delivered by the end of the Local Plan period through private sector funding via developer contributions, this modelling has focused on determining the trigger point for delivery of the bypass. The traffic modelling has indicated that, on account of the additional local traffic generated by Beaulieu station, the North East Bypass would need to be delivered either by the station's opening year or before development of NE Chelmsford Phase 1 could commence. This scenario has been tested in the Financial Model to confirm the viability of the developments if this condition were

imposed, using the latest cost estimates for the bypass. This has indicated that the developments would not be viable if required to deliver the NE Bypass up-front, with total cashflow remaining negative well beyond the end of the Local Plan period and positive cashflow only being achieved on the basis of full development of NE Chelmsford Phase 2, which is not yet an allocated site. It has been judged that, on the basis of this modelling, NE Chelmsford Phase 1 would not be viable without additional public-sector funding to contribute to the construction of the NE Bypass.

As no such funding source has been identified, it has been established that the NE Chelmsford development and Bypass would not be built under this option, the maximum possible development at the other sites under these circumstances has been determined using the Chelmsford Traffic Model, and this has been appraised using the housing economic model.

3. Do nothing (no HIF funding)

No HIF funding. No Beaulieu Station. Market led strategy to deliver the Chelmsford NE Bypass.

It does not perform well against the objectives scoring 0/15.

It only allows 3,609 homes (Beaulieu: 1,959; Broomfield: 225; Great Leighs: 550; and Great Notley: 875) between now and 2051.

It does not enable the final 1,100 homes at Beaulieu to be delivered and it then impacts the delivery of homes in adjacent NE Chelmsford Phases 1 and 2 (5,500 homes) which are also dependent on the Station and subsequently the Bypass. There is no plan B alternative transport strategy to release these homes. The existing Chelmsford's two-platform station (the busiest outside of Greater London) will not be able to cope with the forecast growth in journeys from this and other developments; developer funded rapid transit is therefore of little use if the roads are congested and people cannot board the train.

The market led strategy to deliver the Bypass would not work in practice as the bulk of the funding to deliver the road from the NE Chelmsford development would not be forthcoming as these homes could not be developed without the Station.

This results in less development and the homes that would come forward would not be able to follow Garden Community principles, with a reliance on car-dependent lifestyles likely.

New residents would have access to a wide range of job opportunities. However, with the access constraints and interchange time to Chelmsford station factored in, there would be fewer job opportunities within Greater London accessed by rail within 60 minutes.

It does not provide the opportunity to unlock thousands of new homes after 2036. There would need to be an early Local Plan review to determine whether an alternative spatial strategy could work. However, a new spatial strategy would also need infrastructure to be funded.

What strategic risks do the shortlisted options carry?

Description	Likelihood	Impact
<p>Delivery of the full long-term potential of housing in NE Chelmsford is highly uncertain without the Station. The Alternative Transport Strategy that is needed to develop beyond 2,500 homes does not exist and once developed is likely to create a need for further unfunded infrastructure to realise the growth. The connectivity and accessibility of the new homes to the rail network would not be attractive, with a congested Chelmsford Station and city centre, reducing the marketability of new homes for those seeking high quality journey times to London, for which Chelmsford is already known.</p> <p>This option would also have negative consequences for the 107,300 sqm of commercial floorspace planned in NE Chelmsford. Economic studies (Att. 1.5.1.g) have shown that the type of employment generated without a station would be different generating at least £250m less Gross Value Added (GVA) to the economy. There would also be a risk that the type of jobs that then come forward do not match the homes that are developed creating additional traffic issues for mitigation.</p>	High	High
<p>Should the Beaulieu Alternative Transport Strategy be untenable this then creates a knock-on impact for the delivery of the single carriageway CNEB bypass. This road needs all the developers to come forward with their sites to deliver it, but if the cap on development in NE Chelmsford remains, then there will not be the funding to deliver it. This then has knock-on impacts on the accessibility and marketability of homes to the north of Chelmsford in Great Leighs, Great Notley and Broomfield reducing developer confidence. In such a scenario ECC would look to source additional funding such as the forthcoming National Roads Fund, although this would be a competitive exercise with a different focus within the cost benefit appraisal (such as journey time savings). Therefore its full funding could not be certain.</p>	High	High
<p>The absence of an additional railway station in the Chelmsford urban area would result in increasing pressure on Chelmsford station, adding to congestion and safety related issues. In time this would start to have a negative impact on the desirability and marketability of new and existing homes within the city centre, where 2,814 are planned within the Local Plan period. This would impact developer confidence unless additional (currently unsecured) funding was obtained to provide additional capacity at Chelmsford station. This would be technically challenging given its position on a viaduct with two platforms with little space to expand.</p>	MediumHigh	MediumHigh
<p>The absence of forward funding will increase resistance to future housing growth as infrastructure will not come ahead of development. There will also not be the money available to deliver dualling of the CNEB ahead of potential longer-term growth in NE Chelmsford and the south of Braintree in the 2030s, reducing the likelihood of this coming forward. Chelmsford will therefore need to seek alternative locations to grow or plateau at an artificially limited potential.</p>	MediumHigh	MediumHigh

What are the constraints related to this shortlisted option?

- If one of the following developments (NE Chelmsford Phase 1, Broomfield, Great Leighs and Great Notley) does not happen for whatever reason then there would be a funding gap for the wholly developer-funded single carriageway Bypass.

This is especially relevant given that NE Chelmsford Phase 1 needs the Station (or an Alternative Transport Strategy) in place to happen. The Alternative Transport Strategy to progress more than 2,500 homes and 25,000 sqm of commercial floor space in Beaulieu and NE Chelmsford does not exist and would have its own capital costs.

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

- CZ must deliver Radial Distributor Road 1 to link the A12 Boreham Interchange with the A130 Essex Regiment Way. This is expected by 2021 and is considered low risk.

Most of the housing growth depends on Chelmsford's Local Plan being declared sound. The Inspector noted in February 2019 that the Plan is one that could be found sound subject to main modifications (Att. 1.1.3a). The modifications to the Plan do not impact on the quantum of housing development or the site allocations contained within the Plan.

The delivery of homes and the market led single carriageway Bypass go hand in hand. The master planning and the timing of the outlets and infrastructure would be developed through the NE Chelmsford Garden Community Delivery Board. This would take into account the extraction and remediation of Hanson's Quarry.

Trigger points for the delivery of the Bypass would be specified through planning conditions.

The delivery of more than 2,500 homes in Beaulieu Park and NE Chelmsford is dependent on the agreement (and funding) of an Alternative Transport Strategy in lieu of Beaulieu station, which does not exist. This would then create a funding interdependency for the Bypass, in that it could not be delivered without funding from NE Chelmsford Phase 1.

Please provide details of the exit strategy for the shortlisted options

- In the Do Nothing situation, Essex County Council would in the short term continue to explore alternative funding options to bring forward Beaulieu station from public and private sources, and to find funding for the Bypass. However, these are highly uncertain with further rounds of business cases against nationally competitive programmes which are not housing focused.

Without this essential infrastructure only 3,609 of the 14,109 homes in our bid could come forward. Chelmsford City Council would have to instigate a Local Plan review early in the life of the new Local Plan to determine an alternative spatial strategy for future growth and how to pay for it.

An alternative transport strategy to deliver the final 1,100 homes at the outline permitted Beaulieu development would also need to be developed and agreed, including the capital funding to pay for it.

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

- This is not applicable as Option 3 is the Do Nothing.

4. With reduced HIF funding (even less)

Forward fund Chelmsford NE Bypass option c only. No Beaulieu Station.

This option performed slightly worse than option 2, scoring 4/15.

It delivers 5,509 homes – and so is slightly (+1) aligned with Objective 1: (Beaulieu: 1,959; Broomfield: 450; Great Leighs: 1,100; and Great Notley: 2,000) between now and 2051

It is slightly (+1) aligned with Objective 2, facilitating an extra 1,900 homes. It removes the barrier to growth at the sites at Broomfield, Great Leighs & Great Notley.

As Beaulieu Station is not funded the final 1,100 homes Beaulieu are not delivered. NE Chelmsford Ph 1 & 2 (5,500 homes) are impacted as they also need the Station. There is no plan B for an alternative transport strategy to release these homes. Chelmsford's busy station will not be able to cope with the forecast growth in journeys from this and other developments. Developer funded rapid transit is of little use if roads are congested and people cannot board the train.

It is neutrally (0) aligned with Objective 3. It is unlikely that new homes would be delivered in line with Garden Community principles, such as an integrated and accessible transport system. The road based solution, albeit supplemented by local public transport, walking and cycling would mean that car-dependent lifestyles would be likely.

This option would improve connectivity of new homes in Beaulieu to a larger range of jobs in Braintree, Stansted and the M11 corridor and link new homes in Great Leighs and Great Notley to a wider range of jobs in south Essex and on the A12 corridor by car. However, as there is no improved access to the rail network there is only slight (+1) alignment with Objective 4.

It would enable developer contributions associated with new homes in Great Leighs, Great Notley and Broomfield. These would not be sufficient to fund the Station but could support isolated improvements to deliver some limited growth in the corridor beyond 2036 (slight positive, +1), albeit it would also likely be car based,

What strategic risks do the shortlisted options carry?

Description	Likelihood	Impact
<p>Delivery of the full long-term potential of housing in NE Chelmsford is highly uncertain without the station. The Alternative Transport Strategy that is needed to develop beyond 2,500 homes is unproven. The forward funding of the CNEB would provide an opportunity to recover the grant from developers. Whilst the assumption has been that this would be to pay for future dualling, this could instead be used to contribute to the funding gap for the station, although this is expected to be insufficient to cover the whole gap. The added difficulty is that a railway station cannot be delivered in a phased way as and when funds become available.</p> <p>The end result is that connectivity and accessibility of the new homes and jobs to the rail network would be unattractive (as per Option 3), impacting the marketability of new home, the GVA generated by employment and the match of homes and jobs.</p>	MediumHigh	High
<p>Should the Beaulieu Alternative Transport Strategy be untenable this then creates a knock-on impact for the delivery of the single carriageway CNEB bypass. This road needs all the developers to come forward with their sites to deliver it, but if the cap on development in NE Chelmsford remains, then there will not be the funding to deliver it. This then has knock-on impacts on the accessibility and marketability of homes to the north of Chelmsford in Great Leighs, Great Notley and Broomfield reducing developer confidence. In such a scenario ECC would look to source additional funding such as the forthcoming National Roads Fund, although this would be a competitive exercise with a different focus within the cost benefit appraisal (such as journey time savings). Therefore its full funding could not be certain.</p>	MediumHigh	High
<p>The absence of an additional railway station in the Chelmsford urban area would result in increasing pressure on Chelmsford station, adding to congestion and safety related issues. In time this would start to have a negative impact on the desirability and marketability of new and existing homes within the city centre, where 2,814 are planned within the Local Plan period. This would impact developer confidence unless additional (currently unsecured) funding was obtained to provide additional capacity at Chelmsford station. This would be technically challenging given its position on a viaduct with two platforms with little space to expand.</p>	MediumHigh	MediumHigh

What are the constraints related to this shortlisted option?

- A key constraint for this option is the ability to develop and agree an Alternative Transport Strategy in lieu of Beaulieu Station to progress more than 2,500 homes and 25,000 sqm of commercial floor space in Beaulieu and NE Chelmsford. This does not exist and would have its own capital costs.
This option would not preclude development at Broomfield, Great Leighs and Great Notley being brought forward however with the Bypass being provided early.
The March 2024 spend deadline means that we have had to adopt a phased approach to deliver the Bypass. This means construction of the sections with fewer constraints first (where the Garden Village Consortium owns the land), with this happening alongside the Compulsory Purchase Order application for the central section between NE Chelmsford and the A131.

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

- CZ must deliver Radial Distributor Road 1 to link the A12 Boreham Interchange with the A130 Essex Regiment Way. This is expected by 2021 and is considered low risk. This option is dependent on the Local Plan being declared sound to deliver the quantum of growth north of Chelmsford. The Inspector noted in February 2019 that the Plan is one that could be found sound subject to main modifications. (Att. 1.1.3a)
The Bypass needs planning consent, Hanson to finish and remediate quarry extraction (although is a partner within the NE Chelmsford Garden Village Consortium), and for ECC to secure land through negotiation or a Compulsory Purchase Order, for

the section between NE Chelmsford and the A131 and for some of the A131 dualling.

The delivery of more than 2,500 homes in Beaulieu Park and NE Chelmsford is dependent on the agreement (and funding) of an Alternative Transport Strategy in lieu of Beaulieu Station, which does not exist.

Please provide details of the exit strategy for the shortlisted options

- Essex County Council's Major Project Manual provides a robust approach to design and deliver the Chelmsford North East Bypass with stage gates to pass to close out specific tasks.

Essex County Council would continue to explore alternative funding options to bring forward Beaulieu station from public and private sources. However, these are highly uncertain with further rounds of business cases against nationally competitive programmes which are not housing focused.

Should this not be successful then only 5,509 of the 14,109 homes in our bid could come forward. Chelmsford City Council would then instigate an early review of the Local Plan to determine an alternative spatial strategy for future growth, and an alternative transport strategy for the permitted Beaulieu development. However, to be successful an alternative spatial strategy would also require unfunded infrastructure investment.

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

- The delivery of the NE Bypass only using HIF funding, has been modelled in the Chelmsford Traffic Model and the housing economic model. In this scenario Beaulieu Station would not be delivered without additional public-sector funding, and as such the North East Chelmsford site, along with the completion of Beaulieu Park to the site's full capacity, could not be delivered in a policy compliant manner. The North of Broomfield, Great Leighs and Great Notley sites would all be completed to capacity.

Should this not be successful then only 5,509 of the 14,109 homes in our bid could come forward. Chelmsford City Council would then instigate an early review of the Local Plan to determine an alternative spatial strategy for future growth, and an alternative transport strategy for the permitted Beaulieu development. However, to be successful an alternative spatial strategy would also require unfunded infrastructure investment.

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

Our preferred option is the combined infrastructure scheme of Beaulieu Station and the Chelmsford North East (NE) Bypass, option c. This has been determined from an appraisal against both scheme objectives and critical success factors (CSFs) which we describe in turn.

Appraisal vs. Scheme Objectives

The full HIF ask scored 15/15 against the scheme objectives. It did this because it delivers both quantity and quality in terms of the homes, communities and opportunities. Namely it:

- Delivers the highest amount of housing growth (14,109 homes) including on average 32% affordable housing in Chelmsford and Braintree districts.
- Unlocks the most dependent housing (10,500 homes) of all the options.
- Delivers the most housing (10,509 homes) to Town & Country Planning Association (TCPA) Garden Community principles, in particular the provision of integrated and accessible public transport. The NE Chelmsford Garden Community is committed to these principles and in addition to the rail station, would be well served by rapid transit, local buses, walking and cycling.
- Delivers the most housing (10,509 homes) within a 60-minute commute of 1 million+ jobs. A new station with headline journey time figures to London Liverpool Street of less than 40 minutes is very marketable. The Station and Bypass together provide prospective home owners with the choice of a wide range of jobs and amenities both within the Garden Community, Chelmsford, Essex, Eastern England and Greater London. Work on wider economic impacts (Att.1.5.1a) suggests that Beaulieu's Business Park is expected to

field jobs with more variety and higher value given its unique location with A12 road links and a railway station connected to London.

- Sustained housing growth – with the full potential to unlock thousands of new homes between Chelmsford and Braintree both before and after 2036. This is because:

- the Station also needs the Bypass to mitigate the impacts of traffic from it and the full Beaulieu allocation to provide capacity for the rest of the Local Plan growth;

- the developer contributions committed to funding the Bypass (as shown in the various Local Plan MoUs) will be used by Chelmsford City Council (CCC) to fund dualling of the Bypass to unlock new homes after 2036, including the last two phases of NE Chelmsford.

Only this option provides the method to create a virtuous circle of investment in infrastructure first;

- in providing an additional station in Chelmsford, Beaulieu Station helps to provide relief to Chelmsford Station (with 8.6 million passengers the busiest two-platform station outside of Greater London), enabling the city centre to deliver further housing growth beyond 2036.

The do less HIF option (Beaulieu station only) scored 6/15. It unlocks the remaining housing at Beaulieu to Garden Community principles and provides them with excellent access to a large number of quality jobs. However it does not deliver the full quantum or potential for housing growth, because the Bypass is also needed to mitigate the impacts of development and Station traffic.

The Do Nothing option scored 0/15. It would deliver little growth with the Beaulieu Section 106 conditions an obstacle to delivering further growth in NE Chelmsford. Whilst other funding options could be open to Essex County Council (ECC) and CCC to try and break this impasse there is no certainty. Ultimately CCC would need to undertake an early review of their Local Plan to understand how best to deliver the demand for high quality housing growth in Chelmsford and crucially how to pay for it.

The Do Less (Bypass only) option scored 4/15. It would deliver some additional growth by unlocking the full potential for housing within the far north of Chelmsford and south of Braintree district which is not linked to the provision of Beaulieu Station. This is not expected to be housing built to Garden Community principles and would not have access to jobs within Greater London within an hour commute. ECC and CCC would need to examine future funding opportunities to bring forward Beaulieu station. This would only buy a little more time in relation to examining these and the subsequent review of the Local Plan and how to fund the infrastructure required.

Appraisal vs CSFs

From a strategic perspective, the full HIF ask best meets local housing need projections and helps us develop the high quality growth that is within our grasp. There is a strong demand for quality developments built to Garden Community principles. This gives the NE Chelmsford Garden Community the impetus it needs to deliver these at pace and quality.

From a value for money perspective, the full HIF ask offers best value for money. Considering the wider benefits to society, the Station and Bypass in place maximises demand and fare revenue at Beaulieu station by widening its catchment area to include additional parts of Braintree and Uttlesford districts not well served by rail. The full HIF ask also relieves local traffic congestion associated with commuters accessing the Station, thereby minimising its external impacts.

The delivery of two projects is well within the grasp of ECC to deliver. A common ECC project manager with the support of a programme board and project boards will provide a holistic oversight to integrate the two infrastructure projects with each other, housing growth and other ECC / stakeholder projects. They are supported by industry specific oversight and delivery expertise from Network Rail and ECC.

The potential achievability of high quality housing growth in NE Chelmsford is also high. The recent examination of the Chelmsford Local Plan has been underpinned by an extensive evidence base and statements of common ground between CCC, ECC and the key growth site promoters. The Inspector has noted that the Plan is one that could be found sound subject to main modifications. The modifications to the Plan do not impact on the quantum of housing development or the site allocations contained within the Plan. The Management Case demonstrates the work undertaken to develop a Terms of Reference for the NE Chelmsford Garden Community Delivery Board. This provides confidence that the necessary skills and leadership from across ECC, CCC and the development industry is in place to deliver the planned growth.

Considering the supply-side capacity and capability, the market can supply the services necessary to develop and deliver the Station and Bypass in tandem. The projects are not overly complex and should appeal to a range of contractors. We are confident about the level of likely interest through the procurement routes open to delivering these projects.

The housing market is also ready to respond with new homes if both infrastructure schemes come forward. Developers of initial phases of growth at Beaulieu and nearby Channels have ramped up their delivery across these outlets from 282 in 16/17 to 372 in 17/18 with an average of 303 across Beaulieu and Channels over the five-year period to 22/23. The increase to 334 per annum for the 23/24 to 27/28 period across Beaulieu and NE Chelmsford outlets is considered feasible given the range of developers and price points associated with the planned growth, as well as the stimulus provided by the improved accessibility of the area.

ECC and CCC would use Section 106 funding to dual the Bypass from the A131 to connect into an upgraded Boreham Interchange. ECC and CCC are confident of these monies given the Local Plan evidence and statements prepared and examined in November 2018 which committed developers to providing funding for the Chelmsford NE Bypass (see Commercial Case).

The full HIF ask is considered compliant with the sourcing policy of ECC and CCC. Countryside Zest provide significant funding support through a signed Section 106 agreement, with additional funding secured from SELEP's Local Growth Fund.

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

Without funding for this essential infrastructure, only 3,609 of the 14,109 homes in our bid could come forward.

This is because a key focus for growth (Beaulieu and NE Chelmsford) from the mid 2020s onwards and into the long-term could not be delivered unless an alternative transport strategy (that does not currently exist) that is acceptable to ECC, or additional sources of funding (not guaranteed) could be agreed to bring forward suitable infrastructure. An additional 1,100 homes at Beaulieu (above the development's Section 106 cap) and 5,500 homes at NE Chelmsford detailed in the Local Plan would be at risk without Beaulieu Station.

Essex County Council would in the short term continue to explore alternative funding options to bring forward Beaulieu Station from public and private sources, and to find funding for the Bypass. However, these are highly uncertain with further rounds of business cases against nationally competitive programmes which are not housing focused.

Should these efforts prove unsuccessful then Chelmsford City Council (CCC) would have to instigate a Local Plan review early in the life of the new Local Plan to determine an alternative spatial strategy for future growth and crucially how to pay for it.

Crucially any failure to deliver the 3,000 homes at NE Chelmsford Garden Community (with it dependent on Beaulieu Station) in the Local Plan period, would also impact the funding that this development would provide towards the single carriageway Chelmsford NE Bypass. Without the funding, ECC and CCC would be reliant on the S106 contributions from homes in Broomfield, Great Leighs and Great Notley, alongside CIL or alternative funding sources to deliver the road and mitigate the impacts of growth. This would result in a funding gap for the Bypass and thereby limit the full potential of the sites in Broomfield, Great Leighs and Great Notley and again represents market failure.

Should no funding be received for Beaulieu Station, then Chelmsford's city centre railway station (with 8.6 million passengers the busiest two-platform station outside of Greater London) would become more crowded with implications for the attractiveness and safety of commuting from Chelmsford and its surrounding communities. This would result in increased queuing at the ticket gate-lines, on stairs and on the platforms, adding to individual journey times, making it more difficult to board and alight trains, increasing station operation costs and safety risks.

Chelmsford's reputation as a great place to live and commute to Stratford and Liverpool Street within 30 minutes (the so called golden radius) would be at risk, which would have implications for the attractiveness of continued development in the city centre, subsequent housing sales and lets and the wider economy. The likelihood is that another unknown source of Government funding would be needed to break this impasse to provide further access points and circulatory space within the station, which is challenging given its position on a viaduct and with just two platforms.

Should funding not be received for the Bypass then this would also prevent the existing A130 / A131 corridor being made more appropriate for walking, cycling and public transport – the result would be less integration of existing and new communities such as Springfield, Beaulieu and Broomfield by sustainable modes. The likelihood is higher car dependency adding to congestion pressures in Chelmsford which is already operating at 96% capacity at peak times.

This uncertain delivery of this essential transport infrastructure could reduce public acceptability of further development in Chelmsford and would not provide a stream of money that could be reinvested in infrastructure capacity for current and future growth. Sustained growth in NE Chelmsford in the long-term would therefore be at risk unless other sources of funding were identified and secured.

Overall the lack of funding would constrain the delivery of new homes, in a place where developers want to invest and have been delivering upwards of 400 homes p.a. in Channels and Beaulieu alone. The reduced supply would exacerbate affordability pressures, reduce the quality of life and sense of place. There would need to be an early review of the spatial strategy, transport strategy and housing trajectory during the Local Plan period. The sustained Chelmsford city success story and what that means for the wider economy of Essex, London and the East of England would be jeopardised.

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

Our full option assessment report is attached at Att. 3.1.1.

Filename	Description
Chelmsford_3.1.1_Option Assessment Report.pdf	3.1.1 Option Assessment Report

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

£1,670,890,312

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

£13,121,712

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

£2,828,024,132

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

GDV (compliant with the Economic Case guidance)	£10,588,962,021
Build costs	£2,008,185,896
Externals	£1,008,728,343
Professional fees	£239,004,835
Sales costs	£298,306,467
Finance costs	£22,250,310
Contingencies	£132,598,122
Developer profit	£1,638,674,672
Please provide the additionality % assumed for the scheme (deadweight and displacement)	59 %

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 represents the quantum of development at each site that may have come forward even in the absence of infrastructure proposed as part of the HIF bid.

Identification of appropriate deadweight factors was achieved through three primary mechanisms:

- the principle of development dependency, established via transport modelling processes;
- existing planning obligations and conditions on approved/commenced developments (which are likely to have been justified by previous iterations of the development dependency approach);
- planning obligations and conditions proposed for future developments (which can be justified through a combination of the development dependency approach and evidence that the local planning authority have rejected residential planning applications on transport grounds).

Firstly, the dependent development test demonstrates that the level of service to road users will deteriorate significantly should housing development proceed in the absence of HIF-supported infrastructure.

Simultaneously, outline planning permission for 3,600 homes at the Beaulieu development is partially contingent on delivery of the rail station. Only 2,500 homes can be delivered prior to completion of the rail station (or an agreed Alternative Transport Strategy). The residual 1,100 homes are unlocked by completion of the proposed rail station; the substantial funding gap for which can only be filled through HIF. This provides a planning-based justification for dependency and deadweight at Beaulieu, with some 2,500 homes acknowledged as deadweight (of which 541 have been constructed to March 2019 - leaving 1,959 as a remainder) and 1,100 homes acknowledged as dependent on the rail station and therefore HIF.

The provision of a new railway station within North East (NE) Chelmsford is viewed as a key element of Chelmsford City Council's (CCC's) planning strategy for North Chelmsford and is supported by the rail industry, Highways England and the County Highways Authority. The new station would inevitably abstract trips from the existing Chelmsford station and presents a decongestion benefit to that station concourse as well as having the effect of reducing congestion within the city centre area by removing car movements to and from the station and on the radial routes.

CCC has always accepted that the timing of delivery of the railway station would be based on an agreed level of trips being observed on the local highway network. Following discussion between CCC, the Highways Authority and the then Highways Agency (now Highways England) and given legal advice from the DfT on behalf of the Highways Agency and from Counsel acting on behalf of the City Council the obligations, as now contained within the Section 106 (S106) Agreement for the mixed-use residential-led development at Beaulieu (09/01314/EIA refers) were agreed. Specifically, the railway station, track works and ancillary development are to be delivered and fully operational prior to the earlier of the occupation of the 2,501st dwelling, or more than 25,000sqm of employment floorspace within the proposed Business Park with no occupations to be permitted beyond these thresholds until the works have been completed.

In addition to the Beaulieu development, the linkages between the rail station and the nearby NE Chelmsford Strategic Growth Site (5,500 homes) are also clearly articulated in the Local Plan, Infrastructure Delivery Plan (IDP) and associated Statements of Common Ground. In particular, infrastructure requirements for NE Chelmsford include financial contributions to Beaulieu Station which is recognised as an essential item required for unlocking development potential. Therefore, even in the absence of a formal planning application/decision relating to NE Chelmsford at present, there is a strong planning argument for dependency between the rail station (and by extension, HIF funding) and realisation of the development potential of NE Chelmsford. In fact, given the adjacency of the Beaulieu Park development and NE Chelmsford and the identified reliance of both developments on a new rail station, Essex County Council (ECC) have confirmed that the 2,500-unit cap on development applies equally across the development sites. Within this context, the full 5,500 housing units at NE Chelmsford (in addition to 1,100 residual units at Beaulieu Park) are dependent on the rail station (and therefore HIF funding). Deadweight at the NE Chelmsford site is therefore effectively zero.

The Local Plan and IDP for Chelmsford also identified three further development sites that will face planning obligations and conditions relating to provision of infrastructure that will be supported by HIF:

- Great Leighs: 1,100 units, financial contributions required to deliver the Chelmsford NE Bypass.
- North of Broomfield: 450 units, financial contributions required to deliver the Chelmsford NE Bypass.
- Great Notley: 2,000 units, financial contributions required to deliver the Chelmsford NE Bypass.

Whilst none of these developments are subject to planning applications as of yet, Chelmsford and Braintree local planning authorities have confirmed that planning conditions will be placed on these developments, limiting the extent of development in the absence of infrastructure delivered through HIF support. Based on the transport modelling completed for this bid, the threshold for development at these sites without HIF-related infrastructure is expected to be 50% of the overall development quantum of 3,300 units within the relevant Local Plan periods. As a result, deadweight housing units at these sites amounts to 1,650 units (550 at Great Leighs, 225 at North of Broomfield and 875 at Great Notley). The residual 1,650 units within the relevant Local Plan Periods and the 250 additional homes at Great Notley beyond 2033 (the end of Braintree's Plan Period) are considered to be dependent on HIF investment.

In summary, the estimated deadweight across the various sites associated with HIF-related infrastructure amounts to 3,609 units out of a total development quantum of 14,109 units, as outlined in Table 1 below.

Table 1: Individual site deadweight and dependent residential unit

	Site Name	Total Units	Deadweight Units	Dependent Units
Part A - Site 1	NE Chelmsford – Beaulieu	3,059	1,959	1,100
Part A - Site 2	NE Chelmsford Phase 1	3,000	0	3,000
Part A - Site 3	NE Chelmsford Phase 2	2,500	0	2,500
Part A - Site 4	NE Chelmsford Phase 3	2,000	0	2,000
Part B - Site 1	Great Leighs – all sites	1,100	550	550
Part C - Site 1	North of Broomfield	450	225	225
Part D - Site 1	Land East of Great Notley, south of Braintree	2,000	875	1,125
Total		14,109	3,609	10,500

Displacement also acts to reduce the quantum of development unlocked by HIF investment that can be described as additional. Displacement represents the quantum of development supported by HIF that replaces other development that would have occurred elsewhere in North Essex in the absence of HIF. Identification of displacement is predicated on consideration of:

- Housing demand in North Essex, reflected in house price signals and related indicators sourced from the evidence base of local planning authorities.
- The proportion of affordable housing provided as part of the scheme.
- The potential for the planning system to drive displacement.

Housing indicators demonstrate that there is significant market demand in Chelmsford. Savills (2018) 'Spotlight: Chelmsford' report (Att. 4.1.6a) suggests that house price growth in the ten years up to 2018 was almost double the national average (40% versus 21%), implying greater demand in Chelmsford relative to England and Wales as a whole. Further, Strutt and Parker's (2018) Chelmsford Residential Market Commentary (Att. 4.1.6b) indicates that local house prices have increased by 47.65% over the last five years, greater than the UK average by 15%. High growth rates for house prices is attributed to proximity and accessibility to London, with rail journey times to the city estimated at around thirty minutes. At the same time, there is a 72% difference in average house prices between Chelmsford and London. This price gap provides an ongoing opportunity for Chelmsford to attract buyers from the London housing market, contributing to continued high demand for housing in the area. Most housing demand is migration-led, and this demand is likely to be footloose. This may also explain why Chelmsford is the only district within the housing market area (including Colchester, Braintree and Tendring) where average house prices exceed the national average.

Housing demand is likely to have increased in recent years in light of an under supply of housing in preceding years, relative to delivery targets. The Objectively Assessed Housing Need Study (2016) for Chelmsford (Att. 2.1.1b) indicates that over the 20-year period from 1996 to 2015, housing completions have met the relevant housing target on only five occasions. In most other years housing completions have been far below requirements. Whilst the Chelmsford Housing Trajectory (2018) (Att. 4.1.7a) suggests that total completions have exceeded targets by around 200 units (c. 1,000 units vs. 805 units) in the 2016/17 and 2017/18 periods, the long-term deficit in housing over the preceding twenty years implies that residual housing demand is likely to persist. This is reflected in the high take-up rates for recent development across various unit and tenure types. The Chelmsford Residential Market Commentary indicates that demand has been high for new-build apartments and houses in Chelmsford. High sales rates have been maintained across most large developments, including open market units, affordable rental and shared ownership. In particular, two and three-bedroom houses that fall below the Help to Buy threshold and benefit from amendments in Stamp Duty costs have been in particularly high demand, mainly from young families and professionals.

Chelmsford housing market is also the least affordable zone within the wider housing market area. The affordability gap relative to the national benchmark also widened in Chelmsford up to 2016 according to the Objectively Assessed Housing Need Study.

As the identified sites up to 2036 are part of the Chelmsford Local Plan and Braintree Local Plan, both of which show a slight shortfall over the entire plan period relative to their objectively assessed housing needs, prices for both market and affordable housing are expected to be unaffected by the development of the dependent sites. This means that the planning system will be the dominant mechanism by driving displacement.

Both Beaulieu and NE Chelmsford Phase 1 are large strategic sites which are under construction or expected to deliver first homes in 2022 respectively. The Chelmsford Local Plan's call for sites did not identify any further un-allocated sites of a similar size which could be delivered within these timescales without a similar level of infrastructure investment. As such, these sites are expected to show very low displacement, with the provision of small numbers of additional dwellings across a number of sites being the main alternative. Great Leighs, North of Broomfield and Great Notley are all smaller sites or groups of smaller sites, and as such there is more scope for displacement, although this is still limited by the timescales. NE Chelmsford Phases 2 and 3 are similarly large strategic sites but being further in the future there is more scope for alternate sites to be displaced through the planning system.

On the basis of this, the follow levels of displacement and resulting overall additionality have been assumed;

Table 2: Individual site displacement assumptions and resultant overall additionality

Site	Deadweight %	Displacement %	Additionality %
Part A – Site 1: NE Chelmsford – Beaulieu	64%	10%	26%
Part A – Site 2: NE Chelmsford – Phase 1	0%	10%	90%
Part A – Site 2: NE Chelmsford – Phase 2	0%	25%	75%
Part A – Site 2: NE Chelmsford – Phase 3	0%	40%	60%
Part B – Site 1/2/3: Great Leighs	50%	25%	25%
Part C – Site 1: North of Broomfield	50%	25%	25%
Part D – Site 1: Land East of Great Notley, south of Braintree	44%	25%	31%
Overall	28%	22%	59.4%

Additionality has been applied on a site-by-site basis, and the overall additionality presented here has been calculated based on the additionality of each site and each site's individual NPV of housing benefits as outlined in section 4.1.7.

The level of additionality shown in Table 2 is believed to represent a conservative estimate of potential additionality, given the large strategic nature of the sites and the short-term delivery of much of the housing, and as such is considered robust.

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

Net Present Value (NPV) of Housing Benefits

The NPV of Housing Benefits (or net private value of housing) is the private benefit associated with the change in land use, as 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 £2,828.0m and the existing land use value as £13.1m for a total net private value of housing of £2,808.1m. After deadweight and displacement this is equal to a NPV of £1,670.9m.

The methodology and assumptions for calculating each of these elements – residential land value and existing land use value – are outlined below and in more detail in Chapter 3 of the Economic Appraisal Report (attached to 4.2.2).

Existing Land Use Value

The development sites are currently under agricultural and mineral land uses. Those sections under mineral land use are phased for development later in the programme and are expected to have completed mineral extraction and site restoration before they are released for housing. As such, average agricultural land use values have been used for all the sites. The Present Value of the Existing Land Use, including appreciation and discounting as outlined above, was £13.1 million (2019 factor prices and values discounted to 2019).

Residential Land Value (RLV)

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

$$\text{Residential Land Value} = \text{GDV} - (\text{Development costs} + \text{fees} + \text{profit})$$

Gross Development Value (GDV)

The GDV of a site is the estimated total revenue a developer could obtain from the land. This is based on the expected house price multiplied by total number of houses, as

specified in DCLG's Appraisal Guide (2016) and characterised by the formula below:

$$\text{GDV} = \text{House price} \times \text{number of dwellings}$$

The expected housing prices were provided via an independent GDV appraisal undertaken by Lambert Smith Hampton (LSH) (Att. 6.1.11). This appraisal considered the development characteristics for built units shown in Table 1, based on LSH's GDV analysis:

Table 1: Individual site build-out rates and first and last completion dates

	Site Name	Units	Completion Start-End Dates	Build-Out Trajectory
Part A - Site 1	NE Chelmsford – Beaulieu	3,059 outstanding	In-Progress – 2033	200-400 per annum
Part A - Site 2	NE Chelmsford Phase 1	3,000	2022-2036	290-440 per annum
Part A - Site 3	NE Chelmsford Phase 2	2,500	2036-2045	250-500 per annum
Part A - Site 4	NE Chelmsford Phase 3	2,000	2044-2051	250 per annum
Part B - Site 1	Great Leighs – Land at Moulsham Hall	750	2021-2036	90-150 per annum
Part B - Site 2	Great Leighs – Land East of London Road	250		
Part B - Site 3	Great Leighs – Land North and South of Banters Lane	100		
Part C - Site 1	North of Broomfield	450	2021-2028	40-160 per annum
Part D - Site 1	Land East of Great Notley, south of Braintree	2,000	2023-2036	100-300 per annum
Total		14,109		

The number of homes (split by type) and average house values (in both economic and financial terms) across all sites is presented in Table A of Att. 4.1.7g, which outlines the estimated GDV at an individual and aggregate site level. Note that for the calculation of Residential Land Value, these values were 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'. However, sales capital values for affordable housing, from Turner Morem (Att. 4.1.7c) have been also been used to determine the "financial GDV" against which sales costs and developer profit will be levied. See Section 3.3.3 of the Economic Assessment report (Att. 4.2.2) for further details.

Appreciation in house prices were estimated at 7% per annum in nominal terms, as per the MHCLG Appraisal Guide (2016). Adopting this assumption leads to an increase in GDV to £10.59 billion (undiscounted real values, 2019 prices), which was discounted using a discount rate of 3.5% per annum for the first 30 years and 3.0% per annum

thereafter to give a Present Value of £6.1 billion. The drawn-out build out period and anticipated appreciation in house prices causes a significant increase in GDV in real terms.

Build costs

Housing construction costs range from £1,302 to £1,335 per sq m (2019 prices), based on the Turner Morem Viability & Deliverability Analysis report for NE Chelmsford (Att. 4.1.7c) with site-specific adjustments based on the HDH Chelmsford Local Plan Viability Study (Att. 4.1.7d). Based on 91.4 sq m of NIA for private housing and 76.7 sq m of NIA for affordable housing, the build costs for housing units were estimated at £119,067 - £122,044 and £99,917 – £102,282 for private and affordable housing respectively. Based on the build cost per unit and quantum of housing development across all sites shown in Att. 4.1.7g – Table B, the total build costs for the scheme are estimated at nearly £1.6 billion.

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' (Table 2 below) and illustrated in the table below. From 2023, the long-run build cost inflation was assumed to be 4%.

Table 2: Build costs inflation from RICS

2019	2020	2021	2022	2023	Future Years
3.1%	3.3%	3.3%	4.5%	4.0%	4.0%

Adopting these assumptions, the total build costs for the scheme are estimated at £2.0 billion in undiscounted real values (2019 prices), which is discounted to a Present Value of £1.3 billion.

Externals

The value of externals for different sites has been estimated from the best available data and is broken down into two different sources: externals as a percentage of build costs representing costs associated with individual units (driveways, utility connections, gardens and fencing etc.), and itemised fixed externals associated with the sites. Table C in Att. 4.1.7g outlines the build of externals on an individual site and aggregate basis. See Section 3.3.5 of Att. 4.2.2 for more details.

Inflation has been applied in line with the assumptions for build costs, i.e. based on RICS (2018) 'BCIS General Civil Engineering Cost Index for June'. This results in a total undiscounted real cost of £1008.7 million in 2019 factor prices, which is discounted to a present value of £607.4 million.

Contingencies

Contingencies are estimated using benchmark values of 5% for sites in NE Chelmsford (Turner Morem – Att. 4.1.7c) and 2.5% (HDH Att. 4.1.7d) of total build costs plus externals (but excluding NE Chelmsford Local Design Uplift in line with Turner Morem). The contingencies calculated for each site are shown in Att. 4.1.7g – Table D. Factoring build cost inflation and the trajectory of development, the level of contingency for the scheme is estimated at £133 million in undiscounted real values (2019 prices).

Professional fees

Professional fees are estimated using benchmarks of 7% and 10% of total build costs plus externals and contingencies for NE Chelmsford sites and other sites respectively, based on Turner Morem (Att. 4.1.7c) and HDH data (Att. 4.1.7d). The professional fees for each site are shown in Att. 4.1.7g – Table E. Based on total build costs (plus externals and contingency) of £2.46 billion, professional fees are estimated at £189.8m. Factoring build cost inflation and the trajectory of development, the professional fees for the scheme are estimated at £239m in undiscounted real values (2018 prices).

Sales costs

Sales costs are estimated using benchmarks of 3% and 3.5% of total sales price (the financial GDV) for NE Chelmsford sites and other sites respectively, based on Turner Morem (Att. 4.1.7c) and HDH data (Att. 4.1.7d) as shown in Att. 4.1.7g – Table F. Based on total sales value of £4.4 billion, sales costs are estimated at £137m. Considering house price appreciation and the trajectory of development, the sales costs for the scheme are estimated at £298m in undiscounted real values (2019 prices).

Developer profit

Developer profit is estimated using a benchmark of 17% of financial GDV. This benchmark is in line with advice in MHCLG's (2018) 'Land Value Estimates for Policy Appraisal: May 2017'. The Developer profit for each site is shown in Att. 4.1.7g – Table G. Based on a GDV of £4.4 billion, developer profit is estimated at £742.7m. Considering house price appreciation and the trajectory of development, the developer profit is estimated at £1.6 billion in undiscounted real values (2019 prices).

Finance costs

Finance costs are estimated using a benchmark of 6% debit rate for borrowing, based on the financial cashflow for each site. Further details on the calculation of cashflows is provided in the Financial Case.

Resultant NPV

The various components described above were combined to generate residential land value estimates, as per the approach recommended in Annex A of the 'Housing Infrastructure Fund: Forward Funding: Business Case Guidance' and outlined below:

$$\text{Land price} = \text{GDV} - (\text{Development costs} + \text{fees} + \text{profit})$$

The various components for each site are summarised below in Table 3.

Table 3: Resultant NPV by site

Site Name	GDV for LVU	Development Costs	Fees	Profit	Finance Costs	RLV (£2019)
Part A – Site 1: NE Chelmsford – Beaulieu	£1031.0m	£511.7m	£64.6m	£163.3m	£03.1m	£288.3m
Part A – Site 2: NE Chelmsford – Phase 1	£997.5m	£575.1m	£67.4m	£154.0m	£17.3m	£183.7m
Part A – Site 2: NE Chelmsford – Phase 2	£831.3m	£475.5m	£55.9m	£128.4m	£19.5m	£152.0m
Part A – Site 2: NE Chelmsford – Phase 3	£665.0m	£380.4m	£44.8m	£102.7m	£16.6m	£120.6m
Part B – Site 1/2/3: Great Leighs	£417.3m	£166.3m	£29.5m	£62.4m	£02.3m	£156.7m
Part C – Site 1: North of Broomfield	£135.7m	£66.8m	£11.1m	£21.4m	£02.0m	£34.3m
Part D – Site 1: Land East of Great Notley, south of Braintree	£713.9m	£304.7m	£53.2m	£110.5m	£10.4m	£235.1m
Total (£2019, uninflated, undiscounted)	£4791.7m	£2480.6m	£326.6m	£742.7m	£71.1m	£1170.8m
Total (discounted, real values)	£6,112.8m	£1,993.5m	£327.6m	£947.0m	£16.7m	£2828.0m

The resultant Residential Land Value was £1.2 billion in 2019 factor prices. Considering house price and appreciation and cost inflation, along with the projected build out

trajectory of the developments, the Residential Land Value was estimated at £5.24 billion in undiscounted real values (2019 prices). This was discounted to at Present Value of £2.83 billion (2019 prices and values discounted to 2019).

Taken together, the resultant NPV of residential land value can be estimated as:

- Residential land value = GDV (£6,112.8m) – (Build Costs(£1,304.1m) + Externals (£607.4m) + Contingency (£82.0m) + Professional Fees (£153.8m) + Sales Fees (£173.8m) + Developer profit @ 17% (£947.0m) + finance costs (£16.7m))
- Residential land value = £6,112.8m - £3,284.8m
- Residential land value = £2,828.0m

In combination with the existing land value estimate, the residential land value estimate can be used to estimate the economic impact of housing via the following formula:

$$\text{Net private value of housing} = \text{Residential land value} - \text{Existing land use value}$$

- NPV of housing = £2,828.0m - £13.1m
- NPV of housing = £2,814.9m

When adjusted for additionality calculated as described in 4.1.6, this gives a NPV of additional housing benefits of £1,670.9m.

Filename	Description
Chelmsford_4.1.6a_Savills_Spotlight-Chelmsford.pdf	4.1.6a
Chelmsford_4.1.6b_Strutt and Parker_Chelmsford_Market_Commentary.pdf	4.1.6b
Chelmsford_4.1.7c_Turner Morem - EX HS053B HS - North East Chelmsford Garden Village Consortium - Matter 6b (2 of 4).pdf	4.1.7c
Chelmsford_4.1.7a_Annex 5 - Chelmsford Local Plan Housing Trajectory 2013-2036.pdf	4.1.7a
Chelmsford_4.1.7e HDH - EB 082B Chelmsford City Council - Post IDP Viability Update June 2018.pdf	4.1.7e
Chelmsford_4.1.7f Troy Planning + Design - EB 018B Chelmsford Infrastructure Delivery Plan June 2018 Update.pdf	4.1.7f
Chelmsford_4.1.7b_Braintree LP Housing Trajectory including Great Notley.pdf	4.1.7b
Chelmsford_4.1.7d HDH - Chelmsford Viability 5.1.18 with Appendices.pdf	4.1.7d
Chelmsford_4.1.7g_Resi_Land_Value_Uplift tables.docx	Supporting tables for Residential LVU Calcs

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
Amenity value	Loss of amenity from replacing agricultural urban fringe land with housing	£-53,878,560
Transport: Rail User Impacts	Journey Time and Fare impacts on existing rail users from increased congestion accessing the rail network generated by development	£-59,310,297
Transport: Road User Impacts	Journey Time and VOC impacts on existing road users from increased congestion generated by development	£-76,971,508
Transport: Carbon emissions	Change in Greenhouse Gas emissions resulting from changes in travel patterns in response to congestion generated by development	£-935,755
Health	Savings to NHS from reduced accidents and negative health impacts due to shift of vulnerable residents to new higher-standard affordable homes	£4,728,155

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

Chapter 5 of the attached Economic Assessment Report (Att. 4.2.2) provides full details of the calculation of the NPV of external impacts of additional housing.

Amenity Values

The sites are currently agricultural land within the urban fringe of Chelmsford and Braintree. Amenity values for change of land from agricultural/urban fringe uses to housing have been estimated in line with MHCLG guidance and amenity values of land under different uses from DCLG Appraisal guide. The average amenity value of Urban Fringe (Greenbelt) and Agricultural (Intensive) land uses were used for the amenity value of the existing land use, to reflect that due to the size of the sites the land represents a mixture of urban fringe and rural settings.

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 (circa 232 ha) generates an amenity cost of £54 million.

However, it should be noted that the development site will deliver sustainable communities to high quality standards. This will include significant open space provision 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 Impacts: Rail

Rail impacts have been calculated using the Beaulieu Station Rail Appraisal Model and Beaulieu Station Rail Demand Model. These are bespoke models developed for the appraisal of Beaulieu Station for the South East Local Enterprise Partnership (SELEP) Business Case (January 2019) and have been developed in line with the Passenger Demand Forecasting Handbook (PDFH) and the Department for Transport (DfT)'s WebTAG guidance and making use of rail-industry standard MOIRA software. The following impacts modelled as part of the development of the SELEP business case have been re-assessed and monetised to determine the overall external user impacts from the development;

- Journey time, vehicle operating cost and fare impacts for existing users accessing the rail network
- On-Rail journey time and fare user benefits for existing users who switch which station they use to access the rail network in response to the increased congestion
- Indirect tax effects due to change in consumer spending on rail fares (which do not pay VAT).

The modelling has been updated with housing growth assumptions consistent with the completion rates of the development, along with updated access journey time data from the Chelmsford VISUM model to reflect the impact of the Chelmsford North East Bypass and development traffic. As such the values calculated will differ from those presented in the SELEP business case. However the methodology by which the impacts have been modelled and monetised is consistent with those presented as part of that case.

Marginal External Costs calculations used in the SELEP business case have not been included. Instead the external costs have been determined for road users using the Chelmsford VISUM model. All the costs calculated and presented here and in section 4.3 have been calculated under fixed land use.

Transport Impacts: Road

Road impacts have been calculated using the Chelmsford VISUM Model and monetised through TUBA, a DfT approved software package for the economic appraisal of transport impacts. In line with WebTAG unit A2.2's guidance on the appraisal of the external impacts of dependent development, trips originating from the dependent developments have been excluded from the demand matrices used in TUBA to ensure that only the impacts on existing users are captured.

To prevent double-counting of benefits with the Rail User Access Journey Time Benefits, users travelling to the stations modelled in the Rail Demand Model were removed from the demand matrices used in TUBA.

The following monetised impacts were extracted from TUBA;

- Existing Road User Journey Time and Vehicle Operating Cost impacts
- Indirect Tax (Fuel Duty) revenue changes resulting from changes in travel patterns and route choice

- Greenhouse Gas Emissions resulting from changes in travel patterns and route choice.

Both TUBA and the Beaulieu Station Economic Model use standard WebTAG guidance assumptions to produce their outputs. These are;

- A 60-year appraisal period 2025 to 2084 has been used (with both schemes opening in 2025)
- Discount rate is applied at 3.5% for years 1-30 and 3% for years 31-60.
- All prices are presented in market prices (as opposed to factor prices, required per guidance (HIF FF FAQ, Oct. 2018))
- The Price base is 2010 GDP deflator real prices.
- WebTAG DataBook November 2018 values (and TUBA economics file version 1.9.11).

The outputs produced are in 2010 market prices and values, and these have been converted to NPV 2019 factor prices and values using WebTAG DataBook values for GDP deflator and discount factor.

Health Impacts

Health impacts from the creation of new affordable housing have been determined using the DCLG Appraisal Guide guidance for monetising savings to the NHS from the health benefits of new affordable housing. Health impacts per affordable house from the MHCLG DataBook (in turn from BRE) have been used along with the modelled completion rate of affordable rented dwellings.

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 £2,737 in 2019 prices). This benefit is based on the contribution of affordable rented housing to reducing homelessness and overcrowding. The development schemes supported by funding are expected to create 14,109 homes. Of this quantum, 4,593 units will be affordable homes. Of this affordable housing, 2,878 will be provided as affordable rent. Some 1,728 affordable rent units are dependent on HIF funding. Applying the health benefit benchmark of £2,737 to the quantum of additional affordable rent homes attributable to HIF funding (1,728 units), the health impacts of HIF funding are estimated at £4.7 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.

Filename	Description
Chelmsford 4.2.2 Economic_Appraisal_Report_FINAL.docx	Chelmsford EAR

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
Transport: Rail User Benefits	Journey time and fare impacts on existing rail users resulting from construction of Beaulieu Station and associated timetable changes	£21,408,392
Transport: Road User Benefits	Journey time and VOC impacts on existing road users resulting from construction of North East Bypass	£172,220,189
Transport: Carbon emissions	Change in Greenhouse Gas emissions resulting from changes in travel patterns due to new infrastructure	£3,628,547
Commercial Land Value Uplift	Land Value Uplift from the development of land for non-residential uses	£114,820,901

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

Chapter 4 of the Economic Assessment Report (Att. 4.2.2) provides full details of the calculation of the NPV of infrastructure impacts.

Transport Impacts

The impacts of the infrastructure have been modelled through the Beaulieu Station Rail Demand Model and Chelmsford VISUM Model. These models, taken together, forecast the change in both road and rail user travel patterns in response to the introduction of the Chelmsford North East (NE) Bypass, Beaulieu Station and associated timetable changes. The two models have used aligned demand and housing growth assumptions based on the Government's National Trip End Model (NTEM) matched to Chelmsford's Local Plan, and the outputs from each in terms of journey times on the road network and users driving to each station have been reflected iteratively in the inputs to the other to ensure a convergence of the models' forecasts.

The outputs from the Beaulieu Station Rail Demand Model and Chelmsford VISUM Model have been monetised in line with the Department for Transport (DfT)'s WebTAG guidance using the Beaulieu Station Economic Model and TUBA respectively. The Beaulieu Station Economic model is a bespoke spreadsheet-based economic model which was created in line with WebTAG guidance (units A1.1, A1.2, A1.3, A5.3, A5.4), while TUBA is an industry-standard DfT approved software for monetising road user benefits in line with WebTAG guidance.

Both TUBA and the Beaulieu Station Economic Model use standard WebTAG guidance assumptions to produce their outputs. These are;

- A 60-year appraisal period 2025 to 2084 has been used (with both schemes opening in 2025)
- Discount rate is applied at 3.5% for years 1-30 and 3% for years 31-60.
- All prices are presented in market prices (as opposed to factor prices, required per guidance (HIF Forward Fund FAQ, Oct. 2018))

- The Price base is 2010 GDP deflator real prices.
- WebTAG DataBook November 2018 values (and TUBA economics file version 1.9.11).

The outputs produced are in 2010 market prices and values, and these have been converted to NPV 2019 factor prices and values using WebTAG DataBook values for GDP deflator and discount factor.

Both road and rail user impacts associated with the infrastructure have been calculated under fixed land use excluding any trips or congestion resulting from the dependent development, in line with MHCLG Appraisal Guide and WebTAG A2.4 guidance.

Transport Impacts: Rail

Rail impacts have been calculated using the Beaulieu Station Rail Appraisal Model and Beaulieu Station Rail Demand Model. These are bespoke models developed for the appraisal of Beaulieu Station for the South East Local Enterprise Partnership (SELEP) Business Case submission which was subject to independent assurance by the LEP from November 2018 to February 2019. These have been developed in line with the Passenger Demand Forecasting Handbook (PDFH) and WebTAG guidance and making use of rail-industry standard MOIRA software. Att. 4.9.3j provides further detail on how the Beaulieu Rail Demand Model was developed for the SELEP business case.

The following impacts modelled as part of the development of the SELEP business case have been re-assessed and monetised to determine the overall user benefits and other impacts from the infrastructure;

- On-Rail journey time and fare user benefits for existing users who switch to use the new station to access the rail network.
- Access journey time, vehicle operating cost and bus fare impacts for existing users accessing the rail network, both due to switching to use the new station and the decongestion caused by the NE Bypass.
- Reduction in pedestrian delay within Chelmsford Station due to users switching to the new station (Further detail on the pedestrian model developed for Chelmsford station can be found in Att. 4.9.3k).
- MOIRAs predicted journey time impacts on existing users further up the Great Eastern Main Line resulting from changes to the timetable to accommodate extra stopping trains at Beaulieu station.
- Reliability benefits for all users on the Great Eastern Main Line (GEML) from reduced lateness and cancellations as a result of the operational benefits of the new passing loop included within the design for Beaulieu Station.
- Parking charge costs for users who switch stations.

- Indirect tax effects due to change in consumer spending on rail fares (which do not pay VAT).

The modelling has been updated with housing growth assumptions consistent with the completion rates of the development, along with updated access journey time data from the Chelmsford VISUM model to reflect the impact of the Chelmsford North East Bypass and development traffic. As such the values calculated will differ from those presented in the SELEP business case. However, the methodology by which the impacts have been modelled and monetised is consistent with those presented as part of that case.

Marginal External Costs calculations used in the SELEP business case have not been included. Instead the external costs have been determined for road users using the Chelmsford VISUM model. All the costs calculated and presented here and in section 4.3 have been calculated under fixed land use.

Transport Impacts: Road

Road impacts have been calculated using the Chelmsford VISUM Model and monetised through TUBA, a DfT approved software for the economic appraisal of transport impacts. In line with WebTAG unit A2.2's guidance on the appraisal of the external impacts of dependent development, trips originating from the dependent developments have been excluded from the demand matrices used in TUBA to ensure that only the impacts on existing users are captured.

To prevent double-counting of benefits with the Rail User Access Journey Time Benefits, users travelling to the stations modelled in the Rail Demand Model were removed from the demand matrices used in TUBA.

The following monetised impacts were extracted from TUBA;

- Existing Road User Journey Time and Vehicle Operating Cost impacts
- Indirect Tax (Fuel Duty) revenue changes resulting from changes in travel patterns and route choice
- Greenhouse Gas Emissions resulting from changes in travel patterns and route choice.

Commercial Land Value Uplift

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 undertaken using the same economic model as Residential Land Value Uplift (see Section 3 of the Economic Assessment Report - Att. 4.2.2, and the same broad assumptions regarding Existing Land Use, Professional Fees, Sales Costs, Contingencies and Developer Profit, as well as the same discount factors and inflation assumptions have been used.

Build costs have been taken from the Chelmsford Local Plan Viability Study (HDH, January 2018 – Att. 4.1.7d), with £1,527 per GIA sqm for B1/Office use, £809 per GIA sqm for B2/B8 Industrial use, and £990-£1,206 per GIA sqm for Retail and Leisure use (2019 prices). Externals have been calculated at 15% of build costs, with 2.5% contingency, 8% professional fees, 2.5% sales costs and 17% developer profit. Further, the same assumptions on land value growth and build cost inflation, appraisal period and discount factors have been applied to commercial land value as to residential land value and as described in our earlier response on the NPV of Housing Benefits.

The capital value of the completed commercial property has been determined in line with LSH's assessment of the GDV of the sites, based on the commercial floorspace in the Chelmsford Local Plan, along with values for GIA : NIA, rent per sqm, yield, void and rent free periods from LSH's assessment of the local market. These assumptions are summarised in Att. 4.3.2a for the three development sites incorporating commercial development (i.e. Beaulieu Park, North East Chelmsford Phase 1 and Great Notley).

At an aggregate level, the GDV for commercial development across all three sites is estimated at £617 million. Factoring nominal land value inflation at 7.5% per annum and the trajectory of development, the GDV for the commercial elements of the schemes are estimated at £1,244 million in undiscounted nominal values and £1,010 million in undiscounted real values (following application of the GDP deflator).

Assumptions

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:

- Build Costs – based on background work undertaken HDH for the Chelmsford Local Plan Viability Study (Att. 4.1.7d):
 - B1(a) Offices – £1,527 per sq m f GIA
 - B2/B8 Industrial - £809 per sq m f GIA
 - Retail and Leisure - £990 per sq m f GIA for North East Chelmsford Phase 1 and Beaulieu Park (related to general retail) and £1,206 per sq m of GIA for Great Notley (relating to hotel).

Applying these build costs to the GIA estimates for commercial development, the build costs were estimated at £345 million – see Table 1 below. However, given that Beaulieu Park is already under construction, with construction assumed to occur one year in advance of delivery, some commercial development is already assumed to be under development. Therefore the future build costs for Beaulieu Park are effectively £74 million. The aggregate build costs are therefore reduced slightly to £340 million.

Table 1: Commercial Land Use Parameters

Land Use	GIA (Sq M)	Build Cost per Sq M	Total Cost (£)
Beaulieu Park			
Employment B1/Offices	40,000	1,527	61,082,560
Employment B2 B8 / Industrial	22,300	809	18,043,287
Retail and Leisure	0	990	0
Total	62,300		79,125,847
North East Chelmsford Phase 1			
Employment B1/Offices	45,000	1,527	68,717,880
Employment B2 B8 / Industrial	0	809	0
Retail and Leisure	0	990	0
Total	45,000		68,717,880
Great Notley			
Employment B1/Offices	58,949	1,527	90,018,896
Employment B2 B8 / Industrial	58,274	809	47,150,426

Retail and Leisure	49,950	1,206	60,234,905
Total	167,173		197,404,226
Aggregate Total	274,472		345,247,953

- Factoring build cost inflation at 3.9% per annum (as per the BCIS data presented in our Residential NPV discussion) and the trajectory of development, the total build costs for the commercial element of the scheme are estimated at £458 million in undiscounted nominal values and £384 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 £340 million, the cost of externals is estimated at £51 million. Factoring build cost inflation and the trajectory of development, the total build costs for the scheme are estimated at £69 million in undiscounted nominal values and £58 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 £340 million, professional fees are estimated at £27 million. Factoring build cost inflation and the trajectory of development, the professional fees for the scheme are estimated at £37 million in undiscounted nominal values and £31 million in undiscounted real values (following application of the GDP deflator).
- Sales costs are estimated using a benchmark of 2.5% of total sales price. This benchmark is in line with assumptions adopted in the HDH Local Plan Viability Report. Based on total sales value of £620 million, sales costs are estimated at £15 million. Factoring house price inflation and the trajectory of development, the sales costs for the scheme are estimated at £31 million in undiscounted nominal values and £25 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 described earlier.
- Contingencies are estimated using a benchmark of 2.5% of total build costs, as per the HDH Local Plan Viability Report (Att. 4.1.7d). Based on total build costs of £340 million, contingencies are estimated at £8 million. Factoring build cost inflation and the trajectory of development, the contingency allowance for the scheme is estimated at £11 million in undiscounted nominal values and £10 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 £620 million allows for £105m 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 £211 million in undiscounted nominal values and £172 million in undiscounted real values (following application of the GDP deflator).

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

$$\text{Commercial land value} = \text{GDV} - (\text{developer costs} + \text{fees} + \text{profit})$$

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:

$$\text{NPV of Commercial Land Value} = \text{£726 million [PV of GDV]} - (\text{£342 million [PV of build costs, externals, contingency]} + \text{£45 million [PV of sales costs and professional fees]} + \text{£123 million [NPV of developer profit]}) =$$

$$\text{NPV of Commercial Land Value} = \text{£726 million} - \text{£511 million} =$$

$$\text{NPV of Commercial Land Value} = \text{£216 million}$$

Following application subtraction of existing land use value for commercial land (£0.8 million) and application of deadweight and displacement at the same scale as for residential development, the NPV of commercial land value uplift is estimated at £115 million.

Filename	Description
Chelmsford_4.3.2a_Commercial_Land_Value_Uplift.docx	4.3.2 Commercial Land Value Uplift

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	£176,946,962	£148,381,982
	Revenue	£0	£0
Central Government	Cost	£0	£0
	Revenue	£777,599,561	£191,746,255
Local Authority	Cost	£12,211,481	£897,573
	Revenue	£0	£0
Other public sector	Cost	£12,000,000	£9,920,803
	Revenue	£0	£0
Private sector (not developer contribution)	Cost	£17,267,504	£3,406,037
	Revenue	£418,952,314	£104,737,398
Private sector (developer contribution)	Cost	£253,615,509	£124,668,398
	Revenue	£0	£0
Optimism Bias applied to <i>Total Public Sector Costs</i>	Cost	£85,360,356	£70,814,208
Optimism Bias applied to <i>Total Private Sector Costs</i>	Cost	£0	£0
Real Net Present Public Sector Cost		£38,268,311	
Real Net Present Private Sector Cost		£23,337,037	

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

Chapter 6 of the Economic Assessment Report (Att. 4.2.2) provides full details of the calculation of the NPV of scheme costs, and how these costs are split across different funding sources.

The scheme infrastructure costs are split between the two main pieces of infrastructure, the Beaulieu Station and Chelmsford North East Bypass, as outlined in 1.1.3. The costs of these two infrastructure components have been developed independently to a level of detail appropriate for their respective levels of design. As the two infrastructure items will be delivered at different locations and by different parties, the costs for each are independent. In addition, different funding strategies have been identified for each, in particular Beaulieu Station which is seeking funding from multiple sources, and these have been considered in the development of the scheme costs presented in 4.4.1.

In addition to these two main pieces of infrastructure, a number of smaller pieces of infrastructure not funded by HIF are needed to deliver the sites, as outlined in the Chelmsford Infrastructure Delivery Plan (IDP) (Att 4.1.7f). The funding and delivery of these is split between on-site externals, which are included within the calculations in section 4.1, and Section 106 (S106) contributions, which are included in the calculation of the Private Sector (developer contributions) in 4.4.1.

The infrastructure costs and funding assumptions associated with each infrastructure component are detailed in the sections below, with our cost models found in Att. 4.9.2a.

Beaulieu Station

The unit costs for the station's capital costs was produced following Network Rail (NR) Estimating Guidelines appropriate to the level of project development at GRIP 2. undergoing the following reviews:

- 07/12/2016 - Internal Infrastructure Projects (IP) Anglia / Volker Fitzpatrick review
- 31/01/2017 - Peer review
- 02/02/2017 – NR IP Southern Review
- 15/02/2017 – IP National final governance review leading to the completion of the GRIP2 report (Att. 6.1.4a)
- January 2019 – An adjusted cost profile and inflation figures have been calculated by Jacobs to reflect the current scheme programme.

The original estimate was produced by the IP Anglia Multi-Function Framework (MFF) contractor Volker Fitzpatrick and signed by the IP Southern Estimating manager as being fit for purpose according to the IP Southern Approval Endorsement and Release of Estimate Work Instruction. Being a GRIP 2 level estimate, a full Bill of Quantities were not available from which to measure volumes from.

A Quantified Risk Assessment (QRA) has not been undertaken for the project given the level of detail required to make this meaningful and the development stage of the project. NR's Governance for Rail Investment Projects (GRIP) process governs how risks associated with the Station's design and construction are identified, mitigated or removed, and re-evaluated at each GRIP stage. The process is very robust, is well documented and calls for a QRA at GRIP 3 which is then re-assessed and updated at each subsequent stage.

In line with WebTAG guidance on Rail Appraisal (A5.3, para. 2.5.4) as no QRA is available at GRIP 2, risk has not been included in the calculation of the PVC, and instead a higher level of optimism bias of 64% has been applied to the costs in the Point Estimate.

As the cost estimates were developed during GRIP2 in 2016 Jacobs has revisited the spend profile to account for the development services agreement for GRIP3 in place and the scheme programme developed for this bid. In line with Green Book guidance, sunk costs associated with GRIP 3 have been removed from the cost figures in the economic case. Inflation has been calculated by Jacobs in line with Network Rail's Estimating Guidelines. This involves the use of the latest RPI (Average Annual Index (RPI CHAW ONS Actual to 2016/17, NR Forecast to 2023) figures to uplift spend on a quarterly basis for spend on GRIP4 and beyond. As a guide the original estimate was prepared at a 2016 Q3 (264.7) price basis. The resulting nominal spend profile has been adjusted to the 2019 GDP deflator real price basis for this submission and discounted in line with Green Book/WebTAG guidance. As mentioned above, Optimism bias at 64% is applied on top of these costs in the economic case.

In addition to HIF funding, two other funding sources will contribute to Beaulieu Station. These are a capital grant from South East Local Enterprise Partnership, and S106 contributions agreed with the developers of Beaulieu (Countryside Zest) as part of the outline planning permission for the development. Both of these funding sources were agreed as nominal values and have been converted to present values in the 2019 price basis in line with Green Book guidance. It has been assumed that the scheme promoter, Essex County Council, will retain and release the private sector contribution where there is a mismatch between the available funding and the infrastructure cost profile in individual years.

Due to the difference in approach to the treatment of risk and optimism bias between the financial case and economic case (the financial case includes risk but excludes optimism bias, while the opposite is true of the economic case), there is an inherent difference between how the HIF funding profile is presented, despite these two profiles representing the same underlying profile. In the economic case, any discrepancy created by the exclusion of risk from the infrastructure cost has been accounted for within the HIF funding line.

As the S106 agreement stipulates that the full developer contribution funding to the station will be made available, it has been assumed that none of the cost of optimism bias falls on the private sector. Instead, the optimism bias is split between the public-sector funding sources.

In addition to capital costs, the station will incur ongoing operational and maintenance costs. These have been approximated based on changes in long term franchise payments from train operators to Network Rail resulting from the construction of similar new stations elsewhere in the county. Three stations, of similar size and built to modern design and efficiency standards, have been identified, with Greenhith identified as the most suitable comparison to Beaulieu. The annual operating costs for Beaulieu Station have been estimated as double the 'Long Term Charge'.

The operating costs are assumed to increase in line with RPI, are incurred from the opening year until the end of the appraisal period and are paid for by the Train Operating Company (TOC), through a combination of direct payments and payments to NR.

In addition to its costs, Beaulieu Station generates revenue over time for the rail industry. The Beaulieu Park Rail Demand Model (described in Att. 4.9.3j) and Commercial Model, which is built on Passenger Demand Forecasting Handbook (PDFH) guidance for rail demand and revenue forecasting, has been used to determine the revenue. This model was developed to support the submission of the SELEP business case in November 2018 (and its update in January 2019) and has been updated with the latest development assumptions in line with the HIF case.

The rail demand model identifies three forms of revenue for the rail industry;

- Farebox revenue received by the TOC from both increased rail demand and users switching to use more expensive fares offering reduced travel time
- Commercial revenue received by the TOC from letting retail offers at Beaulieu Station
- Car Park revenue received by a car park operator for managing the car parks associated with the station – for the purposes of the economic case this has been assumed to be a private operator.

As the Great Anglia franchise is due to be competitively refranchised in 2025, it has been assumed, in line with WebTAG/PDFH guidance, that 95% of farebox revenue associated with the station will translate into an increase in franchise premium paid to the DfT through the competitive tendering process, resulting in the revenue accruing to Central Government. The remaining 5% represents the TOC's margin and in line with rail industry practice is treated as representing the private sector's cost of offsetting risk, and so is not counted as a benefit for the economic case.

As the project develops, further discussions will be held between NR, Essex County Council and Chelmsford City Council in relation to the ownership and operation of the car parks associated with Beaulieu Station. For the purposes of the economic case it has been assumed that the car park at Beaulieu Station would be built, owned and leased by NR on land that it already owns and will acquire from Chelmsford City Council and Countryside prior to applying for the Transport and Works Act Order. The arrangements for this land transfer from Countryside to NR for £1 is described in the Beaulieu S106 attached (Att.1.1.2c, p45). This would follow once Chelmsford City Council has negotiated the transfer of its land to NR.

At present it is unknown whether the car park would be leased to a third party operator or the Train Operating Company. In this instance the leaseholder would operate the car park and collect revenue, with either a proportion of the profits returning to NR as specified by that lease arrangement or factored into the franchise premium tendered by the new Greater Anglia franchisee from 2025. In addition Chelmsford City Council has the opportunity to specify a profit clawback from car park revenue received by NR when it transfers its land for the station car park to NR, which could be used to unlock future housing growth in Essex. The arrangements which would govern this will be determined by the end of GRIP 3.

At present, insufficient information was available to determine the operating costs of the car park, however, given the scale of the revenues, it is expected that they will be more than sufficiently covered by the car park revenue. In light of this, these car park revenues have been counted under "Private Sector (not developer contributions) Revenues" so as to not over-state potential public sector revenues, and the reader should treat the numbers presented with sufficient caution. The inclusion or otherwise of these revenues, while presented here for completeness, is not likely to materially impact the value for money of the scheme.

Chelmsford North East Bypass

Essex County Council commissioned Jacobs UK Ltd to undertake a review of the Bypass cost estimate that was completed in 2015 for a dual carriageway version of the Bypass. This has subsequently been updated to reflect the outline design work completed to date on the first phase of the bypass (the subject of this bid). This work was carried out 2018 and a summary report is provided in the Financial Case (Att. 6.1.4b). The base date for this estimate is Q1 2019.

The Highways Works element of this estimate have, wherever possible, been quantified in accordance with the Manual of Contract Documents for Highway Works, Volume 4, Bills of Quantities for Highway Works published by the Highways Agency (now Highways England). The work breakdown structure adopted is based on Table 1 included in Section1, Chapter III of the Method of Measurement for Highways Works (MMHW).

An approximate estimating technique based on the overall area of carriageway or structure to be constructed has been used for items such as Fencing, Road Restraint Systems, Drainage and Service Ducts, Traffic Signs and Road Markings, Bridge Structures as there is limited design information available for such features given the early stage of design.

A quantitative risk analysis has been carried out (see section on risk below), and appropriate allowance has also been made for Optimism Bias (see section on Optimism Bias

below) in line with WebTAG/Green Book guidance and assumes that construction costs increase in line with the BCIS General Civil Engineering Cost Index (#1191). 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%).

Key assumptions that have been made are:

- Delivery of infrastructure in line with the delivery plan set-out in this document, and funding provided in alignment with that plan
- Inflation figures are based on construction being complete by March 2024.

No alternate funding sources other than HIF funding have been identified for the NE Bypass. It has been assumed that, where the Chelmsford Local Plan Infrastructure Delivery Plan has identified that a site would be expected to contribute to the costs of the bypass, this contribution will instead be replaced with contributions to the later dualling of the bypass beyond the end of the Local Plan period to unlock further housing, or to a rolling infrastructure fund.

Indirect Taxation

The infrastructure impacts on indirect taxation through two mechanisms;

- Changes in fuel duty associated with changes in driving patterns as calculated by TUBA
- Changes in indirect taxation associated with increased consumer spending on rail fares (which are not taxed) and equivalent decrease in consumer spending on other taxed goods and services.

Further information on the modelling underpinning these values is provided in our response on the calculation of the NPV of external housing and infrastructure impacts as well as in the Economic Appraisal Report (Att. 4.4.2a) These two indirect taxation effects have been calculated for both the infrastructure impacts on existing users and the impacts of the additional housing, and the sum of these combined impacts is included within the calculation of Central Government Revenue above.

Additional Housing-Related Infrastructure

Beyond the two infrastructure schemes being paid for through HIF contributions outlined above, additional infrastructure is required to facilitate delivery of the housing. This infrastructure has been identified in the Chelmsford IDP prepared by Troy Planning Ltd (Chelmsford Infrastructure Delivery Plan Update, Final Report, June 2018, Att. 4.1.7f).

As described in the Residential NPV calculation methodology, the IDP contains a mixture of on-site and off-site infrastructure requirements for the delivery of the local plan sites. The costs of on-site provision of IDP infrastructure has been considered an external associated with the sites. However, where the IDP has identified that either all or part of the costs of IDP infrastructure packages are to be met through S106 contributions from the various sites, these contributions have been modelled as an abnormal and their NPV included in the calculation of Private Sector (developer contributions) costs.

As these IDP items will be fully funded by the private sector through contributions or direct provision by Local Plan allocated sites, through either direct on-site provision or S106, no optimism bias has been applied to these costs in line with HIF guidance. The costs for each item, inclusive of contingency and risk allowances made by Troy Planning + Design, are shown in Table 1.

For Beaulieu Park S106 contributions have been determined from the S106 agreement between Chelmsford City Council and the developer agreed as part of the planning consent for the site, with its Deeds of Variation. These contributions are reflected in Table 1.

Table 1: IDP and other infrastructure S106 contributions

IDP Infrastructure Item	Beaulieu Park	NE Chelmsford Phase 1	Great Leighs	North of Broomfield
White Hart Lane Traffic Calming	£420,000	-	-	-
Gypsy and Traveller Site Contribution	£612,000	-	-	-
Education provision	£26,192,852	-	-	-
Bus priority/Chelmsford Rapid Bus Transit (ChART)	£3,343,284	£3,600,000	-	-
Cycle/foot bridge over Essex Regiment Way	-	£2,608,696	-	£391,304
Outdoor sports and changing facilities	-	Externals	£483,079	Externals
Allotments	-	£650,000	£240,000	£100,000
Children's play and youth facilities	-	£1,840,000	£670,000	£280,000
Community centres	-	£494,505	£181,319	£74,176
Improvements to existing bus services	-	-	£250,000	-
Secondary education - expansion of existing provision	-	-	£4,300,000	£3,913,043
Broomfield Hospital access road	-	-	-	£1,100,000

For the remaining sites not covered by the Chelmsford IDP, costs per household (HH) have been estimated by comparison with the sites covered by the IDP, as outlined in Table 2. For NE Chelmsford Phases 2 and 3, all IDP items associated with the provision of the NE Bypass have been included as indicative S106 contributions towards additional highway infrastructure (such as the dualling of the Chelmsford North East Bypass or capacity improvements to Boreham interchange). This includes items in the IDP for NE Chelmsford phase 1 which were modelled as externals, as unlike for NE Chelmsford Phase 1 the necessary additional highway infrastructure is expected to be off-site and paid for by S106. The total externals and S106 for these sites match the cost per HH for NE Chelmsford phase 1 and Great Leighs respectively from the Chelmsford IDP.

Table 2: S106 contributions for other sites calculated pro-rata from IDP

Site	IDP Source Site	S106 cost per HH	Total S106 (£2019)
NE Chelmsford Phase 2	NE Chelmsford Phase 1	£13,069	£32,671,989
NE Chelmsford Phase 3	NE Chelmsford Phase 1	£13,069	£26,137,591
Great Notley	Great Leighs	£11,172	£22,344,000

These costs have been profiled in line with the completion profile of each site's housing and converted to nominal and NPV 2019 prices and values using the same BICS infrastructure cost inflation and discounting assumptions as for the other infrastructure items and externals. The resultant NPV and nominal costs are shown in Table 3.

Table 3: Nominal and NPV S106 contributions from individual sites

Site	Nominal	NPV
Beaulieu Park	£55.6m	£45.1m
NE Chelmsford Phase 1	£13.8m	£8.0m
NE Chelmsford Phase 2	£67.6m	£23.5m
NE Chelmsford Phase 3	£70.0m	£16.0m
Great Leighs	£8.2m	£5.8m
North of Broomfield	£7.2m	£5.8m
Great Notley	£31.2m	£20.5m

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

The impacts outlined below have not been monetised. Where available, an indicative scale of the impact has been provided. Further details can be found in the Appraisal Summary Tables completed for Beaulieu Station and the Chelmsford NE Bypass (see Att. 4.9.3l and Att. 4.9.3m).

Reliability Impacts on Road Users

Journey time reliability impacts on existing road users, as a result of the Chelmsford NE Bypass, have been investigated qualitatively but a monetised approach to these was not considered proportionate. However, the qualitative assessment has indicated a Moderate Beneficial impact, as a result of the reduced congestion in NE Chelmsford, particularly on the existing A130 (Essex Regiment Way), during peak hours, with reduced journey time variability both between different days and between peak and inter-peak periods expected.

On-train crowding

Users on the rail network may experience dis-benefits due to crowding on services, which would normally be modelled as part of the calculation of rail user benefits, and crowding is present on the GEML between Chelmsford and London under present conditions. However, new rolling stock is due to be introduced to the East Anglia rail franchise before the opening of Beaulieu station and delivery of the housing. This new rolling stock, alongside additional services during peak hours which will be facilitated by the improved performance of the new stock, is expected to significantly increase the seated capacity of the line by up to 40% (Network Rail GEML Study Att 2.5.1e), potentially eliminating on-train crowding. However exact predictions of the level of crowding, particularly during peak hours, after the rolling stock is introduced was not available. While there is potential for the additional demand from the housing to increase or re-introduce crowding, the inherent uncertainty surrounding the levels of crowding in the baseline scenario made it impossible to model and monetise this impact. However, given the available information, any impact is expected to be 'small' or 'neutral'.

Potential Strategic Rail Benefits

Our assessment of Beaulieu Station has focused on the user impacts and revenues where the station is introduced with minimal alterations to the timetable of existing services, only adding stops to existing services that pass through the line at the location of Beaulieu Station, with associated increases in travel time for users up the line and considering only the operational benefits on delays to existing timetabled services through the availability of the passing loop.

This assessment has not considered further potential operational benefits through the introduction of the passing loop due to the uncertainty surrounding them. However, Network Rail (NR) has indicated that the introduction of the passing loop delivered as part of Beaulieu Station, when combined with other schemes in NR's Control Period 6 (CP6) strategic business plan and the introduction of new rolling stock, could allow for significant operational benefits through creating new pathways on the GEML that would not exist without Beaulieu Station. This has the potential to allow for services to overtake at Beaulieu, improving journey times between Colchester and London, introduce new pathways for rail freight, and move services entering service at Chelmsford to start at Beaulieu. Beaulieu Station's passing loops would also improve resilience on the Great Eastern Mainline to Norwich, supporting housing along the whole route north of Chelmsford.

Due to the significant future work required by Network Rail and the TOC to develop the CP6 strategic business plan and associated timetable reassessments, it has not been possible to model and monetise the full range of benefits associated with the operational enhancements to the GEML which the passing loop at Beaulieu will enable. As such, the numbers presented in this case represent a conservative assessment of the potential benefits.

Accidents

Accidents impact assessments of the NE Bypass have not been undertaken as it was not considered proportionate to do so at this stage in scheme development. A small positive impact is expected, given that traffic will be diverted from existing roads to a higher-quality modern road. However, at this stage elements of the scheme design are not sufficiently evolved to inform an accurate assessment of the accident rates of the new road, relative to existing roads.

Accident impacts on rail users were previously monetised for the SELEP business case and showed an increase in accidents as a result of increased annual passenger miles on the rail network. However, this impact is anticipated to be offset by a correspondingly greater decrease in road accidents due to modal shift from road to rail. However, as this impact has not been monetised, it was not considered appropriate to include only a partial assessment.

If overall accident impacts were monetised, they are expected to be small relative to the overall road user impacts and Land Value Uplift and will not meaningfully impact the Value for Money assessment of the scheme. Any potential negative accident impacts will be identified and mitigated as the scheme design evolves, and this mitigation is included within the Present Value of Cost for the scheme and Optimism Bias.

Air Quality and Noise

A quantitative assessment of air quality and noise from the operation of the NE Bypass and Station has not been conducted and would not be proportional at this stage of scheme development. A qualitative assessment of the potential impacts has indicated adverse impacts for a number of receptors in proximity to the scheme. However, these impacts are expected to be small or neutral, as only a very small number of existing receptors are present near either scheme. In addition, potential adverse impacts may occur in the Chelmsford City Centre AQMA if the scheme and housing results in increases in flows in this area. However, traffic modelling has suggested there will be no overall increase in traffic in and around the AQMA, with a potential for an overall decrease relative to the No HIF scenario.

In line with the MHCLG Appraisal Guide, impacts on residents of the new developments are already captured in the calculation of Land Value Uplift, and any further assessment of them would not be additional. In addition, Network Rail's GRIP 2 report identified potential for minor air quality and noise impacts during construction of Beaulieu Station using a preliminary environmental risk assessment (PERA) methodology (Att. 4.9.3i) but determined that these could be mitigated during construction. It is expected that an Environmental Impacts Assessment will be conducted at a later stage in scheme development and allowance has been made within the scheme costs for the mitigation of any impacts identified. As such, these impacts are expected to be 'neutral'.

Severance

Severance impacts are expected to be balanced (neutral) and are not typically monetised in transport business cases. The construction of the road would involve small negative impacts, primarily as the construction of the Bypass will require alterations to Drakes Lane, Cranham Road and Leighs Road, with new bridges being constructed over the bypass to connect these roads to Essex Regiment Way. The number of properties on these roads is very small, and the scale of the diversion is also small. At the same time the Bypass will help to remove some traffic from roads in urban areas such as the B1008 Broomfield Road and facilitate increased use of A130 White Hart Lane and Essex Regiment Way as sustainable transport corridors to better integrate the new communities of NE Chelmsford with North Springfield, Broomfield and the city centre. As such, it has been considered proportionate not to analyse this in further detail.

Accessibility and Personal Affordability

Accessibility and Personal Affordability impacts for Beaulieu Station were assessed through a Distributional Impacts Assessment for the SELEP Business Case (Att. 4.9.3o). This assessment determined that Accessibility impacts would be Beneficial to all vulnerable groups, with an overall assessment of Slight Beneficial. Affordability assessment showed a mixture of beneficial and adverse impacts for different income quintiles, with an overall assessment of 'neutral' given the mixture of impacts and that Beaulieu Station has only added a new fare option without changing existing fares.

Chelmsford NE Bypass is expected to be 'neutral' in terms of both accessibility and personal affordability, with no design features that will impact accessibility in either a beneficial or adverse manner and no impact on the existing highway network, and with no

changes to public transport fares associated with the scheme. As such, no further assessment is considered necessary at this stage.

Security and Journey Quality

Qualitative assessments of the Security and Journey Quality impacts of Beaulieu Station were undertaken using WebTAG worksheets. These assessments concluded that the new station would provide slight beneficial and moderate beneficial impacts respectively within these categories, due to the modern high-quality station facilities provided at Beaulieu station and the scope for users to switch to the new station from Chelmsford, Hatfield Peverel, Cressing and White Notley. The NE Bypass is not expected to provide any impact on security or journey quality. As such, no further assessment was considered proportionate for these measures.

Landscape, Heritage and Townscape

Landscape and heritage impacts of Beaulieu Station have been assessed through the PERA methodology. Several listed buildings are within the vicinity of the site but none within the site boundary itself. New Hall school to the north is a Grade I listed building with Grade II listed parks and gardens. The potential impacts have been a key consideration in the wider Beaulieu Park Master Plan and have provided height constraints for the proposed station and car park which have been met. Landscape and heritage impacts are considered minimal as a result of the adoption of these height constraints.

Townscape impacts for Beaulieu station were not assessed through PERA but are considered to be positive, as the station will make a positive contribution to the vibrancy and human interaction within the public spaces associated with the Beaulieu Park Master Plan.

The northern section of the Chelmsford NE Bypass and dualling of the A131 may have an adverse landscape and heritage impact due to the increased vertical alignment and proximity to ten grade II listed buildings. However, this can be mitigated through earthworks and screening. The southern section of Chelmsford NE Bypass is not expected to have significant landscape, heritage or townscape impacts beyond those of the NE Chelmsford developments themselves as it will be fully within the newly developed area. Some townscape impacts may occur in central Chelmsford if traffic flows in the city centre change significantly as a result of the scheme. However, traffic modelling has indicated that there will be a likely overall decrease in flows in central Chelmsford relative to the No HIF scenario.

The development of housing in this area will extend the urban fabric of Chelmsford, with associated landscape and heritage impacts. However, these impacts have already been a key consideration and assessed through the examination of the Chelmsford Local Plan in 2018 and previously assessed through the adoption of the North Chelmsford Area Action Plan and master plans for and Beaulieu Park and North Chelmsford, and appropriate design and policy measures have been implemented which will mitigate these impacts. In addition, a significant part of the site is currently or recently has been used for mineral extraction, and the restoration of this land as part of the creation of the development will have positive landscape impacts. As such, this overall impact is expected to be 'neutral'. The development is expected to have a positive Townscape impact through the provision of vibrant public spaces and open spaces within a high-quality development with increased scope for positive human interaction.

Regeneration

As most of the scheme will take place on greenfield or mineral land beyond the current urban fringe, no significant regeneration impacts are expected within the sites themselves. However, 'slight beneficial' impacts are expected in NE Chelmsford as a result of the increased attractiveness of Springfield Business Park to private sector investment, resulting from the new rail station adjacent to the business park, significant development in the local area and improved connectivity to Braintree and areas north of Chelmsford resulting from the Bypass. In addition, the removal of trips to central Chelmsford as a result of the new station is expected to decrease demand for car parking in the city centre, providing the potential for smaller car park sites to be unlocked for redevelopment and regeneration, contributing to future windfall sites.

Wider Benefits

Agglomeration benefits were previously quantified for Beaulieu Station as part of the SELEP Business Case. The Beaulieu Station scheme is expected to provide agglomeration benefits by enhancing the connectivity between employment sites in NE Chelmsford,

in particular the Beaulieu Business Park, and the rest of the London Functional Urban Region (FUR). This enhanced connectivity will result in an increased effective density of the FUR as seen from Beaulieu Business Park, causing an increase in productivity through static clustering.

These impacts were determined through a spreadsheet-based productivity impacts calculation in line with WebTAG units A2.1 and A2.4. This calculation used data from the rail demand model to determine the change in effective density resulting from the scheme.

It was not considered proportionate to repeat this calculation for the Bypass and for consistency purposes these benefits are not reported in the HIF Business Case.

Water Environment

The GRIP 2 PERA identified potential for some access and car park options for the station to cause water environment impacts, but these were considered fully mitigatable. In addition, there is potential for the North East Bypass and residential developments in NE Chelmsford to cause water environment impacts, and this has been a consideration in the Chelmsford Local Plan and Beaulieu Park and North Chelmsford Master Plans. These impacts are expected to be fully mitigatable through the introduction of Sustainable Drainage Systems (SuDS) throughout the affected area.

Sensitivity Analysis

Please describe sensitivity analysis conducted (if not covered above)

Chapter 7 of the Economic Assessment Report (Att. 4.2.2) provides full details of the sensitivity tests undertaken and the results. Sensitivity tests have been undertaken for the following parameters to determine how variable the value for money of the project is to these factors:

- Different land value appreciation rates;
- Variation in Externals as a cost percentage;
- Exclusion of NE Chelmsford Phase 3 housing; and
- Variations in Optimism Bias.

A summary of these sensitivity tests is presented below;

Land Value Appreciation Rates

A number of reduced nominal land value appreciation rates have been tried to determine the impact of these assumptions on the PVB. In addition, a no-inflation sensitivity test has been conducted with 0% nominal inflation for both land value and build costs and externals. These are shown in Table 1.

Table 1: Comparison of key metrics from Land Value Appreciation Rate sensitivity tests

Present Value (£2019 discounted to 2019)	Core Scenario	6% LVA	4% LVA	3.5% LVA	No Inflation
GDV	£6113m	£5240m	£3886m	£3663m	£2497m
Build Costs	£1304m	£1304m	£1304m	£1304m	£880m
Externals	£607m	£607m	£607m	£607m	£380m
Contingencies	£82m	£82m	£82m	£82m	£53m
Professional Fees	£154m	£154m	£154m	£154m	£103m
Sales	£174m	£149m	£111m	£105m	£72m
Developer Profit	£947m	£812m	£603m	£568m	£388m
Finance	£17m	£28m	£68m	£351m	£36m
Residential Land Value	£2828m	£2104m	£957m	£491m	£586m
Existing Land Value	£13m	£11m	£8m	£8m	£7m
NPV of Additional Housing Benefit	£1671m	£1205m	£487m	£182m	£277m
Commercial Land Value Uplift	£115m	£75m	£32m	£23m	£51m
NPV of Infrastructure Impacts	£305m	£265m	£222m	£213m	£241m

Private Sector (developer contributions) Costs	£125m	£125m	£125m	£125m	£85m
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As is to be expected, the NPV of additional housing benefits is highly sensitive to changes in the nominal rate of land value appreciation.

Increased External as percentage of build costs

Based on data from HDH (Att. 4.1.7e) and Turner Morem (Att. 4.1.7c), different externals as a percentage of build costs were applied to the various sites, in addition to site-specific fixed externals. Some of these values were below the MHCLG Appraisal Guide's benchmark value of 15%, while some were higher. In this sensitivity test, the externals were increased to the maximum value of 20% for all sites, to test the impact of this higher rate on the residential land value. The resultant externals for each site are shown in Table 2.

Table 2: Comparison of individual site externals for increased externals sensitivity test

Site	Build Costs (£2019)	Default Externals		Increased Externals			
		Build Cost % Externals	Total Externals	Build Cost % Externals	Total Externals	Build Cost % Externals	Total Externals
Part A – Site 1: NE Chelmsford – Beaulieu	£348.4m	10%	£34.8m	£139.6m	20%	£69.7m	£174.4m
Part A – Site 2: NE Chelmsford – Phase 1	£337.1m	10%	£33.7m	£211.3m	20%	£67.4m	£245.0m
Part A – Site 2: NE Chelmsford – Phase 2	£280.9m	10%	£28.1m	£172.5m	20%	£56.2m	£200.6m
Part A – Site 2: NE Chelmsford – Phase 3	£224.7m	10%	£22.5m	£138.0m	20%	£44.9m	£160.5m
Part B – Site 1/2/3: Great Leighs	£126.6m	20%	£25.3m	£35.6m	20%	£25.3m	£35.6m
Part C – Site 1: North of Broomfield	£51.8m	15%	£7.8m	£13.4m	20%	£10.4m	£16.0m
Part D – Site 1: Land East of Great Notley, south of Braintree	£232.1m	20%	£46.4m	£65.1m	20%	£46.4m	£49.2m
Total (All Sites)	£1601.6m	12%	£198.6m	£775.6m	20%	£320.3m	£881.4m

The resulting impact on the total Externals, Contingencies, Professional Fees, Residential Land Value and the NPV of additional housing benefits are shown in Table 3. This indicates that the value for money of the scheme is not significantly affected by variations in the Externals costs.

Table 3: Comparison of core metrics for increased externals sensitivity tests

Present Value (£2019 discounted to 2019)	Core Scenario	Increased Externals
Externals	£607.4m	£690.2m
Contingencies	£82.0m	£86.5m
Professional Fees	£153.8m	£159.6m
Residential Land Value	£2821.2m	£2725.0m
NPV of Additional Housing Benefit	£1667.0m	£1604.0m

Exclusion of NE Chelmsford Phase 3

The NE Chelmsford Phase 3 site, being further in the future, has greater uncertainty associated with it than the other sites, which are all either Local Plan allocations or, in the case of NE Chelmsford Phase 2, have been identified as potential future strategic sites for the next Local Plan period in the current Local Plan preparation.

As such, a sensitivity test is presented where NE Chelmsford Phase 3 is excluded, assuming it is never built (and therefore both the benefits and costs associated with it are not included in the test). The core metrics for this sensitivity test are shown in Table 4. This shows that the exclusion of NE Chelmsford Phase 3 does not significantly change the NPV of additional housing benefits or Private Sector Costs.

Table 4: Comparison of core metrics for Exclusion of North East Chelmsford Phase 3

Present Value (£2019 discounted to 2019)	Core Scenario	Excluding NE Chelmsford Phase 3
Total Homes	14,650	12,650
Dependent Homes	10,500	8,500
GDV	£6113m	£5041m
Build Costs	£1304m	£1165m
Externals	£607m	£523m
Contingencies	£82m	£71m
Professional Fees	£154m	£137m
Sales	£174m	£145m
Developer Profit	£947m	£782m
Finance	£17m	£20m
Residential Land Value	£2828m	£2199m
Existing Land Value	£13m	£11m
Additionality	59.4%	59.2%

NPV of Additional Housing Benefit	£1671m	£1295m
Private Sector (developer contributions) Costs	£125m	£109m

Increased Optimism Bias on Chelmsford North East Bypass

As described below a 15% allowance for optimism bias has been applied to the Chelmsford NE Bypass in line with WebTAG guidance (A1.2) for a highway scheme at Stage 2 (Outline Business Case). Given the level of development of the design for the CNEB, a sensitivity test has been conducted with 44% optimism bias (the WebTAG recommended level for a Stage 1 highway scheme) to test the robustness of the case to higher levels of optimism bias. The associated impact on the Present Value of Costs of the scheme is shown below in Table 5.

Table 5: Comparison of NPV of scheme costs for Increased Optimism Bias for CNEB

NPV of Scheme Costs		Core Scenario		CNEB Higher Optimism Bias	
Optimism Bias applied to CNEB		15%		44%	
Type		Total Nominal (factor prices)	Total NPV (factor prices)	Total Nominal (factor prices)	Total NPV (factor prices)
HIF funding	Cost	£176.95m	£148.38m	£176.95m	£152.37m
	Revenue	-	-	-	-
Central Government	Cost	-	-	-	-
	Revenue	£777.60m	£191.75m	£807.30m	£162.88m
Local Authority	Cost	£12.21m	£0.90m	£12.21m	£0.90m
	Revenue	-	-	-	-
Other Public Sector	Cost	£12.00m	£9.92m	£12.00m	£9.92m
	Revenue	-	-	-	-
Private Sector (not developer contributions)	Cost	£17.27m	£3.41m	£17.27m	£3.41m
	Revenue	£418.95m	£104.74m	£418.95m	£104.74m
Private Sector (developer contributions)	Cost	£253.62m	£124.67m	£253.62m	£124.67m

	Revenue	-	-	-	-
Optimism Bias applied to total public sector costs	Cost	£85.36m	£70.81m	£113.14m	£94.27m
REAL NET PRESENT PUBLIC SECTOR COST	Cost		£38.27m		£94.58m

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))

HM Treasury Green Book section 5.25 defines Contingency as the sum of risk (from a Quantitative Risk Assessment) and optimism bias. We have determined the total level of Contingency for the Beaulieu Station and Chelmsford North East Bypass infrastructure components separately in line with WebTAG guidance, and the Optimism Bias for each has been calculated to provide this level of total contingency.

A Quantified Risk Assessment (QRA) has not yet been undertaken for Beaulieu Station given the development stage of the project (between GRIP 2 and GRIP 3). The GRIP process calls for a QRA at GRIP 3 which is then re-assessed and updated at each subsequent stage. As the cost estimates for Beaulieu Station are based on the GRIP 2 estimates, WebTAG A1.2 section 3.5 and A5.3 para 2.5.4 recommends a higher level of Optimism Bias is applied. Recommended values are 64% for conventional rail schemes and 51% for station and terminal building schemes. As the scheme involves both buildings and track layout adjustments, the higher of these values at 64% has been applied.

For Beaulieu station, due to the wording of the Section 106 agreement for the Beaulieu Park development, it has been assumed that the full agreed funding will be paid regardless of the project outturn costs. As such, optimism bias has not been applied to private sector costs, with all the Optimism Bias falling on the public-sector funding contributions.

For the Chelmsford North East Bypass, a QRA has been undertaken and the pMean indicates a risk percentage of 35%. In line with WebTAG A1.2 Section 3.5, an Optimism bias of 15% is normally applied to highway schemes at Stage 2 (Outline Business Case). As such, an Optimism Bias of 15% has been applied in the core case to give an overall contingency of 50%. A sensitivity test has been conducted (see section 4.6.1) to test a higher level of optimism bias of 44%, in line with WebTAG A1.2 Section 3.5 recommended values for a Stage 1 highway scheme.

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

Prior to using the base costs in the Economic Assessment, as per the DfT guidance TAG (Unit A1-2), these have been adjusted to account for measured risks (where relevant) and optimism bias (discussed above).

Bypass

For the Bypass a Quantified Risk Assessment (QRA) was completed in November 2018 and reviewed again in February 2019. This built on a previous facilitated risk workshop undertaken for the full dualled Chelmsford North East (NE) Bypass in 2015 which involved representatives from ECC and Essex Highways designers, technical specialists, planners and delivery managers. The November 2018 risk workshop updated this work and made it specific to the risks associated with a single carriageway bypass and dualled section of the A131, with cognisance of other changes in the locality and new knowledge gained since 2015.

The QRA includes all types of risk which could affect the cost of the scheme such as technical and environmental constraints, planning delay, political decisions, land acquisition issues, legislative delays, their likelihood and the associated financial constraints.

Following the workshop, a quantitative risk analysis has been carried out with a Monte Carlo Simulation, using @RISK software, based on the quantified probability and three-point estimates recorded in project risk register, resulting in a p50, pMean and p80 risk values. p50 means that there is a 50% chance of the outturn cost 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 (TBC, i.e. a 35% uplift) and the economic case uses the pMean. The QRA report (see Att. 6.1.4c) demonstrates the close correlation between the p50 and pMean figures.

Station

A QRA has not yet been undertaken for the station given the development stage of the project (between GRIP 2 and GRIP 3). The GRIP process governs how risks associated with the station design and construction are identified, mitigated or removed, and re-evaluated at each GRIP stage. The process is very robust, is well documented and calls for a QRA at GRIP 3 which is then re-assessed and updated at each subsequent stage.

Risk has therefore been calculated in line with NR corporate guidance for GRIP 2 in the absence of a detailed Quantified Risk Assessment (QRA). An uplift of 40% was applied to the point estimate, minus cost of work done, industry and risk fees. In addition, Essex County Council has included its own separate contingency sum. This is explained in the Financial Case.

However in line with WebTAG A5-3 para 2.5.4, for projects at this development stage, risk has not been included in the Economic Case scheme costs.

Housing

Risks to the delivery of housing have been dealt with through the sensitivity tests described above. These build on the housing risks identified in the Management Case.

Supporting material and additional economic considerations

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

The following attachments have been uploaded to support the economic modelling and transport modelling / appraisal of the project:

Att. 4.9.2a – Core Scenario Economic Models for the infrastructure and each housing site

Att. 4.9.3 – An annotated copy of the DfT’s Annex B pro-forma to describe the transport documentation provided as Attachments 4.9.3a through to 4.9.3q and where relevant information can be found in each report, and if information has not been assessed either because it is not relevant or proportionate to do so.

Filename	Description
Chelmsford_4.9.3_Annex_B_Commentary.docx	Summary of Transport Documentation

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

Filename	Description
Chelmsford_4.9.2_Core_Economic_Models_FINAL.zip	Core Economic Models (housing sites and infrastructure)

Schemes with Transport Impacts

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

Filename	Description
Chelmsford 4.9.3a Traffic Data Collection Report.pdf	4.9.3a
Chelmsford 4.9.3b Local Model Validation Report.pdf	4.9.3b
Chelmsford 4.9.3c Model Validation Addendum.pdf	4.9.3c
Chelmsford 4.9.3d Variable Demand Model.pdf	4.9.3d
Chelmsford 4.9.3e Variable Demand Model Addendum.pdf	4.9.3e
Chelmsford 4.9.3f Traffic Forecast Report.pdf	4.9.3f
Chelmsford_4.9.3i Beaulieu Station_GRIP2_Environmental Appraisal.pdf	4.9.3i
Chelmsford_4.9.3j_Beaulieu_Rail_Demand_Model_Report.pdf	4.9.3j
Chelmsford_4.9.3k_Chelmsford_Station_Pedestrian_Crowding_Note.pdf	4.9.3k
Chelmsford_4.9.3o_Beaulieu_Distributional_Impacts_Assessment.pdf	4.9.3o
Chelmsford_4.9.3h_NE_Bypass_EnvironmentalConstraintsMap.pdf	4.9.3h
Chelmsford_4.9.3q_Rail_Model_Runs_Part1.zip	4.9.3q Part 1
Chelmsford_4.9.3q_Rail_Model_Runs Part 2.zip	4.9.3q Part 2
Chelmsford_4.9.3p_Final Pre-Submission Local Plan Development Assumptions.xlsx	4.9.3p
Chelmsford 4.9.3n TUBA files and results v2.zip	TUBA Files Core Scenario
Chelmsford_4.9.3l_Station AST AMCB PA TEE Tables.xlsm	Station WebTAG files
Chelmsford_4.9.3m_Bypass AST AMCB PA TEE Tables.xlsx	Bypass WebTAG files
Chelmsford 4.9.3g Forecast Model Update (Part 1 - Main report).pdf	Main Forecast Report
Chelmsford 4.9.3g Forecast Model Update (Part 2 - App A - B).pdf	Forecast Report App A and B
Chelmsford 4.9.3g Forecast Model Update (Part 3 App C - E).pdf	Forecast Report App C to E
Chelmsford 4.9.3g Forecast Model Update (Part 4 App F to G).pdf	Forecast Report App F and G

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

We can show there is demand for new homes and the need to build them. There is worsening affordability and good market absorption rates.

Trends and patterns in the local housing market

Affordability

Office for National Statistics (ONS) data shows poor affordability in Chelmsford and Braintree. The ratio of median house prices to work-place earnings was 11.4 in Chelmsford and 9.5 in Braintree in 2017. Both are well above the England average of 7.9.

Rents

In December 2018, Chelmsford City Council (CCC) monitoring (Att. 5.1.1a) showed median rents at the Beaulieu development in North East (NE) Chelmsford were £795 for a two bedroom flat, compared to £950 for Chelmsford. Rent at Beaulieu was £1,250 for a three bedroom house, the same as Chelmsford.

Zoopla data in Att. 5.1.1b – Table A shows that asking monthly rents in Chelmsford in February 2019 are broadly in line with the UK average for houses. Rents for larger properties in Braintree are slightly lower than Chelmsford and the UK.

Average house prices and comparables

The average price of a property in England was £247,886 (ONS House Price Index) in December 2018, an increase of 2.3% on the previous year and 0.3% on the previous month.

The average house price in Essex was higher than in England at £314,035. The pace of house price growth is slower than average, up 1.2% from last year (£310,360).

The average price of a property in Chelmsford is £388,606, up 2.4% on the previous year, and the price in Braintree District is £289,402, up 1.9% on the year before. Zoopla data (Att. 5.1.1b - Table B) gives a snapshot breakdown of mean asking prices for property across house types.

The average Zoopla asking price in Chelmsford in February 2019 was £352,891, and in Great Notley is £400,860. Great Notley's higher average asking price is due to the mix

of properties on offer: like for like properties mostly have higher values in Chelmsford.

Housing market in NE Chelmsford

Development is taking place on the edge of North Urban Chelmsford and Southern Braintree. The Strategic Housing Market Assessment (SHMA) for the area quoted median house prices from September 2015 (Att. 2.1.1a – Figure 3.7b, p109), illustrating that one bedroom properties were dearer in North Chelmsford than the rest of the city (at £159,500), but larger properties were more expensive in southern and rural areas. Four bedroom properties were £394,240 in Urban North, compared to £557,250 in Rural South and East (in the greenbelt). The SHMA showed values in Southern rural Braintree (p 108) were close to North Chelmsford, at £149,500 for a one bedroom flat.

Median house prices for resales in Beaulieu where development is underway show that a two bedroom flat cost £295,000 (vs. £250,000 Chelmsford-wide), and a three bedroom house cost £349,995 (vs. £370,000 Chelmsford-wide). However, there is a new build premium on some sites in North Chelmsford: the median sales value (December 2018) for a three bedroom house at Beaulieu Keep is £519,995, and on the Channels development it is £445,000. (Att. 5.1.1c)

Independent valuers considered market data in the four sites to underpin our assessment of land value (Att. 6.1.11). This showed that the appropriate blended average sales value for market properties was £352,347. The equivalent blended capitalised values for shared ownership and affordable rent properties was £226,188 and £198,116 respectively. These values have been adopted within the subsequent economic and financial analysis.

Trends over time

Chelmsford's house prices reached a peak in November 2007 at £234,481, which was passed again in December 2013 (£234,594). Prices rose steadily from then until July 2017 (£333,846). Since then prices have remained broadly flat (within 2%). The most recent data (December) is the highest on record at £338,605.

Braintree District house prices peaked in September 2007 at £203,700, surpassing that price in May 2014 (£207,207) and have steadily risen to £289,401 in December 2018 (ONS House Price Index Dec 2018).

Market absorption and sales rates

Development at NE Chelmsford shows very strong sales rates. Chelmsford's Local Plan included completions at Beaulieu in 2016/17- 2018/9 for different outlets. Zone A delivered 85 units a year in 2016/17 and 2017/18. Zone B completed 71 units in one full year (2017/18). Zone G completed its 68 units in the year from Quarter 4 2017/18. These rates are substantially above the 50-unit market expectation per sales outlet. (Att. 2.1.2).

The housing trajectory for Chelmsford's Local Plan is based on sales rates of 50 units per year per outlet, which is the market expectation in strong markets.

There are strong delivery rates of new build homes in Chelmsford (Att. 5.1.1d). Table 1 below shows that since the end of the impact of the 2008 recession, new build rates in Chelmsford have been above the dwelling target in the existing Local Plan

Table 1: Chelmsford New Build completions vs. targets and OAHN

Year	Dwelling Target	Objectively Assessed Housing Need	Completions
2014/15	700	805	826
2015/16	700	805	792
2016/17	700	805	1002
2017/18	700	805	1008

As Table 2 below shows, Chelmsford expects the current growth in completions to continue, with 1,205 completions in 2018/19, rising to 1,559 units in 2021, and remaining over 1,000 units a year to 2027/28.

Table 2: Projected New Build Completions, Source: Housing Site Schedule November 2018 (Att. 5.1.1d)

	2018/19	2019/20	2020/21	2021/22	2022/23
NE Area Action Plan	244	574	544	371	118
NE Chelmsford	0	116	93	144	250
Subtotal	244	690	637	515	368
Projected total - Chelmsford	1205	1362	1039	1559	1231

Local demographics

Chelmsford's and Braintree's populations are growing and ageing putting additional stress on infrastructure needs:

- Chelmsford grew from 168,310 (2011 Census) to 176,194 (ONS 2017 Mid-year estimates).

- From 2001 to 2011 Chelmsford's population grew at a slower rate (7.0%) than the East of England (8.5%) and England (7.9%), although at a faster rate than Essex (6.3%).
- Between 2001 and 2011 the number of over 90s increased by 53%, the number of 60-64 year olds by 46% and 85-89 year olds by 33%. Chelmsford saw a decrease of 12% in the number of people aged 30-34 years between 2001 and 2011.
- Braintree's population is 151,677 (ONS 2017 mid-year estimates) and dispersed across its towns and villages. Braintree town itself accounts for 29% of residents. Great Notley currently has about 7,000 residents (ward based profiles).
- Braintree has a more middle-aged population than England. Nationally there are nearly as many 30-year olds as 50 year olds (95%). Braintree District only has three quarters of the number of people aged 30 as 50.
- Braintree District's population is ageing. The number of over 90s increased by 65% in Braintree from 2001 to 2016. (ONS mid-year population estimates).

Filename	Description
Chelmsford_5.1.1a_December 18 - Housing Market Affordability Info.xlsx	Chelmsford Housing Market Affordability Information
Chelmsford_5.1.1b_Zoopla price data.docx	Zoopla February 2019 data
Chelmsford_5.1.1c_December 18 - New build Monitoring.xlsx	Chelmsford New Build Monitoring data
Chelmsford_5.1.1d_EB 063A Housing Site Schedule November 2018 with Annual Projections to 2035-36.pdf	Chelmsford Housing Site Schedule to 2035/36

Delivery strategy

Please provide details of who will be delivering the infrastructure

Infrastructure associated with the housing growth project is described in turn for:

- The Station and the Bypass. These are made possible through HIF funding, with delivery by Network Rail and Essex County Council respectively; and
- Ancillary infrastructure funded by developer contributions, and delivered by developers, ECC and other infrastructure providers as appropriate.

Beaulieu station

Essex County Council (ECC) have fulfilled promoter roles on recent rail related projects in Essex including a new access bridge at Witham station and also a new bridge structure across the Braintree branch line to connect with the Freeport shopping village. The complexity of the rail infrastructure required to form Beaulieu Station and its

location on the Great Eastern Main Line has meant that ECC has sought to partner with Network Rail (NR) to deliver the station.

NR mandates the use of a mature and repeatable process to deliver enhancements and renewals on the railway known as GRIP – Governance for Railway Investment Projects. The eight stages of GRIP are designed to minimise and mitigate the risks often associated with new rail infrastructure, and how it integrates with the existing railway. The product driven system helps guide the rail industry and its stakeholders from a project's objectives through to its outputs and outcomes while avoiding unnecessary risks and helping to ensure that resources are used appropriately.

NR, as ECC's delivery partner, have delivered a comprehensive GRIP 2 study for the station which has considered the feasibility of a range of layout options and are now progressing through GRIP 3 to identify a selected option and develop this option to Approval in Principle (AIP) stage.

Jacobs UK Limited's rail division (procured through the ECC-Ringway Jacobs Highways Strategic Transformation contract 2012) are acting as ECC's client support for the project. A Development Services Agreement has been signed by ECC and NR for GRIP 3, which involves the engagement of a NR Project Sponsor, Project Manager and their procurement frameworks to deliver the project as well as ensuring all necessary third-party consents are properly dealt with.

For a project of this nature, Infrastructure Projects (IP) is NR's national infrastructure delivery arm, working to increase capacity on the network by developing, designing and delivering enhancements and large complex multi-disciplinary capital projects. IP is split into four regions (Central, Southern, Western & Wales, and Scotland North East) and two discipline lead programme teams (Signalling and Track). For Beaulieu station, this is IP Southern.

IP relies on an extensive supply chain to design and deliver projects. IP utilise various routes to the market which are predominately covered via professional service frameworks; alliances; design and construction frameworks; or via a market sought tender. Frameworks are also competitively tendered in accordance with the Contract Utilities Regulations and comply with Official Journal of the European Union (OJEU) regulations.

NR have procured and delivered new railway stations on the Anglia Route during Control Period 5 (CP5 - 2014-2019) including Lea Bridge, Meridian Water and Cambridge North. The delivery of the Anglia Workbank in CP5 has provided Network Rail with valuable information on lessons learned in procurement and project delivery.

It is preferred that NR will continue to deliver the scheme through GRIP 4 and then on to GRIP 5-8.

To provide assurance that the March 2024 HIF spend target remains achievable the delivery strategy will be reviewed specifically at two additional points in the programme outside the normal stage gate reviews which occur at the conclusion of each GRIP stage.

The first review and decision point meeting will be conducted immediately following the planned completion of the discipline specific Approval in Principle (AIP) documents. This will determine the most appropriate way forward for procurement and governance for GRIP 4 based on the constructability and programme risk assessment carried out as part of the AIP development.

The second review and decision point meeting will be conducted following conclusion of the statutory Transport and Works Act Order (TWAO) Objections period of 42 days. This meeting will determine the most appropriate way forward for procurement and governance for GRIP 5-8 and will be informed by risk assessment based on the outcome of

the TWAO Objections period and the informal consultation in readiness for the Network Change application.

Chelmsford NE Bypass

The full connection between the A131 at Great Leighs and the A12 Boreham Interchange involves the delivery of the Radial Distributor Road 1 (RDR1) and our HIF proposal for the Chelmsford NE Bypass.

Countryside Zest will deliver RDR1 from the A12 Boreham Interchange to the A130 Essex Regiment Way as part of their Section 106 (S106) agreement, with this to be in place before the delivery of more than 1,000 of the 3,600 homes given outline planning consent at Beaulieu. RDR1 will provide access to Beaulieu Station and the Roundabout for the connection to the Chelmsford NE Bypass. ECC has worked with the developer through the Chelmsford Local Plan process to ensure that the safeguarded corridor for the bypass fits with the RDR alignment. ECC has also worked with Highways England to ensure that the plans for the Bypass and Boreham Interchange connection are compatible and acceptable with Highways England's ongoing widening plans for the A12 between Chelmsford and the A120. ECC consulted with Highways England on the Safeguarded Corridor through the Local Plan.

ECC's Development Management Team will then be responsible for adopting RDR1 as a public highway through a Section 38 agreement. It is anticipated that this road will be open by 2021.

ECC's highway delivery arm, Essex Highways (a combination of ECC and Ringway Jacobs – with Jacobs as their designer for Major Projects), will deliver the single carriageway Chelmsford NE Bypass and dualling of the A131 south of Great Leighs. Essex Highways has an established Major Projects Contract 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 (as described in the Management Case).

The Chelmsford Local Plan will provide statutory protection for the corridor. Design work in 2018 ensured that this safeguarded corridor works for both single and eventual dual carriageway alignments.

ECC will commission Jacobs to provide ongoing development of the design to 'illustrative' status through the Highways Strategic Transformation (HST) Contract 2012 (Essex CC Highways Partnership Contract). Essex Highways develop a preliminary design to secure planning consent and an illustrative design to engage contractors through a design and build (D&B) tender process.

To accelerate the delivery of the road we are proposing to phase the design of the Bypass into three sections. The southern section of the Bypass is on land controlled by the NE Chelmsford Garden Village Consortium enabling this to be taken to planning and construction ahead of the other two sections where additional land is required through negotiation or compulsory purchase order. Essex Highways will work with the NE Chelmsford Garden Community Delivery Board to ensure the smooth delivery of the southern section and enable connections to be made to subsequent developer led access roads.

As noted in our Procurement Strategy (below), Essex Highways will use OJEU procurement routes to enable the D&B of the road sections. Essex Highways will undertake supervision of the scheme through a dedicated site supervision team, making use of existing procurement routes for these services. Essex Highways will also interface with Highways England who are delivering the A12 widening scheme. Regular liaison already exists between ECC and Highways England, whereby ECC's Head of Network

Development works closely with Highways England's Strategic Development Management team.

Ancillary Infrastructure

The wider housing scheme will build on the development already underway at Beaulieu and Channels, where planning permission has been granted for 4,350 homes and which are currently being built out at a rate of in the region of 250 homes per year. This is a private sector led development being delivered through a strong partnership between the local authorities of Chelmsford City Council (CCC) and ECC.

The homes and the provision of their associated ancillary infrastructure planned in NE Chelmsford and Braintree will continue to be led through the private sector, where both local planning authorities and ECC has an excellent track record of engagement with development partners. This can be demonstrated in a number of ways, that include:

- Existing Planning Performance Agreements (PPAs) between CCC and the developers of Beaulieu and Channels (4,350 homes) to provide for the effective delivery of new housing and supporting community facilities in the context of the master planning and management of reserved matters planning applications. This ensures a single point of contact between the developer and the local authority creating continuity and also a point of contact for the new community.
- Existing PPAs between Braintree District Council and the developers of strategic sites in the district to similarly provide for the effective delivery of new housing and supporting community facilities and infrastructure.
- Existing PPAs between ECC and the developers of Beaulieu and Channels (4,350 homes) on highways related matters. This has the same effect of creating a single point of contact and delivery continuity.
- Regular liaison meetings are held between the primary developers and the local authorities to enable quick response to any delivery issues identified.
- CCC, ECC and development partners have worked effectively in producing the new Chelmsford Local plan to 2036, which was examined November/December 2018. This included a comprehensive Infrastructure Delivery Plan (IDP) and supporting Statements of Common Ground setting out the ancillary on-site and off-site infrastructure needs, their funding mechanisms, phasing and delivery routes.

The new strategic Local Plan allocations will build on this successful approach and already PPAs are in place with the development partners to develop the master planning frameworks for each site.

In Chelmsford there is a significant level of trust between the local authorities of CCC, ECC and development partners. This has been demonstrated through the recent joint submission to Government for NE Chelmsford to be recognised as a Garden Community. This was a joint submission, supported by both local authorities and the key development partners of NE Chelmsford and this excellent relationship with the private sector, which is delivering successfully now, will be built on to maximise delivery in NE Chelmsford.

As a holistic approach to successful housing delivery, Chelmsford was recognised as one of the few areas in England as 'Housing Business Ready' by the Housing Finance

Institute in 2017 (see Att. 5.3.2).

Procurement strategy

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

Beaulieu station

At this stage the preferred procurement route for the delivery of Beaulieu station is by Network Rail directly using its internal procurement strategy. From a technical perspective this method should maximise the buy-in and knowledge of the rail industry and minimise risk to ECC. As described in our Delivery Strategy it will be necessary to review the delivery strategy, specifically, at two additional points in the programme outside the normal stage gate reviews, which occur at the conclusion of each GRIP stage, to provide assurance that the March 2024 HIF spend target remains achievable. At these review points the most appropriate procurement route will be agreed and implemented based on the constructability assessment of the selected option and an assessment of programme risk.

Under the preferred procurement route, ECC agrees its requirements of Network Rail through a Development Services Agreement at design stage and then through an Implementation Agreement at construction stage. ECC will secure its own rail assurance advice from an external party (Jacobs).

For large multi-disciplinary rail projects (>£30m in total value) delivered by NR a specific (procurement) strategy review must be undertaken. The specific strategy review undertaken to date has resulted in the following approach. The project has been developed up to the end of GRIP 2 by VolkerFitzpatrick Limited under the existing Multifunctional Framework (MFF) which is due to expire in March 2020. As the project timescales for award of the delivery contract did not align with the expiration of the MFF contract the scheme was progressed to GRIP 3 using the Multi-Functional Design Framework (MFD). A call off from this framework was competitively tendered to the 9 suppliers. WSP UK Limited were subsequently appointed to develop the scheme to GRIP 3.

NR is in the process of tendering its replacement for the professional services and multi-functional frameworks for Control Period 6 (CP6), during which delivery of GRIP 4 and GRIP 5-8 will occur. During the tendering of these replacement frameworks, NR considers suppliers' capability, skills and behaviours to deliver a portfolio of works successfully. Criteria include safety, sustainability, social value, cost and quality absolutes. NR also considers what has worked well and not so well in the delivery of its current frameworks and elsewhere in the industry.

Going forward the preferred contracting strategy will be to utilise the new CP6 frameworks with the following procurement options available.

- Use the CP6 IP Southern Multi Discipline Framework (SMDF) as the single delivery partner of the scheme. The SMDF is currently out to tender and is not due to be awarded until April 2019. This framework is underpinned by the principles of ISO44001 for collaborative business relationships. Adopting and implementing ISO44001 supports and complements the NEC3 framework contract, providing a meaningful way to measure and continuously improve performance over the duration of the framework. In the early GRIP stages Network Rail used the current team to provide early contractor involvement through the implementation of robust design, planning and constructability reviews early in project life cycles. The incoming supplier would take over the project at the end of an appropriate GRIP stage, which would tie into the programme dates for the project and the finalisation of the tender and award.
- Continue to develop the scheme through to the completion of GRIP 4 with a designer and competitively tender the detail design and construction of the project to the open market with the successful supplier providing single point delivery responsibility.
- Use all of the frameworks available in IP with SMDF undertaking the Building, Civils, and Electrification & Plant Works, IP Signalling framework undertaking the signalling works, and IP Track framework undertaking the track works. Similar to Option 1, this would have to be handed to the framework suppliers at an appropriate GRIP stage.

At the completion of GRIP 4 it is anticipated that the detailed design and construction (GRIP 5-8) will be let as a single fixed price contract following a competitive tender drawn from Network Rail's supplier frameworks. The use of this contractual mechanism is the most advantageous to ECC as it will give the greatest cost certainty on award and will incentivise the contractor to exercise robust early warning in the event of potential change.

Chelmsford NE Bypass

We have undertaken a review of procurement and delivery options for the Bypass. 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 2023/24 spend deadline;
- Provide ECC with cost certainty; and
- Deliver value for money for the taxpayer.

To date ECC has called upon the services of Jacobs for design, environmental assessment and business case development through their Joint Venture organisation Ringway Jacobs' existing term contract. This procurement method is expected to remain over the duration of the project's development.

Currently the 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.

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 with expiry in 2020 before the Bypass 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.

The replacement EHAF mechanism could also be appropriate if the scheme was broken down into two or more packages. This would introduce extra complexity to the scheme with the need to integrate potentially more than one contractor's design and works. It would also likely incur greater cost.

Highways England's New Routes to Market Framework

Highways England has recently procured its replacement of the Collaborative Delivery Framework under New Engineering Contract (NEC) 4 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 considered appropriate.

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 undertakes 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.

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 Bypass. 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 Restricted / Competitive Negotiation. The following delivery procedures are available under these OJEU options:

- Design and Build (D&B)
- Early Contractor Involvement (ECI)
- traditional two-stage procurement (design and construction as separate packages).

D&B is ECC's preferred route as described below. This has been considered most appropriate based on our experiences and the guiding principles.

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 cost premium to pay for the transfer of the full design risk to the contractor at this stage of the project.

The Bypass' main technical risk relates to the ground conditions of the backfilled quarry. The remainder of the Bypass would be built over primarily arable farmland and compared to many road schemes is not complicated.

Our current design involves a piled raft foundation to develop an appropriate risk premium. Further preliminary design work would be undertaken by Essex Highways to ensure that a design which is capable of being constructed can be handed over. This 'illustrative' design 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.

Early Contractor Involvement (ECI)

This discounted 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 Bypass does not warrant the specialist expertise of an ECI contractor.

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.

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

All four sites unlocked by this HIF bid are private sector led developments being delivered by developers. Essex County Council (ECC) is not developing joint ventures, special purpose vehicles or other legal entities where the Council is involved directly in delivery on these sites. However, we are building on strong partnerships between the Local Authorities - Chelmsford City Council (CCC), Braintree District Council (BDC) and ECC and developers to ensure that delivery continues at pace.

The majority of homes come forward at North East (NE) Chelmsford. This development builds on the development already underway at Beaulieu and Channels, where planning permission has been granted for 4,350 homes and which are currently being built out at a rate of in the region of 250 homes per year.

The additional homes being planned in NE Chelmsford will continue to be led through the private sector, where both local authorities have an excellent track record of engagement with development partners. This can be demonstrated in a number of ways, that include:

- Existing Planning Performance Agreements (PPAs) between CCC and the developers of Beaulieu and Channels (4,350 homes) to provide for the effective delivery of new housing and supporting community facilities in the context of the master planning and management of reserved matters planning applications. This ensures a single point of contact between the developer and the local authority creating continuity and also a point of contact for the new community.
- Existing PPAs between ECC and the developers of Beaulieu and Channels (4,350 homes) on highways related matters. This has the same effect of creating a single

point of contact and delivery continuity.

- Regular liaison meetings are held between the primary developers and the local authorities to enable quick response to any delivery issues identified.
- The Councils and development partners have worked effectively in producing the new Chelmsford Local Plan to 2036, which was examined November/December 2018.
- CCC will agree Heads of Terms for Section 106 (S106) agreements with developers to make legally binding the delivery of onsite infrastructure and contributions towards the future road network, and to agree delivery of affordable housing in line with the Local Plan. For NE Chelmsford the affordable housing will be delivered by London & Quadrant (L&Q), who are part of a joint venture with Countryside at Beaulieu known as Countryside Zest. On other land the private developer will procure the delivery of affordable housing in line with the S106 agreement.

BDC will also develop a PPA with the developers expanding Great Notley on Land North of Bakers Lane. This site is at an earlier stage than development in North East Chelmsford. The S106 agreement will be negotiated alongside an outline planning permission in line with the Local Plan.

The new strategic Local Plan allocations will build on this successful approach and already PPAs are in place with the development partners to develop the master planning frameworks for each site.

In Chelmsford there is a significant level of trust between CCC, ECC and development partners. This has been demonstrated through the recent joint submission to Government for NE Chelmsford to be recognised as a Garden Community (Att. 1.5.1d). This was a joint submission, supported by both Local Authorities and the key development partners of NE Chelmsford and this excellent relationship with the private sector, which is delivering successfully now, will be built on to maximise delivery in NE Chelmsford.

As an holistic approach to successful housing delivery, Chelmsford was recognised as one of the few areas in England as 'Housing Business Ready' by the Housing Finance Institute in 2017.

The Chief Executive of the Housing & Finance Institute, Natalie Elphicke, said, "Chelmsford has an outstanding team with the confidence and capability to deliver, and we were particularly impressed by the range of housing delivery offered by Beaulieu and the Channels." (Att. 5.3.2)

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

Filename	Description
Chelmsford_5.3.2_Housing Business Ready.pdf	Developer Evidence

Implementation timescales

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

Housing

As noted in our Procurement Strategy, all of the housing sites unlocked in this bid are private sector led. We are not developing joint ventures, special purpose vehicles or other legal entities where the council is involved directly in delivery on these sites. The local planning authorities will instead make use of Planning Performance Agreements (PPAs) to provide a framework for the effective delivery of each of the sites. Our housing and infrastructure programme (see Management Case) sets out the timescales for each of the sites which are repeated below:

- Beaulieu – Ongoing use of existing PPAs.
- NE Chelmsford Phase 1 – PPAs, master plan, outline planning application and agreement of Section 106 (S106) conditions: 2019/20 to 2021/22.
- NE Chelmsford Phase 2 & 3 – PPAs, master plan, outline planning application and agreement of S106 conditions: from 2034/35 onwards.
- Great Leighs – PPAs, master plan, outline planning application and agreement of S106 conditions: 2019/20 to 2020/21.
- North of Broomfield – PPAs, master plan, outline planning application and agreement of S106 conditions: 2019/20 to 2020/21.
- Great Notley – PPAs, master plan, outline planning application and agreement of S106 conditions: 2021/22 to 2022/23.

Infrastructure

Beaulieu Station

- WSP is currently developing the scheme design to GRIP 3, on behalf of Network Rail, which includes the Approval in Principle (AIP) discipline specific deliverables, with the exception of signalling. This commission concludes in Q1 2020.
- A review and decision point meeting will be conducted immediately following planned completion of the AIPs during Q4, 2019. This meeting will determine the most appropriate way forward for procurement and governance for GRIP 4 based on the constructability and programme risk assessment carried out as part of the AIP development.
- It is planned to commence GRIP 4 by the beginning of Q2 2020.
- A further review and decision point meeting will be conducted following conclusion of the statutory TWAO Objections period of 42 days. This meeting will determine the most appropriate way forward for procurement and governance for GRIP 5-8 and will be informed by risk assessment based on the outcome of the TWAO Objections period and the informal consultation in readiness for the Network Change application.

- It is planned to award a GRIP 5-8 design and build contract in Q3 2021. It is intended that tender documents would be prepared prior to completion of GRIP 4 in readiness for inviting tenders for the GRIP 5-8 design and build contract between Q2 and Q3 2021,
- Construction would then start in Q3 2022.

Chelmsford NE Bypass

- 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 2021
- Finalise NEC Engineering and Construction Contract documents including relevant z clauses – Q4 2021
- Issue OJEU Contract Notice / Selection Questionnaire – Q4 2021
- Evaluate Selection Questionnaire and Approve Contractors to be invited to Tender (ITT) – Q4 2021
- Issue Invitation to Tender with 3-4 month tender period – Q1 2022
- Carry out Tender evaluation (1-2 months) – Q2 2022
- ECC Approvals and mandatory periods (1-2 months) – Q2 2022
- Award – Q3 2022.

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

The phasing and implementation timeline for the wider scheme is set out within the Management Case. Chelmsford sites have been shown using the housing trajectory prepared for the Chelmsford Local Plan to 2036 (examined November – December 2018) and evidence base documents (such as the Chelmsford Infrastructure Delivery Plan - IDP). The Great Notley site has been set out using the housing trajectory prepared for the Braintree Publication Draft Local Plan to 2033. The Inspector agreed the housing numbers for Braintree in the Joint Strategic Section 1 Local Plan at examination in 2017.

Together the housing trajectories and Chelmsford IDP set out the anticipated implementation and phasing of the North East (NE) Chelmsford, Broomfield, Great Leighs and Great Notley developments over the plan period, both in terms of housing numbers and infrastructure provision.

NE Chelmsford

There are four main sites in NE Chelmsford.

The first site completes the existing permission at Beaulieu where 541 homes have already been completed. Development is controlled by the permission with reserved matters and a Section 106 (S106) agreement. Chelmsford City Council (CCC) will manage the progress of delivery through the existing Planning Performance Agreement (PPA).

A secondary school will open September 2019 and a new primary healthcare facility will be leased. This social infrastructure is being delivered early to ensure the site retains a strong offer to the market. Developers will complete a further 1,395 homes on the Phase to 2023, another 1,220 by 2028, leaving the final 985 to complete by 2036.

The later units over 2,500 rely on the delivery of the Station, which is set to open in December 2025 (if this HIF bid is successful). The Station requires the delivery of ancillary road improvements. The development will pay for Boreham Interchange works in 2021 and a Radial Distributor Road in 2022 which links the A12 with Essex Regiment Way (A130). The Bypass (funded by HIF) will join this road at a roundabout when it completes in Q1 2024. This means the road network will be ready for the Station when it opens. A second health care facility will open in 2026 and another primary school in 2027 to support development up to 2036 when the site completes.

The second site is the first phase of the NE Chelmsford Garden Community (3,000 homes) allocated in Chelmsford's Local Plan (examined in December 2018). It expands on Beaulieu and the neighbouring development of Channels (750 homes consented with 212 delivered).

Between 2019/20 and 2021/22 the developers will create a master plan for the site and agree it with CCC and Essex County Council (ECC). The master plan will include the land promoted by Ptarmigan and by Countryside Zest so that the Garden Village has a strong urban form. Master planning work will be supported by the Government's Garden Community funding if successful. CCC will then agree a PPA with the Consortium. Developers will submit an outline planning application and negotiate a Section 106 (S106) agreement to give legal force to the infrastructure and affordable housing. Ptarmigan Land will also enter into deals with developers on the first portions of their site so that the developers can submit detailed permission to CCC to enable them to start developing. This is the business model Ptarmigan has successfully used at Channels.

Between 2022/23 and 2027/28 the site will deliver from two outlets completing between 90 and 100 homes year. A primary school will be delivered in this phase. From 2028/29 delivery ramps up to 245 homes a year through to 2032/33, when the second Radial Distributor Road (RDR2) is completed by the developers on this site. RDR2 joins the Bypass to Essex Regiment Way (A130) with intermediate access points to the housing of the first site above. Sustainable transport is also supported by a rapid bus transit scheme and a footbridge over Essex Regiment Way to improve walking access to the site. This phase also sees a secondary school to meet the growing demand for school places. This infrastructure - paid for by the development - enables the site to reach peak delivery from 2033/4 to 2035/36, completing 408 homes a year sold from six to seven outlets.

The third (2,500) and fourth (2,000) sites are NE Chelmsford Phases 2 & 3. These sites will happen after the Local Plan period: Phase 2 is noted in the Local Plan as an extension to the NE Chelmsford Garden Community post 2036. Phase 3 is included in the application to the Garden Community Fund as a further extension.

CCC will use developer contributions from NE Chelmsford, alongside Broomfield, Great Leighs and Great Notley for future dualling of the Bypass and improvements to the A12 at Boreham. We will carry out the detailed design and planning work for this dualling scheme between 2030 and 2035 to enable ECC to deliver the works from 2036. This additional road capacity unlocks the housing capacity on the third and fourth sites for 4,500 homes. We expect master planning, outline planning applications and S106 agreements for these sites to be developed in the early 2030s so that delivery starts from 2036 in the next Local Plan period.

Broomfield

Preparatory work for Broomfield will take place 2019/20 and 2020/21, following approval of the Local Plan. This work will include agreeing a PPA between Bloor Homes, CCC and ECC, master planning the site, developing and submitting the outline planning application and agreeing the S106 agreement and reserved matters. Completion of this preparation will enable delivery to start in 2021/22 on one outlet (40-50 homes), which will increase to two outlets in 2023/24 (72 homes a year). All homes will complete by 2027/28. Delivery from 2024 will be unlocked by completion of the bypass. During the seven years it will take to deliver the site, a new health care facility, mitigation of surface water flooding, and a new access road into the hospital site will complete. This site will contribute to education provision, which as noted above will see a new secondary school primary school in the NE Chelmsford area by 2033.

Great Leighs

The Great Leighs sites will prepare for delivery from 2019/20 to 2020/21, including master planning, agreeing a PPA, planning permission and S106 agreement. This will enable the first delivery on land east of London Road in 2021/22. It is expected to deliver between 70 and 100 homes each year for three years until that site completes. The main site is at Moulsham Hall which starts in 2023/4, just before the Station and Bypass open to provide the transport capacity on the network. The smaller site at Banter Lane also opens and takes two years to complete. Moulsham Hall will continue development throughout the plan period. Education provision expanding Notley High secondary, and adding two forms of entry at the primary, plus a road junction are included in the site. The phasing of infrastructure delivery is to be determined but will take place before 2033.

Great Notley

The planning for Great Notley will start in 2021/22 to give time for Braintree District Council's (BDC) joint Local Plan to complete its progress and be adopted. There will be two years of master planning, PPA, planning permission and S106 agreement so that delivery can begin in 2023/24 just before the Bypass and Station complete. BDC's preferred option is to develop this with the consortium of developers, with the main three controllers of the site (Bellway, Bloor and a South East regional developer) having the capability to lead negotiations. There is impatience from some developers to make progress in advance of the Local Plan, but BDC is pushing back firmly. This site will also invest in primary and secondary school provision before 2027 with a new primary care facility at the same time. It is expected that Anglian Water Services will also invest in water treatment facilities at Coggeshall and White Notley through their Capital Programme before 2026.

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

Beaulieu station

Network Rail (NR) are currently contracted to Essex County Council (ECC) under a Development Services Agreement (DSA) up to the completion of GRIP 3. This agreement includes for NR carrying out all asset protection duties. Under the terms of this agreement NR submit a 4 weekly progress report to ECC together with a draft invoice for agreement. This report includes a detailed back up showing records of NR personnel bookings and also sub-contractor invoices and is related to the progress of programmed activities.

The review and decision point meeting to be conducted on completion of the Approval in Principle (AIP) discipline specific deliverables will consider the most appropriate way forward for GRIP 4. It is preferred that NR will continue to be retained by ECC under a new DSA on a similar basis, to complete GRIP 4.

For GRIP 5-8 it is intended that ECC will retain NR under an Implementation Agreement on a fixed price basis. Under this agreement NR will procure a design and build contractor from their internal Works framework agreement. This ensures that the selected contractor would have competitively tendered a schedule of rates and also have demonstrated competence and familiarity with delivery of works of this nature. It is anticipated that governance arrangements for payment will be as the previous GRIP stages.

By entering into a Development Services and Implementation Agreement ECC are required to contribute to two funds, the Network Rail Fee Fund and the Industry Risk Fund. These are set as percentages of the Service fee agreed and are usually paid soon after commencement of each service agreement. NR have their own Project Management Plan (PMP) which describes how they manage their internal and external suppliers on the project, including the project scope, project outputs, roles and responsibilities, stakeholder management, reporting, planning, change control, risk and value, lessons learned, commercial management, environment, sustainability, health and safety. The PMP includes supporting documents. This approach will be revisited at each GRIP stage.

Chelmsford NE Bypass

ECC will commission 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 Bypass on a Design & Build (D&B) contract through an OJEU Restricted or Competitive Negotiation route using the illustrative design as its basis. Either New Engineering Contract (NEC) 3 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 ECC's 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 Key Performance Indicators (KPIs). ECC has 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.

Please provide details of the proposed key contractual clauses

Beaulieu station

As noted above the future contract associated with the delivery of Beaulieu station's design and construction will outline the required outputs, expectations around time and quality and specify ownership of risk based on who is best placed to manage the risk and specific parties' responsibilities should cost overruns materialise.

At the completion of GRIP 4 it is anticipated that the detailed design and construction (GRIP 5-8) will be let as a single fixed price contract following a competitive tender drawn

from Network Rail's supplier frameworks. The use of this contractual mechanism is the most advantageous to ECC as it will give the greatest cost certainty on award and will incentivise the contractor to exercise robust early warning in the event of potential change.

One of the principal risks of cost over run is the late and unexpected loss of track access during the construction period. The required track access is evaluated as the design is developed through the GRIP stages through constructability and risk assessments. This will include the need for the booking of contingency track access as a mitigation measure. The tenderers for the GRIP 5-8 contract will also be expected to make an assessed allowance for loss of track access in their submissions.

Chelmsford NE Bypass

As noted above, the preference 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 with to be determined 'z' clauses to ensure compliance with ECC governance, project objectives and outcomes. This could include expectations of the contractor in terms of sectional completion of the road to advance the delivery of homes in the NE Chelmsford Garden Community. In preparing the contract documents ECC will draw upon contemporary learning of project delivery in Essex and Ringway Jacobs / Jacobs' wider expertise elsewhere in England, including similarly sized Design and Build road projects.

Additional information

Please provide details of the proposed key contractual clauses

Statements of Common Ground with developers are attached as Att. 5.3.3b through to Att. 5.3.3f.

Option Agreements for Channels and NE Chelmsford are attached at Att. 5.3.3g & h with an accompanying letter (Att. 5.3.3i).

Filename	Description
Chelmsford_5.3.3d_Great Leighs_SOCC16a_Strategic Matters.pdf	5.3.3d Statement of Common Ground: Great Leighs
Chelmsford_5.3.3e_SOCC 16B Statements of Common Ground Great Leighs Sites 5A & 5B.pdf	5.3.3e Statement of Common Ground: Great Leighs
Chelmsford_5.3.3f_SOCC 16C Statement of Common Ground with Great Leighs Site 5C.pdf	5.3.3f Statement of Common Ground: Great Leighs
Chelmsford_5.3.3.c_SOCC 19 Statement of Common Ground with Site Promoter of N of Broomfield.pdf	5.3.3c Statement of Common Ground: North of Broomfield
Chelmsford_5.3.3b_North East Chelmsford_SOCC21_Strategic Matters (reduced).pdf	5.3.3b Statement of Common Ground NE Chelmsford
Chelmsford_5.3.3a_Overview of Developer contractor support.docx	Read me first - introduces the letters and SOCC
Chelmsford_5.3.3g_REDACTED PA Channels 2 final.pdf	Channels Option Agreement
Chelmsford_5.3.3h_Redacted Version of Option Agreement.pdf	NE Chelmsford Option Agreement
Chelmsford_5.3.3i_HIF Bid – Option Agreement CMS Letter 04.03.2019.pdf	Read me first - Option Agreement Intro letter

Financial Case

What are the total scheme costs?

£4,115,729,500

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
(Bypass) preliminaries	Other	£8,031,384	£8,031,384
(Bypass) Road works	Infrastructure	£23,252,338	£23,252,338
(Bypass) Structures	Infrastructure	£4,997,676	£4,997,676
(Bypass) Accommodation Works	Infrastructure	£5,115,021	£5,115,021
(Bypass) Project / Design Team Fees	Preparation costs (design and planning)	£6,679,274	£6,679,274
(Bypass) Construction Management & Site Supervision	Construction	£788,045	£788,045
(Bypass) Land Acquisition	Land (exc. Sunk costs)	£6,968,521	£6,968,521
(Bypass) Employer Costs	Preparation costs (design and planning)	£1,575,413	£1,575,413
(Bypass) Environmental Mitigation	Infrastructure	£11,361,440	£11,361,440
(Bypass) QRA p50 Risk	Contingency	£22,054,501	£22,054,501
(Bypass) Statutory Undertakers' Diversions	Infrastructure	£2,536,488	£2,536,488
(Station) Direct Construction Works	Infrastructure	£64,041,000	£52,393,000
(Station) Preliminaries	Other	£13,439,000	£11,221,000
(Station) Overheads & Profit	Allowance for developer profit	£6,557,000	£5,475,000
(Station) Design Team	Preparation costs (design and planning)	£6,916,000	£4,584,000
(Station) Project Team	Preparation costs (design and planning)	£5,658,000	£3,694,000
(Station) Schedule 4 TOC & FOC compensation	Other	£5,208,000	£3,563,000
(Station) Network Rail Fee	Professional fees	£5,347,000	£5,248,000
(Station) Industry Risk Fee	Other	£2,137,000	£2,097,000
(Station) GRIP 3 costs	Sunk costs	£3,088,000	£0
(Station) Risk	Contingency	£40,726,000	£32,369,000
(Station) - Contingency - ECC owned	Contingency	£3,903,000	£3,857,000
(Station) Monitoring and Evaluation - ECC Revenue budgets	Other	£50,000	£0

Please provide a summary evidencing how you have assumed these costs

Beaulieu station

The unit costs for the scheme's capital costs was produced following Network Rail Estimating Guidelines appropriate to the level of

project development at GRIP 2. undergoing the following development and reviews. Further detail on each step is provided below:

- 07/12/2016 - Internal Infrastructure Projects (IP) Anglia / Volker Fitzpatrick review
- 31/01/2017 - Peer review
- 02/02/2017 - IP Southern Review
- 15/02/2017 – IP National final governance review leading to the completion of the GRIP2 feasibility summary report (Att. 6.1.4a)
- January 2019 – An adjusted cost profile and inflation figures have been calculated by Jacobs to reflect the current scheme programme. The cost plan is shown in Att. 6.1.9a.

The original estimate was produced by the Infrastructure Projects (IP) Anglia Multi-Function Framework (MFF) contractor Volker Fitzpatrick and signed by the IP Southern Estimating manager as being fit for purpose according to the IP Southern Approval Endorsement and Release of Estimate Work Instruction. Being a GRIP 2 level estimate, a full Bill of Quantities were not available from which to measure volumes from.

The cost estimates were developed during GRIP2 in 2016 and assumed completion of the project in 2024. Jacobs has revisited the spend profile and inflation (escalation) to take into account the development services agreement for GRIP3 now in place and the current scheme programme developed by Jacobs. This assumes no risk and inflation percentage for the GRIP3 costs given that Network Rail are working under a Development Services Agreement with Essex County Council to a defined budget including contingency. The GRIP 6 construction spend profile developed by Jacobs assumes 35% construction spend in 2022/23, 50% in 2023/24 and 15% in 2024/25. This aligns with works in 2024/25 being primarily associated with the fit out and commissioning of the station.

Inflation has been calculated by Jacobs in line with Network Rail's Estimating Guidelines. This involves the use of the latest RPI (Average Annual Index (RPI CHAW ONS Actual to 2016/17, NR Forecast to 2023) figures to uplift spend on a quarterly basis for spend on GRIP4 and beyond. As a guide the original estimate was prepared at a 2016 Q3 (264.7) price basis. In the Cost Plan (Att. 6.1.9a) these have also been converted to nominal (2019) prices without outturn inflation.

A Quantified Risk Assessment (QRA) has not yet been undertaken for the project given the level of detail required to make this meaningful and the development stage of the project. The GRIP process governs how risks associated with the station design and construction are identified, mitigated or removed, and re-evaluated at each GRIP stage. The process is very robust, is well documented and calls for a QRA at GRIP 3 which is then re-assessed and updated at each subsequent stage.

Risk has been calculated in line with NR corporate guidance for GRIP 2 in the absence of a detailed Quantified Risk Assessment (QRA). An uplift of 40% was applied to the outturn point estimate, minus cost of work done, industry and risk fees.

In addition, Essex County Council have applied an additional contingency sum of £3.903m. This represents the difference between the initial outturn cost (from the revised construction profile) and the outturn cost used in the SELEP business case approved in February 2019 with a slightly extended construction profile.

Optimism bias has not been applied in the Financial Case.

The design for Beaulieu station is currently being progressed through GRIP 3 (single option) development. This will result in an updated cost and more mature risk profile later in 2019.

Chelmsford NE Bypass

For the bypass base cost estimate Essex County Council commissioned Jacobs UK Ltd to undertake a review of the cost estimate that was completed in 2015 for a dual carriageway version of the bypass. This has subsequently been updated to reflect the outline design work completed to date on the first phase of the bypass (the subject of this bid). This work was carried out in 2018 and a summary report is provided as Att. 6.1.4b. The base date for this estimate is Q1 2019.

The Highways Works element of this estimate have, wherever possible, been quantified in accordance with the Manual of Contract

Documents for Highway Works, Volume 4, Bills of Quantities for Highway Works published by the Highways Agency (now Highways England). The work breakdown structure adopted is based on Table 1 included in Section1, Chapter III of the Method of Measurement for Highways Works (MMHW).

An approximate estimating technique based on the overall area of carriageway or structure to be constructed has been used for items such as Fencing, Road Restraint Systems, Drainage and Service Ducts, Traffic Signs and Road Markings, Bridge Structures as there is limited design information available for such features given the early stage of design.

A quantitative risk analysis has been carried out with a Monte Carlo Simulation, using @RISK software, based on the quantified probability and three-point estimates recorded in the project risk register.

The results summary and total risk exposure charts including frequency distribution, cumulative distribution and tornado charts are provided in the QRA report attached (Att. 6.1.4c).

Inflation has been calculated in line with WebTAG/Green Book guidance and assumes that construction increases in line with the BCIS General Civil Engineering Cost Index (#1191). 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%).

Key assumptions that have been made are:

- Delivery of infrastructure in line with the delivery plan set-out in this document, and funding provided in alignment with that plan
- Inflation figures are based on construction by March 2024
- Construction spend is assumed at 40% in FY22-23 and 60% in FY23-24 and built-up through a phased-delivery of the scheme as outlined in our scheme programme enclosed in the Management Case.

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
Beaulieu Park: Cost of building residential units	Construction	£416,805,499
Beaulieu Park: Provision of IDP site infrastructure externals	Construction	£90,341,447
Beaulieu Park: To cover unidentified risks. Estimated at 5% of externals	Contingency	£4,517,072
Beaulieu Park: To cover design, contractor and other fees. Estimated at 7% of build, externals and contingency costs.	Professional fees	£35,816,481
Beaulieu Park: To cover marketing costs. Estimated at 3% of sales price.	Professional fees	£28,822,895
Beaulieu Park: To cover reasonable expectation of profit for developers. Estimated at 17% of GDV.	Allowance for developer profit	£163,329,739
Beaulieu Park: To cover S106, CIL, and land purchase	Land (exc. sunk costs)	£83,296,498
North East Chelmsford Phase 1 Cost of building residential units	Construction	£403,268,270
North East Chelmsford Phase 1 Provision of garages, IDP and non-IDP site infrastructure externals, RDR2 East-West Section	Construction	£163,634,866
North East Chelmsford Phase 1 To cover unidentified risks. Estimated at 5% of build costs	Contingency	£8,181,743
North East Chelmsford Phase 1 To cover design, contractor and other fees. Estimated at 7% of build, externals and contingency costs.	Professional fees	£40,255,942
North East Chelmsford Phase 1 To cover marketing costs. Estimated at 3% of sales price.	Professional fees	£27,180,138
North East Chelmsford Phase 1 To cover reasonable expectation of profit for developers. Estimated at 17% of GDV.	Allowance for developer profit	£154,020,783
North East Chelmsford Phase 1 To cover S106, CIL, and land purchase	Land (exc. sunk costs)	£40,652,543
North East Chelmsford Phase 2 Cost of building residential units	Construction	£336,056,891
North East Chelmsford Phase 2 Provision of garages and IDP and non-IDP site infrastructure externals	Construction	£132,847,388
North East Chelmsford Phase 2 To cover design, contractor and other fees. Estimated at 7% of build, externals and contingency costs.	Professional fees	£33,288,265
North East Chelmsford Phase 2 To cover marketing costs. Estimated at 3% of sales price.	Professional fees	£22,650,115

North East Chelmsford Phase 2 To cover reasonable expectation of profit for developers. Estimated at 17% of GDV.	Allowance for developer profit	£128,350,652
North East Chelmsford Phase 2 To cover S106, CIL, and land purchase	Abnormals	£58,888,046
North East Chelmsford Phase 3 Cost of building residential units	Construction	£268,845,513
North East Chelmsford Phase 3 Provision of garages and IDP and non-IDP site infrastructure externals	Construction	£106,277,911
North East Chelmsford Phase 3 To cover unidentified risks. Estimated at 5% of build costs	Contingency	£5,313,896
North East Chelmsford Phase 3 To cover design, contractor and other fees. Estimated at 7% of build, externals and contingency costs.	Professional fees	£26,630,612
North East Chelmsford Phase 3 To cover marketing costs. Estimated at 3% of sales price.	Professional fees	£18,120,092
North East Chelmsford Phase 3 To cover reasonable expectation of profit for developers. Estimated at 17% of GDV.	Allowance for developer profit	£102,680,522
North East Chelmsford Phase 3 To cover S106, CIL, and land purchase	Abnormals	£47,110,437
Great Leighs Cost of building residential units	Construction	£155,767,395
Great Leighs Provision of IDP site infrastructure externals	Construction	£10,300,000
Great Leighs To cover unidentified risks. Estimated at 2.5% of build costs	Contingency	£257,500
Great Leighs To cover design, contractor and other fees. Estimated at 10% of build, externals and contingency costs.	Professional fees	£16,632,489
Great Leighs To cover marketing costs. Estimated at 3.5% of sales price.	Professional fees	£12,854,806
Great Leighs To cover reasonable expectation of profit for developers. Estimated at 17% of GDV.	Allowance for developer profit	£62,437,630
Great Leighs To cover S106, CIL, and land purchase	Abnormals	£17,659,464
North of Broomfield Cost of building residential units	Construction	£61,025,412
North of Broomfield Provision of IDP site infrastructure externals	Construction	£5,677,623
North of Broomfield To cover unidentified risks. Estimated at 2.5% of build costs	Contingency	£141,941

North of Broomfield To cover design, contractor and other fees. Estimated at 10% of build, externals and contingency costs.	Professional fees	£6,684,498
North of Broomfield To cover marketing costs. Estimated at 3.5% of sales price.	Professional fees	£4,414,289
North of Broomfield To cover reasonable expectation of profit for developers. Estimated at 17% of GDV.	Allowance for developer profit	£21,440,832
North of Broomfield To cover S106, CIL, and land purchase	Abnormals	£10,581,981
Great Notley Cost of building residential units	Construction	£285,479,941
Great Notley Provision of on-plot externals	Construction	£18,727,273
Great Notley To cover unidentified risks. Estimated at 2.5% of build costs	Contingency	£468,182
Great Notley To cover design, contractor and other fees. Estimated at 10% of build, externals and contingency costs.	Professional fees	£30,467,540
Great Notley To cover marketing costs. Estimated at 3.5% of sales price.	Professional fees	£22,740,323
Great Notley To cover reasonable expectation of profit for developers. Estimated at 17% of GDV.	Allowance for developer profit	£110,452,999
Great Notley To cover S106, CIL, and land purchase	Abnormals	£45,377,645
North East Chelmsford Phase 2. To cover unidentified risks. Estimated at 5% of build costs	Contingency	£6,642,369
Finance costs: all sites	Finance costs	£11,883,011

Please provide a summary evidencing how you have assumed these costs

The costs outlined above were derived utilising a mixture of MHCLG benchmark data, site-specific development appraisals and viability analysis prepared by independent experts supporting the promotion of the Local Plan or individual sites. In particular, primary data sources included:

- Turner Morem 'Viability & Deliverability Analysis: North East Chelmsford – Strategic Growth Site 4' (2018). (Att. 4.1.7c)
- HDH Planning & Development Ltd 'Local Plan Viability Study: Including CIL Viability Review' (2018) (Att. 4.1.7d)
- Troy Planning + Design and Navigus Planning 'Chelmsford Infrastructure Delivery Plan Update' (2018) (Att. 1.1.3c)
- Chelmsford City Council 'Post IDP Viability Note' (2018) (Att. 4.1.7e)
- HDH Planning & Development Ltd 'Base – to use: Chelmsford & Elsewhere v2' (2018) (Att. 6.1.8a)
- MHCLG 'Land Values for Policy Appraisal' (2018)

Residential Build Costs

Build costs across all sites pivot from data presented in Tab 3 of Turner Morem's report for North East (NE) Chelmsford. Base (2018) per sq m costs were estimated at £1,171 for houses and £1,355 for flats. These were updated to £1,213 per sq m and £1,404 per sq m in 2019 prices based on 3.6% build costs inflation using the BCIS inflation rate for 2018 to 2019. These build costs are equivalent to £112.7 (houses) and £130.4 (flats) as a base per sq ft build cost.

These base costs were adjusted by a Chelmsford-specific locational factor of 1.04 and the base cost for flats was further adjusted using a net to gross factor of 15%. Subsequently, the updated base cost for houses and flats across all sites is revised to £117.2 and

£156.0 per sq ft of build cost respectively.

The base costs were adjusted for site-specific uplifts relating to on-site externals and contingency. A blended average across all unit types was then calculated based on the distribution of floorspace between houses and flats. These site-specific uplifts are detailed under each site sub-heading in Att. 6.1.8b.

Commercial Build Costs

Details on Commercial Build Costs can also be found in Att. 6.1.8b.

Financing Costs

Financing costs are valued at 6% as per MHCLG guidance and is applied to any deficit in the cumulative cashflow balance from the preceding year.

Inflation

Note that all costs presented do not include any inflation expectations. Should cost inflation be included within the analysis, the aggregate cost of development is estimated to increase from £4.40 billion (£3.85 billion residential costs plus £0.55 billion commercial costs) to:

- £8.85 billion assuming nominal inflation of 3.5% per annum for civil engineering costs and 3.9% per annum for housing construction inflation
- £6.38 billion assuming real inflation (i.e. following application of the GDP deflator [c. 2% per annum on average] to the nominal inflation rates outlined above).

Filename	Description
6.1.8a_HDH Planning and Development Ltd Base – to use Chelmsford & Elsewhere v2.pdf	6.1.8a
Chelmsford_6.1.8b_Detailed_Information on Build Costs.docx	6.1.8b

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

Filename	Description
Chelmsford_6.1.9a_Beaulieu_Station_Cost Plan.xlsx	6.1.9a Beaulieu Park Station Cost Plan
Chelmsford_6.1.9b_Chelmsford_NE_Bypass_Cost Plan.xlsx	6.1.9b NE Bypass Cost Plan
Chelmsford_6.1.9c_Housing_Cost Plan.xlsx	6.1.9c Housing 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)

The analysis undertaken to date and presented in our response on housing costs is predicated on land acquisition costs at the rate of agricultural land value. For the SELEP area this is estimated at £25,857 per hectare in 2019 prices (uprated from £22,500 in 2017 prices). This land cost therefore excludes any 'hope' or 'expectation' value from the perspective of land owners.

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 in a single transaction one year in advance of incurring build costs and two years in advance of accruing capitalised values (where possible). This means that the scale of land costs (per ha) could increase before the development surplus is eroded away towards net neutral viability position (i.e. neither surplus or deficit). This gives rise to the potential for landowners to apply some form of hope or expectation value to the land being sought for development.

The HDH Local Plan Viability Study acknowledges that every landowner has different requirements and will make decisions whether or not to sell using their own criteria. As a result, the Study finds that land purchase value could be up to £500,000 more than existing use value. Therefore, the same analysis presented in our previous response to housing costs has been carried out using the higher land purchase cost predicated on a £500,000 uplift over and above existing use value. The impact of utilising the higher land acquisition rate on scheme costs is outlined in the bullets below:

- Beaulieu Park – increase in land costs from £6.1 million to £123.2 million;
- Chelmsford Phase 1 – increase in land costs from £3.7 million to £75.1 million;
- Chelmsford Phase 2 – increase in land costs from £3.1 million to £62.6 million;
- Chelmsford Phase 3 – increase in land costs from £2.5 million to £50.1 million;
- North of Broomfield – increase in land costs from £0.6 million to £11.3 million;
- Great Leighs – increase in land costs from £1.4 million to £27.5 million;
- Great Notley – increase in land costs from £3.1 million to £62.6 million.

Threshold analysis demonstrates that the maximum land acquisition costs that the sites could afford whilst achieving a net neutral cashflow position is £445,000 with HIF funding. This falls to £167,000 without HIF funding.

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

Filename	Description
Chelmsford_6.1.11_2019 01 29_GDV Essex Consolidated to Essex.xlsx	LSH document on land cost

Funding and Financing Sources

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

Yes

Please provide details of the public funding applied for and / or received

Details of funding	Funding type	Status
£12.0m of funding has been awarded from the Local Growth Fund administered by the South East Local Enterprise Partnership (SELEP) for Beaulieu station. A final business case has been prepared, and SELEP confirmed this award following their Accountability Board on 15 February 2019 subject to a successful HIF award (Att. 2.2.1f). The Accountability Board agreed at the same February 2019 meeting to extend the spending profile beyond 31 March 2021 with no specific end date.	LEP Funding	Applied for - successful

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)	£217,861,101	£0	£217,861,101	£0	£3,036,079	£7,317,594	£9,616,721	£98,729,639	£99,161,068	£0
Local Authority Revenue primarily for monitoring and evaluation activity associated with LGF investment.	Local Authority	£50,000	£50,000	£0	£0	£0	£0	£0	£0	£0	£50,000
Local Growth Fund through SELEP.	LGF	£12,000,000	£12,000,000	£0	£0	£0	£2,731,000	£1,305,000	£400,000	£1,016,000	£6,548,000
Section 106 - Secured	S.106	£20,519,000	£20,519,000	£0	£1,629,000	£1,459,000	£0	£1,250,000	£0	£0	£16,181,000

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

As noted above, £12.0M of funding has been awarded from the Local Growth Fund administered by the South East Local Enterprise Partnership (SELEP) for the Beaulieu station element.

Essex County Council (ECC) and Chelmsford City Council (CCC) have an agreed Section 106 (S106) with Countryside Zest (CZ) and landowners to provide funding contributions towards the Station.

Section 106 is secured by way of a formal agreement, £2.1m has been received to date leaving the remaining £19.9m due subject to triggers

As part of the Section 106 (S106) agreement for Beaulieu Park, the developers Countryside Zest agreed to contribute £21.95m towards Beaulieu station. £1.43m of the original allocation has been spent on the GRIP 2 study providing £20.52m of available S106 funding for the remainder of the work from GRIP 3 onwards as illustrated in the previous funding and financing table. As noted in the Economic Case, ECC, will retain and release the private sector contribution where there is a mismatch between the available funding and the infrastructure cost profile in individual years.

ECC and CCC have previously worked with CZ to reconfigure the S106 to bring forward the Beaulieu station GRIP3 (single option)

design, as well as a new Academy school and local road infrastructure in NE Chelmsford. CZ is closely involved in the Station project through membership of the Project Board. This provides ECC with suitable confidence that this funding will be received timely and in full.

To ensure that the project expends its HIF funds first and by March 2024, subsequent spending of the S106 monies will be prioritised for the end of the project through a variation to the S106 agreement. Previous variations have been agreed to bring forward other infrastructure and fund the GRIP 3 study.

There is £50,000 of revenue funding from Essex County Council's TRAS budget, previously agreed for the monitoring and evaluation of the Local Growth Funded element of Beaulieu station.

HIF monies will be awarded should this business case be successful.

ECC and CCC intend to use further developer contributions above and beyond the £21.95m already secured to facilitate future dabling. The exact details for the securing of these S106 contributions from development sites is still under consideration. However it is likely that S106 monies will accrue at defined thresholds (i.e. prior to occupation of x, y and z number of housing units).

Whilst this additional S106 funding is not yet secured, developers will be committed to providing this funding by site specific policies in the forthcoming Chelmsford Local Plan. Strategic Site promoters have also entered into Statements of Common Ground for the Chelmsford Local Plan Examination (in November 2018) which agree to providing contributions for the Bypass. These are supported by the requirement for contributions to the Bypass within the Chelmsford Local Plan and Infrastructure Delivery Plan. As these sites are subject to master planning and brought forward for outline planning application, the details of the trigger points for the contributions will be agreed for inclusion in future S106 agreements.

Managing risk and overruns

Both projects have a robust risk premium (circa 31% and 36% respectively) calculated on top of the point estimate for their stage of delivery. Both ECC's Major Projects Contract Manual and Network Rail's GRIP process provide a robust approach to managing schemes through design and into delivery with appropriate governance stage gates to consider updated cost and risk estimates and strategies.

As noted in the Commercial Case the future contract associated with the delivery of Beaulieu station's design and construction will outline the required outputs, expectations around time and quality and specify ownership of risk based on who is best placed to manage the risk and specific parties' responsibilities should cost overruns materialise. At the completion of GRIP 4 it is anticipated that the detailed design and construction (GRIP 5-8) will be let as a single fixed price contract following a competitive tender drawn from Network Rail's supplier frameworks. The use of this contractual mechanism is the most advantageous to ECC as it will give the greatest cost certainty on award and will incentivise the contractor to exercise robust early warning in the event of potential change.

In addition to the risk premium calculated by Network Rail, ECC has applied an additional contingency sum of £3.903m that it will manage. This represents the difference between the initial outturn cost (from the revised construction profile) and the outturn cost used in the SELEP business case approved in February 2019 with a slightly extended construction profile. ECC will continue to review this as the project delivery team's understanding of cost, programme and risk matures.

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)	£3,853,416,388	£0	£3,853,416,388	£0	£107,095,543	£89,441,442	£94,290,565	£149,970,297	£177,204,360	£3,235,414,181
Private Sector (Debt)	Private Sector (Debt)	£11,883,011	£0	£11,883,011	£0	£0	£2,430,666	£2,308,442	£1,789,340	£4,015,076	£1,339,487

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

All housing schemes associated with this HIF bid are private sector developer led. The promoters of the housing sites include a combination of major national, regional and local house builders who routinely deliver housing financed through a mixture of their cash reserves, debt and then subsequent sales off plan and following completion. The sites are currently being promoted through the Local Plan. As a result, the specific funding for each site is yet to be agreed. However, they are being promoted by well-respected and well capitalised organisations.

Beaulieu

The current 3,600 housing allocation at Beaulieu is being delivered by a partnership between L&Q New Homes Ltd and Countryside Properties (joint ventures) Ltd, known as Countryside Zest (CZ). The partnership has delivered 541 homes to March 2019. In 2017 CZ made £60,088,520, of which is £9,019,164 was profit. (Source: Published accounts).

Countryside Properties PLC made £1.02bn in revenue turnover in 2017, a rise of 32% from 2016 following an increase in completions of 28%. (Annual report p14). The company made a profit of £164m. Countryside PLC has access to a £300m revolving credit facility from a syndicate of banks to 2022. As a public limited company, Countryside is funded in part through equity. For example, the largest two equity holders are Oaktree Capital management Private Equity (a 23 percent interest) and Woodland investment management ltd, who owns 11.8%. (Annual report p75). L&Q had a £1.02bn turnover in 2018 with an operating surplus for the year of £420m. The registered provider owns £26.4bn of assets, primarily social and affordable housing in 92,500 homes. (Annual Report p17).

As a result, CZ is a partnership underpinned by two very well capitalised organisations with the finances to bring forward development, including this and the neighbouring NE Chelmsford Garden Village site below.

North East (NE) Chelmsford Garden Village Consortium

The NE Chelmsford Garden Community is being promoted by a consortium of developers and land owners. CZ is the promoters for Threadneedle Pensions Ltd who own Boreham Airfield, Hanson Quarry Products Ltd who own Park Farm and Powers Farm. Ptarmigan Land, (as Chelmsford Land, Stage 2) are promoting adjacent land on behalf of Cliffords Ltd and Clifford's Trust.

As noted above CZ has a strong track record of delivering multi-million pound development over a period of years in North East Chelmsford, with the affordable housing delivered by L&Q.

Ptarmigan Land is a private company limited by shares with two directors. It has £4.8m of assets and £355.6k of liabilities (companycheck.co.uk.). Ptarmigan will use the approach to development it took forward at Channels (750 homes with consent and now in delivery) in NE Chelmsford, selling plots with outline permission to housebuilders to bring forward phases. The majority of financing of development will therefore rest with the firms who purchase the plots to build. Those developers will then contract with affordable housing providers who will finance the affordable housing elements of the site, drawing on their own borrowing and surpluses.

The Consortium have agreed to share the cost of infrastructure, set out in SoCG 21, the Statement of Common Ground with North East Chelmsford Site Promoters (Att. 5.3.3b) and has prepared a North East Chelmsford Infrastructure Delivery Plan (Att. 6.2.6) with reference to Chelmsford City Council's own IDP (Att. 1.1.3c) and Viability Report (Att. 4.1.7d). As a result, the Consortium has

agreed to share financial risk associated with delivering infrastructure.

Chelmsford City Council's policy is that 5% of new homes on strategic sites in excess of 100 homes should be self-build.

Broomfield

Bloor homes has a contractual interest in the land at Broomfield and has agreed a Statement of Common Ground (SoGC 19 – Att. 5.3.3c) with Chelmsford City Council on aspects of site delivery. Bloor homes is a private company (part of a group owned by John Bloor). The housebuilder completes well over 2,000 homes a year, including homes nearby at Boreham in Chelmsford. As a national house-builder at this scale it remains well capitalised and has funding to proceed.

Great Leighs

Great Leighs is being promoted by Great Leighs Estates and Moulsham Hall Estates Ltd, alongside three private landowners. The landowners are advised by Savills and Melville Dunbar Associates. The landowners have agreed with Chelmsford City Council (SoCG 16 b&c – Att. 5.3.3e & 5.3.3f) that they will produce a master plan, and then enter into agreements with developers to bring the sites forward against the plan. Each parcel of land can be delivered independently. The developers will be responsible for funding the sites.

Great Notley

Great Notley is owned by a consortium of land owners. However, by far the majority of the site is under option by Bloor and Bellway and Martin Grant Homes. As set out above, Bloor Homes is a national private house builder with financial capacity. Bellway is national PLC with £2.96bn revenue in 2018, selling 10,307 homes (2018 Annual Report). Martin Grant Homes is a second generation regional developer with sites in the South East of England. The site is at an early stage and so the financing strategy is yet to be agreed, including the approach to delivering the affordable housing.

Filename	Description
Chelmsford_6.2.6_North East Chelmsford Garden Village Consortium IDP.pdf	Infrastructure Delivery Plan

Gross Development Value

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

£4,985,758,030

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

Private sale	£3,411,831,365
Rent income	£0
Affordable sales income	£957,069,553
Commercial income	£616,857,112
Other	£0

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

The GDV estimates (Att. 6.1.11) outlined above were developed in conjunction with property consultants Lambert Smith Hampton and Chelmsford City Council's Housing Implementation and Strategy Team across four sites: NE Chelmsford (including Beaulieu and NE Chelmsford Phases 1-3), Great Leighs, North of Broomfield and Great Notley. The key assumptions utilised in the derivation of the GDV estimates are outlined below.

Development Quantum

The quantum of residential and commercial development anticipated across the four sites is outlined as follows:

- NE Chelmsford Phase 1: 3,000 units, including 35% affordable (of which, 63% affordable rent).
- NE Chelmsford Phase 2: 2,500 units, including 35% affordable (of which, 63% affordable rent).
- NE Chelmsford Phase 3: 2,000 units, including 35% affordable (of which, 63% affordable rent).
- Beaulieu Park: 3,069 residual units, including 27% affordable (of which, 55% affordable rent)
- North of Broomfield: 450 units, including 35% affordable (of which, 67% affordable rent).
- Great Leighs: 1,100 units, including 35% affordable (of which, 67% affordable rent).
- Great Notley: 2,000 units, including 30% affordable (of which, 67% affordable rent).

Further, commercial floorspace forms part of the development scheme at the following locations:

- Beaulieu Park: 40,000 sq m of gross internal area (GIA) of B1 Office and 22,300 sq m of GIA of B2/B8.
- Chelmsford Phase 1: 45,000 sq m of GIA of B1 Office.
- Great Notley: 58,950 sq m of GIA of B1 Office, 58,270 sq m of GIA of B2/B8, 49,950 sq m of retail and leisure.

Residential Capital Values

Residential capital values can be summarised on a site-by-site basis as follows:

NE Chelmsford Phase 1: private housing values informed by LSH, affordable housing values from Turner Morem 'Viability & Deliverability Analysis' (2018 – Att. 4.1.7c)

- o £3,855 per sq m for private housing.
- o £2,949 per sq m for shared ownership.
- o £2,583 per sq m for affordable rent.

NE Chelmsford Phase 2: private housing values informed by LSH, affordable housing values from Turner Morem 'Viability & Deliverability Analysis' (2018 – Att. 4.1.7c)

- o £3,855 per sq m for private housing.
- o £2,949 per sq m for shared ownership.
- o £2,583 per sq m for affordable rent.

NE Chelmsford Phase 3: private housing values informed by LSH, affordable housing values from Turner Morem 'Viability & Deliverability Analysis' (2018 – Att. 4.1.7c)

- o £3,855 per sq m for private housing.
- o £2,949 per sq m for shared ownership.
- o £2,583 per sq m for affordable rent.

Beaulieu Park: private housing values informed by LSH, affordable housing values from Turner Morem 'Viability & Deliverability Analysis' (2018 – Att. 4.1.7c)

- o £3,855 per sq m for private housing.
- o £2,949 per sq m for shared ownership.
- o £2,583 per sq m for affordable rent.

North of Broomfield: private housing values informed by LSH, affordable housing values from Turner Morem 'Viability & Deliverability Analysis' (2018 – Att. 4.1.7c)

- o £3,500 per sq m for private housing.
- o £2,949 per sq m for shared ownership.
- o £2,583 per sq m for affordable rent.

Great Leighs: private housing values informed by LSH, affordable housing values from Turner Morem 'Viability & Deliverability Analysis' (2018 – Att. 4.1.7c)

- o £4,400 per sq m for private housing.
- o £2,949 per sq m for shared ownership.
- o £2,583 per sq m for affordable rent.

Great Notley: private housing values informed by LSH, affordable housing values from Turner Morem 'Viability & Deliverability Analysis' (2018 – Att. 4.1.7c)

- o £4,107 per sq m for private housing.
- o £2,949 per sq m for shared ownership.
- o £2,583 per sq m for affordable rent.

Commercial Rental Values

Commercial rental values were provided by LSH and varied according to type of commercial development, as outlined below:

- B1 Office: £269 per sq m per annum
- B2/B8: £118 per sq m per annum
- Retail and Leisure: only provided at Great Notley. Included as annual revenue of £22.5m.

Inflation

As per the core cost analysis presented in our response on housing costs, the GDV data presented in 6.3.2 and 6.3.3 does not make any allowance for house price or commercial rent inflation. Should inflation be included within the analysis, the aggregate GDV of development is estimated to increase from £4.99 billion to:

- £15.38 billion assuming nominal inflation of 7.5% per annum for house prices and commercial rents as per UK House Price Index data for the last twenty years in Chelmsford.
- £10.64 billion assuming real inflation (i.e. following application of the GDP deflator [c. 2% per annum on average] to the nominal inflation rates outlined above).

No attachments

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
Chelmsford_6.4.1_Cashflow_Analysis_Chelmsford.zip	Chelmsford Cashflow - 3 files

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	£16,000,000
2025-2030	£191,000,000
2030-2035	£253,000,000
Future years	£113,000,000

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.

There is a sequence for a potential recovery/recycling process for the project that creates an overall threshold :

1. Site specific policies within the forthcoming Chelmsford Local Plan and forthcoming Braintree Local Plan Section 2 once adopted by the Local Planning Authorities (LPAs). Strategic Site promoters have also entered into Statements of Common Ground for the Chelmsford Local Plan Examination (in November 2018) which agree to providing contributions for the Bypass. These are supported by the requirement for contributions to the Bypass within the Chelmsford Local Plan and Infrastructure Delivery Plan
2. Master plans adopted by the relevant LPA
3. Outline planning approvals and viability assessments of each development to determine the appropriate amount of planning obligations and trigger points within Section 106 agreements
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.

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). While the exact details for the securing of Section 106 (S106) contributions from development sites is still under consideration, it is likely that S106 monies will accrue at defined thresholds (i.e. prior to occupation of x, y and z number of housing units).

How do you intend to use recycling to support future housing delivery in your area?

Based on the assumed profile of recovery, and the high-level estimate of the Bypass dualling, the necessary surplus to pay for the dualling would be achieved by the early 2030s, ahead of North East Chelmsford Phase 2.

It is our intention to recoup the forward funding for the single carriageway bypass from developers to facilitate future dualling of the Bypass and improvements to the A12 at Boreham. Dualling of the Bypass and subsequent improvements to the Boreham Interchange will help provide capacity on the transport network to deliver the second and third phases of NE Chelmsford (2,500 and 2,000 homes respectively) beyond 2036 as well as future housing growth in Chelmsford and Braintree districts along this corridor. Such growth would be subject to consultation and examination in future Local Plans.

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

Housing Costs

We have enclosed more detail to support our answer for "Please provide a summary evidencing how you have assumed these costs. Please include details of any consultancy advice, cost plans, feasibility studies or comparables used to provide these assumptions" as an attachment – Att. 6.1.8b.

Assumed Profile of Recovery

The assumed profile of recovery is affected by three key sensitivities:

- Inflation assumptions;
- Land acquisition costs;
- Inclusion/exclusion of certain sites from the aggregate analysis.

The core analysis presented throughout Section 6 assumes no inflation allowance, land acquisition costs at agricultural land values and aggregation of financial analysis across all sites. On this basis, the developments are expected to become cashflow positive at an aggregate by 2024 assuming HIF funding is forthcoming. In the absence of HIF funding, the developments could fund the scheme and become cashflow positive by 2032. Under this scenario, HIF funding is required to overcome cashflow rather than viability issues. With inflation allowances included in nominal or real terms, the cashflow becomes positive by 2023 with HIF funding and 2026 without. This is accelerated relative to the zero-inflation scenario because house price inflation is greater than house build cost or civil engineering cost inflation in nominal and real terms.

Our earlier response on Housing Costs recognises that the financial analysis for Beaulieu Park does not accurately capture the reality of the development's financial position. It is predicated on the application of financial parameters and benchmarks adopted from North East Chelmsford development site to the residual development scheduled to come forward at Beaulieu Park. It does not consider existing debt, financing arrangements or revenues derived from those parts of the development scheme already delivered. Within this context, the aggregate financial analysis including Beaulieu Park may underestimate the current scale of borrowing and financing arrangements, particularly given the likelihood of front-loading of major infrastructure components required to unlock the site. As a result, the cashflow and recovery analysis was also completed excluding Beaulieu Park from the analysis. This reveals that in the zero-inflation scenario, the aggregate cashflow excluding Beaulieu Park is positive by 2026 with HIF funding. Without HIF funding, the aggregate cashflow does not become positive at any point, demonstrating there are viability challenges at an aggregate level if the development sites (excluding Beaulieu Park) are required to deliver infrastructure alone. With nominal and real inflation, the aggregate cashflow becomes positive with (2024) and without (2028) HIF funding, implying cashflow rather than viability concerns for the aggregate development sites.

Our earlier response on land costs notes that land acquisition costs are assumed at agricultural values. The HDH Local Plan Viability Study suggests that a £500,000 uplift on this value is appropriate for capturing the likely expectation or hope value attached to the sale of land for residential-led development. Adopting this assumption, the aggregate cashflow in a zero-inflation scenario does not return a surplus at any point even including Beaulieu Park, with or without HIF funding. This demonstrates that the development sites cannot afford to pay circa £525,000 per hectare for land even with HIF funding in the absence of inflation. With nominal inflation and Beaulieu Park, positive cashflow is achieved by 2027 should HIF funding be forthcoming (2029 without). With real inflation and Beaulieu Park, positive cashflow is achieved by 2028 should HIF funding be forthcoming (2030 without).

In light of the above analysis, a profile of recovery is feasible across a number of scenarios providing HIF funding is secured, as demonstrated below:

With Beaulieu Park – Zero Inflation and agricultural land costs:

- o Up to 2025: £16m
- o 2026-2030: £191m

- o 2031-2035: £253m
- o Future years: £113m

With Beaulieu Park – Nominal Inflation and agricultural land costs:

- o Up to 2025: £191m
- o 2026-2030: £846m
- o 2031-2035: £1,377m
- o Future years: £4,105m

With Beaulieu Park – Real Inflation and agricultural land costs:

- o Up to 2025: £169m
- o 2026-2030: £697m
- o 2031-2035: £1,022m
- o Future years: £2,370m

Without Beaulieu Park – Zero Inflation and agricultural land costs:

- o Up to 2025: -£21m
- o 2026-2030: £117m
- o 2031-2035: £194m
- o Future years: £113m

Without Beaulieu Park – Nominal Inflation and agricultural land costs:

- o Up to 2025: £82m
- o 2026-2030: £582m
- o 2031-2035: £1,181m
- o Future years: £4,105m

Without Beaulieu Park – Real Inflation and agricultural land costs:

- o Up to 2025: £70m
- o 2026-2030: £478m
- o 2031-2035: £872m
- o Future years: £2,370m

With Beaulieu Park – Zero Inflation and uplifted land costs:

- o Up to 2025: -£373m
- o 2026-2030: £89m
- o 2031-2035: £125m
- o Future years: -£1,410m

With Beaulieu Park – Nominal Inflation and uplifted land costs:

- o Up to 2025: -£208m
- o 2026-2030: £828m
- o 2031-2035: £1,120m
- o Future years: £3,852m

With Beaulieu Park – Real Inflation and uplifted land costs:

- o Up to 2025: -£226m
- o 2026-2030: £674m
- o 2031-2035: £893m
- o Future years: £2,215m

Without Beaulieu Park – Zero Inflation and uplifted land costs:

- o Up to 2025: -£244m
- o 2026-2030: £49m
- o 2031-2035: £84m
- o Future years: -£861m

Without Beaulieu Park – Nominal Inflation and uplifted land costs:

- o Up to 2025: -£157m
- o 2026-2030: £566m
- o 2031-2035: £1,004m
- o Future years: £3,852m

Without Beaulieu Park – Real Inflation and uplifted land costs:

- o Up to 2025: -£164m
- o 2026-2030: £459m
- o 2031-2035: £743m
- o Future years: £2,215m.

No attachments

Management Case

Project Dependencies

Description	Critical	Outside of direct control
<p>Chelmsford Local Plan Status: Growth plans including spatial strategy, infrastructure and site allocations north east of Chelmsford were tested during the Local Plan Examination in November 2018. Allocated land is outside of the Green Belt. This was subject to substantial consultation with stakeholders in its development between 2015 and 2018. The Local Plan is supported by Memoranda of Understanding and Statements of Common Ground with site promoters, Essex County Council, Network Rail, Greater Anglia and Highways England. Issues: The Inspector has noted that the Plan is one that could be found sound subject to main modifications (Att. 1.1.3a). The modifications to the Plan do not impact on the quantum of housing development or the site allocations contained within the Plan. Chelmsford City Council will work with the Planning Inspectorate to make these main modifications. Close out during 2019.</p>	Yes	Yes
<p>Developer Highway Works Status: Developers are committed to providing enhanced road access to Beaulieu and North East (NE) Chelmsford through a signed Section 106 agreement. Developers may not occupy more than 1,000 homes out of the 3,600 planned at Beaulieu Park without its provision. This work involves the reconstruction of Generals Lane bridge feeding into the A12/A130 Boreham Interchange, works to the Boreham Interchange roundabout where this road joins, and the provision of a radial distributor road (RDR1) connecting the Boreham Interchange to the A130 Essex Regiment Way with intermediate junctions for the station and new development. RDR1 is also important as it will provide the southern connection between the Chelmsford NE Bypass and the A12. Local Plan Statement of Common Ground 17 (Att. 7.1.1a) details the progress made with works ready for construction from 2019 in a phased manner. Issues: None anticipated. Essex County Council and Chelmsford City Council also work closely with Countryside Zest in the planning and delivery of new homes and infrastructure. Should for whatever reason RDR1 not be provided then there would be no access to the station or the Bypass from the A12. Close out by: RDR1 is expected to be completed by 2021. HIF monies would allow acceleration of the NE Bypass to be completed by 2024.</p>	Yes	Yes
<p>Statutory Powers for Beaulieu Station Status: Land required for the project which is outside of the Network Rail (NR) boundary is either owned by Chelmsford City Council (CCC), Essex County Council (ECC) or Countryside Properties who are all stakeholders and support the project. To date a land agreement has been signed with Countryside Properties. Further agreements are required with CCC and ECC respectively. These agreements are currently being set up and it is not envisaged that any compulsory powers will be required. There is one small area of land for which the ownership has not been identified and the current design is such that this land is not required. Outline planning was received for the Station on 28 May 2013 (Att. 7.1.1b). Condition 2 of the planning permission requires that the first application for approval of reserved matters be made to the local planning authority no later than eight years from the date of the permission. As a portion of the land required to accommodate the footprint of the station is not currently in NR ownership a legal review at GRIP 2 has indicated that some form of Transport and Works Act Order (TWAo) will be required to protect NR's operational rights once the station is put into service. Further review of the need for a TWAo will take place during GRIP 3. If a TWAo is pursued, the detailed planning application will form part of this. Key issues: Scheme could get rejected; risk of delay in obtaining order; risk or pressure groups delaying scheme. Typically, NR do not seek to proceed a scheme beyond GRIP 4 until the TWAo is approved. TWAo approval by the Secretary of State can be delayed by factors outside of the project team's control such as elections and competing political priorities. Close out by: Land Transfer by the end of GRIP3 (Q1 2020). Full Planning application by end Q4 2020. TWAo Secretary of State Approval by end Q2 2021.</p>	Yes	Yes
<p>Rail Franchise Agreement Status: Based on the current programme assessment, Beaulieu Station would not be ready for service before the current rail franchise ends (October 2025). As such the current franchise does not include any potential specification of services at Beaulieu Station. Franchise agreements can be varied to</p>	Yes	Yes

include new stations and routes subject to the agreement of the Department for Transport, Network Rail (NR) and the train operator. Franchise specification can be influenced by Essex County Council but is outside of its direct control. NR is working on timetable options for the Great Eastern Main Line in the medium-term incorporating options for calls at Beaulieu Station. Key issues: Calls at the Station must be specified within an amended franchise and the new franchise from 2025. Typically, new services are added to the timetable at two points in the year – May and December to coincide with the main timetable refreshes. Close out by: Amendment to the current franchise agreement by 2023. Specification of station calls within the 2025+ franchise between 2023 and 2025.

Regulated Change Status: Network Change will be required. This process will be implemented during GRIP 4 once a Signalling Scheme Plan has been signed off and following consultation with the affected Train Operating Company (TOC) and Freight Operating Companies. Station Change will not be required, however as the TOC will be the Infrastructure Manager for the new station it will be their responsibility to apply to Office of Road and Rail/Department for Transport to operate the new station. Issues: Experience dictates that effective early and continued engagement with various stakeholders within the rail industry is essential to progress this as quickly as possible. Close out: By Q2 2021 by Network Rail process in GRIP 4.	Yes	No
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Access to the Track Environment to Construct the Station Status: Initial review with the Train Operating Company, Abellio Greater Anglia, has been undertaken by Network Rail as part of its GRIP 3 Option Selection. This has been to raise awareness of the scheme with the track access planners and to gain early indications of any major constraints. Actual booking of Access for construction will occur during GRIP 4 when the constructability assessment and programme for the selected option will have been completed. Issues: The nature of track access booking means that a level of uncertainty will remain with regards the delivery programme for the station construction. Continued engagement with the Abellio Greater Anglia Access Planning team by Network Rail as the selected option is developed through GRIP 3 ensures that access opportunities can be considered prior to final booking.	Yes	Yes
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Quarry Backfill Status: Local Plan Statement of Common Ground (SoCG) 15 was agreed with the North East (NE) Chelmsford Garden Village Consortium (Att. 7.1.1c). This sets out the steps being taken by Hanson (operator of Bulls Lodge Quarry) and landowners to ensure that the delivery of the NE Chelmsford Allocation does not interfere with permissions for economic mineral extraction. In line with the approved phasing plan, all economic mineral underneath the route of the Chelmsford NE Bypass has now been extracted. Hanson is committed to fully restoring the former quarry land prior to construction of the Bypass. Mineral workings on the Boreham Airfield permission (where the Bypass is located) will be suspended from 2020 to allow extraction of minerals on the Park Farm permission to enable this to be developed thereafter for housing. The consented mineral working does not interfere with the delivery of the Bypass or preclude the delivery of housing in NE Chelmsford. Issues: The quarry will be restored in time for Bypass construction. The uncertainty at this stage is the quality of the materials used for restoration and what this means for design and construction and a stable long-term road alignment. Close out by: Hanson to close out by end of 2019 to enable Ground Investigation to start in January 2020.	Yes	Yes
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Ground Investigation of the former quarry land Status: Mineral extraction underneath the safeguarded Bypass corridor has been completed. The land needs to be restored prior to ground investigation. This is envisaged to be complete by 2020 given the plan to suspend minerals activity on the Boreham Airfield area by this time. Ground Investigation work is needed to progress the illustrative design to a level with appropriate allowance for risk for Design & Build tender. Issues: Ground investigation cannot happen until the land has been restored and had time to settle. At this stage it is uncertain what the Ground Investigation will find. To mitigate this a risk-based approach to design has been taken so far, to cater for potentially poor ground conditions. This provides potential innovation opportunities during the Design & Build design. Close out by: Ground Investigation planned between January and May 2020.	Yes	Yes
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<p>Braintree Local Plan Status: Braintree's Draft Local Plan is in two sections. The first section is a joint plan with the neighbouring authorities of Colchester and Tendring. The Shared Section 1 of the Local Plan has been through the following stages: Issues and Options; Preferred Options; Publication Draft Local Plan; and Submission. Examination by the Planning Inspectorate (PINS) is currently paused, expected to re-open in Autumn 2019. The second section covers Braintree district only and includes site allocations such as land east of Great Notley. These plans were subject to substantial consultation with stakeholders in 2014 (call for sites), 2015 (issues and scoping), 2016 (draft Local Plan) and 2017 (publication draft Local Plan), prior to their submission to the Planning Inspectorate in October 2017. Issues: The Inspector found that the approach to assessing housing need was sound but that further work would need to be undertaken so that Garden Community proposals could be found sound. The three local authorities have resolved to continue with examination of Section 1 and are compiling further evidence for when the examination re-opens. Braintree is awaiting further notification from the Planning Inspectorate for its Section 2. Close Out: Further evidence will be submitted by the North Essex Authorities in 2019 to enable further examination in Autumn 2019. Adoption of the Joint Section 1 Local Plan is expected in Q2 2020/21.</p>	Yes	Yes
<p>Bypass planning consent Status: The proposed scheme does not impact on the Strategic Road Network directly. The proposed scheme falls wholly within the remit of Essex County Council (ECC) as Highway Authority, the works therefore 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 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 plan. Issues: None envisaged. The planning system is plan led and the Bypass' safeguarded corridor has been previously adopted through the existing North Chelmsford Area Action Plan (Att. 7.1.1d, p61). It has been since refreshed through the new Chelmsford Local Plan with consultation on its corridor (Att. 7.1.1e). Close out by: ECC submission by Q2 2021. Determination by Q4 2021.</p>	Yes	Yes
<p>Bypass land negotiations / CPO Status: Land needs to be acquired. The route can be split into three sections. The section of the route immediately north of RDR1 lies within the control of the NE Chelmsford Garden Village Consortium. The agreed Local Plan SoCG (17) (Att. 7.1.1a) makes it clear that the default scenario (without HIF) is for the developers to deliver the single carriageway section during the Local Plan period. The SoCG recognises the powers of Essex County Council (ECC) for Compulsory Purchase to deliver highway schemes. ECC fully expects that the land for the Bypass within the control of the NE Chelmsford Garden Village Consortium will be transferred for a nominal sum (£1) in a timely manner. Schedule 2 of the Beaulieu Section 106 (Att.1.1.2c) makes provision for the transfer of the section of the land within its allocation for £1. The land required for the remaining two sections (NE Chelmsford Garden Community to Chatham Green (A131), and from Chatham Green to Deres Bridge, Great Leighs may become available through negotiation. ECC will also run a compulsory purchase order process in parallel to the negotiations once planning permission has been granted in order to avoid unnecessary delays. Issues: The land is part of a safeguarded corridor, consulted on through the Local Plan process which provided an opportunity for representations to be made. Nevertheless, should a CPO be required, and then this be challenged then there is a potential for a Public Inquiry to add delay. To keep to an accelerated programme, ECC is also proposing to fast track the delivery of the southern section to allow more time for CPO on the remainder if required.</p>	Yes	No

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

An effective approach to governance and oversight have been developed to deliver growth to the north of Chelmsford. This involves:

- Scrutiny and oversight from Members and Senior Offices at Essex County Council (ECC), Chelmsford City Council (CCC) and Braintree District Council (BDC) as well as Government through MHCLG, Homes England and the Department for Transport (DfT).
- 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.
- A Delivery Board responsible for the North East (NE) Chelmsford Local Plan Growth Area (homes, jobs, placemaking, infrastructure, etc) which constitute the majority of the housing within this bid.
- Planning Performance Agreements (PPAs) will be used to govern delivery of the other major sites. The delivery of housing would be monitored through annual housing delivery reports.
- Separate project boards focussing on the technical detail of Beaulieu Station and Bypass. Common representatives will sit on the delivery and infrastructure specific boards to ensure holistic joined-up thinking.
- Stakeholder Groups including statutory bodies, neighbouring local authorities, politicians, community groups, businesses, developers and landowners amongst others.

The organisational chart attached to our bid illustrates this structure in more detail. Further information on how this works in practice and the roles of key individuals is now described.

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 officers from across ECC's Localities (Housing) and Highways & Transportation directorates and its supply chain.

North East Chelmsford Garden Community Delivery Board

CCC has developed a Terms of Reference for a NE Chelmsford Garden Community Delivery Board (Att. 7.2.1). The Board is an informal partnership with no separate legal status or powers in its own right. It will draw on the powers of its membership to co-ordinate and deliver an agreed master plan for the NE Chelmsford Garden Community and supporting infrastructure delivery. Its members include Member and Officer representation from CCC and ECC and representation from the NE Chelmsford Garden Village Consortium.

The Delivery Board's responsibilities include:

- Setting the strategic direction for the ongoing growth in North Chelmsford;
- Defining the scope and setting the timescales for major project milestones;
- Providing the NE Chelmsford Garden Community Delivery 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; and

- Monitoring delivery of homes in line with the trajectory in local plans and this business case.

It would meet three times a year.

CCC intends to appoint a Delivery Manager to deliver the North East Chelmsford Garden Community in 2019.

The Chair for the NE Chelmsford Garden Community Delivery Board will be CCC's Chief Executive. They 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 key representatives are expected to include CCC's Leader, CCC's Cabinet Member for Planning, CCC's Economic Development, Director of Sustainable Communities, ECC's Cabinet Member for Infrastructure, ECC's Cabinet Member for Planning and Economic Development, ECC's Director for Transport and Infrastructure and ECC's Director for Strategic Commissioning and Policy (Housing), and four representatives of the North East Chelmsford Garden Village Consortium.

Other Housing Sites

CCC and BDC have both developed master planning protocols for their Strategic Sites in their districts as a lever to manage development. When the developer looks to bring forward a strategic site, the Council produces a Master Plan Framework. This sets out what information and analysis should be included in the master plan. The developer and Council then enter into a Planning Performance Agreement (PPA). For Chelmsford this PPA will cover all the stages of the master planning, from the initial notification, through to its development in accordance with the Strategic Growth Site Policy, engagement with statutory bodies and public consultation to the final stage of the document being adopted by the Council as 'approved guidance'.

Once approved by Chelmsford's Executive Cabinet, the master plan forms the basis of the subsequent planning application.

For Braintree a master plan could be drawn up to support an outline planning application, but BDC would not expect it to be adopted as a Supplementary Planning Document.

CCC and BDC's planning teams will monitor the progress of these sites in accordance with their Local Plan Monitoring Frameworks.

Infrastructure Project Boards

An appropriate governance structure is also essential to the successful delivery of the ongoing design, planning and construction activities related to Beaulieu Station and the Bypass.

Ian Turner (Beaulieu and Chelmsford NE Bypass Project Manager) and his Project Delivery Teams (described in Project Management Arrangements) will continue to report regularly to Project Boards already established for Beaulieu station and the Bypass. 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 North East Chelmsford Garden Community Programme Board, ECC's Investment Board and / or the Political Leadership Group as required.

Both Beaulieu and Chelmsford NE Bypass Project Boards 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 and CCC 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.

The Project Boards will be chaired by the Senior Responsible Owner (SRO) – Chris Stevenson. As ECC's Head of Network Development, Chris has responsibility and delegated authority for ensuring effective delivery of the schemes to time, budget and quality. Chris will provide leadership to the Project Board to help 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 Prince2 principles, with additional roles to reflect the multiple contributors to the success of the project. In addition to Andrew, Chris, Ian and the NE Chelmsford Garden Community Delivery Manager (to be appointed), the following members are common to both project boards ensuring holistic decision making:

- Gary MacDonnell, 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.
- Stuart Graham, Economic Development and Integration Manager, CCC – is responsible for the delivery of economic growth outcomes in Chelmsford through the Local Plan and ongoing development, of which housing growth, Beaulieu Station and the Bypass are an integral element for current and future residents, businesses and visitors to the city.

For Beaulieu station, Project Board membership also includes:

- Network Rail Senior Supplier (Jared Aspinall, Senior Sponsor, Network Operations) will ensure that Network Rail's Infrastructure Projects team provide the required service to the Project Manager, and that rail operational and stakeholder requirements are taken into consideration during design, construction and operation.
- Greater Anglia (Senior User) as the train operator and likely car park operator, will ensure that the station design and train service specification meets the needs of their operations and delivers optimum fare revenue.
- Project Assurance (Phil Moat, Technical Director, Jacobs) – provides an independent view of how the NR scheme design and development is progressing on behalf of ECC. Tasks include checking that the project remains viable, in terms of costs and benefits (business assurance), the users' requirements are being met (user assurance), and that the project is delivering a suitable solution (technical assurance). During GRIP 5 this role is likely to transition to incorporate greater assurance from Jacobs' rail construction management team. Pete Hodkin previously provided this role to NR on major station fit outs including St. Pancras (Thameslink) and London Blackfriars during construction, commissioning and handback.
- Project Assurance (Karen Short, Principal Planning Officer, CCC) – provides assurance on planning and consents issues, in particular the requirements for the full planning application and the TWAO.
- Major Stakeholder – David Potter (Countryside Zest) provides oversight on part of a major supplier of growth in North Chelmsford and part funder of the project.

The Beaulieu Project Board will also continue to use technical input from a Stakeholder Reference Group to understand the wider implications of Beaulieu station, in particular its interface with Abellio Greater Anglia's existing franchise and NR's long-term planning (to 2043) to enhance the Great Eastern Main Line (GEML) and stakeholders' aspirations for the route. This includes a strong interface with the GEML Task Force – made up of political, local government and business leaders responsible for ensuring that:

- Abellio Greater Anglia delivers on the investments and commitments outlined in its franchise.
- NR delivers on the required planned investment in Control Periods 5 and 6.
- Support is given to the delivery of improved services and investment across the wider network.
- Evidence-based business cases for additional investment are continually provided.

The Stakeholder Reference Group membership will be reviewed regularly to ensure that relevant stakeholders are engaged at the appropriate time. Membership will include but will not be limited to Abellio Greater Anglia (and its successors), DfT, SELEP, New Anglia LEP, other local authorities, regulatory bodies and representatives of the business community.

The Chelmsford NE Bypass Project Board membership also includes:

- 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 Bypass 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 Bypass.

The Chelmsford NE Bypass Project Board will also continue to use technical input from a Stakeholder Reference Group to understand the wider implications of the project, in particular the interface with development, Hanson's quarry remediation, landowners and Highways England's plans to widen the A12 between Chelmsford and the A120 scheduled for 2020-2025. 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 has 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. ECC has already safeguarded the corridor for the Chelmsford NE Bypass through the current Chelmsford Local Plan, with this reviewed and refreshed for the new Draft Chelmsford Local Plan examined in November 2018. Where land is required for the Bypass from developers in NE Chelmsford, this has been identified and agreed within the Statements of Common Ground prepared for the Local Plan Examination.

For Beaulieu Station, the land required is entirely in the ownership of Network Rail, ECC, CCC or Countryside Zest – all of which are supporting the delivery of the station.

Engagement with developers and landowners will also be aided by ECC's participation on the NE Chelmsford Garden Community Delivery Board.

Please provide details of the authority's resourcing for the proposal

Essex County Council (ECC), Chelmsford City Council (CCC) and Braintree District Council (BDC) are all well-resourced to deliver the proposal.

Effective governance arrangements are in place to develop the infrastructure projects. In addition to the Programme Board, Project Boards and Project Manager described previously, well established multi-organisational teams are ready to deliver housing growth in North East (NE) Chelmsford, Beaulieu Station and Chelmsford NE Bypass. The make-up of each of these Project Delivery Teams is shown in the attached Organisational Chart, summarised below.

Housing

Each authority has the resources to be confident that the housing set out in this business case can be delivered. ECC is committed to facilitate growing communities and new homes, laid out in its Organisation Strategy 2017-21. ECC has invested in a new housing growth team as part of its Localities Directorate to drive this agenda. Steve Evison as Director for Strategic Commissioning and Policy (Housing) will provide appropriate oversight and guidance through both his roles on the HIF Programme Board and the NE Chelmsford Garden Community Delivery Board.

ECC's Head of Housing Growth – Lee Heley will as the HIF Programme Board's Senior User ensure that ECC housing policy and ambition is central to the delivery of the housing sites and the supporting HIF infrastructure. Lee is supported by a well-resourced Housing Growth Team with significant experience.

CCC, within its Sustainable Communities Directorate, has a well-resourced Planning and Strategic Housing Policy Team. CCC has qualified urban design planners and a well-resourced development management team to take forward the development of master planning and the subsequent management of planning applications. These disciplines work together and are a key reason for the success of NE Chelmsford to date. Should the NE Chelmsford Garden Community bid be successful, there will be additional revenue resources available to ECC and CCC to support the delivery of new homes, community facilities and infrastructure. The Housing Finance Institute gave the CCC Housing Business Ready status in 2017.

BDC has a corporate directorate responsible for strategic investment, economic development and planning policy, with again a well-resourced multi-disciplinary development and planning policy team to bring forward the Local Plan, development plans, new housing investment and strategic economic growth. Again, these work collaboratively across disciplines, with stakeholders and developers to bring forward high quality development in the district, including previous phases of the Great Notley Garden Village.

Infrastructure

The Programme Board will task each Project Board and their Project Delivery Team to deliver the Beaulieu Station and Bypass through to completion. They will release funding and provide support to manage risks effectively, realise shared efficiencies and ensure appropriate resources are used on each of Essex's HIF projects. Board members with their established relationships and knowledge will also be vital in supporting negotiations with key stakeholders and partners in the developments and maintaining key lines of communication between site promoters, stakeholders, Local Enterprise Partnership, MHCLG, Department for Transport, Homes England, Network Rail (NR) and Highways England.

ECC's Hannah Neve will ensure a joined-up approach to transport planning across the delivery of Local Plan Growth and both Chelmsford HIF schemes through her ongoing liaison role for the city of Chelmsford.

Key members of the Beaulieu Station Project Delivery Team will include:

- Supplier Project Manager (Glenn King, Project Manager, NR) will continue to manage the design and construction input of appointed consultants and contractors and relevant stakeholders. WSP is currently providing services to NR at GRIP 3. Further consultancy work for Consents, Design & Build will be managed through relevant procurement frameworks (see Commercial Case).
- Alastair Southgate (Head of Future Transport Strategy, ECC) will continue to integrate latest thinking in relation to Beaulieu Station into the Great Eastern Main Line Task Force's Business Case for investment in the Line, Greater Anglia longer-term timetable planning and franchise specifications.
- Support from Jacobs on transport planning, business case and communications.
- Support from Lambert Smith Hampton (LSH) for estate/land consultancy services.

Key members of the Chelmsford NE Bypass Project Delivery Team will include:

- Supplier Project Manager – Chris Cooper (Project Manager, Jacobs) will continue to manage the design of the bypass up until the Design & Build Stage. This role would then evolve into a project assurance lead, with Chris or another representative of Essex Highways providing that oversight of the design and construction on behalf of ECC.
- Development Management Lead – Hilary Gore (ECC) will work with CCC and developers to manage the impacts and interfaces of the new housing growth. Hilary will work with CCC to ensure appropriate planning obligations are developed to recoup HIF funding from development to enable this to be used for future Bypass dualling.
- Support from Jacobs on design, planning and consents, environment, transport planning and modelling, commercial management and communications.
- Support from LSH for estate/land consultancy services.

Additional discipline specialist expertise will attend the Project Delivery Team as and when required. Moving into project implementation, ECC's Project Manager will be responsible for the administration of the New Engineering Contract (NEC) contract management arrangements described in the Commercial Case. The NEC Project Manager will be supported by a Supervisor and site-based supervision team. The NEC 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
Chelmsford 7_2_3 HIF Governance Structure.pptx	Organisation Charts

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

Housing

The Station and the Bypass unlock four major housing sites between Chelmsford and Braintree. The Local Authorities have developed a strong partnership with each other, developers and land owners, where this is strongest on the largest site at North East (NE) Chelmsford. This will build on the approach already in place that is successfully delivering new homes at Beaulieu in NE Chelmsford. This is set out diagrammatically in our Organograms. We outline the project plan in detail below. In short, the key dependencies are:

- (i) Delivery of homes in NE Chelmsford requires the Station, after 2,500 completions on the site with permission.
- (ii) The main project delivery challenge is that Network Rail (NR) need to deliver the elements of the Station and associated track

improvement funded by HIF by March 2024, although further work to December 2025 can be covered by the other partner funders. Consequently, ECC is working very closely with NR on programming.

(iii) The Station relies on the Bypass because people will drive to the Station for commuting, which puts a further load on an already congested road network.

(iv) Completion of the Bypass alongside the Station frees the network back up to allow housing development in NE Chelmsford, Broomfield, Great Leighs and Great Notley.

(v) Delivery of the Phase 2 and 3 of NE Chelmsford for 4,500 homes in the next Local Plan period rely on dualling the bypass by the mid 2030s. The dualling of the Bypass relies on funding from developer contributions released through delivery of homes across these sites before 2036.

The Inspector noted in February 2019 (Att. 1.1.3a) that the Chelmsford Local Plan can be found sound subject to main modifications, which do not impact on the amount of development or site allocations. In readiness for this Chelmsford City Council (CCC), working with development partners, is well advanced in terms of preparing the master planning frameworks for each location (this approach has already been agreed by the Council's Development Policy Committee). The master plans are being developed in conjunction with the relevant developers with development management, planning policy, urban design and highways disciplines being drawn in from each of the Local Authorities. Once approved and adopted by CCC the master plans will form the basis for development of the pre-application process with developers which will ultimately lead to the submission and determination of the planning application. Once each site reaches the development stage, CCC has a robust mechanism in place, through a dedicated officer, to monitor housing delivery against the identified delivery trajectory for each location. This monitoring framework informs future Local Plan reviews.

For the 5,500 new homes being planned for immediately to the north of Beaulieu and Channels, the submission to Government for Garden Community Status represents a step change in the approach to delivery arrangements in this part of Chelmsford. For this location a NE Chelmsford Garden Community Delivery Board is being established to provide strategic guidance and oversight and act as resolution forum to ensure the timely delivery of the NE Chelmsford Garden Community and its supporting infrastructure. Membership will include CCC, Essex County Council (ECC) and representation from the development partners, via the NE Chelmsford Garden Village Consortium. Draft Terms of Reference have been produced and the Board (Att.7.2.1) will meet for the first time in spring 2019. Sitting alongside the Board will be a NE Chelmsford Community Liaison Group (Att. 7.3.1) which will have the main role of providing updates to local interest groups and provide the opportunity for the local community to engage with the existing and emerging communities as the Garden Community develops over the next 20+ years. Membership will comprise of CCC, ECC, the developer Consortium, Parish Councils and local neighbourhood and interest groups.

For the other strategic sites in Chelmsford and Braintree districts, the local planning authorities will use Planning Performance Agreements to work with the developers and multiple disciplines within the authorities and ECC to master plan the sites. These will form the basis for development of the pre-application process with developers which will ultimately lead to the submission and determination of the planning application. Once each site reaches the development stage, both CCC and Braintree District Council have robust mechanisms in place, through a dedicated officer, to monitor housing delivery against the identified delivery trajectory for each location. This monitoring framework informs future Local Plan reviews.

HIF Infrastructure

Network Rail is committed to the scheme as the Delivery Partner and will support ECC throughout the delivery of the station design and construction, ultimately taking the station into service. Network Rail's Governance of Rail Investment Projects (GRIP) Process will be used to govern delivery of the scheme. The GRIP process is product driven and each delivery stage will be subject to a stage gate review which will provide final assurance that the project can be moved on to the next stage. The project is currently at GRIP 3 (single option selection). Following stage gate approvals, the project will move on to GRIP 4 (consents) and GRIP 5-8 (Design and Build, Close Out and Handover). Substantive detail is provided in our project management plan to deliver the infrastructure below.

To deliver the Bypass, 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). The project is currently at the end of Stage 2 –

Scheme Identification with a clear preferred option for the single carriageway Chelmsford NE Bypass developed. 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). Substantive detail is provided in our Project Management Plan to deliver the infrastructure below.

Other Infrastructure

The Project Case has outlined the requirements and delivery mechanisms for other infrastructure not funded by HIF. In summary:

- Early years, primary and secondary school and sports provision will be delivered by Essex County Council using their existing and future contract mechanisms.
- Upgrades to water and wastewater infrastructure and treatment capacity will be delivered by Essex & Suffolk Water and Anglian Water Services respectively using their capital programme procurement arrangements.
- Upgrades to gas, electricity, broadband will be delivered by these service providers' contracting mechanisms.
- Other upgrades to ECC's road, cycle and walking network will be delivered by developers under Section 278 of the Highways Act 1980. These will then be adopted by ECC under Section 38 of the Highways Act 1980.
- Additional primary health care provision will be delivered by developers and leased to practitioners via the Clinical Commissioning Group.

The local planning authorities will work closely with ECC's Infrastructure Delivery Team, the NE Chelmsford Garden Community Board, developers and other infrastructure providers through the master planning and pre-application process identified in the Planning Performance Agreements of each site. ECC and the local planning authorities will also take a strategic overview of the requirements and phasing of infrastructure building on the extensive work undertaken for Chelmsford's and Braintree's Infrastructure Delivery Plans.

Please summarise your project delivery plan to deliver the infrastructure, this should include your anticipated land ownership / control strategy

Beaulieu station

Network Rail's (NR) Governance of Rail Investment Projects (GRIP) Process will be used to govern delivery of the scheme. The GRIP process is Product driven and each delivery stage will be subject to a Stage gate review which will provide final assurance that the project can be moved on to the next stage.

The design as it develops will be subject to robust scrutiny at each design stage. An appropriate level of Inter-disciplinary Check meetings will be administered by Network Rail with a final Inter-disciplinary Review being signed by the Designated Project Engineer.

The GRIP process has eight stages and will be managed concurrently. GRIP 1-4 are subject to a stage gate review prior to moving forward with the next stage. This provides a means to secure assurance that all required products for the stage have been delivered and signed off by the relevant parties and to define residual issues to be addressed in the next stages. At the completion of each GRIP stage a checklist of products/deliverables for the next stage will be agreed by the NR project team. This checklist will form the basis of the Stage gate review at completion of the stage. The products will generally be grouped into the following elements:

- Technical
- Environmental
- Value engineering & risk management
- Safety
- Constructability

- Cost & Schedule
- Maintenance plans.

The stages are defined as follows:

GRIP 1-2 Feasibility: Completed April 2017

This work by NR defined the scheme outputs and identification of feasible options to deliver these outputs.

GRIP 3 Single Option Selection: Commenced April 2018 and programmed to March 2020

This stage involves design and land tasks split out below. A copy of NR's current GRIP 3 Programme is attached as Att. 7.4.3b.

Design: Comparison of the feasible options identified at GRIP 2 and selection of a preferred option. Develop an outline design for the preferred option.

Deliverables: The outline design is presented as a suite of discipline specific Approval in Principle (AIP) documents, with the exception of the signalling design which will be completed to AIP during GRIP 4. NR are programmed to complete by March 2020. Currently the AIP suite of documents are programmed to be approved technically by November 2019.

The first review and decision point meeting will be conducted immediately following approval of the AIPs and will determine the most appropriate way forward for procurement and governance for GRIP 4 based on the constructability and programme risk assessment carried out as part of the AIP development.

Responsibilities: ECC has specified its requirements of Network Rail through a Development Services Agreement (DSA). WSP UK Ltd has been appointed by Network Rail to produce the GRIP 3 deliverables. NR is the Principal Designer under the CDM Regulations. Jacobs UK Ltd is providing rail assurance advice to Essex County Council (ECC).

Land agreements: Under the preferred option the new station buildings, comprising the booking hall, retail and passenger facilities, forecourt area and the new down main and loop line are to be sited on land currently owned by CCC.

Deliverables: Land transfer agreements are to be put in place by the completion of GRIP 3. The transfer has been agreed in principle by Chelmsford City Council (CCC) who are a party to the Memorandum of Understanding for the scheme. The remainder of the station infrastructure is wholly on land owned by NR and designated as operational land.

Responsibilities: NR and CCC.

GRIP 4 Consents: Q2 2020 to Q3 2021

This GRIP stage is predominantly concerned with obtaining the necessary consents to implement the preferred option. The Signalling AIP is also developed at this stage. The key consents to be delivered at this stage are Transport and Works Act Order (TWAO) and Network Change described as follows:

TWAO – Required to secure operational rights for NR on the land transferred from CCC. The application for the TWAO will be submitted at GRIP 4 and will incorporate the detailed planning application. Ideally the TWAO should be in place prior to the appointment of the GRIP 5-8 design and build contractor. The time to secure a TWAO is uncertain as the decision to approve is subject to the resolution of objections raised during the formal objection period. The history of TWAO decisions published by the DfT demonstrates that the period of time from Application to Secretary of State approval ranges from 5 months to circa 2 years. To maintain the HIF spend target of March 2024 the TWAO will need to be delivered within 6-7 months.

Network Change – This is a regulatory requirement for NR that must be in place prior to appointment of the GRIP 5-8 design and build contractor. The process is designed to ensure that all rail stakeholders who are impacted by the implementation of the new station are formally consulted and have the opportunity to register objections to the scheme. The Network change process typically involves

- Informal consultation – Usually commenced during GRIP 3 on the basis of the draft AIPs
- Formal period of consultation – Set period of 6 weeks where stakeholders have the opportunity to review the design and register concerns and objections
- Resolution of Objections.

The second review and decision point meeting will be conducted following conclusion of the statutory TWAO Objections period of 42 days. This meeting will determine the most appropriate way forward for procurement and governance for GRIP 5-8 and will be informed by risk assessment based on the outcome of the TWAO Objections period and the informal consultation in readiness for the Network Change application.

Responsibilities: It is preferred that NR will continue to deliver the scheme through GRIP 4. Jacobs would continue to provide rail assurance advice to ECC.

GRIP 5-8 Detailed Design, Construction, Close Out and Handback: Q3 2021 to Q4 2025

It is intended that these stages will be implemented by a Design and Build (D&B) contractor procured through a NR framework contract. GRIP 5 comprises the detailed design development with GRIP 6 covering the construction works.

GRIP 7 and 8 cover the close out activities for the construction works including handover of the Health & Safety File, sign-off by the regulator - Office of Rail and Road (ORR), and Train Operating Company (TOC) acceptance to commence the station operation. It is planned that the D&B contract will be awarded by Q3 2021 with the station ready to be put into service by the timetable change of December 2025.

Access to site: The main site compound will be formed on the land adjacent to the existing 'down' (Colchester bound) main line, where the new station buildings will be sited. Access to this compound will be off Generals Lane. A secondary access off the A138 slip road will be formed to enable access to the track when the existing line is being regraded.

Access to the Track Environment to carry out works will be limited to standard disruptive possessions. These are normally booked a minimum of 18 months from the access date.

Responsibilities: NR's negotiations with the TOC - Greater Anglia will commence during GRIP 3 to secure the track access needed to construct the works.

Construction: The principal construction phases for the implementation of the station design are anticipated to be as follows:

- Establish the main construction compound on the land off Generals Lane adjacent to the existing lines.
- Construct the station buildings and the new down main and loop tracks and associated infrastructure offline (normal working hours).
- Use disruptive possessions to install new points and crossings on the main line and connect to the new offline infrastructure.
- Divert trains via the new loop line and down main.
- Remove existing down main and regrade the existing up main in normal hours and complete the station layout.
- Target commissioning of the station with approval for opening from ORR in time for timetable change in December 2025.

Deliverables: Constructed and operational station and related rail assets. As built drawings. Health & Safety File. Regulatory sign off. Asset Management information.

Responsibilities: NR will hand over the responsibility of the Principal Designer to a Principal Contractor drawn from their frameworks.

Jacobs would continue to provide rail assurance to ECC.

Chelmsford NE Bypass

ECC would be responsible for the delivery of the Bypass and would undertake the following activities to design, achieve consent for and construct the scheme. This would be delivered in line with ECC's Major Projects Contract Manual, with its defined Design Stages.

Design Stage 3A – Preliminary Design

Develop Design to Pre-Planning Consultation: Q1 2019/20 – Q4 2019/20

- Development of the outline highways design to Design Freeze 1 (DF1) 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 under the governance of ECC.

On-site Ground Surveys: Q1 2019/20 – Q1 2020/21

- Specification, procurement and undertaking ground surveys to support the development of the design to DF1 and more notably, to DF 2. These are both dependent land access and the Ground Investigation relies on the completion of quarrying activities at Hansons' Quarry in Q4 2019.
- Deliverables: Topographical Survey and Ground Investigation Survey.
- Responsibility: Jacobs scoping/procuring contractor through ECC's existing contract with Ringway Jacobs.

Pre-Planning Consultation: Q1 2020/21

- Planning for and undertaking a pre-planning consultation. This is the start of an ongoing discussion with the planning authority through to the planning application.
- Deliverables: Consultation reporting.
- Responsibility: Consenting experts from Jacobs supporting ECC's project and legal teams.

Develop Design to Planning Application: Q1 2020/21 – Q4 2020/21

- Further development of the above design to a preliminary design at DF2, enabling the fix 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 & pre-planning application.
- Responsibility: Jacobs under the governance of ECC.

Planning Application: Q1 2021/22 – Q2 2021/22

- Prepare and submit for a planning application. This has been supported by a pre-planning application and ongoing discussion with the planning authority.
- Deliverables: Planning permission (including conditions).
- Responsibility: Consenting experts from Jacobs supporting ECC's project and legal teams.

Design Stage 3B – Legal Orders

Compulsory Purchase Order (CPO): Q2 2021/22 – Q1 2022

- 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 safeguarded status of the scheme in the Local Plan it is anticipated that most sites can be acquired through negotiations but the CPO will be progressed in parallel. ECC's land agent will commence negotiations with land owners from 2019 onwards to maximise the chances of this.

- Deliverables: All land required for construction of the scheme.
- Responsibility: Consenting experts from Jacobs supporting ECC's project and legal teams.

Design Stage 3C & 3D – Detailed Design, Tender Preparation and Tender Management

Illustrative Design / Procurement: Q1 2021/22 – Q1 2022/23

- Further develop the highway design to an illustrative design stage (3C) sufficient for procurement to a Design & Build contractor. Due to the ongoing discussions with the planning authority, the design work can resolve issues iteratively so the illustrative design can commence in advance of planning determination as the risk of onerous planning conditions is reduced. Enact the procurement strategy in line with the timescales in the Commercial case
- Deliverables: Illustrative highways design & an awarded main contract.
- Responsibility: Jacobs under the governance of ECC. Decision-making responsibility lies with ECC and the cabinet member with portfolio responsibilities for transport infrastructure.

Design Stage 3E

Environmental Mitigation: Q2 2022/23 – Q4 2022/23

- Enact the environmental mitigation plan developed through the scheme development phase and taking account of planning conditions. Engage a contractor to undertake the work on site – to be confirmed whether this would be the same as the main contractor for the scheme.
- Deliverables: Environmental mitigation measures on site.
- Responsibility: Jacobs scoping/procuring contractor through ECC's existing contract with Ringway Jacobs.

Final Design & Construction: Q2 2022/23 – end Q4 2023/24

- Contractor design to be completed in phases to stage 3D standard to facilitate a phased approach to the construction, enabling the sections with the land under ECC/Developer control.
- Deliverables: Completed design & constructed scheme (in phases). As built drawings. Health & Safety File. Asset Management information.
- Responsibility: Design & Build contractor under supervision of ECC and delegated NEC supervisors/Project Managers. The Principal Designer under CDM regulations 2015 will be responsible for the compilation of the H&S file (using the approved template) and shall ensure that it is completed, checked and compliant for the scheme undertaken before confirming its acceptability and handing over to the Client through the ECC Asset Management Team.

CDM and Construction Safety: Throughout the design and construction activities

- Jacobs will appoint a CDM Advisor to ensure that all duties under CDM 2015 regulations are being undertaken appropriately. Health and Safety will be integrated into the project development and procurement process through Safety in Design, hazard identification, buildability reviews, risk analysis and mitigation, in keeping with the philosophy of the CDM Regulations. Jacobs will ensure that designer's hazard risk assessments are produced, maintained and made available to the Contractor prior to the construction phase.
- Jacobs shall ensure that the Principal Designer appointed is competent and is given all necessary facilities to comment freely on the construction safety implications of the design as it develops. Jacobs will support the Client in discharging the Client duties under the CDM 2015 regulations.

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

Our project delivery plan attached (Att. 7.4.3a) sets out how the station and the bypass will be delivered alongside smaller social and transport infrastructure to unlock housing sites.

Ensuring delivery of housing.

Housing remains primarily market led. The scale of the development and investment required by the developer on these sites means that it is in their interest to deliver homes in line with market demand. Experience on the sites adjacent to the Garden Community are of rates of 60-80 homes completed per outlet per year (Att. 2.1.2), well above national comparators. The current controlling interests in land are committed to opening multiple sites. Sites are controlled by different land owners and so there will be multiple outlets - up to six or seven on the main Garden Village site for 3,500 homes.

A master plan-led approach to managing development

Chelmsford City Council (CCC) has developed a master planning protocol for Strategic Sites in the district as a lever to manage development, setting out the Council's strategic approach to development. Master plans deliver a framework in enough detail to define predictable outcomes but with sufficient flexibility to allow creative responses from developers/promoters, including a vision, site context, an infrastructure strategy, landscape, spaces and public realm, building height, design code and site specifics. Crucially the master plan sets out the phasing of delivery.

CCC expects a master plan for each site to be submitted for approval. This is to ensure the site is developed in the manner in which it is intended to help deliver the Spatial Strategy. Where there is a requirement for a site to be master planned, this is specified in the policy for the site allocation, which includes North East (NE) Chelmsford, Broomfield and Great Leighs. Master plans will be significant material considerations to the Local Plan to ensure Strategic Growth Sites deliver the Spatial Strategy. An approved master plan must be in place for the relevant site prior to the submission of any planning application.

(i) When the developer looks to bring forward a strategic site, CCC produces a master plan Framework. This sets out what information and analysis should be included in the master plan. The developer and Council then enter into a Planning Performance Agreement (PPA). Where a site includes multiple parcels of land the developer of each parcel signs up to the agreement. However, the obligations of the individual developer or promoter is subject to the availability of the individual sites - which allows sites to come forward independently as they become available, but master planning principles can still be established. This PPA will cover all the stages of the master planning, from the initial notification to the final stage of the document being adopted by CCC as approved guidance.

(ii) CCC requires the master plan area to reflect the development principles set out in the Strategic Growth Site Policy. The developer must engage with statutory bodies, service providers, local transport authority and local organisations such as Parish/Town Councils, neighbourhood plan groups. Supporting evidence may include transport modelling, Flood Risk Assessment, Habitats Regulations Assessment, Landscape Assessment, Sustainability Appraisal. A Design Review process is also likely to occur prior to the submission of a planning application.

(iii) The council requires the developer/promoter to consult, for example through exhibitions, directing attendees to submit comments via CCC's website. CCC consults local neighbourhood groups, Parish/Town Councils etc.

(iv) Once approved by the Executive Cabinet, the master plan forms the basis of the subsequent planning application.

Braintree District Council (BDC) also use PPAs to help bring forward their strategic sites efficiently. They will use a PPA with the developers who control Great Notley to help set the expectations of an outline planning application. A master plan could be drawn up to support that process but BDC would not expect it to be adopted as a Supplementary Planning Document.

Monitoring the Local Plan

CCC has a monitoring framework for its new Local Plan. CCC will monitor the number of master plans approved and planning permissions granted on its strategic sites. If NE Chelmsford is not delivering the number of net new homes in the Local Plan trajectory, it triggers action by the Council. Chelmsford will consider the reasons for any imbalance in delivery compared to the targets and whether there are any obstacles to delivery affecting sites and / or particular forms of development on sites in particular locations. After this review the council will consider whether the Policy requirement itself needs to be reviewed as part of a full or focused formal review of the Local Plan. While the Council is not in a position to compel a private developer to build more homes, it

could be necessary to increase land supply for housing more widely in Chelmsford to ensure the number of homes required is built.

BDC will monitor their Local Plan to ensure delivery of housing supply remains on track.

Garden Community Board

In addition to these policies, the NE Chelmsford Garden Community has a Board that brings together public and private interests in the site to support and challenge delivery. The Board functions as an informal partnership without separate legal status or powers in its own right. It draws on the powers of its membership to co-ordinate and deliver an agreed master plan for the NE Chelmsford Garden Community and supporting infrastructure delivery. The Board will monitor starts and completions of homes to ensure that there is transparency of delivery rates and provide the forum for public sector partners to press for delivery in line with the Local Plan trajectory.

Project delivery plan 2019 to 2051

We now set out in more detail the activities underpinning the Project delivery plan (Att. 7.4.3). Recently completed activities in 2018/19 include:

- Examination of the Chelmsford Local Plan in November / December 2018 with an initial response received from the Inspector in February (Att. 1.1.3a) noting that the Plan is one that can be found sound subject to main modifications, none of which relate to the location and quantum of development
- NE Chelmsford and Great Leighs: Planning performance agreement between CCC and developers have already been signed.

2019/20

Local Plans

- CCC make main modifications to Local Plan.
- Chelmsford Local Plan then found sound and adopted.
- Braintree Local Plan Section I examined found sound and adopted.

NE Chelmsford

- Existing Beaulieu permission: Secondary school and Health care completed.
- Set up the North East Chelmsford Consortium board in spring 2019.
- NE Consortium submits master plan pre-application enquiry to the Chelmsford for the Garden village sites at Beaulieu.

Broomfield

- Bloor develop master plan for the site.
- CCC agree PPA.
- Bloor submit outline planning application against master plan.

Great Leighs

- Moulsham Hall Estates submits master plan pre-application enquiry submits master plan for the sites.
- Moulsham Hall consults on and completes master plan. CCC approve it.

2020/21

Local Plans

- Braintree Local Plan Section II examined and adopted.

NE Chelmsford

- Boreham interchange works complete.
- Master planning the Garden Community sites at Beaulieu completes.

- Consortium submit outline planning application to CCC against the master plan.

Broomfield

- City Council agree outline application with conditions.
- Developer and CCC negotiate and agree a Section 106 agreement.

Great Leighs

- Moulsham Hall estates submit outline planning application against the master plan.
- CCC agree outline application with conditions.
- Developer and CCC negotiate and agree a Section 106 agreement.

2021/22

NE Chelmsford

- Radial Distributor Road (on the site with permission) completes.

Broomfield

- The site opens and the first 40 complete.

Great Leighs

- The site opens and the first 70 homes complete.

Great Notley

- BDC sign a planning performance agreement with developers.
- Consortium led by Bellway, Bloor and Martin Grant Homes develop a master plan for the site.

2022/23

NE Chelmsford

- The site opens and the first 100 homes complete on the new Garden Community site.

Great Notley

- Consortium submit an outline planning application.
- BDC agree the planning permission with conditions.
- Consortium and BDC conclude a Section 106 agreement.

2023/24

- New Chelmsford NE Bypass opens to traffic (March 2024).

Great Leighs

- The first site for a total of 250 homes completes.
- The next two sites open and start and complete homes.

Great Notley

- Site opens, and first homes completed on the site.

2024/25

- Local Plan: Chelmsford Local Plan five-year review (commencing three years after adoption – completing within five years).
- New Station construction complete. Testing and commissioning in early to mid 2025, to prepare the station for entry into service.
- Broomfield: Critical drainage area issues resolved on the site and health care facilities improvements made - potentially a new facility on site.

2025/26

- Local Plan: Braintree Local Plan five-year review (commencing three years after adoption – completing within five years).
- New Station opens to passengers for the Rail Industry's December Timetable change (December 2025).
- NE Chelmsford: Health care facility completed on site with existing planning permission.
- Great Notley: Water recycling facility upgrade complete during Anglian Water's Asset Management Plan 7 (AMP7) Capital Programme period (2020-2025).

2026/27

- NE Chelmsford: Second primary school completed on site with existing permission, and first primary school complete on new Garden Community site.
- Great Notley: New primary school complete and new primary healthcare facility open.

2027/28

- Broomfield: All homes on site complete; new access road to Broomfield Hospital complete.

2030-2032

- Braintree 2033-2053 Local Plan developed.

2032/33

- NE Chelmsford and Broomfield: New secondary school complete; expansion of existing primary school (also supports Broomfield).
- NE Chelmsford: Chelmsford Rapid Transit scheme complete, footbridge over Essex Regiment Way.
- Great Leighs: Expanded provision at Notley High secondary school.
- Great Leighs: 3m road junction complete.
- Great Notley: End of Local Plan period for Braintree. 1,750 homes complete on the site.

2033-2036

- Chelmsford Local Plan 2036 - 2056 under development - evidence base, call for site, publication and examination, to include final sites for 2,500 homes and 2,000 homes.
- Updated costing, planning and contract and risk management developed to dual the Bypass.
- Developer transport contributions used to dual the Bypass.
- NE Chelmsford: Original planning permission and Garden Community sites complete.
- NE Chelmsford: Master planning of the next site for 2,500 homes.
- Great Leighs: Site completes.
- Great Notley: Site completes.

2036-2051

- NE Chelmsford: Delivery of the remaining sites for 2,500 and 2,000 homes following the trajectory to be developed through the Local Plan process in 2033-36.

Please summarise your maintenance strategy for ongoing costs for the scheme

Throughout the design of the Bypass 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 County Council's (ECC) asset management team will be engaged to ensure that the maintenance of the road will fit adequately into their long-term strategy for the wider strategic road network.

Design will be undertaken so that a 25-year design life is specified for the carriageway and 120-year for structures as a minimum.

Drainage systems will also be designed for climate change factors on top of base design specifications.

Appropriate oversight of this process will be assisted by Peter Massie's presence as Head of Essex Highways Commissioning on the Project Board.

Following scheme opening, the scheme will be added to Asset Management Database and becomes part of the Essex Asset Management Plan, in line with Essex's Highways Asset Management Policy and Strategy. These documents reference that 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 also to provide best value and whole life cost. In support of our asset led approach, ECC was successful in gaining the ISO55001 Asset Management Systems standard in March 2017 which has been sustained to date.

Routine maintenance such as grass cutting, gully emptying, pavement surface treatment etc, will be carried out through ECC's existing term maintenance contract, currently held by Ringway Jacobs.

An Asset Maintenance Plan (AMP) for Beaulieu Station and associated infrastructure will be developed in line with Network Rail's Maintenance Strategy for the Anglia route. Network Rail will ensure that the suite of documents that comprise this plan are completed and accepted internally for issue at GRIP 8. The Train Operating Company will then take responsibility for the day to day operation of the assets in line with their franchise obligations. They may sub-contract operation and maintenance activities to other organisations for day to day operation and maintenance (such as the station car park should this be owned and operated by Network Rail) in line with franchise wide agreements for these services.

Project milestones

Please provide actual or estimated dates for the following infrastructure delivery milestones:

First infrastructure planning permission granted	28/05/2013
Last infrastructure planning permission granted	30/09/2021
All land assembly completed (if required)	30/06/2022
Project infrastructure works started	01/07/2022
Project infrastructure works completed	13/12/2025

Please provide actual or estimated dates for the following housing delivery milestones:

First residential units commenced	01/04/2019
Last residential units commenced	31/10/2050
First residential completion	01/09/2019
First residential completion	31/03/2051

Please attach an outline delivery programme for your proposal and the key milestones required to achieve it

Filename	Description
Chelmsford_7.4.3 (a to d)_Overall and project specific programmes.pdf	Housing, Beaulieu GRIP 3, Beaulieu delivery and Bypass delivery programmes

Please list planning references for the infrastructure works

Countryside Zest (Beaulieu Park) LLP, submitted an outline planning application in January 2010 for the development of the railway station and associated highways infrastructure (Ref: 10/00021/EIA) along the Southern site boundary with the existing rail line. This was granted planning permission on 28 May 2013 (see Att. 7.1.1b) and it was subsequently agreed that Network Rail would deliver this scheme which comprises the following:

“a new railway station and other related development, including ticket hall, ancillary offices, public conveniences, kiosks/small

shops/cafes; track works, platforms, 'permanent way' and a viaduct; highways, including the demolition of Generals Lane bridge and the construction of a new road bridge over the railway; public transport interchange; surface level and multi-storey car parks, all within a landscaped setting; together with associated development and engineering works to form operational railway land."

Condition 2 of the planning permission requires that the first application for approval of reserved matters be made to the local planning authority no later than eight years from the date of the permission.

A planning application has not been submitted for the Chelmsford NE Bypass. In 2007, Essex County Council (ECC) and its partners laid out a long-term plan for the Bypass and safeguarded the land through the Local Plan process. Safeguarding is part of the planning process and helps protect land set aside for infrastructure projects such as this one from being used for other purposes. The Bypass is identified on the North Chelmsford Area Action Plan (NCAAP) Proposals Map as a 'Safeguarded Corridor for Proposed Strategic Non-Trunk Roads' (Core Strategy policy CP4 Securing Infrastructure) for the construction of the bypass including the road and associated landscaping. The NCAAP, paragraph 3.37 states that:

"A safeguarded 'corridor' is allocated for the future Chelmsford NE Bypass aligned to minimise noise, protect heritage setting and optimise areas for development." (Att. 7.1.1d, p61).

Updates to the safeguarded corridor were presented in the Draft Local Plan consultation held in early 2018 (Att. 7.1.1e). The updates ensure there is sufficient space for the scheme and that no land is safeguarded unnecessarily.

There will be further engagement and consultation on the Bypass as part of the statutory planning process before the scheme is finalised. The scheme will be presented in detail as part of any formal planning application, providing the opportunity for further comments to be made and assessed.

Further detail on our approach to secure planning consent for the Bypass has been previously provided in our project delivery plan to deliver the infrastructure.

Please list all statutory powers or consents required and already obtained to deliver the HIF works

Planning Consent

Outline planning (all matters reserved) was granted for Beaulieu Station on 29 May 2013 including a new railway station, car parking, public transport interchange, access roads and landscaping. A Full Planning Application would need to be determined by the end of GRIP4 to enable the project to move into Design and Build phase. Condition 2 of the planning permission requires that the first application for approval of reserved matters be made to the local planning authority no later than eight years from the date of the permission.

The Bypass scheme does not impact on the Strategic Road Network directly; there are no proposed works to Boreham Interchange on the A12. The scheme is designed to facilitate the early delivery of housing allocations within the existing and proposed Local Plans by bringing forward the main distributor road and link to the A131 earlier than planned and removing the restriction to the phased delivery of this housing allocation.

As the proposed scheme falls wholly within the remit of Essex County Council (ECC) as Highway Authority, the works fall within the remit of the Town and Country Planning Act 1990. Regulation 3 of the Town and Country 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 (CPO)

The land required for the construction of the new road may become available through negotiation, however, ECC would run a compulsory purchase order process in parallel to the negotiations once planning permission has been granted in order to avoid unnecessary delays. Following Planning Consent, draft orders would be published for CPO. Given that the road corridor has been consulted on twice in preparation of the current and new Chelmsford Local Plans it is considered unlikely that this would be opposed.

Currently the land required for the Station which is outside of the Network Rail (NR) boundary is either owned by Chelmsford City

Council (CCC), ECC or Countryside properties who are all stakeholders and support the project. To date a land agreement has been signed with Countryside Properties. Further agreements are required with CCC and ECC respectively. These agreements are currently being set up and it is not envisaged that any compulsory powers will be required. There is one small area of land for which the ownership has not been identified and the current design is such that this land is not required.

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 Bypass crosses these, Orders under Section 119 of the Highways Act 1980 will be required where it is necessary to divert them.

Transport & Works Act, 1992 Order (TWAO)

As a portion of the land required to accommodate the footprint of the Station is not currently in NR ownership a legal review at GRIP 2 has indicated that some form of TWAO will be required to protect NR's operational rights once the station is put into service. Further review of the need for a TWAO will take place during GRIP 4. If a TWAO is pursued, the detailed planning application will form part of this. The TWAO will then define the limits of the works which the GRIP5-8 detail design and construction will then have to respect. It is envisaged that an application and approval for a TWAO if required would be made during GRIP 4, following AIP of signalling outline design, given the need for a robust single option across multiple disciplines to have been selected.

Network Change Notice

This change process is administered by NR and is commenced at the beginning of GRIP 4. The process enables all rail stakeholders, internal asset management divisions, the Train Operating Company (TOC) and the Freight Operating Companies to be consulted as to the scheme design and to raise objections accordingly. NR will ensure that this change process has been fully closed out prior to opening of the station, and that any objections raised have been addressed and resolution achieved.

Station Change will not be required, however as the TOC will be the Infrastructure Manager for the new Station it will be their responsibility to apply to Office of Road and Rail/Department for Transport to operate the new Station.

Stakeholder management

Please summarise how the key delivery partners will work together effectively

The key delivery partners for the project working with Essex County Council (ECC) and the planning authorities of Chelmsford City Council (CCC) and Braintree District Council (BDC) include:

- Landowners, developers and registered providers who will deliver new homes, mixed-use commercial space and supporting infrastructure
- Network Rail (NR) and Countryside Zest to deliver Beaulieu station
- ECC's Essex Highways delivery arm to complete the Chelmsford North East (NE) Bypass.

Joined up working to deliver the Garden Community

CCC has submitted an expression of interest (EOI) to Homes England for Garden Community status for North East Chelmsford. Regardless of the success of the EOI, CCC proposes to develop a NE Chelmsford Garden Community Delivery Board and supporting Community Liaison Group to help realise the ambition of the Garden Community. As an initial step CCC has developed a MoU with the NE Chelmsford Garden Village Consortium to set out respective expectations associated with HIF funding and the delivery of a fully planning policy compliant and comprehensive development which is underpinned by the Garden Community Principles (Att. 2.2.1a)

The Delivery Board will provide strategic guidance and oversight and act as a resolution forum to ensure the timely delivery of the NE Chelmsford Garden Community and its supporting infrastructure. The Board will function as an informal partnership with no separate legal status or powers in its own right. It will draw on the powers of its membership to co-ordinate and deliver an agreed master plan

for the Garden Community and supporting infrastructure delivery. The Board will be consulted on the submission of any additional delivery or other bids including those to the Local Enterprise Partnership or Homes England e.g. Garden Communities Prospectus. The relationship between housing delivery, cash flow and infrastructure provision will be a key focus of the Board.

Statements of Common Ground

In developing the new Chelmsford Local Plan, CCC has consulted widely on the plans for new homes, employment and infrastructure. For the examination of the Local Plan in November 2018 Statements of Common Ground (SoCG) were agreed in relation to the delivery of homes and infrastructure for the principal sites, providing more detail on how delivery partners will work together. These include:

- SoCG 21 (Strategic Matters – Att. 5.3.3b) shows the level of agreement already made in relation to facilitating and contributing to the construction of the Bypass.
- SoCG 15 (Att.7.1.1c) describes how Hanson Quarry Products, one land owner of the NE Chelmsford site, has agreed to operate its minerals works in phase with the development of the homes and the Bypass.
- SoCG 17 (Att.7.1.1a) describes how the Councils have worked together to plan NE Chelmsford's two radial distributor roads and access arrangements by foot, cycle, bus and to/from A12.
- SoCG have also been agreed with the promoters of the North of Broomfield (Att. 5.3.3c, p3) and Great Leighs sites (Att.5.3.3e/f pp 4-5) including contributions to the cost of the Bypass.

Master plans

In advance of the submission of the relevant planning applications and adoption of the Local Plan, CCC has already begun the process of developing master plans for each site in partnership with the lead developer. These are the subject of Planning Performance Agreements (PPAs) and is a process agreed by the Council's Development Policy Committee. Further detail is set out in our project management plan.

For Braintree a master plan could be drawn up to support an outline planning application, but BDC would not expect it to be adopted as a Supplementary Planning Document.

Planning permission

New homes will be delivered through a partnership between developers and the planning authorities given force through the Local Plan and development management process.

Countryside Zest (CZ) is a joint venture between the private developer Countryside properties and London and Quadrant, the registered provider of affordable housing. Ptarmigan Land is a site promoter. The planning authorities have a long history of strong working partnership with both Ptarmigan and CZ. The 3,600 home Beaulieu development, business park and railway station were given outline planning consent in accordance with the existing Development Plan.

ECC and CCC have an agreed Section 106 (S106) with CZ and landowners to provide funding contributions towards the Station. ECC and CCC have previously worked with CZ to reconfigure the S106 to bring forward the Beaulieu station GRIP3 (single option) design, as well as a new Academy school and local road infrastructure in NE Chelmsford. CZ is closely involved in the Station project through membership of the Project Board.

S106 agreements

The delivery of the infrastructure required to support the new developments in NE Chelmsford, Broomfield and Great Leighs will then be secured through S106 agreements. The Chelmsford Infrastructure Delivery Plan sets the infrastructure requirements for each site (Att. 1.1.3c pp119-121) with payments secured through S106 agreements. The S106 agreements will be negotiated at the point of a planning application coming forward for development and will follow the normal process of heads of terms followed by full agreement between the parties. Appropriate trigger points within each S106 agreement will be agreed to ensure the capture of

developer contributions at the appropriate phase of the development. CCC and ECC have an excellent track record of managing complex S106 agreements that deliver strategic infrastructure – the agreements for the 4,350 homes at Channels and Beaulieu are two live examples.

Day-to-day management

The City and District Councils and developers will work together closely. Regular promotor/developer and Council officer meetings will oversee the development of the master plan, subsequent pre-application, application process and monitoring process.

Station

A Memorandum of Understanding (MoU) and SoCG 24 for Beaulieu station has been agreed between ECC, CCC, Countryside Zest and NR. Partners will review the content within this MoU as the project progresses. Depending on the outcome of the First Review and Decision point meeting at GRIP 3, ECC will retain Development Services Agreements to specify its high level requirements of NR for each stage. NR's Infrastructure Projects team will continue to report progress through the Project Board providing oversight from NR Operations, ECC (including through Jacobs' rail advisory team), CCC and Countryside Zest as key stakeholders. The Project Board will continue to integrate the role that the Station plays in NR's future ambitions for the Great Eastern Main Line through NR's work for a Task Force made up of MPs, Members, Officers, SELEP and the New Anglia LEP amongst others. As the station definition matures ECC will engage more closely with the Department for Transport's rail franchising team to ensure appropriate specification of services in the current and future train franchises.

Chelmsford NE Bypass

ECC is already liaising with Countryside on the position of the junction of the Bypass and Radial Distributor Road 2 to ensure that this facilitates ease of future development and associated infrastructure, including future proofing access to Phase 2 of NE Chelmsford. This will avoid the Bypass being a barrier to future growth. This liaison will continue through landowner and the Consortium discussions. This will be ratified through the MoU with the NE Chelmsford Consortium.

ECC has a regular joint Partnership Board with Highways England that reviews the progress of Highways England's A12 and A120 schemes and ECC-led infrastructure, and the impacts of each on respective networks. A representative of the Chelmsford NE Bypass Project Board will attend this Partnership Board to ensure flow of information between the projects and co-ordination of the construction programmes.

Please summarise how you will work with the other key stakeholders to ensure project success (i.e. local residents / businesses)

ECC and CCC will work with key stakeholders through the following methods:

- Formal engagement through the North East (NE) Chelmsford Garden Community Liaison Group and infrastructure specific stakeholder reference groups;
- Proactive engagement with landowners;
- Statutory and Public consultation exercises pre planning while the proposals are at a formative stage and if necessary following the submission of the planning application;
- Public engagement at project milestones if required; and
- Website and press release updates.

The way ECC and CCC will 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. The groups and the proposed means of engagement is listed below:

Community Liaison Group – Sitting alongside the Garden Community Delivery Board will be a North East Chelmsford Community Liaison Group (Att. 7.3.1). This will have the main role of providing updates to local interest groups and provide the opportunity for the local community to engage with the existing and emerging communities as the Garden Community develops over the next 20+ years.

Those buying homes on the existing Beaulieu and Channels developments are important stakeholders with an interest in the Bypass and Station. Membership will comprise political and officer representatives from CCC and ECC; the developer consortium; Parish Council; local neighbourhood and interest groups.

Key outputs: update on progress and design; encourage participation in future consultation; seek alignment with local goals and aspirations.

Stakeholder Reference Groups – The Project Board and Project Delivery Teams will periodically work with individual organisations through one-to-one meetings, briefings, and engagement fora depending on the aim of the engagement. The Great Eastern Main Line Task fForce is of particular relevance to Beaulieu station through its development of the strategic case for wider investment in the Great Eastern Main Line. This group consists of MPs, political leaders and senior officers within local authorities, local enterprise partnerships, business and the rail industry.

Key outputs: update on station progress and design; seek alignment with emerging priorities on the Great Eastern Main Line.

Landowners – ECC has identified landowners and land interests associated with the bypass safeguarded corridor. NR has also completed this for Beaulieu station. One-to-one meetings will be used to engage with affected landowners about potential impacts and how these could be mitigated. These meetings would also cover land acquisition.

Key outputs: update on scheme progress; obtain full understanding of current land use and operations feeding into design development and construction planning; update on Hanson's quarry remediation exercises; ensure sufficient land for the road and station's construction and operation; facilitate the smooth acquisition of land through negotiation where possible, failing that through compulsory purchase orders.

Transport users and providers – ECC, CCC, NR and Countryside Zest have already been incorporating the views of transport providers into the design of Beaulieu station through specific workshops. Further engagement with First Bus (the principal bus provider in Chelmsford and operator of bus services to Beaulieu), taxi firms, cycle hire, access groups and so on will take place through a combination of workshops and one-to-one engagement sessions.

Key outputs: Updated design deliverables, development of service patterns, procurement of services / fleet.

Business – The delivery of enabling infrastructure is identified as a key priority of business and the Business Board has supported this bid to the Housing Infrastructure Fund. The Chelmsford Economic Development Strategy 2017 has been jointly prepared by CCC and the Chelmsford Business Board, a representative group of key businesses in Chelmsford. At the county and regional level, CCC and ECC work alongside the Essex Business Board and the South East Local Enterprise Partnership, both of whom have identified infrastructure and housing delivery as key priorities. Through the delivery of further growth in NE Chelmsford, both authorities will continue to liaise with business given the importance of two new business parks served by a new rail station, alongside quality new housing.

Businesses will benefit from the infrastructure and housing but they may experience some disruption during construction. ECC and CCC will mainly keep in contact with businesses via the Community Liaison Group to facilitate constructive dialogues with business representatives throughout the project lifecycle.

Key outputs: update on scheme progress; encourage investment in jobs, skills, premises in the local area.

Rail stakeholders – Key stakeholders include NR departments including Operations, Network Group Strategy, Asset Management, Infrastructure Maintenance; Abellio Greater Anglia, Freight Operating Companies; the Office of Road and Rail; The Health and Safety Executive. In addition to proactive engagement during the design development, NR has a regulatory requirement to implement the Network Change Process. This must be in place prior to appointment of the GRIP 5-8 design and build contractor. The process is designed to ensure that all rail stakeholders who are impacted by the implementation of the new station are formally consulted and have the opportunity to register their views of the scheme if required.

Key outputs: The Network Change Process typically involves

- Informal consultation – Usually commenced during GRIP 3 on the basis of the draft Approval in Principle design deliverables.
- Formal period of consultation – Set period of six weeks where the stakeholders have the opportunity to review the design and provide input.
- Achieve consensus.

Statutory consultees – ECC and CCC will work with statutory consultees through the presentation of information, environmental constraints, challenges and potential mitigation as part of the scheme's design development, environmental appraisal, and further public consultation pre-planning.

Key outputs: Update on scheme progress and design; gain full understanding of environmental constraints and different concerns and issues from stakeholders.

Public consultation – ECC and CCC will hold pre planning public awareness events to inform people of progress on the Station and Bypass. Separate public consultation events will also be held for both the station's full planning application and the bypass's full planning application. Typical activities would include: a public awareness / communication campaign; launch event(s); public exhibitions; one-to-one meetings as required; webpage and questionnaire.

Key outputs: update on scheme progress and design; enable full understanding of the scheme's impact through transparent communications; gain support within the community and with interested parties by improving the schemes based on feedback prior to submitting the planning applications.

Other communication channels

In addition to these formal communication channels, ECC's and CCC's websites are a key resource for communicating information associated with the infrastructure schemes and would provide access to key documents including the business case, scheme designs, summary material and supporting technical reports. The websites will host the relevant drawings and other information for anyone to view and it is intended to continue to publicise these websites via the media and seek comment from customers. This provides stakeholders with the opportunity to comment on the schemes design and for them to be amended, as appropriate.

ECC and CCC will also continue to engage the travelling public through publicity at Chelmsford station, building on the provision of summary leaflets to commuters provided in summer 2018.

Project assurance

What are your project assurance processes, such as gateways reviews, to ensure project delivery against the business case?

The business case includes delivery of four major housing developments across multiple sites, unlocked by the completion of Beaulieu Station and Chelmsford North East Bypass. We have strong project assurance to ensure delivery.

Housing

The main project assurance process for the market-led housing delivery is through the planning process. North East (NE) Chelmsford, Broomfield and Great Leighs site were examined in public in December 2018 as part of Chelmsford City's Local Plan. This provided public scrutiny and challenge, including the expected delivery rates. We have set out in our project management plan the phasing of the delivery of sites and social and physical infrastructure. The planning process provides a series of 'gateways' to ensure compliant delivery:

- The delivery sites will be managed through a master plan led approach. Developers and the City Council will agree master plans for sites to provide assurance that development is in line with the Spatial Strategy set out in the Local Plan. The City Council's Executive Cabinet will sign off master plans.
- Submission, assessment and approval of outline planning permission provides assurance that the sites will be developed in line with the Master Plan.
- Alongside planning permission each site will negotiate a Section 106 agreement between the developer and the City Council to set out the detail and give legal force to commitments on affordable housing and infrastructure.
- The Councils will monitor delivery of the number of new homes against the trajectories within this business case (and Local Plan) closely. The North East Chelmsford Garden Community Delivery Board will track NE Chelmsford housing starts and completions. The delivery of the new homes at Great Leighs and north of Broomfield will be monitored through the City Council's established housing monitoring procedures to ensure developers deliver the type, mix and number of homes agreed.
- A combined monitoring framework for the total housing delivery of all Chelmsford sites identified in this business case will be developed and linked to the Council's housing trajectory and annual monitoring reporting framework.
- Braintree District Council take a similar approach to take the Great Notley site through the planning process, which will operate as a series of reviews from master plan to planning permission and monitoring to ensure effective delivery.

Infrastructure

Both Essex County Council (ECC) and Network Rail (NR) have well established processes (ECC's Major Projects Contract Manual and NR's GRIP) 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. In addition, ECC has appointed a Rail Assurance Lead from within Jacobs UK Ltd to provide them with independent advice on NR's project delivery to reflect the relative lack of these skills and domain knowledge within ECC. Tasks include checking that the project remains viable, in terms of costs and benefits (business assurance), the users' requirements are being met (user assurance), and that the project is delivering a suitable solution (technical assurance).

To supplement this ongoing assurance, we propose to commission independent reviews akin to the relevant former Office of Government Commerce (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 Senior Responsible Owner (SRO), Programme Board and Project Boards for action to inform ECC's 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 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. For the Station this would involve ongoing liaison with the Department for Transport (DfT), NR and Greater Anglia to develop early thinking around the timetabling and specification of the station within the next Greater Anglia franchise (from 2025),

prior to its invitation to tender.

A business case update would be prepared. This 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. For this reason, this would be held prior to the award of the GRIP 5-8 Design and Build rail contract and Design and Build road contract.

OGC Gateway 3 – Final Investment Decision would be taken prior to ECC and NR placing the relevant investment contracts for the construction of both projects. As the Station contract is likely to be a fixed price detailed design and build this Gateway would need to occur at the completion of GRIP 4, when all necessary consents had been secured and the formal tender process completed with an award recommendation being ready. 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 and NR / ECC-led site supervision teams are well placed to deliver the scheme according to terms outlined in the contract. It would also continue to validate the provision of rail services at the station within the new Greater Anglia franchise. This information would be provided by the SRO to ECC's Section 151 Officer and Political Leadership Team for Cabinet sign-off.

With our proposal to deliver the road in phases, this OGC 3 review for the Bypass element would likely provide the authority to deliver just the first phase of the road. As this is delivered and the second and third phases come forward for investment decision, a lighter touch level of assurance would be employed, taking the opportunity to seek lessons learned from the initial construction activity and its management to improve the delivery of the subsequent phases of the road. During 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/NR'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 is adequately covered by existing NR and ECC assurance processes for bringing the station and road into service. From the rail industry perspective there will be four principal areas of assurance that will require satisfaction prior to the station becoming fully operational:

- Placing into Service – Assurance that the station infrastructure meets standards and can be safely integrated into the existing Great Eastern Main Line network, in accordance with Commission Regulation 2014/897/EU. This assurance is achieved by the Notified Body (NoBo) and Designated Body (DeBo) who carry out assessments as the project is delivered to ensure that the six 'Essential Requirements' (Safety, Technical Compatibility, Reliability and Availability, Health, Environmental Protection and Accessibility), all relevant Technical Specifications for Interoperability (TSIs) and National Notified Technical Rules (NNTRs) have been met. This is reported by the Proposer of the change to the Office of Rail Regulation (ORR) by making an EC Declaration of Verification. The ORR ultimately provide authority for placing the station into service.
- Putting into Use – The Assessment Body (AsBo) provides a Safety Verification Statement. This provides assurance that the new station infrastructure has been delivered in accordance with the Common Safety Methodology (CSM) in accordance with Commission Implementing Regulation 402/2013. The AsBo will undertake periodic assessments as the project progresses through implementation to ensure that CSM requirements are being adhered to. The assessment will be based on risk and ultimately will provide evidence that identified operational risks have been mitigated. Evidence will also be required that the Train Operating Company (TOC) have accepted all residual identified operational risks, including maintenance obligations, and have plans and process in place to mitigate and manage them. This will include incorporating the new station into their Safety Management System. The TOC will ensure that prior to the station being put into service that all operational changes have been carried out. These will include ensuring that the timetable has been amended to incorporate the station as a new stop, train crew have been advised and trained appropriately, the Customer Information Systems have been updated and that suitable notification has been supplied to passengers.

- Asset Maintenance Plan (AMP) – NR will ensure that the suite of documents that comprise this plan are completed and accepted internally for issue at GRIP 8.
- Network Change – This change process is administered by NR and is commenced at the beginning of GRIP 4. The process enables all rail stakeholders, internal asset management divisions, the TOC and the Freight Operating Companies to be consulted as to the scheme design and to raise objections accordingly. NR will ensure that this change process has been fully closed out prior to opening of the station, and that any objections raised have been addressed and resolution achieved.
- ECC would work closely with NR and the independent assessment bodies to ensure that these processes were integrated smoothly into the design programme.

Finally, considering benefits realisation, ECC is committed to an outline monitoring and evaluation process in line with the HM Treasury Magenta Book and South East Local Enterprise Partnership's (SELEP) Assurance Framework. An outline monitoring and evaluation plan has been developed for Beaulieu station incorporating the requirements of SELEP's Assurance Framework. Post funding award this will be further developed to encompass the wider NE Chelmsford Growth Hub, building on the existing blend of housing, employment and transport metrics within the current outline Beaulieu Station Monitoring and Evaluation Plan.

Our approach will involve the completion of SELEP template reports setting out the baseline situation, impacts one year after opening and then five years after opening. These reports will maximise data routinely collected by the rail industry, DfT, existing ECC data analysis, and monitoring reports for other purposes (such as other SELEP schemes and the Chelmsford Local Plan Authority Monitoring report) where possible. These reports would be published on ECC's website.

Please provide details of your proposed internal monitoring approach for the scheme

Essex County Council (ECC)'s Commissioning Manager – Gary MacDonnell 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 to the Programme Board and above in line with ECC's corporate risk management strategy where required.

The safe delivery of the new station infrastructure to time, cost and quality requirements will be the responsibility of Network Rail (NR). Their GRIP process will be used to provide a proven approach to managing and monitoring the delivery of the scheme. The requirements of NR will be agreed through a subsequent Development Services Agreement (DSA) building on the DSA in place for the current design work. NR's Project Manager will report to the Beaulieu 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. NR will make use of earned value management, risk management, Primavera P6 cost-loaded programmes and leading / lagging indicators supplied by the contractor and their internal teams to monitor quality and evaluate performance and enact improvement and feedback lessons learned where required. They will work with the contractor to manage early warnings and risk reduction in line with the NR's contract.

The safe delivery of the bypass 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 New Engineering Contract (NEC) Project Manager (PM) and a site supervision team to manage the contract with the appointed contractor. The NEC PM will report to the Bypass 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. The Programme Board will take a holistic view across the other ECC HIF projects under construction to ensure shared efficiencies and lessons learnt are applied across the projects under construction.

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. This initial Monitoring and Evaluation Plan proposes to complete South East Local Enterprise Partnership (SELEP) compliant template reports (one of the requirements of the SELEP funding contributions for Beaulieu station) setting out the baseline situation, impacts one year after opening and then five years after opening. Metrics will include amongst others:

- Housing unit starts
- Housing unit completions
- Commercial floorspace planned
- Commercial floorspace constructed
- Full time equivalent jobs created
- Land and property outputs, such as follow on investment associated with the housing sites
- Transport outputs such as number of passengers at Beaulieu station, station car park usage, traffic flows on the Bypass and surrounding roads.

It is considered that a consistent approach to both the station and bypass monitoring and evaluation using SELEP requirements (even though they are not providing funding for the Bypass) will be proportionate and avoid double counting of benefits. A sum of £50k has been considered appropriate for the present with costs to be borne through ECC's revenue budget. This is additional to the labour costs of the time associated with the Commissioning Manager, Project Board and site supervision teams references above.

These reports will maximise data routinely collected by the rail industry, existing ECC data analysis, and quarterly monitoring reports for other purposes (such as other SELEP schemes and Chelmsford City Council's and Braintree District Council's Local Plan Authority Monitoring) where possible to minimise cost and additional work.

Risk Management

Please outline key risks to delivery and mitigations including known delivery constraints and blockages

Number	1	Likelihood	Medium low	Impact	Medium high
Description	Housing sites do not deliver at the rate identified in the Local Plan Trajectory				
Mitigation	Reviewed through annual Local Plan monitoring process. Adoption of flexible approaches to revisit master plans in light of any necessary changes. Consideration to working with developers to sub-divide sites into smaller outlets.				
Number	2	Likelihood	Medium high	Impact	Medium low
Description	The mix of sites in North East Chelmsford prove ineffective in delivering at the anticipated rate				
Mitigation	Reviewed through annual Local Plan monitoring process and through the North East Chelmsford Garden Community Delivery Board.				
Number	3	Likelihood	Medium high	Impact	High
Description	Economic conditions lead to market crash/failure and delays to housing delivery				
Mitigation	Not within Local Authority control. Adoption of a design led approach to maximise long term certainty and value.				
Number	4	Likelihood	Medium low	Impact	Medium high
Description	Barriers identified to early commencement after planning permission granted, for example site constraints.				
Mitigation	Managed through the North East Chelmsford Garden Community Delivery Board.				
Number	5	Likelihood	Medium low	Impact	Medium high
Description	Developers revisit viability assessments, S106 contributions, master planning principles				
Mitigation	Managed through the North East Chelmsford Garden Community Delivery Board and ongoing relationships with the key developers. Chelmsford City and Braintree District Councils will adopt PPAs with the primary developers to deliver a master planned approach.				
Number	6	Likelihood	Medium high	Impact	Medium low
Description	Delay to delivery through developer engagement with statutory undertakers/utility providers				
Mitigation	Managed through the North East Chelmsford Garden Community Delivery Board.				
Number	7	Likelihood	Low	Impact	High
Description	Local Plan found unsound forcing a strategic review of housing strategy.				
Mitigation	Early review of the Local Plan.				

Number	8	Likelihood	Medium low	Impact	High
Description	Planning permission not granted for the strategic housing sites in North East Chelmsford.				
Mitigation	Managed through the North East Chelmsford Garden Community Delivery Board and ongoing relationships with the key developers. Chelmsford City and Braintree District Councils are adopting master planned led approach to these sites, via PPAs with each of the primary developers.				
Number	9	Likelihood	Medium low	Impact	High
Description	Developers fail to deliver affordable housing provision to policy levels.				
Mitigation	Evidence is informed by a good understanding of site viability.				
Number	10	Likelihood	Medium low	Impact	Medium high
Description	Insufficient capacity in the signalling power feeder for the turnback facility at Beaulieu.				
Mitigation	To be evaluated as part of the GRIP 3 design				
Number	11	Likelihood	Medium high	Impact	Medium low
Description	Unknown ground conditions for platform and station buildings – the ongoing GRIP 3 related surveys will help to understand this in more detail.				
Mitigation	Undertake Ground Investigation surveys at the start of the GRIP 3 design phase				
Number	12	Likelihood	Medium high	Impact	Medium low
Description	Design changes for the Radial Distributor Road (RDR) Bridge to the north of the station impacting on signal sighting and overhead line equipment. This road is being delivered by Countryside Zest as a condition of its planning consent – linking the Beaulieu development with the A12 Boreham Interchange.				
Mitigation	The minimum span and height has been forwarded to Mayer Brown (Countryside Zest's consultants). Latest RDR bridge design will be reviewed in conjunction with station design during GRIP 3				
Number	13	Likelihood	Medium low	Impact	Medium high
Description	Transport Works Act Order (TWAO) with public consultation may be required because of the station's permanent land take – the scheme programme as presented allows time for this to happen, but consent is dependent on a successful outcome. The TWAO will then define the limits of the works which the GRIP5-8 detail design and construction will then have to respect.				
Mitigation	Scheme programme allows time for TWAO, previously the station has received outline planning permission and so it is not envisaged a public enquiry will be required. Legal advice obtained to date confirms need for TWAO to avoid nuisance objections.				
Number	14	Likelihood	Medium low	Impact	Medium high
Description	Incorrect LIDAR surveying information resulting in major subsequent changes.				
Mitigation	Sample check topographical surveys to be carried out at GRIP 3 to cross check and amend as required				

Number	15	Likelihood	Low	Impact	High
Description	The proposed track alignment and overhead line equipment cannot be accommodated under the Generals Lane Bridge.				
Mitigation	Establish early in GRIP 3 design through survey. Review alignment options and carry out option assessment to produce compliant design building on GRIP 2 feasibility work.				
Number	16	Likelihood	Medium low	Impact	Medium high
Description	Poor condition of existing culvert at the Beaulieu station site which could mean its extension and remedial works.				
Mitigation	Review existing historic asset condition reports and verify current condition during GRIP 3 surveys and identify any required remedial works				
Number	17	Likelihood	Medium low	Impact	Medium high
Description	Change of scope requirements resulting in abortive work and re-design.				
Mitigation	Requirements remit for GRIP 3 agreed before progressing				
Number	18	Likelihood	Medium low	Impact	Medium high
Description	Potential for additional land for drainage outfall associated with the multi-storey car park.				
Mitigation	Establish drainage requirements early in GRIP 3 design to enable land acquisition process to be activated at earliest opportunity				
Number	21	Likelihood	Medium low	Impact	High
Description	Bypass land purchase value could be linked to land value increases for housing plots elsewhere – resulting in an increased cost for the land purchase				
Mitigation	Continue to investigate land purchase costs linked to infrastructure unlocking housing through ECC's land agent. Initial assessment indicates a reduced risk providing sites require the infrastructure for planning permission.				
Number	22	Likelihood	Medium low	Impact	Medium high
Description	Construction traffic interface between Chelmsford NE Bypass, Beaulieu station and developer work. Planning conditions could limit ability to use existing routes (time/frequency) increasing costs in providing access and materials to site				
Mitigation	Early involvement with ECC Highways, developer and Network Rail to establish joint programmes and construction management plan.				
Number	23	Likelihood	Medium low	Impact	Medium high
Description	Construction works may cause unpalatable local impacts with reputational damage				
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	24	Likelihood	Low	Impact	High
Description	Lack of availability for imported fill may require borrow pits to obtain additional material for earthworks – this would mean a need to CPO / acquire additional land increasing costs and causing programme delay				
Mitigation	Further design upfront, informed by ground investigations.				
Number	25	Likelihood	Low	Impact	High
Description	Substantial delay to completion of Hansons mineral extraction (economic slow-down etc) delays construction programme				
Mitigation	Regular engagement with Hansons				
Number	26	Likelihood	Medium low	Impact	Medium high
Description	Road safety objectives may not be met				
Mitigation	1) Operational Safety Reviews 2) Identify Safety Baseline 3) Develop initial operational regime 4) Stage 1 Road Safety Audit				
Number	27	Likelihood	Medium high	Impact	Medium high
Description	Quarry back fill may not provide a suitable foundation resulting in potential redesign such as ground treatment				
Mitigation	Consult with the Quarry operators to understand the details of the materials. Undertake Ground Investigation works earlier to enable adequate solutions				
Number	28	Likelihood	Medium low	Impact	Medium high
Description	Unexploded Ordinance given some of the land was a former airfield				
Mitigation	Undertake a UXO survey in advance to identify areas of risk and programme accordingly				
Number	29	Likelihood	Medium low	Impact	Medium high
Description	Discovery of nationally significant archaeological remains				
Mitigation	Undertake a comprehensive preliminary archaeological assessment				
Number	30	Likelihood	Medium low	Impact	Medium high
Description	Failure to identify advanced ecological and archaeological mitigation works.				
Mitigation	1) Advanced access to land to complete archaeological and ecological surveys 2) Advanced Environmental Programme based on survey results				

Please outline your approach to managing risk

Housing

Broadly, the identified housing delivery risks are linked to wider economic conditions, over which the Local Authorities (LAs) have little control over, through to specific local delivery risks that can be mitigated against through various mechanisms and controls that the LAs can put in place.

At a macro level, a global economic shock or national recession, similar to the aftermath of the 2008 financial crisis, could ultimately stall the local housing market leading to a failure in housing delivery for a period of time. In this instance, the appropriate mitigation would be for Chelmsford and Braintree to establish the necessary mechanisms to encourage desired rates of delivery when economic conditions improve. This would include ensuring that the Local Plans are up to date, master plans are prepared and that sufficient professional staff resources exist.

Assuming that wider economic conditions remain stable then there are a number of risks to housing delivery that have been identified. These include:

- Sites do not deliver at the anticipated rates set out in the Local Plan
- Anticipated financial contributions from development do not come forward as expected
- Delays to site delivery through constraints, utility provision, site conditions
- Affordable housing is not delivered at anticipated levels
- Planning permissions are delayed.

Both LAs are well placed to mitigate all of these risks through their approach and track record of delivering major new housing locations which will be applied to development in the Chelmsford – Braintree corridor.

Through an up to date Local Plan, strong evidence base and key tools such as an Infrastructure Delivery Plan and full Viability Assessment, Chelmsford City Council (CCC) can be certain where housing is going to be built and what contribution it will make to key elements of housing delivery, including policy compliant affordable housing. Braintree District Council also has an extensive evidence base and Section 2 Local Plan developed for likely examination in 2020/21.

With a Local Plan close to adoption CCC has already embarked on the master planning of the strategic growth sites and has Planning Performance Agreements in place with the primary developers. Agreed master plans will be approved by CCC giving further certainty to the form and content of the development. Once approved the master plans will inform the delivery of the sites through the normal development management process.

Early engagement with and a close working relationship with the development industry from the outset of the plan-making process, through master planning and then into implementation is integral to the management of housing delivery risks in North Chelmsford.

Beyond this the NE Chelmsford Garden Community Delivery Board will also help to manage risk, including housing delivery. Through the Board's collective responsibilities key delivery issues will be identified, discussed and appropriate solutions implemented.

Infrastructure

Our Project Managers, Project Delivery Teams, Project Board and Programme Board members are responsible for a proactive risk management culture and set of procedures, which ensures that risks are continuously identified, owners assigned, and adequately mitigated.

The Project Delivery Team and stakeholders have systematically identified and reviewed specific and generic risks associated with the design, procurement and construction inherent in similar schemes. This has been undertaken in accordance with each project's Risk Management Plan, which is underpinned by ISO 31000 and Management of Risk Best Practice.

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:

Responsible: Design Project Manager - Glenn King (Beaulieu station) / Chris Cooper (Bypass) with periodic facilitator support from our risk managers

Accountable: ECC Project Manager – Ian Turner

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 scheme specific project level using the specific tools and procedures appropriate to the highways and rail industries.

Bypass

At key stages of the Bypass scheme's development, formal facilitated Risk Identification Workshops will be held with attendees from all project disciplines including representatives from ECC, CCC and Braintree District Council where relevant.

ECC has 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 scheme. These ongoing sessions have identified the likelihood of each risk occurring and the relative quantifiable impact in terms of cost and programme. The risk register (Att. 7.7.3a) will be maintained 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 selected. The risk register is reviewed and updated by the Project Delivery Team regularly, 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 parallel, 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 Project Manager.

Beaulieu Station

NR manage risk in accordance with the Anglia Risk and Value Management Plan, with enterprise risk management in operation using Active Risk Manager for the Station project. Ongoing GRIP 3 surveys and single option development will help to understand the impact of specific risks identified in the risk register (Att. 7.7.3b) in more detail and mitigate these as far as possible. During GRIP 3 NR will also undertake a Quantified Risk Assessment for the scheme with this then kept up to date throughout the GRIP process.

ECC has appointed a Rail Assurance Lead from Jacobs to provide them with independent advice on NR's project delivery to reflect the relative lack of these skills and domain knowledge within ECC. Key risks and issues are communicated and escalated as required through the Project Manager, Project Board and Programme Board as appropriate for action. In addition to the risk premium calculated by NR at GRIP 2, ECC has identified a separate contingency pot for their ownership (Financial Case). This will continue to be reviewed as the cost, programme and understanding of risk matures.

All risks are currently owned by a combination of the project's partners. As the project develops it is expected that some of these risks will be transferred to contractors constructing the scheme depending on who is best placed to manage and own the risk.

In parallel, 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 Project Manager.

Please attach a copy of your current risk register for the scheme

Filename	Description
7.7.3a_Chelmsford_NE_Bypass_Risk Register - Final for upload.xlsx	NE Bypass Risk Register
7.7.3b_Beaulieu station Risk Register.docx	Beaulieu Station Risk Register

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

The committed and funded works at J19 (Boreham Interchange) being undertaken by Countryside Properties are enabling and complimentary to the phasing of the Chelmsford North East Bypass (CNEB) as detailed in the HIF bid, and indeed the works needed at J19 and are for connecting the CNEB to the A12 via the RIS One J19 to J25 scheme. If however the HIF bid is successful it will provide the opportunity to accelerate the phasing of works at the J19 (Boreham Interchange).

Housing project capability and experience:

Essex County Council (ECC), Chelmsford City Council, Braintree District Council and their delivery partners have a proven history of delivering strategic infrastructure and sustainable urban developments.

ECC has established a dedicated housing growth unit within the council to build on this success. The council's ambition is to provide a strong housing offer for all parts of the community in Essex, and the housing unit's role is to work across the County, in partnership with colleagues within the County Council and with the twelve local Planning Authorities, to help deliver their stretching ambitions for housing growth. The Unit is also working across Essex to support the response to tackling homelessness, and to enable the provisions of better housing for vulnerable people.

Although ECC is not a local planning authority, the expertise within the housing unit is designed to support the work of the councils within Essex and to provide a high-level context for facilitating engagement with government departments and agencies and other public sector partners. ECC has appointed a team with extensive experience of housing and planning to help support the capacity and enhance the skills of the local planning authorities to overcome any challenges in the development process.

Within the Chelmsford administrative area there has been a long history of using planning to bring forward exemplar and ambitious developments alongside infrastructure in the spirit of the iconic Essex Design Guide for Residential Areas. These have included the new country town of South Woodham Ferrers, Chelmer Village to the east of Chelmsford; and then latterly significant development in the city centre, Beaulieu and Channels. Since 2014, Chelmsford's housing delivery has increased from 826 to over 1,000 homes a year (MHCLG live tables), demonstrating the ability to reliably deliver growth at scale, one of the highest figures of any local authority.

In the Braintree administrative area, the planning authority has worked with developers to bring forward the Great Notley Garden Village as well as substantial investment in new housing in Braintree itself, capitalising on the enhanced connectivity provided by the A120 and A131 improvements delivered by ECC, which have helped to strengthen links between Braintree, Stansted Airport, the M11 and Chelmsford.

Since its establishment in 2016, the ECC hosted Essex Housing has worked county-wide to identify surplus land for development and make the most of tax-payer owned assets, including local planning authorities and public sector bodies. Essex Housing manages the end-to-end development process, from land identification and scheme design through to securing planning consent, overseeing contractor build, and marketing and sales of completed schemes. This includes the development of housing across a wide range of tenures. In the past two years Essex Housing has already progressed a number of successful developments, including Goldlay Gardens (CM2 0EN) in Chelmsford. Goldlay Gardens includes 32 homes in three new apartment blocks which are a mix of private and specialist housing built on a site that was formerly ECC's library headquarters. The site completed in October 2018.

Infrastructure capability and experience

ECC has developed a Major Projects Contract 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. It has also demonstrated strategic and collaborative working with Highways England 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. This work was recognised through the 2017 National Transport Awards where ECC won the Local Transport Authority of the Year.

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 Highways England; 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.

Network Rail (NR) has delivered a number of similar schemes to the proposed Beaulieu Station including the following stations on the Anglia route through its Anglia Route Collaboration (ARC) mechanism.

The re-opening of Lea Bridge Station has been successfully delivered as part of the regeneration efforts due to the 2012 Olympic Games and provides a well-used connection towards Stratford and Tottenham Hale. With constant dialogue between the project team (NR Sponsor, NR PM and VolkerFitzpatrick's PM) and the operator (Abellio Greater Anglia - AGA), NR was able to hand the station over to AGA a week early to fit out and familiarise the customer service team. The project had incidents and led the way in approaching a positive safety culture on site to be learnt by other projects.

Cambridge North new station is an important part of an integrated transport network for the area, and a key transport node in the north east quadrant of Cambridge as well as the catalyst for further regeneration of Chesterton. The scheme was delivered by VolkerFitzpatrick using a Design and Build mechanism through the ARC. The scheme started construction in 2015 and was opened for the May timetable change in 2017.

The project started with the realignment of the underused Chesterton sidings. Two new through platforms were then constructed on the operational West Anglia Main Line in addition to a bay platform. The scheme then provided a main station building, with high quality passenger waiting facilities, accessible over bridge, ticket gate line, car and interchange facilities. These cater for pedestrians, cyclists, bus users, car drivers and passengers.

Filename	Description
Chelmsford_7.1.1a_SO�G17_NE Chelmsford_Highways and Transport.pdf	Att. 7.1.1a Statement of Common Ground 17
Chelmsford_7.1.1b_Beaulieu station planning committee report.pdf	Att. 7.1.1b Beaulieu Station Planning Committee
Chelmsford_7.1.1c_SO�G15_North East Chelmsford_MINERALS ISSUES NOVEMBER 2018 (reduced).pdf	Att. 7.1.1c Statement of Common Ground 15
Chelmsford_7.1.1d_North Chelmsford Area Action Plan Adopted 20.07.11.pdf	Att. 7.1.1d North Chelmsford AAP
Chelmsford_7.1.1e_Chelmsford North East Bypass Summary Leaflet - January 2018.pdf	NE Bypass Safeguarding
Chelmsford_7.2.1_NECGV Delivery Board TOR - 14.9.18.docx	NE Chelmsford Garden Community Delivery Board Terms of Reference
Chelmsford_7.3.1_NE Community Liaison Group TOR - Sept 18.docx	NE Chelmsford Garden Community Liaison Group Terms of Reference

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 breach our 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 - HIFFF000288BC01.pdf	Section 151 Sign Off

