

ID-31 Response

In response to the EA's 6th May response to the Inspector's questions (ID-31), I would like to draw the Inspector's attention to the 2018 Leigh FSA Business Case that was the basis for the Local Growth Fund funding awarded to enable the FSA expansion, as published on the HM Government South East Local Enterprise Partnership website (<https://www.southeastlep.com/project/leigh-flood-storage-area-and-east-peckham/>). I am attaching this document to my comments to be submitted together with this response as evidence for the inquiry. Neither this Part I Business Case nor the full Outline Business Case that would subsequently have been required would appear to have been submitted to the inquiry; the Part I Business Case raises further questions relevant to the Inspector's Question 2 in particular, which are not answered by the EA's response. I have highlighted sections of the attached document that are especially relevant to my comments, in addition to quoting from it below.

The Part I Business Case, submitted by Tonbridge and Malling Borough Council, with Kent County Council also listed as a lead applicant, to obtain the funding necessary for the Environment Agency to complete the expansion, is titled 'Unlocking Growth' and referred to by this title throughout SELEP documents relating to the project. The project is presented from the opening description as part of Tonbridge's development strategy and the strategic need for identification of new sites for housing and employment, which is declared to be 'constrained by the risk of flooding'; therefore, according to the application:

Urgent work is now needed to increase the capacity of the storage area in order to achieve greater protection for both existing homes and businesses and to unlock new residential and commercial development. (Business Case, section 1.5 ['Description'])

The Strategic Case for the FSA expansion is presented accordingly:

Tonbridge & Malling Borough Council is at a key stage in the development of the Local Plan. Work is being undertaken to identify a supply of sites that will meet the housing and employment needs of the borough up to 2031. However, there are significant parts of the borough that fall within the flood zone and, without any new works being undertaken, will not only continue to put existing homes and businesses at risk but also prevent sites coming forward for much needed new development growth in strategically important areas. (Business Case, section 2.1 ['Challenge or opportunity to be addressed'])

As is made clear throughout the document, the entire business case for the FSA expansion put forward by TMBC to secure the key tranche of LGF funding for the project is based on 'the unlocking of sites that will facilitate a growth in jobs and homes' (Business Case, section 3.2 ['Outputs']).

This is made clear throughout the section devoted to the Economic Case for the expansion: 'The jobs and homes figures for this scheme are predominantly as a result of the unlocking of sites for development...' (Business Case, section 3.5 ['Value for money assessment']).

These references to unlocking sites for development and growth are repeated twenty-five times in the Part I Business Case document that was submitted by TMBC to secure the SELEP funding.

Moreover, according to the SELEP, it is a condition of this funding for the expansion of the FSA being spent beyond 31st March 2021 (as will be necessary) that it provide: 'A direct link to the delivery of jobs, houses or improved skills levels within the SELEP area' (SELEP Accountability Board Meeting Agenda, 7 June 2019 [also published on the SELEP website, as above], section 8.4).

In addition, as part of his statement before the inquiry in support of the project and the revised scheme, Mr Tugendhat MP has submitted the Hansard transcript of his remarks made in the House of Commons in support of the SELEP funding bid. These remarks too clearly emphasise the view that the scheme was being put forward, and deserved Government funding from the local growth fund, because it would 'enable' thousands of additional homes to be built and 'deliver' new employment land to support new jobs:

The Government have been very clear in highlighting the growth that they want to deliver in our part of the country over the coming years, and that depends on investment and people—and, in turn, on viability. This project alone would enable an additional 2,100 homes to be built in sensible locations in an area of predominantly green belt in the south-east of England. It would also deliver over 13 hectares of employment land by 2031, roughly equating to 2,900 associated jobs. The Government targets are rightly ambitious, and to succeed we need to address the creaking infrastructure of the towns and villages nearby. The long-term economic plan, about which we all once heard so much, would focus on these communities to ensure that we have every possible option open to us locally to plan for the future.

Tonbridge and Malling Borough Council is currently consulting on that future through its local plan, and has shown that without significant investment in local flood defences it will be unable to deliver the growth required by Government.

(ID-16, page 8)

Finally, the Environment Agency (EA) Statement of Case made to this inquiry states that: The Environment Agency, working in partnership with Kent County Council, Tonbridge and Malling Borough Council and the South East Local Enterprise Partnership, has secured the required funding to complete the works associated with the Revised Scheme. The benefits of the proposed changes satisfy the Flood Defence Grant in Aid Partnership Funding criteria and the South East Local Enterprise Partnership economic benefit funding rules. (para 1.6)

Yet, in response to Question 2 raised by the Inspector, "To what extent does the Expansion of the Leigh FSA take into account proposed development in Tonbridge?", the EA has responded:

[F]rom an Environment Agency perspective, development after 2011 cannot be counted in the economic benefits or funding calculations for flood defences. This is discussed in section 2.3 of the VBA report (Appendix C of Mr Connell's proof). It is in this sense that all additional capacity gained in the Leigh FSA would be to benefit existing properties.

This is in accordance with Defra's Flood and Coastal Resilience Partnership Funding (the Rules). The Environment Agency cannot include any development constructed after 2011 in their economic consideration for new flood defences....

In short, any new development in these areas at highest risk must be flood neutral - in that it is not at risk itself and does not increase flood risk to others. (ID-31, Environment Agency response to Question 2, 6th May 2021).

Yet the economic case for the expansion made by the EA's partners on the project TMBC and KCC to the EA's other partner on the project the SELEP, in order to calculate and secure the funding for the works, is based overwhelmingly on new development in the flood zone in Tonbridge on sites that would be 'unlocked' by the FSA expansion. It is not at all clear how this process of obtaining a significant portion of the funding for the project can be consistent with the EA's response to the Inspector's question.

Over the course of the inquiry, the EA would seem to have acknowledged its responsibility under the Act to use the FSA to protect downstream communities; the statements made to this effect counter the EA's earlier position that it could and would continue to operate the FSA to protect Tonbridge and Hildenborough only. The discussions that have been facilitated by this inquiry, including the round-table on 7th May devoted to Yalding and downstream communities, have been productive, and this change of position is welcome for downstream communities – as long as it will be reflected in the actual operation of the FSA under the revised scheme. The EA's closing case is consistent with this acknowledgment, and the expressed willingness to use the flexibility afforded by the revised scheme to reduce flood risk to downstream communities clearly goes some way to mitigating the potential for the revised scheme to increase the flood risk for downstream communities affected by the confluence of the Medway, Beult and Teise. Representatives and residents of Yalding look forward to remaining in dialogue with the Environment Agency to ensure that the Agency is able to continue to increase its ability to operate the FSA in such a way as to reduce the flood risk to downstream communities as much as possible, in addition to protecting Tonbridge and Hildenborough.

However, the EA's closing statement is not only in conflict with its earlier statements that the FSA exists to protect Tonbridge and Hildenborough only but also with those aspects of the business case and funding provisions that commit the EA to using the expanded FSA to 'unlock' new housing and employment sites on the floodplain in Tonbridge. There remains a real risk that if these new developments are now brought forward and completed due to the approval of the revised scheme, the balance of properties to be protected for the 'greatest overall benefit' will thereby be shifted away from downstream communities toward Tonbridge, potentially leading to an increased risk to Yalding as a result of the expansion and revision to the scheme. This is the risk that must still be explicitly guarded against – if necessary through a modification to the proposed scheme to mandate that the expanded FSA incorporate consideration of the flows in the Beult and Teise together with the flow in the Medway in the development of the procedures under which it will be operated.

John Ackerman
13th May 2021

Capital Project Business Case River Medway Flood Storage Areas Projects – Unlocking Growth

The template

This document provides the business case template for projects seeking funding which is made available through the **South East Local Enterprise Partnership**. It is therefore designed to satisfy all SELEP governance processes, approvals by the Strategic Board, the Accountability Board and also the early requirements of the Independent Technical Evaluation process where applied.

It is also designed to be applicable across all funding streams made available by Government through SELEP. It should be filled in by the scheme promoter – defined as the final beneficiary of funding. In most cases, this is the local authority; but in some cases the local authority acts as Accountable Body for a private sector final beneficiary. In those circumstances, the private sector beneficiary would complete this application and the SELEP team would be on hand, with local partners in the federated boards, to support the promoter.

Please note that this template should be completed in accordance with the guidelines laid down in the HM Treasury's Green Book. <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government>

As described below, there are likely to be two phases of completion of this template. The first, an 'outline business case' stage, should see the promoter include as much information as would be appropriate for submission though SELEP to Government calls for projects where the amount awarded to the project is not yet known. If successful, the second stage of filling this template in would be informed by clarity around funding and would therefore require a fully completed business case, inclusive of the economic appraisal which is sought below. At this juncture, the business case would therefore dovetail with SELEP's Independent Technical Evaluation process and be taken forward to funding and delivery.

The process

This document forms the initial SELEP part of a normal project development process. The four steps in the process are defined below in simplified terms as they relate specifically to the LGF process. Note – this does not illustrate background work undertaken locally, such as evidence base development, baselining and local management of the project pool and reflects the working reality of submitting funding bids to Government.



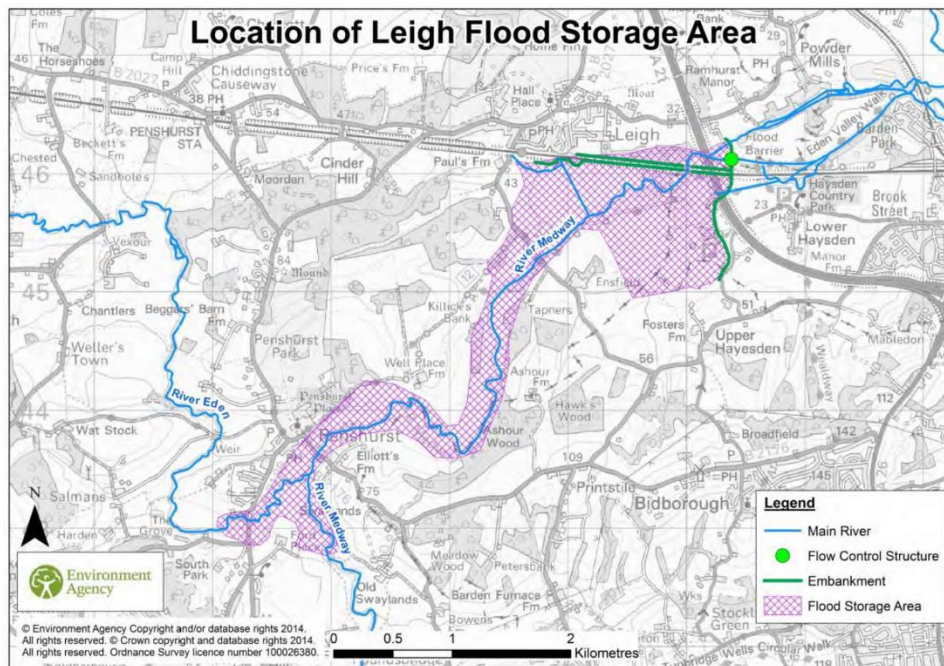
In the form that follows:

- **Applicants for funding for non-transport projects should complete the blue sections only**
- **Applicants for funding for transport projects should complete both the blue and the orange sections**

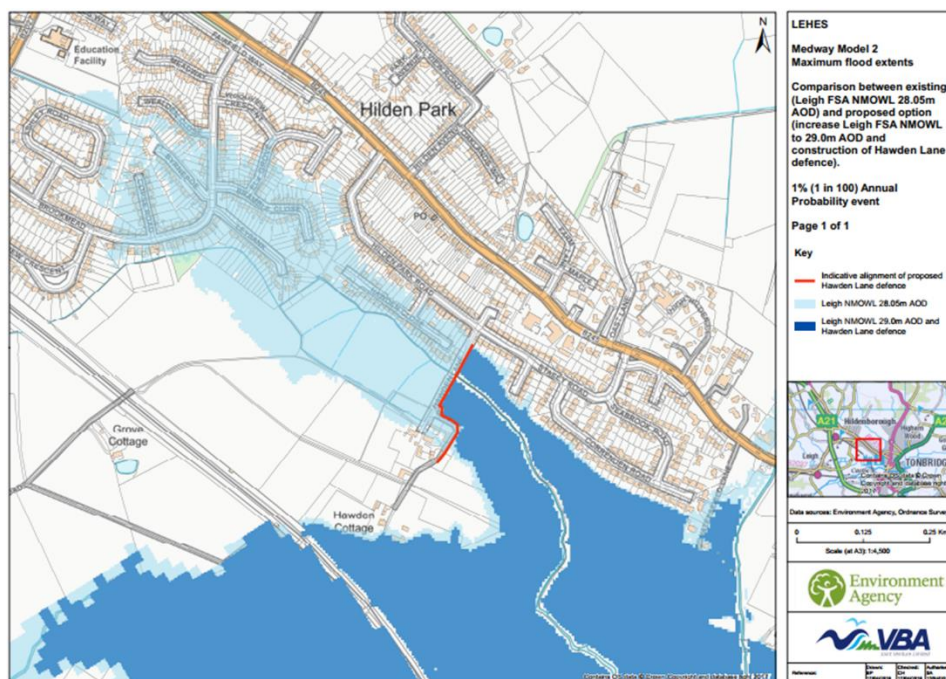
Version control	
Document ID	River Medway Flood Storage Areas Projects – Unlocking Growth (Part 1)
Version	12
Author	JW
Document status	Final Business Case – Part 1
Authorised by	
Date authorised	07 August 2018

1. PROJECT SUMMARY

1.1. Project name	River Medway Flood Storage Areas Projects – Unlocking Growth (NB This is a Part 1 Business Case covering the Leigh Flood Storage Area and Hildenborough only)
1.2. Project type	Flood Management and Development
1.3. Location (inc. postal address and postcode)	Powder Mill Lane, Leigh TN11 9AS (556390, 146190)



Additional works will also be taking place along Hawden Lane in Hildenborough, TN11 9BG (as per the map below)



1.4. Federated Board Area	Kent and Medway
1.5. Description (max 300 words)	<p>Tonbridge and Malling has a strong record of sustainable growth, delivering jobs and homes at a consistently high level for a number of years. The borough council is in the process of producing a new Local Plan, setting out policies for development and identifying new sites for new housing and employment uses to meet the area's objectively assessed need.</p> <p>The area benefits from the presence of the Leigh Flood Storage Area. However, the capacity was insufficient to protect the area in 2013/14 when Tonbridge and the surrounding area suffered serious flooding, affecting 311 homes and over 110 businesses in both communities.</p> <p>In addition to the flood risk to existing properties, considerable parts of the borough are constrained by the risk of flooding. Urgent work is now needed to increase the capacity of the storage area in order to achieve greater protection for both existing homes and businesses and to unlock new residential and commercial development.</p> <p>A partnership has been formed between Tonbridge and Malling BC, Maidstone BC, Kent County Council and the Environment Agency. Together they have already previously raised £1.08 million toward developing solutions to reduce the risk of flooding to vulnerable communities in the catchment. This project is referred to as the River Medway Flood Storage Areas project (now Leigh Expansion and Hildenborough Embankments Scheme), which started work in January 2015. Its objective is to identify options to reduce the risk of flooding, select preferred options and prepare a business case in line with Defra and Treasury rules by September 2018 that will be submitted to the internal EA Approval Board.</p>
1.6. Lead applicant	Tonbridge & Malling Borough Council/Kent County Council
1.7. Total project value	The total project value for this Part 1 Business Case is £15.574million
1.8. SELEP funding request, including type (e.g. LGF, GPF etc.)	The SELEP funding request for this Part 1 element is for £2,298,500 of the overall £4,635,900 LGF3 Funding allocation + £50k for monitoring and accountable body costs (total £2,348,500).
1.9. Rationale for SELEP request	<p>This project fits the LGF 5 key criteria as follows:</p> <p>Strategic – As set out in section 2.3, this project is supported by National, Regional and Local strategies with the Leigh Flood Storage Area specifically highlighted in the Kent & Medway Growth and Infrastructure Strategy (2017) as one of three big flood protection initiatives that are priorities for the county.</p> <p>Economic – As illustrated in the initial Business Case, the LGF Round 3 funding would provide additionality to the overall scheme, plugging a funding gap of £4.545m in total (equating to up to £2.3m for Part 1). It would also unlock some private sector investment as well as considerable economic outcomes in terms of job creation, new employment land and housing growth.</p> <p>Compliance – this project is fully compliant with State Aid Regulations and procurement procedures.</p>

	<p>[The EA have done a rather comprehensive analysis of State Aid for the LFSA and EPAS project.</p> <p>The Environment Agency's State Aid Unit have looked at this project and have concluded that compliance with the EU Law on State Aid is fulfilled by ensuring that the flood defence works meet the criteria of being GENERAL INFRASTRUCTURE (which in relation to flood defence, it is the EA's public remit to provide). In order to ensure the infrastructure is general in nature, the element of selectivity needs to be eliminated. This is already apparent with this proposal as it is designed to protect many existing homes & businesses, highways and other public assets, moreover the many undertakings which will be protected operate in different market sectors.</p> <p>Inextricably linked with this is ensuring that no elements of these works are DEDICATED, that is designed and constructed to accrue benefits to only one or few undertakings (which normally come at an additional cost), this is because the element of selectivity can clearly be seen in such work. Should any dedicated aspects be identified, then they will either be designed out, or paid for in their entirety by the beneficiary, thus ensuring the infrastructure remains general.</p> <p>To conclude – the EA do not foresee difficulties in ensuring state aid compliance, which will be achieved through the continued involvement of the EA's State Aid Unit.]</p> <p>Deliverability – as per the project planning of the scheme by the Environment Agency, all works are scheduled to be fully completed by July 2023 (and certainly no later than November 2023), with the LGF3 element of the funding package being spent by March 2021.</p> <p>Financial – this is a capital scheme that has been costed and has a considerable amount of its funding already in place. The funding gap of around £2.3m for Part 1 is relatively small within the context of the total project costs of just under £15.6m, but critical to its delivery.</p>
<p>1.10. Other funding sources</p>	<p>Environment Agency (Flood Defence Grant in Aid) Funding – £10.14million. This funding has been secured subject to other funding being realised.</p> <p>Kent County Council and Tonbridge & Malling BC have agreed to contribute the following funding towards the initiative:</p> <p>KCC – £2.5million TMBC – £0.5million</p> <p>Written letters of confirmation are attached to this business case.</p> <p>The above partners (and Maidstone BC) have already contributed towards the development of the business case - £1,005,000 during 2015/16 and 2016/17.</p> <p>£0.085million has also been contributed by the Southern Regional Flood & Coastal Committee.</p> <p>In addition, the Environment Agency has entered into dialogue with local businesses and land owners and has correspondence expressing the intention to contribute towards the scheme (see section 5.3).</p>

1.11. Delivery partners	Partner	Nature and/or value of involvement (financial, operational etc.)
	KCC	Partner underwriting funding shortfall
	TMBC	Financial
	EA	Project leader. Contributing via flood defence funding (FDGIA). Project managing design and construction elements of the project
1.12. Key risks and mitigations	<p>The key risks to delivery are:</p> <ol style="list-style-type: none"> 1. Failure to obtain sufficient partnership funding. 2. Costs of delivering the scheme are greater than forecast. 3. The proposed works do not secure planning permission. 4. The environmental impacts of the scheme are greater than forecast. 5. Housing and Employment Sites are not allocated in the emerging Local Plan. 6. Housing and Employment sites are refused planning permission. 7. Downturn in the local economy delays the unlocking of sites. <p>The mitigation measures for each of these risks are set out in Section 7.</p>	
1.13. Start date	Design work for the project is already well underway.	
1.14. Practical completion date	April – November 2023	
1.15. Project development stage	Options selection was completed in January 2016. Economic analysis of likely costs and benefits has been used to select preferred options. Outline design is in hand.	
1.16. Proposed completion of outputs	Direct outputs will be completed by 2023, with wider development and economic benefits unlocked progressively up to 2031.	
1.17. Links to other SELEP projects, if applicable	<p>There is a link to the recently completed Tonbridge High Street Regeneration Works and River Walk Improvements, which both secured LGF1 funding of over £2 million. Tonbridge High Street falls within the flood zone protected by this scheme and so without adequate protection is likely to flood again in future years.</p>	

2. STRATEGIC CASE

The strategic case determines whether the scheme presents a robust case for change, and how it contributes to delivery of the SEP and SELEP's wider policy and strategic objectives.

2.1. Challenge or opportunity to be addressed

Describe the key characteristics of the challenge to be addressed and the opportunity presented. Provide an overview of the evidence supporting this and the impact of not progressing the scheme.

Tonbridge & Malling Borough Council is at a key stage in the development of the Local Plan. Work is being undertaken to identify a supply of sites that will meet the housing and employment needs of the borough up to 2031. However, there are significant parts of the borough that fall within the flood zone and, without any new works being undertaken, will not only continue to put existing homes and businesses at risk but also prevent sites coming forward for much needed new development growth in strategically important areas.



Map showing extent of Flood Zone 3 in an around Tonbridge and Hildenborough

An illustration of the very real need for this investment is the flooding that took place during 2013/14. This event followed on from previous flooding events in 1947, 1958, 1960, 1963, 1968, 1974, 1979, and 2000. During 2013/14, 311 homes and over 110 businesses suffered from direct flooding, and large areas of countryside became submerged. It is only a matter of time before another flooding event takes place in the area, causing more damage, and continuing to limit any growth potential. Since the last major investment in these flood defences in the 1980s, the frequency of these flooding events has been approximately every 15 years, however they are likely to become more frequent if nothing is done, as the current flood defences are becoming less fit-for-purpose.

What is the need?

The need for action was demonstrated by David Cameron's visit to the area in 2013/14 at the time of the last flooding event, and its subsequent ministerial prioritisation in the subsequent Growth Deal announcements. Key partners have been working towards the delivery of improved flood defences since 2014, and whilst the implementation of minor improvements such as small scale flood defence works behind Avebury Avenue and the

	<p>introduction of Flood Wardens has been much welcomed by local residents and businesses, public consultation exercises in late 2016 have demonstrated a high level of public support (from residents and businesses) for this major investment in the LFSA and Hildenborough.</p> <p>As such, it is clear that urgent work is needed to increase the capacity of the storage area at Leigh in order to achieve greater protection for both existing homes and businesses and to enable new residential and commercial development to take place to meet the objectively assessed need of the area and stimulate sustainable economic growth.</p> <p><i>Why now?</i></p> <p>This project needs to be implemented as soon as possible. Without doing so, the chances of a similar flooding event occurring again will continue to increase – effectively blighting a large swathe of West Kent from much needed development and causing damage to existing residential and commercial premises when the inevitable eventually happens. Although a percentage of funding from DEFRA has been secured, without other funding sources, the project as set out in this business case cannot be implemented.</p> <p>Considerable work has been undertaken to engage with public and private sector partners in order to meet the full funding requirement, and whilst some contributions have been forthcoming this has been insufficient to meet the total funding requirement:</p> <ul style="list-style-type: none"> • Although local authority budgets are incredibly tight, both TMBC and Kent County Council are financially contributing to this scheme. • Whilst most of the businesses in and around Tonbridge are very small and unable to contribute, some of the larger organisations/land owners in the area are contributing to the scheme via construction material/land/maintenance of flood bank which has helped to reduce the overall cost of the scheme <p>In the eventuality that the totality of funding cannot be secured for the scheme, the existing flood defences would be refurbished, but this would not create any additional benefit and simply continue the status quo. As such, the Local Growth Funding is desperately needed in order to meet the full cost of the scheme.</p> <p>This complex scheme will take a number of years to design and build, but the sooner this scheme is implemented, the sooner the wider economic benefits can be realised.</p>
<p>2.2. Description of project aims and SMART objectives</p>	<p>The primary aim of the project is to provide flood defences for Tonbridge and the surrounding area in order to achieve greater protection for existing homes and businesses, and to enable new residential and commercial development to take place and meet the objectively assessed needs of the area.</p> <p>The SMART (specific, measurable, achievable, realistic and time- bound) benefits and outcomes on the local economy that will arise following delivery of Part 1 of this scheme (in terms of numbers of jobs, new homes, GVA) are:</p> <ul style="list-style-type: none"> • Completion of Leigh Flood Storage Area and Hildenborough works by November 2023 • 1,475 homes better protected from flooding by 2023 • 200 businesses better protected from flooding by 2023 • 100 homes completed by 2023 (1,480 new homes completed by 2031)* • 50 direct jobs created and safeguarded by 2023 • 100 associated jobs created by 2023 (1,400 new jobs created on unlocked employment sites by 2031)*

- 0.75ha of new employment land by 2023 (Over 13ha of new employment land in use by 2031)*

*Figures for the period up to 2031 have been provided to illustrate the considerable beneficial impact the scheme would potentially have on the delivery of the emerging Tonbridge and Malling Local Plan. Section 6.2 provides annual figures up to 2031.

The calculation of these jobs and homes figures has been arrived at by using the following approach:

Homes by 2023 (with 2031 in brackets): The methodology employed for considering the impact of works to the LFSA and the East Peckham FAS is as follows:

- **Defended** – has been calculated by counting the number of homes within the flood zone that will be protected by the increased capacity of the flood defences. Having been counted, the number of defended homes would be 1475.
- **New Homes Completed** – has been calculated using information from the emerging Local Plan evidence base. Firstly, the Objectively Assessed Need (OAN) in the borough for the period 2011-2031 (13,920) has been used as a starting point. Then the following have been subtracted from this total to produce a figure for the number of houses still needed to meet the OAN up to 2031:

- Completions since 2011
- Sites with permissions
- Smaller Allocations
- Strategic Allocations (such as Peters Village and Holborough Lakes)
- Sites under construction

This leads to a figure of around 6,032 new homes to be accommodated in the borough in the period up to 2031.

Then employing the following assumptions:

- That the distribution of growth will be such that approximately 50% of the need arises in the West Kent Housing Market Area (where Tonbridge is located)
 $\Rightarrow 6,032 \times 0.5 = 3,016$ homes
- That within the West Kent Housing Market Area around 70% of homes will be located in Tonbridge and Hildenborough.
 $\Rightarrow 3,016 \times 0.7 = 2,111$ homes
- That around 70% of these homes located in Tonbridge and Hildenborough will benefit from better flood defence.
 $\Rightarrow 2,111 \times 0.7 = 1,478$ homes.

Therefore, using this methodology, the number of new homes unlocked by improved flood defences across Leigh and Hildenborough would be in the region of 1,480 homes.

Assuming that unlocked sites will not commence until around 2022/23 and housing delivery will not peak until around 2025-2027, a figure of 100 homes during the period up to 2023 for Part 1 has been estimated.

Housing Numbers for Part 1:

	Defended	New Homes Completed	Total
Total	1475	100 (1,480)	1575 (2,955)

Direct Jobs by 2023: This information has been provided by the Environment Agency and is based on direct job impacts of similar schemes across England.

	Safeguarded	New Jobs	Total
Engineering Consultants	10		10
Design and Supervisory Engineers	6	4	10
Construction Workers	8	22	30
Total	24	26	50

Indirect Jobs by 2023 (with 2031 in brackets): Two separate methodologies have been used to ascertain indirect job creation for the entire project (that is, the jobs created through the unlocking of new employment sites as a result of the flood defence works):

- a) Using the refresh of the Employment Land Review (August 2017): within this document two future jobs growth scenarios (looking at Labour Supply and Labour Demand) set out likely jobs growth during the period up to 2031. The refresh document highlights that jobs growth remained relatively static between 2011 and 2015, leading to a range of between 9,957 and 14,400 jobs being arrived at for the borough as a whole.

Assumption 1: that the Tonbridge area plays a strong role in the economy and 30% of the jobs growth for the period up to 2031 will be in and around the Tonbridge and Hildenborough area, the range would => 2987 - 4320 jobs.

Assumption 2: that of these jobs, around 40% will be generated on sites that will be unlocked by improved defences => 1194-1728 jobs.

- b) This first methodology produces a relatively wide range, and so 'Call for Sites' information has been extracted from the Local Plan process to use a sites-based approach to look to narrow this down. It should be noted that at this stage, there are no guarantees that any particular sites will definitely proceed to inclusion within the adopted Local Plan, the draft version of which is currently heading towards a Regulation 19 consultation in October 2018. However, the refresh of the Employment Land Review does indicate that around 42 ha of new employment land will need to be allocated for the period up to 2031, with a proportion of this allocation being located in or around the Tonbridge area (as illustrated by the emerging development strategy) in order to solidify its role as an employment centre.

Three sites in the east of Tonbridge which have been submitted through the Call for Sites process have had a favourable analysis for employment use at the current stage in the Local Plan process amounting to in excess of 13.3ha. The following assumptions have been applied to these sites:

- i) 90% industry/10% office split
- ii) For industry:
 - a) A ratio of 0.4 applied to 1ha to get an overall floorspace figure.
 - b) 20% taken off this figure to arrive at a net floorspace figure.
 - c) A split of 60% B8/20% B2/20% B1c applied, using HCA employment densities.
- iii) For office:
 - a) A ratio of 0.4 applied to 1ha for 70% and 2.0 for 30%
 - b) 20% taken off this figure to arrive at a net floorspace figure.

c) Using HCA densities – apply an average of 1 job per 12m2.

- ⇒ Industry – 610 new jobs
- ⇒ Office – 780 new jobs
- ⇒ Total – A minimum of 1,390 new indirect B-Class jobs over the course of the plan period (up to 2031)

As one can see, there is overlap between the two methodologies, with one giving a range of approximately 1,200-1,700 jobs, and the other more site specific methodology arriving at a figure of around 1,400 which sits almost in the middle of the range. On that basis, it has been estimated that this scheme will generate approximately 1,400 new indirect jobs during the period up to 2031.

In terms of for the period up to 2022, three key assumptions have been used to arrive at a phasing for indirect job creation:

- a) Assumption 1: Indirect jobs will not start to be created until the first stage of works are substantially completed in 2023
- b) Assumption 2: That the delivery of indirect jobs will arise through a normal distribution, with a peak around 2025-2027.
- c) Assumption 3: That all benefits will have been delivered by the end of the plan period in 2031.

Indirect Job Creation for Part 1:

Type	Number of Jobs (with 2031 figures in brackets)
Industry	21 (294)
Office	27 (378)
Other	52 (728)
Total	100 (1,400)

Employment Land Unlocked by 2022 (with 2031 in brackets): As mentioned above, the Call for Sites process has identified at least three sites for employment that could be unlocked by improved flood defences, as well as further development within existing employment sites. This land amounts to at least **13.3ha** by 2031.

Type	Amount (ha)
Industrial	0.675 (11.97) hectares
Office	0.075 (1.33) hectares
Total	0.75 (13.3) hectares

Track Record of Delivery

The Environment Agency has a considerable track record of delivery. Within Kent and South London, the Environment Agency delivers 20% of the national capital program. In any one year 2 projects of similar size to the Medway FSA project are being delivered in this business unit. Examples of other major capital projects delivered by the Environment Agency locally include:

- Dymchurch Sea Defence Scheme – coastal flood defence initiative costing £60 million and delivered on time and to budget in 2011. The new scheme protected in the region of 2,400 homes and three caravan and camping sites in the Romney Marsh - <http://www.bbc.co.uk/news/uk-england-kent-14092586>

	<ul style="list-style-type: none"> • Broomhill Sands Coastal Defence - £30 million scheme covering 1.3 miles of beach from Camber in East Sussex to Lydd Ranges in Kent was completed in 2016, protecting 1,300 homes and 100 businesses. <p>A good example of a flood storage area scheme (as opposed to a coastal defence scheme) delivered by the Environment Agency is the Banbury Flood Storage Scheme. This scheme consisted of five elements, designed to comprehensively and considerably lower Banbury's chances of flooding in the future:</p> <ul style="list-style-type: none"> • Flood storage reservoir upstream of Banbury: A 2,850m long earth embankment dam has been constructed, creating a flood storage area. The embankment has a maximum height of 4.5m. • Road Raising: raising 860m of the A361 road in the flood storage area. • Localised storage defences downstream of the reservoir • Pumping station at Moorfield Brook • Creation of a Biodiversity Action Plan (BAP) habitat. <p>This project was completed on time in July 2012. For more information on this particular initiative go to: http://www.waterprojectsonline.com/case_studies/2012/EA_Banbury_2012.pdf</p>
<p>2.3. Strategic fit</p>	<p><i>Please detail the SELEP and local objectives/strategies/work programmes/ services which the investment will support</i></p> <p>DEFRA/Environment Agency – National Flood and Coastal Erosion Risk Management Strategy for England: The strategy encourages more effective risk management by enabling people, communities, business, infrastructure operators and the public sector to work together to:</p> <ul style="list-style-type: none"> • ensure a clear understanding of the risks of flooding and coastal erosion, nationally and locally, so that investment in risk management can be prioritised more effectively; • set out clear and consistent plans for risk management so that communities and businesses can make informed decisions about the management of the remaining risk; • manage flood and coastal erosion risks in an appropriate way, taking account of the needs of communities and the environment; • ensure that emergency plans and responses to flood incidents are effective and that communities are able to respond effectively to flood forecasts, warnings and advice; • help communities to recover more quickly and effectively after incidents. <p>The strategy also identifies the River Medway as one of ten Indicative Flood Risk Areas in England.</p> <p>South East LEP – Strategic Economic Plan (SEP): The current SELEP Growth Deal and Strategic Economic Plan (2014) highlights the importance of works to the flood defences under paragraph 4.218, stating “... we will explore with the Environment Agency the potential for the partial funding of improvements to the Leigh Barrier flood defences, given the need to protect identified areas for growth at Tonbridge and Maidstone from future flooding incidents”.</p> <p>This clearly illustrates the regional significance of this scheme.</p> <p>In addition, there are a number of areas where the scheme will ultimately lead to outcomes that positively impact on the aims and objectives of the South East LEP. For example, the ‘A21 London-Tonbridge-Tunbridge Wells’ is identified in the SEP as a Transport Growth Corridor, and this scheme will help to unlock growth that will</p>

contribute towards this focus. Also, STEM skills development opportunities are likely to arise indirectly from this scheme through the construction that is stimulated as a result, but also via businesses that expand or locate to the area.

The Leigh Flood Storage Area is highlighted in the **Growth and Infrastructure Strategy (2017)** as one of three big flood defence investments prioritised for the county.

Kent and Medway Economic Partnership/KCC – Unlocking the Potential:

Highlights the current limited development opportunities in West Kent despite the high levels of demand in the area – “Very constrained capacity due to metropolitan green belt and other environmental designations – so limited delivery despite high demand”

The strategy goes on to highlight that “...with capacity for growth constrained in West Kent, it will be important to ensure delivery in those locations that can be brought forward”

Given the potential of the LFSA works **to unlock sites in West Kent**, this proposal fully supports the aspirations set out in ‘Unlocking the Potential’.

Kent Local Flood Risk Management Strategy 2017-2023:

The strategy aims to:

- To support and improve the safety and wellbeing of Kent’s residents and the economy of Kent through appropriate flood risk management
- To ensure that we all work together effectively to understand and deliver appropriate flood risk management in Kent
- To contribute to sustainable development, regeneration and land management in Kent through the promotion of sustainable flood risk management practices that utilise natural processes where appropriate.

It also recognises the Medway Catchment as one of six priority areas due to previous flooding episodes and the pressing need to improve the flood defence infrastructure.

West Kent Partnership – Priorities for Economic Growth:

This scheme is identified as a ‘transformational project’, noting that an enhanced capacity to the Leigh Flood Storage Area will ensure continued flood protection beyond 2030 for business and homes in central Tonbridge along with an associated scheme that will provide additional flood protection for local businesses at East Peckham.

Tonbridge & Malling Economic Regeneration Strategy 2015-2019 (TMBC):

Under Chapter 4 - Funding for Key Infrastructure, the strategy states that:

“Our future infrastructure funding priorities include the following...investment...to improve the Leigh Flood Storage Area to provide better flood protection to Tonbridge, Hildenborough, and East Peckham.”

It was subsequently agreed by the Economic Regeneration Advisory Board in September 2015 that the Leigh Flood Storage Area was the Borough Council’s top priority for investment.

Environment Agency:

The Medway Flood Partnership launched its Medway Flood Action Plan in December 2017. This action plan outlines how the partnership will reduce the risk of flooding to 9,000 properties in communities along the River Medway. The plan sets out a shared action plan for the next 5-10 years, and a 25 year vision for the future. The delivery of the

	Leigh Flood Storage Area and Hildenborough works is given a high priority within the action plan.																																																															
2.4. Summary outputs	<table><tr><th></th><th>18/19</th><th>19/20</th><th>20/21</th><th>21/22</th><th>22/23</th><th>Totals</th></tr><tr><td>Project Delivery Jobs Created (FTE)</td><td></td><td></td><td></td><td>10</td><td>16</td><td>26</td></tr><tr><td>Project Delivery Jobs Safeguarded (FTE)</td><td></td><td></td><td></td><td>7</td><td>17</td><td>24</td></tr><tr><td>Indirect Jobs Created (FTE)</td><td></td><td></td><td></td><td></td><td>100</td><td>100</td></tr><tr><td>Businesses Protected</td><td></td><td></td><td></td><td></td><td>200</td><td>200</td></tr><tr><td>Homes Protected</td><td></td><td></td><td></td><td></td><td>1475</td><td>1475</td></tr><tr><td>Homes - Started</td><td></td><td></td><td></td><td></td><td>125</td><td>125</td></tr><tr><td>Homes - Completed</td><td></td><td></td><td></td><td></td><td>100</td><td>100</td></tr><tr><td>New Employment Space (ha)</td><td></td><td></td><td></td><td></td><td>0.75</td><td>0.75</td></tr></table> <p><i>Note: 1 FTE job = 30 hours per week or more; Permanent job = 12 months or more</i></p>		18/19	19/20	20/21	21/22	22/23	Totals	Project Delivery Jobs Created (FTE)				10	16	26	Project Delivery Jobs Safeguarded (FTE)				7	17	24	Indirect Jobs Created (FTE)					100	100	Businesses Protected					200	200	Homes Protected					1475	1475	Homes - Started					125	125	Homes - Completed					100	100	New Employment Space (ha)					0.75	0.75
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2.5. Planning policy context, consents and permissions	<p><i>Please include timeline where appropriate</i></p> <p>Planning Permission is still to be sought, although pre-app discussions have taken place and are well advanced with the Local Planning Authority and the Borough Council has identified the implementation of these works as being its top priority.</p> <p>Timescale:</p> <ul style="list-style-type: none">Leigh Flood Storage Area Land negotiations and planning permission will be sought in 2018/19 (Legal mechanism for delivery of LFSA already explored by EA legal team. The River Medway Flood Relief Act 1976 has sufficient scope to allow delivery of the enlargement to Leigh FSA) <p>NB Landowners have already agreed in principle to allow defences to be built on their land in Hildenborough. Negotiations to formalise this are in hand and should be completed by February 2019.</p>																																																															
2.6. Delivery constraints	<ul style="list-style-type: none">Legal challenge – use of EA permissive powers and early review of legal approach are underway.Technical issues – will be mitigated through the design process.Planning issues – will be mitigated through an ongoing working relationship with the Local Planning Authority.																																																															
2.7. Scheme dependencies	<p><i>Please provide details of any related or dependent activities that if not resolved to a satisfactory conclusion would mean that the full economic benefits of the scheme would not be realised.</i></p> <p>Securing Planning Permission:</p> <p>In order to achieve the full economic benefits of this scheme, key housing allocations and employment sites will need to achieve full planning permission, and be implemented.</p> <p>The Borough Council is in the process of producing a new Local Plan for the period up to 2031 and has identified a need to allocate sites to provide approximately 7,000 additional homes, around half of which are likely to be needed in the West Kent Housing Market Area, and additional employment land, predominantly in the Tonbridge area.</p>																																																															

	<p>Tonbridge and Malling Borough Council has a good track record of delivery and its positive approach to sustainable growth has ensured that in recent years it has regularly approved the highest percentage of planning applications in Kent (over 90%). As such, whilst it can't be guaranteed that applications relating to the associated benefits of the scheme will all be approved, the Borough Council does take a pro-active and 'can do' approach to growth.</p> <p>Securing All Partnership Funding Contributions: All partners have formally agreed contributions towards the scheme, with funding agreements now in place.</p>
2.8. Scope of scheme and scalability	<p><i>Please summarise what the scope of the scheme is. Provide details of whether there is the potential to reduce the projects costs but still achieve the desired outcomes – or increase projects costs for much improved outcomes.</i></p> <p>The planned interventions for Part 1 are to increase the volume of storage available at the Leigh FSA by 30% and construct local embankments in Hildenborough to provide adequate protection to existing homes and businesses and to unlock new sites for development.</p> <p>Several efficiencies have already been identified in order to make the scheme as cost effective as possible.</p> <ul style="list-style-type: none"> • Some of the local embankments which form part of the scheme to increase the size of the Leigh FSA will be constructed out of locally won material. This material has been offered to Tonbridge School for free. Rather than be considered as waste to be moved off site it will provide construction material worth in excess of £500K. • Additionally the Environment Agency is working to achieve 15% efficiency savings across the board. <p>The scope of the scheme cannot be reduced further in scale without compromising considerably the level of protection required to provide adequate protection to existing homes and businesses and to unlock new sites for development.</p>
2.9. Options if funding is not secured	<p><i>Please summarise what would happen if the funding for the scheme was not secured - would an alternative solution be implemented and if so please identify how it differs from the proposed scheme and how it would be funded.</i></p> <p><i>Is doing nothing an option?</i></p> <p>The Environment Agency policy is to do nothing if contributions are not forthcoming. There would be no scheme and no improvement to the standard of protection, and as such the potential for unlocking new development sites for new jobs and homes would not be realised. If works are not carried out the condition of the Leigh FSA would decline. The structure is a 'Category A' dam operated under the Reservoir Safety Act 1975. At some point the independent inspecting engineer would declare the reservoir unsafe to impound water and it could no longer be operated as a flood management structure, which would have major implications, both in terms of existing homes and businesses, but also for sustainable economic growth in the area.</p>

3. ECONOMIC CASE

The economic case determines whether the scheme demonstrates value for money. It presents evidence on the impact of the scheme on the economy as well as its environmental, social and spatial impacts.

For projects requesting over £5m of SELEP directed funding, a separate economic appraisal should be undertaken and supplied alongside this application form. This should provide:

- *A calculation of Benefit Cost Ratio according to Government guidelines*
- *Proper inclusion of optimism bias and contingency linked to a quantified risk assessment*
- *Inclusion of deadweight, leakages, displacement and multipliers*
- *An appraisal spreadsheet with clearly identified, justified and sensitivity-tested assumptions and costs*

3.1. Impact Assessment

Please provide a description of the impact assessment of the scheme with some narrative as to why other options have been discounted.

This should include a list of significant positive and negative impacts and a short description of the modelling approach used to forecast the impact of the scheme and the checks that have been undertaken to ensure that the approach taken is fit for purpose.

As set out in section 6.4, work on the FDGIA full Outline Business Case (OBC) will be finalised in October 2018, and work is ongoing to refine the economic case (which is attached as Appendix 9). However, the following information from the initial assessment (Appendix 8), in addition to some of the more recent ongoing work in the Outline Business Case, provides a clear indication of the robustness of the economic assessment.

The economic assessment for Leigh Flood Storage Area and Hildenborough has followed the principles of the Flood and Coastal Erosion Risk Management – Appraisal Guide (FCERM-AG) (Environment Agency, 2010), as updated by supplementary guidance on the DEFRA website. Depth damage data has been taken from the Multi-Coloured Manual (MCM) (Flood Hazard Research Centre, 2015). In accordance with Treasury guidance a 100 year appraisal period has been used and the Treasury variable discount rate has been applied.

Whilst recognising that work is ongoing, the full methodology (October 2016) is provided in Appendix 8 (Appendix F of the River Medway Flood Storage Areas Initial Assessment Technical Report). However, in short, the baseline economic flood damage assessment has included calculation of the following:

- Property damage – using:
 - i) the National Receptor Database (version 4, 2015) and Mastermap building outlines to derive the property dataset
 - ii) maximum flood depth extracted at each property location from the hydraulic model results for a range of design flood events and for each modelled scenario
 - iii) Multi-Coloured Manual methodology and depth damage curves
 - iv) Threshold survey information where available, and where not available, assumed thresholds of 150mm for residential properties and 50mm for non-residential properties, and
 - v) Cap on property damages at their current market value (2016) calculated either from residential property price uplifted by the Distributional Impact (DI) factor, or from non-residential rateable values factored by the gross annual rental yield.
- Evacuation costs for residential properties experiencing above floor level flooding.
- Vehicle damages.
- Cost of emergency services.
- Risk to life.

The benefits of a reduced risk of flooding on the human intangible effects of health and stress were also included. These are measured directly as a benefit and so are listed separately in the option comparison tables provided in Appendix 8. At the current stage, there has been no inclusion of damages from agriculture or infrastructure.

The impact of climate change has been incorporated into the economic appraisal in accordance with the Environment Agency guidance. The implications of the 2016 guidance are set out in Appendix 8 (Appendix F).

For the purposes of the economic assessment, Average Annual Damages (AADs) are discounted over a period of 100 years using a discount factor to generate a Present Value Damage (PVD).

List of Impacts

In addition to the considerable benefits as set out in the strategic case that relate to **the unlocking of growth and the delivery of new homes and employment opportunities**, it is also worth highlighting that there are numerous benefits that arise directly from these works:

Positive impacts	Negative impacts
1475 existing homes better protected from flooding	Small-scale temporary loss of agricultural land.
200 existing businesses better protected from flooding	Potential small-scale impact on landscape.
50 direct jobs created and safeguarded by 2023 (related to the design and build)	
Reduction in insurance premiums for businesses and home owners within the flood zone, helping to unlock greater disposable income into the local economy.	
New leisure/recreation opportunities	
New habitat creation	
Improvements to protection of infrastructure (especially road and rail)	
Positive Public Relations for partner organisations and funders.	

Additional information about some of the qualitative benefits and impacts is also included in the emerging outline business case - Appendix 9, especially with reference to Tonbridge station and the rail network, the A26, the local economy (see section 3.3), agricultural land and ecology.

3.2. Outputs

*Identify jobs, floor space and housing starts connected to the intervention, quantify the outputs in tabular format and provide a short narrative for each theme (i.e. jobs/homes/floorspace) explaining how the project will support the number identified. **Please describe the methodology used for calculating jobs and homes numbers.***

Information regarding **the outcomes of this scheme – namely the unlocking of sites that will facilitate a growth in jobs and homes** - have been provided in the strategic case (as well as within the Benefits Realisation Plan). The outputs – i.e. relating directly to the scheme – are taken to be the delivery of the flood protection works – increase the flood reservoir water level at Leigh from 28.05m to 29m and to deliver a complementary local scheme at Hildenborough. Information relating to these outputs are set out below (provided in more detail in Appendix 9):

	Output	Detail
	Increase the flood reservoir water level maximum from 28.05m to 29m at Leigh.	Concrete revetment on the Main Embankment back-slope from northern tie-in to A21 (MIOS)
		Geotextile revetment on the Main embankment back-slope from A21 to southern tie-in (MIOS)
		New Gate Drive System, sill beam and plates and gate guide rollers (MEICA)
		Standby Programmable Logic Control operating kiosk and expanded server room (MEICA)
		Minor ancillary upgrade improvement (lighting, access etc.) (MEICA)
		New wave wall to control overtopping
		Raise protective berm to Network Rail embankment to new water level
		Raise embankment at Cattle Arch to Paul's Farm Brook to tie into higher ground at new water level.
		Upgrade pumping station near Cattle Arch and install new pumping station at Paul's Farm Brook.
		Minor flood wall to reduce impact on Penshurst Place car-park
		New fishpass in Powdermill Stream
	Delivery of a local FCRM scheme at Hildenborough	Upgrade existing embankment near Hawden Farm, Hildenborough.
		Install new control structure and pumping station to prevent back-up of River Medway into Hildenborough during full discharge.
3.3. Wider benefits	<p><i>Please describe below any wider economic benefits that the scheme will achieved that will help to contribute to the overall value for money of the scheme.</i></p> <p>In addition to the direct outputs and outcomes associated with jobs and homes, there are also a number of wider benefits that will be derived from this project – covering economic, environmental, transport and leisure impacts:</p> <ul style="list-style-type: none"> - Economic viability of town centre businesses – in previous flooding events a sizeable number of businesses (on the High Street and on industrial estates) have struggled through having taken a considerable financial hit as a result of property damage and loss of earnings. With flooding events occurring every 10 years or so, some businesses are suffering this impact on a relatively regular basis. This naturally has an impact on property maintenance/investment and can contribute towards some properties contributing negatively to the town centre. Improvements to the flood defences will improve business confidence and investment in the town centre. - A Gross Value Added (GVA) local economy assessment was undertaken using specific commercial property risk within Tonbridge, accompanied by average national statistics to quantify the added value to the economy. This indicated an additional £20-23m of PV benefits for Maintain to Improve (Improve Leigh (29.0mAOD) and Hildenborough) respectively (referred to in Appendix 9) - Through the use of the Environment Agency's Carbon Calculator Tool at the detailed business case stage, the carbon impact of the scheme will be minimised, ensuring a sustainable construction. The Carbon Calculator includes the carbon used for construction, operation, maintenance and demolition of assets. The calculator will be used to compare options, to track the carbon footprint of the preferred option and to report construction carbon to Defra. As well as comparing carbon usage, the 	

	<p>calculator can be used to fine tune the option selection process to minimise the project carbon footprint.</p> <ul style="list-style-type: none"> - As well as protecting homes and businesses, and unlocking new growth, the project will also ensure greater protection of the transport network - both road and rail – within the scheme area. - Habitat Creation – the improvements to the flood defence works will ultimately lead to the creation of new habitats that will help to stimulate areas of biodiversity. - Footpaths – new leisure opportunities will arise through the creation of footpaths along the flood defence works. Such infrastructure will also help contribute towards supporting the healthy living agenda.
3.4. Standards	<p><i>Provide details of anticipated standards (such as BREEAM) that the project will achieve.</i></p> <p>The Environment Agency work to ISO14001 and ISO 9001</p> <p>ISO 14001 is the principal management system standard which specifies the requirements for the formulation and maintenance of an Environmental Management System. This helps to control environmental aspects, reduce impacts and ensure legal compliance.</p> <p>ISO 9001 is the internationally recognised standard for Quality Management Systems (QMS).</p>
3.5. Value for money assessment	<p><i>Please consider value for money in broad terms, e.g.:</i></p> <ul style="list-style-type: none"> • <i>Cost per job</i> • <i>Cost per housing unit</i> • <i>Leverage ratio against SELEP investment and as a percentage of total scheme cost</i> <p>Jobs and Homes:</p> <p>The jobs and homes figures for this scheme are predominantly as a result of the unlocking of sites for development and as such are included in the strategic case, however as an indication of what the delivery of the scheme could unlock in this respect:</p> <p>⇒ Cost per Job: Direct and Indirect up to 2031 – £15.574m/1,450 jobs = c.£10,700 per job</p> <p>⇒ Cost per housing Unit: Up to 2031 - £15.574m/1,480 homes = c.£10,500 per home</p> <p>Leverage:</p> <p>The leverage ratio for the scheme of 1:5.75 illustrates that whilst the SELEP investment is fundamental to the delivery of the scheme, and will be a vital part of the partnership funding model that is employed in the delivery of flood defences, there is also commitment from other organisations that recognise the importance of the scheme. This funding from other sources equates to around 85% of the total scheme cost:</p> <p>⇒ Leverage Ratio: c. £2.3m of SELEP investment will lever in £13.224m. This equates to a ratio of 1:5.75</p> <p>⇒ Percentage of Total Scheme Cost: SELEP Investment would equate to around 15% of the total scheme cost.</p> <p>As such, there is a healthy level of match-funding associated with this scheme.</p> <p>Benefit Cost Ratios:</p> <p>In addition, the Benefit Cost Ratio and the Incremental Benefit Cost Ratio (against both maintain and improve LFSA) for the scheme is particularly high, especially in comparison to other types of infrastructure investment (see 3.6).</p>

3.6. Options assessed

Please provide a description of at least 4 options (or choices) for investment, together with their relative advantages and disadvantages (a SWOT analysis):

In the initial assessment, the Environment Agency set out a number of options (long list options), including:

- Do nothing - Take no action. If this option were selected, owing to reservoir safety considerations, the Leigh FSA and Hildenborough would need to be rendered inoperable. Flood risk to existing beneficiaries would be increased greatly and housing and employment sites for development would not be unlocked. Cost – minimal.
- Do minimum - Maintain Leigh FSA and extend its life to 2035, no improvement in current standard of protection, indeed diminution of standard of protection as climate change takes effect. This option would be particularly unsatisfactory as whilst it would provide some protection, an increased number of homes and businesses would become vulnerable to flooding and housing and employment sites for development would not be unlocked. Cost – around £10m.
- Do something - Improve Leigh FSA. This improvement to the flood defences would help to protect additional housing and potentially unlock a limited number of new housing and employment sites. Cost – around £13.8m.
- Do optimum - Improve Leigh FSA and Hildenborough. This approach affords protection to the largest number of homes and businesses and maximises the wider benefits in terms of new jobs and housing. Cost – around £15.6m.

Other options were assessed for a long list but have been omitted from this proforma (although they are supplied in Appendix 8).

Optimism bias was allowed for at 30% for improvements to the Leigh FSA.

Funding decisions for flood risk management projects are based on the FCERM-Appraisal Guidance decision rule (Environment Agency, 2010). This rule consists of a number of stages:

- 1. Testing of benefits exceeding costs:** The BCRs of all options are greater than 1, indicating that the benefits outweigh costs.
- 2. Identify the leading option using BCRs and IBCRs:** As illustrated in the table below, the initial leading option is maintain, as this has the highest BCR of 12.3. However, as stated above this would be an unsatisfactory option overall as it would lead to a greater number of homes and businesses becoming vulnerable to flooding and offer up nothing in the way of growth potential. In order to identify one of the ‘Improve’ options as the leading option, the decision rule states that an IBCR greater than 1 is required. As is evident below, combining the Leigh FSA improvement works with the Hildenborough flood alleviation scheme gives a **BCR of 9.8 and an IBCR (against improve Leigh FSA) of 1.4**. This option, as opposed to considering Leigh FSA in isolation, has a slightly lower BCR but offers up a wider level of protection and greater overall benefits for the area. Under the FCERM-Appraisal Guidance decision rule, the high BCR/IBCR is sufficient for the leading option to become ‘Improve Leigh FSA with the Hildenborough scheme’.

	Total PV Damages £k	Total PV Benefits £k	PV Cost £k	Contribution required £k	BCR	IBCR (against Improve Leigh FSA)
Do Nothing	457,028	-	-	-	-	-
Maintain/ Refurbish	272,414	188,000	10,000	600	12.3	-

Improve Leigh FSA	246,196	215,442	13,800	2,900	11.3	-
Improve Leigh FSA and local embankments in Hildenborough	242,202	220,084	15,574	5,800	9.8	1.4

3. **Consider how contributions could affect BCRs and IBCRs:** contributions from Central Government and partners (as set out in this business case) towards the 'Improve' options strengthen the case for the options to be taken forward.
4. **Consider if uncertainty could affect the choice of option:** the following sensitivity testing has been carried out to date:

- **Sensitivity Test 1: Optimism Bias increased from 30% to 50%, increasing costs of all options to reflect possible uncertainty. Note that a higher Optimism Bias of 60% had already been included in the costs for the scheme at Hildenborough to reflect the higher level of cost uncertainty for this option.**
- **Sensitivity Test 2: Leigh Maintain and Improve costs reduced by £620,000; the cost of works recommended for reservoir safety purposes and hence could be included as a Measure in the Interest of Safety instead of FCERM activity.**
- **Sensitivity Test 3: PVb reduced by 10% across all options to reflect the uncertainty associated with the capping value used for properties with MCM code 400 (warehouses)**
- **Sensitivity Test 4: For the Leigh FSA Improve with Hildenborough option only, with the capital costs for the Hildenborough scheme reduced to reflect a potential shorter defence alignment.**

While the BCRs and IBCRs change, the changes were not sufficient to change the identified preferred options. Sensitivity testing was also undertaken on the partnership funding calculations.

5. **Consider whether wider objectives are met by the leading option:** the objectives of this study were to assess the viability of options to reduce the risk of flooding to Tonbridge and the downstream communities. The existing Leigh FSA reduces flood risk to Tonbridge and Hildenborough and to a lesser extent East Peckham. This risk can further be reduced by the proposed Leigh FSA improve option combined with Hildenborough, thus meeting the study objectives for the area.

This process leads to the conclusion that the **'Improve Leigh Flood Storage Area combined with Hildenborough FAS' is the leading economic option in the initial assessment.**

N.B The emerging OBC has taken this options analysis a step further and developed a number of short-listed options to take forward to detailed appraisal:

- Option 1 - Do nothing (as per the initial assessment)
- Option 2 - Do minimum (as per the initial assessment)
- Option 3a - Improve Leigh FSA (28.6m AOD) and Hildenborough
- Option 3b - Improve Leigh FSA (28.85m AOD) and Hildenborough
- Option 3c - Improve Leigh FSA (29.0m AOD) and Hildenborough

The analysis of these options are set out in Appendix 9. This includes analysis of Present Value Damages and Benefits, Present Value Costs, and Net Present Values, along with an appraisal of non-financial benefits, which leads to an option ranking that selects Option 3c as the preferred economically justified option. Minor sensitivity testing has demonstrated that the selection of **Option 3c** is robust.

<p>3.7. Scheme assessment</p>	<p><i>Provide a brief description of a modelling and appraisal methodology – including details of data source. Show sufficient information to demonstrate the analysis supporting the economic case fitness for purpose.</i></p> <p>Full details of the economic appraisal methodology is set out in the Initial Assessment Flood Economic Appraisal (2016) – Appendix F as set out in Appendix 8.</p> <p>The methodology is essentially broken down into two parts – the options cost methodology and the economic flood damages methodology in accordance with the multi-coloured manual and flood and coastal erosion risk management (FCERM) appraisal guidance.</p> <p>In brief, the options cost methodology:</p> <ul style="list-style-type: none"> • Sets out the cash costs for capital works, with the costs listed in the document being prior to the inclusion of Optimism Bias. • Details of how the calculation methodology has been arrived at for each area of capital works is provided. <p>In brief, the economic flood damages methodology considers:</p> <ul style="list-style-type: none"> • Property Damages: assessed using MCM methodology and depth damage curves. • Property Thresholds: surveys undertaken by the EA with some individually-surveyed property thresholds applied where available. • Flood Depths: taken from model results provided by JBA consulting. • Capping of Damages: residential damages were capped at market value, by property type. These prices were based on 3-month moving average house prices, taken from data on property sales prices in the study area. These prices were then uplift by the DI Factor, calculated from social class data (NOMIS). All caravans were assumed to have a market value of £75k, with a value of £84-89k once the DI Factor uplift is applied. • In accordance with MCM methodology, the market values of non-residential properties were calculated by multiplying the property specific rateable value by 100 and then dividing by the gross annual rental yield (using the south-east values published by ARLA). Rateable values for large commercial developments at risk of flooding were obtained from the VOA, and for all other non-residential properties, Government rateable value statistics from the DCLG were applied. • Evacuation Costs: in accordance with MCM methodology, evaluation costs for individual properties have been estimated as a function of the flood depth and property type. Evacuation costs have only been included for residential properties experiencing above floor level flooding. • Vehicle Damages: using the MCM methodology, with an average value of £3,100 and the total number of vehicles likely to be damaged during a flood equating to 28% of the total number of properties (residential and commercial) at risk. This percentage was calculated using historic data on the 2007 and 2012 UK floods. • Emergency Costs: in line with MCM methodology, have been costed at 5.6% of the total property damages. • Risk to Life: estimated as a broad-brush 1% addition to the total calculated flood damages. • Human Intangibles: these are based on the change in the Standard of Protection offered by each option to each individual property according to the modelling results. • Calculation of Annual Average Damages: for each modelled flood event the total of the property and vehicle damages, evacuation and emergency services costs and risk to life was summed. Event probability was then taken into account, and the AAD calculated.
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- Climate Change: uses Environment Agency guidance to provide an upper end, lower end and change factor estimate for the potential increase in peak river flow in each river basin over the next 100 years compared to 1961-1990 baselines

Using this data, along with property counts, the calculation of present value damages, present value benefits and benefit cost ratios, as well as sensitivity testing, the choice of economically preferred option is based on the FCERM-AG decision rule, i.e. the decision stages set out in 3.6. A sixth stage of the decision rule is to make an option choice – the economic appraisal states that the leading economic option is to improve Leigh FSA combined with the Hildenborough FAS as it would reduce flood risk to properties in Hildenborough and Tonbridge and to a lesser extent, some downstream communities. In addition to this, there are the wider strategic benefits arising from the unlocking of sites that will lead to the creation of jobs and homes.

4. COMMERCIAL CASE

The commercial case determines whether the scheme is commercially viable. It presents evidence on risk allocation and transfer, contract timescales, implementation timescales and details of the capability and skills of the team delivering the project.

4.1. Procurement

Please provide details of the procurement route and strategy that will be used for the project. This should include details of the procurement mechanism to be used, details of whether it is an existing framework and contract, the timescales associated with the procurements and details of other routes that were considered for delivery and reasons why these were rejected.

The agreed approach in the procurement strategy for the main appraisal contract is to use the Water and Environmental Management (WEM) Framework– a national EA framework that has been procured according to OJEU rules. The WEM Framework is divided into lots, which helps in selecting the appropriate consultant for each level of assessment.

Following a national competitive tendering exercise, the following suppliers were selected to deliver projects within Kent and South London (Programme Delivery Unit 3):

Lot 1 (Modelling, Mapping and Data Services) – CH2M

Lot 3 (Engineering and Related Services) – CH2m and Jackson Hyder

Lot 4 (Asset Delivery) – Team Van Oord (TVO) and Volker Boskalis Atkins (VBA)

The contract for appraisal and design has been let to VBA. The reason for this is that VBA were appointed to deliver the initial assessment work for this scheme through competitive tendering in 2013 and have a good working knowledge of the area. VBA have strong experience in delivering appraisal work for the Environment Agency through not only the Kent and South London appraisal packages which were awarded in 2016 but also other appraisal work around the UK.

VolkerStevin, Boskalis Westminster and SNC Lavalin Atkins (the three companies that make up the joint venture) also all have a strong focus apprenticeships, traineeships and internships, adding considerable value to the contracts they deliver. For example:

- The Volker Group has an Apprenticeship Academy - <http://www.volkerwessels.co.uk/en/careers/early-careers/apprentice-academy> - as well as a graduate programme and work placements.
- Boskalis Westminster has a Traineeship International Programme - <https://careers.boskalis.com/student/technical-traineeship/>
- SNC Lavalin Atkins has an Apprenticeship Programme - <https://careers.atkinsglobal.com/apprenticeships>

Examples of initiatives around the UK delivered by VBA under the WEM Framework include:

The Louth flood alleviation scheme (Lincolnshire) - £6.5m

This scheme has seen two flood storage areas constructed outside the town. The first was located off the A157 and the second off Halfpenny Lane, both adjacent to the A16. The embankment of the north storage area measures 150m and for the south, 200m. These storage areas have reduced the risk of flooding, from the River Lud, to 355 local properties.

	<p>Littlehampton Flood Defence Scheme (West Sussex) - £14.5m</p> <p>This award-winning scheme has improved the tidal flood defences along the East Bank of the River Arun in Littlehampton, including defences from the lighthouse on the promenade, to north of the A259. It has protected over 2,000 residential properties and businesses against 100 years of predicted sea level rise and was completed in March 2015.</p> <p>VBA are also able to manage delivery of this project within the proposed timescale.</p>
4.2. Commercial dependencies	<ul style="list-style-type: none"> • Planning permission being secured. • Negotiations with land owners continue to be fruitful. • Private sector funding contributions secured. • Contractor secured for delivery of scheme • Contractor delivers as per contract.
4.3. Commercial sustainability	<p><i>Please can you identify how the project will be commercially sustainable? Will the project require ongoing revenue support? If so how will this be funded?</i></p> <p>Revenue support will be offered through the Flood and Coastal Erosion Risk Management revenue budget. This is accounted for in the Environment Agency business case. Whole life costs have been accounted for in preparing the funding bid for flood defence funding (FDGIA). Please refer to the section on post construction, operation and maintenance (Section 6).</p>
4.4. Compatibility with State Aid rules	<p><i>Does funding this scheme constitute state aid?</i></p> <p>The EA have done a rather comprehensive analysis of State Aid for the LFSA and EPAS project.</p> <p>The Environment Agency's State Aid Unit have looked at this project and have concluded that compliance with the EU Law on State Aid is fulfilled by ensuring that the flood defence works meet the criteria of being GENERAL INFRASTRUCTURE (which in relation to flood defence, it is the EA's public remit to provide). In order to ensure the infrastructure is general in nature, the element of selectivity needs to be eliminated. This is already apparent with this proposal as it is designed to protect many existing homes & businesses, highways and other public assets, moreover the many undertakings which will be protected operate in different market sectors.</p> <p>Inextricably linked with this is ensuring that no elements of these works are DEDICATED, that is designed and constructed to accrue benefits to only one or few undertakings (which normally come at an additional cost), this is because the element of selectivity can clearly be seen in such work. Should any dedicated aspects be identified, then they will either be designed out, or paid for in their entirety by the beneficiary, thus ensuring the infrastructure remains general.</p> <p>To conclude – the EA do not foresee difficulties in ensuring state aid compliance, which will be achieved through the continued involvement of the EA's State Aid Unit.</p>

4.5. Commercial viability	<p><i>Please provide:</i></p> <ol style="list-style-type: none"> <i>1. Evidence to show the risk allocation and transfer between the promoter and contractor and timescales identified in procurement and/or contract management strategy</i> <i>2. Definition of approach taken to assess commercial viability</i> <i>3. Arrangements for cost overrun</i> <i>4. Letter from local authority S151 officer.</i> <ol style="list-style-type: none"> 1. Risk will be managed and allocated through the NEC 3 suite of contracts. The Environment Agency and partner funding authorities will maintain a risk register to manage and report on the project risk, this register will be developed during the full business case to Defra. The project procurement strategy sets out the strategy for allocating risk within the contracts let during the project. 2. All commercial contracts let during the project will be through the Environment Agency's frameworks. The overarching control provided by the framework agreements provides commercial assurance as to the viability of the entities employed. 3. The Environment Agency's financial scheme of delegation (FSOD) process will be used to manage and control cost and cost overrun. 4. A confirmation letter from the s151 Officer that demonstrates that adequate assurance systems are in place is provided as Appendix 1 to this business case.
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5. FINANCIAL CASE	
<i>To be completed in conjunction with the spreadsheet in Part B</i>	
5.1. Total project cost and basis for estimates	£15.574million (This cost based on Environment Agency estimates of cost of construction) with £50,000 for monitoring and accountable body costs)
5.2. Total SELEP funding request	Part 1 - £2,298,500 plus £50,000 monitoring and accountable body costs.
5.3. Other sources of funding	<p>Environment Agency – £10,140,500 (Flood Defence Grant in Aid) KCC – £2.5million (refer to Appendix 1 – s.151 Assurance Letter) TMBC – £0.5million (refer to Appendix 2) Southern Regional Flood & Coastal Committee - £0.085m (2017/18)</p> <p>Contributions towards working up the business case up during 2015/16 and 2016/7 have also been given to the EA as part of a legal agreement by KCC (£75k), TMBC (£75k) and Maidstone Borough Council (£75k).</p> <p>In kind contributions from Tonbridge School (construction material/land/maintenance of flood bank) and Hawden Farm will form an essential part of this scheme.</p>
5.4. Summary financial profile – expand as appropriate	

(£m)	17/18	18/19	19/20	20/21	21/22	22/23	23/24	Total
Source of funding – List here the amount of funding sought								
SELEP LGF request	140,000	710,000	482,500	966,000	0	0	0	2,298,500
SELEP (LGF Monitoring and Accountable Body)	0	16,000	17,000	17,000	0	0	0	50,000
EA (FDGiA)	0	0	0	0	3,506,500	6,380,000	254,000	10,140,500
KCC	0	0	0	0	2,500,000	0	0	2,500,000
TMBC	0	0	0	0	500,000	0	0	500,000
SRF&CC	85,000	0	0	0	0	0	0	85,000
Total	225,000	726,000	499,500	983,000	6,506,500	6,380,000	254,000	15,574,000
(£m)	17/18	18/19	19/20	20/21	21/22	22/23		Total
Costs - List here the elements of gross costs, excluding optimism bias.								
Project Management	30,000	100,000	100,000	100,000	100,000	100,000	30,000	560,000
Appraisal	195,000	475,000	0	0	0	0	0	670,000
Detailed design	0	85,000	332,500	600,000	632,500	0	0	1,650,000
Cost management	0	50,000	50,000	50,000	100,000	100,000	50,000	400,000
Supervision	0	0	0	100,000	250,000	200,000	70,000	620,000
Construction	0	0	0	103,000	5,394,000	5,950,500	94,000	11,541,500
Other – Monitoring and accountable body cost	0	16,000	17,000	30,000	30,000	29,500	10,000	132,500
Total	225,000	726,000	499,500	983,000	6,506,500	6,380,000	254,000	15,574,000

5.5. Viability: How secure are the external sources of funding?	<p>Please provide evidence of the security of the specified third party contributions</p> <table><tr><th>Type</th><th>Source</th><th>How secure?</th><th>When will the money be available?</th></tr><tr><td rowspan="5">Public</td><td>KCC/MBC/TMBC/EA</td><td>Legal agreement to fund development of business case for Leigh and Hildenborough up to 2018</td><td>Now</td></tr><tr><td>SRF&CC</td><td>Already secured</td><td>2017/18</td></tr><tr><td>FDGiA</td><td>Policy</td><td>As required</td></tr><tr><td>TMBC</td><td>Written</td><td>As required</td></tr><tr><td>KCC</td><td>Written</td><td>As required</td></tr><tr><td rowspan="3">Private</td><td>Tonbridge School</td><td rowspan="2">Written commitment</td><td rowspan="2">Prior to tender for construction being let</td></tr><tr><td>Hawden Farm</td></tr><tr><td>Southern Water</td><td>Verbal commitment</td><td>In kind/during construction phase</td></tr></table>	Type	Source	How secure?	When will the money be available?	Public	KCC/MBC/TMBC/EA	Legal agreement to fund development of business case for Leigh and Hildenborough up to 2018	Now	SRF&CC	Already secured	2017/18	FDGiA	Policy	As required	TMBC	Written	As required	KCC	Written	As required	Private	Tonbridge School	Written commitment	Prior to tender for construction being let	Hawden Farm	Southern Water	Verbal commitment	In kind/during construction phase
Type	Source	How secure?	When will the money be available?																										
Public	KCC/MBC/TMBC/EA	Legal agreement to fund development of business case for Leigh and Hildenborough up to 2018	Now																										
	SRF&CC	Already secured	2017/18																										
	FDGiA	Policy	As required																										
	TMBC	Written	As required																										
	KCC	Written	As required																										
Private	Tonbridge School	Written commitment	Prior to tender for construction being let																										
	Hawden Farm																												
	Southern Water	Verbal commitment	In kind/during construction phase																										
5.6. Cost overruns	<p>Cost over-run approval is subject to the same financial scheme of delegation (FSOD) and funding rules as the Full Business Case (FBC). The amount of grant in aid (FDGiA) available to the scheme is set out in the Flood and Coastal Resilience Partnership Funding guidance published by Defra. Expenditure over-run approval will be sought via the FSOD process. This will be funded via central government through the FDGiA process and contributions made by the contributing partner local authorities. A legal agreement has been finalised between the parties setting out the above.</p>																												
5.7. Delivery timescales	<p>The project delivery timescale is within the current 6 year Environment Agency medium term plan and an allocation within this plan has been made. Should the project be delayed then an allocation will need to be made in the next MTP. This risk will be managed by the Environment Agency’s capital allocation team. This will not impact the cost of the project or expenditure of the LGF allocation.</p>																												
5.8. Financial risk management	<p>Identify key risks to the scheme funding and any mitigations</p> <p>Project funding is dependent on partnership funding. The partnership funding rules are set by Defra. If the lead and partner organisations are not able to confirm funding to levels compliant with the rules then the project will not be approved to continue. A legal agreement guaranteeing the level of funding has now been finalised as part of the approval process.</p> <p>At this stage of the process, the Environment Agency have applied a percentage risk allowance to costs as there is not quite enough detail to finalise a Quantitative Risk Assessment (QRA) which will be meaningful. However, a full QRA is well underway and will be available in September 2018.</p> <p>Once the project has been completed (post-2023), ongoing maintenance and monitoring costs will be met through the Environment Agency’s revenue budgets.</p>																												
5.9. Alternative funding mechanisms	<p>If loan funding is requested how will it be repaid?</p> <p>Not applicable</p>																												

	<p><i>Do you anticipate that the total value of the investment will be repaid? If not, how much will be repaid?</i></p> <p>Not applicable</p>
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6. DELIVERY/MANAGEMENT CASE

The management case determines whether the scheme is achievable. It provides evidence of project planning, governance structure, risk management, communications and stakeholder management, benefits realisation and assurance.

6.1. Project management

Please provide details of who will be Senior Responsible Officer for delivering the scheme and the different roles and responsibilities they will play. Please also detail the governance structure for the project identifying how key decisions have or will be made, how the scheme will be monitored and details of the contract management arrangements. Please provide an organogram if available.

Project Management: the project will be managed by the Environment Agency ncpms project management service. The project will have a single project manager and project executive. The management structure for the project will consist of an Area Portfolio Board, Project Board and Project Team. The project will be managed in accordance with Projects in Successful Environments 2 (PRINCE2). The governance structure for the project is shown in Appendix 4.

Project roles and responsibilities:

- Project Sponsor (Area FCRM Manager): is ultimately accountable for the success of the project and benefits realisation. Specific responsibility for strategic decisions and leadership and delegation of delivery to the Project Executive, within defined approvals.
- Programme Board (KSL Area Package Programme Board): drive the project forward and support delivery of outcomes. Specific responsibility for resolving strategic and directional issues, ensuring project delivers within set parameters and defining acceptable risk profile and threshold.
- Project Board (Medway Project/Package Board): accountable to Sponsor and Programme Board for delivery of outcomes. Specific responsibility for the delivery within tolerances set by Sponsor/Programme Board, managing project issues and risk, the escalation route for project issues and for project and external communications.
- Project Executive (ncpms PM1): ultimately responsible for the project, supported by the Senior User and Senior Supplier. Responsible for project assurance, project achieving its objectives, outcomes and value for money and balances the demands of business, customers, users and suppliers.
- Project Manager (ncpms PM2): authority to run the project on a day to day basis. Specific Responsibility for managing the project to agreed tolerances, delivering the project plan, managing the agreed products to time, cost and quality, and monitoring and report progress, managing change control.
- Senior User (PSO Team Leader): works closely with the Project Sponsor to represent the needs of business, with specific responsibility for providing the business quality expectations and define project acceptance criteria, ensure the desired outcomes and benefits of the project are clearly articulated and to ensure the project produces products which deliver the desired outcomes.
- Project Team (Led by ncpms PM): this comprises the Project Manager, Principal Designer, Senior User/Representative, NEAS Representative and external Supplier Project Manager. The Project Team will work with key area staff and other project staff to deliver the work.

Risk Management: the tools used to manage risk will include governance procedures and a risk register. Governance shall follow the projects in controlled

environments (PRINCE2) government recommended approach. Gateways and milestones are set with agreed tolerances within which the project team operate. Monthly highlight reports will be used to report on status.

The risk register will align risks with owners. The WEM Lot 3 supplier will produce an initial project risk register based on outcome of a risk workshop. Once populated, the WEM Lot 3 Supplier will lead updates to the risk register throughout the appraisal process. The Project Executive will have control of risk distribution and will apportion it accordingly within the project tolerances set by the board. The process shall follow the requirements of the Employer's Operational Instruction 152_10 Manual of technical guidance for risk management in ncpms projects. The risk management process will have the following objectives:

- Identify and manage risks to the delivery of the appraisal package contract such that the outcomes are achieved as efficiently as possible;
- Identify and actively manage risk with the potential to seriously impact project delivery as early as possible such that abortive work is avoided;
- Identify and take steps to manage significant risks to the future implementation of the preferred way forward. This may include undertaking site investigations to gain an understanding of the risks;
- Calculate risk budgets using a Monte Carlo analysis, or appropriate risk analysis methods;
- Clearly document residual risks to support further business case submissions;
- Set a risk budget for approval this is realistic for the levels of risk involved.

Contract Management: will be the responsibility of the Project Manager at the Environment Agency. The Project Manager will liaise with the Procurement and Commercial Teams on a regular basis to manage suppliers contracted on the WEM and NCMF2 frameworks over the life of the project. The Project Manager will be named as Employer for the appraisal contract and will be responsible for managing it. They will be supported by the Environment Agency Commercial Lead and Project Executive.

The capital construction stage of the project will require an NEC Engineering Construction Contract (NEC-ECC). An ECC Project Manager will be responsible for managing the delivery contract. They will support the project during the preparation of the tender for the delivery stage.

6.2. Outputs

Please identify how the outputs for the scheme will be achieved within the programme timescales and details of how the project will be monitored and evaluated. Please also complete the outputs delivery table.

Please complete with any baseline information.

In addition to the detailed project specific outputs (as set out in 3.2) which will be delivered between 2021-2023, the following table provides information on associated housing and employment figures for the period up to 2031:

Output	18/19	19/20	20/21	21/22	22/23	Total (2016-2023)
Direct New (Project Delivery) jobs	0	0	0	10	16	26
(Project Delivery) Jobs safeguarded	0	0	0	7	17	24
Indirect jobs	0	0	0	0	100	100
Employment space (ha)	0	0	0	0	0.75	0.75
Businesses Protected	0	0	0	0	200	200
Homes Protected	0	0	0	0	1475	1475
Housing starts	0	0	0	0	125	125
Housing completions	0	0	0	0	100	100

Output	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	Total (2018-31)
Direct New (Project Delivery) jobs	0	0	0	0	0	0	0	0	26
(Project Delivery) Jobs safeguarded	0	0	0	0	0	0	0	0	24
Indirect jobs	200	300	200	150	150	150	100	50	1,400
Employment space	1.5	2.0	2.3	2.5	2.25	1.25	0.5	0.25	13.3
Businesses Protected	0	0	0	0	0	0	0	0	200
Homes Protected	0	0	0	0	0	0	0	0	1,475
Housing starts	150	200	225	200	200	175	150	125	1,550
Housing completions	125	150	200	230	200	200	150	125	1,480

6.3. How will outputs be monitored?

In brief:

	<p>Direct Jobs and Safeguarded Jobs: this information would be derived directly from the Environment Agency and their contractors.</p> <p>Indirect Jobs: the indirect jobs would effectively be accommodated by the new employment space that arises as a result of the unlocking of sites currently within the flood zone. As such, a combination of information from the annual Commercial Information Audit, planning applications (new jobs) and where required, primary research in the form of a questionnaire to businesses would help to secure a relatively robust assessment of indirect job creation.</p> <p>Employment Space: this information will be picked up by the annual Commercial Information Audit which is undertaken by the Local Planning Authority in partnership with the Strategic Business Development & Intelligence Unit at KCC. The baseline data will need to be analysed in order to ensure that only geographically relevant sites are included.</p> <p>Additional Businesses and Homes Protected: work has already been undertaken to quantify the additional level of protection to existing homes and businesses that would arise from the flood defence works proposed in this scheme. This information will be re-assessed on a regular basis.</p> <p>Housing Starts and Completions: this information will be picked up by the annual Housing Information Audit which is undertaken by the Local Planning Authority in partnership with the Strategic Business Development & Intelligence Unit at KCC. The baseline data will need to be analysed in order to ensure that only geographically relevant sites are included.</p> <p>Further information is also provided in the Benefits Realisation Plan which is attached as Appendix 3, as well as the Monitoring and Evaluation Plan (Appendix 7).</p>									
6.4. Milestones	<p>Please identify the key milestones and projects stages relating to the delivery of this project in the table below.</p> <table><tr><th>Project milestone</th><th>Description</th><th>Indicative date</th></tr><tr><td>Strategic outline case</td><td>Case for change confirmed</td><td>Complete</td></tr><tr><td>FDGIA Outline Business case - Leigh and Hildenborough Approved</td><td><ul style="list-style-type: none">the Strategic Case – revisited;the Economic Case – completed according to the Green Book;the Commercial Case – outlines envisaged Deal structure/s and key contractual clauses and payment mechanisms;the Financial Case – contains a detailed analysis of affordability and any funding gaps;the Management Case –develops in more detail how the scheme will be delivered with an outline of the proposed programme/project management plan and if ITC is involved in accordance with PRINCE 2 methodology.</td><td>October 2018</td></tr></table>	Project milestone	Description	Indicative date	Strategic outline case	Case for change confirmed	Complete	FDGIA Outline Business case - Leigh and Hildenborough Approved	<ul style="list-style-type: none">the Strategic Case – revisited;the Economic Case – completed according to the Green Book;the Commercial Case – outlines envisaged Deal structure/s and key contractual clauses and payment mechanisms;the Financial Case – contains a detailed analysis of affordability and any funding gaps;the Management Case –develops in more detail how the scheme will be delivered with an outline of the proposed programme/project management plan and if ITC is involved in accordance with PRINCE 2 methodology.	October 2018
Project milestone	Description	Indicative date								
Strategic outline case	Case for change confirmed	Complete								
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	Tender for MEICA works and awarding of tender	MEICA stands for Mechanical, Electrical, Instrumentation, Control and Automation	October 2018 – February 2019
	Public Consultation Process	Consultation with a wider range of stakeholders, including public consultation events for local residents.	October 2018 - April 2019
	MEICA works	Undertaking of early stage works	February 2019 onwards
	Planning Approval Secured	Consent obtained from the Local Planning Authority to proceed with the works.	May 2019
	Amendment to Medway Flood Relief Act finalised	Amendment to the Medway Flood Relief Act in order to ensure the legislative framework consents to progress with the project	October 2019
	Construction Tender for Main Embankment Works at Leigh and Hildenborough	Procurement.	June – November 2020
	Accelerated Works	Elements of the construction works brought forward in order to ensure accelerated delivery.	June 2020
	Full Business case Hildenborough and Leigh	<ul style="list-style-type: none"> the Strategic Case – revisited and revised if required. the Economic Case –the findings of the procurement included in the analysis and recorded; the Commercial Case – the recommended Deal written-up; the Financial Case – affordability and funding issues resolved; the Management Case – the detailed plans for delivery and arrangements for the realisation of benefits, management of risk; and post evaluation are recorded. 	March 2021
	Main Embankments Construction Leigh and Hildenborough	Construction of main works.	April 2021 - July 2023
A detailed Gantt chart setting out the milestones for the project, the key construction stages, the critical path and all interdependencies is currently being assembled by the Environment Agency			
6.5. Stakeholder management & governance	<i>Please provide a summary of the stakeholder management plan for the scheme. Include any governance arrangements which will materially impact on the delivery of the scheme.</i>		

	<p>The Environment Agency's Communications and Engagement Plan provides a detailed approach to stakeholder management across the whole of the River Medway Flood Storage Area. This plan is attached to this business case as an Appendix 4.</p> <p>In short, amongst other things, the plan identifies agreed ways of working amongst partners, key messages, a stakeholder analysis and plan for future action which targets specific stakeholder groups.</p> <p>Whilst communication is regular and ongoing with stakeholders through meetings, the most recent public consultation events took place in late 2016, which demonstrated a high level of support for the schemes. Further consultations are scheduled as the scheme progresses, with the next events scheduled for the period October 2018-April 2019.</p> <p>The stakeholder analysis identifies stakeholders as high, enhanced or standard. Those with particular relevance to the Leigh Flood Storage Area and East Peckham include:</p> <p>High Members of Parliament for Tonbridge & Malling and Maidstone The Project Executive Funding Forum Relevant Local Authorities Natural England English Heritage National Farmers Union Parish Councils Tier 1: East Peckham, Hildenborough, Tonbridge Forum, and Leigh Network Rail Southern Water Kent Highways Individual Landowners – including Leigh Upstream, New and Old, Tonbridge School, and Tonbridge Sailing Club</p> <p>Enhanced (quadrant 2 and 4) Country Land and Business Association Edenbridge Town Council Anglers Public Rights of Way Sustrans Medway Valley Countryside Partnership Kent Wildlife Trust</p> <p>Standard Medway River Users Association Wider Public</p> <p>The attached operation instructions (Appendices 5a and 5b) detail the Environment Agency's approach to Project Governance and Assurance. The Environment Agency is the lead authority for FCERM projects and all such projects pass through the same project assurance process including projects managed and delivered by other risk management authorities.</p>
6.6. Organisation track record	<p><i>Please briefly describe the track record of the organisation in delivering schemes of this type, including whether they were completed to time and budget.</i></p>

	<p>The Environment Agency is the lead delivery authority for the majority of flood risk management schemes in England. The Flood and Coastal Risk Management (FCRM) directorate structure within the Environment Agency will be accountable for the project delivery. The Environment Agency is the owner and operator of the Leigh Flood Storage Area. The track record of the Environment Agency is scrutinised by Defra and the National Audit Office. A 6 year commitment to funding FCRM schemes has been made by Central Government reflecting The Environment Agency's competence and track record of delivery against targets.</p> <p>Within Kent and South London the Environment Agency delivers 20% of the national capital program. In any one year 2 projects of similar size to the Medway FSA project are being delivered in this business unit.</p>
6.7. Assurance	<p><i>Please provide s151 Officer confirmation that adequate assurance systems are in place. Please also provide evidence of financial performance over 3 years.</i></p> <p>Please find attached as Appendix 1, a confirmation from the s151 Officer that adequate assurance systems are in place.</p>
6.8. Equalities Impact Assessment	<p><i>Please provide evidence of your Equalities Impact Assessment here.</i></p> <p>Please see attached as Appendix 6, the EA Equalities Analysis Screening document which was completed in February 2018.</p>
6.9. Monitoring and evaluation	<p><i>Please explain how you will monitor and evaluate the project, referring to the use of key performance indicators as appropriate.</i></p> <p>Within the project group (and in line with FDGIA requirements) project progress will be monitored and reported through formal project reporting to the project board. This will include updates on progress with the build programme and a regular update report on the delivery of outputs and wider benefits.</p> <p>Once completed, the capital assets created by this project will be recorded on the Environment Agency's asset management system. They will be managed and monitored by the Environment Agency throughout the asset lifecycle. The assets will undergo regular inspection and maintenance to ensure they perform to the design standard. The Environment Agency has strict criteria to maintain assets to target condition, resources are assigned accordingly. The Environment Agency operate a gateway process and the requirement for the project to pass 'Gateway 4 – operational readiness' is that it is operating to the standard set out in the full business case.</p> <p>All capital projects complete a lessons learnt log and undergo peer group sharing. This information will be available to all risk management authorities in England.</p> <p>In terms of monitoring and evaluation to the SELEP, the Benefit Realisation Plan and Monitoring and Evaluation Plan set out the level of monitoring and evaluation information that will be provided. This will cover inputs, outputs, outcomes and impacts, and will be reported to the SELEP regularly throughout the course of the implementation of the scheme. Post scheme monitoring reports will also be provided at stages of 12 months after delivery, 3 years after delivery and 5 years after delivery in order to give a thorough illustration of the benefits arising from the scheme.</p>

	The Monitoring & Evaluation Plan (Appendix 7) and the Benefit Realisation Plan (Appendix 3) are both attached to this business case.
6.10. Post completion	<p><i>What are the plans for the project on completion? Will there be a change of ownership, will the project be refinanced? How will this be managed?</i></p> <p>The Environment Agency will operate and manage the flood defences post-completion; as such there will be no change of ownership.</p>

7. RISK ANALYSIS

		Likelihood and impact scores: 5: Very high; 4: High; 3: Medium; 2: Low; 1: Very low			
Risk	Likelihood*	Impact*	Risk Owner	Mitigation	Score after Mitigation (LxI)
Business Case to Defra does not receive approval	2	2	EA	Liaise with project assurance team to seek recommendation for approval of the outline case applying the 5 case business model and identify continued communication with delivery partners.	2
Not securing permission to proceed from DEFRA as insufficient match funding	2	5	KCC/TMBC/EA	Discussions have been ongoing amongst the local authorities to ensure that match funding is identified, either through their own resources or through applying to funding streams such as the LGF.	5
Not securing Planning Permission for the flood defence works	2	5	TMBC/EA	Early discussions with the Local Planning Authority have taken place in order to ensure any issues are ironed out as early as possible.	5
No local source of construction materials	2	3	EA	Identify sources of material in an early stage.	4
Costs of delivering the scheme are greater than currently forecast.	2	4	EA	The Environment Agency has a track record of delivering flood risk infrastructure schemes of a similar size throughout England.	6
Environmental Impacts are greater than forecast	2	3	EA	Appropriate level of specialist advice acted on early within appraisal and through the design.	3
New housing and employment sites are not allocated in the Local Plan	1	5	TMBC	The Local Plan evidence base has identified the Objectively Assessed Need for housing in the borough and the quantum of employment land needed for the period up to 2031. As such, in order to be found 'sound' the plan will require the allocation of sufficient housing and employment land in order to meet this future demand.	5
New housing and employment sites are	2	4	TMBC	If sites have been allocated within the Local Plan, then the principle of development	4

not given planning permission				on these has been secured. Early stage discussions with the Local Planning Authority will help to mitigate against the chances of refusal.	
Downturn in the local economy delays housing and jobs growth.	3	3	TMBC/KCC	There is not a huge amount that can be done if there is another global economic downturn, however in the previous downturn Tonbridge and Malling did recover relatively quickly, showing a degree of resilience in the local economy partly as a consequence of having a strong economic base supported by the local authorities.	9

8. DECLARATIONS

- | | |
|---|----|
| 8.1. Has any director/partner ever been disqualified from being a company director under the Company Directors Disqualification Act (1986) or ever been the proprietor, partner or director of a business that has been subject to an investigation (completed, current or pending) undertaken under the Companies, Financial Services or Banking Acts? | No |
| 8.2. Has any director/partner ever been bankrupt or subject to an arrangement with creditors or ever been the proprietor, partner or director of a business subject to any formal insolvency procedure such as receivership, liquidation, or administration, or subject to an arrangement with its creditors | No |
| 8.3. Has any director/partner ever been the proprietor, partner or director of a business that has been requested to repay a grant under any government scheme? | No |

If the answer is “yes” to any of these questions please give details on a separate sheet of paper of the person(s) and business(es) and details of the circumstances. This does not necessarily affect your chances of being awarded SELEP funding.

I am content for information supplied here to be stored electronically and shared in confidence with other public sector bodies, who may be involved in considering the business case.

I understand that if I give information that is incorrect or incomplete, funding may be withheld or reclaimed and action taken against me. I declare that the information I have given on this form is correct and complete. I also declare that, except as otherwise stated on this form, I have not started the project which forms the basis of this application and no expenditure has been committed or defrayed on it. I understand that any offer may be publicised by means of a press release giving brief details of the project and the grant amount.

8.4. Signature of Applicant



8.5. Print Full Name

Julie Beilby

8.6. Designation

Chief Executive, T&MBC

8.7. Date

August 2018

Please also refer to the following appendices:

Appendix 1: Letter of Assurance from s.151 Officer

Appendix 2: TMBC Funding Letter

Appendix 3: Benefits Realisation Plan

Appendix 4: Communications Plan

Appendices 5a and 5b: Operation Instructions – Assurance and Governance

Appendix 6: Equalities Analysis Screening Document

Appendix 7: Monitoring and Evaluation Plan

Appendix 8: River Medway Flood Storage Areas – Initial Assessment

Appendix 9: Draft Economic Case (Emerging Outline Business Case)