



Department
for Environment
Food & Rural Affairs

Bidder Pack

Project Title: Understanding the links between economic development and flood risk investment

Procurement Reference Number: 36734

ITT Number: 10492

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Section 1: The Invitation

Defra group Commercial on behalf of Defra group and its Arm's Length Bodies invite you to bid in this competition.

The Bidder Pack comes in two parts.

This first part, **The Core Requirements**, provides details of the General Requirements, Government Transparency Agenda and Government Priorities.

The second part, **The Procurement Specific Requirements**, provides details of the Specification Requirements, Terms and Conditions of Contract, Evaluation Methodology, Procurement Timetable and Definitions.

The Definitions that apply to both parts can be found in Section 7.

The tendering process seeks to determine the Most Economically Advantageous Tender (MEAT). The Authority will evaluate the Tenders using the tender evaluation criteria and weightings listed in Section 4, Evaluation Methodology.

The Opportunity

This opportunity is advertised by Defra group Commercial on behalf of the Environment Agency (EA).

Within England the EA are responsible for:

- regulating major industry and waste
- treatment of contaminated land
- water quality and resources
- fisheries
- inland river, estuary, and harbour navigations
- conservation and ecology

The EA are also responsible for managing the risk of flooding from main rivers, reservoirs, estuaries, and the sea.

Lead local flood authorities (LLFAs) are responsible for managing the risk of flooding from surface water, groundwater and ordinary watercourses and lead on community recovery.

For further information please visit:
<https://www.gov.uk/government/organisations/environment-agency>

Procurement Plan and Timetable

The timetable below is subject to change from time to time as notified by the Authority. All Tenderers will be informed via the Authority's [eSourcing System](#).

Procurement Activity	Anticipated Date	
Publish Contracts Finder Notice and Bidder Pack	03 rd August 2022	
Clarification deadline	Date	Time
	02 nd September 2022	14:00 GMT
Bidder Pack / ITT response date	Date	Time
	09 th September 2022	12:00 GMT
Compliance Checks	09 th September 2022	
Evaluation	09 th September 2022 – 13 th September 2022	
Moderation Meeting	16 th September 2022	
Produce Contract Award Report and Draft Letters	21 st September 2022	
Approval of Contract Award Report	23 rd September 2022	
Issue Notification of Intention to Award letters	23 rd September 2022	
Discretionary Standstill Period	N/A	
Self-Declaration Due Diligence	TBC	
Finalise Contract and obtain approvals (if required)	30 th September 2022	
Contract award / contract issued	30 th September 2022	
Contract Start Date	07 th October 2022	
Publish Contract Award Notice and Redacted Contract	04 th October 2022	
Handover	07 th October 2022	
Service Commencement Date	07 th October 2022	
Contract End Date	31 st July 2023	

All timescales are set using a 24-hour clock and when referring to “days” it means calendar days unless otherwise specified (for example, working days).

Variant Tenders

The Authority shall not accept variant Tenders.

For the avoidance of doubt, if the Authority has reserved a right to waive a requirement in this Bidder Pack and chooses to exercise such discretion, the Tender will not be considered a variant Tender.

Abnormally Low Tenders or Pricing Anomalies

If the Authority considers your Tender to appear abnormally low, an initial assessment will be undertaken using a comparative analysis of the pricing proposals received from all Tenderers and the Authority’s valuation of the procurement. If that assessment indicates that your Tender is abnormally low the Authority will request a written explanation of your Tender, or of those parts of your Tender which the Authority considers contribute to your Tender being abnormally low. The Authority reserves the right to reject your Tender if the response does not satisfactorily account for the low level of price or costs proposed.

The assessment of abnormally low tenders will be undertaken strictly in accordance with Regulation 69 of the Public Contracts Regulations 2015, which outlines how abnormally low tenders must be assessed and the circumstances in which the contracting authority can reject the tender.

Pricing Anomalies

If in the opinion of the Authority your Tender contains any pricing anomalies (for example apparent discrepancies between the financial submission and other parts of your response) the Authority may seek clarification. If the clarification response indicates that the pricing anomaly was the result of a clear and obvious error, in the interest of fairness the resulting change will be taken into consideration. If the clarification response results in a change to the initial tendered Commercial Response and price, it will not be taken into account.

Section 2: The Specification of Requirements

The Authority's Priorities

The Environment Agency's priorities are set out in the National Flood and Coastal Erosion Flood Risk Management Strategy for England, and the Environment Agency 5-year Action Plan 2025.

Overview of Requirement

This project will undertake research on how flood risk management and water environment¹ improvement projects can impact local/national economic growth. It will develop a theory of change and methodology to include local and possibly national economic growth in Environment Agency business cases.

Summary

It is frequently claimed there are economic growth benefits from reducing flood risk and improving the quality of the water environment. These could be from:

- Creating jobs to deliver investment programmes, such as the £5.2bn flood and coast capital fund. This may also create further jobs elsewhere in the economy through multiplier effects.
- Reducing the economic harm caused by natural disasters such as floods. This helps to sustain existing businesses and avoids diverting scarce resources needed to deal with the clean-up, allowing more investment for productivity growth or other productive uses. There is detailed academic research on this topic (e.g. [Boosting SME's resilience – Yorkshire Integrated Catchment Solutions Programme \(iCASP\)](#)).
- Stimulating higher investment and productivity growth by:
 - o Improving investor confidence by reducing uncertainty about the impact of flooding or water pollution incidents.
 - o Improving water quality can remove barriers to development which can be beneficial in obtaining planning permission, therefore enabling increased economic development.
 - o Encouraging agglomeration benefits by improving the amenity of an area, thereby making it more attractive for businesses, workers, and customers.
 - o Encouraging commercial development by reducing long-term property damage risk.

¹ Water environment improvements projects include improvements to the water quality, flow, physical habitat and associated uses and wildlife of rivers, lakes, canals, estuaries, coasts and groundwater.

- Economic regeneration with the aim of attracting and fostering new economic activities such as better skilled jobs and investment.

Economic growth impacts are not routinely included in business cases, or impact assessments carried out under the HM Treasury Green Book (2020) guidance. This is due to concerns about the robustness of methodologies to capture national impacts and because local economic impacts are assumed to be neutral at the national economy level. However, recent policy developments (*Annex 2*) means that we can revisit this assumption and consider ways to capture local and national economic growth in our business cases.

The only significant guidance on how to capture flood risk impacts on the local economy is the 2013 study completed by Frontier Economics (referenced in HMT Green Book) which focuses exclusively on flood risk management.

This study offers practitioners a “toolkit” to assess the costs and benefits to a local economy of Flood and Coastal Erosion Risk Management (FCERM). The toolkit helps quantify the impact on employment and Gross Added Value (GVA) using a transmission mechanism, which illustrates the channels through which changes in flood risk affect local businesses. However, this methodology has rarely been applied in project appraisal and there have been inconsistencies in its use. In addition, evidence on benefits associated to additional economic growth is not well established and the relationship between flood risk management, investor confidence, productivity or land value is yet to be better defined, particularly to methodological standards for qualitative or quantitative project appraisals following Green Book guidance.

At present, there is no formal guidance to attribute local or national economic growth benefits for Water Environment projects. However, there is literature available covering specific topics within the water environment such as Bathing Water sites or Water Resources (drought). For example, Eftec et al (2014) includes a valuation for local economic growth benefits based on visitor numbers and measured in GVA. This approach is likened to valuation methods for Blue / Green Infrastructure and relies on the assumption that visitor numbers will directly correlate with environmental quality.

There are also examples on water quality issues being a blocker and therefore a key enabler for housing delivery. Poor water quality can lead to unpleasant odours, unsightly environments, limits to recreation opportunities (fishing and bathing), leads to green space people try to avoid and gives the appearance of an area being rundown and subject to anti-social behaviour. Clean water habitats provide a blue /green space with opportunities for informal and formal recreation, improving wellbeing and encouraging people to enjoy the outdoors. It is thought that businesses are more likely to invest in locations where there is a healthy water environment.

Flood risk management schemes seek multiple benefits and are often combined with water environment improvements.

Overall, existing research has generally associated environmental quality with land value and development opportunities, visitor spend, business market attractiveness and indirect benefits (such as Health impacts and avoided sick leave). Tools such as Exeter University’s Outdoor Recreation Valuation Tool (ORVAL), Enabling a Natural Capital Approach (ENCA) or the Green Infrastructure Valuation Guide (Forest Research, Genecon) can help value the environment, however this project is focussed on the benefits to local businesses and economy.

Scope of the problem

This project will collate evidence and produce methodologies to enable robust and consistent presentation of economic growth impacts from flood risk management and water environment improvement projects. The intention is to include this in business case guidance for future capital projects.

The objectives are to:

- Create a methodology to measure the impact of flood and coastal erosion risk and water environments on existing businesses.
- Create and compile evidence on impact of flood risk management and water environment improvement projects on local growth and national growth.
- Produce a proportionate, 2020 Green Book compliant methodology for use in project business cases to quantify and present local growth benefits and, if appropriate, national economic benefits. This requires understanding of substitution, displacement, and leakage.

Geographic area of Study

A local and national scope, covering the understanding of the links between economic growth and investments in flood risk, coastal erosion, and the water environment.

Outputs

The key outputs for this work are:

1. A review and critical appraisal of existing literature, methodologies, and evidence on the impact of flood risk management and water environment improvement projects on local and national economic growth. This should include:
 - a. a review of methods, data sources and evidence of economic growth
 - b. interviews with practitioners that can help to develop a theory of change
 - c. a clear theory of change linking the activities above to economic growth
2. A recommended methodology to measure **local** economic growth suitable for Environment Agency business cases. The output should be in a technical report with an accompanying webinar presentation to help communicate results.
3. Parallel to the above, a recommended methodology to measure **national** economic growth suitable for Environment Agency business cases. The output should be in a technical report with an accompanying webinar presentation to help communicate results.
4. HM Treasury Green Book compliant guidance on how to report local and national economic growth impacts in project business cases for FCERM and water environment improvements. The guidance should clearly show which impacts can be

included in the Economic Case and which are place based impacts that meet local strategic objectives but are not nationally significant.

These outputs should include a detailed user guide on implementation of the methods and availability of data sources needed. The outputs should be in a report-based format with accompanying webinar presentation, and an excel (or similar) toolkit².

The above outputs are needed to ensure that local and national economic growth impacts can be included in Environment Agency business cases and does so in a way that uses resources proportionately and efficiently.

To do this the project will have to:

- Specify which water management activities are in and out of scope (*Annex 1* has an initial list). This should be done in consultation with Environment Agency and Defra staff and agreed by the Technical Advisory Group (PSG).
- Be fully aligned with policy needs (*Annex 2*).
- Be delivered in accordance with HM Treasury Green Book and supplementary material guidance. Specifically, the methodologies will have to differentiate between (a) locally significant impacts that do not result in a change in social welfare to the nation (e.g., because of leakage, substitution, and displacement effects (Green Book, *Annex 3*) and (b) economic growth impacts that result in a change to national welfare and so can be included in Green Book compliant business cases.
- Undertake a literature review that will address the research questions presented in *Annex:4*.
- Have a clearly defined methodology for undertaking a literature review following established best practice, e.g., Defra/Natural Environment Research Centre (NERC) guidelines for the production of 'Quick Scoping Reviews (QSR) and Rapid Evidence Assessments (REA)' (Collins *et al.*, 2015). This should include a predefined strategy for searching for relevant published and grey literature to include in the literature review. The review should include as a minimum the documents listed in (*Annex 4*).
- Include a full detailed critical review of measures, methods, data sources, and evidence of growth impacts. Growth measure could include, but are not limited to, productivity measures such as output per hour, output per job, output per worker or employment effects or impacts on salary, Gross Added Value (GVA), or agglomeration impacts due to infrastructure improvements.
- Identify the needs of the investment partnership community (e.g., through practitioner interviews with Local Authorities and members of Local Enterprise Partnerships) to specify what economic growth metrics should be included in Environment Agency business cases to encourage partnership funding.
- Analyse the literature, practitioner interviews and other evidence to develop a theory of change linking flood risk management and water environment improvements exist

² Example toolkit: [Assess the impact of air quality - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/444444/Assess_the_impact_of_air_quality_-_GOV.UK.pdf)

with economic growth. This should be done, where possible, applying the guidance and tools on theory of change developed by Defra.

- Specifically revisit Frontier Economics toolkit (2014), with a view to improving on it. This includes but is not limited to:
 - Indirect Business Impacts of flooding (i.e., to those business not flooded internally).
 - Impact of flood probability and flood history on land use, productivity, investor confidence, business response, growth, and resilience.
 - Linked to the above, evidence on duration of business disruption.
 - Critical review of (input) data sources.
- Set out alternative options for developing a methodology, based on literature review and practitioner interviews and propose a recommended approach to develop further. This needs to be approved by the PSG before proceeding to method development.
- Develop a methodology to calculate **local** economic growth that is clearly informed by the literature review and practitioner interviews. The methodology should:
 - Identify, quantify and value economic growth impacts that are locally/regionally significant.
 - Be quite prescriptive to ensure easy and consistent application across the capital scheme where local economic growth can inform “local choice” (see FCERM-AG for explanation of the decision rule)
 - Consider distributional and equality impacts to determine whether average benefits will vary across certain groups or places
- Develop a methodology to calculate **national** economic growth that is clearly informed by the literature review and practitioner interviews. The methodology should:
 - Identify national economic growth impacts of project interventions that can be included in the calculation of a change in social welfare to the nation.
 - Provide high level guidance that outlines what a bespoke study should include.
 - Be applicable for inclusion in Present Value Benefits used to calculate the Net Present Value and Benefit Cost Ratios used in the FCERM-AG Decision Rule.
- The recommended methodologies must be tested in 3 test cases covering flood risk management, coastal erosion, and water environment improvement projects in accordance with stakeholders.
- Develop guidance that can be practicably applied and is relevant to a wide range of flood risk management and water environment improvement projects.
- The guidance should be developed in a way that aligns with FCERM and environmental strategic objectives and avoids perverse incentives, e.g., development in flood plains or areas of environmental importance.

- The methodology used to quantify growth impacts must be based on sound economic theory, but all final reports should be easily read and understood by non-economists.

The work will have to:

- Be delivered in partnership with key stakeholders (this may include external stakeholders, such as flood and coastal erosion Risk Management Authorities, Local Enterprise Partnerships, and water companies).
- All reports and presentations must use the Joint Research Programme templates, which have been designed to meet accessibility requirements and adhere to the styles and instructions contained within the template. These will be provided by the project manager at the start of the project. All images/tables and supporting information will need to be supplied in the most accessible format in line with the [Environment Agency's accessible documents policy](#).

Minimum Products

1. **Project management:** Project Plan, monthly risk registers, weekly progress meetings (with a record of key points, decisions taking, and responsibilities assigned), minutes of key meetings.
2. **Stakeholder engagement plan:** Identifying how stakeholders will be identified, how they will contribute to various stages of the project and how they will be contacted
3. **Practitioner consultation:** Consult with practitioners within the Environment Agency, Local Authorities, Local Economic Partnerships, and other key stakeholders to define the need for the inclusion of local and national economic growth impacts in Business Cases.
4. **Technical Report including review of literature, methodologies, evidence, datasets, analysis, proposed methodology and recommendations for further work:** Using approved literature review methodologies (see Appendix 5), delivered in a report-based format with an accompanying webinar to help communicate the results proposed methodology and further recommendations.
5. **New HM Treasury Green Book compliant methods:** The output should be a technical report with accompanying webinar
6. **New guidance:** The output should be report based with an excel based (or similar) toolkit.
7. **Science Report:** A 2 page plain English summary of the project (this is required for all projects funded under the joint [Defra/Environment Agency FCERM R&D Programme](#))
8. **Final Project Webinar:** A Presentation summarising the project findings and outputs to be delivered and shared with the project team.

In managing the services, the winning *Consultant* shall:

- Produce a monthly project risk register that indicates, risk, mitigation measures, risk owner and cost (including *Consultant* risk budget)
- Attend progress meetings (weekly telecoms) and record minutes (the *Employer* to issue)
- Produce monthly progress reports that summarise work completed to date, work to complete the following month, financial updates, and forecasts, to meet the *Employer's* project reporting timetable
- Regularly review and update the lessons learnt log
- Provide monthly invoices, billing for work completed.

Services and experience required

The key skills required to do this project are listed below:

- Experience in undertaking a literature review of both published and grey literature.
- Understanding of and experience in research into local and national economic growth in the UK;
- Experience in using national indicators of economic growth;
- Knowledge of economic growth literature in the UK;
- Experience in developing methods to capture the impact of government policy on local and national economic growth;
- Understanding and application of HM Treasury Green Book and Supplementary guidance (e.g., the Blue Book);
- Ability to develop and manage a complex stakeholder engagement plan;
- Experience of the Multi-Coloured Manual and knowledge of the types and nature of economic impacts from flooding
- Proven ability to work with a range of stakeholders who may supply data or be users of the outputs
- Project management skills to oversee the development and delivery of the project to time, cost, and quality criteria
- Clear verbal and written communication for discussions with key project staff and stakeholders. Innovative and varied communication approaches to ensure stakeholders are well engaged during delivery and are readily able to use and embed outputs.

Project Milestone Timetable

Milestones will be set by the EA ahead of beginning the contract period. Progress against milestones will be regularly monitored throughout the contract period. Continuous monitoring of the project will also be used to refine the scope and address issues which arise.

Item	Timeline	Notes	Payment
Milestone 1	1 week after the inception meeting	Supplier To provide Project Plan, Risk Register and GANTT Chart (see deliverables section above)	
Milestone 2	TBC	Interim milestones to be agreed at inception meeting	80%
Milestone 3	1 Week before contract end date	Final Report	20%

Payment

Payment will be monthly payments in arrears based on progress towards interim milestones achieved (max total of 80% of agreed fee). Final payment of 20% of agreed fee value after last deliverable.

Reporting requirements

The supplier should designate a key point of contact, who will attend fortnightly meetings with the EA contract manager to discuss progress, arising issues, and agree risk mitigation measures. At each meeting the project risk register will be discussed, and the supplier is expected to provide an update of the risk register at least 1 working day prior to project management meetings.

Section 3: Terms and Conditions of Contract

The Terms and Conditions of Contract for this procurement are DgC Short Form Services.

The Terms and Conditions are split into Core Terms and Contracting Authority Terms within the Annexes / Schedules, and details of the legal priority are similarly within the contract's Annexes/Schedules.

The Authority proposes to enter into Contract(s) for a maximum period of nine (9) months with the successful Tenderer(s) - (07th October 2022 – 31st July 2023).

The anticipated commencement date is **07/10/2022**.

Suggested Changes to Conditions of Contract

Tenderers may raise clarification questions relating to the amendment of contract terms during the clarification period only, as specified in the Timetable, if it can be demonstrated that there is a legal or statutory reason why they cannot be accepted. Where a legal or statutory reason cannot be substantiated the Authority has the right to reject the proposed changed.

Such requests must follow the Clarifications Sought by the Tenderer process set out in the Core Requirements element of this Bidder Pack.

Section 4: Evaluation Methodology

The overall aim of the evaluation process is to select the Tender that is the most economically advantageous to the Authority, having regard to the Authority's overall objectives and the criteria set out below.

Evaluation of Tenders comprise of the stages set out in the table below.

The Authority will carry out its evaluations of the Technical and Commercial elements according to the criteria, sub-criteria and weightings set out in the table below and **Appendix C**. The detailed questions and guidance are set out in the Authority's eSourcing:

Evaluation of Responses

Evaluation of Responses will be undertaken by a panel appointed by the Authority. Each panel member will first undertake an independent evaluation of the Responses applying the relevant evaluation criteria for each question. Then, a moderation meeting will be held at which the evaluation panel will reach a consensus on the marking of each question.

During the consensus meeting, the decision may be taken that a Response will not be carried forward to the next evaluation stage if the consensus view is that the Tenderer has failed to meet any minimum or mandatory requirements, and/or provided a non-compliant response.

Stage	Section Reference	Evaluation Criteria	Question Scoring/ Weighting (%)
Stage 1	Form of Tender	This stage is not scored but if you do not upload a complete, signed and dated Form of Tender in accordance with the instructions in Bravo, your Tender will be rejected as non-compliant.	Pass/Fail
Stage 2	Selection Stage:	This stage is designed to select those Tenderers who are suitable to deliver the Authority's requirements and will be evaluated in accordance with the criteria set out in Sections 1 to 5 of the response form in Bravo and Part 1 of this Section 2 below (in respect of economic and financial	Pass/Fail

		<p>standing and technical and professional ability).</p> <p>Failure to meet the stated selection criteria will result in a Response being rejected at this stage and no further assessment of the remainder of the Response (including the Tender) pursuant to the remaining stages below will be undertaken by the Authority.</p>	
Stage 3	Technical & Professional Ability – Project Specific Requirements(Technical Questionnaire)	<p>This stage will be evaluated in accordance with the criteria set out in the Technical Questionnaire.</p> <p>Some requirements are mandatory and if you cannot provide them your Tender may be rejected.</p> <p>Scored as 70% weighting of the total available score, consisting of the following breakdown of questions:</p>	<p>Scored</p> <p>F01 - Sustainability Weighting= Pass/ Fail</p> <p>F02 - Health and Safety Weighting= Pass/ Fail</p> <p>E01 - Methodology and Capability Weighting = 40%</p> <p>E02 – Skill and Experience Weighting = 30%</p> <p>E03 – Project Management Weighting = 20%</p> <p>E04 – Knowledge Transfer Weighting = 10%</p>
Stage 4	Pricing Schedule	Prices will be evaluated in accordance with criteria set out in the Pricing Schedule on the ITT and Bravo.	Scored weighting 30%
Stage 5	Final score / Award	<p>A Response which passes stage 1 and 2 will proceed to evaluation of Tenders in accordance with stages 3 to 5</p> <p>The final score is calculated as follows:</p>	

		<p>Total Technical Quality Requirements will make up to a maximum of 70% of total score. (Stage 3)</p> <p>Total Price Requirements will make up to a maximum of 30% of total score. (Stage 4)</p> <p>The most economically advantageous Tender will be the Tender with the highest final score.</p>
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- 1.1 Tenders will be evaluated on quality and price using the evaluation criteria set out in Bravo to determine which Tender is the most economically advantageous. The Authority will award the Contract to the Tenderer which submits the most economically advantageous tender which will be the highest scoring Tender after the weightings in clause 1.3 are applied.
- 1.2 Each question will be scored separately, and no reference will be made between the questions.
- 1.3 To ensure that the relative importance of both sets of criteria is correctly reflected in the overall score, a weighting system will be applied to the evaluation:
 - the total quality scores awarded will form **70%** of the final score;
 - The score awarded for price will form **30%** of the final score.
- 1.4 Each scoring question in the quality evaluation is given a weighting to indicate the relative importance of that question in the overall quality score. Weightings for quality scores are provided with the evaluation criteria and are detailed on Bravo for each question in the response form. The evaluation criteria for price are set out in the Pricing Schedule.
- 1.5 Evaluation of Tenders will be undertaken by a panel appointed by the Authority. Each panel member will first undertake an independent evaluation of the Tenders applying the relevant evaluation criteria for each question. Then, a moderation meeting will be held at which the evaluation panel will reach a consensus on the marking of each question.
- 1.6 Questions asked by the Authority to evaluate submission's Technical Quality can be found on Bravo. These are repeated as Appendix C of this ITT for information purposes.
- 1.7 The method for scoring price can be found on Bravo.
- 1.8 The submissions against the Technical Quality questions E01 – E04 will be evaluated using the following scoring criteria:

For a score of 100: Excellent - Response is completely relevant and excellent overall. The response is comprehensive, unambiguous and demonstrates a best-in-class thorough understanding of the requirement and provides details of how the requirement will be met in full.

For a score of 70: Good - Response is relevant and good. The response demonstrates a good understanding and provides details on how the requirements will be fulfilled.

For a score of 50: Acceptable - Response is relevant and acceptable. The response provides sufficient evidence to fulfil basic requirements.

For a score of 20: Poor - Response is partially relevant and/or poor. The response addresses some elements of the requirements but contains insufficient / limited detail or explanation to demonstrate how the requirement will be fulfilled.

For a score of 0: Unacceptable - Nil or inadequate response. Fails to demonstrate an ability to meet the requirement.

If a Tenderer receives a 'Fail' in either question F01 or F02 they will be eliminated from the procurement. If a score of twenty (20) or less is awarded to a Tenderer's response to any scored question the Authority may choose to reject the Tender.

The commercial evaluation will be based on a total price and bidders will be required to provide a full price breakdown of the work package, and matched against milestones in the commercial workbook

Tenderers must provide a financial proposal, including rates and hours for each participating team member and costing analysed by work stages. The project is for a fixed cost. A breakdown of costs against each objective and against each key personnel including a detailed breakdown for equipment, consumables; overheads and travel costs are required. The Authority is keen to receive competitive Day Rates which must be set out in the "Commercial Workbook" (provided in the ITT pack); "Staff Costs" worksheet and ensure the details entered in the "Milestone" worksheet are that of the deliverables detailed in the specification.

The above is required to be uploaded to the 'Commercial Envelope' of Bravo.

Where subcontractors or joint contractors are used, a separate breakdown for each should be provided in addition to the overall project costs.

Day rates for all staff should be provided along with a general description of duties.

Tenderers will be required to submit a total fixed cost for completion of the project and include a breakdown of costs against each objective and against key personnel. Costs will need to be reasonable and competitive and offer value for money.

Evaluation

The calculation used is the following:

$$\text{Score} = \frac{\text{Lowest Tender Price}}{\text{Tender Price}} \times 30\% \text{ Maximum available marks}$$

For example, if three Tender Responses are received and Tenderer A has quoted £3,000 as their total price, Tenderer B has quoted £5,000 and Tenderer C has quoted £6,000 then the calculation will be as follows:

$$\text{Tenderer A Score} = \frac{£3000}{£3000} \times 30\% \text{ (Maximum available marks)} = 30\%$$

$$\text{Tenderer B Score} = \frac{£3000}{£5000} \times 30\% \text{ (Maximum available marks)} = 18\%$$

$$\text{Tenderer C Score} = \frac{£3000}{£6000} \times 30\% \text{ (Maximum available marks)} = 15\%$$

Commercial Pricing Breakdown applicable to this ITT is on Bravo. This should be downloaded; completed and attached to the commercial envelope.

*Please Note:

Tenderers must be aware that all bids are **submitted** in acceptance of agreed Defra terms and conditions of contract. Any clarifications regarding terms and conditions must be discussed & agreed during the tender period. No discussion of terms and conditions of contract shall be held following tender submission. Failure to agree with the terms and conditions of contract post tender shall result in a bid being deemed non-compliant.

Selection Questionnaire - Financial standing

The Authority will review the economic information provided as part of the Selection Questionnaire response to evaluate a Tenderer's economic and financial standing. The Authority's evaluation will be based on all the information reviewed and will not be determined by a single indicator. If, based on its assessment of the information provided in a Response, the Authority decides that a Tenderer does not meet the Authority's required level of economic standing, the Authority may:

- ask for additional information, including information relating to the Tenderer's parent company, if applicable; and/or
- require a parent company guarantee or a performance bond.

If the Authority decides that a parent company guarantee or performance bond is required, the Authority will reject a Response if the Tenderer is unable to offer a commitment to make such provision. In addition to the information provided in a Response, the Authority may, at its discretion, consult Dun & Bradstreet reports and other credit rating or equivalent reports depending on where a Tenderer is located.

The Authority's assessment of economic and financial standing will consider financial strength and risk of business failure. Financial strength is based on tangible net worth and is rated on a scale of 5A (strongest) to H (weakest) obtained from Dun & Bradstreet. There are also classifications for negative net worth and net worth undetermined (insufficient information). Financial strength will be assessed relative to the estimated annual contract value.

The Authority will also consider annual turnover.

In the case of a joint venture or a consortium bid, the annual turnover is calculated by combining the turnover of the relevant organisations in each of the last two financial years.

Risk of Business Failure is rated on a scale of 1 (minimal) to 4 (significant) obtained from Dun & Bradstreet. There is also a classification of insufficient information. The Authority regards a score of 4 as indicating inadequate economic and financial standing for this procurement. The Authority will also calculate and evaluate the Tenderer's:

- operating performance: growth or reductions in sales, gross profit, operating profit, profit before tax and earnings before interest, tax, depreciation, amortisation, exceptional items and profit/loss on sale of businesses;
- liquidity: net current assets, movements in cash flow from operations, working capital and quick ratios, and average collection and payments periods; and
- financial structure: gearing ratios and interest cover.

Section 5: Performance Management Framework

1. Overview of the PMF

- 1.1. As part of the Authority's continuous drive to improve the performance of all Contractors, this PMF will be used to monitor, measure, and control all aspects of the Supplier's performance of contract responsibilities.
- 1.2. The PMF purpose is to set out the obligations on the successful Contractor, to outline how the successful Contractor's performance will be monitored, evaluated and rectified for performance.
- 1.3. The Authority may define any reasonable performance management indicators for the Contractor under the following categories:
 - Updates to Authority
 - Data Handling
 - Participatory Outputs
 - Reports
 - Presentations
- 1.4. The above categories are consistent with all Contract awards allowing the Authority to monitor Contractor's performance at both individual level and at the enterprise level with the individual Contractor.

2. Management of the PMF

- 2.1. Key Performance Indicators (KPI's) shall be monitored on a regular basis and shall form part of the contract performance review. Performance of KPI's will be reported by the Contractor to the Authority on monthly basis. The Contractor shall detail performance against KPI's in Monthly Reports and at quarterly Contract Meetings with the Authority, who will review this and make comments if any.
- 2.2. The Contractor shall maintain their own management reports, including a Risk and Issues Log and present these as requested by the Authority at any meeting requested by the Authority.
- 2.3. Any performance issues highlighted in these reports will be addressed by the Contractor, who shall be required to provide an improvement plan ("Remediation Plan") to address all issues highlighted within a week of the Authority request.
- 2.4. Key Performance Indicators (KPIs) are essential in order to align Contractor's performance with the requirements of the Authority and to do so in a fair and practical way. KPIs must be realistic and achievable; they also have to be met otherwise indicating that the service is failing to deliver. The successful Contractor will ensure that failure and non-performance is quickly rectified.
- 2.5. The Authority reserves the right to amend the existing KPI's detailed in section 7 below or add any new KPI's. Any changes to the KPI's shall be confirmed by way of a Contract Change Note.

Section 6: Key Performance Indicators (KPI's)

KPI and deliverables	Measurement	Fail	Acceptable
1. Updates to Authority	Regular, and ad hoc, verbal and written updates summarising progress and challenges	Updates are infrequent or lacking enough detail to assure the Authority of progress	Updates are timely and include enough detail to assure the Authority of progress
2. Data handling	Secure, accessible and organised collecting and storage of data/information relating to the project	Data, information and files are not kept up-to-date and are unavailable	All project data and information are up-to-date and accessible to the Authority
a. Evidence synthesis	Collection and storage of external and internal evidence sources, as well as any annotations / analysis	Evidence is only cited and not made available to the Authority	Evidence is gathered, stored and accessible to the Authority
b. Evaluation questions	Proportionate collection and secure storage of key informant views and secondary data underpinning evaluation questions	Inadequate range of views and information accessed and not stored	Key stakeholders consulted and their views and other information are gathered and stored securely
c. Baselines and data collection plan	Collection and storage of data used to develop and test counterfactuals and baselines	Data is inadequate to achieve deliverable	Data is adequate and available to the Authority
3. Participatory outputs	Notes and outputs from participatory exercises with stakeholders	Notes and outputs are incomplete or missing	Notes and outputs are detailed and stored for future reference
a. Theory of Change	Notes and outputs from development of ToC	Notes and outputs are incomplete and do not reflect the participatory process	Notes and outputs show how the ToC was developed in a participatory way with a range of stakeholders
b. Evaluation questions	Notes, information and ratings underpinning development of the evaluation questions	Notes, information and ratings are incomplete or	Notes, information and ratings for each evaluation

		missing and not clearly linked to evaluation questions	question are clearly linked and transparent
4. Reports	Draft iterations and final reports, including comment logs and requested changes	Reports are late, incomplete and do not adequately address feedback from the Authority or deliverables	Reports are on time, complete, incorporate comments and address all deliverables
5. Presentations	Presentation materials and delivery of key findings	Presentations do not take place	Presentations take place and convey key findings clearly

Section 7: ITT Glossary and Appendices

Definitions

Unless the context otherwise requires, the following words and expressions used within the Bidder Pack (except for Section 3: Terms and Conditions of Contract) shall have the following meanings to be interpreted in the singular or plural as the context requires.

TERM	MEANING
“Authority”	Environment Agency
“Bidder Pack”	this invitation to tender and all related documents published by the Authority and made available to Tenderers.
“Contract”	the contract (set out in Appendix B) to be entered into by the Authority and the successful Tenderer.
“EIR”	the Environmental Information Regulations 2004 (as amended) together with any guidance and/or codes of practice issued by the Information Commissioner or any Government Department in relation to those Regulations.
“eSourcing system”	eSourcing system is the eSourcing system used by the Authority for conducting this procurement, which can be found at http://defra.eSourcing.solutions.co.uk
“FOIA”	the Freedom of Information Act 2000 (as amended) and any subordinate legislation made under that Act together with any guidance and/or codes of practice issued by the Information Commissioner or any Government Department in relation to that legislation.
“Form of Tender”	means the form contained in Annex 2 to the Procurement Specific section of the Bidder Pack which must be signed, scanned and uploaded into the Authority’s eSourcing System by the Tenderer to indicate that it understands the Tender and accepts the various terms and conditions and other requirements of participating in the exercise.
“Information”	means the information contained in the Bidder Pack or sent with it, and any information which has been made available to the Tenderer by the Authority, its employees, agents or advisers in connection with the procurement.
“Involved Person”	means any person who is either working for, or acting on behalf of, the Authority in connection with this procurement and/or the Contract including, without limitation, any officer, employee, advisor, agent, member, partner or consultant”.
“Pricing Schedule”	the form accessed via eSourcing system in which Tenderers are required to submit their pricing information as part of a Tender.
“Regulations”	the Public Contracts Regulations 2015.
“Relevant Body	means any other organisation, body or government department that is working with or acting on behalf of the Authority in connection with this procurement and/or the Contract including,

	without limitation, its officers, employees, advisors, agents, members, partners or consultants.
“Response”	means the information submitted in response to the Bidder Pack via the online response forms on eSourcing system including the Tenderer’s formal Tender.
“Specification Requirements”	of the Authority’s requirements set out in Section 2 of the Bidder Pack Procurement Specific Requirements.
“Tender”	the formal offer to provide the goods or services described in section 1.1 of part 1 of the Bidder Pack and comprising the responses to the questions in eSourcing system and the Pricing Schedule.
“Tenderer”	anyone responding to the Bidder Pack and, where the context requires, includes a potential tenderer.
“Timetable”	the procurement timetable set out in Section 1 of the Bidder Pack Procurement Specific Requirements.

APPENDIX A

FORM OF TENDER

To be returned by 12:00pm (GMT time) on 09th September 2022.

Victor Mpehla
Procurement Advisor
Department for Environment, Food and Rural Affairs
Procurement and Commercial Function

TENDER FOR THE: Understanding the links between economic development and flood risk investment

Tender Ref: project **36734**.
ITT **10492**

1. We have examined the invitation to tender and its schedules set out below (the **ITT**) and do hereby offer to provide the goods and/or services specified in the ITT and in accordance with the attached documents to the Authority commencing date **07/10/2022** for the period specified in the ITT.
 - Tender Particulars (Section 1)
 - Specification of Requirements (Section 2)
 - Form of Tender (Appendix A)
 - Authority's Conditions of Contract (Appendix B)
2. If this tender is accepted, we will execute the Contract and any other documents required by the Authority within 10 days of being asked to do so.
3. We agree that:
 - a. before executing the Contract substantially in the form set out in the ITT, the formal acceptance of this tender in writing by this Authority or such parts as may be specified, together with the documents attached shall comprise a binding contract between the Authority and us;
 - b. pursuant to EU Directive 1999/93/EC (Community Framework for Electronic Signatures) and the Electronic Communications Act 2000, the Contract may be executed electronically using the Authority's electronic tendering and contract management system, Bravo;
 - c. we are legally bound to comply with the confidentiality provisions set out in the ITT;

- d. any other terms or conditions or any general reservation which may be provided in any correspondence sent by the Authority in connection with this procurement shall not form part of this tender without the prior written consent of the Authority;
- e. this tender shall remain valid for 120 days from the closing date for tenders specified in the ITT; and
- f. the Authority may disclose our information and documents (submitted to the Authority during the procurement) more widely within Government for the purpose of ensuring effective cross-Government procurement processes, including value for money and related purposes.

4. We confirm that:

- a. there are no circumstances affecting our organisation which could give rise to an actual or potential conflict of interest that would affect the integrity of the Authority's decision making in relation to the award of the Contract; or
- b. if there are or may be such circumstances giving rise to an actual or potential conflict of interest, we have disclosed this in full to the Authority.

5. We undertake and it shall be a condition of the Contract that:

- a. the amount of our tender has not been calculated by agreement or arrangement with any person other than the Authority and that the amount of our tender has not been communicated to any person until after the closing date for the submission of tenders and in any event not without the consent of the Authority;
- b. we have not canvassed and will not, before the evaluation process, canvass or solicit any member or officer, employee or agent of the Authority or other contracting authority in connection with the award of the Contract and that no person employed by us has done or will do any such act; and
- c. made arrangements with any other party about whether or not they may submit a tender except for the purposes of forming a joint venture.

6. I warrant that I am authorised to sign this tender and confirm that we have complied with all the requirements of the ITT.

Signed

Date

In

the

capacity

of

**Authorised to sign
Tender for and on
behalf of**

Postal

Address

Post Code

Telephone

No.

Email

Address

APPENDIX B

AUTHORITY'S CONDITIONS OF CONTRACT

Upload on Bravo

APPENDIX C

TECHNICAL EVALUATION QUESTIONS

In line with DEFRA policy, we will be awarding a contract to the Most Economically Advantageous ITT response (MEAT).

The overall score is broken down as follows: 70% of the overall score will be awarded for technical criteria and 30% of the overall score will be awarded for commercial.

Please note responses will be assessed against demonstration of understanding of the Specification as attached above.

The technical evaluation criteria that will be used to assess responses are set out in the table below. The Technical criteria is weighted according to its significance to the project, and this will be applied using the following scoring methodology:

Scoring Criteria	<p>Scoring criteria</p> <p>E01 - E04 will be scored using the following scoring criteria:</p> <ul style="list-style-type: none">• For a score of 100: Excellent - Response is completely relevant and excellent overall. The response is comprehensive, unambiguous and demonstrates a best-in-class thorough understanding of the requirement and provides details of how the requirement will be met in full• For a score of 70: Good - Response is relevant and good. The response demonstrates a good understanding and provides details on how the requirements will be fulfilled• For a score of 50: Acceptable - Response is relevant and acceptable. The response provides sufficient evidence to fulfil basic requirements• For a score of 20: Poor - Response is partially relevant and/or poor. The response addresses some elements of the requirements but contains insufficient / limited detail or explanation to demonstrate how the requirement will be fulfilled• For a score of 0: Unacceptable - Nil or inadequate response. Fails to demonstrate an ability to meet the requirement <p>If you score 20 or less in respect of questions E01 - E04 then you may be eliminated from the procurement.</p>
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	If a Tenderer receives a 'Fail' in any of the questions on Sustainability and, Health and Safety Policy they will be eliminated from the procurement.		
Detailed technical criteria	Criteria	Weighting	Description
	F01 Sustainability	Pass/Fail	<p>The Authority has set itself challenging commitments and targets to improve the environmental and social impacts of its estate management, operation, and procurement. These support the Government's green commitments. The policies are included in the Authority's sustainable procurement policy statement published at: https://www.gov.uk/government/publications/defra-s-sustainable-procurement-policy-statement</p> <p>Within this context, please explain your approach to delivering the services and how you intend to reduce negative sustainability impacts. Please discuss the methods that you will employ to demonstrate and monitor the effectiveness of your organisation's approach.</p> <p>Your response must be a maximum of two sides of A4, font size 11 addressing the below questions. Any responses exceeding two sides of A4 will not be evaluated beyond the last page.</p> <p>A "Fail" will be allocated to a response that does not demonstrate any evidence of Sustainability policies.</p> <p>Your response should:</p> <ul style="list-style-type: none"> • demonstrate that the Tenderer has a sustainability policy in place; and • provide evidence as to how the Tenderer will reduce the environmental impacts of delivering this contract. <p>Please upload a document with the filename: F01 Your Company Name.</p>
	F02 Health and Safety	Pass/fail	<p>Your response must be a maximum of two sides of A4, font size 11 addressing the below questions. Any responses exceeding two sides of A4 will not be evaluated beyond the last page.</p>

			<p>A “Fail” will be allocated to a response that does not demonstrate any evidence of addressing health and safety.</p> <p>Tenderers should provide details of suitably robust procedures for health and safety, including how they will conduct measurements in a safe manner.</p> <p>Please upload a document with the filename: F02 Your Company Name.</p>
	E01 Methodology	40%	<p>Please provide a response of a maximum of six sides of A4, font size 11 (including diagrams). Any responses exceeding four sides of A4 will not be evaluated beyond the last page.</p> <p>Please provide a clear methodology of delivering the Authority’s output detailed in the specification. Your response should include the following:</p> <ul style="list-style-type: none"> • Demonstrate your understanding of the key project aim and objectives • Detail how you identify and communicate effectively with stakeholders • Set out how each task will be delivered (approach) with detail about specific methods or approaches that will be used • Describe your approach for quality assurance of the method and deliverables (within the supplier and EA project team/more widely in the EA- e.g., testing any new processes). • Make clear in your proposal any assumptions (e.g., data access, number of Quality Assurance opportunities). • Describe your approach to managing subcontractors or consortium partners (where applicable) • Detail the software, tools and formats intended to be used. <p>Please upload a document with the filename: E01 Your Company Name.</p>
	E02 Skill and Experience	30%	<p>Your response must be a maximum of Four sides of A4, font size 11, with an additional one side of A4 for a Gantt chart.</p>

			<p>Any responses exceeding four sides of A4 will not be evaluated beyond the last page.</p> <p>Please provide the following:</p> <ul style="list-style-type: none"> • Please provide a project management team structure, including named individuals with their skills and experience. • Demonstrate how your project management team has appropriate seniority with relevant experience (e.g., able to design and apply appropriate project management standards through the use of an effective project management process e.g., PRINCE2), and has authority to manage and commit resources to successfully deliver the outcomes in the scope/works information. • Demonstrate how your project team includes staff with the relevant experience, appropriate technical expertise, qualifications and experience to add value and confidently deliver the project outcomes (see section on Skills and experience required). • Please demonstrate how your proposed team structure has appropriately experienced and qualified staff to undertaking the work, with sufficient supervision and review. <p>Please upload a document with the filename: E02 Your Company Name.</p>
	E03 Project Management	20%	<p>Your response must be a maximum of four sides of A4, font size 11, plus CV's (maximum of 2 pages per person). Any responses exceeding four sides of A4 (excluding CV's) will not be evaluated beyond the last page.</p> <p>Please provide a resource plan in support of methodology to deliver the requirement:</p> <ul style="list-style-type: none"> • Please include a cost and time breakdown per member of the proposed project team in your Pricing Schedule (Appendix B) • Identify the resources, approach and capability to deliver effective project management. This should include the ability to: <ul style="list-style-type: none"> ○ Assure the quality of deliverables

			<ul style="list-style-type: none"> ○ Assure the quality of stakeholder engagement ○ Co-ordinate and manage resources including sub-consultants and consortium Partners. ○ Be flexible with the programme if certain tasks take longer ○ Prepare a plan and monitor the delivery of the project. • Identify how you propose to set out of the programme of work, including: <ul style="list-style-type: none"> ○ Key tasks, the duration, dates, dependencies, key milestones and critical path activities ○ 10 days for EA project team review for each draft deliverable ○ Time for EA project manager to check any updates of drafts before final versions are issued ○ Time for wider consultation where other Quality Assurance/testing is needed ○ Any controls to deliver the project within no more than 18 months <p>Please include a Gantt chart in your response.</p> <ul style="list-style-type: none"> • Detail how key risks associated with all aspects of work have been appropriately assessed, allocated, costed and appropriate control measures have been identified. Ideally this is through a clearly set out risk register that includes: <ul style="list-style-type: none"> ○ All project risks, mitigation measures, remaining risk, costs, risk owner (EA / supplier), total risk costs for the supplier and EA ○ A description of assumptions or areas of uncertainty in the programme and any dependencies. A description of how these will be managed and kept under review. <p>Please upload a document with the filename: E03 Your Company Name.</p>
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	E04 Knowledge Transfer	10%	<p>Your response must be a maximum of three sides of A4, font size 11 addressing the below questions. Any responses exceeding three sides of A4 will not be evaluated beyond the last page.</p> <ul style="list-style-type: none"> Detail in your proposal how and when knowledge relating to the tasks and project will be identified, captured and disseminated appropriately according to the audience. <p>Your response should provide confidence that knowledge transfer will occur in a timely manner within the project timescales.</p> <p>Please upload a document with the filename: E04 Your Company Name.</p>
Scoring and calculation method	<p>Evaluation</p> <p>The calculation used is the following:</p> $\text{Score} = \frac{\text{Lowest Tender Price}}{\text{Tender Price}} \times 30\% \text{ Maximum available marks}$ <p>For example, if three Tender Responses are received and Tenderer A has quoted £3,000 as their total price, Tenderer B has quoted £5,000 and Tenderer C has quoted £6,000 then the calculation will be as follows:</p> <p>Tenderer A Score = $\frac{£3000}{£3000} \times 30\%$ (Maximum available marks) = 30%</p> <p>Tenderer B Score = $\frac{£3000}{£5000} \times 30\%$ (Maximum available marks) = 18%</p> <p>Tenderer C Score = $\frac{£3000}{£6000} \times 30\%$ (Maximum available marks) = 15%</p>		

APPENDIX D

Commercially Sensitive Information (Attached)
Please re-produce and upload as an attachment on Bravo if applicable

TENDERER'S COMMERCIALLY SENSITIVE INFORMATION	POTENTIAL IMPLICATION OF DISCLOSURE	DURATION COMMERCIALLY SENSITIVE INFORMATION OF

APPENDIX E

PRICING SCHEDULE

For Completion (Available on Bravo. Please upload to Bravo)

APPENDIX F

STAFF TIME IN DAYS TEMPLATE

For Completion (Available on Bravo. Please upload to Bravo)

Section 8: Specification Annexes

1. Annex 1 - Water Management Activities

The following are water management activities that are considered in scope. This will need to be confirmed through consultation with the PSG at project commencement.

- **Flood and coastal erosion risk management projects:** these include but are not limited to flood and coastal defences, flood storage reservoirs, temporary defences, and nature-based solutions.
- **Water Environment Improvement Projects:** these include projects delivered to achieve objectives set in River Basin Management Plans (RBMP); these set out measures to improve water in rivers, lakes, estuaries, coasts and groundwaters. Activities included in these projects can include physical modifications to rivers, managing pollution from wastewater and managing changes to levels and natural flow of water.

2. Annex 2 - Key Policy Drivers

* **Updated Appraisal Guidance:** HM Treasury updated Green Book (2020) developed the theme of Sub-national and Distribution Analysis, with a new appendix focussing on Place Based Analysis. Government spending should enable delivery of local place outcomes wherever this is an explicit policy / investment objective. Changes to the Green Book are summarised in more detail in Annex 4. The guidance builds on earlier concepts of additionality (increasing economic activity through either the creation of new jobs or greater productivity) and provides employment multipliers that could be applied to a sub-national/local appraisal. Demonstrating the contribution of Environment Agency's activities to growth is an important evidence need for Spending Reviews and to deliver partnership funding through the 2021-26 capital investment programme

* **Evidence showing the impact of environmental risks on growth:** The potential for infrastructure disruption to affect economic activity on a national level was revealed in the National Floods Resilience Report. Reducing risk, via better defences or improved planning decisions, is often an intrinsic part of regeneration and development projects at the local level. If risk is not reduced, it can undermine incentives for businesses to locate and invest in an area and therefore acts as a limiting factor on the economic prospects of the area. Similarly, impacts to the quality of our water habitats can constrain economic activity, e.g., nutrient pollution, and drought.

* **New Growth Ambitions:** Improving economic productivity is a priority in the UK's Build Back Better: Our Plan for Growth (HM Treasury, March 2021).

* **Refreshed Blended Finance Programmes:** The 2021-26 FCERM Capital Investment Programme is to be delivered through partnership funding. To attract contributions under the

Partnership Funding policy, project teams need to make a compelling case to local partners. This usually means presenting in terms of jobs, businesses and growth. Growth impacts have always been important to Local Enterprise Partnerships, local authorities and other bodies with economic regeneration objectives. Estimates of gross value added (GVA) and job creation form the main justification for their investments. These use various methodologies with different levels of robustness. For projects with a mix of local and central government funding (such as flood defence projects), it is common to see jobs and GVA benefits presented alongside Green Book compliant benefits estimates in order to appeal to both funders

* **Catchment Approach:** The move towards a catchment approach, bringing together flood risk management, land management and water body improvements. This will encourage and enable a holistic view of how these activities contribute to the local economy.

* **COVID-19:** The government's response to the pandemic has been necessary but extremely costly. Public sector debt is forecast to peak at 110% of GDP. Managing this debt and providing high quality public services is only possible with strong economic and productivity growth.

3. Annex 3 – Green Book Guidance and Technical Terms

2020 Green Book Update

HM Treasury updated Green Book (2020) developed the theme of Sub-national and Distribution Analysis, with a new appendix focussing on Place Based Analysis. The guidance builds on earlier concepts of additionality (increasing economic activity through either the creation of new jobs or greater productivity) and provides employment multipliers that could be applied to a sub-national/local appraisal.

In the application of HM Treasury appraisal rules as outlined in the Green Book (HMT, 2020) the need to consider growth impacts on the local and national economy is more nuanced. The Green Book states clearly that it is concerned with “effects on welfare and wellbeing at a micro level” and that it “is not generally possible to estimate objectively based, credible and statistically significant differences in macroeconomic variables arising from alternative options within a business case”. In effect, changes to GDP or GVA are not in scope for Green Book based appraisals.

However, the updated Green Book states that:

“Productivity effects should be included in the calculation of UK costs and benefits where they can be objectively demonstrated. Productivity effects may arise from movement to more or less productive jobs, changes in the structure of the economy, benefits from dynamic clustering or agglomeration (benefits that arise through close location of businesses and/or people), private investment, product market competition or the generation and flow of ideas.”

And

“Interventions which increase human capital, job-search activity or provide better access to jobs can have positive labour supply and macroeconomic effects. Provided they can be supported by clear, objective evidence, labour supply effects can be included in appraisal.”

Other recent changes to the Green Book 2020 include Annex A2, encouraging the use of place-based analysis:

“... where proposals have a focus on a specific part of the UK, place based analysis should be performed and be central to appraisal advice”

The guidance states that where the primary objective is to analyse the impact on the place then some differences in approach are permitted:

“...place based appraisal may also include employment changes in the area under consideration.”

And

“Employment effects should be adjusted for leakage, substitution and displacement ... Where appropriate, employment multipliers can also be applied.

The guidance proceeds to suggest multipliers [Table 1] that could be included for place-based analyses.

Measures of Economic Growth:

- **Gross value added (GVA):** An estimate of the volume of goods and services produced after subtracting the volume of intermediate goods and services used in the production process (intermediate consumption).
- **GVA per hour worked:** A measure of productivity: GVA divided by the hours worked to create it.
- **GVA per job:** A measure of productivity: GVA divided by the number of filled jobs used to create it
- **GVA per capita:** A measure of productivity: GVA divided by the population. Also known as GVA per head.
- **Regional GVA:** Regional gross value-added using production (GVA(P)) and income (GVA(I)) approaches. Regional gross value added is the value generated by any unit engaged in the production of goods and services. GVA per head is a useful way of comparing regions of different sizes. It is not, however, a measure of regional productivity.

Employment effect adjustments:

- **Substitution** where firms substitute one type of labour for another to benefit from an intervention but do not increase employment or output.
- **Leakage** which is the extent to which effects “leak out” of a target area into others. For an intervention designed to increase employment in a particular area, leakage could take the form of increased employment in neighbouring areas. For the example in Box 27, some of the employment creation occurs in the surrounding area. This leakage of employment effects into neighbouring areas reduces employment effects in the target areas. However, leakage is not always a ‘zero sum’ game. For example, a place-based crime intervention might decrease crime in neighbouring areas (leakage) without reducing the effect in the target area.
- **Displacement** which is the extent to which an increase in economic activity or other desired outcome is offset by reductions in economic activity or other desired outcome in the area under consideration or in areas close by. For example, where a supported business takes market share from an unsupported business.

Employment multipliers

When a job is created in a locality it generates economic activity that can have indirect effect on local employment. For example, it can lead to a further increase in jobs in the same sector locally (agglomeration effects) or lead to new jobs in other sectors by increasing demand for local goods and services. Where these effects are positive it is possible to calculate an “employment multiplier”. In some cases, creating new jobs can result in other impacts, such as increases in wages (without increased productivity) and prices.

Generally, multipliers are calculated using the following industry sector categories:

- **Tradable sector** – businesses that produce goods/services that are sold mostly outside the local economy.

- **Non-tradable sector** – businesses that produce goods/services that are mainly sold and consumed within the local economy.

Businesses within the tradable sector are sometimes split into high-tech, tech or simply tradeable sectors. There is evidence that job creation in the high-tech and tech sector have higher employment multipliers, specially where these are skilled job creation.

How can we estimate multipliers?

- Input-output models (positive demand side effects adjusted for 'leakages')
- General Equilibrium Models (these are able to offset price and wage effects)
- Empirical studies (such as those used to calculate place-based multipliers published in the Green Book 2020).

4. Annex 4: Interim research questions to investigate evidence on the impact of flood risk management and water environment project on local or national economic growth.

The consultant must show in their project proposal how these questions will be answered.

1. What is the definition of local and national economic growth used to develop the research outputs?
2. What are the economic metrics used to quantify growth, e.g., employment effects, productivity effects, capital improvements affecting growth?
3. What data sources are available that measure economic growth in the UK? How granular is it? Is the data freely available?
4. What methodologies are used to quantify economic growth?
5. What is the economic theory of change that shows the impact of the FCERM/water environment improvement activities to productivity, jobs and economic growth?
6. Do different types of projects impact growth in different ways? E.g. reducing "frequent flooding" (high frequency events) may impact growth in different ways than reducing catastrophic risks from low frequency events, or reducing risk of drought / improving water quality may impact growth differently to reducing risk of flooding.
7. How does the above vary across regions and what economic and demographic indicators play a role in this?
8. How might we measure and how significant are indirect impacts of flooding and flood risk to economic activity outside the flood zone?
9. Is there any evidence of flood risk management or water environment projects leading to growth of the local/national economy?
10. Is there any evidence of flood risk management or water environment projects restricting growth of the local/national economy?
11. If there is no literature available showing evidence of impact of flood risk management and water environment projects on growth, can we use other research to infer a link between these activities and growth? What might be similar type projects?

When describing the recommended methodology as part of Output 1 the consultant should explicitly state:

- Key assumptions
- Data sources, with a qualitative assessment of accuracy, accessibility and timeliness
- A range of estimates (high, median, low) to quantify economic growth?

5. Annex 5: Supporting Literature

The literature below should be referenced as a minimum:

- HM Treasury Green Book (2020) (The Green Book: appraisal and evaluation in central government - GOV.UK (www.gov.uk))
- Environment Agency, Flood and Coastal Erosion Risk Management – Appraisal Guidance ([FCERM appraisal guidance - GOV.UK \(www.gov.uk\)](http://www.gov.uk))
- Penning-Rowsell, E., Priest, S., Parker, D., Morris, J., Tunstall, S., Viavattene, C., Chatterton, J., Owen, D. (2013), Flood and Coastal Erosion Risk Management: Handbook for Economic Appraisal 2020, London and New York, Routledge <https://www.mcm-online.co.uk/>
- Penning-Rowsell, E., Priest, S., Parker, D., Morris, J., Tunstall, S., Viavattene, C., Chatterton, J., Owen, D. (2013), Flood and Coastal Erosion Risk Management: A Manual for Economic Appraisal, London and New York, Routledge
- Fronter Economics 2014 Flood and coastal erosion risk management and the local economy Toolkit([FCERM toolkit: the local economic benefits of Flood and Coastal Erosion Risk Management projects - GOV.UK \(www.gov.uk\)](http://www.gov.uk))
- Wainmen.G, Gouldson,A, Szarzy.S. 2010: Measuring the economic impact of an intervention or investment ONS- (Measuring the Economic Impact of an Intervention or Investment, 2010 – GOV.UK (www.gov.uk))Capello, R. (2016) Regional Economics, Routledge
- eftec, Ipsos MORI & TSWRC (2014) Bathing Water Valuation Study: Technical Report
- **Environment Agency Grey Literature:**
 - Hall, M. 2019: Impacts of Flooding on Economic Growth, Environment Agency
 - Sissons.A, The Effects of Flood Risk Management on Economic Growth. Environment Agency
 - Hall.M, Sissons.A, Walton, H. 2018: FCERM's Impact on Productivity. Environment Agency
 - Defra Theory of Change (ToC) tool Summary
- Drivylas.I, Guest.J, Steeds.E,2018: Quick Scoping Review: Uplifts Associated with Flood Defence, Defra (Uplifts Associated with Flood Defence Quick Scoping Review March 2018- GOV.UK)
- [The production of quick scoping reviews and rapid evidence assessments - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

Annex 6: Supporting Data

In answering questions from Annex 4 the appointed consultant should consider the datasets below and how these might inform the valuation of economic growth for flood risk and water environment projects. However, we recognise there are a multitude of similar datasets around employment, GVA and flood risk therefore the list below should not be considered prescriptive.

In addition, we are currently engaging local stakeholders who hold detailed information on businesses impacted by flooding (business surveys, flood relief grant applications) as well as other datasets which could help inform the theory of change and wider impacts (footfall and vehicle statistics, credit card expenditure data, visitor numbers and origin data).

- Inter Departmental Business Register (IDBR), ONS
 - Most detailed business accounts available including employment and turnover at the business site level over time. Not freely available but can be purchased at cost. Could inform evidence on flooding and flood risk impact on economic growth.
- Gross Value Added per filled Job, NUTS 2 and NUTS 3 region, ONS
 - GVA per job by local authority, can be used to calculate additional GVA from new employment as well as GVA losses associated to disruption from flooding.
- Annual Business Survey, ONS
 - Turnover, GVA and Employment costs by sector and region over time.
- SIC07 Industry Annual Pay, ONS
 - Median and Average pay by sector code. Frontier suggests using salary as a proxy for GVA.
- National Receptor Database (NRD):
 - Accessible through the Defra Data Services Catalogue, the NRD is a property receptor database often used in flood risk appraisal including attributes on address, floor level, floor area and directly correlates with the Flood Hazard Research Centre's Multi-Coloured Manual (MCM).
- Risk of Flooding From Rivers and the Sea (RoFRS):
 - National assessment of flood risk for England produced using local expertise. The dataset shows the chance of flooding from rivers and/or the sea, based on cells of 50m. Each cell is allocated one of seven flood risk categories, taking into account flood defences and their condition.
- Recorded Flood Outlines:
 - GIS layer showing all Environment Agency records of historic flooding from rivers, the sea, groundwater and surface water. The absence of coverage by Recorded Flood Outlines for an area does not mean that the area has never flooded, only that we do not currently have records of flooding in this area.