

**DATED 30<sup>th</sup> January 2023**

**(1) ENVIRON-**

**MENT AGENCY**

**AND**

**(2) Frontier Economics**

**Understanding the links between economic development and flood risk investment**

**Project Ref No: 36734**

**Ecm Ref No: 66469**

**Commencement Date:**

**30<sup>th</sup> January 2023**

**End Date: 31<sup>st</sup> October**

**2023**

**Project Period: 9**

**months**

# EA Conditions of Contract - Research & Development

**Ref/ECM: 66469**

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

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# Section 1: Terms and Conditions of Contract for Services

**THIS AGREEMENT** is made on the 30<sup>th</sup> day of January 2023

**BETWEEN:**

(1) **ENVIRONMENT AGENCY** (EA), whose principal office is at Horizon House, Deanery Road, Bristol BS1 5AH ("the Agency")

**AND**

(2) **Frontier Economics** whose principal office is at 71 High Holborn, London, Greater London, WC1V 6DA ("Contractor")

("the Parties")

**WHEREAS:**

A. The Parties wish to undertake the Project in order to carry out the Research and Development Project for Understanding the links between economic development and flood risk investment.

B. The objectives of the Project 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.

C. The aim of this Project is to:

Undertake research on how flood risk management and water environment<sup>1</sup> 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.

**NOW THE PARTIES AGREE AS FOLLOWS:**

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<sup>1</sup> 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.

## 1. DEFINITIONS AND INTERPRETATION

1.1. In the Contract, unless the context otherwise requires the following words and expressions shall have the following meanings:

- 1.1.1. Agency  
Environment Agency, its successors and assigns.
- 1.1.2. Agency's Prior Rights  
All Intellectual Property Rights owned by, or lawfully used by the Agency, whether under licence or otherwise, before the date of this Contract.
- 1.1.3. Appendix  
The Appendix to these Conditions.
- 1.1.4. Contractor  
The person, firm, company or body that undertakes to provide the services to the Agency as set out in the Appendix.
- 1.1.5. Contractor's Prior Rights  
All Intellectual Property Rights owned by or lawfully used by the Contractor, whether under licence or otherwise before the date of this Contract.
- 1.1.6. Contract  
These Conditions including the Appendix, any Special Conditions, the Specification, Pricing Schedule, Contractor's tender, acceptance letter and any relevant documents agreeing modifications exchanged before the Contract is awarded, and any subsequent amendments or variations agreed in writing.
- 1.1.7. Contract Period  
The time period stated in the Appendix, or otherwise in the Contract, for the performance of the Services.
- 1.1.8. Contractor Personnel  
means all directors, officers, employees, agents, consultants and contractors of the Contractor and/or of any sub-contractor engaged in the performance of its obligations under this Contract
- 1.1.9. Contracting Authority  
Means any contracting authorities (other than the Environment Agency) as defined in regulation 2 of the Public Contract Regulations 2015 (SI 2015/102) (as amended).
- 1.1.10. Contract Price  
The price (exclusive of any VAT) set out in the Contract for which the Contractor has agreed to provide the services.

- 1.1.11. Contract Supervisor  
Any duly authorised representative of the Agency, notified in writing to the Contractor for all purposes connected with the Contract. Any notice or other written communication given by or to the Contract Supervisor, shall be taken as given by or made to the Agency.
- 1.1.12. Data Protection Legislation  
means: (i) the General Data Protection Regulation (Regulation (EU) 2016/679) or GDPR, the Law Enforcement Directive (Directive (EU) 2016/680) ("LED") and any applicable national implementing Laws as amended from time to time (ii) the Data Protection Act 1998 ("DPA 1998") and/or the Data Protection Act 2018 ("DPA 2018") to the extent that it relates to processing of personal data and privacy; (iii) all applicable Law about the processing of personal data and privacy
- 1.1.13. Data Protection Schedule  
The Schedule attached to this Contract describing how the Parties will comply with the Data Protection Legislation.
- 1.1.14. Law  
means any law, subordinate legislation within the meaning of Section 21(1) of the Interpretation Act 1978, bye-law, enforceable right within the meaning of Section 2 of the European Communities Act 1972, regulation, order, regulatory policy, mandatory guidance or code of practice, judgment of a relevant court of law, or directives or requirements with which the Contractor is bound to comply
- 1.1.15. Notice  
Any written instruction or notice given to the Contractor by the Contract Supervisor, delivered by:
- a) fax, or hand delivery to the Contractor's registered office or other address notified by the Contractor to the Agency for the purposes of the Contract and be deemed to have been served at the date and time of delivery; or
  - b) first class post to the Contractor's registered office. Such notice shall be deemed to have been served 48 hours after posting.
- 1.1.16. Intellectual Property Rights  
All Intellectual Property Rights including without limitation, patents, patent applications, design rights, registered designs, utility models, trade and service marks and applications for same, copyright, know-how, rights in semi-conductor chip topography, and in each case whether protectable at law or not, and if protectable, whether an application has been made for such protection or not, and all similar industrial, commercial, monopoly or

other intellectual property rights whether present or future, vested or contingent wherever protected.

1.1.17. Results

All things produced in performing the Services including maps, plans, photographs, drawings, tapes, statistical data, experimental results, field data, analysis of results, published and unpublished results and reports, inventions, computer programmes and user documentation.

1.1.18. Resulting Rights

All Intellectual Property Rights in the Results that are originated, conceived, written or made by the Contractor, whether alone or with others in the performance of the Services or otherwise resulting from the Contract.

1.1.19. Services

All Services detailed in the Specification including any additions or substitutions as may be requested by the Contract Supervisor.

1.1.20. PCR

Means the Public Contract Regulations 2015 (SI 2015/102) as amended.

- 1.2. Except as set out above and in the Data Protection Schedule, the Contract shall be interpreted in accordance with the Interpretation Act 1978.
- 1.3. All headings in these Conditions are for ease of reference only, and shall not affect the construction of the Contract.
- 1.4. Any reference in these Conditions to a statutory requirement this will include all subsequent modifications.
- 1.5. All undefined words and expressions are to be given their normal English meaning within the context of this Contract. Any dispute as to the interpretation of such undefined words and expressions shall be settled by reference to the definition in the Shorter Oxford English Dictionary.

## **2. PRECEDENCE**

To the extent that the following documents form the Contract, in the case of conflict of content, they shall have the following order of precedence.

- Conditions of Contract including Appendix, Data Protection Schedule and any Special Conditions
- Specification
- Pricing Schedule
- Drawings, maps or other diagrams.

## **3. CONTRACT SUPERVISOR**

The Contractor shall strictly comply with any instruction given by the Contract Supervisor concerning or about the Contract provided such instructions are reasonable and consistent with the nature, scope and value of the Contract. All

such instructions shall be in writing. The Contractor is not obliged to comply with any verbal instruction from the Contract Supervisor, that is not confirmed in writing within seven working days.

#### **4. SERVICES**

- 4.1. The Contractor shall provide all staff, equipment, materials and any other requirements necessary for the performance of the Contract using reasonable skill, care and diligence, and to the reasonable satisfaction of the Contract Supervisor.
- 4.2. Where the Agency has indicated in writing, at or before the date of the Contract, that there will be a need to retain certain persons crucial to the successful provision of the Services, such persons ("Key Personnel") shall be identified from within the Contractor's business or staff and agreed in writing, and a list made of such persons ("the Key Personnel List").
- 4.3. The Contractor shall (subject to Condition 4.5) make Key Personnel available for the whole of the Contract Period, for the purposes of providing the Services.
- 4.4. Where the Contract Supervisor gives Notice that Key Personnel are associated with the provision of specific services, such services shall only be provided by such persons.
- 4.5. No changes of any kind shall be made to the Key Personnel List, without the prior written agreement of the Contract Supervisor.
- 4.6. The Contractor shall only employ in the execution and superintendence of the Contract, persons who are suitable, and appropriately skilled and experienced. The Contract Supervisor shall be at liberty to object to, and require the Contractor to remove any person employed in or about the Contract who is unsuitable, misconducts himself, is incompetent or negligent in the performance of his duties, or persists in conduct which could endanger the health or safety of others. Such persons shall not be employed again on the Contract without the express permission of the Contract Supervisor.
- 4.7. The Contractor shall provide the Agency with such progress reports at such intervals and in such form as is detailed in the Specification or otherwise as reasonably required by the Contract Supervisor.
- 4.8. The Contractor shall notify the Contract Supervisor immediately if any factors occur which give the Contractor reason to believe that the Contract could be completed more effectively or expeditiously by changing the programme or method of working in the Specification.
- 4.9. The Contractor shall not carry out any survey for the Agency (whether or not such survey forms part of the Services) which includes any interviews or the circulation of questionnaires or similar documents without the agreement of the Agency to the form and content of such interviews, questionnaires or other documents.
- 4.10. The Contractor shall promptly notify the Contract Supervisor, in writing of any situation, or event arising from circumstances beyond his control and which it could not have reasonably foreseen which makes it difficult for the

Contractor to carry out in whole or in part the Contract in accordance with the Specification. On receipt of such notification, any revision to the Condition 6 (Contract Period) in accordance with Condition 10 (Variations) and/or Condition 11 (Extensions of Time) shall be considered by the Contract Supervisor on its merits, and the Contractor notified in writing of the decision.

## **5. ASSIGNMENT**

- 5.1. The Contractor shall not assign, transfer or sub-contract the Contract, or any part of it, without the prior written permission of Contract Supervisor.
- 5.2. Any assignment, transfer or sub-contract entered into, shall not relieve the Contractor of any of its obligations or duties under the Contract.
- 5.3. Nothing in this Contract confers or purports to confer on any third party any benefit or any right to enforce any term of the Contract

## **6. CONTRACT PERIOD**

The Contractor shall perform the Services within the time stated in the Appendix, subject to such amendments arising from Condition 10 (Variations), and/or Condition 11 (Extensions of Time.).

## **7. PROPERTY**

- 7.1. All property issued by the Agency to the Contractor in connection with the Contract shall remain the property of the Agency, and shall be used in the execution of the Contract, and for no other purpose whatsoever without the prior approval of the Contract Supervisor.
- 7.2. The Contractor shall keep all property issued by the Agency in safe custody and good condition, set aside and clearly marked as the property of the Agency.
- 7.3. On expiry, or earlier termination of the Contract, the Contractor shall, if so required, either surrender such property to the Agency, or otherwise dispose of it, as instructed by the Contract Supervisor.

## **8. CONFIDENTIAL INFORMATION**

- 8.1. Confidential Information shall comprise any information disclosed to, or made available to the Contractor and its agents and staff in connection with the Contract and the provision of the Services. This will include, but not be limited to the Agency's procedures, the Contract, the Results, any Intellectual Property of the Agency, or any other information which could reasonably be regarded as confidential.
- 8.2. The Contractor shall take all necessary precautions to ensure that all Confidential Information as in Condition 8.1:
  - 8.2.1. Is given only to the minimum number of staff and then only to the extent necessary for each member of staff's activities in the provision of the Services;

8.2.2. Is treated as confidential and not disclosed, without the prior approval of the Contract Supervisor, to any other person.

8.3. Where required by the Contract Supervisor, the Contractor will ensure that its staff sign a confidentiality undertaking before commencing work on the provision of the Services, and provide copies to the Contract Supervisor.

8.4. The Agency's remedies for breaches of Conditions 8.1, 8.2, and 8.3 shall not be limited to damages.

8.5. Nothing in this Condition shall prevent the Agency from disclosing such information relating to the outcome of the Contract procurement process as may be required to be published in the Supplement to the Official Journal of the European Communities in accordance with E.C. Directives, or elsewhere in accordance with requirements of United Kingdom law on the disclosure of information.

## **9. SECURITY**

The Contractor shall be responsible for the security of all goods and equipment (i) belonging to the Agency and used by the Contractor in the provision of the Services, and (ii) belonging to the Contractor, or Contractor's staff, or sub-contractors whilst on Agency premises. This Condition shall not prejudice the Agency's rights under Condition 15.

## **10. VARIATIONS**

10.1. The Contract Supervisor may vary the Contract by adding to, deleting or otherwise modifying the Services to be supplied, by written order to the Contractor provided such variations are reasonable and consistent with the nature, scope and value of the Contract.

10.2. The value of any such variation, other than any variation arising out of Condition 10.3, shall be determined by reference to the rates contained in the Pricing Schedule. Where the Services so ordered are not covered in the Pricing Schedule, they shall be valued at a fair and reasonable rate agreed between the Contract Supervisor and the Contractor.

10.3. Where a variation is the result of some default or breach of the Contract by the Contractor, or for some other cause for which it is solely responsible, any additional cost attributable to the variation shall be borne by the Contractor.

10.4. The Contractor may also propose a variation to the Services, but no such variation shall take effect unless agreed and confirmed in writing by the Contract Supervisor.

10.5. No variation shall have the effect of invalidating the Contract, if that variation is reasonably consistent with the nature, scope and value of the Contract. The Contractor may also propose a variation to the Goods to be supplied but no such variation shall take effect unless agreed and confirmed in writing by the Contract Supervisor.

- 10.6. No variation shall have the effect of invalidating the Contract, or placing the Contract at large, if that variation is reasonably consistent with the nature, scope and value of the Contract.
- 10.7. The Agency may vary the Contract to comply with a change in English Law. Such a change will be effected by the Contract Supervisor notifying the Contractor in writing.
- 10.8. The Agency may assign, novate or otherwise dispose of its rights and obligations under the Contract or any part thereof to:
- 10.8.1. any Contracting Authority; or
  - 10.8.2. any other body established by the Crown or under statute in order substantially to perform any of the functions that had previously been performed by the Agency; or
  - 10.8.3. any private sector body which substantially performs the functions of the Agency, provided that any such assignment, novation or other disposal shall not increase the burden of the Contractor's obligations under the Contract.
- 10.9. Any change in the legal status of the Agency such that it ceases to be a Contracting Authority shall not affect the validity of the Contract. In such circumstances the Contract shall bind and inure to the benefit of any successor body to the Agency.

## **11. EXTENSIONS OF TIME**

- 11.1. Should the performance of the Contract be delayed by any cause beyond the reasonable control of the Contractor, and provided that the Contractor shall first have given the Contract Supervisor written notice within five working days after becoming aware that such delay was likely to occur, then, the Contract Supervisor, if satisfied that this Condition applies:
- 11.1.1. in the case of any delay of which the Agency is not the cause, may grant the Contractor such extension of time as in his opinion, is reasonable, having regard, without limitation, to any other delays or extensions of time that may have occurred or been granted under the Contract. The Contract Price shall not increase as a result of such an extension of time.
  - 11.1.2. in the case of any delay of which the Agency is the cause, shall grant the Contractor a reasonable extension of time to take account of the delay.
- 11.2. No extension of time shall be granted where in the opinion of the Agency, the Contractor has failed to use reasonable endeavours to avoid or reduce the cause and/or effects of the delay.
- 11.3. Any extension of time granted under this Condition shall not affect the Agency's rights to terminate or determine the Contract under Conditions 13 and 14 respectively.

## 12. DEFAULT

12.1. The Contractor shall be in default if it:

- 12.1.1. Fails to perform the Contract with due skill, care, diligence and timeliness; or
- 12.1.2. Refuses or neglects to comply with any reasonable written instruction given by the Contract Supervisor; or
- 12.1.3. Is otherwise in breach of Contract.

12.2. Where in the opinion of the Contract Supervisor, the Contractor is in default, the Contract Supervisor may serve a Notice, giving at least 5 working days in which to remedy the default.

12.3. If the Contractor fails to comply with such a Notice, the Contract Supervisor may without prejudice to any other rights or remedies under the Contract, take over for such a period as is necessary the performance of the relevant part of the Contract, and make other arrangements for its completion. Any extra costs arising from this action, will be paid by the Contractor or deducted from any monies owing to it.

## 13. TERMINATION

13.1. The Agency may immediately, without any liability on its part and without prejudice to any of its other rights and remedies under the Contract, terminate all, or any part of the Contract by Notice to the Contractor, or the Contractor's receiver, or the Contractor's liquidator or to any other person in whom the Contract may become vested, if the Contractor:

- 13.1.1. fails in the opinion of the Contract Supervisor to comply with (or take reasonable steps to comply with) a Notice under Condition 12.2; or
- 13.1.2. becomes bankrupt or insolvent, or has a receiving order made against it, or makes an arrangement with its creditors, or (being a corporation) commences to be wound up, not being a voluntary winding up for the purpose of reconstruction or amalgamation, or has a receiver, administrator, or administrative receiver appointed by a Court.

'Termination under the Procurement PCR'

13.2. The Agency may terminate the Contract on written Notice to the Contractor if:

- 13.2.1. the contract has been subject to a substantial modification which requires a new procurement procedure pursuant to regulation 72(9) of the PCR;
- 13.2.2. the Contractor was, at the time the Contract was awarded, in one of the situations specified in regulation 57(1) of the

PCR, including as a result of the application of regulation 57(2), and should therefore have been excluded from the procurement procedure which resulted in its award of the Contract; or

- 13.2.3. The Contract should not have been awarded to the Contractor in view of a serious infringement of the obligations under the Treaties and the PCR that has been declared by the Court of Justice of the European Union in a procedure under Article 258 of the TFEU.

#### **14. DETERMINATION**

- 14.1. Without prejudice to any other rights or remedies under the Contract, the Agency reserves the right to determine the Contract at any time by giving not less than one month's Notice, (or such other time period as may be appropriate).
- 14.2. The Agency shall pay the Contractor such amounts as may be necessary to cover his reasonable costs and outstanding and unavoidable commitments necessarily and solely incurred in properly performing the Contract prior to determination.
- 14.3. The Agency will not pay for any costs or commitments that the Contractor is able to mitigate and shall only pay those costs that the Agency has validated to its satisfaction. The Agency's total liability under this clause shall not in any circumstances exceed the Contract Price that would have been payable for the Services if the Contract had not been determined.

#### **15. INDEMNITY**

- 15.1. Subject always to Condition 15.2 without prejudice to the Agency's remedies for breach of Contract, the Contractor shall fully indemnify the Agency and its staff against any liability, loss, costs, expenses, claims or proceedings in respect of:

- 15.1.1. Death or injury to any person, and/or
- 15.1.2. Loss or damage to any property, excluding indirect and consequential loss, and/or
- 15.1.3. Infringement of third party Intellectual Property Rights

which might arise as a consequence of the actions, omissions or negligence of the Contractor, its staff or agents in the execution of the Contract.

- 15.2. Nothing in this Condition 15 shall limit or exclude any liability of the Agency for personal injury or death arising from its negligence.

#### **16. LIMIT OF CONTRACTOR'S LIABILITY**

- 16.1. The limit of the Contractor's liability for each and every claim by the Agency, other than for death or personal injury, whether by way of indemnity or by reason of breach of Contract, or statutory duty, or by reason of any tort shall be-

- 16.1.1. The sum stated in the Appendix;
- 16.1.2. If no sum is stated in the Appendix, ten times the Contract Price, or five million pounds whichever is the greater.

## **17. INSURANCE**

- 17.1. The Contractor shall insure, and maintain insurance against the liabilities under Condition 15 (Indemnity), in the manner, and to the values listed in the Appendix to these Conditions. If no sum is stated, the value insured shall be £5m, (five million pounds).
- 17.2. If required by the Agency, nominated insurances shall be in the joint names of the Contractor and the Agency.
- 17.3. The Contractor shall, upon request, produce to Contract Supervisor documentary evidence that the insurances required are fully paid up and valid for the duration of the Contract.

## **18. PREVENTION OF FRAUD AND CORRUPTION**

- 18.1. The Contractor shall not offer, give, or agree to give anything, to any person an inducement or reward for doing, refraining from doing, or for having done or refrained from doing, any act in relation to the obtaining or execution of the Contract or for showing or refraining from showing favour or disfavour to any person in relation to the Contract.
- 18.2. The Contractor shall take all reasonable steps, in accordance with good industry practice, to prevent fraud by the Contractor's staff and the Contractor (including its shareholders, members and directors) in connection with the Contract and shall notify the Agency immediately if it has reason to suspect that any fraud has occurred or is occurring or is likely to occur.
- 18.3. If the Contractor or the Contractor's staff engages in conduct prohibited by this clause 18 or commits fraud in relation to the Contract or any other contract with the Crown (including the Agency) the Agency may:
  - 18.3.1. terminate the Contract and recover from the Contractor the amount of any loss suffered by the Agency resulting from the termination, including the cost reasonably incurred by the Agency of making other arrangements for the supply of the Goods and any additional expenditure incurred by the Agency throughout the remainder of the Contract; or
  - 18.3.2. recover in full from the Contractor any other loss sustained by the Agency in consequence of any breach of this clause.
- 18.4. The Contractor shall not, directly or indirectly through intermediaries commit any offence under the Bribery Act 2010 (as amended), in any of its dealings with the Agency.

## **19. MONITORING AND AUDIT**

- 19.1. The Contract Supervisor may inspect and examine the Services being carried out on the Agency's premises or elsewhere at any reasonable time. Where the Services are being performed on other than the Agency's premises, reasonable notice to inspect shall be given to the Contractor. The Contractor shall give all such facilities as the Contract Supervisor may reasonably require for such inspection and examination.
- 19.2. The Contractor shall keep and maintain for six years following termination of the Contract, records of all expenses and expenditure which have been or are reimbursable by the Agency, and of the hours worked and costs incurred by the Contractor and its sub-contractors in the performance of the Contract, and the Contractor shall on request afford the Agency such access to those records as may be required to carry out audit checks or for any other legitimate reason.

## **20. CONTRACT PRICE**

- 20.1. The Contract Price will be paid by the Agency to the Contractor, as amended by any variations ordered under Condition 10 (Variations).
- 20.2. Subject to receipt of a valid VAT invoice addressed to the Agency, in addition to the Contract Price, the Agency will pay to the Contractor such VAT (if any) as may properly be chargeable at rates ruling at the time of invoice.

## **21. INVOICING AND PAYMENT**

- 21.1. Invoices shall only be submitted for work already satisfactorily completed, and accompanied by such information as the Contract Supervisor may reasonably require to verify the Contractor's entitlement to payment. Such invoices will be paid within 30 days of receipt by the Agency.
- 21.2. If any sum shall become payable under the Contract by the Contractor to the Agency, whether by deduction from the Contract Price, or otherwise, it will be deducted by the Contractor from the Contract Price and such deduction reflected in the next available invoice.
- 21.3. If the Contractor enters into a sub-contract with a supplier for the purpose of performing its obligations under the Contract, it shall ensure that a provision is included in the sub-contract which requires payment to be made of all sums due from it to the sub-contractor within 30 days from the receipt of a valid invoice.

## **22. INTELLECTUAL PROPERTY RIGHTS**

- 22.1. All Prior Rights used in connection with the Services shall remain the property of the party introducing them. Details of each party's Prior Rights are set out in the Prior Rights Schedule to this contract.
- 22.2. All Results shall be the property of the Agency.
- 22.3. The Resulting Rights in any Results, and any interim results shall, from the time they arise, be the property of the Agency and the Agency shall be free, should it so wish, to apply at its own expense for patent or other protection

in respect of the Results or any interim results. The Agency's intention to apply for such patent or other protection shall be notified to the Contractor. Such applications for patents or other registered intellectual property rights shall be filed in the name of the Agency.

22.4. Unless otherwise agreed in writing between the Contractor and the Agency, the Contractor hereby:

22.4.1. assigns to the Agency all Resulting Rights

22.4.2. grants the Agency a non-exclusive, non transferable (save for the purposes of sub-licensing, reorganisation or transfer to a successor body, for the purposes of all the successor body's normal business use), irrevocable, royalty free, perpetual licence to the Agency in respect of all the Contractor's Prior Rights necessary in order for the Agency to use or exploit the Resulting Rights.

22.5. The Contractor undertakes to the Agency not to use, exploit or deal with any of the Agency's Prior Rights, other than in the performance of the Contract unless the Contractor has first obtained a written licence from the Agency, in specific terms to do so.

22.6. The Agency undertakes to the Contractor not to use or exploit the Contractor's Prior Rights, save as provided in Condition 22.3.

22.7. The Contractor warrants to the Agency that the performance of the Services, the Contractor's Prior Rights and the Results shall not in any way infringe any Intellectual Property Rights of any third party.

22.8. If the Contractor is prevented from carrying out his obligations under the Contract due to any infringement or alleged infringement of any Intellectual Property Rights, the Agency may without prejudice to any other rights and remedies under the Contract, exercise the powers and remedies available to it under Conditions 13 and 14, Termination and Determination respectively.

22.9. The Contractor shall not be liable if such infringement arises from the use of any design, technique or method of working provided by or specified by the Agency.

22.10. The Contractor waives in favour of the Agency its rights to object to derogatory treatment of the Results and the Contractor also agrees that it will not assert or seek to enforce against the Agency and/or any other person, firm or company any of its moral rights as defined in the Copyright Designs and Patents Act 1988 without the prior agreement of the Agency.

22.11. The Contractor shall not be liable for any consequential losses, damage or injuries arising from third party misuse of the Results, of which the Contractor is not aware.

## **23. WARRANTIES**

The Contractor warrants that the Services supplied by him will be discharged with reasonable skill, care and diligence.

## **24. PUBLICATION OF RESULTS**

- 24.1. Without prejudice to the generality of Condition 22, the Contractor shall not, without the prior written agreement of Contract Supervisor, use, disclose or permit any person or organisation to use or disclose the Results or Confidential Information for any thesis, degree, research or other educational purpose. Any such use or disclosure may only be made subject to such terms as the Agency shall require.
- 24.2. The Contractor shall not publish any other information related to the Contract without agreeing the text to be published, and the publication or transmission service in or on which it is to appear with Contract Supervisor. Such agreement shall not be unreasonably withheld or delayed.
- 24.3. Any agreed publication shall contain an acknowledgement that the Services were carried out under contract to the Agency, and is published with the Agency's agreement.
- 24.4. Any publication by the Contractor shall be entirely at the Contractor's own cost and the Contractor shall, within ten days of publication, supply the Agency free of charge with a reasonable number of copies of any publication.

## **25. STATUTORY REQUIREMENTS**

The Contractor shall at all times comply with (i) all relevant legislation and all applicable codes of practice and other similar codes or recommendations and (ii) the Health and Safety at Work etc. Act 1974 (as amended) and any other acts, orders, regulations and codes of practice relating to health and safety, which may apply to employees and other persons working directly or indirectly in the provision of the Services.

## **26. ENVIRONMENT, SUSTAINABILITY AND DIVERSITY**

- 26.1. The Contractor in the performance of this Contract should adopt a sound proactive environmental approach, designed to minimise harm to the environment, to conserve energy, water, wood, paper and other resources, reduce waste and phase out the use of single-use plastic, ozone depleting substances and minimise the release of greenhouse gases, volatile organic compounds and other substances damaging to health and/or the environment, and be able to provide proof of so doing to the Agency on demand.
- 26.2. The Agency is committed to ensuring that workers employed within its supply chains are treated fairly, humanely and equitably. The Agency expects the Contractor to share this commitment and to understand any areas of risk associated with this and work to ensure they are meeting International Labour Standards. The Contractor ensures that it and its sub-contractors and its supply chain:

- 26.2.1. comply with the provisions of the Modern Slavery Act 2015;

26.2.2. pay staff fair wages (and pays its staff in the UK not less than the Foundation Living Wage Rate ); and

26.2.3. implement fair shift arrangements, providing sufficient gaps between shifts, adequate rest breaks and reasonable shift length, and other best practices for staff welfare and performance.

26.3. The Contractor should support the Agency to achieve its Public Sector Equality Duty by complying with the Agency's policies (as amended from time to time) on Equality, Diversity and Inclusion (EDI). This includes ensuring that the Contractor (and their sub-contractors) in the delivery of its obligations under this Contract:

26.3.1. eliminates discrimination, harassment, victimisation and any other conduct that is prohibited by or under the Equality Act 2010;

26.3.2. advances equality of opportunity between people who share a protected characteristic and those who do not; and

26.3.3. fosters good relations between people who share a protected characteristic and those who do not.

## **27. LAW**

This Contract shall be governed and construed in accordance with the Law, and subject to the exclusive jurisdiction of the courts of England.

## **28. WAIVER**

28.1. No delay, neglect or forbearance by the Agency in enforcing any provision of the Contract shall be deemed to be a waiver, or in any other way prejudice the rights of the Agency under the Contract.

28.2. No waiver by the Agency shall be effective unless made in writing.

28.3. No waiver by the Agency of a breach of Contract shall constitute a waiver of any subsequent breach of Contract.

## **29. ENFORCEABILITY AND SURVIVORSHIP**

29.1. If any part of the Contract is found by a court of competent jurisdiction or other competent authority to be invalid or legally unenforceable, then that part will be severed from the remainder of the Contract which will continue to be valid and enforceable to the fullest extent permitted by law.

29.2. The following clauses shall survive termination of the Contract, howsoever caused: 8, 13, 14, 15, 22, 23, 24, 25, 27, 29, 30, 31, 32 and 33.

## **30. DISPUTE RESOLUTION**

30.1. All disputes under or in connection with this Contract shall be referred first to negotiators nominated at a suitable and appropriate working level by the Agency and the Contractor.

- 30.2. If the parties' negotiators are unable to resolve the dispute within a period of forty five days from its being referred to them, the dispute shall be referred at the instance of either party to the parties respective senior managers or directors (supported as necessary by their advisors)
- 30.3. If the parties respective senior managers or directors are unable to resolve the dispute within forty five days, the dispute shall be referred to the Centre for Dispute Resolution who shall appoint a mediator and the parties shall then submit to the mediators supervision of the resolution of the dispute.
- 30.4. Recourse to this dispute resolution procedure shall be binding on the parties as to submission to the medium but not as to its outcome. Accordingly all negotiations connected with the dispute shall be conducted in strict confidence and without prejudice to the rights of the parties in any future legal proceedings. Except for any party's right to seek interlocutory relief in the courts, no party may commence other legal proceedings under the jurisdiction of the courts, or any other form of arbitration until forty five days after the appointment of the mediator.
- 30.5. If, with the assistance of the mediator, the parties reach a settlement, such settlement shall be put in writing and, once signed by a duly authorised representative of each of the parties, shall remain binding on the parties.
- 30.6. The parties shall bear their own legal costs of this dispute resolution procedure, but the costs and expenses of mediation shall be borne by the parties equally.
- 30.7. Any of the time limits in Condition 30 may be extended by mutual agreement between the parties. Such agreed extension shall not prejudice the right of either party to proceed to the next stage of resolution.

## **31. GENERAL**

- 31.1. Neither party to the Contract will be liable to the other for any delay in performing or failing to perform its obligations under the Contract because of any cause outside its reasonable control. Such delay or failure will not constitute a breach of the Contract and the time for performance of the affected obligation will be extended by a reasonable period.
- 31.2. The Contract contains the whole agreement between the parties and supersedes all previous communications, representations and arrangements, written or oral. It is accepted that the Contract has not been entered into on the basis of any representations that are not expressly contained in the Contract.

## **32. FREEDOM OF INFORMATION ACT**

- 32.1. The Agency is committed to open government and to meeting its responsibilities under the Freedom of Information Act 2000 (as amended) ('Act') and the Environmental Information Regulations 2004 (as amended) ('Regulations').
- 32.2. The Contractor agrees that:

32.2.1. All information submitted to the Agency may need to be disclosed by the Agency in response to a request under the Act or the Regulations; and

32.2.2. The Agency may include information submitted (in whole or in part) in the publication scheme which it maintains under the Act or publish the Contract, including from time to time agreed changes to the Contract, to the public.

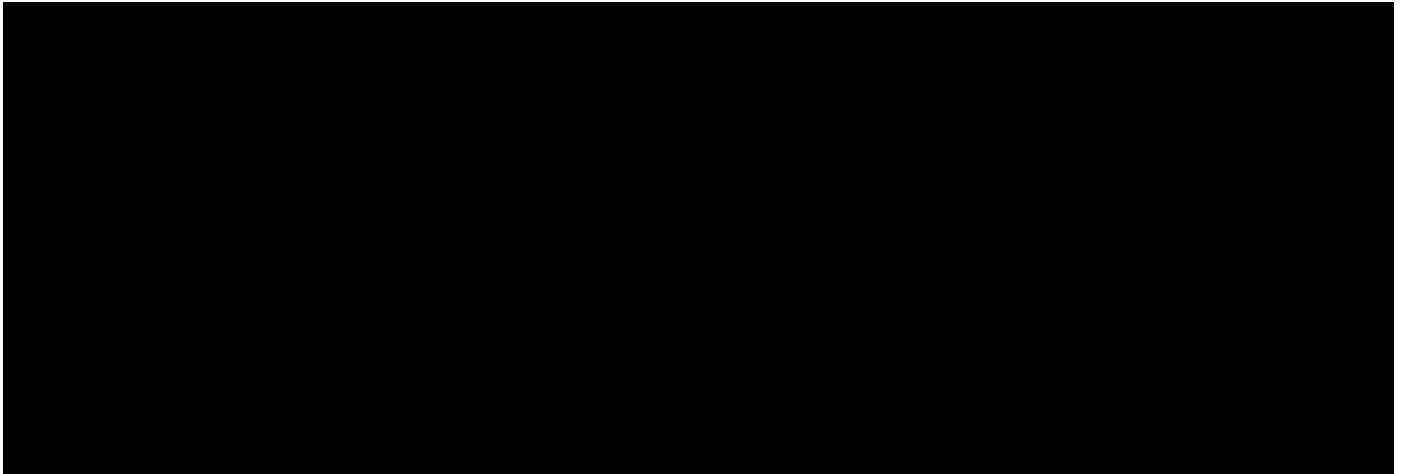
32.3. If the Contractor considers that any of the information included in its tender, or that it has submitted to the Agency or that is otherwise contained in the Contract, is commercially sensitive, it shall identify and explain (in broad terms) what harm may result from disclosure if a request is received, and the time period applicable to that sensitivity. The Contractor acknowledges that if it has indicated that information is commercially sensitive, such information may still be required to be disclosed by the Agency under the Act or the Regulations. The receipt of any material stated to be or marked 'confidential' or equivalent by the Agency shall not be deemed to infer that the Agency agrees any duty of confidentiality by virtue of that marking.

### **33. Data Protection**

33.1. In the event that the Contract requires data to be processed within the meaning of the Data Protection Legislation the Data Protection Schedule shall be completed by the Parties and provisions and definitions therein shall apply and bind the Parties as part of this Contract.

## Section 2: Charges

1. The Authority shall pay to the Contractor no more than the fixed sum identified in Table 1 below: **GBP £ 99,590.00** as the Price for the whole contract duration from **30/01/2023 – 31/10/2023**.
2. Subject to any Variation agreed in accordance with the terms of this Contract as set out in Section 1 (Clause 10), the amounts in **Table 1** shall remain firm throughout the duration of the Contract.
3. In the event that the Contract is varied, the amounts in **Table 1** below may be adjusted as agreed in writing, between the Authority and the Contractor and added as an addendum to the Contract
4. The payment arrangements shall be as follows:
  - 4.1. Upon completion, to the satisfaction of the Authority, of the Services described in the Specification for each of the milestones set out in **Table 2** below and upon delivery, to the satisfaction of the Authority, to the Authority of the corresponding milestone deliverables; the Contractor shall submit an invoice to the Authority for the amounts set out in **Table 1** in respect of each such milestone;
  - 4.2. Any and all such invoices shall comply with the requirements in Section 1 (clauses 20 – 21) of the Contract and the Contractor shall provide all further reasonable information and/or evidence of completion as the Authority shall reasonably require to demonstrate the satisfactory completion of the agreed milestones (clause 4.1);
  - 4.3. The Authority shall pay all Valid Invoices in accordance with the payment terms in Section 1 (clauses 20 – 21) of the Contract to the bank account nominated by the Contractor in the invoice.



**Table 3: Staff Time**



## Section 3: Specification

### 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 environment<sup>2</sup> 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.
  - o Economic regeneration with the aim of attracting and fostering new economic activities such as better skilled jobs and investment.

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<sup>2</sup> 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 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, Eftic 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) toolkit<sup>3</sup>.

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.

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<sup>3</sup> Example toolkit: [Assess the impact of air quality - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/assess-the-impact-of-air-quality)

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 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 practicable 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

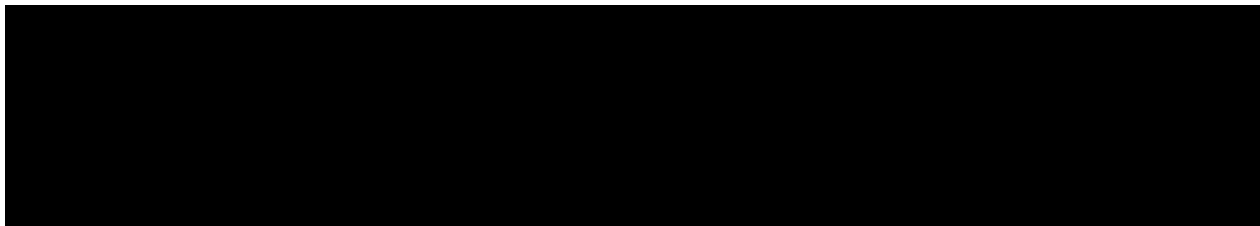
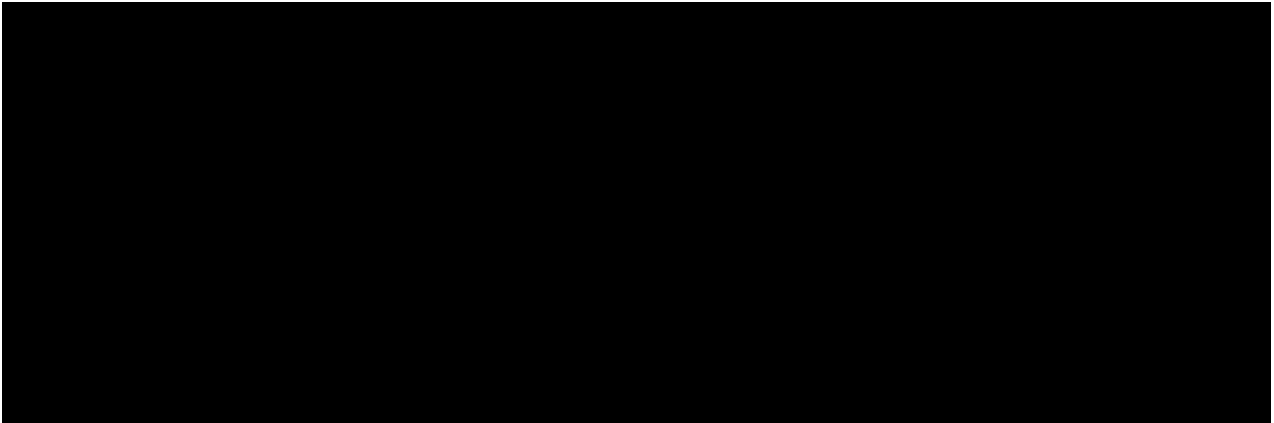
The key skills required to do this project are listed below:

- 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.



### **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.

### **Specification Annexes**

#### **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.

## **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.

### **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.

“Public bodies that routinely engage in place based interventions should collect data to develop an objectively based, well researched evidence base to support decision making... Ranges should be presented and variability in data should be clearly shown

### 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).

**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?

**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](http://www.gov.uk)))

- Environment Agency, Flood and Coastal Erosion Risk Management – Appraisal Guidance ([FCERM appraisal guidance - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/314441/FCERM_appraisal_guidance.pdf))
- 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 \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/314441/FCERM_toolkit_the_local_economic_benefits_of_Flood_and_Coastal_Erosion_Risk_Management_projects.pdf))
- 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](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/314441/Measuring_the_Economic_Impact_of_an_Intervention_or_Investment.pdf)))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 \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/314441/The_production_of_quick_scoping_reviews_and_rapid_evidence_assessments.pdf)

## **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.

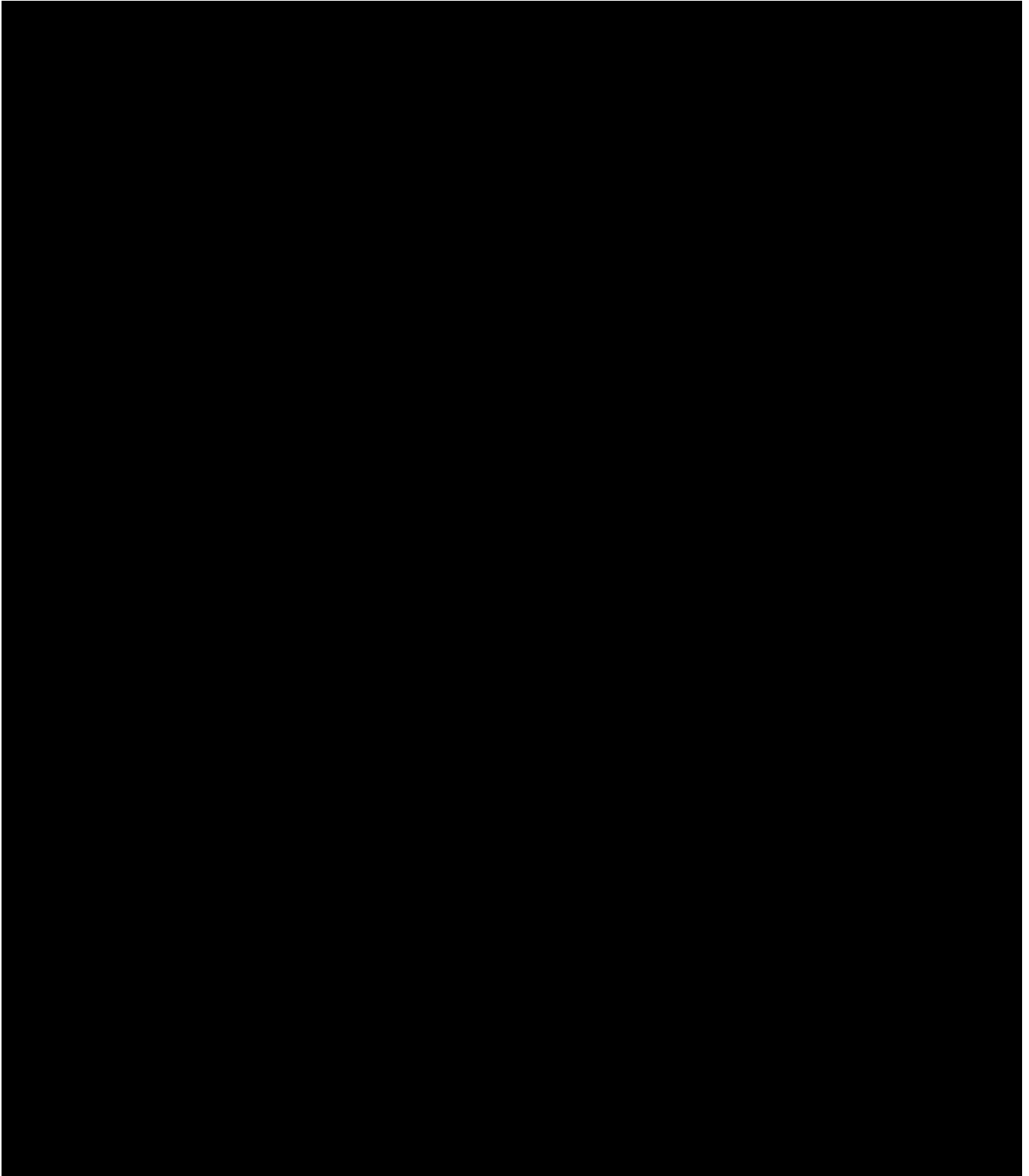
In addition, we are currently engaging local stakeholders who hold detailed information on businesses impacted by flooding (business surveys, flood relief grant applications) as well as other datasets which could help inform the theory of change and wider impacts (footfall and vehicle statistics, credit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

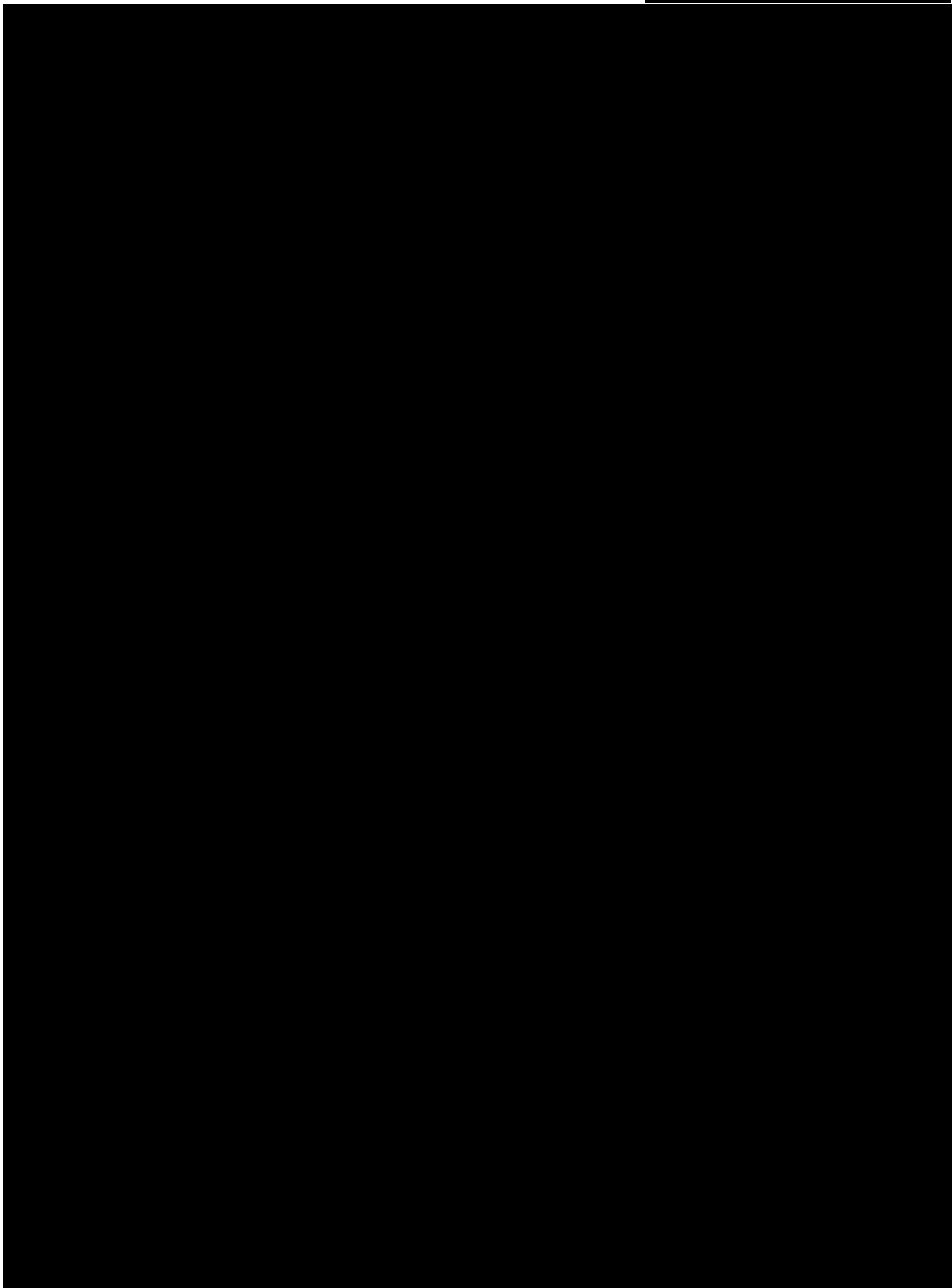
- Inter Departmental Business Register (IDBR), ONS
  - Most detailed business accounts available including employment and turnover at the business site level over time. Not freely available but can be purchased at cost. Could inform evidence on flooding and flood risk impact on economic growth.

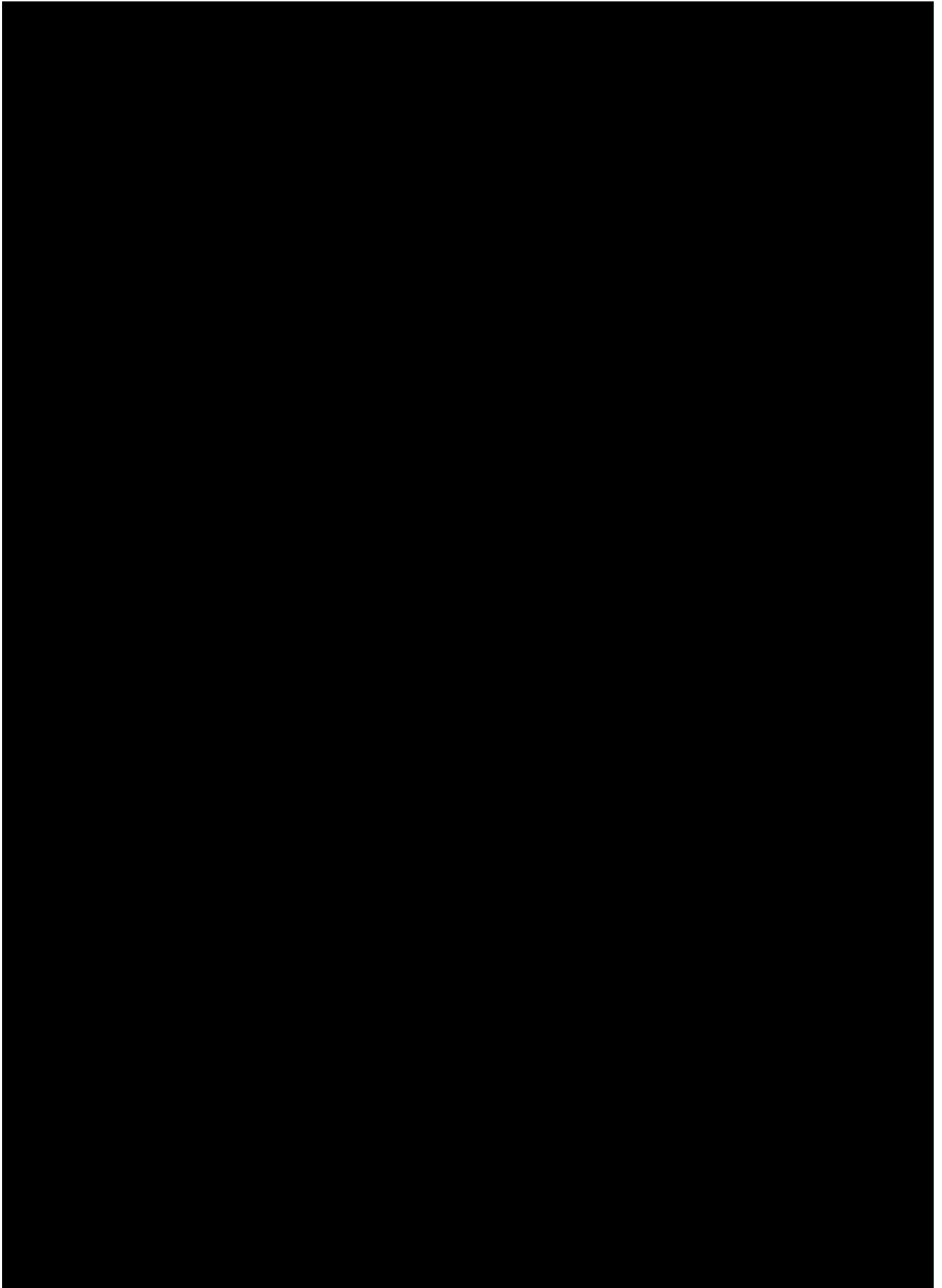
- Gross Value Added per filled Job, NUTS 2 and NUTS 3 region, ONS
  - GVA per job by local authority, can be used to calculate additional GVA from new employment as well as GVA losses associated to disruption from flooding.
- Annual Business Survey, ONS
  - Turnover, GVA and Employment costs by sector 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.

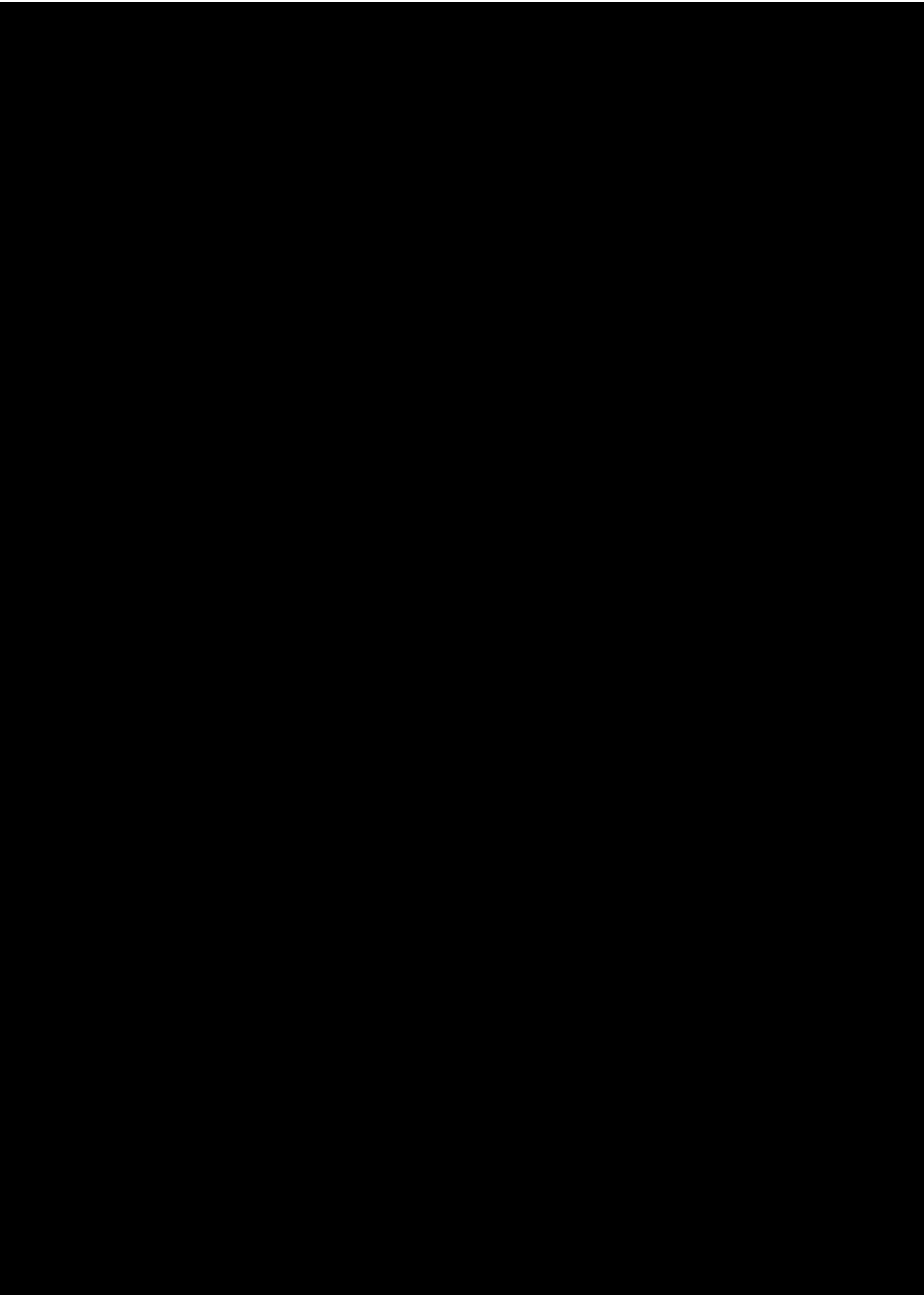
## Section 4: Supplier's Submission

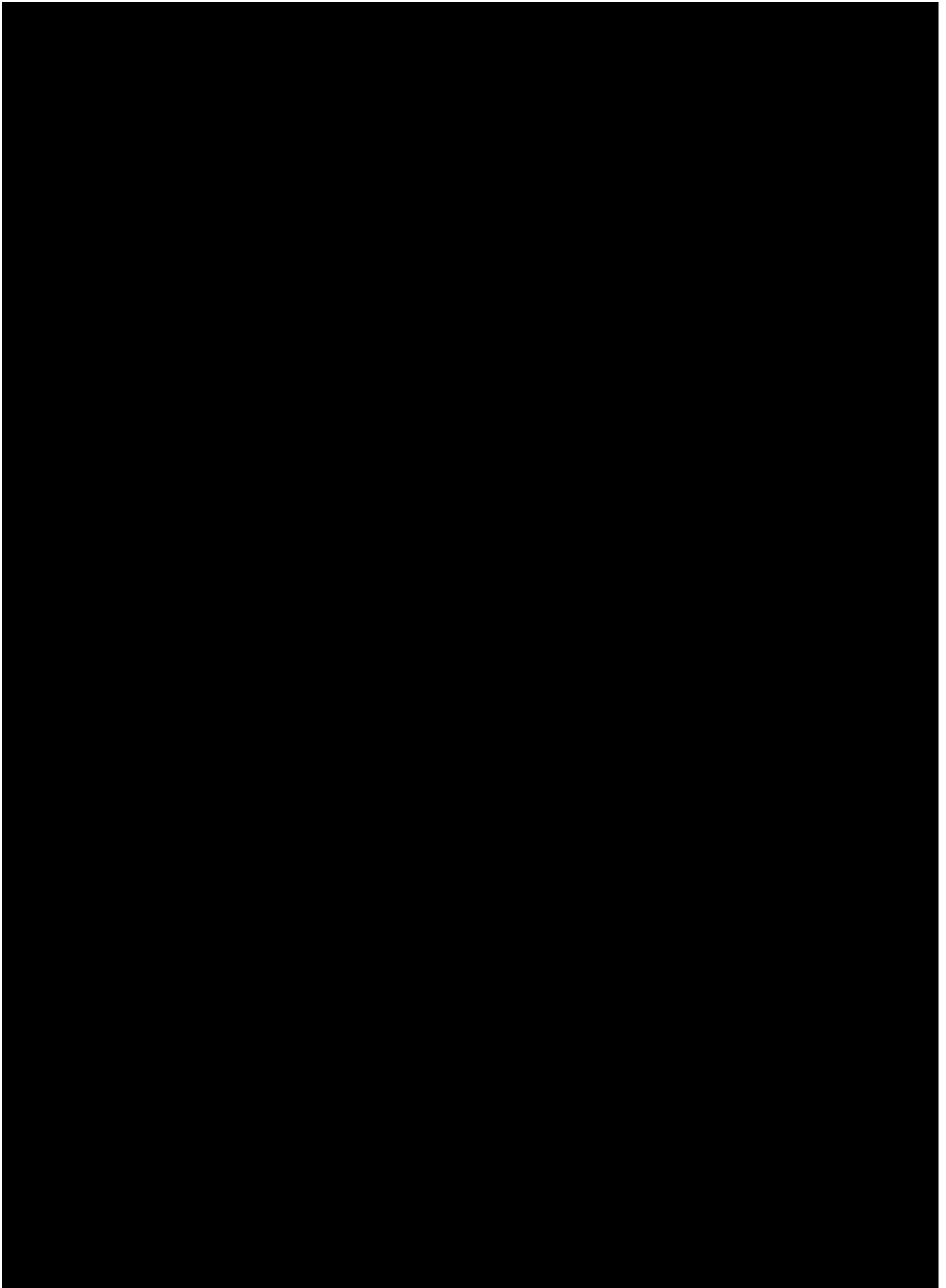
**Title:** Understanding the links between economic development and flood risk investment

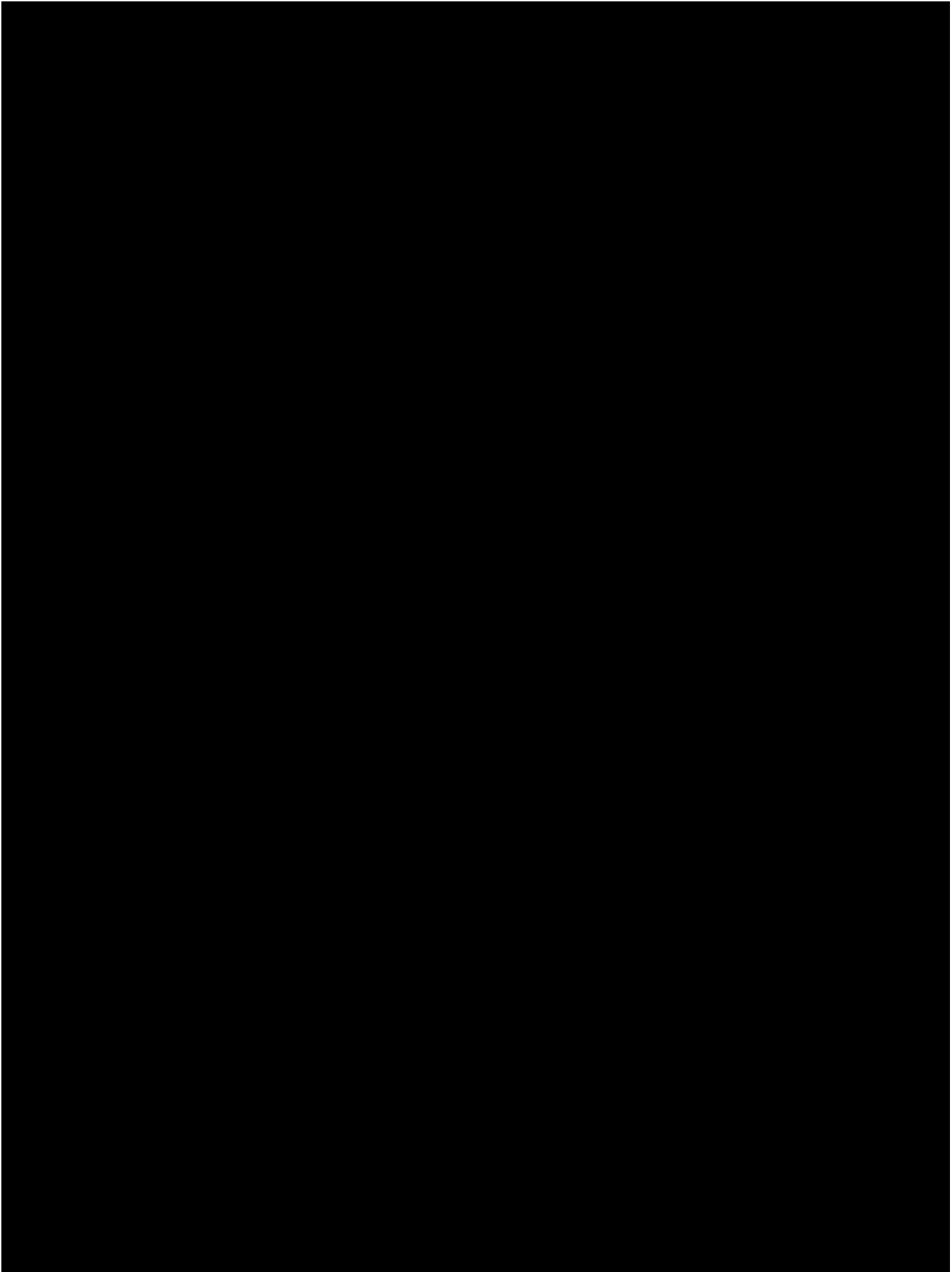


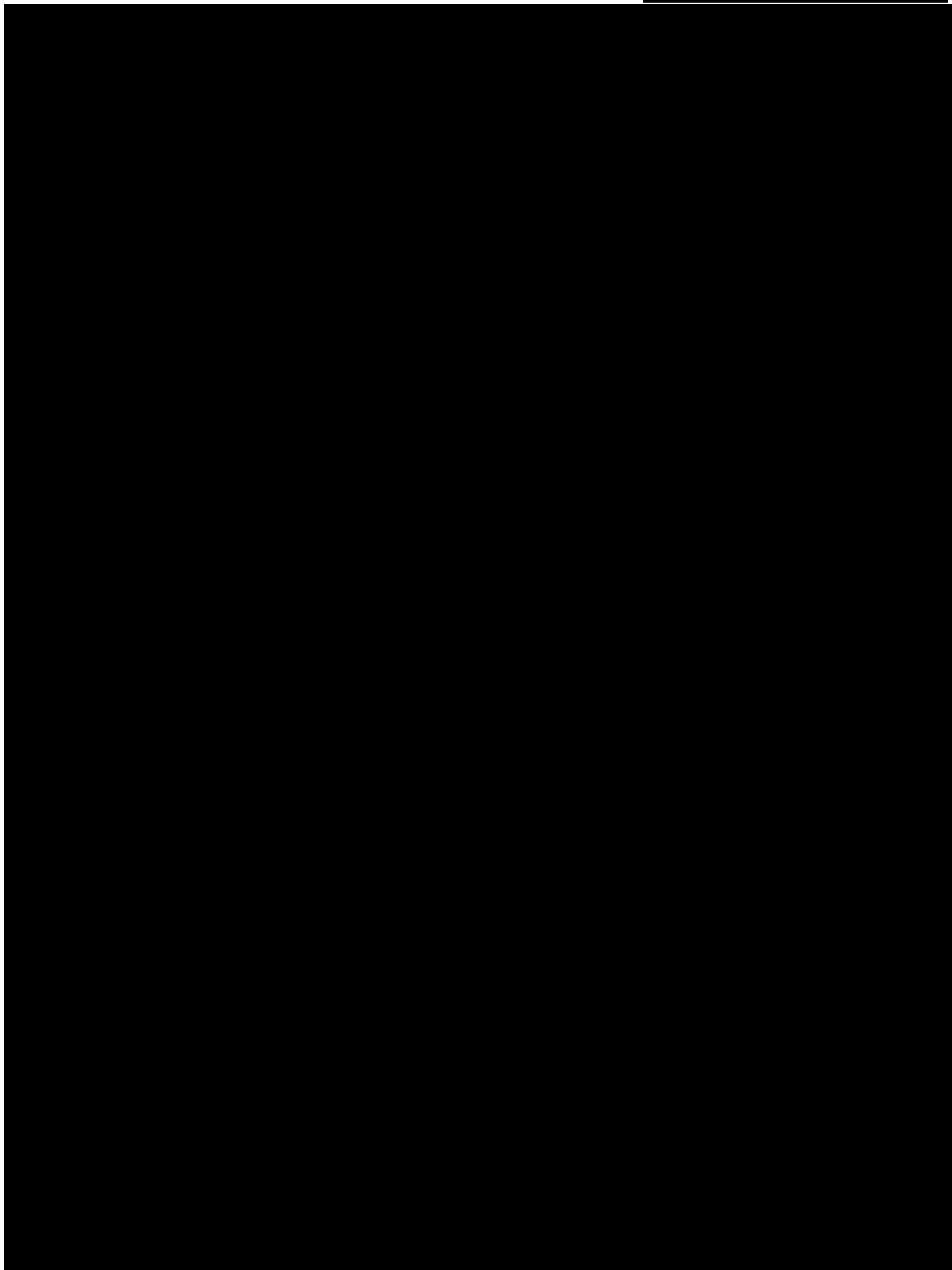


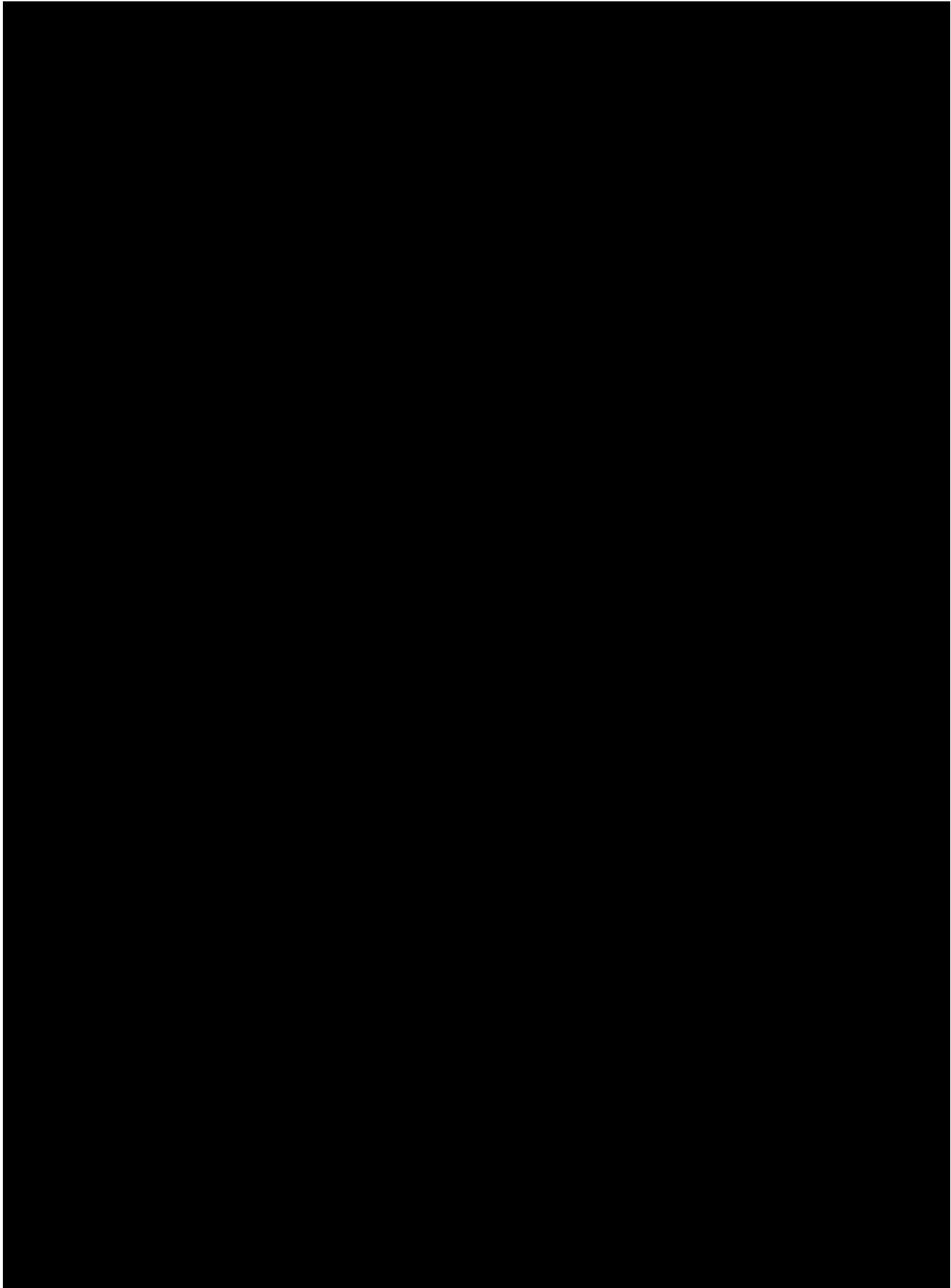


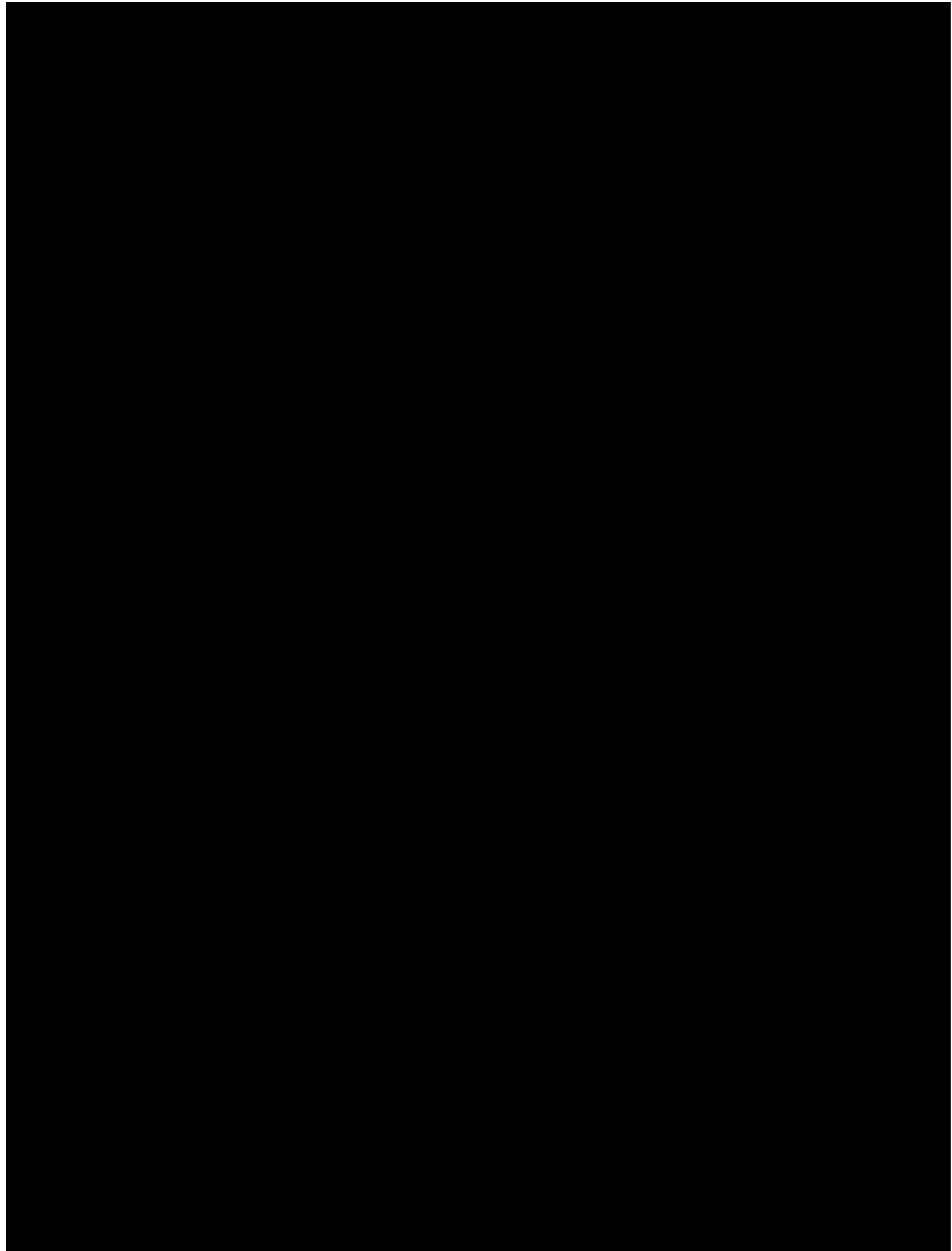




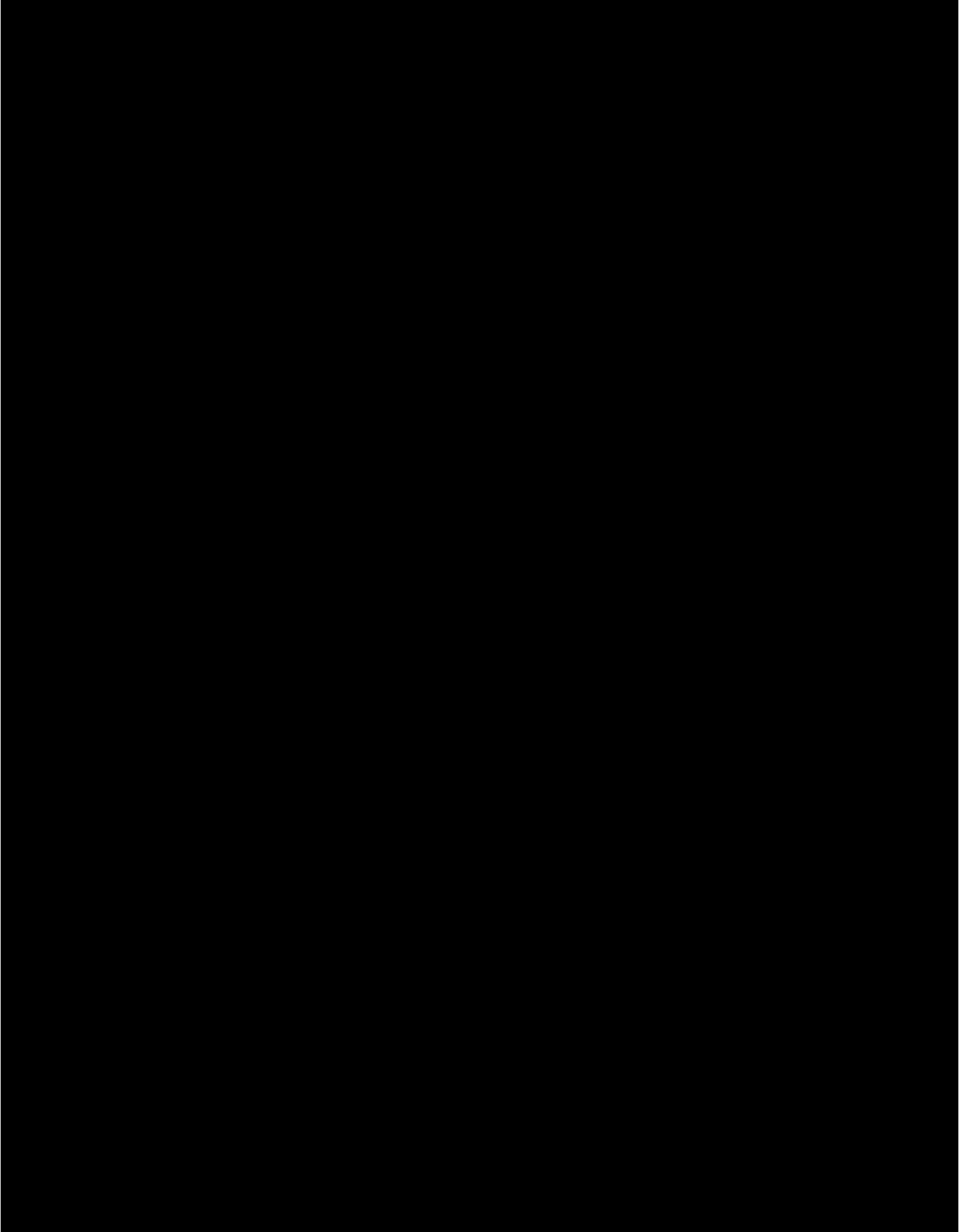


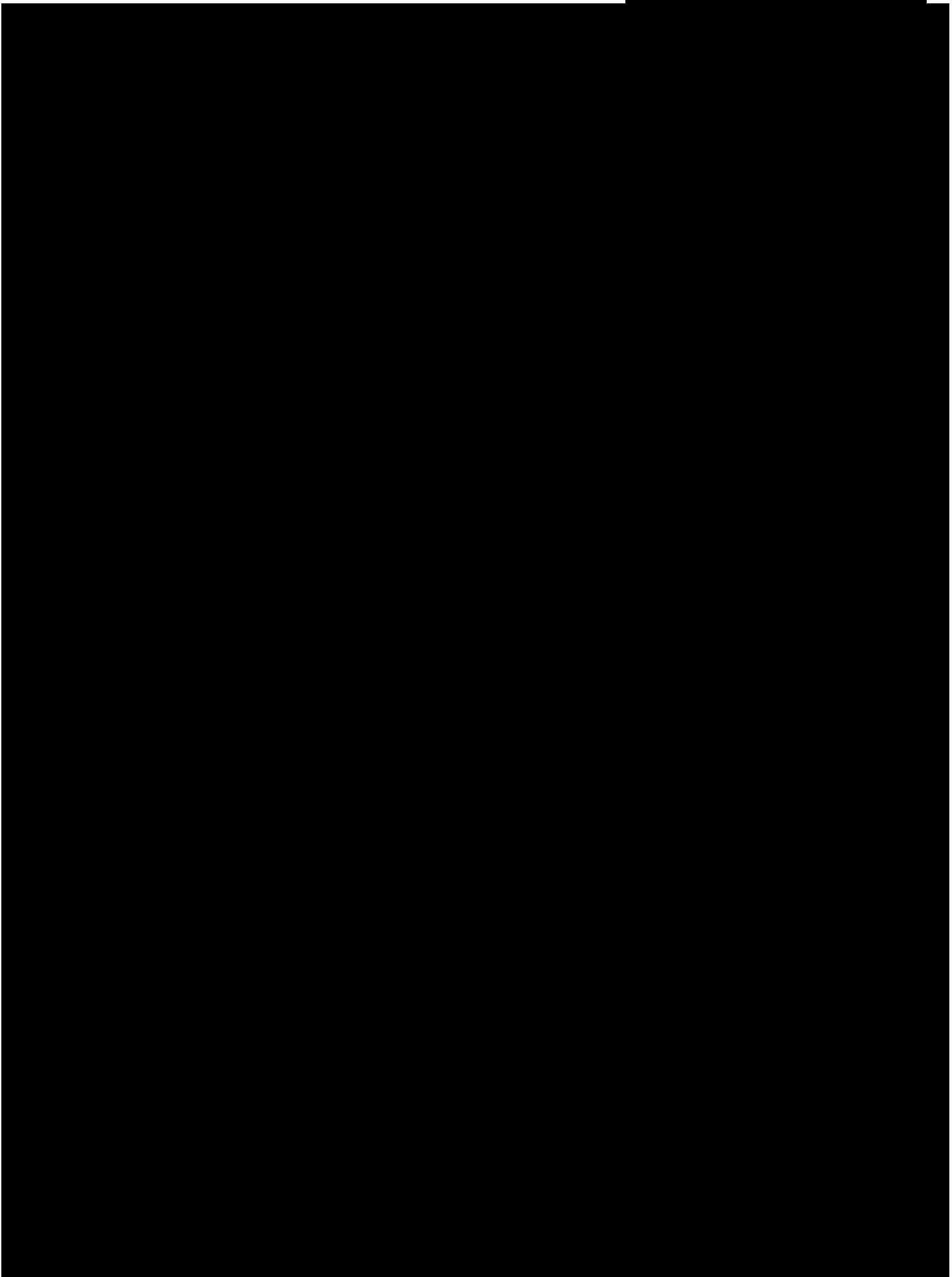


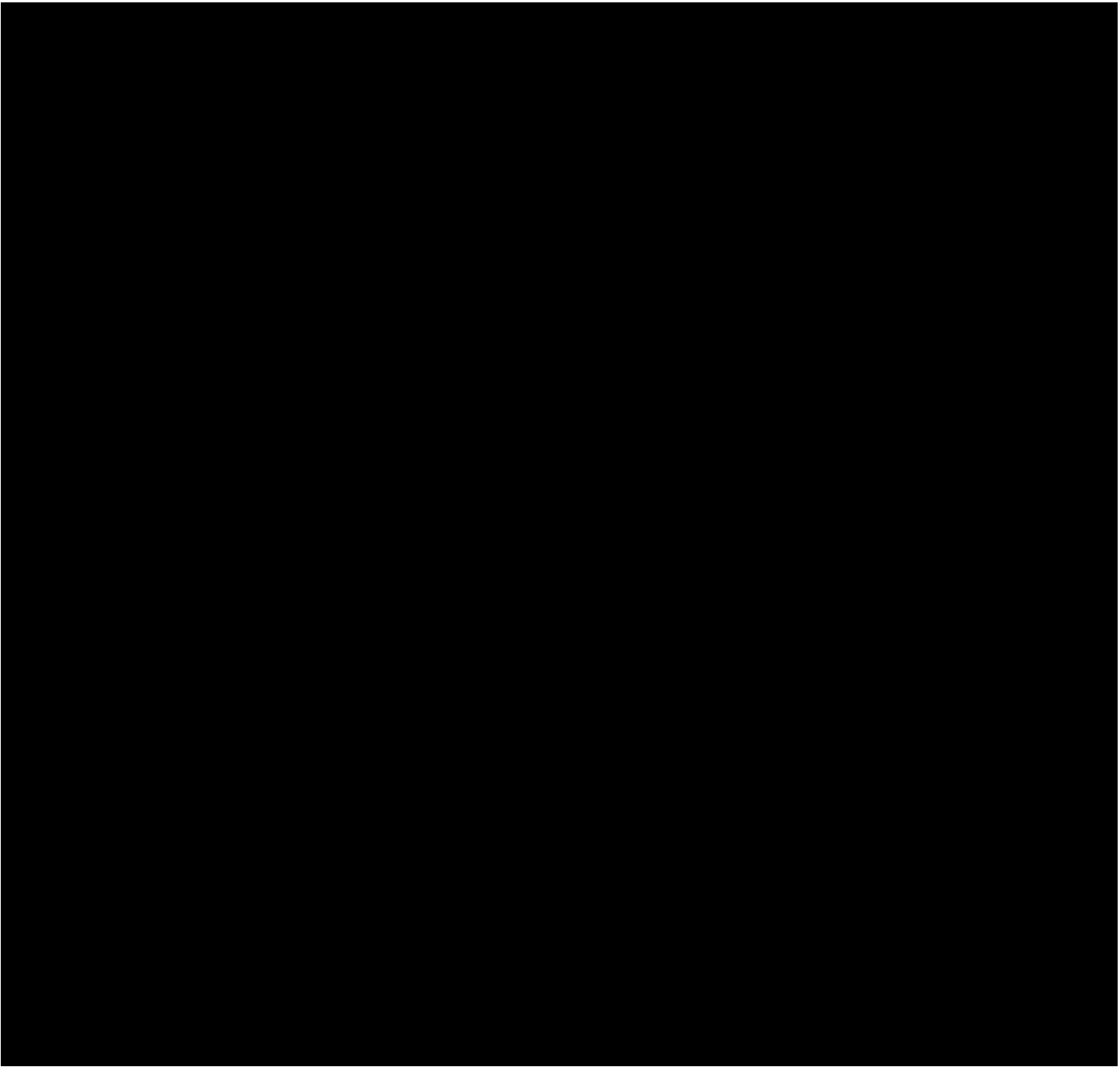




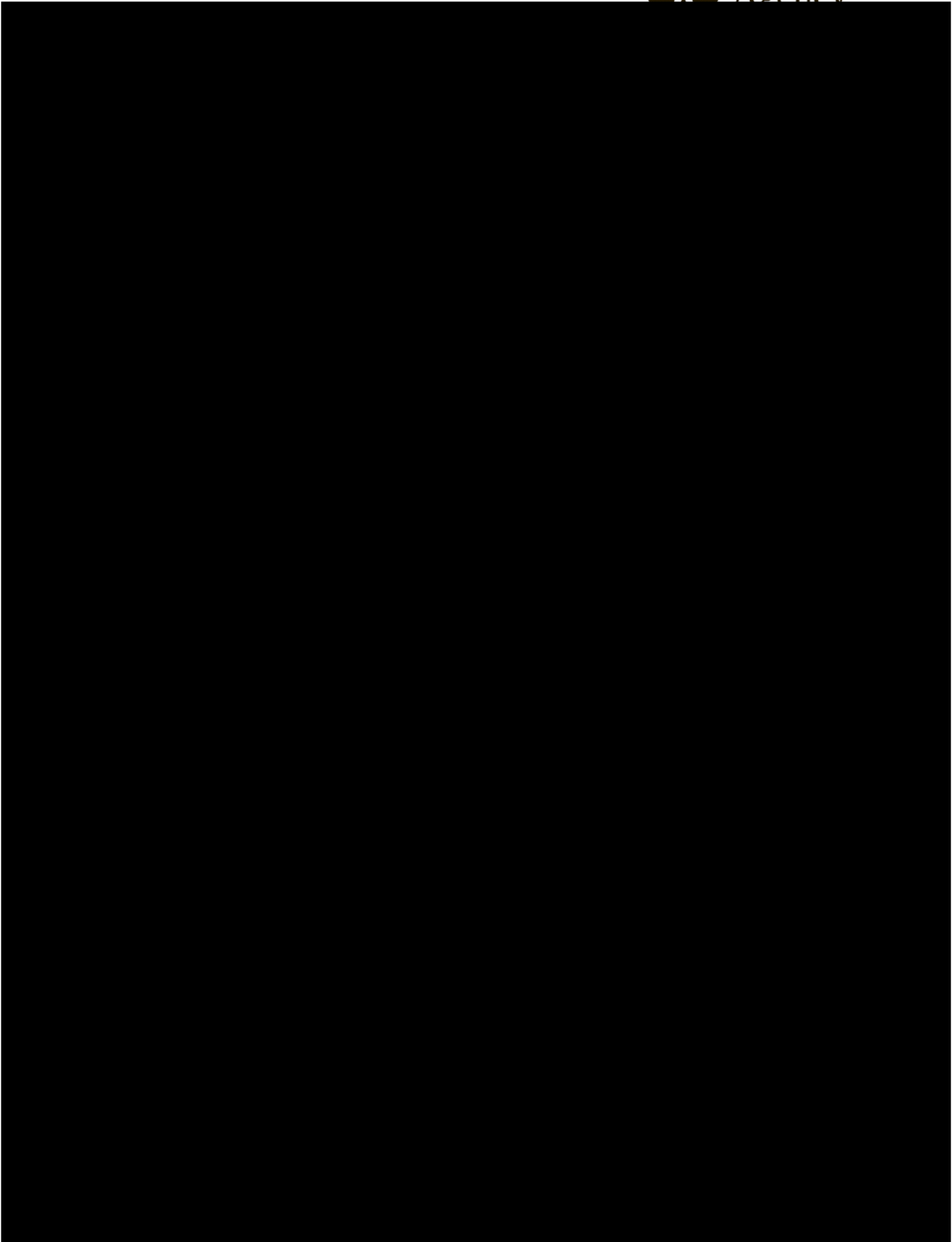


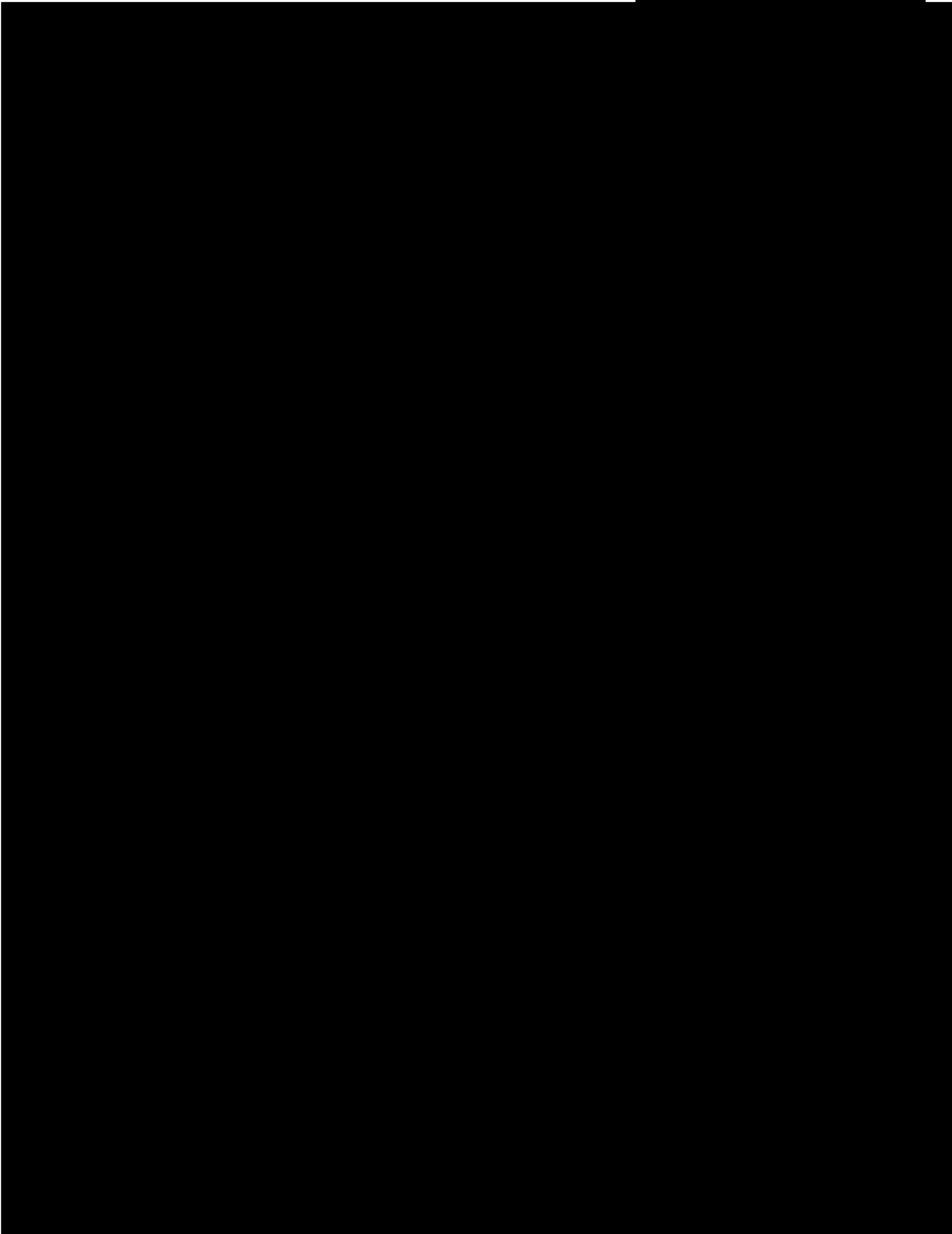


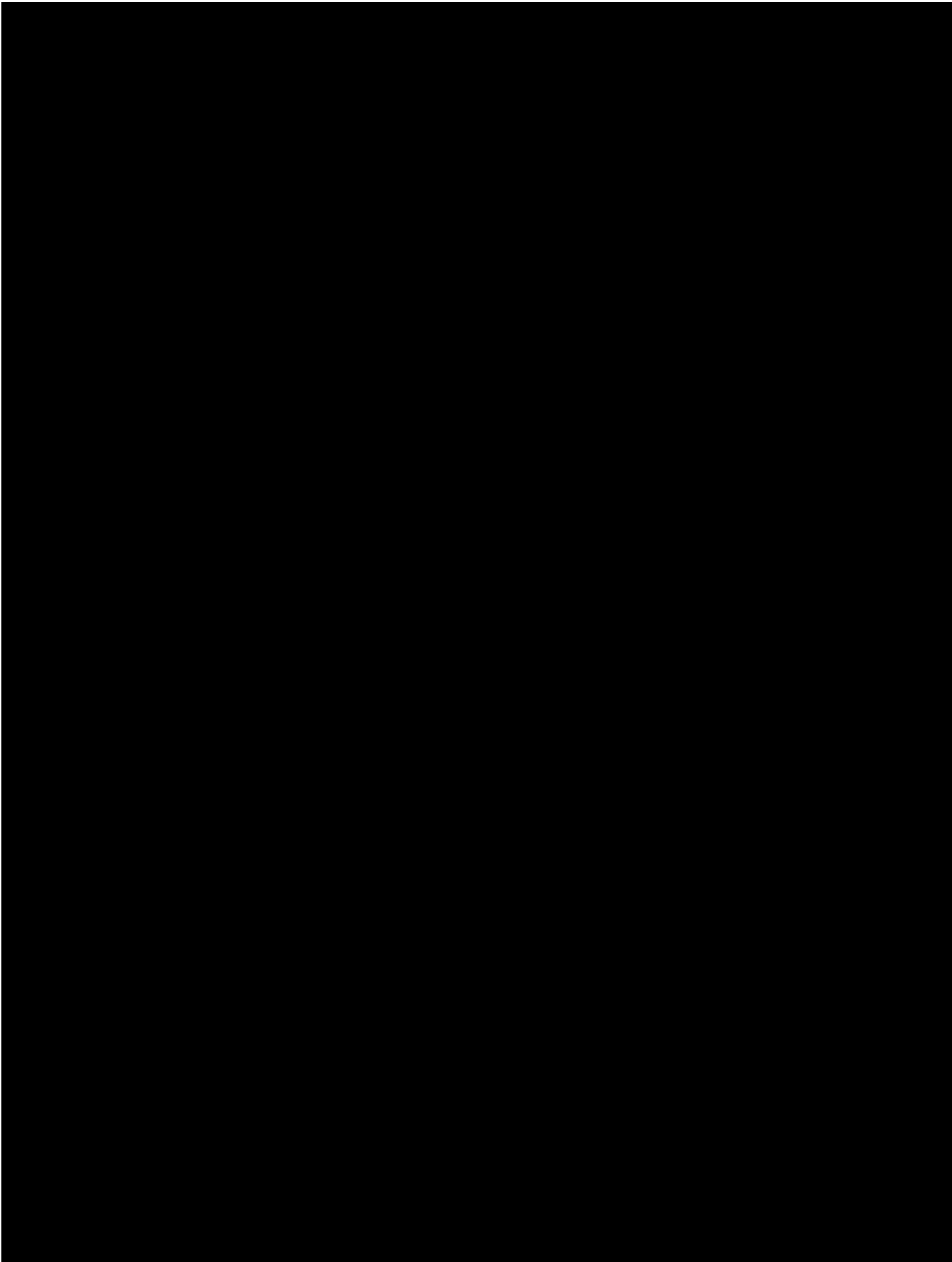










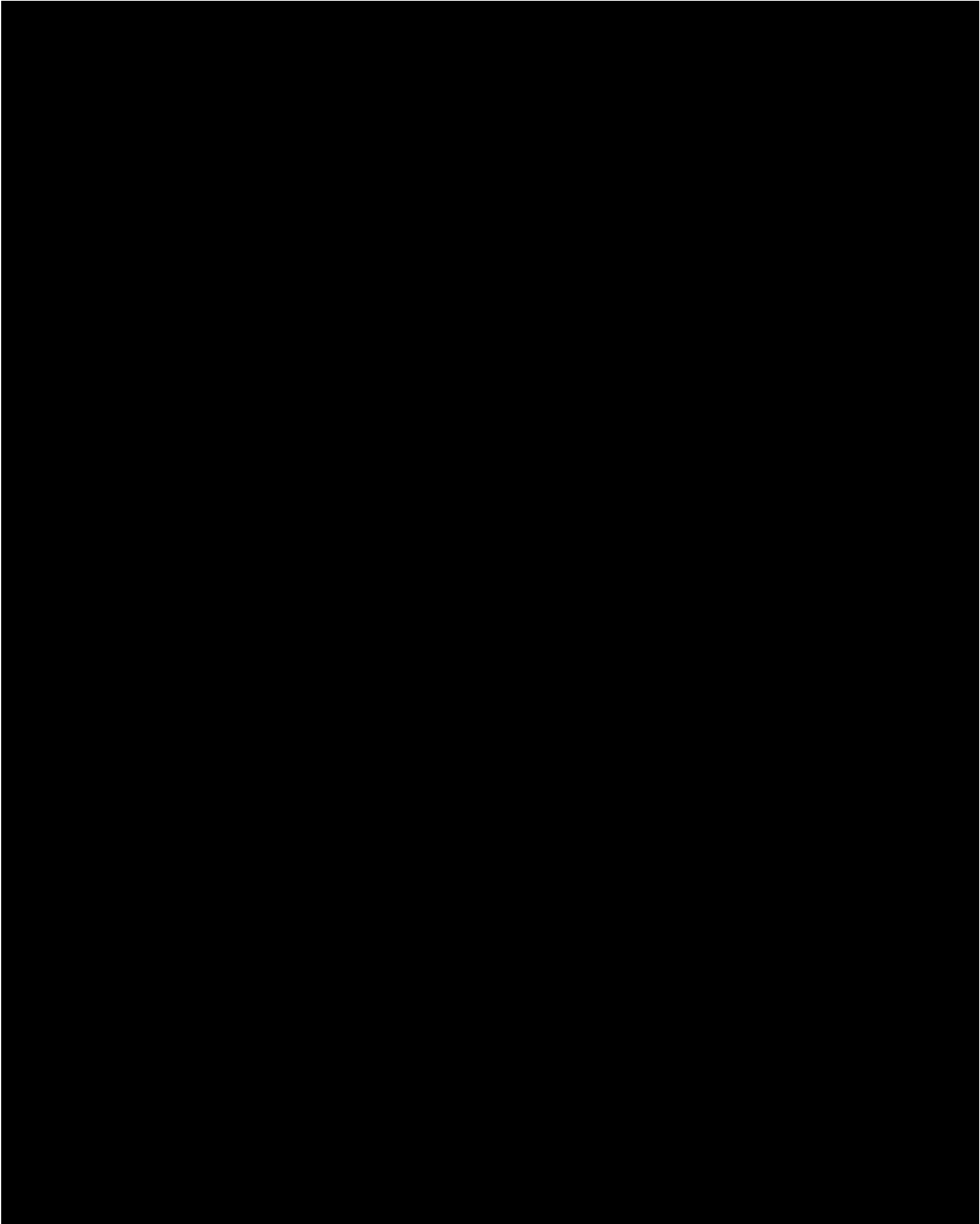






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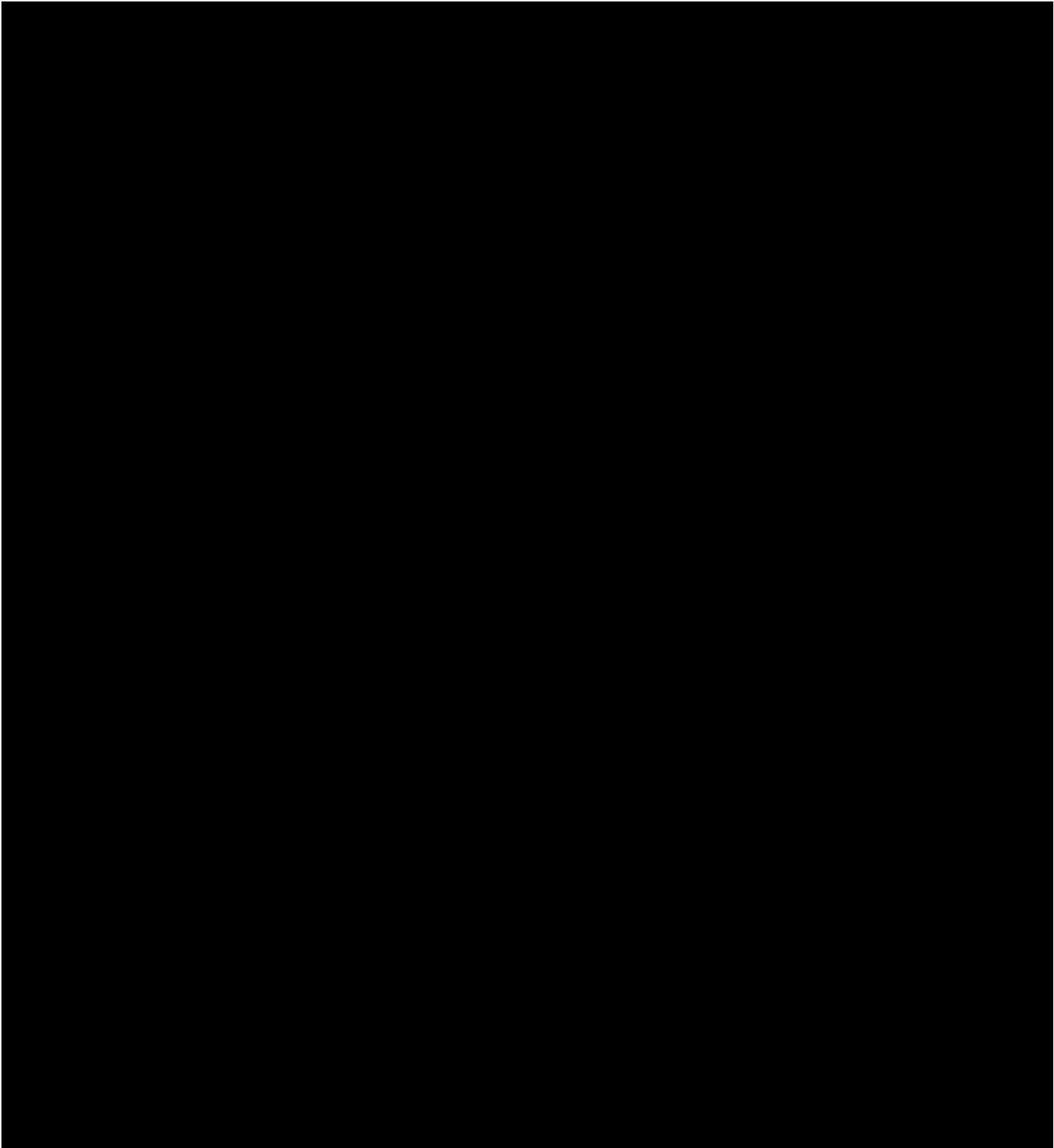
## Section 5: Performance Management Framework and Key Performance Indicators

- 1.1. Overview of the PMF
- 1.2. 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.
- 1.3. 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.
- 1.4. The Authority may define any reasonable performance management indicators for the Contractor under the following categories:
  - Contract Management
  - Delivery and Support
  - Quality of Service
- 1.5. The proposed KPIs for this Contract are set out at *Section 6*. These will be included in the Contract and discussed in detail at the inception meeting.
2. Governance and Contract Management
  - 2.1. Key Performance Indicators (KPI's) shall be monitored on a regular basis and shall form part of the contract performance review. Within the first week of commencement of the Contract the successful Contractor will hold a conference call with the Authority's project lead. The Authority's project lead will contact the successful Contractor to set this up.
  - 2.2. 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 monthly Contract Meetings with the Authority; who will review this and make comments if any. The quality of the Service provided, and the successful Contractor's performance shall be discussed as part of these meetings. The successful Contractor shall be appropriately represented at the review meetings, which will be conducted in person or via teleconference due to Covid 19 or other social media as may be agreed with the Authority's representatives.
  - 2.3. 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 have to 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.
  - 2.4. The successful Contractor shall appoint a nominated person of appropriate grade to be the successful Contractor's Authorised Representative to manage the Service and

to liaise with an official from the Authority as required. At any meeting, the Contractor's Authorised Representative shall be authorised to make critical decisions.

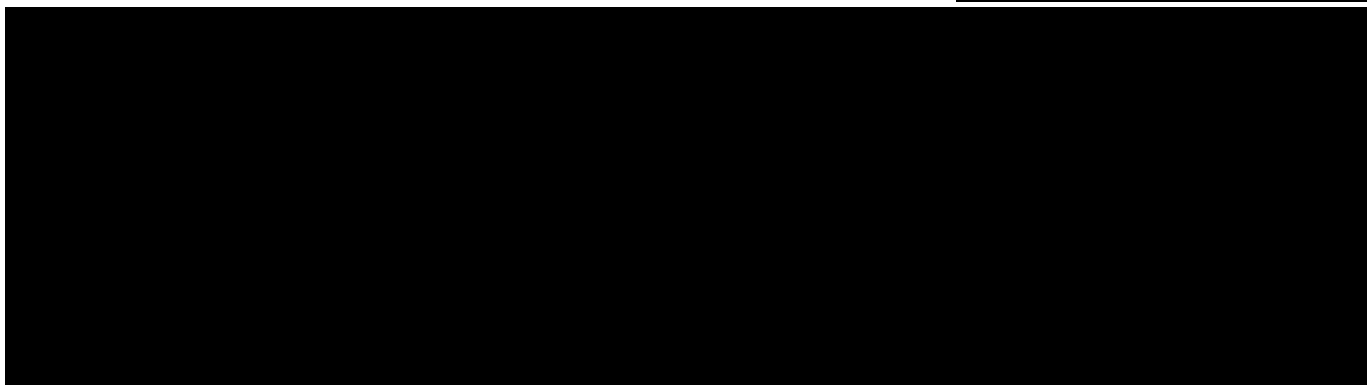
- 2.5. The Contractor shall maintain their own management reports, including a Risk and Issues Log and present these as requested by the Authority at any meeting requested by the Authority.
- 2.6. Any performance issues highlighted in these reports will be addressed by the Contractor, who shall be required to provide an improvement plan ("Remediation Plan") to address all issues highlighted within a week of the Authority request.
- 2.7. The Authority will be responsible for agreeing dates and drafting the agenda for and producing a note of the review meeting.
- 2.8. The Authority reserves the right to amend the existing KPI's detailed in *Annex 5* 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



## Section 7: Processing Personal Data and Data Subjects

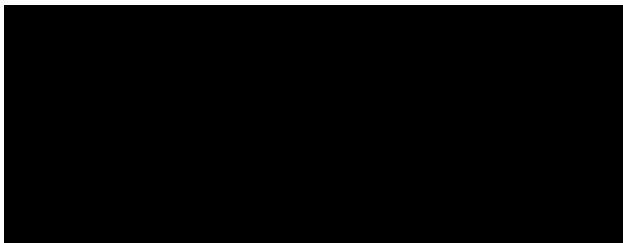
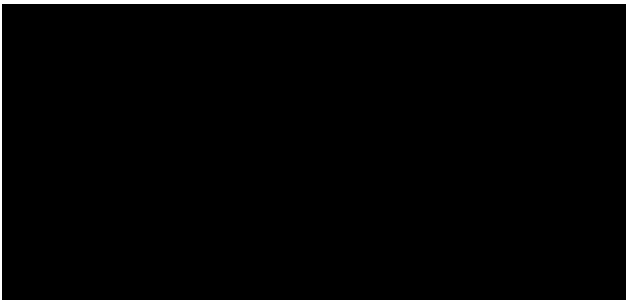
1. This Schedule shall be completed by the Authority, who may take account of the view of the Contractor, however the final decision as to the content of this Schedule shall be with the Authority at its absolute discretion.
  2. The contact details of the Authority Data Protection Officer are:  
[Dgc.gdpr@defra.gov.uk](mailto:Dgc.gdpr@defra.gov.uk)
  3. The contact details of the Contractor Data Protection Officer are:
  4. The Contractor shall comply with any further written instructions with respect to processing by the Authority.
  5. Any such further instructions shall be incorporated into this Schedule.
-



## Appendix (1) to Conditions Research and Development

Ref: ecm 66469

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



**3 Completion**

Contract Start Date 30/01/2023

Contract End Date 31/10/2023

**4 Delivery**

Address: As above

**5 Insurance**

