

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Committees: Corporate Projects Board - for decision Projects Sub - for decision Service Committee Streets & Walkways Sub Committee – for decision Planning & Transportation Committee- for information Open Spaces and City Gardens Committee – for information | Dates: 31 March 2021 14 April 2021 29 April 2021 12th May 2021 27 th April 2021 |
| Subject: Climate Action Strategy - Cool Streets and Greening Programme Unique Project Identifier: PV ID 12267 | Gateway 1& 2: Project Proposal Regular |
| Report of: Director of the Built Environment Report Author: Janet Laban | For Information |
| <h1>PUBLIC</h1> | |

Recommendations

| | |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Next steps and requested decisions | <p>Project Description: Cool Streets and Greening is a Climate Action Strategy programme to develop climate resilient streets and open spaces in the Square Mile.</p> <p>This project aligns with the City’s Corporate Plan and Responsible Business Strategy and contributes to the City Corporation’s preparation for the UN climate conference COP26. It will assist in implementation of climate measures in the emerging City Plan 2036 and Transport Strategy whilst supporting the City’s aspiration to develop culture and commerce in parallel in the coming decades.</p> <p>Funding Source: Members agreed funding for this work through the Climate Action Strategy in Oct 2021. The specific funding source for this work is the Department of the Built Environment On-Street Parking Revenue (DBE - OSPR)</p> <p>Next Gateway: Gateway 3/4 - Options Appraisal (Regular)</p> <p>Once suitable pilot sites have been identified and prioritised a Gateway 3 / 4 report will seek approval for implementation of resilience measures on specific sites later in year 1.</p> <p>In subsequent years, the implementation of resilience measures will be at sites where other works are planned. Full Gateway approvals will be sought for each site with suitable</p> |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <p>climate resilience measures being incorporated within the normal project approval process.</p> <p>Next Steps:</p> <p>Year 1 (2021/22) of the Cool Streets and Greening project will involve:</p> <p>Set up Climate Resilience Steering Group Terms of Reference</p> <ul style="list-style-type: none"> • Programme development & governance • Opportunity mapping and data gap analysis • Data collection & analysis protocols • Develop criteria for funding of resilience measures <p>Steering Group Review - programme</p> <ul style="list-style-type: none"> • Draft technical resilience measures guidance • Site identification and prioritisation • Baseline heat, flood and Urban Greening Factor monitoring <p>Steering Group review – sites, measures & data - subject to Gateway 3/4 approvals for pilot sites</p> <ul style="list-style-type: none"> • Plan implementation of heat and flooding resilience measures on 4-7 pilot sites • Model impacts for 4-7 sites • Implement climate resilience measures on 4-7 pilot sites • Monitor impacts <p>Steering Group review – implementation and impacts</p> <p>Years 2,3 & 4 2022 to 2025- Further resilience measures will be implemented in a minimum of 20 sites based on the evaluation at the pilot sites.</p> <p>Requested Decisions:</p> <ol style="list-style-type: none"> 1. That budget of £320K is approved for <ul style="list-style-type: none"> • Programme framework development (4-year programme) • Climate resilience measures catalogue • Installation of smart sensors and data protocols for monitoring • Opportunity mapping and gap analysis for climate resilience solutions • Identification and prioritisation of sites. <p>This is a capitalised resource against the proceeding capital works.</p> 2. Note the total estimated cost of the Cool Streets and Greening project at £1.7M for Year 1. The remaining funds will be for installation of resilience measures in priority sites and will be subject to Gateway 3,4 & 5 approvals |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | | | | |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------|
| | 3. Note that the likely cost range for the Cool Streets & Greening 4-year programme will be an estimated £1.7M per annum over 4 years – Total £6.8M | | | |
| 2. Resource requirements to reach next Gateway | Item | Reason | Funds/ Source of Funding | Costs £ |
| | Framework development | Consultant support in designing programme | Climate Action Strategy (CAS) funding DBE - On Street Parking Reserve (OSPR) | 50K |
| | Resilience measures catalogue | Consultant support in development of technical catalogue of resilience measures | CAS funding DBE OSPR | 10K |
| | Smart sensors and monitoring | Installation of smart sensors for flood and heat monitoring including ongoing maintenance | CAS funding DBE-OSPR | 85K |
| | Data collection & analysis | Consultant support in smart monitoring, analysis and interpretation and reporting of results & KPIs | CAS funding DBE-OSPR | 20K |
| | Opportunity mapping & data gap analysis | Consultant support | CAS funding DBE-OSPR | 75K |

| | | | | |
|---------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------------------------------|
| | | | | |
| | Site identification and prioritisation | Consultant support | CAS funding DBE-OSPR | 30K |
| | Staff costs Site identification and prioritisation | Public Realm/ Highways/ Open spaces staff | CAS Funding DBE-OSPR | 50K |
| | Staff costs Cool Streets & greening workstream management | Environmental resilience team currently funded until Sept 2021 thereafter to be funded through the Mainstreaming Resilience workstream | Environmental Resilience Team | 100K funded from existing budgets |
| | Total cost for this Gateway | | | 320K |
| Costed Risk Provision requested for this Gateway: £0(as detailed in the Preliminary Risk Register – Appendix 2) | | | | |
| 3. Governance arrangements | <ul style="list-style-type: none">• The service committee for this project is the Streets & Walkways Committee• A cross departmental Climate Resilience Steering Group, chaired by the District Surveyor and Environmental Resilience Director, will oversee recommendations on procurement, project prioritisation, budgets, timetable and reporting. This steering group will meet quarterly and will report progress to the Projects Sub Committee.• The Senior Responsible Officer for this project is the District Surveyor and Environmental Resilience Director (Gordon Roy)• The Project Manager for this project will be the Senior Sustainability & Lead Environmental Resilience Officer (Janet Laban) who will be supported by the Environmental Resilience team the City Public Realm team, and the City Transportation team, working with highways, transport and open spaces officers on | | | |

| | |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <p>individual implementation projects within this workstream.</p> <ul style="list-style-type: none"> • Year 1 will be undertaken by the Environmental Resilience team which is a small team using design thinking and agile work practices to achieve results (see appendix 3). The team will work in partnership with officers from other parts of the Environment Service Area in the new Target Operating Model. • Some activities will require partnership working with organisations such as the British Geological Survey, Thames Water and the Environment Agency. Such activities will be undertaken with the relevant confidentiality agreements and memorandums of understanding in place. |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Project Summary

| | |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4. Context | <p>4.1 The City's Climate Action Strategy identifies the need to adapt to a changing climate where we will experience hotter drier summers, warmer wetter winters, sea level rise and more extreme weather events.</p> <p>4.2 The climate risks that the City faces include overheating, flooding, water scarcity, biodiversity loss, increases in pests and diseases and disruption to food and trade.</p> <p>4.3 The City of London Adaptive Pathways report prepared for the City Corporation by Buro Happold demonstrates the importance of beginning now to incorporate resilience actions into the Square Mile.</p> <p>4.4 The funding for the Climate Action Strategy was agreed in Oct 2020 by Court of Common Council. Individual tranches of funding will be the subject of Resource Allocation Sub Committee approval as appropriate.</p> |
| 5. Brief description of project | <p>5.1 This Gateway 2 project is the first phase of a wider programme of work to improve the resilience of the City's streets and spaces to climate change.</p> <p>5.2 This phase will identify opportunities, set an evaluation framework, gather baseline information including from smart sensors and identify and prioritise sites for installation of climate resilience measures such as sustainable drainage (SuDS) and heat resilient materials.</p> <p>5.3 The wider project addresses the range of actions agreed through the City's Climate Action Strategy to address climate risks for the City's streets including:</p> <ul style="list-style-type: none"> • Flood modelling |

| | |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <ul style="list-style-type: none"> • Heat resistant materials testing • Water footprint and leakage management • Natural flood management and sustainable drainage (SuDS) • Greening and climate resilient planting. <p>5.4 Subject to Gateway 3/4/5 approval the wider project will install and evaluate measures and techniques to address the climate challenges that the City faces.</p> <p>5.5 The measures that are found to be effective will then be incorporated into the City's design guidance providing a roadmap to 2080 for a climate resilient public realm. This aligns with the Climate Action Strategy adapting to climate change diagram – best case by 2080</p> <p>5.6 Ongoing maintenance of the climate resilience measures will be secured through a commuted sum associated with each implementation project to be included at Gateway 3 / 4 /5. The amount of the commuted sum will be included in each project cost and be funded from the Climate Action funding sources.</p> |
| 6 Consequences if project not approved | <p>6.1 The City's climate is changing. We need to adapt the City's environment to hotter drier summers, warmer wetter winters, sea level rise and more frequent extreme weather events.</p> <p>6.2 The high cost of reacting to rather than preparing for climate change is well recognised¹.</p> <p>6.3 The Climate Resilience Adaptive Pathways study completed for the City Corporation by Buro Happold in 2020 identified the measures that we need to implement now to ensure that we are ready for the future climate.</p> <p>6.4 If this project is not approved, we will miss the opportunity to prepare for the inevitable change in the climate resulting in increased climate risks, higher insurance costs through lack of preparedness and higher costs of action.</p> <p>6.5 Some actions from the recently adopted statutory Local Flood Risk Management Strategy (LFRMS) could be compromised if we fail to progress this project.</p> |
| 7 SMART project objectives | <p>Vision: The Square Mile and City Corporation assets elsewhere are an exemplar of climate resilience, pre-empting inevitable climate related risks and impacts, providing a model for others to follow.</p> <p>Climate Action Strategy Objectives:</p> <ul style="list-style-type: none"> • The City of London Corporation and its assets are resilient to climate change |

¹ [Stern Review Report on the Economics of Climate Change](#)

| | <ul style="list-style-type: none"> • The Square Mile's buildings, public spaces and infrastructure are resilient to climate change • People in the Square Mile and beyond benefit from a clean, green and safe environment and job creation <p>These objectives were agreed by Court of Common Council on 8th Oct as part of the City's Climate Action Strategy (Committee report appendix 2)</p> <p>The key project objectives for 2021/22 are to</p> <ol style="list-style-type: none"> 1) To develop a catalogue of resilience measures and assessment methodology for consideration in planned public realm, transport, highways and open spaces schemes by Q3 2021/22 2) To map the opportunities and constraints for flood and heat resilience interventions in the Square Mile by Q3 2021/22. 3) To identify and prioritise sites for Climate resilience interventions by Q3 2021/22 4) Develop and implement real time baseline monitoring infrastructure which will be used to evaluate resilience interventions by Q3 2021/22 5) Identify and design interventions for 4-7 sites by Q3 2021/22 subject to Gateway 3-4 approval 6) Implement and monitor resilience measures on 4-7 sites by Q1 2022/23 subject to Gateway 3-4 approval <p>The project level Key Performance Indicators for this project will be:</p> <ul style="list-style-type: none"> • Urban Greening Factor for the Square Mile which provides a quantifiable measure of the overall level and environmental benefit of greening in the City. • Area of the Square Mile with Sustainable Drainage (SuDS) installed. | | | | | | |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------|---------------------|-------------------------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------|
| <p>8 Key benefits</p> | <p>This project covers the ten actions agreed by the Court of Common Council on 8th Oct 2020 under the City Climate Action Strategy report – nine actions from Appendix 2b Action Area 2 Resilient Streets and Greening and one action from Action Area 4 Resilience co-ordination and training.</p> <p>The Key benefits are set out below:</p> <table border="1" data-bbox="528 1733 1439 2049"> <thead> <tr> <th>Action</th><th>Benefit</th></tr> </thead> <tbody> <tr> <td>2.1 Flood modelling</td><td>Provides accurate, up to date information about flood risk in the Square Mile</td></tr> <tr> <td>2.2 Heat resistant materials</td><td>Provides pilot results for effective heat resilient materials in the public realm</td></tr> </tbody> </table> | Action | Benefit | 2.1 Flood modelling | Provides accurate, up to date information about flood risk in the Square Mile | 2.2 Heat resistant materials | Provides pilot results for effective heat resilient materials in the public realm |
| Action | Benefit | | | | | | |
| 2.1 Flood modelling | Provides accurate, up to date information about flood risk in the Square Mile | | | | | | |
| 2.2 Heat resistant materials | Provides pilot results for effective heat resilient materials in the public realm | | | | | | |

| | | |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| | 2.3 Water footprint management plan | Identify opportunities to minimise water use (and associated cost) and make best use of this resource |
| | 2.4 Develop natural flood risk management areas | Reduces surface water flooding and sewer overflows |
| | 2.5 Sustainable rain and surface water management | Reduce surface water flooding and sewer overflows |
| | 2.6 Water leakage management | Minimise water loss through leakage through pro active leak detection and asset management |
| | 2.7 Increase green space | Climate resilient greening reducing flood risk and overheating risk |
| | 2.8 Climate resilient planting | Thriving planting in face of climate change |
| | 2.9 External funding sources review | Potential partner funding from non-City of London sources |
| | 2.10 Engagement plans | Best practice used elsewhere |
| | 4.6 Below ground mapping | Identification of climate resilience opportunities |
| | <p>The measurable benefits for Gateway 2 will consist of:</p> <ul style="list-style-type: none"> • Framework resilience measures catalogue for flood and heat risk and appraisal methodology • Mapping (above and below ground) showing constraints and opportunities for flood and heat resilience measures • Prioritised list of sites that are suitable for climate resilience interventions in the Square Mile • Network of smart sensors to measure flood and heat risk • Baseline monitoring of climate resilience indicators including Urban Greening Factor for the Square Mile | |
| 9 Project category | 7a. Asset enhancement/improvement (capital) | |
| 10 Project priority | A. Essential | |

| | |
|------------------------------|------------------------------------------------------------------------------------------------------------------------|
| 11 Notable exclusions | 1 Implementation of buildings related resilience measures 2 Resilience of privately owned assets and infrastructure |
|------------------------------|------------------------------------------------------------------------------------------------------------------------|

Options Appraisal

| | |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12 Overview of options | <p>Option 1 – Business as usual. Ad hoc inclusion of climate resilience measures in public realm when funds allow.</p> <p>Option 2 – Focused programme to install and evaluate climate resilience measures in the Square Mile informing a roadmap for resilience to 2080. This option could be achieved within the requested budget subject to Gateway approvals as appropriate.</p> <p>Option 3– extend measures to include open spaces elsewhere. This option would provide more comprehensive data on the impacts of the climate resilience measures and is particularly relevant to surface water management and sewer overflow flooding. Additional funding would enable extension of this project beyond the Square Mile to include City Corporation managed open spaces elsewhere.</p> <p>Option 2 is the preferred approach since it will progress the City Corporation's adopted Climate Action Strategy climate resilience actions. Seeking further funding through Option 3 is dependent on the City Corporation progressing Option 2.</p> |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Project Planning

| | | | |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13 Delivery period and key dates | Overall project: This project will run from Jan 2021 until March 2025 see Gantt chart – Appendix 4. This Gateway 2 report is seeking approval for the initial phase of year 1 activities. | | |
| | Key dates: | | |
| | Year 0 | Q4 2020/21 | Partner engagement Staff upskilling Project plans |
| | Year 1 | Q1-2021/22 to Q1-2022/23 | Project design & governance Resilience measures catalogue Opportunity and constraint mapping Smart monitoring infrastructure Site identification and prioritisation Design and installation for 4-7 no pilot schemes Evaluation and reporting |

| | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Years 2 & 3 | Q2-2022/23 To Q1-2024/25 | Implementation of resilience measures <ul style="list-style-type: none"> • Sustainable drainage SuDS • Natural flood management (NFM) • Urban greening factor (UGF) • Resilient planting • Leakage management • Heat resilient surfaces |
| | Year 4 | Q2-2024/25 To Q4-2024/25 | Review and recommendations Development of guidance Roadmap for a climate resilient Square Mile to 2080 |
| <p>Other works dates to coordinate: The implementation phase of this project will be carried out alongside maintenance cycles and improvement to the public realm, highways and open spaces. Benefits from installation of resilience measures may be realised in adjacent areas e.g. SuDS in open spaces may benefit highway run off. Integration with other projects will minimise cost and disruption but will require careful planning to ensure alignment of dates.</p> | | | |
| 14 Risk implications | <p>Overall project risk: Low A high level overview of the risks in line with the Projects Procedure Corporate Risks Register is set out in Appendix 2: Risk Register – Costed Risk Provision. Further risk assessment will be carried out at the next Gateway as the workstream progresses.</p> <p>The potential risks at the Gateway 2 stage are as follows:</p> <ul style="list-style-type: none"> • Lack of funding would prevent these actions from progressing however the Climate Action Strategy commits £1.7M per annum to climate resilience. • Contract or partnership problems could delay progress of this stage. City procurement and comptrollers will oversee contracts and partnership governance arrangements. • Skills shortages – Skills currently exist in the Environmental Resilience Team as secondments with consultant support. Measures are underway to secure longer term commitment to skilled staffing for climate resilience. • Smart sensors do not provide suitable data to evaluate resilience measures. To mitigate against this contract specifications will be drawn up to ensure provision of useful data. • Opportunity mapping might show that there are minimal opportunities for resilience measures. An alternative approach would then be needed | | |

| | |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | The Costed Risk Provision assessment shows that at Gateway 2 any costs associated with minor risks and do not present a threat to the project. |
| 15 Stakeholders and consultees | PESTLE analysis has been used to identify the relevant stakeholders for this project (appendix 5) A stakeholder engagement plan is being developed to ensure co-ordinated messaging across the Climate Action Strategy implementation phase. |

Resource Implications

| 16 Total estimated cost | Likely cost range (excluding risk) for Gateway 2 Cool Streets & Greening: £320K Likely cost range for the Cool Streets & Greening 4 year programme: £1.7M per annum over 4 years – Total £6.8M Likely cost range (including risk): +/- 20% Years 1-4 £5.4M to £7.2M (if additional funding is not available to cover the shortfall then resilience measures will be implemented on fewer sites). | | | | | | | | | | | | | | | | | |
|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|--------------------------|----------|------------------------------------|---|-------------|------|-------------|------|-------------|------|-------------|------|--|--|-------|------|
| 17 Funding strategy | Choose 1: All funding fully guaranteed | Choose 1: Internal - Funded wholly by City's own resource | | | | | | | | | | | | | | | | |
| | <table><tr><th>Funds/Sources of Funding</th><th>Cost (£)</th></tr><tr><td>Year 0 Climate Action Strategy CAS</td><td>-</td></tr><tr><td>Year 1 CAS*</td><td>2.0M</td></tr><tr><td>Year 2 CAS*</td><td>1.8M</td></tr><tr><td>Year 3 CAS*</td><td>1.6M</td></tr><tr><td>Year 4 CAS*</td><td>1.4M</td></tr><tr><td></td><td></td></tr><tr><td>Total</td><td>6.8M</td></tr></table> | | Funds/Sources of Funding | Cost (£) | Year 0 Climate Action Strategy CAS | - | Year 1 CAS* | 2.0M | Year 2 CAS* | 1.8M | Year 3 CAS* | 1.6M | Year 4 CAS* | 1.4M | | | Total | 6.8M |
| | Funds/Sources of Funding | Cost (£) | | | | | | | | | | | | | | | | |
| | Year 0 Climate Action Strategy CAS | - | | | | | | | | | | | | | | | | |
| | Year 1 CAS* | 2.0M | | | | | | | | | | | | | | | | |
| | Year 2 CAS* | 1.8M | | | | | | | | | | | | | | | | |
| | Year 3 CAS* | 1.6M | | | | | | | | | | | | | | | | |
| | Year 4 CAS* | 1.4M | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| Total | 6.8M | | | | | | | | | | | | | | | | | |
| There may be potential for securing additional funding from external sources to extend this programme. | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| 18 Investment appraisal | For the Cool Streets and Greening Gateway 2, an options appraisal is not required. This is preliminary work to assess future options for implementation of climate resilience measures which will be assessed at Gateway 3/4 | | | | | | | | | | | | | | | | | |
| 19 Procurement strategy/route to market | Procurement for the Gateway 2 element of this workstream will involve specialist consultants and contractors all of which will be procured in line with the City's procurement policies. Appendix 6 summarises the Procurement Strategy for the | | | | | | | | | | | | | | | | | |

| | |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <p>lifecycle of the project and further procurement approaches will be finalised, in response to the findings of consultants appointed at this Gateway.</p> <p>Procurement will be overseen by the Climate Action Strategy Programme Management Team and the Senior Sustainability and Lead Environmental Resilience Officer</p> <p>City Procurement Reference Number: Not required – all appointments are below PCR threshold</p> |
| 20 Legal implications | <p>This project implements actions agreed by the Court of Common Council under the Climate Action Strategy. There are no specific legal implications at this stage and implications (for example on the highway) will be explored at the next stage as more detailed proposals are formulated. The Climate Change Act 2008 sets a framework for mitigating climate change and for adapting to climate change. This Act enshrined into law a target of reducing the UK's carbon account for the year 2050 by at least 100% of the 1990 baseline. The Climate Action Strategy as a whole and this project, which implements actions agreed by the Court of Common Council within it, are compliant with legislation, including the Climate Change Act 2008</p> |
| 21 Corporate property implications | <p>Year 1 - None</p> <p>Year 2-4 Discussions with Corporate Property team will take place during year 1 as sites are identified. Resilience works will be aligned with maintenance schedules wherever possible</p> |
| 22 Traffic implications | <ol style="list-style-type: none"> 1. Resilience interventions in the public realm and highways may have traffic implications through the reduction of carriageway space for vehicles and pedestrians. Implications will be explored at the next stage. |
| 23 Sustainability and energy implications | <ol style="list-style-type: none"> 1. This project will help to prepare the City for the impacts of climate change 2. Sustainable procurement and circular economy principles will be applied to minimise the materials impacts of implementation and reduce embodied carbon. 3. During Year 1 of this programme monitoring and reporting protocols will be put in place to enable robust evaluation of climate impacts including temperature and flood risk and evaluation methodologies will be developed |
| 24 IS implications | <p>None.</p> |
| 25 Equality Impact Assessment | <ul style="list-style-type: none"> • An equality impact assessment test of relevance will be undertaken at each stage of this project and any |

| | |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | potential issues will be addressed prior to progressing the action. |
| 26 Data Protection Impact Assessment | <ul style="list-style-type: none"> The risk to personal data is less than high or non-applicable and a data protection impact assessment will not be undertaken |

Appendices

| | |
|-------------------|--------------------------------|
| Appendix 1 | Gateway 1 Approval |
| Appendix 2 | Risk Register |
| Appendix 3 | Team structure and support |
| Appendix 4 | Schedule of stages Gantt chart |
| Appendix 5 | Stakeholder engagement plan |
| Appendix 6 | Procurement Strategy |

Contact

| | |
|-------------------------|---------------------------------------|
| Report Author | Janet Laban |
| Email Address | Janet.laban@cityoflondon.gov.uk |
| Telephone Number | 020 7332 1148 or Microsoft Teams call |

Appendix 1 Gateway 1 Approval

In September 2020 Resource Allocation Sub Committee and Policy and Resources Committee approved the scoped and costed Climate Action Strategy for the City Corporation which was subsequently approved by the Court of Common Council on 8th October 2020. See Committee Report below. A capital bid was submitted in August 2020 by the relevant Chief Officer – this was then adopted at RASC in Sept – this constitutes the Gateway 1 approval.



Climate Action
Report for Policy and



App2 Actions by
Committee FOR SUB

Appendix 2 of this Committee report provides a breakdown of the actions proposed to implement the Climate Action Strategy. Appendix 2b provides a detailed profile of each action area for climate resilience and Action Area 2 *Resilient Streets and Greening* includes most of the actions that will be covered through the Cool Streets and Greening programme. In addition, one action from Action Area 4 *Resilience Co-ordination and Training* has been included in the Cool Streets and Greening programme. (see below for relevant action plans)

Action Area 2: Resilient Streets and Greening

Committee: Planning & Transportation Committee

| CLIMATE RESILIENCE VISION: The Square Mile and City Corporation assets elsewhere are an exemplar of climate resilience, pre-empting inevitable climate related risks and impacts, providing a model for others to follow. | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| STRATEGY GOALS: B) The City of London Corporation and its assets are resilient to climate change E) The Square Mile's buildings, public spaces and infrastructure are resilient to climate change F) People in the Square Mile and beyond benefit from a clean, green and safe environment and job creation | | | |
| High level actions Action 2.1 Flood modelling, which include SUDs and other mitigation strategies, to complement EA flood models Action 2.2 Conduct pilot to test heat resistant materials in planned works for streets and highways during 2021-2025 Action 2.3 Develop City Corporation and Square Mile water footprint management strategy Action 2.4 Develop natural flood risk management areas Action 2.5 Sustainable rain and surface water management policies and implementation Action 2.6 Work with partners to accelerate actions to address water leak management Action 2.7 Increase the quality and provision of green space and coverage in the Square Mile and wider City Corporation spaces Action 2.8 Introduce climate-resistant and adaptive landscaping in planned works Action 2.9 Undertake funding sources review | Gross cost £M / yr. £2.0m | Impact on employment (estimate of total new jobs created in the green economy /yr.) 8 | What it pays for <ul style="list-style-type: none"> • An investigation into new water infrastructure such as strategic SUDs, roof top greening, catchment greening and afforestation, and more as relevant • A register and upgrade plan for roads that are vulnerable to acute heat which mainstreams heat-resistant road surfacing • A connected system of water recycling, urban drainage and rainwater management measures • Increased greenery in the Square Mile public realm • Climate change adaptable landscapes and planting • A strong partnership with Thames Water to reduce water wastage from leakage |
| Resilience Risks <ul style="list-style-type: none"> • Flooding • Overheating • Water stress • Natural capital Impact on resilience risks <ul style="list-style-type: none"> • Additional guidance on climate resilience forming part of Planning Policy will reduce all resilience risks • Minimising temperature increases through the public realm, creating cool spots • Interventions such as shading, urban greening, heat-resistant road surfacing, natural flood risk management areas, flood defence asset maintenance and careful material selection will reduce all resilience risks | Measurement Total no. climate risks managed | Key Benefits <ul style="list-style-type: none"> • Positive reputation amongst suppliers and construction industry • Indirect effect on green jobs and economic multipliers for green tech ecosystem • Increased visibility and standards across projects • Future proof public realm for climate impacts | |
| | Strategic Links Corporate Plan Outcomes – 5,7, Local Plan 2015, The draft City Plan 2036, Transport Strategy 2018-43, Responsible Business Strategy 2018-23, Local Flood Risk Management Strategy 2014-2020 | | |

Action Area 4: Resilience Co-ordination and Training

Committee: Primarily Porth Health & Environmental Services Committee and Planning & Transportation Committee

| CLIMATE RESILIENCE VISION: A future where the City's communities benefit from a fair and equitable transition to a climate resilient City with open access to data, knowledge and skills resulting in collaborative climate responses. | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| STRATEGY GOALS: B) The City of London Corporation and its assets are resilient to climate change E) The Square Mile's buildings, public spaces and infrastructure are resilient to climate change F) People in the Square Mile and beyond benefit from a clean, green and safe environment and job creation | | | |
| High level actions Action 4.1 Develop financial package and programme to manage resilience in longer term Action 4.2 Expand use and availability of non-sensitive data to monitor effectiveness of interventions Action 4.3 Embed principles of inclusion and equity throughout all resilience strategies Action 4.4 Design and deliver cross-Corporation training programme to strengthen skills and capabilities on resilience Action 4.5 Mainstream climate resilience into City Corporation governance and decision-making Action 4.6 Review of above and below ground space utilisation in the Square Mile Action 4.7 Strengthen resilience requirements for planning Action 4.8 Undertake external funding sources review | Gross cost £M / yr. £0.3m | Impact on employment (estimate of total new jobs created in the green economy /yr.) 4 | What it pays for <ul style="list-style-type: none"> • A considered plan on funding options for climate resilience work, blending internal and external funding sources • A stronger, data-led approach to understanding climate related risks and mitigations across the Square Mile • A method to ensure that the needs of the most vulnerable to climate change are prioritised in decision making • A workforce with the knowledge and skills required to manage climate resilience across the Square Mile, backed up by a climate resilience lens across all decision making • A review of the supplementary planning guidance and approach for new developments to strengthen climate resilience measures |
| Resilience Risks <ul style="list-style-type: none"> • Flooding • Water stress • Overheating • Cross-cutting themes Impact on resilience risks <ul style="list-style-type: none"> • Embedding inclusion and equity in strategies and projects will ensure that the needs of the most vulnerable are prioritised • Skills gap analysis, skills sharing, and training will future proof the organisation | Measurement Total no. climate risks managed | Key Benefits <ul style="list-style-type: none"> • External investment in Corporation assets • Increased visibility and standards across projects • Increased performance from capital spend • Future proof key asset base for the Corporation • Decreased costs due to integration of resilience actions | |
| Strategic Links Corporate Plan Outcomes – 5,7 | | | |

Appendix 2 Risk Register – Costed Risk Provision (CRP)

See attached spreadsheet

AutoSave On

Risk Register - Cool Streets & Greening Gateway 2 - Last Modified: 4m ago

Laban, Janet

FileHomeInsertPage LayoutFormulasDataReviewViewHelp

Search

PasteCutCopyFormat PainterClipboard

Century Gothic18A⁺

Font

Wrap TextMerge & Center

Alignment

Sensitivity

Sensitivity

Conditional FormattingFormat as Table

Number

InsertDeleteFormat

Cells

Σ AutoSumFillClear

Editing

Sort & FilterFind & Select

Editing

Ideas

Ideas

M4

fx

Official

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------------------------------------|---------|-----------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------|------------------------------------------|--------------------------------------|------------|----------------------------------|-------------------------------------|------------------------------|---------------------------------------------------------------------------------|----------------------------------|-------------------------------------------|---------------------------------------|-----------------------------------|----------------------------|------------------|------------|-------------|---------------------------------------------|----------------------------------------------|---------------------------------|------------|--------------|--|---|--|
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | | | |
| City of London: Projects Procedure Corporate Risks Register | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Name: | | Cool Streets & Greening | | | | | | | | | | PM's overall risk rating: | | Low | | CRP requested this gateway | | £ - | | Average unmitigated risk | | 1.8 | | Open Risks | | 5 | |
| Unique project identifier: | | PV12345 | | | | | | | | | | Total estimated cost (exc risk): | | £ 320,000 | | Total CRP used to date | | | | Average mitigated | | 1.0 | | Closed Risks | | 0 | |
| General risk classification | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Risk ID | Gateway | Category | Description of the Risk | Risk Impact Description | Likelihood Classification pre-mitigation | Impact Classification pre-mitigation | Risk score | Costed impact pre-mitigation (£) | Costed Risk Provision requested Y/N | Confidence in the estimation | Mitigating actions | Mitigation cost (£) | Likelihood Classification post-mitigation | Impact Classification post-mitigation | Costed impact post-mitigation (£) | Post-Mitigation risk score | CRP used to date | Use of CRP | Date raised | Named Departmental Risk Manager/Coordinator | Risk owner (Named Officer or External Party) | Date Closed OR Realised & moved | Comment(s) | | | | |
| R1 | 2 | (2) Financial | Funding not available | Project will not progress | Rare | Minor | 1 | £0.00 | N | A - Very Confident | Climate Action Strategy funding identified | £0.00 | Rare | Minor | £0.00 | 1 | £0.00 | | 0 | | | | | | | | |
| R2 | 2 | (1) Compliance/Regulatory | Delays due to governance & sign off procedures | Project will be delayed | Possible | Minor | 3 | £0.00 | N | A - Very Confident | Steering Group governance structure | £0.00 | Rare | Minor | £0.00 | 1 | £0.00 | | 0 | | | | | | | | |
| R3 | 2 | (4) Contractual/Partnership | Contract or partnership problems | Project will be delayed | Rare | Minor | 1 | £0.00 | N | A - Very Confident | Procurement and controllers will oversee contracts and partnership arrangements | £0.00 | Rare | Minor | £0.00 | 1 | £0.00 | | 0 | | | | | | | | |
| R4 | 2 | (4) Contractual/Partnership | Skills shortage | Project quality compromised | Unlikely | Minor | 2 | £0.00 | N | A - Very Confident | Skills available for this phase | £0.00 | Rare | Minor | £0.00 | 1 | £0.00 | | 0 | | | | | | | | |
| R5 | 2 | (3) Environmental | Minimal opportunities for resilience measures due to environmental constraints | Future phases of the project will need to be revisited | Unlikely | Minor | 2 | £0.00 | N | A - Very Confident | Carry out this phase as preparation avoiding costly design for individual sites | £0.00 | Rare | Minor | £0.00 | 1 | £0.00 | | 0 | | | | | | | | |
| R6 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R7 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R8 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R9 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R10 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R11 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R12 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R13 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R14 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R15 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R16 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R17 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R18 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R19 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R20 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R21 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R22 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R23 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R24 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R25 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R26 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R27 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R28 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R29 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R30 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R31 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R32 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R33 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R34 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R35 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R36 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R37 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R38 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R39 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |
| R40 | | | | | | | | £0.00 | | | | £0.00 | | | £0.00 | | £0.00 | | | | | | | | | | |

Risk RegisterIssuesAssumptionsDependencies

66%

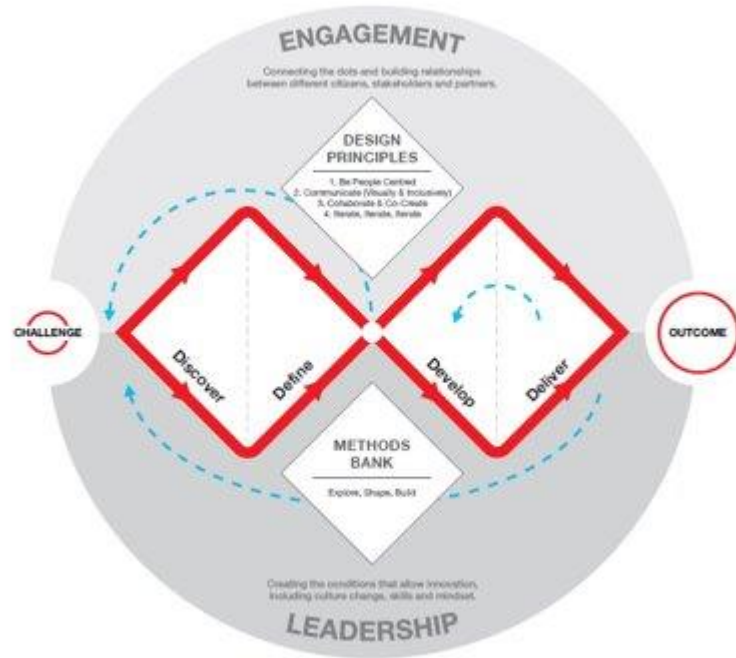
Appendix 3: Team Structure & Support

Proposed Environmental Resilience Team

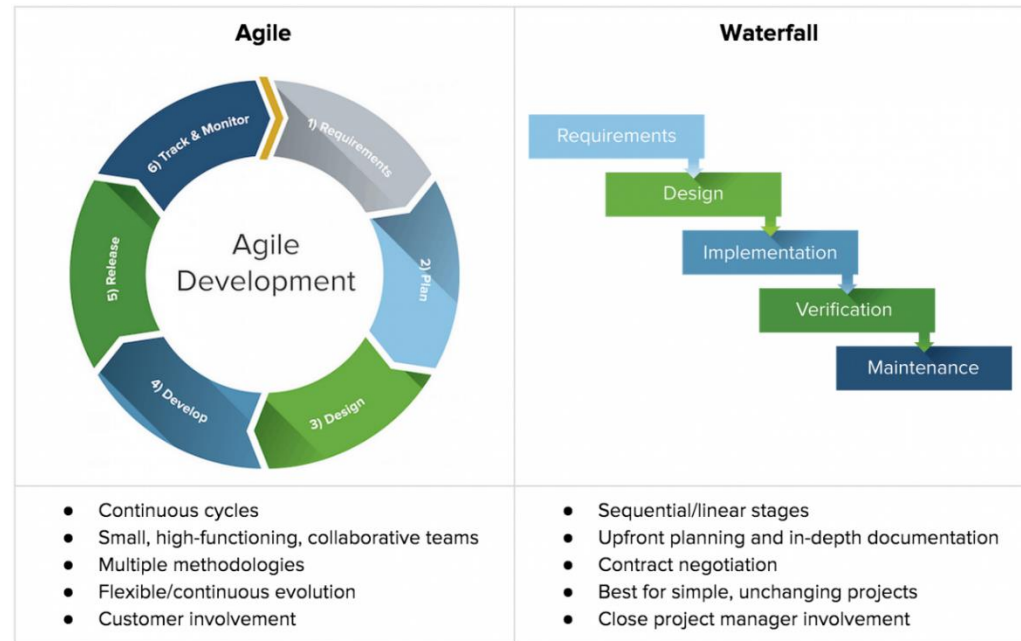
| Post | Grade | Skills | | | | | | | | | | | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|----------------|----------------|--------------------|-----------------|-----|------|-------------------|-----------------|-------------|-----------------|----------|------------------|----------------|----------------|---------------|--------------|---------------------|
| The resilience team should remain as a small team with secondment or temporary recruitment to fill posts. Part time secondments will help to spread the skills across the organisation and give interested individuals the opportunity to develop their expertise | | Climate Change | Sustainability | Climate resilience | Data management | GIS | SuDS | Flooding | Water resources | Overheating | Natural capital | Greening | Pests & Diseases | Food and trade | Communications | Agile working | Funding bids | Budgeting & Finance |
| Programme Lead – Climate Resilience | 1 FTE Grade F | x | x | x | | | | | | | | | | | x | x | x | x |
| Data Lead – Climate resilience | 1 FTE or 2 x0.5 FTE Grade E | x | x | x | x | x | | | | | | | | | x | x | x | x |
| Topic Lead Flooding / SuDS/ water resources | 0.5 FTE Grade D/E | | | x | | | x | x | x | | | | | | x | x | | x |
| Topic Lead Overheating / natural capital / greening | 0.5 FTE Grade D/E | | | x | | | | | | x | x | x | | | x | x | | x |
| Topic Lead Pest & disease / Food & Trade | 0.5 FTE Grade D/E | | | x | | | | | | | | | x | x | x | x | | x |
| Apprentice – Climate Resilience | 1 FTE Apprentice | | x | | x | | | | | | | | | | x | x | | x |
| Total | | 1 FTE Grade F | | | 1 FTE Grade E | | | 1.5 FTE Grade D/E | | | | | 1 FTE Apprentice | | | | | |

Contact: janet.laban@cityoflondon.gov.uk

Design thinking



Agile Project Management



Appendix 4 Schedule of Stages

Project Timeline and Milestones Year 1

[illegible]

Lead officer: Janet Laban
 Line manager: Gordon Roy
 Authority: Carolyn Dwyer

CLIMATE ACTION STRATEGY
 PROJECT PLAN
RESILIENT STREETS AND GREENING

Project ID: CAS-00X
 Date: 30/10/2020
 Version: 1.1

Recipients: Damian Nussbaum, Simi Shah, Stuart Wright

| Delivery plan (Gantt chart) | | | Year 0 | Year 1 | | Year 2 | | Year 3 | | Year 4 | |
|---------------------------------------------------------------------------------------------------------------|-----------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | FY20/21 | FY21/22 | | FY22/23 | | FY23/24 | | FY24/25 | |
| Phases | Responsible | Completion | Oct-Mar | Apr-Sep | Oct-Mar | Apr-Sep | Oct-Mar | Apr-Sep | Oct-Mar | Apr-Sep | Oct-Mar |
| 2.1 Flood modelling, which include SUDs and other mitigation strategies, to complement EA flood models | JL | 0% | | | | | | | | | |
| Task 1: Review scope of Strategic Flood Risk Assessment 2017 | JL | 0% | | | | | | | | | |
| Task 2 Strategic Flood Risk Assessment Review | JL/ consultants | 0% | | | | | | | | | |
| Task 3: Integrate findings into other plans and strategies | KS/ JL | 0% | | | | | | | | | |
| 2.2 Conduct pilot to test heat resistant materials in planned works for streets and highways during 2021-2025 | | 0% | | | | | | | | | |
| Task 1: Design programme with Highways, Public Realm & Open Spaces | JL SG HS | 0% | | | | | | | | | |
| Task 2: Baseline monitoring | SG HS | 0% | | | | | | | | | |
| Task 3: Engage with partners Utilities highways contractor etc | SG HS | 0% | | | | | | | | | |
| Task 4 Materials testing | SG HS | 0% | | | | | | | | | |
| Task 5 Review and conclusions | JL SG HS | 0% | | | | | | | | | |
| 2.3 Develop City Corporation and Square Mile water footprint management strategy | | 0% | | | | | | | | | |
| Task 1: Design Programme | JL HS | 0% | | | | | | | | | |
| Task 2: Baseline monitoring | JL HS | 0% | | | | | | | | | |
| Task 3 Engage with Thames Water | JL HS | 0% | | | | | | | | | |
| Task 4: Implement water reduction measures | JL HS | 0% | | | | | | | | | |
| Task54: Review and conclusions | JL HS | 0% | | | | | | | | | |
| 2.4 Develop natural flood risk management areas | | 0% | | | | | | | | | |

| | | | |
|--------------------------------------------------------------------------------------------------------------------------------|----------|-----------|---|
| Task 1: Identify sites in Public Realm and Open Spaces | JL TM JT | 0% | i |
| Task 2 Baseline monitoring -gulleys and sewers | | | |
| Task 3: Implement rain gardens/natural flood management measures | JL TM JT | 0% | |
| Task 4: Review impact | JL TM JT | 0% | |
| Task 5 Develop guidance | JL TM JT | | |
| 2.5 Sustainable rain and surface water management policies and implementation | | 0% | |
| Task 1: Identify sites in Public Realm and Open Spaces | JL SG TM | 0% | |
| Task 2 Baseline monitoring -gulleys and sewers | JL SG TM | | |
| Task 3: Implement SuDS | JL SG TM | 0% | |
| Task 4: Review impact | JL SG TM | 0% | |
| Task 5 Develop guidance | JL SG TM | | |
| 2.6 Work with partners to accelerate actions to address water leak management | | 0% | |
| Task 1: Engage with Thames Water | JL HS | 0% | |
| Task 2: Identify vulnerability to burst watermain in the City | JL HS | 0% | |
| Task 3: Leakage monitoring | JL HS | 0% | |
| Task 4 Leakage management | JL HS | | |
| Task 5 Review impacts | JL HS | | |
| 2.7 Increase the quality and provision of green space and coverage in the Square Mile and wider City Corporation spaces | | 0% | |
| Task 1: Identify sites in Public Realm and Open Spaces | JL SG JT | 0% | i |
| Task 2: Baseline temperature monitoring | JL SG JT | | |
| Task 3: Implement greening | JL SG JT | 0% | |
| Task 4: Review impact | JL SG JT | 0% | |
| Task 5: Develop guidance | JL SG JT | | |
| 2.8 Introduce climate-resistant and adaptive landscaping in planned works | | 0% | |
| Task 1: Identify sites in Public Realm and Open Spaces | JL SG JT | 0% | i |
| Task 2 Implement resilient planting | JL SG JT | 0% | |
| Task 3:Review impact | JL SG JT | 0% | |
| Task 4: Develop guidance | JL SG JT | | |

| | | | | |
|------------------------------------------------------------------------------------------------------------------|-------------------------|----|-----------|--|
| 2.9 Undertake external funding sources review | | | 0% | |
| Task 1: Review funding opportunities/ sources government/ utility companies/ businesses/ charities/ partnerships | JL | 0% | | |
| Task 2: Set up regular scanning programme for funding | JL | 0% | | |
| Task 3: Streamline application process for resilience funding using templates/ standard wording etc | JL | 0% | | |
| Task 4: Target 4 funding applications per year | JL | | | |
| 2.10 Integrate above actions into relevant engagement plans | PROJECT TO BE DEVELOPED | | | |
| 4.6 Review of above and below ground space utilisation in the Square Mile | | | 0% | |
| Task 1: Engage with British Geological Survey | JL HS | 0% | | |
| Task 2: Map below ground utilisation basements, utilities, archaeology, geology | HS | 0% | | |
| Task 3: Use mapping to identify opportunities for SuDS, cool routes, water storage etc | HS JL TM | 0% | | |
| Task 4: Develop guidance on use of underground spaces | HS JL | | | |
| i - overlaps between these projects | | | | |
| JL - Janet Laban | | | | |
| SG - Simon Glynn | | | | |

HS - Holly Smith

JT - Jake Tibbetts

Appendix 5 Stakeholder Engagement Plan

| Who: | What message? | Channels | When |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------|
| Internal/External. Priority groups. | Inform, engage or consult. Asks/offers. | Tried and tested. New. | Phase around project plan. Media needs 1-month lead-time. |
| COLC Members <ul style="list-style-type: none"> Streets & Walkways Planning & Transport Open Spaces PHES | Engage Asks: Seek approval for projects Offers: CAS implementation projects | Committees | Ongoing as required |
| London Borough of Camden | Engage Asks: Project partnerships Offers: Collaborative resilience projects | Collaboration through Officers | Quarterly partnership meetings |
| Potential Funders External <ul style="list-style-type: none"> Defra TRFCC Environment Agency BIDs | Engage Asks: Seek funding Offers: Projects which meet funding priorities | Regular partnership meetings Funding opportunities | Ongoing – quarterly partnership meetings |
| Businesses & SMEs | Consult Asks: Seek comments Offers: Inform of plans | Consultation surveys Website Social media | Q1-2 2021/22 |
| Public realm users City Residents Disability groups City of London Access Group | Consult Asks: Seek feedback on plans Offers: Inform of plans | Consultation surveys Website Social media | Q1-2 2021/22 |
| COLC Officers <ul style="list-style-type: none"> Highways Open Spaces Public Realm Housing Cleansing | Engage Asks: Project management for implementation of resilience measures Offers: Part funding | Climate Chats Interviews 1:1 meetings | Q1-2 2021/22 |
| Green Finance Institute Contractors Academic partner Thames Water UKPN BT Openreach Transport for London British Geological Survey | Engage Asks: Technical / expert input into Climate Resilience plans Offers: Involvement with Local Authority Leader in Climate Resilience | Interviews 1:1 meetings | Q2-3 2021/22 |
| CoLC Comptrollers & City Solicitors Emergency services | Consult Asks Seek feedback on plans Offers: Inform of plans | Consultation | Q2-3 2021/22 |
| Environment Agency | Engage Asks: Expert input into plans Offers: Involvement with Local Authority Leader in Climate Resilience | Partnership meetings 1:1 meetings | Ongoing |
| London Climate Change Partnership London Councils Green & Resilient Group London Drainage Engineers Network London Environmental Coordinators Forum | Inform Asks: Comment on plans Offer: Knowledge sharing | Presentations at regular meetings | Ongoing Quarterly meetings |

Appendix 6 Cool Streets & Greening Procurement Plan

| Package | Contract type | Requirements | Contract value | Timescale | Selection process | Responsible procurement |
|-----------------------------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------|----------------------------------------------------------------------------------|-------------------------------------------------------|
| Framework development | Consultant | Develop a framework for the 4 year Cool Streets & Greening Programme to ensure delivery of: Outputs: a minimum of 17 climate resilient test sites Outcomes: monitoring and evaluation of direct impacts, co benefits and value for money. Benefits: A climate resilient Square Mile and roadmap for future resilience | 40-70K | Q1 2021/22 | Request for quote (RFQ) process via the Procurement Operations team | Include responsible business in tender evaluation |
| Resilience Measures Catalogue | Consultant | Develop a technical catalogue of resilience measures, methodology for recording effectiveness of resilience measures and recommendations for inclusion in City Corporation design guides | Phase 1 10K-20K + Phase 2 30K-40K | Q4 2020-21 Q2 2021/22 | Continuation of previous work with Buro Happold + competitive tender for phase 2 | Review sustainability credentials of current provider |
| Smart sensors for flood risk monitoring | Contractor | Provide and install smart sensors to monitor water levels in gullies in high flood risk parts of the City along with control sensors elsewhere in the City. Integration of the data with MET office weather data, the City's gully emptying schedule and SuDS implementation and reporting real time monitoring results through Power BI | 40-50K | Q1-2 2021/22 | Procurement Authorisation Report (PAR) | Include responsible business in tender evaluation |
| Smart sensors for heat risk monitoring | Contractor | Provide and install smart sensors to monitor temperature across the Square Mile. Integration of the temperature data with MET office weather data, air quality monitoring and urban greening reporting real time monitoring results through Power BI | 40-50K | Q1-2 2021/22 | Procurement Authorisation Report (PAR) | |
| Data collection & analysis | Contractor | Ongoing assistance in smart monitoring, analysis and interpretation of results | 20-30K | Q2 2021/22- to Q4 2024/25 | Procurement Authorisation Report (PAR) | Include responsible business in tender evaluation |

| | | | | | | |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|
| Opportunity mapping | Specialist consultant | Development of comprehensive below ground mapping for the Square Mile. Integrated 3D spatial assessment, drawing on existing, but disparate, data and models (e.g. 3D geology, soil properties, land use, basements, buried utilities, archaeology) to i) map underground structures and linkages to surface features, ii) model surface-subsurface environmental conditions, iii) model potential interactions between groundwater systems and underground structures and surface water features. The below ground assessment will be used to identify suitable locations for integrated water management options including natural flood management e.g. SuDS and options for dual-use of underground assets for flood alleviation. | Phase 1 75K Phase 2 75K – 125K | Q1 to Q4 2021-/22 Q1 2022/23 to Q3 2023/24 | Formal Invitation to Tender (ITT) | Include responsible business in tender evaluation |
| Site identification & prioritisation | In House or specialist consultant | Using evidence from below ground mapping, City Corporation GIS, vulnerability data and development potential, develop a comprehensive map of suitable sites for implementation of resilience measures, with priorities and timing estimates | 80-100K | Q2 2021/22- Q3 2024/25 | Request for Quote (RFQ) process via the Procurement Operations team | Include responsible business in tender evaluation |
| Design and model resilience measures for 4 - 7 pilot sites | In house with advice from specialist consultant | Develop comprehensive designs for resilience measures for 4 - 7 no pilot sites | 40K-60K | Q 1-2 2021 /22 | Request for Quote (RFQ) process via the Procurement Operations team | Include responsible business in tender evaluation |
| Installation of resilience measures for 4-7 pilot sites | Highways term contractor | Install resilience measures on 2 -4 pilot sites | 0.9M-1.08M | Q2-4 2021/22 | Highways term contractor | Include responsible business in tender evaluation |
| | | TOTAL 2021-22 | £1.35-£1.7M | | | |
| Design, install and monitor resilience measures in suitable sites in the Square Mile | In house design and monitoring with consultancy support plus Highways | Implement a programme of design, installation and evaluation of resilience measures with ongoing maintenance on sites across the Square Mile | 1.7M pa | Q1-4 2022/23 Q1-4 2023/24 Q1-4 2024/25 | Competitive tender/ Framework contract | Include responsible business in specification and tender evaluation |

| | | | | | | |
|-----------------------------------------------|----------------------------------|---------------------------------------------------------------------------------------|----------------------------|--------------------------|---------------------------------------------------------------------|------------------------------------------------------------------------|
| | term contractor for installation | | | | | |
| Scientific verification of programme findings | Academic partner | Sponsor PhD Researcher to develop robust evidence of Resilience measure effectiveness | 35K per annum (total 140K) | Q3 2021/22 to Q2 2024/25 | Request for Quote (RFQ) process via the Procurement Operations team | Use academic institution with exemplar responsible business reputation |
| | | TOTAL 2022-24 | £5.24M | | | |
| | | Cool Streets & Greening TOTAL 2021-24 | £6.59M – 6.94M | | | |