

GREATER LONDON AUTHORITY

REQUEST FOR MAYORAL DECISION – MD2480

Title: Future procurement and investment in city simulation technology

Executive Summary:

City simulation technology provides an effective and proven decision support tool for strategic authorities such as the GLA. It enables integrated assessment of strategic investment options and policy choices at the city-wide and local scale, which can be tested against a range of specified scenarios. Project simulation technology provides an additional means of tracking the progress of complex projects and proactively identifying delivery challenges before they arise.

Approval is sought to incur expenditure on services required to develop and provide city and project simulation technology and services to the Greater London Authority over a four-year period commencing in 2019/20; and seek and accept third party funding to assist in the meeting the costs of the same. Outputs from this programme of work will be used to inform Mayoral strategies, investment decisions and future lobbying of stakeholders, including Government.

It is anticipated that this programme of work will require a significant funding commitment that will need to be met through a combination of contributions from the GLA, TfL and other external stakeholders. This decision approves the procurement and sets a total budget envelope but does not commit any GLA funding. This will be considered independently from this decision as part of standard budget setting processes, based upon the business case for doing so and the levels of external funding received.

Decision:

That the Mayor:

1. Approves the seeking, receipt and expenditure of up to £3,000,000 of third-party funding on services required to develop and provide city and project simulation technology and services to the Greater London Authority and partners over a four-year programme of work; and
2. Notes that the GLA does not now but may in future provide funding for such services within this overall expenditure limit, following approval through the Authority's standard decision-making processes.

Mayor of London

I confirm that I do not have any disclosable pecuniary interests in the proposed decision and take the decision in compliance with the Code of Conduct for elected Members of the Authority.

The above request has my approval.

Signature:



Date:

27/8/19

PART I - NON-CONFIDENTIAL FACTS AND ADVICE TO THE MAYOR

Decision required – supporting report

1. Introduction and background

- 1.1. City simulation technology is built on a methodology known as ‘system dynamics’. It provides an effective and proven decision support tool for strategic authorities such as the GLA, enabling the integrated assessment of strategic investment options and policy choices at the city-wide and local scale, which can be tested against a range of specified scenarios.
- 1.2. Such an approach to modelling characterises the city in terms of its ‘whole system’, rather than other existing models that tend to focus on discrete aspects, like the economy, environment, air quality, carbon emissions or population. The unique qualities of such an approach include:
 - The number and range of high-level data modelled independently and within an integrated system;
 - The faithful reproduction of the statistical record of London’s evolution over time, as recorded across many datasets over the last twenty years;
 - The capacity to assess counterfactuals;
 - The capacity to test a range of policies and investments in combination under different conditions and show results across the whole range of data; and
 - The combination of all the above in a single model.
- 1.3. The GLA Group has developed a system dynamics-based London simulator over the last few years, contracting with Greenwood Strategic Advisors to create the technology underpinning it. The work programme included preparation of ‘Mind the Gap’, a report released in July 2018 that examined how London responds (in socioeconomic, fiscal and environmental ways) to a range of investment decisions including Crossrail 2 and the Bakerloo Line Extension. In late 2018 the Mayor approved, under cover of MD2393, further development of the technology through Phase 2 development of the ‘London Simulator’ to enable new investment projects and policy issues to be assessed and results split between inner and outer London. See Annex 1 for a summary of the results of scenario analysis conducted in Phase 2. In addition, outputs from the simulator are being leveraged to examine opportunities for new financing arrangements for infrastructure. These include innovative approaches for linking financing to the fiscal uplift that projects are predicted to generate in the future, as modelled by the London simulator.
- 1.4. Project simulation technology, built on the same system dynamics principles, is a proven technique for tracking and predicting the progress of complex projects. It has been applied by private companies and governments in sectors such as energy, manufacturing, infrastructure and defence. The GLA Group sees the potential benefits of project simulation technology for improving the delivery of large public infrastructure projects in London. Combined, the simulation both of projects’ performance and their impacts on the city offers potentially significant benefits for the GLA as a strategic authority. Other technologies and approaches will continue to be used to examine other strategic questions facing London.
- 1.5. A range of third-party organisations have expressed interest in applying the system dynamics approach employed in the London simulator to their own initiatives, but the complications and cost of procuring this specialist technology from scratch can prevent them from following through. By establishing a procurement framework to cover these types of services, the GLA can ease the ability of aligned third-party organisations to employ this innovative technology and maximise the value of our investment-to-date in developing the simulator. For instance, this might involve adapting the London simulator model to a specific part of London to allow for tailored analysis by a local authority or proponents of a particular infrastructure scheme.

2. Objectives and expected outcomes

- 2.1. The future procurement and entering into a four-year contract arrangement with a suitable supplier(s) will enable this work programme to continue until 2023/24. Expected outcomes include:
- Undertaking new scenario analyses using the technology to understand the impacts of future proposed investment options and inform policy evaluation and investment appraisal related to these proposals.
 - Undertaking new scenario analyses to form the basis of future government lobbying initiatives – e.g. requests for devolved fiscal powers, or government grants for infrastructure projects.
 - Undertaking new scenario analyses to meet the needs and objectives of potential external funders – for example developers looking to understand social, economic and fiscal impacts of large developments, or not-for-profits seeking to evaluate government-led policy reforms.
 - The application of project simulation tools to new or ongoing public infrastructure projects to assess their potential for improving delivery.
 - The possible integration of city simulator technology with innovative financing approaches that rely on the credible prediction and monitoring of the socioeconomic impacts of a given infrastructure project.
 - A programme of continuous improvement of the procured technology and associated training materials, to ensure the accuracy and accessibility of outputs to relevant GLA and TfL policy teams, as well as potential external stakeholders.
- 2.2. The Growth, Infrastructure & Connectivity Unit has prepared a specification for this contract, consulting with relevant GLA teams and will be working with TfL's Commercial team to procure the same. As the GLA's (and to the extent applicable any third party funders') development needs may evolve over the life of the contract it is proposed that a term contract be let under which the supplier(s) provides services on an instruction by instruction basis. It is also proposed to hold two (or more) rounds of procurement to cover a) well-defined immediate needs and b) broader needs that fall within the remit of this MD and are defined in more detail over time.

3. Equality comments

- 3.1. Under Section 149 of the Equality Act 2010, as a public authority, the Mayor must have 'due regard' to the need to eliminate unlawful discrimination, harassment and victimisation as well as to advance equality of opportunity and foster good relations between people who have a protected characteristic and those who do not.
- 3.2. In line with the policies of the Mayor, city simulation tools can assess the degree to which investment choices and policies can improve aspects of London related to equality, including the availability of jobs and housing for different income levels. Results from these tools will be used only to inform investment choices and policy options and will not supplant decision-making as other critical aspects of equality are not yet modelled within the simulator. These tools model investment and policy options that will be required also to consider equality. Among the data potentially simulated are ones relevant particularly to income equality in London including: unemployment rate; housing availability to low income residents; the number of low income households; the proportion of low income jobs relative to total jobs; in/out migration; workforce relative to jobs for low income earners; social housing and private housing (for low income and other income levels) – the stock, additions and demolitions; and housing capacity relative to population (at different income levels).

4. Other considerations

a) Risks and issues analysis

Risk	Mitigation / Response	Probability	Impact
Lack of clarity on requirements	<ul style="list-style-type: none"> - Instruction based term contract approach allows for flexibility in requirements over the period, as does the organisation of multiple procurement rounds. - Consultation with GLA teams will ensure frequent assessment of outputs and their value. 	LOW	MEDIUM
Insignificant or irrelevant outputs	<ul style="list-style-type: none"> - Regular workshops with senior management will ensure integration and alignment of analysis to GLA Group priorities; and the programme will be managed as part of a newly-created strategy coordination team within the intelligence unit. 	LOW	LOW
Other methodological flaws will be found	<ul style="list-style-type: none"> - Significant internal and external due diligence will be carried out on the methodology for any tool developed under this MD. Any development process will be iterative to allow for modifications as required in response to peer review. 	LOW	HIGH
Simulation technology used inappropriately	<ul style="list-style-type: none"> - Training and awareness raising sessions will be developed as part of the work to increase understanding of any city or project simulation technologies employed, and the situations for which they are appropriately used within the GLA. - We propose to negotiate fixed day rates early with suppliers, to avoid cost inflation. 	MEDIUM	MEDIUM
Supplier lock in	<ul style="list-style-type: none"> - Where possible, city or project simulation tools will be developed using standard software to allow for a change in supplier if required. - The GLA is always looking at alternative tools and models, so we are not tying ourselves to dynamic simulation as the only method for analysing the impact of major investments on London. 	MEDIUM	MEDIUM

b) Links to Mayoral Strategies

Strategy	Links
Transport Strategy	<ul style="list-style-type: none"> • Promotion of Crossrail 2, the Bakerloo Line Extension, South London Metroisation, Crossrail to Ebbsfleet and other investment projects.
The London Plan and Housing Strategy	<ul style="list-style-type: none"> • Help to accelerate housing delivery in areas of London that are poorly served by existing infrastructure.
Economic Development Strategy	<ul style="list-style-type: none"> • Ensure that London remains a world-leader in planning and delivering new infrastructure, and maintaining existing infrastructure, to promote positive perceptions of the city internationally. • Supporting decision-making so as to select public investments that have the greatest value in enabling sustainable growth.
Environment Strategy	<ul style="list-style-type: none"> • Improve air quality and ensure adequate flood defences that are resilient to future shocks.

5. Financial comments

- 5.1. It is proposed to set a budget envelope of £3,000,000 for this programme of work. Funding will be sourced from a combination of GLA Group and external sources, including TfL and boroughs and potentially other third-party groups, such as developers, not for profits and institutional investors. Internal funding from the GLA will be set through standard budget setting processes within budgets already agreed and approval for this funding is not sought under this Mayoral Decision.
- 5.2. The £3,000,000 envelope is intended to enable flexibility around the GLA's future expansion of, and engagement around, dynamic simulation and other technologies with a range of third-party funders, not to convey available upfront funding or the probable total expenditure.

5.3 The value of contract(s) awarded and the phasing of expenditure up to September 2023 will be dependent on the amount of confirmed funding agreed (external and via GLA budgets) by the time the procurement process has been concluded and will be subject to separate approval via the Authority's decision-making process.

6. Legal comments

6.1 The foregoing sections of this report indicate that the activity in respect of which approval is sought may be considered to be facilitative of and conducive to enabling the exercise of the GLA's general powers and officers have complied with the GLA's related statutory duties to:

- (a) pay due regard to the principle that there should be equality of opportunity for all people;
- (b) consider how those proposals will promote the improvement of health of persons, health inequalities between persons and to contribute towards the achievement of sustainable development in the United Kingdom; and
- (c) consult with appropriate bodies.

6.2 The services required must be procured in accordance with the GLA's Contracts and Funding Code, in liaison with TfL Commercial who will determine the procurement strategy and officers must ensure that appropriate contract documentation is put in place and executed by the successful bidder(s) and the GLA before the commencement of the services.

6.3 In seeking third party funding as contribution to its costs of the services to be procured officers must ensure, to the extent that such funding is to be secured by way of:

- 6.3.1 sponsorship income (pursuant to its power to charge third parties for discretionary services under section 93 of the Local Government Act 2003 provided that the charges levied do not exceed the costs of provision), that such sums are sought in accordance with the GLA's Sponsorship policy and legally binding agreements are put in place between and executed by the GLA and such sponsors before placing reliance upon the same;
- 6.3.2 grant from functional bodies such as, for example, TfL, that the Mayor approves such grants in accordance with section 120 (capital)/121 (revenue), as applicable, of the Greater London Authority Act 1999; and
- 6.3.3 other third party contributions, that legally binding agreements are put in place between and executed by the GLA and such contributors before placing reliance upon the same.

6.4 In taking the decisions requested, the Mayor must have due regard to the Public Sector Equality Duty; namely the need to eliminate discrimination, harassment, victimisation and any other conduct prohibited by the Equality Act 2010, and to advance equality of opportunity and foster good relations between persons who share a relevant protected characteristic (race, disability, gender, age, sexual orientation, religion or belief, pregnancy and maternity and gender reassignment) and persons who do not share it (section 149 of the Equality Act 2010). To this end, the Mayor should have particular regard to section 3 (above) of this report.

6.5 Officers must ensure that any contracts entered into are on terms which do not fetter the discretion of the Mayor, in light of the GLA elections being held prior in May 2020, in particular taking this into account when issuing any instructions provided to contractors.

7. Planned delivery approach and next steps

Workstream	Timeframe for delivery
Procurement process	August – December 2019
Successful suppliers appointed	December 2019
Programme commences	January 2020
Programme ends	March 2024

Appendices and supporting papers:

Annex 1: London simulator Phase 2 summary results

Public access to information

Information in this form (Part 1) is subject to the Freedom of Information Act 2000 (FOI Act) and will be made available on the GLA website within one working day of approval.

If immediate publication risks compromising the implementation of the decision (for example, to complete a procurement process), it can be deferred until a specific date. Deferral periods should be kept to the shortest length strictly necessary. **Note:** This form (Part 1) will either be published within one working day after approval or on the defer date.

Part 1 Deferral:

Is the publication of Part 1 of this approval to be deferred? YES

If YES, for what reason:

Yes – the MD contains the disclosure of which, before the conclusion of procurement activity, would prejudice the commercial interests of the GLA, impacting upon its ability to secure value for money, which would not be in the public interest.

The need for continued deferral should be reviewed in January 2020.

Part 2 Confidentiality: Only the facts or advice considered to be exempt from disclosure under the FOI Act should be in the separate Part 2 form, together with the legal rationale for non-publication.

Is there a part 2 form – No

ORIGINATING OFFICER DECLARATION:

Drafting officer to confirm the following (✓)

Drafting officer:

Jeremy Skinner has drafted this report in accordance with GLA procedures and confirms the following:

✓

Sponsoring Director:

Martin Clarke has reviewed the request and is satisfied it is correct and consistent with the Mayor’s plans and priorities.

✓

Mayoral Adviser:

David Bellamy has been consulted about the proposal and agrees the recommendations.

✓

Advice:

The Finance and Legal teams have commented on this proposal.

✓

Corporate Investment Board

This decision was agreed by the Corporate Investment Board on 19 August 2019.

EXECUTIVE DIRECTOR, RESOURCES:

I confirm that financial and legal implications have been appropriately considered in the preparation of this report.

Signature

Date

19.08.19

TOM MIDDLETON on BEHALF OF MARTIN CLARKE

CHIEF OF STAFF:

I am satisfied that this is an appropriate request to be submitted to the Mayor

Signature

Date

19/8/2019.

