19.1 SMART CITY JOINT DEVELOPMENT PROJECT

Objective Reference:

Authorising Officer: **Louise Rusan, General Manager Community & Customer Services**

Responsible Officer: **Glynn Henderson, Group Manager Corporate Services**

Report Author: **Kim Kerwin, Group Manager Community & Economic Development**

Attachments: **Nil**

The Council is satisfied that, pursuant to Section 275(1) of the *Local Government Regulation 2012*, the information to be received, discussed or considered in relation to this agenda item is:

(e) contracts proposed to be made by it.

PURPOSE

The purpose of this report is to seek Council approval to contract with MiTAC Information Technology Corp. (MiTAC) as a specialised provider to supply services and funding of the Smart City Joint Development Project ('Project'). Because of the funding arrangement with MiTAC providing the majority funding for the Project, it would be impractical for Council to invite tenders or quotes to deliver the services.

BACKGROUND

Following attendance at the 2019 Smart Cities Mayoral Summit and Expo in March, Redland City Council as a member of the Global Smart City (Go Smart) organisation was invited by Go Smart to put forward a proposal to secure project funding by MiTAC, a leading global technology firm headquartered in Taiwan. Go Smart provides a platform for cities and regions to exchange knowledge and initiate collaborations with participating cities/regions with the objective of stimulating smart city solutions. Following a competitive bid process, Council was informed that MiTAC has selected Redlands as the primary Queensland city to partner in the smart city joint development project - Smart Pest Management, Mosquito Monitoring and Treatment.

Redland City Council is investigating opportunities for use of drone and sensor technology that can be used to support the application of analytics and intelligent surveillance to transform how Council does business and support sustainable, long-term improved outcomes for the community. This technology could enhance how Council protects the community from mosquito transmitted disease and nuisance using the most effective and efficient treatment methods with minimal impacts on the environment.

Demonstrating the benefits of this technology in mosquito monitoring and treatment through this collaboration will provide a starting point for similar initiatives to be brought forward as candidate projects for potential investment. It is anticipated that these benefits could be easily replicated for a multitude of applications or other intensive data collection processes such as land management, koala conservation, biosecurity and disaster management for Government, research institutions, and industry on a local, regional, national and global scale.

ISSUES

Redland City's diverse range of environments presents a variety of challenges for effective mosquito management including:

- Timeframe between inspection and treatment is critical. Extremely limited treatment timeframe due to mosquito growth patterns – current treatment methods via helicopter, quad bike and 8 wheel amphibious vehicle does not always allow for timely and efficient treatment.
- When optimum treatment of larvae timeframe is missed, treatment options are reduced and there is an increase in the cost of chemicals that are suitable.
- Drones are currently cost prohibitive due to the lack of data available to enable them to be targeted to undertake surveillance and chemical spraying.
- Post treatment surveys of chemical effectiveness timeframe is 24 hours. Drones would reduce this post treatment surveillance to as little as 6 hours which would increase the likelihood of larvae to be treated avoiding excessive chemical costs.
- Tidal constraints limit mosquito ratification program (e.g. human access, quad bike access limited). Drones are not limited by these tidal constraints.
- Spraying is currently undertaken by quad bike, helicopter, and eight wheel amphibious vehicle. Some sites are too small for helicopter treatment resulting in cost to treat becoming very prohibitive.
- Work place health and safety which includes: fatigue management (particularly in summer), walking through areas that incorporate soft ground and sinking into the mud resulting in extra stress on the body and potential knee damage. Heat stress in summer is a risk.
- Other hazards from human surveillance include walking through water resulting in trip hazards from areas such as crab holes.
- Quad bikes which are used in the spraying of mosquitoes are high risk and can be harmful to the environment.

Project scope

Phase 0: Confirmation of Project Scope, Requirements and Feasibility – July 2019 to February 2020

- Requirements and outputs
- Confirm project scope, schedule and milestones
- Feasibility and detailed project planning
  - Demo/trial data collection (via drone)
  - Integration with MiTAC Cloud Platform
  - Preparations for 2020 the Smart City Summit and Expo

Phase 1: Proof of Concept – February 2020 to November 2020

- Data collection
  - Use of latest technology, equipment and remote sensors to increase data collection capability and real-time information for tidal inundation areas.

- Surveillance enhancement
  - Targeted use of drone technology to increase surveillance and minimise environmental disturbance based on real-time data.
- Programming and mapping
  - Capture, analysis, reporting and mapping of data relating to surveying and treatment of mosquitoes to show historic trends and predict forward programming.

Phase 2: Future Opportunity – Post November 2020

- Drone treatment
  - Using mapping and data from Phase 1, target smaller isolated areas with drone mosquito treatment (replacing quad bikes and amphibious vehicle).

Project Benefits:

Council anticipates the following benefits will be realised during and post project implementation:

- Reduced impacts on the environment;
- Timely, targeted, effective and efficient treatment;
- Operational budget savings through equipment renewal and chemical budgeting;
- Data collection and extraction will allow for targeted spraying of larvae which additionally reduces cost of drone operation;
- Access to mosquito larvae sites are improved (timely and physically accessable);
- Work place health and safety incidents reduced including better management of staff fatigue, heat stress, musculoskeletal injuries and manual handling;
- Live and real time data capture;
- Accurate records of surveillance-trapping, monitoring and mapping of mosquito breeding areas;
- Monitoring, comparison and review of mosquito management activities to demonstrate necessity, effectiveness and ensure continued reduction of mosquito breeding;
- Targeting exotic mosquito (fatal disease carrying) incursions to reduce the likelihood of fatal disease; and
- Contribute and add value to other Global research bodies – namely:
  - Regional Mosquito Management Group
  - Mosquito and Arbovirus Research Committee
  - North East Moreton Mosquito Organisation
  - Mosquito Control Association of Australia
  - Mosquito Control Association of America
  - QIMR Bergohofer Medical Research Institute

Estimated Timeline:

- Mayor Williams attended the Smart Cities Mayoral Summit and Expo in Taipei in March and on behalf of the Local Government Association of Queensland, was signatory for all 77 Queensland Councils joining the Go Smart Global Smart City (Go Smart) organisation.

- Redland City Council, together with the six other Queensland Councils which attended the Taipei expo, was invited to submit a project pitch to Go Smart for funding of a smart city collaboration project. The bid process was managed by Go Smart through Trade and Investment Queensland (TIQ) with funding provided by a Taiwanese company, MiTAC.
- Following an interview process, Council's bid was shortlisted and on 10 and 11 July 2019 MiTAC attended Council to discuss potential joint City Development Projects.
- On 17 July 2019 officers submitted an application to MiTAC for Project funding.
- On 22 July 2019 officers were informed by MiTAC that the application was successful.
- By Friday 16 August 2019 the parties aim to complete a preliminary contract.
- By Friday 30 August 2019 the parties aim to conduct a contract signing ceremony.
- July 2019 to February 2020: Phase 0: Confirmation of Project Scope and Feasibility.
- February 2020 to November 2020: Phase 1: Proof of Concept Trial.
- Post November 2020: Future opportunities.

Governance:

This program will be governed using an AGILE Methodology. As Phase 0 is proving a proof of concept, defining clear problem statements and success criteria will be essential to ensure iterative development deliver tangible outputs and ensure the success of future phases.

Information Management (IM) will lead the programme with the Group Manager – Corporate Services as the project sponsor. IM will be responsible for project management, vendor liaison, internal and external stakeholder engagement.

Key stakeholders include:

- Pest Control: Customer and quality assurance
- Information Management: Project manager and vendor liaison
- MiTAC: Platform and solution provider
- Local 3rd Party providers: Specialists, infrastructure and data collection

Clearly defined business requirements will define key outcomes and milestones for the solutions provider to meet. This will inform future outcomes to deliver benefits for mosquito management.

Reporting will be submitted fortnightly to the Project Sponsor and regular updates provided to key stakeholders on timelines, budget, milestones, risks and issues. The project team will conduct weekly meetings with the solutions provider to ensure key deliverables are achieved.

Risk management and project assurance will be provided by Council's Risk and Liability and Portfolio Management Office Officers.

Procurement Phase:

Section 235 of the *Local Government Regulation 2012* (LGR) provides several exceptions for when a local government may enter into a contractual arrangement without first inviting written quotes or tenders. In particular section 235(b) LGR provides an exception if '*the local government resolves that, because of the specialised or confidential nature of the services that are sought, it would be impractical or disadvantageous for the local government to invite quotes or tenders*'.

MiTAC is a global company originating from Taiwan and recognised in cloud computing and the Internet of Things as integral elements to future smart city planning. MiTAC has sought project applications on a confidential basis to trial Smart City applications to seek to improve public services and community experiences. It is impractical for Council to carry out an open tender arrangement for the services already offered by MiTAC as part of an exclusive funding arrangement and specialised supplier under s235(b) LGR.

In consideration of this proposal, the following Sound Contracting Principles have been considered:

Open, Effective and Efficient Competition:

The Project is a trial to test an alternative service delivery through drones and real time data analytics that could better inform treatment programs and surrounding communities of changing mosquito conditions. Because of the funding arrangement with MiTAC providing the majority funding for the Project, it would be impractical for Council to invite tenders or quotes to deliver the services. The trial is expect to lead to greater open and effective competition in the future.

Value for money:

The services are principally funded by MiTAC as the 'Specialised Supplier' under s235(b) LGR; noting surveying by drones is expected to be better value for money than surveying by helicopter, boat and /or labour intensive site inspections.

Enhancement of the capabilities of local business and industry:

The trial is expected to lead to greater open and effective competition in the future.

Environmental Protection:

Surveying areas by drones is considered to be safer to the environment than operating helicopters and or labour intensive site inspections.

Ethical Behaviour and fair dealing:

Council is currently working with the Mosquito and Arbovirus Research Committee (MARC) Medical Entomologist, to ascertain the current market and to whether a drone can be adapted to suit our requirements. A joint project was conducted successfully in February of this year, utilising a drone from QIMR Bergohofer. This was to determine canopy coverage on Pannikin Island and how it would affect aerial treatments. The trial will facilitate the scope of future market opportunities.

STRATEGIC IMPLICATIONS

Legislative Requirements

In accordance with Section 235 (b) of LGR2012, a local government may enter into a medium–sized contractual arrangement or large-sized contractual arrangement without first inviting written quotes or tenders if:

b) The local government resolves that, because of the specialised or confidential nature of the services that are sought, it would be impractical or disadvantageous for the local government to invite written quotes or tenders.

Council also has a legislative obligation under Chapter 2 of the *Public Health Act 2005* to prevent and control public health risks in relation to mosquitoes. The resolution, if made, will allow Council

to continue to explore and improve the ways of delivering this essential service and meet its legislative obligation.

Risk Management

Council will utilise its risk management framework for delivery of this project with the contract reviewed by Risk and Liability Services Unit prior to signing.

Financial

Council estimates that a total investment of $300,000 AUD is required to progress this Project initiative (Phase 0 and 1 only), of which Council's contribution is up to 30% with MiTAC contributing the balance. Resource commitment is included in this costing.

Council has an adopted budget of approximately $700,000 AUD in 2019/2020 towards the existing program of monitoring and treatment of mosquitos as well as other capital fleet costs associated with the program. Council will realign a portion of these funds to cover its contribution to phases 0 and 1 in 2019/20.

People

The Project aligns to existing budget programs. Council's Information Management Group will be Project lead for Phase 0 working collaboratively with the Pest Management and Economic Development Teams.

Environmental

For smaller treatment areas, there is potential for drones to replace the need for mechanical spray units (quad bikes and amphibious vehicle), which will substantially lessen the impact on the environment and improve treatment timeframes by up to 24 hours.

Social

The project aligns with improved controls for workplace health and safety and public health outcomes.

Alignment with Council's Policy and Plans

The opportunity aligns with:

Redland City Corporate Plan 2018-2023

- Increase community safety, health and well-being by planning and delivering programs, services, partnerships, regulations and education.
- Minimise the impact of disaster by improving community preparedness and our capacity to respond effectively to support the community when disasters occur.

Public Health Act 2005

- Local Government has a legislative obligation to undertake mosquito control activities and to prevent and control public health risks in relation to mosquitos under the Public Health Act 2005.

Local Government Association of Queensland (LGAQ) Mosquito Management Code of Practice 2014

- The purpose of this Code of Practice is to provide local governments, organisations, commercial enterprises and individuals involved in the control of mosquitoes with a means of demonstrating that reasonable and practicable measures are being taken to minimise environmental harm from selected mosquito control activities.

CONSULTATION

Consulted	Consultation Date	Comments/Actions
Stakeholders from the Pest Management Team, External Funding Team, Procurement and Contracts Team, Corporate Governance, Community and Economic Development Group, Environment and Regulation Group and Information Management Group	July 2019	Various meetings and engagements

OPTIONS

Option One

That Council resolves as follows:

1. Because of the funding arrangement with the specialised supplier, it would be impractical for Council to invite tenders or quotes to deliver the services.
2. To invite the specialised supplier to enter a contractual arrangement with Council in accordance with section 235(b) of the *Local Government Regulation 2012* to deliver the Smart City Development Project.
3. To delegate to the Chief Executive Officer pursuant to section 257 (1)(b) of the *Local Government Act 2009* (Qld) power to negotiate, make, vary, or discharge all relevant documents.
4. That this report remains confidential until the contract has been signed and awarded to the potential specialised supplier.

Option Two

That Council resolves as follows:

1. To not enter a contractual arrangement in accordance with section 235(b) of the *Local Government Regulation 2012* to deliver the Smart City Development Project.
2. That this report remains confidential until the contract has been signed and awarded to the potential specialised supplier.

Option Three

That Council resolves as follows:

1. To request further information about the contractual arrangement to deliver the Smart City Development Project.
2. That this report remains confidential until the contract has been signed and awarded to the potential specialised supplier.

OFFICER'S RECOMMENDATION

That Council resolve as follows:

1. **Because of the funding arrangement with the specialised supplier, it would be impractical for Council to invite tenders or quotes to deliver the services.**
2. **To invite the specialised supplier to enter a contractual arrangement with Council in accordance with section 235(b) of the *Local Government Regulation 2012* to deliver the Smart City Development Project.**
3. **To delegate to the Chief Executive Officer pursuant to section 257 (1)(b) of the *Local Government Act 2009* (Qld) power to negotiate, make, vary, or discharge all relevant documents.**
4. **That this report remains confidential until the contract has been signed and awarded to the potential specialised supplier.**