Management report to Council

Agenda item 6.7

Cooperative Research Centre for Future Cities Agreement

Council

Presenter: Claire Ferres Miles, Director City Strategy and Place

30 October 2018

Purpose and background

1. The purpose of this report is to seek approval to enter into an agreement between the Cooperative Research Centre for Future Cities (CRC FC) and Melbourne City Council.

2. The CRC FC will lead a national program of research and development activities to support the emergence of urban technologies in the built environment. The goal of the CRC FC is to deliver socio-technical management solutions, learning through experimentation, and support for national development, interoperability and standardisation of urban technologies (see Attachment 2).

3. The CRC FC is expected to greatly influence the direction of smart city development paths of Australian cities (e.g. relating to electric vehicles, sensing systems, artificial intelligence and 5G).

4. The proposal to establish the CRC FC will be presented to the Commonwealth Government in late November 2018. If approved, the CRC FC will be operational from July 2019 to July 2029.

5. The CRC FC will be jointly funded by over 90 Australian and international research, industry and government partners (see Attachment 2), including CSIRO, Massachusetts Institute of Technology, the Victorian Department of Health and Human Services, and Yarra and Brimbank City Councils. Collectively partners will contribute $37 million. If approved, the Commonwealth will contribute a further $45 million.

6. The CRC FC will be governed by a Board and an Industry Engagement Committee (see Attachment 2).

7. The City of Melbourne is a current participant of the CRC for Water Sensitive Cities ($10,000 per annum from 2012–13 to 2021–22) and a past (partial term) participant of the CRC for Low Carbon Living ($15,000 per annum from 2014–15 to 2016–17).

Key issues

8. The benefits of participation in the CRC FC for City of Melbourne are:

    8.1. Priority access to the CRC FC's outputs and research findings to advance City of Melbourne capabilities and to address knowledge deficits.

    8.2. Potential implementation support for existing and future City of Melbourne initiatives such as Melbourne Innovation Districts, open data, and the deployment of sensing, 5G pilots, and other urban technologies.

    8.3. Ability to influence the development of interoperability and standardisation arrangements of city data and future smart city platforms.

9. The CRC FC will be a national initiative with Melbourne nodes of activity (particularly through RMIT University, the University of Melbourne and Swinburne University). It is expected locations within the municipality will be used as focus areas.

10. Execution of this agreement commits Council to a $10,000 yearly financial commitment from 1 July 2019 until 30 June 2030.

11. The proposed yearly costs would be funded through City of Melbourne's Corporate Research Budget.

12. The agreement provides an exit clause should the program not deliver on Council's requirements or if Council's allocated budget is no longer available.

Recommendation from Management

13. That Council enters into the agreement with Cooperative Research Centre for Future Cities for a ten year period, for $10,000 per annum, from 1 July 2019 to 30 June 2030.

Attachments:
1. Supporting attachment (Page 2 of 5)
2. Overview of the CRC Future Cities (Page 3 of 5)

Supporting Attachment

Legal

1. Entry into the agreement with CRC FC will incur an obligation for Council to expend money in future budget years. A Council resolution is required to approve the entry into the agreement (and resulting expenditure) as section 98(1) of the *Local Government Act 1989* prohibits the Council delegating the power to approve any expenditure not contained in a budget approved by the Council.

Finance

2. Enters into the agreement with Cooperative Research Centre for Future Cities for a ten year period, for $10,000 per annum, from 1 July 2019 to 30 June 2030.

    The proposed yearly costs would be funded through City of Melbourne's existing Corporate Research Budget.

Conflict of interest

3. No member of Council staff, or other per son engaged under a contract, involved in advising on or preparing this report has declared a direct or indirect interest in relation to the matter of the report.

Occupational health and safety

4. City of Melbourne staff will adhere to occupational health and safety obligations when conducting activities within the CRC FC program. Risks relating to health and safety will be assessed and mitigated at the project instigation stage within the broader CRC FC program.

Stakeholder consultation

5. Consultation was undertaken with senior university academics and administrators from RMIT University, the University of Melbourne and the University of New South Wales.

Relation to Council policy (if applicable)

6. The following Council plans and policies are relevant:

    6.1. Council Plan 2017–21 - A City Planning for Growth, specifically; *'Melbourne is prepared for future technological change" and "Melbourne's commercial, retail and residential development, and supporting infrastructure'.*

    6.2. Council Plan 2017–21 – A Knowledge City Goal, specifically *'Strengthen collaboration within the sector including with tertiary institutions and other providers beyond our municipality'* and '*Broker access to resources and assets in the municipality that help grow the knowledge sector, including open data'.*

    6.3. Council Plan 2017–21 – A Connected City Goal, specifically '*Meets current and future transport needs by adapting to new innovations and technologies'.*

Environmental sustainability

7. This proposal will benefit environmental sustainability by supporting research into optimal urban responses to climate change, smart water, waste, traffic and other infrastructure systems, the energy performance (use and generation) of the built environment, and realisation of circular economy principles in Australian cities.

Overview of the CRC Future Cities

1. Introduction

The CRC Future Cities will enable Australia's infrastructure, built environment, advanced manufacturing and technology sectors to become suppliers and exporters of smart city innovation to the world.

It will generate solutions that integrate technological advances in the internet of things (IOT), geographic information systems (GIS), and artificial intelligence (AI) into the management and operation of our cities and regions. Researchers will work with industry to develop products that deliver a technology-enabled built environment, integrated with city serving systems to deliver outcomes for communities. This collaborative approach is currently missing in Australia's fragmented built environment sector.

Research will be tested in 'living laboratories'. These will be community focussed, embedded in real-time development projects, and digitally enabled – to deploy and test the outputs of the CRC's four research programs incorporating smart city technology and infrastructure, social innovation, governance and regulatory reform, new business and finance models, and urban planning and design.

The CRC will showcase cutting-edge research and development with major Australian developers, investors and city stakeholders, accelerating market adoption of successfully validated innovations.

This CRC takes a holistic view of cities and has a systems approach to its problem identification as well as delivery of outcomes. Hence measurement will be at a city scale and based on known methodologies like the Rockefeller Resilient Cities Framework, the International Panel on Climate Change protocols for carbon reductions, well established liveability indices, and independent economic impact calculations.

2. Research Programs

Program 1 – Smart Connected Places will address current technological shortcomings by developing next generation smart sensors and cyber-safe smart solutions for cities including 5G enabled systems and AI led solutions. We will also tackle new industry ready technologies driving low carbon assets, new advanced materials from waste recovery and built environment ready AI solutions for global markets.

Outputs:

- Methods, protocols etc. for the interoperability of smart sensing networks and data from multiple sources – vertically (e.g. smart sensors speaking to each other) and horizontally (e.g. smart precincts speaking to each other).
- A digital and social blueprint for the Australian circular economy addressing optimal resource use for the built environment (tracking materials provenance (source to sink); recycling technology – next generation tech recovery processes; adaptive reuse in novel applications e.g. plastic bottles into street furniture; building construction systems e.g. 3d printing.

Program 2 – Efficient integrated infrastructure will tackle efficiency, integration, finance, regulatory and sustainability and resilience challenges of city infrastructure and assets. Australia is catching up on its infrastructure deficit and has a long pipeline of projects which can benefit from innovation and provide a platform for exporting capability. It will also investigate energy, water, waste and transport futures for cities and develop tools and systems to enable sustainable solutions for future.

Outputs:
- A toolbox for enabling smart, sustainable, integrated urban infrastructure. Comprises decision making tools for the design, construction and operation of urban infrastructure and integrates virtual, social and physical urban infrastructure.

Program 3 – City analytics and foresighting will address the transition from big data to intelligible information and actionable knowledge to enhance design, planning and policy innovations. This program will synthesise data to enable decisions for better governance of cities.

Program 4 – Liveable cities and regions will shift cities from technocratic to truly technology enabled, problem-driven and community-oriented ones. Consumer and market insights will enable products and policy design. Better insights into more liveable and healthy cities will enable better quality of urban life and directly impact on health and other budgets.

3. Participating organisations

- AECOM
- Arizona State University, USA
- ARUP
- Australia Post
- Australian Institute of Architects
- Australian Institute of Landscape Architects (AILA)
- Bluescope
- Committee for Sydney
- Commonwealth Department of Environment and Energy
- Consult Australia
- CSIRO
- Curtin University
- Deakin University
- DX Solutions
- Enosi Australia Pty Ltd
- Frasers Property
- Green Building Council Australia
- HASSELL
- Hong Kong Polytechnic University, China
- Housing Industry Association
- India Government Smart Cities Initiative, India
- Infrastructure Australia
- Infrastructure NSW
- IoT Alliance Australia
- Jemena Ltd
- Kinesis
- Kings College London, UK
- Lindenbaum Pty Ltd
- Massachusetts Institute of Technology, USA
- Master Builders Association

- MIRVAC
- Mulpha Norwest Business Park
- Newhaven Rail Group
- NewVote (Politick)
- Next Generation Infrastructures consortium
- NSW City Council: Bathurst Regional Council
- NSW City Council: Liverpool
- NSW City Council: Northern Regional Organisation of Councils
- NSW City Council: Parramatta
- NSW City Council: Randwick
- NSW City Council: Sydney
- NSW City Council: Wollongong
- NSW Government: Landcom
- NSW Government: Ministry of Health
- NSW Government: Office of Environment and Heritage
- NSW Government: Western Sydney Local Health Authority
- Open & Agile Smart Cities (OASC)
- Origin Energy
- Planning Institute Australia (PIA)
- Porter Davis (RSS Property Holdings)
- Property Council of Australia (PCA)
- QLD City Council: Gold Coast
- QLD City Council: Ipswich
- QLD City Council: Logan
- Queensland University of Technology
- RMIT University
- Roads Corporation of Victoria
- South Australia City Council: Salisbury Water
- Smart Cities Council

- Solar Analytics
- South Australia Water
- Springfield City Group
- Standards Australia
- Swinburne University
- Sydney Metro Delivery Office
- Sydney University
- Sydney Water
- The Australian Sustainable Built Environment Council (ASBEC)
- The Infrastructure Sustainability Council of Australia (ISCA)
- The United Nations Economic and Social Commission for Asia and the Pacific
- Transgrid
- UK Collaboratorium for Research on Infrastructure and Cities (UKCRIC), UK
- UN Habitat
- University of Melbourne
- University of Minnesota, USA
- University of New South Wales
- University of South Australia
- University of Wollongong
- University Technology Sydney
- Urban Development Institute of Australia
- VIC City Council: Brimbank City Council
- VIC City Council: City of Yarra
- VIC State Government: Department of Health & Human Services
- VIC State Government: The Victorian Health Promotion Foundation
- Victorian Building Authority
- WA State Government: Land Authority
- Wattwatchers

4. Governance

Interim Board:

- **Philip Davies – Chair** (Chair, University of Wollongong's SMART infrastructure group)
- **Susan Lloyd Hurwitz** (Chief Executive Officer, Mirvac)
- **Dr Kate Wilson** (Executive Director, Office of Environment and Heritage)
- **Romilly Madew** (Chief Executive Officer, Green Building Council of Australia)
- **Lucy Turnbull AO** (Greater Sydney Commission)
- **Ken Maher AO** (President, Australian Sustainable Built Environment Council)
- **Dr Steven Kennedy PSM** (Secretary of the Department of Infrastructure, Regional Development and Cities)

Interim Chief Executive Officer:

- **Scientia Professor Deo Prasad AO FTSE**, University of New South Wales

Interim Industry Advisory Committee:

- **Ken Morrison – Chair** (Chief Executive Officer, Property Council of Australia)
- **Monica Barone** (Chief Executive Officer, City of Sydney)
- **Dorte Ekelund** (Executive Director, Major Cities Unit at Infrastructure Australia)
- **Ken Maher AO** (President, Australian Sustainable Built Environment Council)
- **Rod Fehring** (Chief Executive Officer, Frasers Property Australia)
- **Linda Koshier** (Origin)
- **Rod Simpson** (Environment Commissioner, Greater Sydney Commission)
- **Ralph Horne** (Deputy Pro Vice-Chancellor, Research and Innovation RMIT University)
- **Stanford Harrison** (Director, Commercial Buildings, Department of the Environment and Energy)
- **Kate Lynch** (Executive Director Cities Division at Department of Infrastructure, Regional Development and Cities)
- **Wendy Harris** (Director, Eastern Metropolitan Regional Council)