

**ITEM 7. GREEN SQUARE TRUNK STORMWATER DRAIN - SCOPE  
CHANGES**

**FILE NO: S121015**

**SUMMARY**

Green Square is one of the largest urban renewal redevelopment sites in Australia. It comprises 278 hectares, will house 61,000 residents and 21,000 workers, and the value of residential, retail and commercial development will exceed \$13 billion. The value of new and upgraded public infrastructure is around \$1.3 billion, including new streets, parks, drainage and community facilities.

The Green Square Trunk Stormwater Drain Project is intended to deliver key enabling infrastructure that will mitigate flood risks in the Green Square urban renewal area and also facilitate the continued development of the Green Square Town Centre as a major new residential, retail and cultural hub.

The current flooding risks were exemplified in April 2015, when a storm event resulted in water depths of over one metre around Joynton Avenue, Zetland, and resulted in people having to be evacuated from their floating cars. This storm event has been estimated to be equivalent to less than a one in two year recurrence interval storm event.

This level of drainage construction is normally undertaken by Sydney Water Corporation, given that it owns most of the large trunk drains across Sydney. However, due to the project's critical impact on the redevelopment of Green Square, the City agreed to co-fund the project with Sydney Water Corporation providing the project manage services and expertise to oversee this complex venture.

The project involves the construction of 2.4 kilometres of major stormwater drainage pipes and open channel widening from Link Road, Zetland to the Alexandra Canal, installation of two major water quality improvement devices, provision of two stormwater water offtakes for the Green Square Non-Potable Recycled Water Scheme, construction of a pedestrian/cycle path from Maddox Street to the Alexandra Canal and replacement of the Huntley Street road bridge. It is being jointly delivered by the City and Sydney Water Corporation. The project is currently 85 per cent complete.

On 7 April 2014, Council approved the substantive terms of a Project Agreement between the City and Sydney Water Corporation. The drain generally runs along and across existing and future streets and parks. However, through the Epsom Precinct it passes across four industrial properties where two buildings had previously been built over an existing culvert. The drain also runs adjacent to the existing open channel from Maddox Street to the Alexandra Canal and is tightly located next to existing warehouses with significant differences of levels. At this time, it was determined to deliver the project through an Alliance contract due to the risks involved in constructing large and, at times, deep culvert structures along the challenging sections of the project. The drain has had to navigate many complex and highly sensitive utility services along its length, including one of Australia's main fibre optic international communications cables.

On 8 December 2014, Council approved the formation of an Alliance between the City and Sydney Water Corporation as Owner Participants and four Non-Owner Participants to deliver the Green Square Trunk Stormwater Drain. Unlike a fixed price Design and Construct contract, an Alliance contract shares the project risks with all parties. It has the

advantage of managing higher risk projects through collaboration through the detailed design process and reducing the initial price where the contractor usually puts a high premium on these types of risks.

Works commenced in February 2015 and, on 29 February 2016, Council approved additional scope for the project to include a shared pedestrian and cycle path along part of the Alexandra Canal. On 12 December 2016, Council approved staging of the eastern section (320 metres) of the project through the Epsom Precinct and major new raised bridge at Huntley Street.

The project has experienced a number of challenges and has required some construction methodology changes that have significantly impacted on cost and time, including:

- the construction of a new bridge in Huntley Street is being delivered in four stages, rather than two, to maintain at least one lane of traffic to be available at all times and with multiple staging of utility relocations to maintain services in the local area and broader area. The complexity of staging, utility construction and statutory approvals has resulted in many items having to be undertaken sequentially rather than concurrently;
- the tightness of the work area next to the open channel between Maddox Street and the Alexandra Canal and the proximity of existing buildings located on the property boundaries has required additional protection measures, including temporary and permanent piling and restricted access for construction equipment;
- the contamination levels amount of ground material that has had to be removed from site has been significantly more than originally estimated;
- the shallow depth of ground water and deepness of structures at specific locations along the route has required pumping and removal of large quantities of water from site; and
- variable natural and man-made ground materials resulted in five occasions when the tunnelling header became stuck and had to be dug out at depth, repaired and new thrust pits constructed.

Under the Alliance contract, any overrun in costs are shared between all six parties within the Alliance. Non-Owner Participants have a maximum risk exposure of the fee amount (profit and margin) payable under the contract. Sydney Water and the City share the balance of any overrun.

The drainage works already delivered have enabled private development, as well as the City's community facilities, in Green Square Town Centre and Epsom Park, to be constructed as per each of their intended construction programs.

This report seeks Council approval to increase the existing contract contingency allowance and budget for the project to cover the increased costs to the City.

**RECOMMENDATION**

It is resolved that Council:

- (A) approve an increase to the budget and contract risk and contingency allowance for Green Square Trunk Stormwater Drain Project as outlined in confidential Attachment B to the subject report;
- (B) approve the proposed additional funds to be brought forward from the future years, as detailed in confidential Attachment B; and
- (C) note that Sydney Water is also seeking additional funds from its Board at its November 2017 meeting.

**ATTACHMENTS**

**Attachment A:** Images of construction of Green Square Trunk Drain

**Attachment B:** Financial Implications (Confidential)

**(As Attachment B is confidential, it will be circulated separately from the agenda paper and to Councillors and relevant senior staff only.)**

**BACKGROUND**

1. Significant works are underway to transform the Green Square urban renewal area from an old industrial precinct to a new commercial, retail and residential centre. The City is delivering new community infrastructure and public domain works, which include new streets, services, library and plaza, aquatic centre and open recreational spaces.
2. The Green Square urban renewal area is located on a floodplain and, during periods of heavy rainfall, experiences significant flooding problems. The current stormwater system allows stormwater flows to be conveyed through a series of underground pipe networks. However, when flows exceed the capacity of the existing pipe networks, these are conveyed on ground, along streets, open spaces and, in some instances, private property.
3. Key trapped low points within the Green Square urban renewal area have been identified at Botany Road and Joynton Avenue and, during high rainfall events, these sag points have been known to reach flood levels of over 1.1 metres and 2.3 metres, respectively.
4. The Green Square Town Centre is located within the boundaries of these two known sag points and therefore the development of the new town centre is dependent on a flood solution being implemented. Without a flood mitigation solution, the delivery of the proposed retail, commercial and residential developments will be delayed.
5. On 7 April 2014, Council approved the substantive terms of a Project Agreement between the City and the Sydney Water Corporation and endorsed proceeding with the delivery of the Green Square Trunk Stormwater Project.
6. On 8 December 2014, Council delegated authority to the Chief Executive Officer to negotiate, execute and administer the Project Alliance Agreement between the City, the Sydney Water Corporation, as Owner Participants, and UGL Engineering Pty Ltd, Seymour Whyte Constructions Pty Ltd, Parsons Brinckerhoff Australia Pty Ltd, and RPS Manidis Roberts Pty Ltd, as the Non-Owner Participants, to deliver the Green Square Trunk Stormwater Drain. Works commenced in February 2015.
7. On 29 February 2016, Council approved additional scope for the construction of a shared pedestrian and cycle path, adjacent to the Sydney Water-owned open channel between Maddox Street and south of Huntley Street and other drainage works.
8. On 12 December 2016, Council approved staging of the eastern section (320 metres) of the project through the Epsom Precinct, due to the necessity of aligning delivery of this section with timeframes for private development and a major new raised bridge at Huntley Street which will reduce flooding for areas upstream in addition to those benefited by the Green Square Trunk Drain.
9. The Project Alliance Agreement provides for adjustments to scope and costs, based on a predetermined process and cost-sharing formula. It is proposed to complete the project, taking into account a number drivers of change, including:

- (a) complexities of necessary bridgeworks and major utility adjustments at Huntley Street. A major new raised and widened bridge at Huntley Street which will reduce flooding for areas upstream in addition to those benefited by the Green Square Trunk Drain. The bridge is part of a significant transport corridor and, due to traffic management considerations, must be staged. Multiple staging of service relocations are required. Staging and technical requirements have been complex and there have been delays in getting some statutory approvals;
  - (b) additional costs associated with the Shea's Creek Channel and Shared Path. The original proposal envisaged a box culvert design at the Shea's Creek Channel. Due to constructability issues, it was determined that the original plan was not feasible and the design was amended to widen the channel;
  - (c) the tightness of the work area next to the open channel between Maddox Street and the Alexandra Canal and the proximity of existing buildings located on the property boundaries has required additional protection measures, including temporary and permanent piling and restricted access for construction equipment;
  - (d) the shallow depth of ground water and deepness of structures at specific locations along the route has required more pumping and removal of water from site;
  - (e) variable natural and man-made ground materials resulted in five (5) occasions when the tunnelling header became stuck and had to be dug out at depth, repaired and new thrust pits constructed;
  - (f) additional costs of provisional items, including the water quality improvement devices (Gross Pollution Traps), non-potable water off-take structure, additional shaft and realignment on Ausgrid site and additional aquifer investigations to meet NSW Office of Water requirements;
  - (g) additional costs of staffing and subcontracts, due to the increased level of construction in Sydney since the Project Alliance Agreement was signed; and
  - (h) increases in the level and amount of contamination of material removed from site and landfill levy rates.
10. The financial implications of these changes, as outlined in the above paragraph, are detailed in confidential Attachment B.
11. The Green Square Trunk Stormwater Drain (GSSD) Project is intended to deliver key enabling infrastructure that will mitigate flood risks in the Green Square urban renewal area. The Project objectives include:
- (a) significantly reduce flood risk in the Green Square urban renewal area;
  - (b) minimise any downstream flooding impacts; and
  - (c) facilitate private and public development at Green Square Town Centre and Epsom Park.

12. These objectives are being met and the drainage works already delivered have enabled private development, as well as the City's community facilities, in Green Square Town Centre and Epsom Park to be constructed as per each of their intended construction programs.

## **KEY IMPLICATIONS**

### **Strategic Alignment - Sustainable Sydney 2030 Vision**

13. *Sustainable Sydney 2030* is a vision for the sustainable development of the City to 2030 and beyond. It includes 10 strategic directions to guide the future of the City, as well as 10 targets against which to measure progress. The Green Square Trunk Stormwater Drain Project is aligned with the following strategic directions and objectives:
  - (a) Direction 9 - Sustainable Development, Renewal and Design – The project underpins significant development and urban renewal in south Sydney, which would not be feasible without the provision of this major infrastructure.
  - (b) Direction 10 - Implementation through Effective Governance and Partnerships – the cost sharing arrangement with Sydney Water and joint governance of the Project Alliance has provided a model for progressing major infrastructure works, funded across different levels of government.

## **Environmental**

14. The Green Square Trunk Stormwater Drain Project has a significant environmental benefit for flood mitigation, water recycling and water quality improvement, with the introduction of stormwater off-takes and new gross pollutant traps.

## **Economic**

15. The Green Square Trunk Stormwater Drain Project is an enabler for development projects in Green Square, enabling 61,000 residents and 21,000 jobs when fully developed. Significant economic activity is linked to current and future development, including \$13 billion in construction works, as well as ongoing retail and commercial activity in Green Square.

## **BUDGET IMPLICATIONS**

16. This project is jointly funded by the City and Sydney Water Corporation. To date, both the City and Sydney Water have committed funds to contribute towards the delivery of the project. The City's current budget allocation for the project will need to be revised and additional funds will need to be allocated in the capital works program as identified in confidential Attachment B.
17. The proposed net increase to Risk and Contingency Allowance will be funded from the future years' Stormwater Drainage Improvements Program as identified in confidential Attachment B.
18. Sydney Water is also seeking additional funds from its Board at its November 2017 meeting.

**RELEVANT LEGISLATION**

19. *Local Government Act 1993*, sections 10A(2)(c) and 10A(2)(d)(i).
20. The Green Square Stormwater Trunk Drain project was approved under State Environmental Planning Policy (Infrastructure) 2007 and Part 5 of the *Environmental Planning and Assessment Act 1979* through the Review of Environmental (REF) process undertaken by the Sydney Water Corporation in 2014.
21. Attachment B contains confidential commercial information of the estimates, budgets and contingencies which, if disclosed, would:
  - (a) confer a commercial advantage on a person with whom Council is conducting (or proposes to conduct) business; and
  - (b) prejudice the commercial position of the person who supplied it.
22. Discussion of the matter in an open meeting would, on balance, be contrary to the public interest because it would compromise Council's ability to negotiate fairly and commercially to achieve the best outcome for its ratepayers.

**CRITICAL DATES / TIME FRAMES**

23. The project was originally scheduled to be complete and operational by December 2017. The general status is as follows:
  - (a) works from Rose Valley Way in Epsom Park to Maddox Street in Alexandria are complete;
  - (b) the widening of the open channel and installation of a pedestrian/cycle path from Maddox Street to the Alexandra Canal is substantially complete, except at Huntley Street Bridge. Final facing of the open channel with sandstone will begin in January 2018;
  - (c) Huntley Street Bridge works are now expected to be completed in late 2018 or early 2019 due to complex major utility adjustments and staging requirements, however, two lanes of traffic are expected to be back in place in late 2017; and
  - (d) the Rose Valley Way to Link Road section in Epsom Park will be delivered as part of private development of each of three land parcels. One Voluntary Planning Agreement has been agreed.

**PUBLIC CONSULTATION**

24. The DG Alliance has a dedicated communications and stakeholder engagement team from RPS Manidis Roberts working closely with the City of Sydney and Sydney Water. This team implements the overarching Community and Stakeholder Engagement Plan and site-specific community relations plans. This includes regular newsletters, notifications of works, as well as liaison with directly impacted stakeholders, and enquiry and complaints management.

25. Further to the consultation in 2014 for the Review of Environmental Factors, the community is informed on project progress and upcoming works through the City's communications and engagement program, including regular face-to-face events, the City of Sydney website, [SydneyYourSay.com.au](http://SydneyYourSay.com.au) and the Green Square Community Update newsletter.

**KIM WOODBURY**

Chief Operating Officer

Morris Bellamy, Place Manager Green Square