

For Cabinet

16/148

Alternative Management and Funding Models for Sustainable Operation and Maintenance of Stormwater Water Quality Assets

Minister for the Environment and Climate Change, Simon Corbell MLA

Received by Cab Sec	[Date/ Time]
Purpose	To brief Cabinet on analysis regarding Alternative Management and Funding Models for Sustainable Operation and Maintenance of Stormwater Water Quality Assets ('Alternative Management and Funding Project').
Timing	For Cabinet on 30 August 2016
Impact - Government Priorities - Alignment with other Government Policy	Liveability and opportunity – addressing water quality and catchment management in the most cost-effective manner will improve the liveability and wellbeing of the community. It provides opportunities for growing the economy through community amenity and tourism activities from our waterways. Improved operations and maintenance arrangements will improve performance of water quality assets and add to the economy through increased land and housing values, including in our urban renewal areas. Improved management and funding of stormwater water quality (WQ) assets is critical to meeting the water quality and stormwater quantity targets in the Territory Plan; is consistent with the ACT's obligations under the Murray Darling Basin Plan, and consistent with achieving the objectives of the ACT Water Strategy and the ACT Basin Priority Project. The final ACT and Region Catchment Strategy identifies a growing population and the associated landuse change to accommodate expanded settlements as key drivers affecting the regional catchment over the coming decades. Improving the management and funding of stormwater WQ assets is essential to manage the impacts of urban development and the effects of a changing climate. Management and funding of stormwater WQ assets supports the draft ACT Climate Change Adaptation Strategy (and the associated development of Living Infrastructure; e.g. green corridors and retention of water bodies in the landscape designed to mitigate the heat island effect). The purpose of the Climate Change Adaptation Strategy is to support the community, the city and the natural environment to be more resilient to the impacts of climate change.
Impact Triple Bottom Line	Social Impacts Addressing issues related to water quality will increase visual amenity and active living opportunities across the ACT supporting liveability and the wellbeing of the community. Environmental Impacts Better operation and maintenance of stormwater WQ assets will result in improved water quality in urban lakes and ponds and protection of rivers and downstream water supply catchments, consistent with the requirements of the Territory Plan and other related legislation. Economic Impacts Community users and tourism activities will benefit from actions that address water quality concerns. Land and property values are increased by attractive visual amenity such as clean water ways.

SENSITIVE: CABINET

Consultation	The following Directorates were consulted during the development of this submission (CMTEDD, EPD and TCCS) (ex-TAMSD))					
Legislation Change	No					
Communications Strategy	No					
Budget Impact: (A minus sign indicates a cost to the Budget) Treasury Agreement: Yes/No	Net impact (\$000)	2016-17	2017-18	2018-19	2019-20	2020-21
	Operating	0	0	0	0	0
	Capital	0	0	0	0	0
Documents for Release	No					

Recommendations

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1. I recommend Cabinet note:

- a) The work carried out to date on the alternative management and funding models for sustainable operation and maintenance (O&M) of stormwater water quality (WQ) assets.

2. I recommend Cabinet agree to:

- a) Further investigations for the introduction of a cost-reflective stormwater levy / charge for improving long term funding arrangements (Funding Options 2(a) and 2(b) Attachment C).
- b) Further investigations for improving the institutional arrangements for managing stormwater quality assets:
 - i) Review of existing arrangements (Management option 1 Attachment C),
 - ii) Stormwater Utility within ACT Government, in the form of an internal Business Unit (Management Option 2a Attachment C) and
 - iii) Full transfer of assets to Icon Water (Management Option 2b Attachment C).
- c) Finalise a qualitative and quantitative assessment and comparison (as far as existing information allows) of the current options under consideration and a process for implementation of a preferred option.

- d) The key principles for guiding a final decision on the preferred option should include governance and accountability arrangements that encourage a strong commitment to managing water quality assets for their longer term optimal performance and allow for accurate tracking and evaluation of the costs and benefits of asset management.
3. I recommend Cabinet agree to:
- a) the non-release of Attachments A to G as this project is still an emerging project and the issues and implications are not fully understood.

SUPPORTING ARGUMENT

BACKGROUND

- 1) Total water cycle management and stormwater WQ assets are fundamental to the health and liveability of our city. Functioning urban ecosystems provide many social, environmental and economic benefits. Cabinet has previously acknowledged the importance of urban amenity and functioning ecosystems through the various environmental and sustainability strategies and policies implemented by government.
- 2) The Supplementary Report to the ACT Basin Priority Project Business Case (Feb 2016) approved by the Commonwealth, and informed by Lawrence (2012), Commissioner for the Sustainability and the Environment (2012) and Coombes and Barry (2013), identified that:
 - a) accumulated pollutants (nutrients and sediments) represent a threat to water quality both within the ACT and to the Murray Darling Basin system;
 - b) higher urbanisation will generate significantly greater loads of pollutants (Phosphorous and Nitrogen) that discharge into stormwater catchments;
 - c) poor catchment management has resulted in the accumulation of nutrients and sediments in ACT lakes, creating the necessary conditions for extensive algal blooms on an on-going basis;
 - d) accumulated pollutant loads could be reaching a level where ACT lakes are no longer able to act as effective nutrient traps therefore threatening water quality downstream from the ACT;
 - e) there has been a considerable increase in the pollutant loads downstream of urban areas particularly in areas of urban infill (Yarralumla) and greenfield development (West Belconnen and Molonglo); and
 - f) urban stormwater runoff is the primary contributor of phosphorous and nitrogen rich organic material to ACT lakes.

- 3) The "Report on the State of Watercourses and Catchments of Lake Burley Griffin" (the report) by the Commissioner for Sustainability and the Environment (2012) identified that in recent years, a number of triathlon, rowing and sailing events have been hampered through water quality and safety issues such as blue-green algae, faecal contamination and flood related debris. This has required, for example, the cancellation of triathlon swim legs which has negatively affected competitor numbers (particularly from interstate) and diminished Canberra's reputation as a triathlon event host.
- 4) The report estimated that in the event of continued deterioration in the quality and reliability of Lake Burley Griffin as a sport venue, the annual economic cost to Canberra would be \$25,513,500/yr. This amount includes not only the loss in economic value accruing to Canberra as a result of termination of the Lake related activities, but additional costs incurred by organizations in terms of devaluation of equipment and facilities, and costs incurred in travelling to venues outside of the ACT.
- 5) Lake Tuggeranong has also suffered from poor water quality with blue green Algal blooms (cyanobacteria) resulting in lake closures in every year since 2007. These closures are a significant impact on the Tuggeranong community including the sea scouts, rowing club and other community groups.
- 6) The report concluded that the main threats to waterbodies such as Lake Burley Griffin (and Lake Tuggeranong) are high concentrations of blue-green algae and faecal contamination. Nutrients are adsorbed onto the surfaces of suspended solids and removed from the water column when the particles settle to the lakebed. The nutrients are then re-mobilised (potentially) when conditions are conducive to algal growth and incidence of blue-green algae bloom occurs.
- 7) The long timeframes associated with sediment and nutrient accumulation and water quality degradation provides justification as to why water quality assets require a sustainable and long-term ongoing funding stream rather than "just in time maintenance" as may be appropriate with some other assets.

8) The ACT Government's Water Sensitive Urban Design (WSUD) Review Report (2014) was released following Cabinet consideration on 8 July 2014 (14/122/CAB). It found that funding for operations and maintenance (O&M) of stormwater water quality control assets was inadequate and hence their performance targets were not being met. The WSUD Review recommended eight priority projects, the focus of this cabinet paper is Priority Project 2: Alternative management and funding models, which called for EPD, TCCS (formerly TAMS), and CMTEDD to work together to investigate alternative management and funding models for sustainable maintenance of WSUD assets.

9) The Economic Growth and Urban Renewal Sub-Committee of Cabinet (URSC) received presentations at meetings on 3 November 2015 (15/180) and 25 May 2016 (16/037) relating to Priority Project 2 of the ACT WSUD Review - "Alternative Management and Funding Models for Sustainable Operation and Maintenance of Stormwater Water Quality Assets".

10) Whilst this Cabinet Submission focuses on Priority Project 2 of the ACT WSUD Review, it should be noted that the review identified issues relating to stormwater WQ assets, from concept to design and also with the planning and construction phases that can also add to the negative impact on operational performance. Much work has been undertaken to improve the overall efficiency of managing stormwater WQ assets on a systems basis. This has included:

- revision of WSUD provisions in the Territory Plan to provide greater clarity in interpretation of the relevant code plus providing for innovation and flexibility in meeting WSUD targets. This includes clearer qualitative and quantitative targets allowing for ease of carrying out concept designs. Note that the draft variation will be released for public comment in later 2016.
- building internal capacity within the ACT Government to better understand monitoring and modelling capability to ensure that the recommended treatment provide the anticipated water quality outcome and fully consider the whole of life cycle costs of water quality assets, this includes officers being trained in the modelling software of MUSIC-link.
- release of the draft Municipal Infrastructure Standards (MIS) for Stormwater for practitioner comment and review, noting that a draft MIS for WSUD is currently being carried out by TCCS which will provide design standard provisions and parameters to assist practitioners in designing stormwater WQ assets.

11) Marsden Jacob Associates (MJA) was commissioned by the Environment and Planning Directorate (EPD) to benchmark current ACT management and funding arrangements for stormwater WQ assets against other jurisdictions including Australian and international experiences.

12) MJAs Final Report (Attachment A) was presented to the URSC and provided eight alternative options to improve current management and funding arrangements. MJA utilised a multi-criteria analysis based on best practice principles to rank the options which were then short listed to three preferred options for further analysis. Preferred options being;

- a) two alternative management options being setting up a stormwater utility (or business unit) within government, or transferring assets and management responsibilities to Icon Water.
- b) preferred funding option of a cost reflective stormwater charge or levy.

13) It should be noted that addressing sustainable funding mechanisms and improving institutional/management arrangements have equal importance in improving the performance of the ACT water quality assets. Refining current arrangements through normal budget processes was assessed at Treasury's request and ranked as least effective of the options considered.

14) Since the last presentation to the URSC, a pre-feasibility: options assessment study has commenced to undertake more detailed investigations of the three preferred options (plus the additional option of refining existing arrangements) in further detail. The study will assess the transaction costs of each option and involve ongoing engagement and discussions with Icon Water and with TCCS to further explore the option that best meets the ACT Government's strategic directions and other high level policy objectives.

15) MJA has advised EPD of current research (which will be referenced in the Prefeasibility Study currently under development) of comparative analysis between local government authorities in NSW, where stormwater is managed in conjunction with a number of other services, and stormwater utilities in Victoria where stormwater is managed by purpose built utilities such as water supply utilities. The research consistently identified efficiency gains of 15% to 21% attributed to the purpose built utility arrangement.

ISSUES & OPTIONS

Findings to date - Alternative management and funding models proposal (MJA) February 2016)

16) Attachment A outlines that the report provided a comprehensive evaluation of eight alternative management and funding arrangements, namely:

Funding Options

- a) Refine current arrangements;
- b) Hypothecate part of the Water Abstraction charge;
- c) Cost-reflective stormwater charge;
- d) Developer charge;

Institutional/Management Options

- a) Stormwater utility within government;
- b) Transfer stormwater assets to Icon Water;
- c) Long-term performance based O&M contract; and
- d) Long-term lease of stormwater assets.

17) The MJA report outlines a stormwater WQ management and funding assessment framework with criteria derived from national and international assessment of best industry practice. The key criteria allowed MJA to compare the existing arrangements to alternative options.

18) Of the options assessed, introduction of a cost-reflective stormwater charge ranks first for funding arrangements, and establishing a stormwater utility within government or transferring stormwater assets to Icon Water both rank first for improving institutional/management arrangements. MJA's assessment identified current management practice as ranking low and assessment of current funding arrangements also ranked as mostly low to medium.

19) MJA also recommended that government intervention is required, given that assets are already performing poorly through the underspending on O&M activities

20) MJA estimated the capital value of stormwater water quality assets in the ACT at \$595 million, with approximately \$2.5m spent on O&M by TCCS in 2014. The optimal level for O&M expenditure was estimated to be \$6.8m/yr. The estimated funding shortfall for 2014 was approximately \$4.2 million.

21) Also, as part of the Basin Priority Project, a Strategic Review and Analysis of ACT Urban Water Quality Management Infrastructure (2015) by Alluvium Consulting found that across the ACT, all types of assets are generally underperforming and in some cases compounding water quality issues. The analysis also provided significant scope for improving the processes by which stormwater treatment systems are planned, designed, constructed, established and maintained (Attachment B) provides a summary table of example "case study" where these issues have been experienced).

The case for change

22) The abovementioned reports are collectively identifying the issues that are developing as a result of the underfunding of stormwater asset operation and maintenance and suggests that once pollutants are embedded in our watercourses, they are very difficult to extract and that they are accumulating to a point that algal blooms are likely to be more frequent.

23) The ACT Basin Priority Project Business Case indicated a cost: benefit ratio of 1.3 to 1.5 for the installation of new, well functioning Water Quality assets. Furthermore the Cooperative Research Centre for Water Sensitive Cities attributes private and public benefits of water quality assets to:

- a) Increased property prices through proximity to green landscapes and increased flood protection;
- b) Potential to develop alternate water sources such as stormwater harvesting and recycling resulting in improved water security and reduced energy costs;
- c) Better flood management and increased opportunity for flood detention and conveyance;
- d) Improved heat mitigation via retaining water in the landscape resulting in reduced energy costs for cooling and reduced heat stress; and
- e) Improved air and water quality and terrestrial and aquatic biodiversity.

- 24) The need for change management, including considering alternative funding arrangements, must be a priority for the ACT Government. Other jurisdictions see the importance of better management of stormwater WQ with existing stormwater management charges and management models focused on delivering liveable cities because of the economic benefits provided by these ecosystem services.
- 25) Some examples from around Australia include:
- a) NSW: Stormwater management services charge introduced since 2006. The charge is capped at \$25 per residential property. Local councils are able to implement the charge in accordance with approved stormwater management plans.
 - b) VIC: Melbourne Water's Waterways and Drainage Charge uses the funds to manage the health of waterways, streamside vegetation, flood protection and drainage services across the whole of Port Philip Bay Catchment. The charge is capped at \$95.48 for residential properties within the urban growth boundary.
 - c) SA: State government has provided grant funding to assist local governments with stormwater management. The funding isn't focused around O&M but other activities such as floodplain mapping; preparation of stormwater management plans through to investigations, research and pilot programs.
 - d) QLD: The Queensland local councils offer a number of funding and management alternatives, Logan City Council's Stormwater Quality and Flow Management Guidelines permits stormwater quality offsets where on-site treatment is not feasible. Financial contribution in lieu of on-site treatment is also acceptable. Mackay Regional Council has imposed the Natural Environment Levy since 2003. Ratepayers contribute to the annual levy via rates for environmental projects, including maintenance of stormwater quality assets.
- 26) Note that the original report for MJA put initial estimates for an ACT stormwater charge at approximately \$45/lot/year. Final estimates may vary pending the scope of assets and management functions considered.
- 27) Liveability and opportunity, urban renewal and growing the economy are government priorities that link directly to this work. Poor and/or infrequent O&M practices result in poor water quality in our waterbodies leading to an increased number of lake closures due to blue-green algae blooms. Poorly and infrequently maintained stormwater WQ assets which have a stormwater retention and detention function can

lead to unintended perverse outcomes such as nuisance flooding, especially in our urban renewal areas, when systems have the potential to overflow due to gross pollutants and more intense rainfall events.

28) Stormwater WQ assets are fundamental to Canberra's liveability. Without appropriate O&M through a sustainable funding regime and an appropriate institutional management model, potential exists for detrimental impacts to water bodies, nuisance flooding, hotter urban environments (impacting on those vulnerable in our society due to the increased in impervious surfaces) and less open space areas to recreate in our consolidated urban environments.

29) The Territory is rolling-out \$93.5 million of funding to construct new water quality infrastructure through the ACT BPP. Without identified funding streams and improved management arrangements, the Territory risk being unable to operate and maintain these assets to an optimal level and meet the water quality targets and objectives for which they were designed.

Pre-feasibility Study (Marsden Jacob 2016)

30) A Pre-feasibility Assessment study ('pre-feasibility study') which looks further into the alternative management and funding project has been commissioned by EPD and carried out by Marsden Jacob Associates. A fourth option of refining current budget arrangements has also been included at the request of ACT Treasury.

31) An Options Paper was developed and circulated to key stakeholders to further understand the transactional and regulatory costs of preferred alternatives with a view to recommending the most efficient business model for management of water quality assets.

32) Attachment C outlines a schematic diagram of the options that were explored and a breakdown of subset options. The options breakdown highlights the complexity in arriving at the most optimal outcome for the long term management of our assets.

33) Developing a tariff schedule for the stormwater charge will need to estimate the necessary charge per property and any mitigating actions to protect disadvantaged users. There may also be an expectation from the community for a comparable reduction in existing rates, or at least a reduction of the amount currently being committed to O&M.

Consultation feedback: Summary of Positions

- 34) Consultation feedback from the key stakeholders has been received. As a result, MJA has provided a Summary of Positions for Cabinet consideration (Attachment D). Noting that the specific details to be provided in the pre-feasibility study will include the cost of implementation; technical factors that influence the feasibility; broader implementation considerations (community preferences, legislative changes etc); consequences for the ACT BPP assets; and a revised triple bottom line analysis.
- 35) Icon Water has provided a formal response during this process showing their support for further exploration of transfer of assets under their management (Attachment E).
- 36) The Options Paper explores the alternative of transfer of assets to Icon Water as well as another option of transferring the O&M responsibilities only to Icon Water.
- 37) Treasury has also provided a response supporting refining current budget arrangements and increased level of performance monitoring.
- 38) Treasury indicated that it did not support the establishment of a statutory authority or Territory owned corporation and suggested looking at improving the current arrangements as a first step in a reform process. Treasury supported continued investigations into the establishment of a stormwater management charge/levy; creation of an internal ACT government utility/business unit and transfer of assets to Icon water if initial options proved unsatisfactory.
- 39) TCCS has provided feedback in a previous exposure draft Cabinet Submission (16/037) indicating a preference for a stormwater utility option over transferring assets to Icon Water. TCCS notes that, along with its important objectives of its water quality treatment components, operation and maintenance of the stormwater network, more generally, is integral to the provision of a safe and serviceable road network and amenable public spaces.
- 40) Establishing a stormwater utility or unit within government, which could effectively be a stand-alone division of TCCS, would be expected to be a relatively simple undertaking. In this regard, it should be noted that Roads ACT were formerly titled "ACT Roads and Stormwater". This title was dropped some years ago, presumably for simplicity sake, but it did also remove the overt reference to the important role of managing the Territory's stormwater assets.

Refine current arrangements

- 41) A stormwater unit option and refining current budgetary arrangements is the closest option to maintaining the status quo, however noting that MJA makes recommendations on management aspects that could be refined to improve performance and this should be seriously considered.
- 42) MJA focused on three key areas where changes could be made within the current system including:
- a) Broadening the base of assets that are captured in the funding determination framework. The existing framework excludes 'soft' WQ assets because they are typically not capitalised. Capitalising soft WQ assets or including a 'shadow' capitalised value for those assets could rectify this situation. There is also opportunity to review the assets included in the 'growth' model for estate assets;
 - b) Funding O&M of landscaping immediately following asset acceptance. For core capital works assets, it would be necessary to identify soft assets in a manner that would allow O&M funding for those assets to commence from the year of asset acceptance; and
 - c) Inserting a performance framework that requires TCCS Strategic Finance to report back to CMTEDD each year on how the annual O&M funding was allocated across TCCS functions and how the funding was expended against agreed government objectives.
- 43) It should be noted that Industry and community feedback during the ACT WSUD Review, and during other planning consultations, has been critical of government in that developers must install infrastructure to comply with statutory requirements but government does not maintain them to meet our own targets. This would suggest that key industry stakeholders would expect more than minor incremental change to current O&M practice.
- 44) The Commonwealth Government has provided funding to deliver the ACT Basin Priority Project (BPP) with the expectation that assets will be maintained, and the previous Cabinet Submission 14/122 agreed with the need to look at alternatives as there is evidence that the existing system is not working. Therefore, refining current arrangements may not be satisfactory to meet these expectations of optimal O&M.

Improving current weaknesses

45) Marsden Jacob also recommended four generic weaknesses that could be corrected irrespective of the option implemented. These include:

- a) Better alignment of roles and responsibilities, in particular involving those with responsibility for the operation and maintenance of assets having meaningful input into the design of assets;
- b) Design approval should consider the lifecycle cost of the asset. For the avoidance of doubt, this should explicitly include the costs of operating, maintaining and refurbishing the asset;
- c) Developing a financial framework that records operation, maintenance and refurbishment costs for stormwater WQ assets. It has been clear from this project that the current framework is incomplete, meaning that the ACT Government is not currently in a position to accurately estimate and monitor O&M expenditure; and
- d) Allow the Municipal Infrastructure Standards (MIS) to be revised more frequently, as this would permit innovative and modern stormwater WQ assets to be approved for construction in the ACT.

Next steps

46) Finalisation of the above-mentioned Prefeasibility Study will provide Cabinet with a qualitative and quantitative assessment and comparison of the various options (as much as existing information allows; remembering that MJAs initial reports have indicated that a paucity in the tracking and monitoring of costs is an issue to be rectified in the future) for their further consideration. This feasibility study will step out the implementation pathway including the due diligence assessment required and regulatory impact statement.

47) A key principle in the final recommendation should include governance and accountability arrangements that provide the appropriate commitment to managing and maintaining water quality assets for their longer term optimal performance.

48) On completion of the abovementioned Prefeasibility Report, a revised TBL assessment will be provided.

Consultation

49) Cross directorate consultation on this issue has been ongoing over a number of years. The issue was identified during cross directorate consultation for the ACT WSUD Review in 2013-2014. Cross directorate consultation (CMTEDD, TCCS and EPD) was sought in the drafting of the project scope and bi-monthly project updates. Two cross directorate working group sessions were facilitated by Marsden Jacob in August and September 2015 with targeted interviews carried out by the consultant in 2016.

50) The Directors-General Water Group has also been briefed on the progress of the project which also included presentations from the consultant (8 July 2015; 11 August 2015; 27 October 2015; 8 March 2016; and 16 June 2016).

MEDIA/PUBLIC RELEASE

51) No media release or public release is currently proposed for this project. The non-release of Attachments A to G is recommended as this project is still an emerging project and the issues and implications are not fully understood.

FINANCIAL IMPLICATIONS

52) There are no financial implications of this cabinet paper however, the pre feasibility: options assessment study is paid for within existing budget.

Minister's signature



Date

29/3/10

INDEX TO ATTACHMENTS

Attachment	Title	Page(s)	Release (Yes/No)
A	Final Report: Alternative Management and Funding Models for Sustainable Operation and Maintenance of Stormwater WQ Assets (Marsden Jacob Associates, 2016a)	88	No
B	Summary table of example issues related to the lifecycle of stormwater WQ	10	No
C	Schematic diagram of alternative management and funding models	1	No
D	Summary of Positions Statement Paper for Cabinet (Marsden Jacob Associates, 2016b)	24	No
E	Response from Icon Water (letter and PowerPoint presentation)	16	No
F	Triple Bottom Line Assessment Framework	12	No
G	Table of Final Comments	1	No

