

MEDIA RELEASE**31 January 2018****Acceptance of stormwater assets**

ACT Auditor-General, Dr Maxine Cooper, today presented a report on the **Acceptance of stormwater assets** to the Speaker, for tabling in the ACT Legislative Assembly.

Dr Cooper says 'There are clear asset management objectives for accepted stormwater assets particularly in the ACT Water Strategy 2014-44. These objectives may not be met due to deficiencies in the asset acceptance processes and the management of accepted stormwater assets'.

Acceptance processes are particularly deficient with respect to the design of stormwater solutions as these are negotiated between agencies who have competing objectives for stormwater assets. The audit calls for this process to be replaced by one focused on adopting solutions that achieve the overall stormwater objectives of the ACT Government.

Dr Cooper says 'Significant remediation costs for accepted assets have been incurred by the Territory as a result of third party (e.g. building and construction activity) damage. To address this a multi-agency strategy is needed in addition to the stormwater education program that is underway.'

The audit found that the process to identify optimum stormwater asset solutions is hampered by a lack of catchment-wide planning across the Territory and the explicit consideration of the costs of the operation and maintenance of accepted assets

Dr Cooper says 'There is also an urgent need to review the condition of existing stormwater assets in established areas of Canberra to enable an assessment of the Territory's future stormwater needs.'

The Summary of the **Acceptance of stormwater assets** audit, with audit conclusions, key findings and the seventeen recommendations is attached to this media release.

Copies of **Acceptance of stormwater assets: Report No. 1/2018**, are available from the ACT Audit Office's website www.audit.act.gov.au . If you need assistance accessing the report please phone 6207 0833 or go to 11 Moore Street, Canberra City.

EXTRACT OF SUMMARY CHAPTER

Overall conclusion

The ACT Government has set clear asset management objectives for accepted stormwater assets in various documents, in particular the *ACT Water Strategy 2014-44*. However, these objectives may not be met due to deficiencies in the asset acceptance processes and the management of accepted stormwater assets.

The acceptance processes are particularly deficient with respect to the design of stormwater solutions as these are negotiated between agencies who have competing objectives for stormwater assets. This process needs to be replaced by one focused on adopting solutions that achieve the overall stormwater objectives of the ACT Government. This would reduce the risk that accepted assets may not meet these objectives. The process for developing stormwater solutions would be further enhanced by increased catchment-wide planning and explicit consideration at the design stage of how to fund the maintenance of proposed assets. Options for such funding need to be explored.

Significant remediation costs for accepted assets have been incurred by the Territory as a result of third party damage that occurred following their acceptance. While there is a stormwater education program underway, this needs to be complemented by a multi-agency strategy that incorporates a range of actions that reduces third party damage. There is also an urgent need to review the condition of stormwater assets in established areas of Canberra that will enable an assessment of the Territory's future stormwater needs.

Governance that supports the acceptance of stormwater assets needs to be improved through improvements in agencies' risk management and performance reporting, and the updating of some codes and standards that guide the design and acceptance of assets.

Chapter conclusions

STORMWATER LEGISLATIVE AND REGULATORY FRAMEWORK

The asset management objectives for accepted stormwater assets are clearly articulated in ACT legislation and policy, which are adequately supported by legislative codes, design standards and procedures. While the stormwater asset design codes and standards comply with, and in some instances exceed, relevant national standards, they require updating in some areas. In particular, the *Estate Development Code* requires amendment to include detailed information on gross pollutant removal targets and the *Waterways Water Sensitive Urban Design Code 2009* and the stormwater design standards need to be updated to reflect changes resulting from new Australian Rainfall and Runoff Guidelines released by the Geoscience Australia.

The effect of these updated guidelines could have potentially significant implications for the management of stormwater in the Territory (such as an improved understanding of the ability of the existing and planned stormwater infrastructure to cope with expected rain events).

STORMWATER ASSET ACCEPTANCE PROCESS

The roles and responsibilities of agencies involved in the stormwater asset acceptance process are clearly articulated. However, each agency, by their very function, seeks a different outcome from the development of stormwater solutions. As a result, an agency-focused negotiation process currently determines what design is to be used and consequently what asset is accepted. This needs to be replaced with a process that focuses on the ACT Government's stormwater objectives, so that optimal stormwater solutions are achieved. Not having this process carries the significant risk that accepted assets may not achieve the ACT Government's stormwater objectives, as articulated in legislation and policy.

The process to identify optimum stormwater asset solutions is hampered by a lack of catchment-wide planning across the Territory and the explicit consideration of the costs of the operation and maintenance of accepted assets. At the design stage, potential risks occur when agency advice is not sought, or provided, as part of the development application process.

ARRANGEMENTS FOR MANAGING ACCEPTED STORMWATER ASSETS

There is an urgent need to prevent damage to accepted stormwater assets caused by building and other construction activity, which has led to significant remediation costs being borne by the Territory. While a stormwater education campaign is currently underway, this needs to be complemented by the development and implementation of a coordinated multi-agency strategy to address the range of factors that contribute to third-party damage.

There is also an urgent need for a review of the condition of existing stormwater assets and the development of an augmentation program. There has been no comprehensive review of the existing stormwater network since its development, and there is a limited understanding of the impact that new infill developments will have on the ability of these assets to perform during significant rain events. A lack of a preventative maintenance program increases the risks associated with these assets.

Better information is needed to help inform the development of a preventative maintenance program and the performance of the stormwater network. Performance measures to report on the achievement of ACT Government stormwater objectives are also needed. These could be reported publicly via the Water Report.

Key findings

STORMWATER LEGISLATIVE AND REGULATORY FRAMEWORK	Paragraph
The <i>Territory Plan</i> and the <i>Planning and Development Act 2007</i> provide a sound framework for the consideration of development applications involving stormwater assets and compare well with the policies of other state and territory jurisdictions.	2.10
The <i>ACT Water Strategy's</i> three outcome statements align with the best practice principles of other states. Furthermore, the subject matter expert for the audit, Storm Consulting, considered that 'the <i>ACT Water Strategy</i> provides [a] clear and firm policy basis of best practice stormwater management which is backed by the <i>Territory Plan</i> '. However, to ensure that the Strategy's outcome objectives are achieved, careful ongoing implementation over the thirty year life of the Strategy is required.	2.18
The <i>Estate Development Code</i> is considered to be 'relatively progressive and close to best practice', but needs to include gross pollutant removal targets of 70-90 percent to bring it into line with Victoria, Queensland and NSW, provide clearer guidance to developers and help to achieve the outcomes of the Government's <i>ACT Water Strategy</i> .	2.28
Considering the strong environmental focus of the ACT Government's planning policies, the <i>Waterways Water Sensitive Urban Design Code 2009</i> needs to be one of the most extensive codes and be integrated within the requirements of the <i>Design Standards for Urban Infrastructure—Stormwater</i> . However, water sensitive urban design has developed significantly since 2009 when the Code was implemented. As a result, the Code needs to be improved in a number of areas to provide more effective management of stormwater and be backed with more practical applications and lessons learned since it was first implemented.	2.31
The stormwater chapter of the <i>Design Standards for Urban Infrastructure</i> is a detailed and lengthy document, which primarily focuses on traditional drainage design. Transport Canberra and City Services plans to replace these in February/March 2018 with a chapter in the new Municipal Infrastructure Standards, a draft of which was issued for comment in November 2015. Storm Consulting noted that, while the current and revised stormwater design standards provide reasonable guidance, they are based on the 1987 Australian Runoff and Rainfall Guidelines, and will require updating to reflect the 2016 Guidelines.	2.33
While Transport Canberra and City Services plans to release a replacement for the Design Standards in early 2018, both the <i>Waterways Water Sensitive Urban Design Code 2009</i> and the <i>Design Standards for Urban Infrastructure—Stormwater</i> — will	2.40

need to be further amended to reflect changes resulting from the 2016 Australian Rainfall and Runoff Guidelines.

There will also be an ongoing need to ensure that the two Codes are aligned. In this regard, there would also be merit in combining the *Waterways Water Sensitive Urban Design Code 2009* and the *Design Standards for Urban Infrastructure—Stormwater*. A unified stormwater design guideline, which does not segregate traditional stormwater design from sustainable water sensitive urban design, would help ensure that the environmental aspects of stormwater design were seen to be as important as the hard engineered components and provide better guidance to designers.

2.41

STORMWATER ASSET ACCEPTANCE PROCESS

Paragraph

The *Planning and Development Act 2007* requirement that deems all development applications as approved, unless agency advice indicating otherwise is received within 15 days, leaves the Territory at risk that inappropriate stormwater assets may be constructed and subsequently accepted. As a developer will have received design approval via the development application process, it may be difficult for Transport Canberra and City Services not to accept the detailed design of the stormwater assets if they comply with the approved approach.

3.20

While the asset acceptance procedures provide adequate guidance on the asset acceptance process, the 'Assessment of Design Review Submissions' procedure for infill developments could be improved by specifically referring to the objectives of stormwater assets as set out in the relevant ACT Government policies to ensure that these policies are met.

3.29

Both the Environment, Planning and Sustainable Development Directorate and Transport Canberra and City Services advised that they have not undertaken catchment-wide planning for stormwater for the ACT and that detailed data on the hydrology of proposed new subdivision locations are not available. Developers are therefore required to undertake detailed hydrological studies of greenfield development areas to ensure that their stormwater management approaches will meet planning requirements, particularly those of the *ACT Water Strategy* and the *Waterways Water Sensitive Urban Design Code 2009*.

3.37

The absence of catchment-wide stormwater planning in the ACT presents the risk that stormwater management solutions will not be appropriate to meet those required in ACT water management policies. Developing such a plan would provide a sound basis for future stormwater planning. The Environment, Planning and Sustainable Development Directorate should provide the Minister for Planning and

3.38

Land Management with options on how to undertake this catchment-wide stormwater planning.

A number of issues are arising at the design stage, partly due to a lack of detail in the Waterways Water Sensitive Design Code 2009 (one of the reasons it needs updating), which in turn results in a heavy reliance on designers. 3.42

There is no effective process in place to ensure that options to support the operation and maintenance of suitable estate development are considered at the planning stage. 3.53

While changes to design plans occur infrequently, by not allowing the Development, Review and Coordination Section in Transport Canberra and City Services a reasonable and practical opportunity to respond to proposed design changes that occur during construction (for example, by requiring a response in as little as a few hours), there is an increased risk that unacceptable design solutions may be implemented during the construction of stormwater assets. The Civil Infrastructure Branch and the Development, Review and Coordination Section should consider developing a formal process for the handling of such design changes. 3.69

At the conclusion of work on a project, a developer will provide certification that the work has been completed in accordance with the approved design and to the required standards, after which TCCS will arrange inspection by SMEC. However, certification by the developer is usually provided by one person for an entire project, not specifically for stormwater assets. As separate certification is not usually provided for each type of asset, there is limited assurance the certifier has the suitable qualifications and experience to provide stormwater certification. 3.74

ARRANGEMENTS FOR MANAGING ACCEPTED STORMWATER ASSETS

Paragraph

While the role of each individual agency in the asset acceptance process was well defined, responsibility for the management of stormwater assets within Transport Canberra and City Services was not. 4.3

Transport Canberra and City Services is currently undertaking a functional alignment review that is considering, among other issues, the division of responsibilities between its business units - Roads ACT and City Presentation. This provides an opportunity for Transport Canberra and City Services to also work with Environment, Planning and Sustainable Development to ensure that an effective cross-agency approach is taken to the overall management of stormwater assets. This needs to include consideration of the necessary level of expertise on stormwater management that is required within Government. 4.11

Transport Canberra and City Services has developed internal targets that measure the achievement of a key stormwater objective — reliable flood protection. However, the Directorate has not developed targets for its other key objective — management of stormwater discharges. This makes it difficult to assess whether these objectives are being achieved.

4.31

While the Roads ACT's 2013 Strategic Asset Management Plan includes flood protection performance targets for stormwater assets, none relate to the quality of water exiting the stormwater system. Information gathered by the Environment, Planning and Sustainable Development Directorate in relation to stormwater asset performance against quality and quantity performance targets is not routinely shared with Transport Canberra and City Services.

4.51

Without arrangements to collect information on the performance of stormwater assets Transport Canberra and City Services has no ability to assess whether accepted asset types are achieving the intention of ACT Government objectives, thereby leaving the Territory at risk that inappropriate or poorly functioning assets are accepted.

4.52

Roads ACT's risk register could be improved by the identification of the following additional risks:

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- damage to assets after operational acceptance;
- inadequately planning for the operation and maintenance of accepted assets; and
- adverse effects on the environment from poorly designed, operated, maintained assets.

While the environmental impact of stormwater management has been clearly identified in Environment, Planning and Sustainable Development Directorate documents, Transport Canberra and City Services has been less successful in identifying the environmental risks associated with the acceptance of stormwater assets. The risk register Roads ACT (in Transport Canberra and City Services) does not include potential environmental risks relating to the acceptance of assets. The Roads ACT 2013 Strategic Asset Management Plan touches only briefly on environmental risks but a more detailed consideration of this risk is warranted.

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Asset data in IAMS are not complete and/or accurate. For example, the data on dams were not up-to-date (recently built dams had not been included).

4.65

While accepting that Transport Canberra and City Services has resource restrictions, adopting a preventative approach to the maintenance of stormwater assets, which targets known problem areas, could reduce problems occurring in the first place,

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resulting in improved performance of accepted assets. Analysis of defect data from its IAMS system would also provide the opportunity for Transport Canberra and City Services to identify problem areas and risks to the stormwater network and to take remedial action.

While EPSDD have initiated the *H2OK: Keeping our waterways healthy* stormwater education program, this does not provide a long-term solution to the third-party damage issue. A range of cross-agency measures will be required to help reduce the damage to stormwater (and other assets, such as landscaping) caused by building and other construction activity. 4.91

Transport Canberra and City Services advised that, with limited exceptions, the condition of stormwater assets in established areas of Canberra has not been reassessed since the development of those areas, despite the fact that there is a known flood risk in some locations. Where reviews have been completed, recommended augmentation work has not been undertaken in all cases and some of these reviews are no longer current. 4.94

There are no scheduled reviews of the condition of the stormwater infrastructure in established areas. To ensure that this infrastructure meets future stormwater needs, there needs to be an ongoing program for the review and augmentation of stormwater assets to alleviate flood hazards due to under-capacity of drainage systems. This is important also to ensure that the stormwater infrastructure can support new infill developments. 4.101

Recommendations

RECOMMENDATION 1 CHANGE TO THE ESTATE DEVELOPMENT CODE

The Environment, Planning and Sustainable Development Directorate should facilitate the amendment of the *Estate Development Code* to include a gross pollutant target (70-90 percent removal).

RECOMMENDATION 2 UPDATE OF DESIGN CODES AND STANDARDS

The Environment, Planning and Sustainable Development Directorate and Transport Canberra and City Services Directorate, respectively, should facilitate updates to the *Waterways Water Sensitive Urban Design Code 2009* and the Design Standards for Stormwater Infrastructure to reflect changes resulting from the 2016 Australian Rainfall and Runoff Guidelines.

RECOMMENDATION 3 ALIGNMENT OF DESIGN CODES AND STANDARDS

The Environment, Planning and Sustainable Development Directorate, in consultation with the Transport and City Services Directorate should:

- a) align the *Waterways Water Sensitive Urban Design Code 2009* with the new Design Standards for Municipal Infrastructure—Stormwater; and
- b) facilitate the amalgamation of these two documents so traditional drainage and water sensitive urban design are fully integrated.

RECOMMENDATION 4 REFERRAL ENTITY ADVICE

The Environment, Planning and Sustainable Development Directorate should:

- a) review the potential risks associated with accepting stormwater asset designs, without agency advice, as prescribed under Section 150 of the *Planning and Development Act 2007*; and
- b) prepare a mitigation strategy to address these risks, and, if legislative changes are required, advise the Minister for Planning and Land Management.

RECOMMENDATION 5 CATCHMENT-WIDE STORMWATER PLANNING

The Environment, Planning and Sustainable Development Directorate should identify options for conducting catchment-wide planning, and undertake analysis of stormwater needs, against which future development applications would be assessed. These options should be provided to the Minister for Planning and Land Management for consideration.

RECOMMENDATION 6 CONSIDERATION OF STORMWATER SOLUTIONS

The Environment, Planning and Sustainable Development and Transport Canberra and City Services Directorates, in consultation with the Suburban Land Agency, should develop a range of stormwater management solutions for new estates and subdivisions, in the context of a catchment-wide plan for the area, to ensure that the optimal solution and the means of financing it are adopted.

RECOMMENDATION 7 CERTIFICATION OF STORMWATER ASSETS

The Transport Canberra and City Services Directorate should require that certifications of stormwater assets are provided by engineers who are suitably qualified and experienced in stormwater design.

RECOMMENDATION 8 FUNCTIONAL REVIEW OF STORMWATER MANAGEMENT

The Transport Canberra and City Services Directorate, in consultation with the Environment, Planning and Sustainable Development Directorate, should review arrangements for the management of stormwater assets to improve cross-agency management of stormwater.

RECOMMENDATION 9 STRATEGIC ASSET MANAGEMENT PLAN

Roads ACT should, no later than June 2018, update and adopt the Strategic Asset Management Plan, to reflect current stormwater management priorities.

RECOMMENDATION 10 DEVELOPMENT OF PERFORMANCE INDICATORS

The Environment, Planning and Sustainable Development and Transport Canberra and City Services Directorates should each develop performance measures for the achievement of ACT Government stormwater objectives, including the management of stormwater discharges. These should be publicly reported (for example, in the ACT Water Report).

RECOMMENDATION 11 ACHIEVING GOVERNMENT OBJECTIVES

Transport Canberra and City Services should amend the *Requirements for Design Acceptance Submissions* procedure to require:

- a) designers to demonstrate how proposed stormwater assets will achieve the objectives of the ACT Government; and
- b) consideration of stormwater objectives when assessing stormwater asset designs.

RECOMMENDATION 12 MONITORING THE PERFORMANCE OF STORMWATER ASSETS

The Transport Canberra and City Services Directorate should collect stormwater asset performance information, available from various agencies, for use in considering the acceptance of stormwater assets.

RECOMMENDATION 13 IDENTIFICATION OF RISK

The Development, Review and Coordination Section and Roads ACT and City Presentation business units in the Transport Canberra and City Services Directorate should:

- a) undertake a detailed analysis of the risks associated with the acceptance of stormwater assets;
- b) include treatments to reduce these risks in their relevant risk registers; and
- c) establish a formal process that communicates these risks to Directorate executives.

RECOMMENDATION 14 IMPROVING THE ACCURACY OF IAMS DATA

Transport Canberra and City Services should review all IAMS stormwater data to ascertain whether they are accurate and complete.

RECOMMENDATION 15 MANAGEMENT OF THE EXISTING STORMWATER NETWORK

Transport Canberra and City Services should:

- a) develop a preventative maintenance plan for stormwater assets; and

- b) clearly identify problem areas with, and risks to, the stormwater network.

If required, appropriate remedial action should be recommended to the Minister for Transport and City Services.

RECOMMENDATION 16 REDUCING DAMAGE TO ACCEPTED ASSETS

A working group (including representatives from Transport Canberra and City Services, Environment, Planning and Sustainable Development, the Suburban Land Agency, Access Canberra and other relevant entities) should be established to:

- a) develop a coordinated multi-agency strategy to reduce the damage to accepted assets caused by building and other construction activity; and
- b) report to the Minister for Planning and Land Management on actions to be taken, then subsequently the results of any actions undertaken.

RECOMMENDATION 17 REVIEW AND AUGMENTATION OF EXISTING STORMWATER INFRASTRUCTURE

Transport Canberra and City Services should develop a forward program for the ongoing review of stormwater infrastructure in established areas of Canberra and augmentation of the infrastructure where necessary. The forward program should be provided to the Minister for Transport and City Services for consideration and direction.

In accordance with subsection 18(2) of the *Auditor-General Act 1996*, the Transport Canberra and City Services Directorate, Environment, Planning and Sustainable Development Directorate, Suburban Land Agency and Chief Minister, Treasury and Economic Development Directorate were provided with a:

- draft proposed report for comment. All comments were considered and required changes were reflected in the final proposed report; and
- final proposed report for further comments. As part of this process, the Directorates were offered the opportunity to provide a statement for inclusion in the Summary chapter.

No agency provided comments for inclusion in the Summary Chapter of the final report.