

# MEMO

**TO:** Rita O'Brien < Manager Stormwater and Coastal Assets

**DATE:** 9/9/2026

**FROM:** Craig Martell, Ben Fountain

**PROJECT NO.:**

**COPY:**

**SUBJECT:** Issues for KCDC relating to the Stormwater National Engineering Design Standards

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## BACKGROUND

Taumata Arowai are currently consulting on draft National Engineering Design Standards (NEDS) for Stormwater. These are some of the key issues within the draft NEDS that Kāpiti Coast District Council as a Water Services Entity (WSE) should consider submitting on to facilitate ongoing discussions as the NEDS are progressed.

### Minimum (1.1.2)

Note that the purpose of the SW NEDS is to provide minimum standards and requirements for the design and construction of new and upgraded public stormwater assets.

### Hierarchy of Stormwater considerations (2.1.1)

Any hierarchy of needs is problematic in a national document as it tramples local or site-specific drivers and this could be used by members of the public to counter Kāpiti Coast District Council activities. The proposed hierarchy of stormwater considerations in the NEDS is as follows:

- a. Reduce the frequency and severity of flooding in urban areas,
- b. Improve the quality of the water in our waterways and coasts,
- c. Reduce demand on potable water supply, slow runoff from urban surfaces, and stabilise water flows in streams,
- d. Capture and reuse of roof runoff to supplement non-potable water usage (e.g., toilet flushing, washing machine, garden watering, etc).
- e. Disposal of site runoff to ground within the boundaries of the development where possible and allowed by the Authority regulations.
- f. Use of WSD to promote infiltration through the application of pervious coverage to reduce loading on the existing public stormwater network (e.g., permeable paving, infiltration strips, etc).
- g. Erosion protection / hydrology mitigation management for frequent rainfall events for sites discharging into a stream or watercourse (e.g. ponds, wetlands, tanks, green outfalls, etc).
- h. Attenuation of flows within the site boundaries to optimise flows in the public network (e.g., ponds, wetlands, tanks, etc).
- i. Residual risk is still present in areas when the design level of service is being met by the primary and secondary stormwater management system. It should be considered were

there are potentially significant consequences as a result of stormwater management system failure. This risk is present due to:

- i. Events occur that are of a greater magnitude than the design level of service (such as very rare rainfall events)
- ii. Primary systems can fail (such as blockage, pipe collapse or bridge collapse)
- iii. Secondary systems can fail (such as poor land development control or unconsented works obstructing overland flow paths)

This hierarchy is also very difficult to integrate with all the relevant legislation and policy. However, the NEDS do also acknowledge compliance with district plans.

#### **Legislation and policy (2.1.4)**

Legislation and policy controlling the planning, design, construction, operation, and maintenance of the WSE's stormwater system includes the following documents:

##### **National legislation, approved Codes of Practice, and Standards**

- Resource Management Act, 1991 (RMA)
- Natural and Built Environment Act 2023
- Spatial Planning Act 2023
- Water Services Legislation 2023,
- Water Services Entity Act 2023
- Economic Efficiency and Consumer Protection Act 2023
- Local Government Acts, 1974 and 2002 (LGA)
- Public Works Act, 1981
- Building (Dam Safety) Regulations 2022
- Building Act, 2004; Building Regulations, 1992; Building Code and associated Compliance Documents
- Plumbers, Gasfitters, and Drain Layers Act, 2006
- Civil Defence Emergency Management Act, 2002
- Health and Safety at Work Act, 2015 and associated regulations
- Approved Code of Practice for Temporary Traffic Management (Version 4)
- Australian Standard AS 2865: Confined Spaces
- National Code of Practice for Utility Operators' Access to Transport Corridors, 2015
- Hauraki Gulf Marine Park Act, 2000
- The 1951 Christchurch Drainage Act.

##### **National policy**

- National Policy Statement for Freshwater Management
- New Zealand Coastal Policy Statement
- National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health
- National Environmental Standards for Freshwater.

## Climate Change Scenarios (Table 2-1)

There is a push in the NEDS for adoption of RCP 8.5H+ which is problematic for a range of reasons, including affordability but mostly because if the earth encounters 4 degrees of warming, then the size of our stormwater network or the height of our floor levels will be the least of our problems.

Table 0-1-Risk based framework for climate change effects including rainfall intensity and sea level

| Climate Change Reference - Current 2023                                                                                       |                                 | Emissions Scenarios |          |                                     |
|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------|---------------------|----------|-------------------------------------|
|                                                                                                                               |                                 | RCP4.5              | RCP 6.0  | RCP 8.5H+                           |
| Climate Change Reference - future 2024 onwards                                                                                |                                 | SSP2 – 4.5          | SSP2-4.5 | SSP5 – 8.5<br>(Low, Moderate, High) |
| Item                                                                                                                          | Storm Event                     | Use Scenario        |          |                                     |
| Primary conveyance network - General                                                                                          | Up to 10%AEP                    | N/A                 | Yes      | N/A                                 |
| Secondary conveyance network- General                                                                                         | Greater than 10%AEP up to 1%AEP | N/A                 | N/A      | Yes                                 |
| Residual Risk (exceedance/failure) –to be assessed for highly vulnerable infrastructure or high probability of asset failure. | Greater than 1%AEP              | N/A                 | N/A      | *Yes                                |
| Sea Level Rise - Greenfield Development                                                                                       |                                 | N/A                 | N/A      | *Yes                                |
| Sea Level Rise - Brownfield Development                                                                                       |                                 |                     | Yes      | *Yes                                |

\*Refer to Interim guidance on the use of new sea-level rise projections 2022 (MfE).

**Comment:** We would lean on recent guidance by the Minister for Climate Change and Local Government that high climate change scenarios should be used for sensitivity but not the underlying design. We would promote the use of lower climate change scenarios, particularly for coastal boundary conditions, and a focus on stormwater design solutions that can be adapted to cope with climate change as it is realised.

## Stormwater system design approach (2.2.4)

The preferred approach is to minimise any impact upon the receiving environment. All development should, in the first instance, be in accordance with the integrated stormwater management principles:

- Promote inter-disciplinary planning and design
- Protect and enhance the values and functions of natural ecosystems
- Address stormwater effects as close to source as possible
- Mimic natural systems and processes for stormwater management
- Achieving ecological, amenity and recreational outcomes

These will require further contextualisation within the Kāpiti context.

**Comment:** We agree with the above and would add “focus on adaptive stormwater design solutions”

## Design Standard Defaults (Table 2-2)

While the capacity standards appear to be generally in accordance with Kāpiti Coast District Council current standards it should be noted that as a default: “New development is generally not permitted in areas with no secondary flow path.” Which will be problematic for much of the coast.

### Hydraulic design of stormwater systems (2.2.5.3)

The NEDS state: *The primary piped system shall be designed to cater for the peak design flow, without surcharge (water surface to not exceed above the soffit of the lowest incoming pipe), determined by the water surface profile throughout the piped system. Secondary stormwater systems shall be designed as open channel flows.*

**Comment:** This standard will be near impossible to meet in the context of the low impact design solutions that are encouraged and have proliferated in KCDC. In many cases storage sit above the culverts which are designed to surcharge.

### Coastal areas (2.2.5.8)

This section could be problematic for coastal environments like Kāpiti.

*Where stormwater discharges to the coastal marine environment, the design water levels and conditions shall allow for “worst case” tidal effects, sea level rise, storm surge, coastal erosion, and coastal instability in accordance with the following approaches:*

- a. *Guidelines specific to the coastal area of interest, including TR2020/024 and TR2020/021 for Auckland*
- b. *Ministry for the Environment (Manatū Mō Te Taiao) Coastal Hazards and Climate Change*
- c. *Specific allowances for sea level rise in accordance with unitary and district planning documents*
- d. *Specific guidance from the regional or unitary council responsible for the coastal marine area*
- e. *Modelling guidelines specific to the area of interest*
- f. *In the absence of more specific information, an assumed sea level based on the sum of the mean high water springs level, projected sea level rise to 2110 and an agreed allowance for barometric rise from storm conditions specific to the area of interest.*
- g. *Consideration should be given to potential coastal inundation, backflow into the network, and the effects of seismic activity on the infrastructure.*

**Comment:** The worst-case tidal effects would significantly increase the cost of new infrastructure and renewals for coastal catchments. In addition, the available information on which coastal boundary modelling is undertaken needs to be improved ahead of this requirement being implemented as uncertainty will be reflected back into conservative tidal boundary conditions. Focus should be put on adaptive stormwater design solutions that can be adjusted to meet climate change changes as they are realised.

### Watercourses, natural and constructed waterways (2.2.7)

Following the 1976 floods the Administration of Watercourses Agreement was developed to provide centralised involvement from TA's and the Regional Council in maintaining watercourses. This was due to private landowners not having the capacity or knowledge to maintain watercourses.

The NEDS state: *Watercourse maintenance is the responsibility of the owners of the land through which they pass. In some situations, the WSE has control over the watercourse via covenants or easements. Where daylighting of existing piped watercourses occurs, the resulting watercourse shall be maintained by the landowner.*

**Comment:** We are concerned that this requirement may reduce the opportunities for daylighting and it is impractical in many situations. The devil will be in the detail, but KCDC would be happy to provide some case studies to help refine this requirement.

### Stormwater pumping (2.2.8)

The NEDS are problematic for the Kāpiti Coastal environment in this area:

*There shall be no stormwater pumping within the public network without explicit approval from the WSE. This approval will be provided only in exceptional circumstances and where the WSE is of the opinion that there are no practicable alternatives.*

*Stormwater pumping shall not be used to enable new development in any manner, whether greenfield or brownfield, and will only be considered as a potential option to resolve chronic stormwater issues in already-developed areas where no intensification is planned and where no gravity-based solutions exist.*

**Comment:** While we agree with this requirement in intent it is an impractical requirement in Kapiti. The impact of this in some situations would be significant earthworks and landform change that would be suboptimal for other Council requirements to retain landform. Wording should be softened. Again, we would be happy to provide some exemplar.

### **Approval Process (2.3)**

The NEDS also provide a structured approval process for new stormwater. That could be built on for Kāpiti Coast District Council use to support good SW outcomes.

### **Omissions or Light touches**

The NEDS are light on three issues facing urban stormwater:

- How to achieve significant water quality improvements in accordance with Te Mana o te Wai
- The integration of overland flow paths and watercourses into a managed stormwater network (as per Local Government (Water Services) Act
- Non-asset approaches to stormwater outcomes

Our final recommendation is that stormwater design solutions should be integrated, with a focus on good catchment planning, and that there should be a focus on adaptive design solutions that can be adjusted over time as required. Some of the recommendations in this report will create a significant additional cost to the community with little additional benefit. Stormwater solutions need to mitigate risk and be value for money. This risk-based approach could be usefully applied to a national standard for engineering design.



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