

Using existing Council data and studies to apply the Risk-based Framework

Key findings and lessons from the Hornsby Case Study



To apply the steps of the [‘Risk-based framework for considering waterway health outcomes in strategic land-use planning decisions’](#) Councils require, among other things, data on waterway health monitoring, community environmental values and uses of waterways, and catchment condition and audit reports.

The Risk-based Framework brings together existing strategies and policies for managing waterways in NSW. This means Councils have already been implementing elements of the Risk-based Framework in their ongoing management of waterways, and often possess important historical data and commissioned studies that can be repurposed to achieve the 5 steps of Risk-based Framework.

To implement the Risk-based Framework in a cost-effective way, Councils can create an inventory of their existing monitoring data, modelling, plans and studies, and retrofit their data assets into the Risk-based Framework.

The Hornsby Shire Council case study provides one exemplar on how existing data collected by Councils can be used to apply the Risk-based Framework and prioritise management actions for strategic plans, such as Coastal Management Programs and the Water Sensitive Hornsby Strategy.



What data can be retrofit to apply the Risk-based Framework?

While Councils will differ in their access to existing data, studies and reports, the following list compiled by Hornsby Shire Council illustrates where data can assist in achieving steps of the Risk-based Framework:

- *Waterway health monitoring data (aquatic ecology, sediment quality, water quality and riparian condition data)* - Used in Step 1 to determine the context for applying the Risk-based Framework and to conduct a first-pass risk assessment, and in Step 5 to conduct field sampling and implement a monitoring, evaluation and reporting (MER) program
- *Spatial data summarising environmental conditions* - Used in Step 1 to determine the spatial extent or area you are applying the Risk-based Framework and in Step 2 for identify data gaps for running an effects-based assessment
- *Community use and values data* - Used in Step 1 to establish foundational waterway health objectives for assessing against
- *Catchment condition and audit reports* – Used in Step 1 to conduct a first-pass risk assessment, in Step 2 to undertake an effects-based assessment to identify risk and effectiveness of management options in reducing the risks, and in Step 5 to conduct field sampling and identify and monitor your objectives to respond to significant changes in land-use pressures
- *Catchment management plans and strategies* - Used in Step 1 to collate best available data and information to inform the application of the Risk-based Framework, in Step 2 for identifying specific data gaps to fill in running the effects-based assess-

ment, and in Step 5 to develop an implementation plan that identifies key resources, allocates actions to particular organisations, and outlines priorities to enable effective implementation of the actions

- *Catchment modelling* - Used in Step 2 to identify the range of management options or scenarios for use in the effects-based assessment
- *Future development planning* - All steps
- *Groundwater characterisation* - Used in Step 1 to characterise the landscape and waterways, in Step 2 to undertake an effects-based assessment, and in Step 5 to conduct field sampling and implement a monitoring, evaluation and reporting (MER) program
- *Integrated Water Cycle Management strategies* - All steps depending on application (e.g., for Step 2 it can inform management options to mitigate the risks)

Key findings and lessons

By retrofitting their existing data to apply the Risk-based Framework, Hornsby Shire Council was able to identify several high priority catchments and waterways under pressure from current and future land use, including:

- New medium and high-density residential developments near Hornsby town centre, Asquith, Beecroft, Normanhurst and Waitara leading to increased impervious land and resulting source and diffuse pollutant loads impacting on runoff within relevant sub-catchments and external downstream sub-catchments
- The potential for precinct scale greenfield redevelopment at South Dural, likely to significantly increase threats to waterways within the sub-catchment and the immedi-



-ate downstream sub-catchments

This pilot study provides useful lessons for those applying the Risk-based Framework elsewhere, including:

- Preparing a checklist of required data, their type and resolution
- Completing targeted community consultation in advance of commencing the Risk-based Framework to confirm extent and locations of community uses across the LGA
- The utility of the '[NSW Estuary Health Risk Dataset](#)' and its ability to be confirmed by field assessments and additional existing Council data and studies

Case study drivers and partnerships

This study is identified as a management action under Initiative 1 of the [Marine Estate Management Strategy 2018-2028](#), which has a goal of improving water quality and reducing litter in the marine estate.

This case study was delivered in partnership by Hornsby Shire Council and the Environment, Energy and Science Group of the NSW Department of Planning, Industry and Environment. It was funded by the NSW Government under the Marine Estate Management Strategy, developed by the NSW Marine Estate Management Authority.

What is contained in the Hornsby case study report?

The Hornsby case study report outlines how a preliminary risk-assessment was completed to identify high priority sub-catchments within the Hornsby LGA, where implementation of catchment management actions could assist with protecting higher value waterways.

The preliminary risk-assessment method is consistent with the method for developing the '[NSW Estuary Health Risk Dataset](#)', but has used local scale data as inputs including water quality and flow monitoring and the addition of point source discharges.

The full case study can be found [here](#).

Additional resources

You can access more information about the Risk-based Framework, including other worked case studies, datasets, and tools by visiting [here](#).

Cover photo: Ku-ring-gai Chase National Park, A. Richards/DPIE. Page 2 left to right: Sphinx Memorial to Bobbin Head loop track, N. Webb/DPIE, Boats are moored along Berowra Creek, N. Cubbin/DPIE, The creek bed and bridge at Galston Gorge, N. Cubbin/DPIE. Page 3 left to right: Lyrebird Gully Circuit Walking Track, J. Roberts/DPIE, Lyrebird Gully Circuit Walking Track, J. Roberts/DPIE, Stepping logs, Berowra Creek, M. Van Ewijk/DPIE.

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