

Final report

***Audit of the implementation of  
Floodplain Management Plan for the  
Barwon-Darling Valley Floodplain 2017***  
March 2022



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## Acknowledgement of Country

The Natural Resources Commission acknowledges and pays respect to traditional owners and Aboriginal peoples. The Commission recognises and acknowledges that traditional owners have a deep cultural, social, environmental, spiritual and economic connection to their lands and waters. We value and respect their knowledge in natural resource management and the contributions of many generations, including Elders, to this understanding and connection.

In relation to the Barwon-Darling valley floodplain covered in this report, the Commission pays its respects to the Euahlayi, Barkandji, Gomeroi, Wayilwan, Ngemba, Baranbinja, Wangaaypuwan and Gunu Traditional Owners past, present and future, as well as other Aboriginal peoples for whom these waterways are significant. The Commission hopes that the audit process will help to shape collaborative floodplain planning that is beneficial to Aboriginal peoples and their country.

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## Acronyms and abbreviations

Act	Water Management Act 2000 No 92 (NSW)
AHD	Australian Height Datum
ASAE	Australian Standard on Assurance Engagements
Commission	the Natural Resources Commission
CIRaM	Compliance Investigation Reporting and Management system
DPIE-EES	Department of Planning, Industry and Environment- Environment, Energy and Science
DPE-Water	Department of Planning and Environment-Water
DPIE-Water	Department of Planning, Industry and Environment – Water
DPIE-EES	Department of Planning, Industry and Environment – Environment, Energy and Science
F	Finding
MER	Monitoring, Evaluation and Reporting
NRAR	Natural Resources Access Regulator
O	Observation
OEH	Office of Environment and Heritage (Predecessor to DPIE-EES)
Plan	<i>Floodplain Management Plan for the Barwon-Darling Valley Floodplain 2017</i>
R	Recommendation
Regulation	Water Management (General) Regulation 2018 (NSW)
SA	Suggested action
SMART	Specific, measurable, achievable, relevant and time-bound
WLS	Water Licensing System

The Commission notes that as a result of changes to the NSW Government in late 2021 and early 2022, the Department of Planning, Industry and Environment (DPIE) changed to the Department of Planning and Environment (DPE). As DPIE is the relevant name throughout the audit period and drafting of this report, the Commission has retained this abbreviation throughout this report. However, relevant recommendations and suggested actions are assigned to DPE-Water, the new organisation.

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**1**

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in the Act**

**1**

# 1 Executive summary

The Natural Resources Commission (the Commission) has audited the *Floodplain Management Plan for the Barwon-Darling Valley Floodplain 2017* ('the Plan') to ascertain whether the provisions of the Plan are being given effect to, as required under Section 44 of the *Water Management Act 2000* (the Act).<sup>1</sup>

## 1.1 Audit conclusion

The Commission considers that on balance the provisions of the Plan have not been given full effect to in accordance with the Act.

The audit conclusion is based on the procedures performed and the evidence obtained. The Commission is of the view that the information presented fairly reflects the implementation of the Plan.

## 1.2 Audit findings and recommendations

The audit focused on current implementation to determine recommendations but also considered evidence from the full audit period, which is defined as being from Plan commencement under the Act (29 June 2017) to the date of receipt of agency comments on the draft report (January 2022).

The Commission found that the relevant organisations generally have systems, processes and procedures in place that mostly align with legislative requirements and are available to support implementation of the Plan.

The Commission also found that flood work approvals were generally assessed and processed in accordance with legislative requirements. There has been progress made towards improving associated procedures for floodplain management plans.

**Table 1** outlines the audit findings and recommendations against the four audit criteria:

- Criterion 1: The relevant responsible parties have implemented Plan provisions relating to vision, objectives, strategies and performance (see **Chapter 5**)
- Criterion 2: The relevant responsible parties have implemented Plan provisions relating to granting or amending flood work approvals (see **Chapter 6**)

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<sup>1</sup>. Note that in this report, 'the Act' is used to refer only to the *Water Management Act 2000* and 'the Regulations' refers only to the *Water Management (General) Regulations 2018*.

- Criterion 3: The relevant responsible parties have implemented Plan provisions relating to mandatory conditions including enforcement (see **Chapter 7**)
- Criterion 4: The relevant responsible parties have implemented Plan provisions relating to amendments (where these are not optional) and there is evidence that identified amendments (which may include optional amendments) have been given due consideration (see **Chapter 8**).

The Commission has raised recommendations (R) only for material findings (F) relating to gaps in the implementation of legislative requirements that result in the Plan not being given full effect under Section 44 of the Act. The Commission focused on the fundamental elements of Plan implementation. The Commission did not explore the quality of implementation in detail in this audit.

The Commission undertook detailed limited assurance sample testing and examined roles and responsibilities, systems, processes, and procedures as relevant for all criteria. Relevant information was examined against detailed legislative requirements as set out for each criterion. Implementation was found to comply with legislative requirements except where the report identifies gaps. In the interest of brevity, neither the discussion nor the tables of findings and observations list all positive findings, only identified gaps to enable future action to be taken to address them.

The Commission did not prioritise legislative provisions or recommendations in relation to gaps in implementing these provisions. The Commission has not assigned specific time frames to recommendations. However, given the findings are gaps to legislative requirements, the Commission considers that all recommendations should be implemented as soon as practicable within a maximum timeframe of 12 months.

The Commission has also raised observations (O) and suggested actions (SA) related to areas that are not specifically legislative requirements but support the implementation of these requirements.

While this report discusses specific consequences for each criterion, the overarching consequence of not giving full effect to provisions of the Plan is that the objectives of the Plan are unlikely to be achieved. These objectives are intended to support environmental, social and economic outcomes. In addition, the principles set out in Section 5 of the Act are not likely being given full effect.

**Table 1: Audit findings and recommendations**

Findings	Recommendations
<b>Criterion 1 Finding: The relevant responsible parties have not implemented Plan provisions relating to vision, objectives, strategies and performance</b>	
<p><b>F1</b> Provisions related to vision, objectives, strategies, and performance indicators set out in Clause 12 of the Plan were not implemented within the audit period.</p>	<p><b>R1</b> DPE-Water to:</p> <ul style="list-style-type: none"> <li>▪ lead the monitoring and evaluation of performance indicators to measure the success of the strategies to reach the objectives of the Plan</li> <li>▪ use generated data to support decision making for Plan implementation.</li> </ul>
<b>Criterion 2 Finding: The relevant responsible parties have partially implemented Plan provisions relating to rules for water supply work approvals</b>	
<p><b>F2.1</b> Cumulative impacts are not being assessed for new flood work applications as required under Part 8 of the Plan.</p>	<p><b>R2.1</b> DPE-Water to update the digital spatial model for the Plan and provide this updated model information to WaterNSW and NRAR to enable approval assessment officers to undertake cumulative impact assessments for new approvals going forward.</p> <p><b>SA3.5</b> also applies</p>
<p><b>F2.2</b> Four current flood work approvals relating to structures in the Barwon-Darling floodplain are recorded in the Water Register, but have not been allocated against the Plan. There is a discrepancy between the number of approvals in the Plan at commencement and the number of approvals allocated to the Plan in the Water Register. This indicates there may be other approvals needing to be allocated to the Plan.</p>	<p><b>R2.2.1</b> WaterNSW (with the support of NRAR and DPE-Water) to identify any flood work approvals in the Plan area which are not assigned to the Plan area in approvals system and ensure that they are identified as such in the approvals system.</p> <p><b>R2.2.2</b> DPE-Water to include all relevant flood works currently within the Plan area but not assigned to it in the approvals system in the implementation of <b>R3.1, R3.2, R3.3 and R3.4</b> (application of mandatory conditions to flood work approvals).</p>
<p><b>F2.3</b> With one exception, flood work approval holders (applied for and granted since Plan commencement) were not notified of relevant mandatory conditions as required to give effect to Section 100(1A) of the Act.</p>	<p><b>R3.1, R3.2, R3.3, R3.4 apply</b> (application of mandatory conditions to flood work approvals).</p>
<b>Criterion 3 Finding: The relevant responsible parties have partially implemented Plan provisions relating to mandatory conditions including enforcement</b>	
<p><b>F3</b> Mandatory conditions to give effect to flood work approvals (approvals) for the Plan were not applied in accordance with Section 100(1)(a) and Section 100 (1A) of the Act.</p>	<p><b>R3.1</b> DPE-Water to write mandatory conditions necessary to give effect to requirements of the Plan.</p>

Findings	Recommendations
	<p><b>R 3.2</b> DPE-Water to code conditions into the approval system so they will automatically apply to new approvals going forward, working with WaterNSW to ensure appropriate conditions are applied to works spanning multiple zones.</p> <p><b>R3.3</b> DPE-Water to issue an instruction to WaterNSW to re-issue the statements of approval to existing approval holders inclusive of mandatory conditions.</p> <p><b>R3.4</b> Upon completion of <b>R3.1, R3.2 and R3.3</b>, WaterNSW re-issue the statements of approvals to existing approval holders inclusive of mandatory conditions.</p>
<b>Criterion 4 Finding: The relevant responsible parties have implemented plan provisions relating to amendments (where these are not optional) and there is no evidence that identified amendments (which may include optional amendments) have been given due consideration</b>	
Nil	Nil

**Table 2: Audit observations and suggested actions**

Observations	Suggested actions
<p><b>O1.1</b> There is no transparency of Plan performance in relation to achieving its objectives.</p>	<p><b>SA1.1</b> DPE-Water to publicly report on progress towards Plan objectives.</p>
<p><b>O2.1</b> Spatial information sharing to support the updating of models underpinning cumulative impact assessment of flood work approval applications could be more efficient.</p>	<p><b>SA2.1</b> DPE-Water (in consultation with WaterNSW and NRAR) to make available a shared corporate database to facilitate sharing of spatial information to increase the efficiency in accessing data used for multiple purposes, but primarily to inform updated models used for cumulative impact assessments.</p>
<p><b>O2.2</b> Current procedures incorporating latest technical advice set out in the OEH Implementation Guidelines are not available for WaterNSW and NRAR Water Regulation officers to use when assessing approvals to ensure a consistent approach between assessments undertaken by these two organisations.</p>	<p><b>SA 2.2</b> DPE-Water to develop and finalise procedures and make these available for WaterNSW and NRAR Water Regulation officers to use when assessing approvals to ensure a consistent approach between assessments undertaken by these two organisations. In preparing these procedures DPE-Water should integrate the OEH Implementation Guidelines where appropriate.</p>
<p><b>O2.3</b> Specialist support is not available to assessing officers to provide flood work approval application assessment specific advice to Water Regulation Officers in relation to hydraulic or environmental aspects of this assessment.</p>	<p><b>SA2.3</b> DPE-Water to formally make available technical expertise to support NRAR and WaterNSW staff when assessing individual flood work approval applications if required.</p>
<p><b>O3.1</b> NRAR's public register cannot be searched by floodplain area.</p>	<p><b>SA3.1</b> NRAR to publicly report on compliance by floodplain management plan area to increase transparency of details of relevant offences.</p>
<p><b>O3.2</b> Work has not commenced in the Plan area to address high priority unapproved or problematic structures on the floodplain and the associated potential downstream risk to life and property and the environment or cultural assets in the event of a flood is not transparent.</p>	<p><b>SA3.2</b> DPE-Water to partner with NRAR and other relevant NSW Agencies to address high priority unapproved and problematic flood works on the Barwon-Darling Valley Floodplain and to make the extent of these structures publicly available.</p>
<p><b>O3.4</b> Flood work approval maps are of variable quality and may not be adequate to support enforcement action.</p>	<p><b>SA3.3</b> DPE-Water to establish and specify a minimum standard of acceptable documentation (flood work approval maps) to support flood work approval applications and communicate this to WaterNSW and NRAR to apply to flood work approval application requirements.</p> <p><b>SA3.4</b> Upon implementation of <b>SA3.3</b>, DPE Water to support WaterNSW and NRAR to:</p> <ul style="list-style-type: none"> <li>▪ apply these new standards to all future approval applications</li> <li>▪ update flood work approval maps associated with existing flood work approvals, to bring these documents up to an adequate and appropriate quality to support enforcement action and model updates.</li> </ul>

## 2 The Commission's role and audit approach

### 2.1 The Commission's role in auditing management plans

The Commission is an independent body, that provides evidence-based advice to Government to secure social, economic and environmental outcomes in natural resource management in NSW.

The Commission has a role under Section 44 of the Act to audit water management plans within the first five years of each plan. The audits are to assess whether the provisions outlined in the water management plans are being given effect to. This role began on 1 December 2018 under changes to the Act through the *Water Management Act Amendment Bill 2018*.

Water management plans include:

- **water sharing plans** – statutory documents that establish the rules for sharing water between the environment and other water users
- **floodplain management plans** – frameworks to coordinate flood work development to minimise future changes to flooding behaviour, and to increase awareness of risk to life and property from flooding.

More detail on the purpose of plans is provided in **Section 3.1**.

### 2.2 Audit objective

The objective of this audit was to determine, in accordance with Section 44 of the Act, whether the provisions of the Plan are being given effect to.

### 2.3 Audit standards

This audit was executed as a limited assurance engagement in accordance with the following standards:

- *Standards on Assurance Engagements (ASAE) 3000 Assurance Engagements other than Audits or Reviews of Historical Financial Information*
- *ASAE 3100 for specific Compliance Assurance Engagements*
- *Auditing Standard ASQC 1 Quality Control for Firms that Perform Audits and Reviews of Financial Reports and Other Financial Information, and Other Assurance Engagements.*

In accordance with these standards, the Commission has:

- complied with applicable ethical requirements
- planned and performed procedures to obtain independent assurance about whether the relevant responsible parties have implemented the Plan, in all material respects, as evaluated against the audit criteria.

## 2.4 Audit Criteria

Audit criteria were developed based on common parts of the Plan that the Commission considered warranted examination to ascertain whether provisions are being given effect to.

The audit criteria were:

- Criterion 1: The relevant responsible parties have implemented Plan provisions relating to vision, objectives, strategies and performance
- Criterion 2: The relevant responsible parties have implemented Plan provisions relating to granting or amending flood work approvals
- Criterion 3: The relevant responsible parties have implemented Plan provisions relating to mandatory conditions including enforcement
- Criterion 4: The relevant responsible parties have implemented Plan provisions relating to amendments (where these are not optional) and there is evidence that identified amendments (which may include optional amendments) have been given due consideration.

These criteria were selected for audit as they are:

- key to implementation of the Plan
- governed by requirements under the Act (for example, flood works approval assessments and Plan review), or
- not explicitly governed by requirements under the Act but important for determining if the Plan implementation supports, or is in accordance with, the Act requirements (for example, monitoring and performance indicator assessment information can be used to inform legislated floodplain management plan reviews).

## 2.5 Audit procedures

Audit procedures included:

- document review of either written documents or numerical data, including overarching frameworks, procedures, guidelines, manuals, policies and reports
- interviews with process owners, implementors and users including:
  - auditee (responsible organisations)– Department of Planning, Industry and Environment – Water (DPIE-Water),<sup>2</sup> the Natural Resources Access Regulator (NRAR) and WaterNSW

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<sup>2</sup>. The Commission notes that as a result of changes to the NSW Government in late 2021 and early 2022, the Department of Planning, Industry and Environment (DPIE) changed to the Department of Planning and Environment (DPE). As DPIE is the relevant name throughout the audit period and drafting of this report, the Commission has retained this abbreviation throughout this report. However, relevant recommendations and suggested actions are assigned to DPE-Water, the new organisation.

- other organisations with an historical or current role in aspects of floodplains, but without responsibility for Plan implementation – Department of Planning, Industry and Environment – Environment, Energy and Science (DPIE-EES).
- walk throughs of material activities, including key systems and processes with system implementors, owners and users
- sampling of data.

These procedures were carried out on a test basis, with sufficient evidence to determine an audit finding and corrective action or observation and suggested action.

## 2.6 Limitations

This audit was a limited assurance engagement. As a limited assurance engagement, the audit cannot be relied on to comprehensively identify all weaknesses, improvements or areas of non-compliance. Inherent limitations mean that there is an unavoidable risk that some material matters may not be detected, despite the audit being properly planned and executed in accordance with the standards outlined in **Section 2.3**.

## 2.7 Exclusions

The audit has not provided an assessment against all provisions or parts in the Plan. It has not examined or provided an opinion regarding:

- compliance or non-compliance of individuals
- whether the Plan is being implemented efficiently
- whether the Plan is achieving environmental, social, or economic outcomes
- whether the Plan is achieving stated visions, objectives or performance indicators
- whether the Plan provisions are effective, appropriate or in line with the Act
- approvals that sit under the Environmental Planning and Assessment Act 1979 that are not related to the objects, principles, core and additional Plan provisions
- compliance with any legislation unrelated to the Act.

### 3 Audit context

The Plan was primarily developed by the NSW Department of Primary Industries, Water with technical support provided by the NSW Office of Environment and Heritage (OEH); in consultation with the Barwon-Darling Technical Advisory Group and Aboriginal Technical Working Group.<sup>3</sup> It was reviewed and endorsed by the Interagency Regional Panel in March 2017 and commenced 30 June 2017.

It was the second floodplain management plan developed under the Act, representing a transition away from the Water Act 1912 and historical management arrangements and guidelines (see **Attachment A**). The Plan has been developed in combination with the floodplain harvesting regime.

Existing floodplain management arrangements that applied to the Barwon-Darling Valley Floodplain were reviewed and incorporated where relevant into the design of the management zones, rules and assessment criteria within the Plan.<sup>4</sup>

#### 3.1 Purpose of floodplain management plans under the Act

Floodplain management plans, like all water management plans, are subject to the objects, water management principles, requirements and general provisions in the Act.<sup>5</sup>

Floodplain management plans aim to coordinate development of flood works on a whole of valley basis, protect movement of water through floodplains and protect life and property. They also establish management zones, rules and assessment criteria for granting or amending approvals for flood works.<sup>6</sup>

The following specific principles related to floodplain management are stated in Section 5(6) of the Act:

- a) *floodplain management must avoid or minimise land degradation, including soil erosion, compaction, geomorphic instability, contamination, acidity, waterlogging, decline of native vegetation or, where appropriate, salinity and, where possible, land must be rehabilitated, and*
- b) *the impacts of flood works on other water users should be avoided or minimised, and*
- c) *the existing and future risk to human life and property arising from occupation of floodplains must be minimised.*

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<sup>3.</sup> DPI Water (2017). *Background document to the Floodplain Management Plan for the Barwon-Darling Valley Floodplain 2017*. Available at: [https://www.industry.nsw.gov.au/\\_data/assets/pdf\\_file/0006/146085/Background-document-FMP-Barwon-Darling-Valley-Floodplain-2017.pdf](https://www.industry.nsw.gov.au/_data/assets/pdf_file/0006/146085/Background-document-FMP-Barwon-Darling-Valley-Floodplain-2017.pdf)

<sup>4.</sup> Ibid

<sup>5.</sup> Objects, water management principles, requirements and general provisions for all water management plans are stated in Section 3, Section 5, Section 16 and Section 17 of the Act, respectively.

<sup>6.</sup> DPIE (n.d.) *Floodplain management program*. Available at: <https://www.industry.nsw.gov.au/water/plans-programs/healthy-floodplains-project/plans>

Core provisions for floodplain management plans are stated in Section 29 of the Act.

Specifically, they must deal with:

- a) *identification of the existing and natural flooding regimes in the area, in terms of the frequency, duration, nature and extent of flooding*
- b) *the identification of the ecological benefits of flooding in the area, with particular regard to wetlands and other floodplain ecosystems and groundwater recharge*
- c) *the identification of existing flood works in the area and the way they are managed, their benefits in terms of the protection they give to life and property, and their ecological impacts, including cumulative impacts*
- d) *the risk to life and property from the effects of flooding.*

Additional provisions that may be addressed by a floodplain management plan are outlined in Section 30 of the Act (Attachment B). These include matters such as restoration and rehabilitation of land and improvement of water quality during and after a flooding event. A technical manual outlines the methodology to be used for the development of new floodplain management plans under the Act. The Commission has been advised that this approach has been applied in the development of the Plan.<sup>7,8</sup>

## 3.2 Context for Plan implementation

### 3.2.1 NSW water reforms and compliance have focused on other priorities

There have been many competing demands on organisations responsible for water management plan implementation as they have addressed a large program of water reform.

There has been a focus on developing floodplain management plans under the Act under the Healthy Floodplains project. Since 2013, floodplain management plans under the Act have been prepared across five valleys in northern NSW including the Gwydir, Namoi (upper and lower), Barwon-Darling, Macquarie and Border Rivers.<sup>9</sup> The floodplain management plans developed under the Healthy Floodplains project transitions the plans from the requirements of the Water Act 1912 to the requirements of the Act. There has also been a focus on developing NSW floodplain harvesting and measurement policies to establish the process for bringing floodplain harvesting into the water licensing framework.

In relation to compliance and enforcement, the *Natural Resources Access Regulator Act 2017* specifically provides that NRAR's priorities are to be set independently.

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<sup>7.</sup> Department of Industry (2014) *Rural floodplain management plans: Technical manual for plans developed under the Water Management Act 2000*. Available at:

[https://www.industry.nsw.gov.au/\\_data/assets/pdf\\_file/0016/143152/rural-fmp-draft-technical-manual.pdf](https://www.industry.nsw.gov.au/_data/assets/pdf_file/0016/143152/rural-fmp-draft-technical-manual.pdf)

<sup>8.</sup> DPI Water (2017). *Background document to the Floodplain Management Plan for the Barwon-Darling Valley Floodplain 2017*. Available at:

[https://www.industry.nsw.gov.au/\\_data/assets/pdf\\_file/0006/146085/Background-document-FMP-Barwon-Darling-Valley-Floodplain-2017.pdf](https://www.industry.nsw.gov.au/_data/assets/pdf_file/0006/146085/Background-document-FMP-Barwon-Darling-Valley-Floodplain-2017.pdf).

<sup>9.</sup> Ibid.

These regulatory priorities are reviewed on a regular basis and published.<sup>10,11</sup> Interviews with NRAR reinforced that the compliance issues relating to water extraction in the northern Murray-Darling Basin has been an enduring regulatory priority in accordance with NRAR's risk assessments.

NRAR undertakes proactive investigations based on intelligence as well as monitors and inspects reactively in response to reports of alleged breaches of water laws, incidents or other intelligence received from members of the public and other regulators such as councils. No documented risk assessment was provided to the Commission as part of this audit. The Commission is not seeking to comment on the appropriateness of decisions regarding NRAR's compliance priorities.

Resources have been prioritised to deliver the above work programs, which has been prioritised over implementation of the Plan.

### **3.2.2 Roles and responsibilities have changed over time**

There has been a complex history of changes in government agencies in water management and regulation, and their roles and governance.

An investigation by the NSW Ombudsman into water compliance and enforcement reported that the high level of restructuring and moving of water administration functions and regulation between different government agencies has resulted in significant impacts on staff, loss of expertise and corporate knowledge, and disruptions to systems, strategy and continuity of service delivery.<sup>12</sup>

Roles and responsibilities changed several times during Plan development and following the gazettal of floodplain management plans. The Plan refers to agencies that no longer exist. Public information is available on roles for floodplain management plan administration in a range of documents.

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<sup>10</sup>. NRAR (2019) *Natural Resource Access Regulator Regulatory Priorities 2019 – 2021*.

<sup>11</sup>. NRAR (2021). *Regulatory priorities 2021-22*. Available at: <https://www.nrar.nsw.gov.au/about-us/our-regulatory-priorities>

<sup>12</sup>. NSW Ombudsman (2017) *Investigation into water compliance and enforcement 2007-17*. Available at: [https://www.ombo.nsw.gov.au/data/assets/pdf\\_file/0012/50133/Investigation-into-water-compliance-and-enforcement-2007-17.pdf](https://www.ombo.nsw.gov.au/data/assets/pdf_file/0012/50133/Investigation-into-water-compliance-and-enforcement-2007-17.pdf)

However, some of these are outdated, while others do not provide the detail required to determine the agency responsible for Plan implementation.<sup>13,14,15</sup>

For this audit, DPIE-Water is assumed to be responsible, except where other agencies are documented as being responsible (for example through the WaterNSW Operating Licence and the Natural Resources Access Regulator Act 2017). In June 2021, DPIE-Water, NRAR and WaterNSW signed an agreement which clarifies roles and responsibilities including those relating to floodplain management plans and flood work approvals.<sup>16</sup>

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<sup>13.</sup> Department of Primary Industries - NSW Office of Water (2014) *Floodplain management under the Water Management Act 2000: A guide to the changes*. Available at: [https://www.industry.nsw.gov.au/\\_data/assets/pdf\\_file/0017/143153/floodplain-management-under-the-WMA-2000-a-guide-to-changes.pdf](https://www.industry.nsw.gov.au/_data/assets/pdf_file/0017/143153/floodplain-management-under-the-WMA-2000-a-guide-to-changes.pdf)

<sup>14.</sup> NRAR (2019) *Floodplain management, Our compliance approach to flood works*. Available at: [https://www.nrar.nsw.gov.au/\\_data/assets/pdf\\_file/0011/488774/Floodplain-management.pdf](https://www.nrar.nsw.gov.au/_data/assets/pdf_file/0011/488774/Floodplain-management.pdf)

<sup>15.</sup> Water NSW (2017) *WaterNSW Operating Licence 2017-2022*. Available at: <https://www.watarnsw.com.au/about/legislation/operating-licence>

<sup>16.</sup> Department of Planning, Industry & Environment (2021) *DPIE Roles & Responsibilities Agreement (DPIE-Water, NRAR and WaterNSW)*, pp.25-85. Available at: <https://www.industry.nsw.gov.au/water/what-we-do/roles-responsibilities-agreement>

## 4 Plan area

The Barwon-Darling Valley Floodplain covers approximately one million hectares. The upstream limit of the floodplain is at Mungindi on the Barwon River, at the New South Wales (NSW), Queensland border and the downstream limit is approximately 20 km downstream of Louth on the Darling River (**Figures 1-3**). The northern boundary and part of the southern boundary of the floodplain are confined to higher ground and include a limited extent of contributing influence streams. The remaining parts of the southern boundary are aligned to boundaries of other rural floodplain management plans. The Barwon-Darling valley floodplain makes up approximately two percent of the Barwon-Darling catchment and one percent of the Murray Darling Basin (MDB).

The Barwon-Darling valley floodplain is characterised by low relief and elevation. For most of the time, 'low' flow conditions dominate the Darling River with major floods periodically interrupting these dry periods. Flows decrease downstream of Bourke due to the lack of contributions from tributaries and increased rates of evaporation.<sup>17</sup>

Major tributaries to the Barwon-Darling Valley Floodplain include the Macintyre, Gwydir, Namoi, Castlereagh, and Macquarie rivers. These systems enter the Barwon-Darling River upstream of the township of Bourke. Downstream of Bourke and further west, the Paroo and Warrego rivers contribute intermittent flows to the Darling River and can provide significant volumes during flood events, raising the duration of high flow events in the Barwon-Darling River.<sup>18</sup>

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<sup>17.</sup> Thoms, M., Sheldon, F., and Crabb, P. (2004). *A Hydrological Perspective on the Darling River*. In R. Breckwoldt, R. Boden and J. Andrew (eds), *The Darling. Murray-Darling Basin Commission*. Canberra, ACT

<sup>18.</sup> Cooney, T. (1994). *Barwon - Darling River Riparian Health Report: Wetland Inundation*. NSW Department of Water Resources, Sydney. pg 87

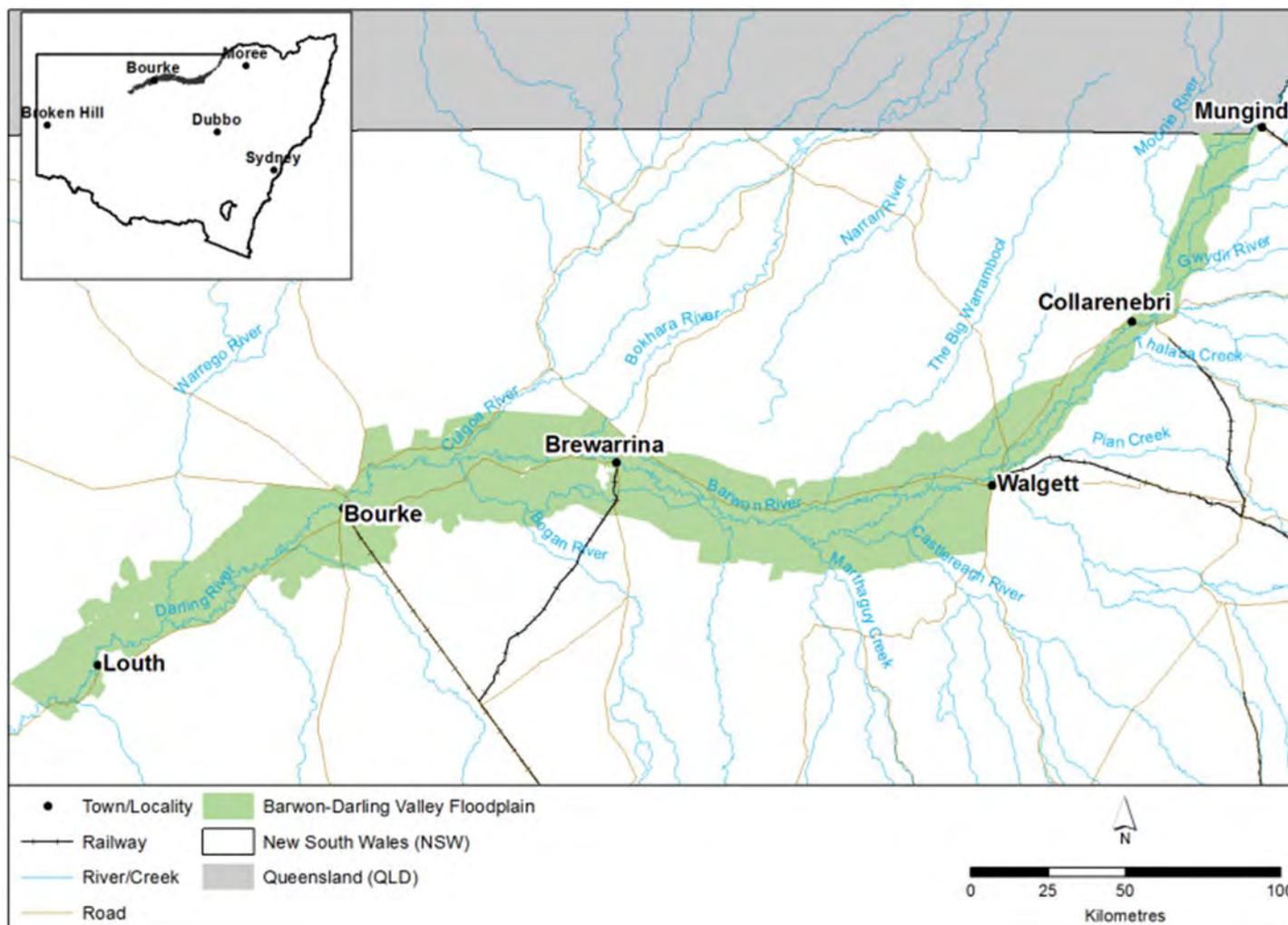


Figure 1: Key features of the Barwon-Darling Valley Floodplain<sup>19</sup>

<sup>19</sup>. DPI Water (2017). *Background document to the Floodplain Management Plan for the Barwon-Darling Valley Floodplain 2017*. Available at: [https://www.industry.nsw.gov.au/\\_data/assets/pdf\\_file/0006/146085/Background-document-FMP-Barwon-Darling-Valley-Floodplain-2017.pdf](https://www.industry.nsw.gov.au/_data/assets/pdf_file/0006/146085/Background-document-FMP-Barwon-Darling-Valley-Floodplain-2017.pdf)

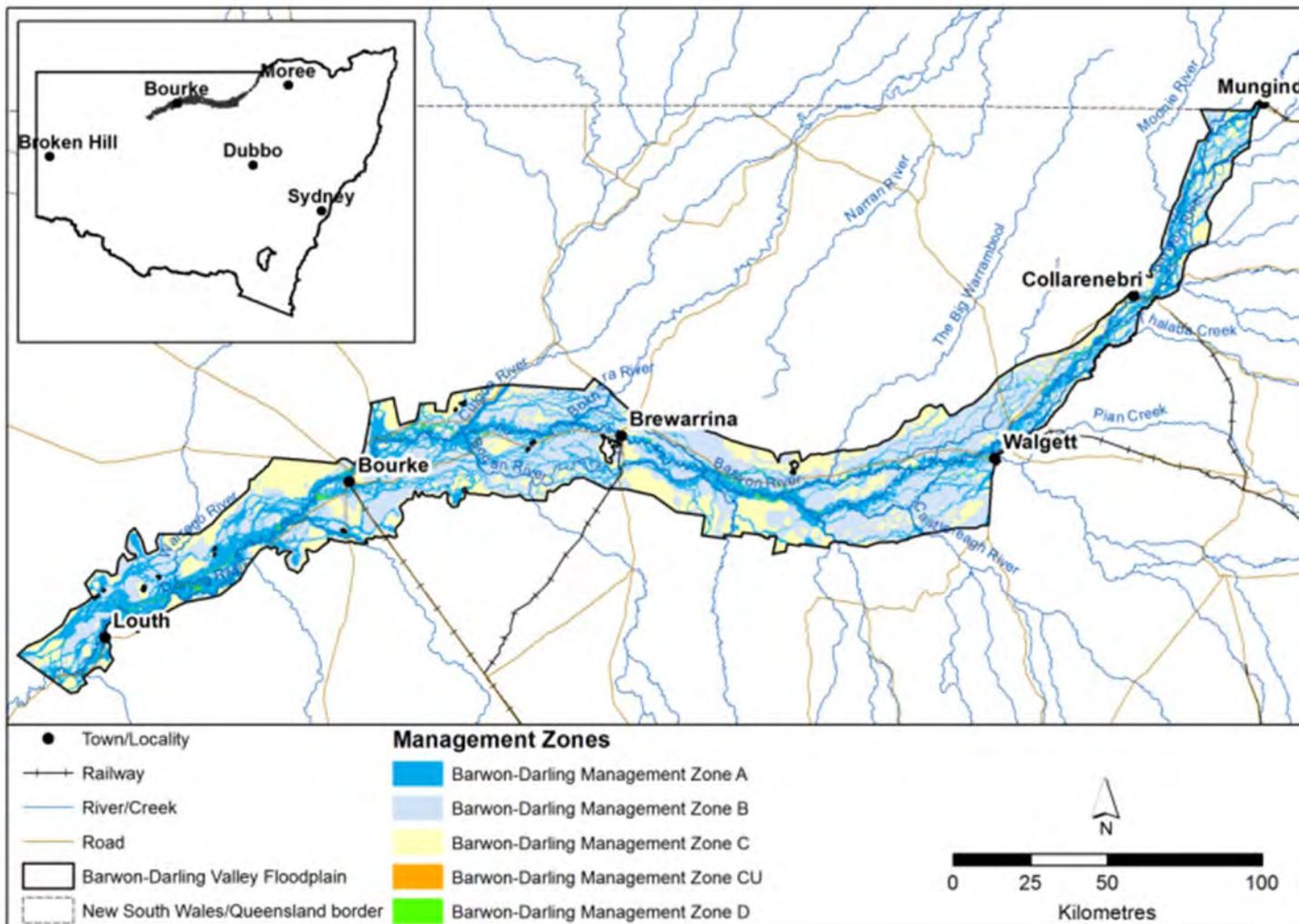


Figure 2: Management Zones in the Barwon-Darling Valley Floodplain<sup>20</sup>

<sup>20</sup>. DPI Water (2017). *Background document to the Floodplain Management Plan for the Barwon-Darling Valley Floodplain 2017*. Available at: [https://www.industry.nsw.gov.au/\\_data/assets/pdf\\_file/0006/146085/Background-document-FMP-Barwon-Darling-Valley-Floodplain-2017.pdf](https://www.industry.nsw.gov.au/_data/assets/pdf_file/0006/146085/Background-document-FMP-Barwon-Darling-Valley-Floodplain-2017.pdf)

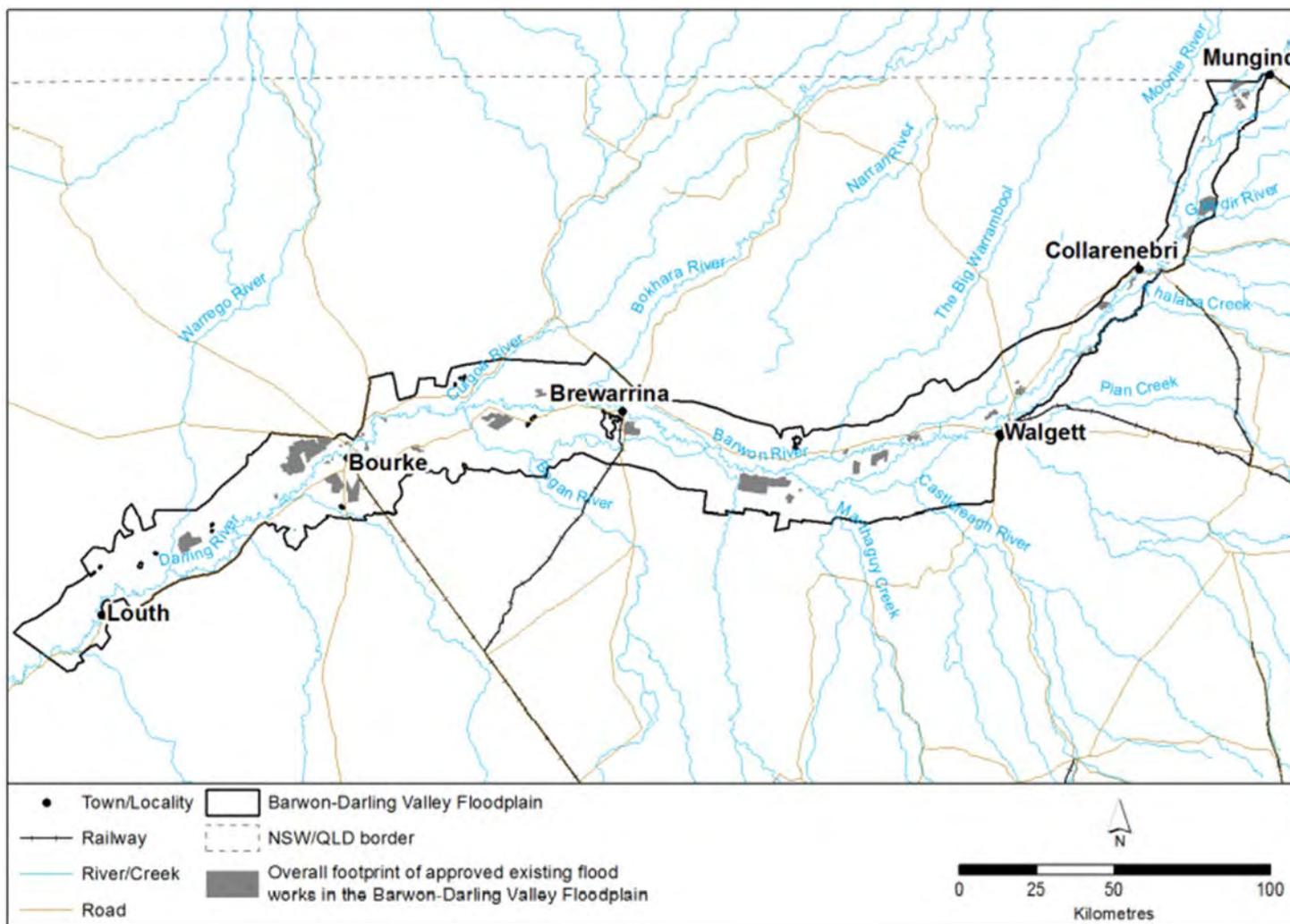


Figure 3: Overall footprint of constructed flood works<sup>21</sup>

21. DPI Water (2017). *Background document to the Floodplain Management Plan for the Barwon-Darling Valley Floodplain 2017*. Available at: [https://www.industry.nsw.gov.au/\\_data/assets/pdf\\_file/0006/146085/Background-document-FMP-Barwon-Darling-Valley-Floodplain-2017.pdf](https://www.industry.nsw.gov.au/_data/assets/pdf_file/0006/146085/Background-document-FMP-Barwon-Darling-Valley-Floodplain-2017.pdf)

Characteristically, the floodplain has grey cracking clay soils, drainage lines of varying definition, riverine woodlands fringing the main watercourses and many wetlands including floodplain billabongs, anabranches and lagoons (**Figure 4**).<sup>22</sup> The floodplain supports a broad range of fauna.

The ecological significance of the Barwon-Darling Valley Floodplain includes:

- wetlands along the river and several deflation basin wetlands (geological depressions formed by erosion when soil is shifted by the wind)
- major waterbird breeding habitat sites at lakes and other wetlands along the floodplain which are watered at a variety of flows
- the Barwon-Darling River channel and associated riparian habitats which support a wide variety of ecosystems and a number of fish species, including bony herring and golden perch
- a diverse range of flora species including river red gum, black box, river cooba, coolibah and lignum
- a range of fauna including species listed under the Environment Protection and *Biodiversity Conservation Act 1999* such as Murray cod, Latham's snipe, rainbow bee-eater and superb parrot, and the *NSW Threatened Species Act 1995* (TSC Act) such as the blue-billed duck, the brolga and the grey falcon<sup>23</sup>
- part of the Lowland Darling River Aquatic Ecological Community<sup>24</sup> as the Fisheries Management Act 1994 declares the main Barwon-Darling River from Mungindi to its junction with the Murray as endangered.

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<sup>22.</sup> Brennan, S., O'Brien, M., Thoms, M., and Maher, S. (2002). *The physical character and flow criteria for wetlands along the Barwon - Darling River*. Cooperative Research Centre for Freshwater Ecology Technical Report to the Department of Land and Water Conservation

<sup>23.</sup> Commonwealth Environmental Water Office (CEWO) (2013). *Barwon Darling Catchment Planning for 2013-14*, accessed 20 August 2013. Available at: <http://www.environment.gov.au/ewater/northern/barwon-darling>

<sup>24.</sup> NSW Department of Primary Industries (NSW DPI) (2011). *Final Recommendations of the Fisheries Scientific Committee – Aquatic Ecological Community in the natural drainage system of the lowland catchment of the Darling River*. Available at: Aquatic ecological community in the natural drainage system of the lowland catchment of the Darling River.

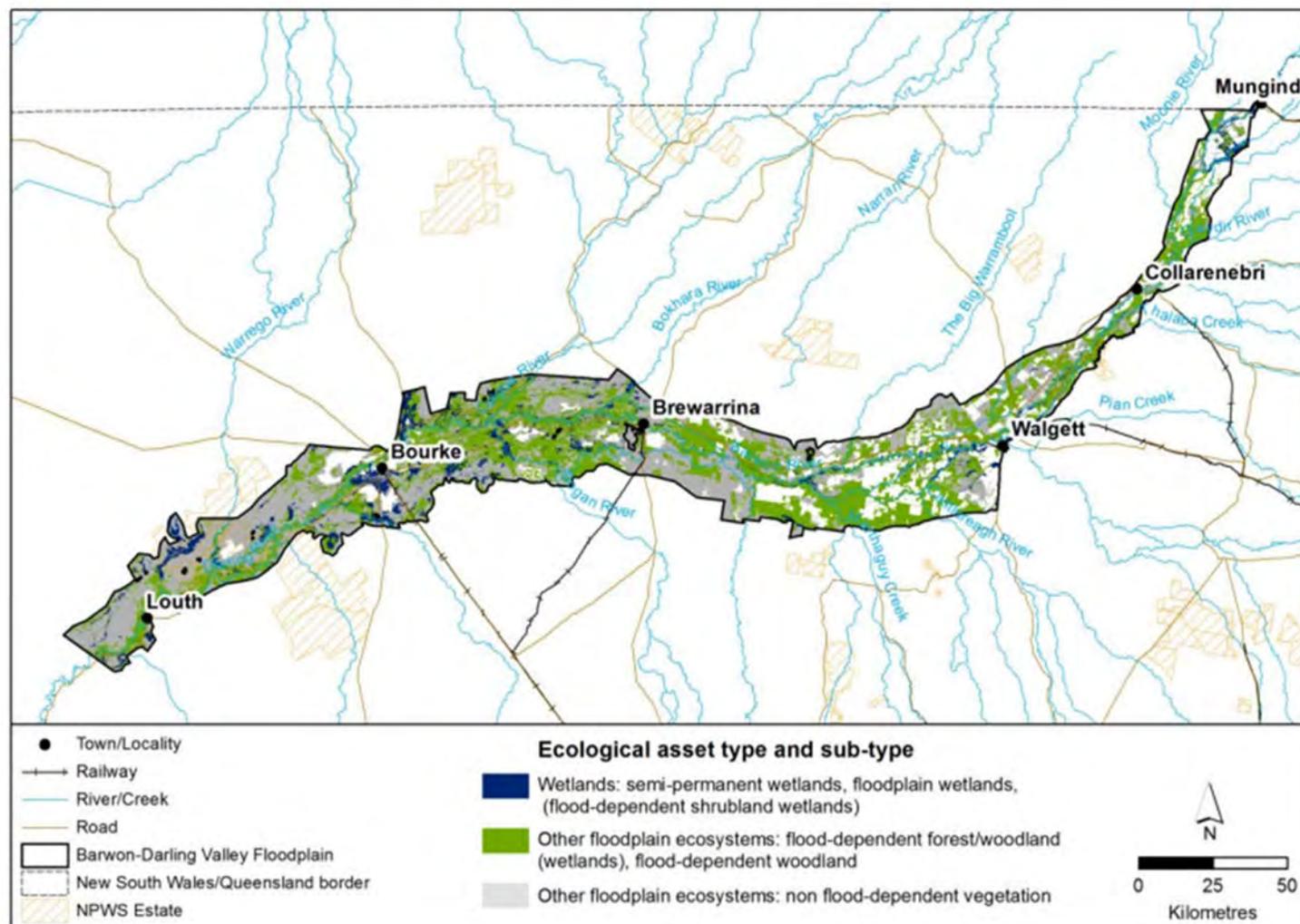


Figure 4: Ecological Assets in the Barwon-Darling Floodplain<sup>25</sup>

<sup>25</sup> DPI Water (2017). *Background document to the Floodplain Management Plan for the Barwon-Darling Valley Floodplain 2017*. Available at: [https://www.industry.nsw.gov.au/\\_data/assets/pdf\\_file/0006/146085/Background-document-FMP-Barwon-Darling-Valley-Floodplain-2017.pdf](https://www.industry.nsw.gov.au/_data/assets/pdf_file/0006/146085/Background-document-FMP-Barwon-Darling-Valley-Floodplain-2017.pdf)

Many of the areas of ecological significance in the Barwon-Darling Valley Floodplain are linked with areas that are important to Aboriginal people. The floodplain has a rich Aboriginal heritage and contains many areas of Aboriginal importance, such as ceremonial sites, Dreamtime places and scarred or carved trees, some of which are sustained by periodic flooding. In recognition and respect for the traditional owners of the land the names of each Nation covered by the Plan is documented for each floodplain reach **(Figure 5)**.

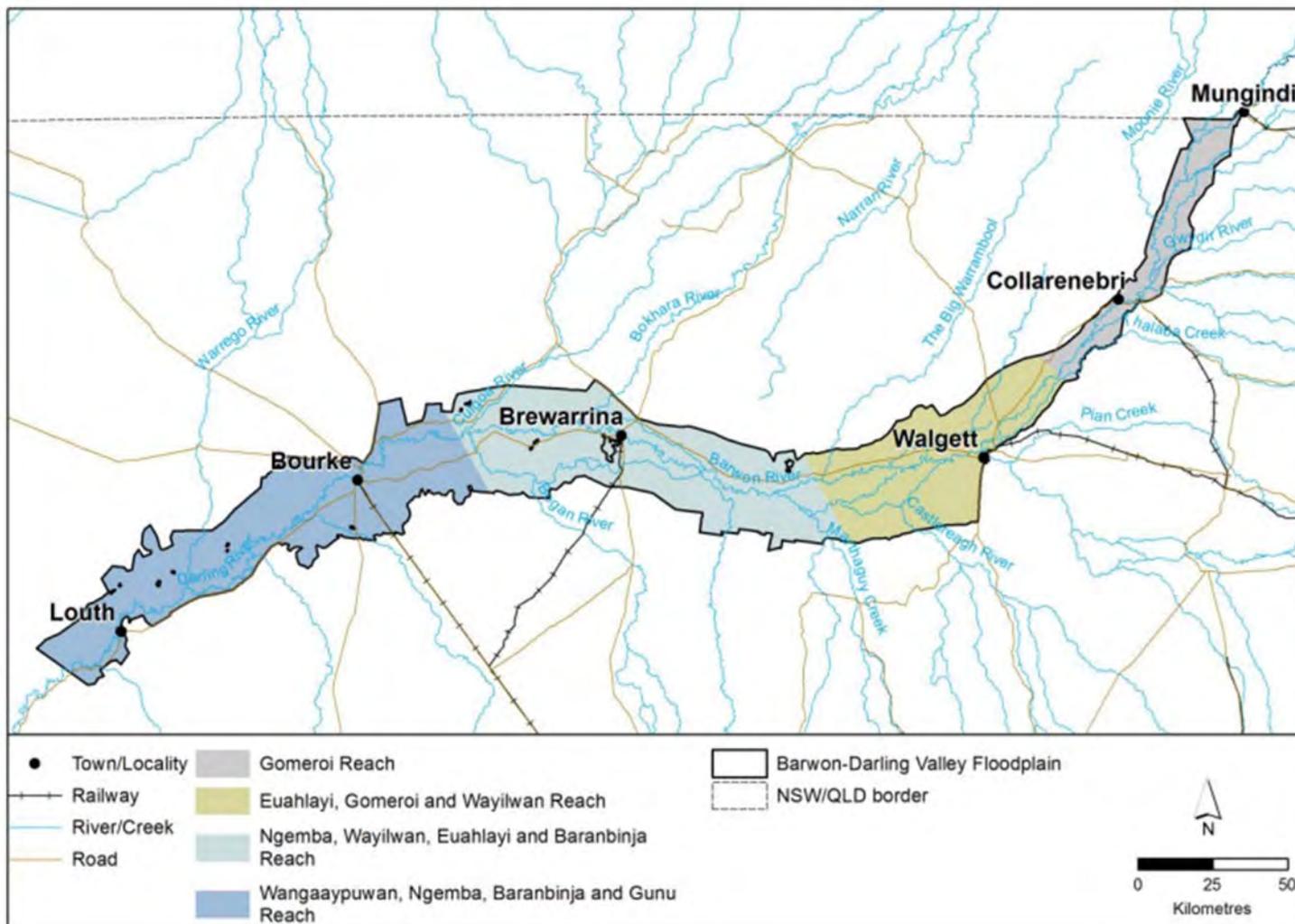


Figure 5: The four Reaches of the Barwon-Darling Valley Floodplain<sup>26</sup>

<sup>26</sup> DPI Water (2017). *Background document to the Floodplain Management Plan for the Barwon-Darling Valley Floodplain 2017*. Available at: [https://www.industry.nsw.gov.au/\\_data/assets/pdf\\_file/0006/146085/Background-document-FMP-Barwon-Darling-Valley-Floodplain-2017.pdf](https://www.industry.nsw.gov.au/_data/assets/pdf_file/0006/146085/Background-document-FMP-Barwon-Darling-Valley-Floodplain-2017.pdf).

## 5 Criterion 1 – Vision, objectives, strategies and performance indicators

### 5.1 Criterion overview

Part 2 of the Plan is made in accordance with Section 35(1) of the Act. This section requires floodplain management plans to include a vision statement, objectives consistent with the vision statement, strategies for reaching objectives, and performance indicators to measure the success of those strategies. Clause 12 within Part 2 of the Plan is about performance indicators. This Clause sets out the indicators that are to be used to measure the success of the strategies to reach Plan objectives. Specifically:

- Clause 12(a) - the extent to which flood works are impacting on the flood connectivity of ecological and cultural assets and groundwater recharge
- Clause 12(b) - the change to flood connectivity to ecological and cultural assets caused by flood works constructed after commencement of the Plan
- Clause 12(c) - the extent to which flood works are modifying the hydraulic behaviour of floodwaters
- Clause 12(d) - the change to the hydraulic behaviour of floodwater caused by flood works constructed after commencement of the Plan
- Clause 12(e) - the extent to which the hydraulic behaviour of monitored floods is consistent with the floodway network.

These clauses require the performance indicators set out above to be largely assessed by:

- examining the impact that flood works have on the flood connectivity of ecological and cultural assets<sup>27</sup>
- their effect on groundwater recharge, including whether they are responsible for any changes in the hydraulic behaviour of flood waters.

The identified performance indicators are not specifically aligned to the Objectives of the Plan; and the Plan does not identify how these matters are to be assessed and monitored. The Commission expects to see at a minimum a process detailing what data will be collected; and how it will be collected and used for the purpose of undertaking these assessments.

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<sup>27</sup>. This refers to flood works existing and constructed after the commencement of the Plan.

## 5.2 Current roles, systems and processes

DPIE-Water is the lead agency responsible for giving effect to performance provisions, including during the audit period.<sup>28</sup> This includes using performance indicators to measure the success of the strategies in meeting Plan objectives.

Under the Roles and Responsibilities Agreement between DPIE-Water, WaterNSW and NRAR, signed on 21st June 2021, DPIE-Water's role in relation to water monitoring and modelling includes:<sup>29</sup>

- designing the program of monitoring to answer the operational questions posed by the Government direction or the longer term agreed strategic direction
- reporting on the outcomes either through model runs, scientific interpretation or evaluation programs to inform plans, policy and strategy in an effort to manage the water resources for the State
- developing a State-wide water quality management framework for all of the NSW Government
- setting monitoring requirements and quality standards for the evaluation and reporting of water sharing plans and water resource plan outcomes and for the evaluation of flow events.

DPIE-Water has now finalised the Monitoring Evaluation and Reporting (MER) framework for the northern Murray Darling Basin; and has scoped the floodplain management plan monitoring and evaluation requirements for the Plan. In addition, it has also engaged an ecological hydrologist, whose role will involve managing the implementation of the Healthy Floodplain Project's monitoring program.

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<sup>28</sup>. DPIE-Water is assumed to be responsible, except where other agencies are identified to be responsible (through the *WaterNSW Operating Licence 2017-2022* and the *Natural Resources Access Regulator Act 2017*, and the *Deed of Business Transfer 2016 Between Department of Industry, Skills and Regional Development and WaterNSW*).

<sup>29</sup>. Department of Planning, Industry & Environment (2021) *DPIE Roles & Responsibilities Agreement (DPIE-Water, NRAR and WaterNSW)*, pp.25-85. Available at: <https://www.industry.nsw.gov.au/water/what-we-do/roles-responsibilities-agreement>

### **5.3 Performance monitoring provisions have not been given effect to**

While this Plan includes provisions to satisfy this requirement of the Act, DPIE-Water has not implemented the identified monitoring processes during the audit period.

DPIE-Water indicated that performance indicators have not been used to measure the success of strategies to reach the objectives of the Plan, as required. Specifically, DPIE-Water staff indicated that no monitoring had been undertaken other than remote sensing and gauged flow data that is available for flood events.

No analysis has been done to date however the analysis will be done in future in accordance with the *Environmental Healthy Floodplain Project's MER plan*.

The monitoring of performance indicators for the Plan is complicated by the fact that these performance indicators have not been specifically aligned to the Objectives of that Plan; and are not specific, measurable, achievable, relevant or time-bound (SMART). Further, no metrics or targets have been identified within the Plan, to define the intended outcomes and monitoring processes for the nominated performance indicators.

To some extent, this has been partially addressed by *the Healthy Floodplain Project Monitoring MER plan* which documents the linkages between the monitoring processes and the floodplain management plan Objectives in general by identifying:

- key evaluation questions
- the existing monitoring program
- an evaluation approach.

However, it does not identify which organisation is responsible for carrying out monitoring programs, it does not document specific quantifiable targets. These are expressed in more subjective terms, based on a pre and post Plan comparison.

### **5.4 Potential impacts**

Performance indicators are key to measuring the success of strategies in meeting Plan objectives. Potential impacts of not using performance indicators include:

- no ability to determine and demonstrate if Plan implementation aligns with the objects and principles of the Act
- no ability to benchmark or identify good practices that could be adopted in other floodplain areas
- no ability to transparently report on the achievement of Plan outcomes

- insufficient information to make evidence-based decisions, apply adaptive management, or continually improve implementation to proactively address risks to life, property or environmental or cultural assets
- no ability to measure the consequence of the partial or non-implementation of Plan provisions
- limited evidence base to inform the five- year review of the Plan under Section 43A of the Act.

## 5.5 DPIE-Water is making efforts to improve MER

DPIE-Water has indicated that some of the necessary resourcing required for this task has now been secured; and ongoing work being undertaken to further develop the *Healthy Floodplain Project MER plan* and move this into the business-as-usual model.

As part of this development, the scoping work required to design and develop the monitoring and evaluation processes; and to identify the resources required for implementation, has been completed for the Plan.

To further develop the MER program, DPIE-Water is currently seeking funding support from the Commonwealth, with a decision on this request due to be made in February- March 2022.

DPIE-Water advised that the approach taken in developing this program is a tiered approach, which means that it intends to be low cost at commencement, based on existing resources, but it can be scaled it up as additional resources become available.

## 5.6 Recommendations and suggested actions

The Commission makes one recommendation and raises one suggested action.

<b>R1</b>	<p>DPE Water to:</p> <ul style="list-style-type: none"><li>▪ lead the monitoring and evaluation of performance indicators to measure the success of the strategies to reach the objectives of the Plan</li><li>▪ use generated data to support decision making for plan implementation.</li></ul>
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Although not a requirement of the Plan or the Act, public reporting is becoming increasingly important in relation to water sharing. It was a key theme in reports such as Ken Matthews' *Independent investigation into NSW water management and compliance*<sup>30</sup> and in the NSW Government's *Water Reform Action Plan*.<sup>31</sup>

Data accessibility to support transparency is consistent with the NSW Government's *Open Data Policy*<sup>32</sup> and its importance is highlighted in DPIE-Water's statement that

*'we provide transparent stewardship of water resources, and deliver services and reforms which support sustainable and healthy environments, economies and societies.'*<sup>33</sup>

The Commission suggests that DPIE-Water publicly report on progress towards objectives of the Plan so that all stakeholders (including community stakeholders) are informed on the extent to which Plan objectives are being met.

<b>SA1.1</b>	DPIE-Water to publicly report on progress towards Plan objectives.
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<sup>30.</sup> Ken Matthews (2017) *Independent investigation into NSW water management and compliance*. Available at: [https://www.industry.nsw.gov.au/\\_data/assets/pdf\\_file/0016/120193/Matthews-interim-report-nsw-water.pdf](https://www.industry.nsw.gov.au/_data/assets/pdf_file/0016/120193/Matthews-interim-report-nsw-water.pdf).

<sup>31.</sup> NSW Government (2017) *Securing our water NSW Government water reform action plan*. Available at: [https://www.industry.nsw.gov.au/\\_data/assets/pdf\\_file/0015/312144/nsw-government-water-reform-action-plan.pdf](https://www.industry.nsw.gov.au/_data/assets/pdf_file/0015/312144/nsw-government-water-reform-action-plan.pdf).

<sup>32.</sup> NSW Department of Finance, Service and Innovation (2016) *NSW Government Open Data Policy*. Available at: <https://data.nsw.gov.au/nsw-government-open-data-policy>.

<sup>33.</sup> Ibid.

## 6 Criterion 2 – Rules for flood work approvals

### 6.1 Criterion overview

Provisions in the Act establish rules for flood work approvals including:

- Section 92 - applications for approvals
- Section 93 - objections to applications
- Section 95 - determinations of applications
- Section 96 - matters for consideration in relation to granting approvals
- Section 97 - grounds of refusal of certain applications
- Section 98 – notice of decision
- Section 100 - imposing mandatory and discretionary conditions on approvals.
- Section 102 - notification of any conditions imposed, amended, revoked or suspended
- Section 20 of Schedule 10 -notification of the terms of any replacement access licence or approval.

The relevant clauses of the Regulation include:

- Clause 25(1)(a) - requires the application to be in an approved form
- Clause 25(1)(b) - requires an application to include or to be accompanied by an assessment of the likely impact of the water use, water or activity concerned (if required by the Minister)
- Clause 26(7) - requires the application for approval to be published
- Clause 29 - specifies the circumstances in which an existing approval may be amended
- Clause 30 - specifies the circumstances in which the Minister may refuse to accept the surrender of an approval.

### 6.2 Current roles, systems and processes

WaterNSW, NRAR and DPIE-Water administer the Act, the Regulation and individual rules for the Plan related to the granting or amending of flood work approvals.

Roles and responsibilities for giving effect to Plan provisions have been documented broadly for the public on the WaterNSW and NRAR websites.<sup>34,35</sup> The roles and responsibilities of the respective organisations has been further clarified in the new *Roles & Responsibilities Agreement*,<sup>36</sup> between DPIE-Water, WaterNSW and NRAR, signed on 21<sup>st</sup> June 2021.

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<sup>34.</sup> NSW Government (2018) *Roles of water management agencies in NSW*. Available at: [https://www.watnsw.com.au/data/assets/pdf\\_file/0020/133940/Water-Roles-and-Responsibilities.pdf](https://www.watnsw.com.au/data/assets/pdf_file/0020/133940/Water-Roles-and-Responsibilities.pdf).

<sup>35.</sup> NRAR (n.d.) *Licensing and approvals*. Available at: <https://www.industry.nsw.gov.au/natural-resources-access-regulator/licensing-and-approvals>.

<sup>36.</sup> Department of Planning, Industry & Environment (2021) *DPIE Roles & Responsibilities Agreement (DPIE-Water, NRAR and WaterNSW)* Available at: <https://www.industry.nsw.gov.au/water/what-we-do/roles-responsibilities-agreement>

In addition, the *WaterNSW Operating Licence 2017-2022* and other internal documents outline various functions, including the Deed of Business Transfer between WaterNSW and the former DPIE-Water and delegations. Audit interviews indicated that roles in relation to approvals are well understood between the two organisations. Any gaps in documentation or understanding are considered immaterial.

A summary of agency roles in flood work approvals is as follows:

- **WaterNSW** is responsible for assessing and granting flood work approvals to landholders, industries and developments that are not State significant developments or State significant infrastructure.<sup>37</sup> WaterNSW is also responsible for notification of all holders of former entitlements under the *Water Act 1912* upon the commencement of a new floodplain management plan under the Act.
- **NRAR** is responsible (since 2018) for assessing and granting flood work approvals to NSW Government agencies, local councils and the Australian Government; state-owned corporations; major water utilities, water supply authorities, and local water utilities; licensed network operators under the *Water Industry Competition Act 2006*; mining companies; irrigation corporations; floodplain harvesting; major developments (State significant developments and State significant infrastructure); schools and hospitals. During the audit period, NRAR assessed controlled works applications made under the *Water Act 1912*, existing at Plan commencement. NRAR also has a role to monitor and audit compliance with approvals, specifically detecting instances of non-compliance in a timely manner.<sup>38</sup> NRAR is also tasked with investigating and enforcing NSW water legislation including other water approval types and water access licences.

The main systems used to grant flood work approvals are the:

- **Water Licensing System (WLS) - Approvals Transaction Module** – this is an automated workflow and storage system. It captures all applications, including flood work approvals and supports the assessment officers to undertake the assessments of the application in line with the requirements. Part 8 approvals under the 1912 Act were processed using the Licencing Administration System, the predecessor to WLS.

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<sup>37.</sup> State of NSW (n.d.) *WaterNSW Operating Licence 2017-2022*, pp 50-51. Available at: <https://www.waternsw.com.au/about/legislation/operating-licence>

<sup>38.</sup> NRAR (n.d.) *Which agency do I lodge my application with?* Available at: <https://www.dpie.nsw.gov.au/nrar/how-to-apply/water-licences/which-agency>

- **NSW Water Register** – this is set up under Section 113 of the Act, which requires the register to be available for public inspection and record every application and every approval granted, extended, amended, transferred, surrendered, suspended or cancelled. The register can be found at the WaterNSW website.<sup>39</sup>

The main procedural and process documents used by WaterNSW, NRAR and DPIE-Water to support the granting of flood work approvals used throughout the audit period are:

- **The Licensing Procedure Manual** - which sets out requirements for operationalising the Act and Regulation requirements for the flood works approval process.
- **Assessment summary report** – this provides a framework for officers to document their assessment of an application and their decision. It is designed to ensure the relevant administrative and environmental checks stated in the Act and Regulation are undertaken by water regulation officers and includes space to capture the relevant signatures.
- **Approval assessment checklist** – this is a checklist for use by water regulation officers to ensure they have undertaken the required processes (administrative and environmental checks and impact assessment of the activity) under the Licensing Procedure Manual, the Act and the Regulation.

WaterNSW and DPIE-Water advised that they intend to update their documentation to provide more specific guidance for the assessment of flood work approvals. WaterNSW has progressed a draft suite of documentation to support the assessment of flood work approvals, however, these have yet to be formally approved and adopted. DPIE-Water are in the process of updating and amending the relevant chapters of the Licensing Procedure Manual, relating to the assessment and amendment of flood work applications.

The Commission found that:

- the relevant organisations have systems, processes and procedures in place that generally align with legislative requirements, which are available to support the assessment and granting of flood work approvals
- flood work approvals were generally assessed and processed in accordance with legislative requirements
- progress has been made towards improving associated approval procedures for floodplain management plans.

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<sup>39</sup>. WaterNSW (n.d) *NSW Water Register*. Available at: <https://waterregister.watarnsw.com.au/water-register-frame>

### **6.3 Rules for flood work approvals were partially implemented**

To assess if Plan provisions were given effect in relation to approvals applied for and granted in the audit period, the Commission reviewed:

- WaterNSW's four most recent flood work approvals processed under the Plan.
- NRAR's five Statements of Approval and grant letters for controlled work approval applications made under the Water Act 1912 that were granted as flood work approvals under the Act in the audit period. NRAR did not assess any new applications during the audit period for the Plan. The Commission notes that NRAR did not assess or grant any approvals associated with new applications for flood works made since Plan commencement.

This analysis found that approval applications were generally assessed and processed in accordance with legislative requirements set out above. However, the Commission noted the following gaps set out below.

#### **Mandatory conditions were not included in the statements of approval**

In all but one instance, no mandatory conditions were included in the statements of approval for flood work approval holders. This is discussed further in **Chapter 7** (Criteria 3- Mandatory Conditions).

#### **Cumulative impact assessments were not undertaken as required**

Cumulative impact assessment required under clauses 30(2), 40(5), 42(6), 42(7), 43(6) and 46(5) of the Plan has not occurred. This is largely because the floodplain model for the Plan has not been updated to reflect new works as originally intended at Plan commencement. This limits the ability to undertake cumulative impact assessment as floodplain development continues. The Commission has not assessed whether a model update was triggered in the Barwon-Darling valley floodplain or the materiality of the update not occurring. The Commission notes that the original documented intention of DPIE-Water was to perform annual updates to the model at a minimum, and more frequently if triggered by a pre-defined event.

As of October 2020, formal arrangements have been put in place between WaterNSW and DPIE-Water to facilitate two-way data sharing, to enable a transfer of necessary information to perform model updates and to inform approval assessments.

DPIE-Water have further indicated that the process of compiling the information necessary to update the spatial models requires a more efficient data sharing mechanism to be in place to easily access data on the spatial layers from WaterNSW and NRAR. This could take the form of a shared corporate database to facilitate the sharing of spatial information.

### **Technical specialist advice is not available to support individual flood work applications**

There is currently no formal process for WaterNSW and NRAR water regulation officers to refer flood work approval application assessments to DPIE-Water for specialist assistance with hydrologic or environmental impact assessments. Previously, water regulation officers used to refer controlled work applications under the *Water Act 1912* to OEH (predecessor to DPIE-EES). Following the transition of flood work management plan responsibilities moving from OEH to DPIE-Water, this no longer occurs. DPIE-Water should consider making technical experts available, where required, to assist water regulation officers in WaterNSW and NRAR. This would provide support to the assessment process of hydraulic, environmental, cultural and heritage impacts of flood work applications under the Act. This may require a formal arrangement to be put in place between DPIE-Water and WaterNSW and NRAR.

### **Approval holders were not notified of mandatory conditions to give effect to Section 100(1A) of the Act**

It appears that no bulk notification letter was sent to controlled works approval holders; either at the time when the Act came into force, or when the Plan commenced. As there was no requirement technically to notify approval holders at Plan commencement, because there was no change to mandatory conditions, this is not technically a non-compliance with sections 102(4) and 102(5).

However, if controlled works approval holders have not been notified that their work has been converted to a flood work, this does constitute a non-compliance against Schedule 10 clauses 20(1) and (2A) of the Act, which requires:

*The Minister must cause written notice of the terms of any replacement access licence or approval arising by operation of this Schedule to be given to the holder of each such access licence or approval.*

As approval holders were not notified of Plan commencement of changes to their works associated with the transition from the *Water Act 1912* to the Act, they may be unaware of their conversion of controlled works to a flood work.

The Commission has assessed this ultimately as not giving effect to Section 100((1A) of the Act as the key aspect of this relates to mandatory conditions for the approval holder. This is discussed further in **Chapter 7** (Criteria 3- Mandatory Conditions) of this report.

### **Water Licencing System records for the Plan area are not complete**

Four current flood work approvals relating to structures in the Barwon-Darling Valley Floodplain are recorded in the Water Register, but these have not been allocated against the Plan or any plan. There is a discrepancy between the number of approvals in the Plan at commencement and the number of approvals allocated to the Plan in the Water Register.

This indicates there may be other approvals needing to be allocated to the Plan. Clause 25 of the Plan states that at the commencement of this Plan, 44 flood works were approved in the Barwon-Darling Valley Floodplain, which were controlled work approvals granted under the *Water Act 1912*, prior to Plan commencement. Records provided by WaterNSW indicated that it has granted five flood work approvals since the commencement of this Plan; and NRAR advised that it has not granted any flood work approvals since the Plan commenced.

WaterNSW records from the WLS (as verified in the Water Register by the Commission) shows only 36 existing flood work approvals are currently recorded against the Plan. This suggests that:

- potentially there are 13 Barwon-Darling flood work approvals that were not recorded in the WLS against the Plan
- potentially there is a typographical error in the Plan in relation to the number of approvals at Plan commencement.

Based on information provided by the Commission, NRAR has identified seven approvals (four of which are current and three of which are expired) that are located within the Plan area.

The Commission does not have any visibility of the remaining six approvals. This represents a discrepancy between the number of approvals at Plan commencement noted in the plan and the number of approvals currently in WLS. However, we suggest that a review be undertaken to ensure all approvals located within the Plan area are identified and allocated to the Plan.

This will assist in both transparency in the Water Register and in ensuring all relevant approvals are identified so that mandatory conditions relevant to the Plan are appropriately added to all approvals as required.

## 6.4 Potential impacts

Improving the quality of information available to support the assessment of applications will support improved decision making around the granting of approvals for new, amended or decommissioned structures in the floodplain. This can be done through:

- updated models to inform cumulative impact assessment
- improved detailed technical guidance and procedures to inform a consistent approach and greater technical rigour by the organisations undertaking assessments
- improved data sharing between agencies
- improved accuracy and completeness of the WLS records, affecting which Plan dependent mandatory conditions are assigned to which approvals.

Without the above, there is a higher risk of:

- increased flood liability on individual owners and occupiers of flood-prone property
- increased private and public losses of life and property resulting from floods
- reduced diversity and well-being of riverine and floodplain ecosystems that depend on flood inundation including important wetland areas
- reduced ability to undertake enforcement activities.

## 6.5 Recommendations and suggested actions

The Commission makes three recommendations and raises three suggested actions.

To ensure that requirements set out in the Plan under clauses 30(2), 40(5) and 46(5) and in the Principles of the Act (sections 5(2)(d) and 6) relating to cumulative impact assessment are met, we recommend:

<b>R2.1</b>	DPE-Water to update the digital spatial model for the Plan and provide this updated model information to WaterNSW and NRAR to enable approval assessment officers to undertake cumulative impact assessments for new approvals going forward.  <b>SA3.5</b> applies.
<b>SA2.1</b>	DPE-Water (in consultation with WaterNSW and NRAR) to make available a shared corporate database to facilitate sharing of spatial information to increase the efficiency in accessing data used for multiple purposes, but primarily to inform updated models used for cumulative impact assessments.

To improve the accuracy and completeness of the Water Register records; and ensure that all relevant approval holders can be identified for the purposes of notification of changes to the conditions applied to approvals:

<b>R2.2.1</b>	WaterNSW (with the support of NRAR and DPE-Water) to identify any flood work approvals in the Plan area which are not assigned to the Plan in the approvals system and ensure that they are identified as such in the approvals system.
<b>R2.2.2</b>	All relevant flood works currently within the Plan area but not assigned to it in the approvals system to be included in the implementation of <b>R3.1, R3.2, R3.3 and R3.4</b> (application of mandatory conditions to flood work approvals).

To improve technical guidance for assessment of flood work approvals, and provide greater clarity and consistency to support assessment processes undertaken by NRAR and WaterNSW water regulation officers when performing flood work approval assessments, we suggest:

<b>SA2.2</b>	DPE-Water to develop and finalise procedures and make these available for WaterNSW and NRAR Water Regulation officers to use when assessing approvals to ensure a consistent approach between assessments undertaken by these two organisations. In preparing these procedures DPE-Water should integrate the <i>OEH Implementation Guidelines</i> where appropriate.
<b>SA2.3</b>	DPE-Water to formally make available technical expertise to support NRAR and WaterNSW staff when assessing individual flood work applications if required.

## 7 Criterion 3 – Mandatory conditions

### 7.1 Criterion overview

Part 9 of the Plan sets out provisions describing the mandatory conditions that flood work approvals (approval) must include (where required). Mandatory conditions for flood work approvals generally relate to rules for appropriate construction or amendment of works, decommissioning of a work, notification of breaches of conditions (Clause 48).

Enforcement requirements for flood work approvals are set out in the Act, specifically:

- Part 3 Division 1A:
  - Section 91D - offence relates to constructing a flood work without an approval
  - Section 91G - offence relates to contravention of an approval
  - Chapter 7 – enforcement actions such as stop work orders, removal of unlawful water management works.

To be given effect, mandatory conditions rely on:

- notifying flood work approval holders of mandatory conditions
- relevant Plan provisions being accurately reflected as mandatory conditions on statements of approval
- a compliance and enforcement regime promoting compliance by approval holders with the obligations set out in the conditions applied to the approvals.

In relation to the first dot point above, notification of flood work approval holders of mandatory conditions was considered a critical component of Criterion 2 and issues around these provisions are discussed in **Chapter 6** (Criteria 2 - Approvals). In particular, the assessment of Criterion 2 found that notification of a decision had occurred, but that, the notification did not include the required mandatory conditions.

This Chapter focuses on the second two dot points above - the accuracy of the mandatory conditions themselves in reflecting Plan provisions, as well as the enforcement regime.

The Commission notes that it was outside the scope of this audit to comment on the adequacy of the provisions for mandatory conditions in the Plan.

## 7.2 Current roles, systems and processes

A summary of organisational roles is as follows:

- **DPIE-Water** – responsible for creating, entering and coding the mandatory conditions into the WLS (since September 2019). This includes identifying the individual management zones and matching them to applicable Plan provisions so that they can be applied by water regulation officers in WaterNSW and NRAR to flood work approvals. Prior to this, the function was at various times carried out by NRAR and DPIE-Water predecessor organisations such as DPI-Water, Department of Industry–Lands and Water and Department of Industry–Water.
- **WaterNSW** – responsible for imposing mandatory conditions on approval holders in accordance with Section 100<sup>40</sup> of the Act for its customers.<sup>41</sup> WaterNSW is also responsible for notifying licence and approval holders upon the commencement of a new Plan under the Act, conversions of pre-existing rights under Schedule 10(2) or changes to or remakes of floodplain management plans under the Act. Prior to this, these functions were the responsibility of DPIE-Water predecessors or NRAR.
- **NRAR** - responsible for enforcement of the conditions imposed on flood work approvals that give effect to Plan provisions. NRAR took over these responsibilities in April 2018. Prior to 2018, DPI-Water and WaterNSW were responsible. Regardless of compliance behaviours, in a particular plan area, it has been recognised as important to have adequate enforcement capabilities and arrangements in place by the NSW Ombudsman.<sup>42</sup> The *Natural Resources Access Regulator Act 2017* objects are to: 10(a) to ensure effective, efficient, transparent and accountable compliance and enforcement measures for the natural resources management legislation, and 10(b) to maintain public confidence in the enforcement of the natural resources management legislation. NRAR took the lead role in assessing legacy applications made under the *Water Act 1912*, prior to Plan commencement. The majority of these assessments took place during the audit period.

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<sup>40.</sup> State of NSW (n.d.) *WaterNSW Operating Licence. 2017-2022*, p. 53. Available at: <https://www.waternsw.com.au/about/legislation/operating-licence>

<sup>41.</sup> NRAR (n.d.) *Licensing and approvals*. Available at: <https://www.nrar.nsw.gov.au/how-to-apply/water-licences> states that NRAR is responsible for granting approvals to government agencies, including other NSW government agencies, local councils and the Commonwealth; state owned corporations; major water utilities, water supply authorities, and local water utilities; licensed network operators under the *Water Industry Competition Act 2006*; mining companies; irrigation corporations; Aboriginal communities and businesses; floodplain harvesting; major developments (state significant developments and state significant infrastructure); schools and hospitals; and that WaterNSW is responsible for granting approvals to rural; landholders; rural industries and developments which are not state significant development or state significant infrastructure.

<sup>42.</sup> NSW Ombudsman (2017) *Investigation into water compliance and enforcement 2007-17*. Available at: [https://www.ombo.nsw.gov.au/\\_data/assets/pdf\\_file/0012/50133/investigation-into-water-compliance-and-enforcement-2007-17.pdf](https://www.ombo.nsw.gov.au/_data/assets/pdf_file/0012/50133/investigation-into-water-compliance-and-enforcement-2007-17.pdf).

The following systems are used to administer and manage the implementation of mandatory conditions:

- **WLS** – owned and maintained by WaterNSW. Used by DPIE-Water to code mandatory conditions and make them available to water regulation officers in WaterNSW and NRAR. Water regulation officers then apply these to approvals, along with any discretionary conditions applicable on a case-by-case basis. WLS generates the statement of approval, notice of decision and the cover letter that is sent to approval holders by NRAR and WaterNSW. These documents should include the relevant mandatory and discretionary conditions.
- **NSW Water Register** – operated by WaterNSW, this system makes details of granted flood work approvals available to the public as required under Section 113 of the Act.
- **Compliance Investigation Reporting and Management System (CIRaM)** – used by NRAR to record and manage compliance and enforcement activities.

The main procedural and process documents used by WaterNSW, DPIE-Water and NRAR to implement mandatory conditions are:

- **The Licensing Procedure Manual**, specifically:
  - **Chapter 6.3, Section 1.5.2** – relates to issuing approvals and states that mandatory conditions will display on screen (in WLS) and be automatically added to the statement of approval based on the location and the rules within the relevant plan. Floodplain management plans or water management plans are not mentioned in this document. It is directed at management of water sharing plans. The Commission has been advised that this approach should apply to floodplain management plans.
  - **Chapter 8, Conditions** - this provides information in relation to translating water management plan provisions into mandatory conditions in WLS for use by water regulation officers in WaterNSW and NRAR.
- **The Compliance Investigations Manual** - used by NRAR to respond to allegations of non-compliance. It is the primary reference for NRAR investigations staff and sets out the approved processes, procedures, authorities, instruction and guidance to be applied when investigating alleged breaches of water regulations. NRAR staff indicated that the Department had a compliance manual prior to NRAR being established in April 2018. The Commission has not reviewed this manual.

The Commission considers there were systems, processes and procedures in place to support implementation of Plan provisions relating to mandatory conditions within the audit period.

However:

- these procedures should be updated to specifically include floodplain management plans
- these systems, processes and procedures were not utilised in the audit period to give effect to the mandatory conditions provisions of the Plan.

### **7.3 Rules for mandatory conditions have not been implemented**

#### **Rules for mandatory conditions were not implemented**

To assess if Plan provisions were given effect to, the Commission sampled a range of flood work approvals of both converted former entitlements and those applied for and granted in the audit period. The sample included:

- four recently applied for and granted flood work approvals across management zones A, B and C. WaterNSW have only granted five approvals since Plan commencement and no works were approved in management zone D
- five controlled works approvals granted under Part 8 of the *Water Act 1912*, covering different approval types across four management zones, which were converted to flood work approvals under the Plan
- all of the 44 pre-existing approvals.

The Commission found that mandatory conditions were missing on all but one of the approvals sampled, which included only two of the relevant mandatory conditions.

Mandatory conditions have only partially been applied to one of the flood work approvals in the Plan.

DPIE-Water and WaterNSW staff confirmed that mandatory conditions had not yet been coded into WLS, resulting in these conditions not being available to water regulation officers in NRAR and WaterNSW when they are producing statement of approval documents.

DPIE-Water have indicated that no work has yet be done in relation to creating mandatory conditions for the Plan. DPIE-Water staff indicated that this was largely due to priority being given to the coding of conditions for water sharing plans and the management and notification of the new metering rules.

DPIE-Water staff advised that their intention is to address the coding of mandatory conditions for floodplain management plans, in early 2022.

DPIE-Water staff further advised that additional work needs to be performed in the WLS to enable flood works to be allocated to specific management zones, particularly where flood works span multiple management zones, before mandatory conditions can be applied.

The materiality of missing mandatory conditions was partially offset by the application of a discretionary condition by water regulation officers in NRAR and WaterNSW. This discretionary condition required the construction of the works to be in accordance with the approved flood work approval maps detailing the site location and height restrictions.

Based on testing of the audit sample, the Commission found that there was only one flood work approval in the Plan that did not include this discretionary condition.

The Commission, however, notes that the extent of reliance that can be placed on this discretionary condition is heavily dependent on the quality of the maps and plans submitted for approval. NRAR and WaterNSW staff advised that the quality of the maps and plans is highly variable. For example, a plan may consist of a hand drawn line on a topographic map located in hard copy in a regional office; or it may be a surveyor's plan with heights recorded located in the relevant database.

WaterNSW staff indicated that most of the recent applications come in with a surveyor's plan with heights recorded in Australian Height Datum (AHD).<sup>43</sup> WaterNSW advised that, as part of the process of renewing flood work approvals, they are currently updating the plans by mapping works to ground using satellite technology. WaterNSW indicated that approximately 50 percent of pre-existing flood work approvals are now in the WaterNSW database, with updated plans.

The Commission has not verified this information. This will improve the ability of NRAR to undertake enforcement activities of approved flood works.

The Commission has not examined plans to determine their quality and makes no comment on their adequacy from an enforcement perspective.

However, high quality plans and maps are necessary to support:

- recording of the effect of flood works on the flood flow distribution and impact on the floodplain, which affects the model and any model updates to support cumulative impact assessment
- the enforcement of compliance with the requirements.

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<sup>43</sup>. the height of a point above mean sea level

Based on our testing of the audit sample, it was further identified that no discretionary conditions have been applied that address the requirements detailed in the following mandatory condition provisions of the Plan:

- Clause 48(2)(b) - the approval holder to notify the Minister of any breach of conditions they become aware of
- Clause 48(2)(c) - the approval holder to inform the Minister of the completion of the flood works construction
- Clause 48(2)(d) - the approval holder to apply to the Minister for permission to decommission flood works; and to advise the Minister when works have been removed
- Clause 48(2)(e) - the approval holder to comply with the requirements of action plans
- Clause 48(2)(f) - the approval holder to comply with any other condition required to implement the provisions of the Plan.

Applying the mandatory conditions in WLS is an important requirement to ensure that a consistent set of conditions are applied to all flood work approvals to give effect to all the mandatory condition provisions in the Plan.

The lack of mandatory and discretionary conditions to give effect to the Plan rules can lead to unmanaged structures on the floodplain and result in adverse changes to flood flow patterns, which may cause:

- increased flood liability on individual owners and occupiers of flood-prone property
- increased private and public losses of life and property resulting from floods
- reduced diversity and well-being of riverine and floodplain ecosystems that depend on flood inundation.

### **A reactive compliance and enforcement regime is in place**

There is a reactive enforcement regime in place to support implementation of the Plan to detect offences under the Act (sections 91D, 91G of the Act as applicable). Associated enforcement of mandatory conditions is undertaken for approvals in accordance with Chapter 7 of the Act.

The NRAR public register does not currently have functionality to easily search enforcement activity for the floodplain management areas and so it is not currently clear how this information corresponds to the Plan.<sup>44</sup> NRAR staff indicated that it is currently scoping improvements to the NRAR public register to better indicate where enforcement actions relating to flood works have been taken.

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<sup>44</sup>. NRAR (n.d.) *Public Register*. Available at: <https://www.dpie.nsw.gov.au/nrar/progress-and-outcomes/public-register>

In addition, the NRAR quarterly compliance reports do not currently include searchable NRAR enforcement activity for the floodplain management areas and so it is not clear how this information relates to the Plan.<sup>45</sup>

The Plan like all management plans is subject to a reactive compliance regime and NRAR has reported since 2019 on compliance activity on the Barwon-Darling Valley Floodplain. However, this reporting has not distinguished between issues relating to water sharing plans and floodplain management plans in the area.

Even if there was a clear degree of community reporting of breaches, a reactive compliance program on its own may not be an adequate control, depending on the level of awareness and interest in the community in relation to:

- downstream impacts of flood works that are not immediately apparent beyond issues between neighbours
- environmental impacts such as connectivity and inundation extent relating to flood works.

The Commission reviewed NRAR's Public Register,<sup>46</sup> and identified that there were four instances of offences under Section 91(G) of the Water Management Act *Contravention of terms and conditions of approval*, between 29th March 2019 and 6th July 2021, resulting in the issuance of seven penalty notices.

Publicly available information does not indicate if there is a good or poor level of compliance in the Plan area. The fact that there is a low level of reported offences provides some information in relation to the level of compliance, but it is unclear if community awareness is high enough for this to be a reliable indicator.

### **Work has not commenced to address high priority unapproved or problematic structures on the floodplain**

NRAR has set up an enduring regulatory priority relating to unauthorised floodplain structures. However, the work intended to be undertaken as part of the 2019-21 priorities relating to a pilot in the Plan area has been delayed and is intended to be commenced in March 2022. NRAR staff advised that this work relates to the identification of unauthorised flood works on the floodplain in the Plan area, with a focus in management zones A and D.

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<sup>45</sup>. NRAR (n.d.) *Quarterly Enforcement Reports*. Available at: <https://www.dpie.nsw.gov.au/nrar/progress-and-outcomes/qrt-reports>

<sup>46</sup>. NRAR (n.d.) Public Register. Available at: <https://www.dpie.nsw.gov.au/nrar/progress-and-outcomes/public-register>

Some work however, has been done to inform future program of work, the NSW Department of Industry (2019) *Draft Hotspots Strategy*, identifies the following issues in relation to the Plan:

- 56 hotspots in the Barwon-Darling valley, which predominantly consist of banks and roads crossing lagoons, block dams and road crossings that are identified as barriers to fish passage and connectivity, particularly of small-medium flows
- more than 80 percent of hotspots are completely or partly in-stream and block more than one floodway, having a high level of impact on flood dependent vegetation and key fish habitat assets.

The NSW Sustaining the Basin Program: Healthy Floodplains Project Business Case put forward by the NSW Office of Water (predecessor to DPIE-Water) to the Commonwealth Government in 2010 included key deliverables of this project to:

- undertake on -ground remedial works to modify or remove inappropriate floodplain development
- develop and implement a compliance and enforcement strategy.<sup>47</sup>

This business case recognised that significant resources are needed to undertake the individual farm assessments and address the complex licensing, assessment, compliance and enforcement issues.<sup>48</sup>

Work to address targeted hotspot areas (**Figure 6**) will commence under the *Improving floodplain connections* program, focusing primarily on unapproved works including works in the Plan area.<sup>49</sup>

Upon successful completion of this work, DPIE-Water should consider addressing problematic existing structures on the floodplain that may have been previously approved. These works may be capturing overland flows that would otherwise be contributing to wetland inundation. Impacts of these approved problematic works may include reducing connectivity between the river and the floodplain or blocking natural flow paths and fish passages, altering flood behaviour or alienating high conservation wetlands.

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<sup>47.</sup> NSW Office of Water (2010) *NSW Sustaining the Basin Program: Healthy Floodplains Project Business Case*. p.4

<sup>48.</sup> NSW Office of Water (2010) *NSW Sustaining the Basin Program: Healthy Floodplains Project Business Case*. p.32

<sup>49.</sup> DPE-Water (2022) *Improving floodplain connections*. Available at: <https://www.industry.nsw.gov.au/water/plans-programs/healthy-floodplains-project/improving-floodplain-connections>

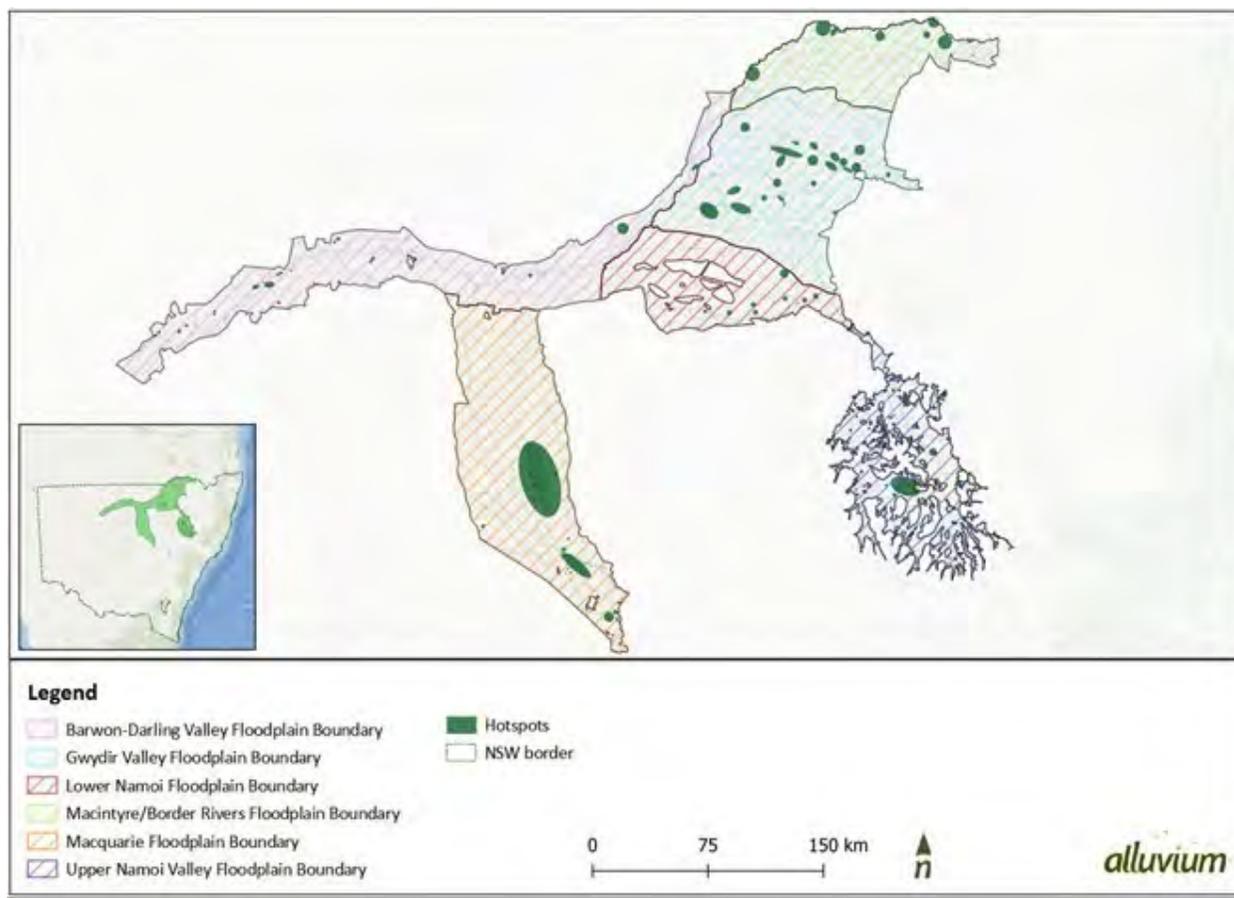


Figure 6: Study area and identified hotspot areas to be targeted in the Improving Floodplains Connections Program<sup>50</sup>

<sup>50</sup>. DPE-Water (2022) *Improving floodplain connections*. Available at: <https://www.industry.nsw.gov.au/water/plans-programs/healthy-floodplains-project/improving-floodplain-connections>

In addition, with climate change contributing to reduced flooding events, the management of floodwater is becoming more important to achieve environmental outcomes. The importance of identifying approved yet problematic structures, and unapproved structures in the landscape is extremely important in achieving the objectives of the Plan and the principles of the Act. A proactive regime is needed to pick up downstream impacts to life and property in a timely manner to proactively protect properties and life from harm in a flood event, and to address risks to the environment.

## 7.4 Potential impacts

The Plan provisions are primarily implemented through water users complying with mandatory conditions. Without mandatory conditions (or appropriate discretionary conditions applied consistently in their place):

- the Plan cannot be given effect as intended
- compliance and enforcement activities are limited to those structures without an approval and those structures with discretionary conditions in relation to construction requirements
- there are potentially adverse cumulative impacts on the environment affecting wetlands, cultural assets and species that depend on these wetlands and these overland flows.

The risk of unmanaged structures on the floodplain could potentially contribute to risks to downstream life and property, but also may be adding further stress to already stressed ecosystems.

The *Barwon-Darling Long Term Water Plan* states:

*Construction of structures (e.g. levees, diversion channels, sediment blockage of culverts) that causes barriers to flows to wetlands and ecological-important floodplain areas; and Any further development of water storages and weirs along the Barwon–Darling are likely to further exacerbate this current shortage of water and may act as barriers to high value ecological areas.*<sup>51</sup>

The management of floodwater on risks to life and property is paramount and the level of risk of unmanaged and unapproved structures to life and property is currently not transparent.

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<sup>51</sup>. NSW Government (2021) *Barwon Darling Long Term Water Plan*, Part A, p. 57. Available at: <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Water/Water-for-the-environment/long-term-water-plans/barwon-darling-long-term-water-plan-part-a-200112.pdf>

## 7.5 Recommendations and suggested actions

The Commission makes four recommendations and raises three suggested actions.

To give effect to mandatory conditions the Commission recommends the following:

<b>R3.1</b>	DPE-Water to write mandatory conditions necessary to give effect to requirements of the Plan.
<b>R3.2</b>	DPE-Water to code conditions into the approval system so they will automatically apply to new approvals going forward, working with WaterNSW to ensure appropriate conditions are applied to works spanning multiple zones.
<b>R3.3</b>	DPE-Water to issue an instruction to WaterNSW to re-issue the statements of approval to existing approval holders inclusive of mandatory conditions.
<b>R3.4</b>	WaterNSW re-issue the statements of approval to existing approval holders inclusive of mandatory conditions.

To improve transparency, the Commission suggests the following:

<b>SA3.1</b>	NRAR to publicly report on compliance by floodplain management plan area to increase transparency of details of relevant offences.
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Despite the lack of hard data on the level of risk caused by existing structures in the landscape, there is enough evidence to suggest that proactive investigation is warranted to establish the level of risk to life and property and the environment.

Further, the management of floodwater is critical to achieving environmental outcomes. Identifying approved structures that are inconsistent with the hydraulic and environmental criteria, and unapproved structures in the landscape is critical to achieve the objectives of the Plan and the principles of the Act. A proactive regime is needed to protect properties and life from harm during a flood event, and to protect the already stressed environment including important wetlands.

Problematic structures are works that significantly alter the flow of floodwater, causing social, economic, ecological and cultural impacts. These existing structures on the floodplain need to be addressed.

To better manage risks to life and property, environmental and cultural assets, the Commission suggests:

<b>SA3.2</b>	DPE-Water to partner with NRAR and other relevant NSW Agencies to address high priority unapproved and problematic flood works on the Barwon-Darling Valley Floodplain and to make the extent of these structures publicly available.
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To improve the quality of plans and maps that are relied upon by the discretionary conditions used as a basis for enforcement actions, the Commission suggests:

<b>SA3.3</b>	DPE-Water to establish and specify a minimum standard of acceptable documentation (plans and maps) to support flood work approval applications and communicate this to WaterNSW and NRAR to apply to flood work approval application requirements.
<b>SA3.4</b>	Upon implementation of <b>SA 3.3</b> , DPE Water to support WaterNSW and NRAR to: <ul style="list-style-type: none"><li>▪ apply these new standards to all future approval applications</li><li>▪ update flood work approval maps associated with existing flood work approvals, to bring these documents up to an adequate and appropriate quality to support enforcement action and model updates.</li></ul>

## 8 Criterion 4 – Amendments

### 8.1 Criterion overview

Section 45(1) of the Act allows for floodplain management plans to be amended under specific conditions. Part 10 of the Plan includes amendment provisions. While the Plan does not contain mandatory amendment provisions, it contains provisions that allow the Plan to be amended for specified reasons (non-mandatory amendments). As such, the Commission has focused on non-mandatory amendment provisions and assessed if they have been given due consideration.

### 8.2 Current roles, systems and processes

DPIE-Water is responsible for implementing amendment provisions and updating plans as required under Section 42 of the Act. The Minister for the Environment must concur with proposed amendments as required under Clause 45(3) of the Act.

The new *Roles & Responsibilities Agreement* between DPIE-Water, WaterNSW and NRAR further outlines DPIE-Water's responsibilities in relation to:<sup>52</sup>

- making amendments to provisions in floodplain management plans or the Regulation requiring mandatory conditions to be imposed on approvals,
- identifying existing conditions which require amendment, drafting amended conditions
- identifying application of amended conditions to approvals.

The Commission found that DPIE-Water have developed a Floodplain management planning - Amendment register covering all of the valleys, which is in the form of an excel spreadsheet. This floodplain management specific register includes consideration of the Plan.

Further improvements include the incorporation of a risk assessment to inform prioritisation of identified amendments as well as actions requiring to be taken to implement the amendment.

The Commission understands that DPIE-Water is currently developing a process to document and track the progress and decisions made regarding proposed floodplain management plan amendments, but that this is a work-in-progress as it has not made any amendments to any floodplain management plans as yet.

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<sup>52</sup>. Department of Planning, Industry & Environment (2021) *DPIE Roles & Responsibilities Agreement (DPIE-Water, NRAR and WaterNSW)*. Available at: <https://www.industry.nsw.gov.au/water/what-we-do/roles-responsibilities-agreement>

### **8.3 Non mandatory amendment provisions were likely given due consideration**

The Commission found that no amendments set out in Part 10 of the Plan were made or were proposed to be made by the end of the audit period.

In relation to non-mandatory amendments, the Commission found that there were no instances of potential material amendments having been identified by DPIE-EES, or any other organisation.

### **8.4 Recommendations and suggested actions**

The Commission makes no recommendations; and raises no suggested actions.

In the Commission's previous audit of the *Gwydir Valley Floodplain Management Plan 2016* (published in 2020) found instances where potentially relevant amendments were not implemented due to a lack of clear systems, processes and procedures to trigger and track non-mandatory conditions.<sup>53</sup> In this case, the Commission recommended that DPIE-Water formalise and implement a process to:

- document the decision-making process underpinning if and how to implement potential amendment provisions
- document the status of potential amendment provisions.

While there were no material findings in relation to amendments to repeat this recommendation in this audit. Future Plan implementation is likely to benefit if this recommendation is implemented, as it is likely to reduce the risk that relevant Plan amendments are not implemented in the future.

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<sup>53</sup>. Natural Resources Commission (2021) *Final report -Gwydir Valley floodplain management plan audit*. Available at: <https://www.nrc.nsw.gov.au/wsp-audits>

## Attachment 1 - Historical plans and guidelines for the Barwon-Darling Valley Floodplain

Category	Document description
Non-statutory guidelines	<p>The following two guidelines were produced in the Barwon-Darling Valley Floodplain:</p> <ul style="list-style-type: none"><li>▪ Guidelines for Flood Plain Development Darling River Little Bogan confluence to Yanda Creek confluence<sup>54</sup></li><li>▪ Guidelines for Flood Plain Development Darling River Yanda Creek confluence to Louth<sup>55</sup></li></ul>
Rural floodplain management plans under the <i>Water Act 1912</i>	<p>Existing and potential floodplain developments in the Barwon-Darling Valley Floodplain were identified from the following existing floodplain areas designated under Part 8 of the WA 1912:</p> <ul style="list-style-type: none"><li>▪ Bogan River Confluence to Louth designated floodplain, rural flood study<sup>56</sup></li><li>▪ Lower Macquarie designated floodplain</li><li>▪ Lower Macintyre designated floodplain</li><li>▪ Small sections of the Lower Gwydir and Lower Namoi designated floodplains</li><li>▪ Little Bogan River to Yanda Creek floodplain guidelines<sup>57</sup></li><li>▪ Darling River – Yanda Creek to Louth floodplain guidelines<sup>58</sup></li></ul>
Flood studies	<p>A number of supporting flood studies were developed in the Barwon-Darling Valley Floodplain to assist with flood work determinations. These studies include:</p> <ul style="list-style-type: none"><li>▪ Flood Study Report – Rural Flood Study Darling River Floodplain (Bogan River Confluence to Louth)<sup>59</sup></li><li>▪ Compendium of Data - Rural Flood Study Darling River Floodplain (Bogan River Confluence to Louth)<sup>60</sup></li></ul>

Source: DPI Water (2017). *Background document to the Floodplain Management Plan for the Barwon-Darling Valley Floodplain 2017*. Available at: [https://www.industry.nsw.gov.au/\\_data/assets/pdf\\_file/0006/146085/Background-document-FMP-Barwon](https://www.industry.nsw.gov.au/_data/assets/pdf_file/0006/146085/Background-document-FMP-Barwon)

<sup>54</sup> Water Resources Commission (WRC) (1986a). *Guidelines for Flood Plain Development Darling River Little Bogan confluence to Yanda Creek confluence*. NSW

<sup>55</sup> Water Resources Commission (WRC) (1986b). *Guidelines for Flood Plain Development Darling River Yanda Creek confluence to Louth*. NSW

<sup>56</sup> URS (2009). *Flood Study Report – Rural Flood Study Darling River Floodplain (Bogan River Confluence to Louth)*. Report for the NSW Department of Environment, Climate Change and Water

<sup>57</sup> Water Resources Commission (WRC) (1986a). *Guidelines for Flood Plain Development Darling River Little Bogan confluence to Yanda Creek confluence*. NSW

<sup>58</sup> Water Resources Commission (WRC) (1986b). *Guidelines for Flood Plain Development Darling River Yanda Creek confluence to Louth*. NSW

<sup>59</sup> URS (2009). *Flood Study Report – Rural Flood Study Darling River Floodplain (Bogan River Confluence to Louth)*. Report for the NSW Department of Environment, Climate Change and Water

<sup>60</sup> URS (2008). *Flood Study - Darling River (Bogan River confluence to Louth) Compendium of Data*. Artarmon NSW 2064. Report for the NSW Department of Environment, Climate Change and Water

## **Attachment 2 - Non-core (additional) provisions for floodplain management plans in the Act**

The floodplain management provisions of a management plan for a water management area may also deal with the following matters

- proposals for the construction of new flood works
- the modification or removal of existing flood works
- restoration or rehabilitation of land, water sources or their dependent ecosystems, in particular in relation to the following
  - the passage, flow and distribution of floodwater
  - existing dominant floodways and exits from floodways
  - rates of flow, floodwater levels and duration of inundation
  - downstream water flows
  - natural flood regimes, including spatial and temporal variability
- the control of activities that may affect or be affected by the frequency, duration, nature or extent of flooding within the water management area
- the preservation and enhancement of the quality of water in the water sources in the area during and after flooding
- other measures to give effect to the water management principles and the objects of this Act
- such other matters as are prescribed by the regulations.