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CM040-10

NSW Office of Water
GPO Box 3889
Sydney NSW 2001

Re: Unregulated river sources and groundwater sources Draft Water Sharing Plans (WSP) for the Greater Metropolitan Region

The Sydney Coastal Councils Group (SCCG) welcomes the opportunity to provide comment on the unregulated river sources and groundwater sources Draft Water Sharing Plans (WSP) for the Greater Metropolitan Region (GMR). Maintaining the ecosystem function of surface and groundwater resources while managing the impacts of domestic and commercial extraction represents a significant challenge for all levels of Government.

The development of WSPs for the unregulated river sources and groundwater sources of the GMR is an important step in ensuring all surface and groundwater resources are managed and regulated consistently under the NSW *Water Management Act 2000* (WMA 2000). In making this submission the SCCG is aiming to provide comments and recommendations to assist with the integration of the both WSPs into the land use planning and environmental management of coastal and estuarine councils in Sydney. The attached submission addresses the following aspects of both plans:

1. Overarching issues relevant to both WSPs
 - Integration of both WSPs into land use planning activities of councils
 - Managing surface and groundwater resources in response to climate change
 - Monitoring and evaluation
2. Issues specific to the unregulated river sources WSP
 - Macro water planning
 - Maintenance of water quality
 - Maintenance of environmental water
 - Urban Stormwater Harvesting Policy
3. Issues specific to the groundwater sources WSP
 - Planned environmental water
 - Managed aquifer recharge
 - Adaptive environmental water conditions
 - Maintenance of groundwater quality
4. Conclusion

I trust that the information provided in this submission will receive the appropriate attention. If you wish to clarify any matter in the letter or require further information, please contact the Group's Senior Coastal Projects Officer, Craig Morrison on 9246 7702 or craig@sydneycoastalcouncils.com.au

Yours sincerely,

Cr. Wendy McMurdo
Chairperson

1. Overarching Issues relevant to both WSPs

Integration of both WSPs into land use planning activities of councils

An objective stated in both WSPs is to contribute to *'the sustainable and integrated management of the water cycle across the Greater Metropolitan Region unregulated river water sources'*. Local Government implements a diverse range of water quality management, recycling and saving actions. Additionally, the land use planning and development assessment activities of councils have a potentially significant impact on both water quality and quantity of both surface and groundwater sources.

The development of both WSPs has involved the collation of existing research and data to identify environmentally sensitive sites as well as establishing benchmarks for environmental flows and sustainable extraction yields. At present there isn't a clear process for integrating the principles and information within both WSPs into the land use planning activities of councils. This is important because it would assist councils to ensure the principles of both WSPs are considered during strategic planning and the information they contain applied in development assessment and other land management activities. Ultimately this would ensure a whole of government approach to water management and limit potential adverse impacts of existing and future land uses on surface and groundwater quality and quantity.

To address this the SCCG recommends that the NSW Office of Water (NOW) work with the NSW Department of Planning and councils on the development of model planning objectives and provisions to assist the integration of the WSPs into local land use instruments and plans. Such guidance would ensure:

- Strategic planning decisions consider existing and future license allocations before nominating future zonings and land uses;
- Approved development does not have a negative impact on the quality and quantity of water entering surface or groundwater systems; and
- Consistent consideration of development applications required for the construction of infrastructure for surface and groundwater extraction.

Recommendations

The NSW Office of Water (NOW) work with the NSW Department of Planning and councils on the development of model planning objectives and provisions to assist the integration of the WSPs into local land use instruments and plans. Such guidance would ensure:

- Strategic planning decisions consider existing and future license allocations before nominating future zonings and land uses;
- Approved development does not have a negative impact on the quality and quantity of water entering surface or groundwater systems; and
- Consistent consideration of development applications required for the construction of infrastructure for surface and groundwater extraction.

Managing surface and groundwater resources in response to climate change

Changing climatic conditions combined with a greater demand on water resources from an increasing population, have focused the attention of land managers on ensuring all water resources are managed holistically and sustainably. Traditionally, very little has been understood about the dynamics of groundwater as well as surface and groundwater interactions and their sustainable management. Therefore, there is a need to build the understanding and capacity of all stakeholders to understand and manage surface water and groundwater

resources sustainably. The sustainable management of surface water and groundwater in response to climate change with NSW would be assisted through the provision of the following resources:

- Mapping of groundwater aquifer systems;
- Modelling climate change impacts on surface water and groundwater dynamics (including changes in rainfall intensity and frequency as well as sea level rise impacts on sand coastal aquifers);
- Standard access to surface water and groundwater licensing information; and
- The development of standard Environmental Planning Instrument provisions for surface water groundwater management.

Recommendations

The NOW support the management of surface water and groundwater in response to climate change with NSW would be assisted through the provision of the following resources:

- Mapping of groundwater aquifer systems;
- Modelling climate change impacts on surface water and groundwater dynamics (including changes in rainfall intensity and frequency as well as sea level rise impacts on sand coastal aquifers);
- Standard access to surface water and groundwater licensing information; and
- The development of standard Environmental Planning Instrument provisions for surface water groundwater management.

Monitoring and evaluation

Monitoring and evaluating integrated water cycle management activities requires the collection of data including, but not limited to, historic and current flow usage of surface and groundwater sources, water quality of these sources, water demand and performance of water and sewerage treatment systems as well as future water demand. At present the collection of this information is done inconsistently and in a piecemeal fashion or not at all. To address this NSW Government, through the NSW Office of Water, must:

- Establish standard process for collecting the necessary information to design and implement extraction and integrated water cycle management projects; and
- Develop manuals and training to assist consistent and ongoing collection of the necessary information to design and implement integrated water cycle management taking into account the impact of the appropriate extraction regimes.

Recommendations

To assist effective monitoring and evaluation of both Plans the NOW, must:

- Establish standard process for collecting the necessary information to design and implement extraction and integrated water cycle management projects; and
- Develop manuals and training to assist consistent and ongoing collection of the necessary information to design and implement integrated water cycle management taking into account the impact of the appropriate extraction regimes.

2. Issues specific to unregulated river sources WSP

Macro Water Planning

The unregulated rivers WSP has been prepared as a 'Macro Water Plan'. Peer review of the NSW Macro Water Sharing Planning process commissioned by the National Water Commission in the course of the 2005 under the National Competition Policy noted two important points in relation to the Macro Water Sharing Process:

1. That *"the macro planning process was deemed adequate to prescribe flow rules in unregulated rivers under circumstances in which there is no significant competition for water between environmental and other uses"*; and

2. That although the ecological science for the development of macro plans was acceptable for less competitive systems 'it is too simplistic for competitive water allocation systems'.

GMR river water sources are characterised by highly competitive demands on supply and have been identified previously by the NSW Government as complex systems that required individual attention to develop water sharing plans. As such management decisions made in relation to allocation of water for competing objectives must be made using adequate and robust science beyond that traditionally applied to Macro Water Planning.

The information contained within both WSPs and supporting documents represents a significant collation of existing data and management information. To allow for unregulated rivers in the GMR to be managed appropriately and adaptively into the future a greater level of site specific research, data collection and monitoring needs to be undertaken. Therefore it is recommended that the NOW:

- Demonstrate how the macro planning process adopted for the GMR contains sufficiently robust scientific research for the development of water sharing rules for a complex system such as the GMR for the life of the WSP (10 years).
- Identify and undertake the necessary site specific investigation to allow for the accurate identification of the necessary environmental flows and sustainable extraction yields in the GMR when the WSP is reviewed.

Recommendations

The NOW demonstrate how the macro planning process adopted for the GMR contains sufficiently robust scientific research for the development of water sharing rules for a complex system such as the GMR for the life of the WSP (10 years).

The NOW identify and undertake the necessary site specific investigation to allow for the accurate identification of the necessary environmental flows and sustainable extraction yields in the GMR when the WSP is reviewed.

Maintenance of water quality

The NSW *Water Management Act 2000* (WMA 2000) identifies the importance of the protection and enhancement of the quality of water within regulated and unregulated rivers. The draft unregulated river water sources WSP for the GMR notes that there are no specific strategies in the plan to maintain or improve water quality.

Maintaining or improving water quality in the rivers of the GMR to assist with the maintenance of the ecosystems those rivers support and the provision of safe drinking water to Sydney should be given a higher priority within the unregulated rivers WSP. To address this, the unregulated rivers WSP must contain information on the specific actions to ensure that water quality in the GMR is maintained or improved as a result of the WSP. Such objectives should also be linked with the NSW Water Quality and River Flow Objectives.

Recommendation

The unregulated rivers WSP be amended to contain information on the specific actions to ensure that water quality in the GMR is maintained or improved as a result of the WSP.

Maintenance of environmental water

The principles within the WMA 2000 require the protection of a water source and its dependent ecosystems. The planned environmental water for all water sources is to be identified and established as the volume of water in excess of Long-Term Average Annual Extraction Limits.

Therefore the water allocated for environmental purposes has not been established based on environmental need rather than the water available. While the SCCG supports the principles of the WMA 2000 with respect to environmental water, more robust and site specific research needs to be undertaken to establish the appropriate allocation of environmental water within unregulated rivers of the GMR.

Recommendation

More robust and site specific science be undertaken to establish the appropriate allocation of environmental water within unregulated rivers of the GMR.

Urban Stormwater Harvesting Policy

The background document for the unregulated rivers WSP notes that an Urban Stormwater Harvesting Policy is under development in partnership with DECCW. The development of an Urban Stormwater Harvesting that defines the NSW Governments position on urban stormwater harvesting as well as assists in identifying opportunities and criteria for stormwater harvesting projects would assist the water saving and reuse activities of all stakeholders.

Of concern to the SCCG is the proposal within the background document for an amendment to the unregulated rivers WSP, as part of the Urban Stormwater Harvesting Policy, to allow for the inclusion of a category of licence for stormwater harvesting. This would present a significant additional cost and disincentive to the identification and delivery of stormwater harvesting projects. Therefore the SCCG recommends:

- An Urban Stormwater Harvesting Policy that sets a strategic direction in relation to urban stormwater harvesting and identifies the criteria for stormwater harvesting projects be developed (such a policy should include: an assessment of current stormwater harvesting practices as well as the identification of future desired activates and be linked to a funding program); and
- No amendment to the unregulated rivers WSP be made to allow for the inclusion of a category of licence for stormwater harvesting.

Recommendations

The NOW in coordination with DECCW and Local Government develop an Urban Stormwater Harvesting Policy that sets a strategic direction in relation to urban stormwater harvesting and identifies the criteria for stormwater harvesting projects. Such a policy should include: an assessment of current stormwater harvesting practices as well as the identification of future desired activates and be linked to a funding program.

No amendment to the unregulated rivers WSP be made to allow for the inclusion of a category of licence for stormwater harvesting.

3. Issues specific to groundwater sources WSP

Planned environmental water

The National Water Commission define sustainable groundwater yield as “*the groundwater extraction regime, measured over a specific planning timeframe that allows acceptable levels of stress and protects dependent economic, social and environmental values*”. This approach recognises that sustainable groundwater management needs to be considered in the form extraction regimes and the associated climatic influences and ecosystem requirements, not just an extraction volume.

Through the groundwater sources WSP ‘planned environmental water’ or water to remain within the aquifer for environmental purposes is calculated through combining a percentage of water reserved from:

1. The aquifers storage capacity; and
2. Estimated average annual recharge from rainfall.

It is then assumed that the remainder of water within the aquifer can be extracted sustainably. This fails to take into account a number of factors including the volume of water required by surrounding groundwater dependent ecosystems, when that water is required, and the impacts of surrounding land uses on recharge potential.

Additionally, it applies a static formula to assessing the water needs of groundwater dependent ecosystems and the volume of water that can be extracted sustainably. As a result the opportunity to accurately reassess the appropriate volume of ‘planned environmental water’ due to changes in climate and land use until the WSP is reviewed in 10 years is lost.

A more adaptive approach needs to be applied. Therefore the SCCG recommends the assessment of ‘planned environmental water’ for groundwater systems must be applied through a process involving monitoring impacts of extraction and taking into account varying recharge rates due to varying rainfall patters and differing surrounding land uses. Under such a process sustainable yields could be regularly reassessed and adjusted in accordance with a specified framework that takes account of any new information, including improved valuations of groundwater dependent ecosystems.

The Sydney Coastal Councils Region Groundwater Management Handbook - A Guide for Local Government (SCCG 2006) notes that groundwater dependent ecosystems represent a vital yet poorly understood component of the natural environment and include communities of plants, animals or other organisms. To assist Councils and developers meet their legislative requirements to consider threatened species, communities and populations when development that impacts on groundwater is proposed, the SCCG proposes the following activities:

- The NOW assist Councils to adopt a groundwater dependent ecosystem rapid assessment methodology as a requirement for proposed development in the vicinity of environmentally sensitive areas, including aquifers of high groundwater vulnerability.
- The NOW works with Councils to confirm or update the range of listed threatened species under the Threatened Species Conservation Act 1995, the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 or the Fisheries Management Act 1995.
- The NOW support Councils in requiring that developers give greater consideration to the state groundwater policy documents (particularly the *NSW State Groundwater Dependent Ecosystems Policy*) when proposing a development so as to improve the level of information provided to Councils and state agencies for assessment.

Recommendations

The criteria for the assessment of 'planned environmental water' for groundwater systems be amended to involve monitoring impacts of extraction and taking into account varying recharge rates due to varying rainfall patterns and differing surrounding land uses.

The NOW assist Councils to adopt a groundwater dependant ecosystem rapid assessment methodology as a requirement for proposed development in the vicinity of environmentally sensitive areas, including aquifers of high groundwater vulnerability.

The NOW works with Councils to confirm or update the range of listed threatened species under the Threatened Species Conservation Act 1995, the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 or the Fisheries Management Act 1995.

The NOW support Councils in requiring that developers give greater consideration to the state groundwater policy documents (particularly the *NSW State Groundwater Dependent Ecosystems Policy*) when proposing a development so as to improve the level of information provided to Councils and state agencies for assessment.

Managed aquifer recharge

Part 15, Section 53 of the groundwater sources WSP notes that the Minister may amend the WSP to include rules which allow for and regulate Managed Aquifer Recharge (MAR) schemes within groundwater sources. At present the understanding of the science and application as well as potential impacts and benefits remains limited.

To address this and allow for the application of MAR requires additional trials combined with consideration of its regulation and monitoring. A number of councils within the GMR including Randwick (through the University of NSW) and Blacktown currently have MAR trials being undertaken within their Local Government Areas. To assist further trials and the development of rules which allow for the regulation of MAR the SCCG recommends the following to assist councils in undertaking and monitoring MAR projects:

- The NOW establish a data base of case studies and information on the specifications, lessons learnt and monitoring techniques of MAR trials in NSW.
- The NOW work with councils, industry and research organisations on the development of the appropriate rules and documentation which would allow for and regulate MAR schemes.

Recommendations

The NOW establish a data base of case studies and information on the specifications, lessons learnt and monitoring techniques of MAR trials in NSW.

The NOW work with, councils, industry and research organisations on the development of the appropriate rules and documentation which would allow for and regulate MAR schemes.

Adaptive environmental water conditions

Section 17 of the WSP states that:

- The holder of an access license may request that the Minister impose an adaptive environmental water condition in respect of the access license; and
- An access license may be granted in these water sources by the Minister so long as the adaptive environmental water condition imposed on the access license is not to be removed.

The SCCG supports the intent of this provision to enable water access licenses to be committed for specified environmental purposes. To assist in recovering water entitlements and managing them for environmental purposes it is recommended that the NOW, in consultation with the appropriate stakeholders, identify and develop a strategic register of desired licenses for adaptive environmental water conditions. The development of such a register:

- Would assist to identify and protect priority threatened groundwater dependent ecosystems; and
- Provide a framework for prioritising the application of adaptive environmental water conditions and working with the license holders on the application of these conditions.

Recommendation

The NOW, in consultation with the appropriate stakeholders, identify and develop a strategic register of desired licenses for adaptive environmental water conditions

Maintenance of groundwater quality

The primary purpose of the groundwater sources WSP is to address the licensing and extraction issues associated with groundwater in the GMR. Similar to unregulated river sources, the WMA 2000 identifies the importance of the protection and enhancement of the quality of water within groundwater aquifers.

The groundwater sources WSP does not contain objectives or specific strategies to maintain or improve the quality of groundwater contained within the aquifers of the GMR. This is particularly important given the unknown number of unregistered/unlicensed groundwater users in domestic and household situations. To address this, the unregulated rivers WSP should be amended to include objectives and information on the specific actions necessary to ensure that the quality of groundwater contained in the aquifers of the GMR is maintained or improved as a result of the Plan.

A key component of maintaining water quality within urban groundwater systems is the prevention of contamination from existing and future land uses. As noted previously in this submission the SCCG recommends that the NOW work with the NSW Department of Planning and councils on the development of model planning objectives and provisions to assist the integration of the groundwater sources WSP into local land use instruments and plans. This would assist councils to ensure the principles of the groundwater sources WSP are taken into account during the appropriate Council, industry and community activities and limit potential adverse impacts of existing and future land uses on surface and groundwater quality.

Recommendation

The NOW work with the NSW Department of Planning and councils on the development of model planning objectives and provisions to assist the integration of the groundwater sources WSP into local land use instruments and plans.

4. Conclusion

The NOW and councils face a number of significant challenges in ensuring the objectives and key directions in both the unregulated river sources and groundwater sources WSPs are achieved and integrated into the water management activities of councils. To address these, the SCCG recommends the following actions be prioritised before both WSPs are finalised:

1. The NOW work with the NSW Department of Planning and councils on the development of model planning objectives and provisions to assist the integration of the WSPs into local land use instruments and plans. Such guidance would ensure:
 - Strategic planning decisions consider existing and future license allocations before nominating future zonings and land uses;
 - Approved development does not have a negative impact on the quality and quantity of water entering surface or groundwater systems; and
 - Consistent consideration of development applications required for the construction of infrastructure for surface and groundwater extraction.
2. The NOW support the management of surface water and groundwater in response to climate change with NSW would be assisted through the provision of the following resources:
3. Mapping of groundwater aquifer systems;
4. Modelling climate change impacts on surface water and groundwater dynamics
5. Standard access to surface water and groundwater licensing information
6. The development of standard Environmental Planning Instrument provisions for surface water groundwater management.
7. The NOW demonstrate how the macro planning process adopted for the GMR contains sufficiently robust scientific research for the development of water sharing rules for a complex system such as the GMR for the life of the WSP (10 years).
8. The NOW identify and undertake the necessary site specific investigation to allow for the accurate identification of the necessary environmental flows and sustainable extraction yields in the GMR when the WSP is reviewed.
9. The unregulated rivers WSP be amended to contain information on the specific actions to ensure that water quality in the GMR is maintained or improved as a result of the WSP.
10. More robust and site specific science be undertaken to establish the appropriate allocation of environmental water within unregulated rivers of the GMR.
11. The NOW in coordination with DECCW and Local Government develop an Urban Stormwater Harvesting Policy that sets a strategic direction in relation to urban stormwater harvesting and identifies the criteria for stormwater harvesting projects. Such a policy should include: an assessment of current stormwater harvesting practices as well as the identification of future desired activates and be linked to a funding program.
12. No amendment to the unregulated rivers WSP be made to allow for the inclusion of a category of licence for stormwater harvesting.
13. The criteria for the the assessment of 'planned environmental water' for groundwater systems be amended to involve monitoring impacts of extraction and taking into account varying recharge rates due to varying rainfall patters and differing surrounding land uses.
14. The NOW assist Councils to adopt a groundwater dependent ecosystem rapid assessment methodology as a requirement for proposed development in the vicinity of environmentally sensitive areas, including aquifers of high groundwater vulnerability.

15. The NOW works with Councils to confirm or update the range of listed threatened species under the Threatened Species Conservation Act 1995, the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 or the Fisheries Management Act 1995.
16. The NOW support Councils in requiring that developers give greater consideration to the state groundwater policy documents (particularly the *NSW State Groundwater Dependent Ecosystems Policy*) when proposing a development so as to improve the level of information provided to Councils and state agencies for assessment.
17. The NOW establish a data base of case studies and information on the specifications, lessons learnt and monitoring techniques of MAR trials in NSW.
18. The NOW work with, councils, industry and research organisations on the development of the appropriate rules and documentation which would allow for and regulate MAR schemes.
19. The NOW in consultation with the appropriate stakeholders identify and develop a strategic register of desired licenses for adaptive environmental water conditions
20. The NOW work with the NSW Department of Planning and councils on the development of model planning objectives and provisions to assist the integration of the groundwater sources WSP into local land use instruments and plans.

The SCCG thanks NOW for the opportunity to provide comments on the unregulated river sources and groundwater sources WSPs. If you wish to clarify any matter in this correspondence or require further information, please contact SCCG Senior Coastal Projects Officer, Craig Morrison on (02) 9246 7702 or craig@sydneycoastalcouncils.com.au