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Greater Macarthur 2040: An Interim Plan for the Greater Macarthur Growth Area

Dear Bruce

Thank you for your letter of 20 November, 2018 inviting comments on *Greater Macarthur 2040: An Interim Plan for the Greater Macarthur Growth Area*.

We would like to take the opportunity to address the plan from a strategic level (alignment with broader city planning objectives) and at a service level (our capacity to service the areas covered in the plan).

Introduction to strategic objectives

We look forward to working with the Department of Planning and Environment and the Western Sydney Planning Partnership on the water management and water servicing of the Greater Macarthur area. Strong collaborative planning will be needed to realise the District Plan's Planning Priority *W12 - Protecting and improving the health and enjoyment of the District's waterways*, as well as the vision expressed in the *Greater Macarthur 2040* of "land uniquely bounded by water".

We agree that an integrated approach to water, wastewater and stormwater is needed. We support *Greater Macarthur 2040's* identification of the need for green infrastructure, especially in the context of the District Plan's categorisation of green infrastructure as essential infrastructure.

Greater Macarthur 2040's vision for place, landscape and built form can be achieved with an integrated approach to water that informs land use planning decisions. Good water planning should be undertaken before precinct planning to enable effective integrated water cycle management that supports waterway health and underpins effective land use that supports great amenity for future residents of the Greater Macarthur Growth Area.

Waterway health and protection

Greater Macarthur 2040 points to the objectives in the Western City District Plan's Planning Priority *W12 - Protecting and improving the health and enjoyment of the District's waterways*.

As outlined in *Greater Macarthur 2040*, we agree that a risk-based framework for waterway health is an appropriate tool to determine waterway health targets - and identify what improvements to waterway health are needed so future residents can continue to enjoy

waterways. The framework must be clearly informed by community and environmental values of waterways.

A risk-based framework for waterway health must clearly guide the land use planning decisions and water management actions that are required to improve waterway health. The final Greater Macarthur Land Use and Infrastructure Implementation Plan (LUIIP) should demonstrate how these decisions have been embedded.

Application of a risk-based framework must clearly identify the land use decisions and waterway management approaches that are needed to achieve waterway targets.

The final LUIIP must clearly outline the community values for waterways. It must show how the application of the risk-based framework has guided land use decisions and identified green infrastructure and water management requirements.

Sydney Water has gathered insight on community values for waterways – including the Hawkesbury Nepean River. We are happy to share information and look forward to working with DPE and the Planning Partnership to identify and implement measures to improve the health and enjoyment of the waterways in the Growth Area, and share our expertise in water quantity and quality modelling.

We agree with the *Greater Macarthur 2040* (p42) that improved wastewater treatment can significantly improve receiving water quality, but we emphasise that wastewater management must be accompanied by effective stormwater management and focused land use planning controls to gain the projected ecological outcomes of waterways and riparian corridors in the growth area. In particular, modification to waterway flow and hydrology are the most significant factors in the detrimental ecological response to the urbanisation of freshwater catchments. Managing waterways requires an integrated water cycle approach.

Sydney Water's work with other government agencies on land and water planning for the adjacent South Creek corridor shows how an early and effective approach to integrated water cycle management can also achieve benefits such as urban cooling, better open space and recreation availability, better urban amenity and attractive urban environments.

We also recommend DPE and the Planning Partnership consider mechanisms for whole-of-Growth Area stormwater management and governance, to enable the waterway objectives to be achieved and ensure the water cycle is well managed in the future. Sydney Water would be willing to assist in the facilitation of such an outcome with other government stakeholders such as local government, the Environment Protection Authority and Office of Environment and Heritage.

Green Plan, open space and recreation

We strongly support DPE's proposal to use a Green Plan to detail the requirements for open space in the Growth Area. We understand a comprehensive Green Plan (as outlined on p38 of *Greater Macarthur 2040*) must occur ahead of rezoning, precinct planning and neighbourhood planning, so open space and public amenity requirements can be embedded in good development decisions.

In a Growth Area that has significant areas of proposed greenfield development, and many sensitive waterways, the Green Plan will have greatest benefit if it can be linked with water planning.

For example, effective Integrated Water Cycle Management solutions may involve high levels of land irrigation with fit-for-purpose recycled water. Irrigated areas may include passive open space, urban forests, agriculture and active recreational areas – all of which should be reflected in the Green Plan.

Effective integration of the Green Plan with water planning may also enable early identification of green-blue places that provide effective links between neighbourhoods, centres, parks and creeks with high levels of amenity.

We note key opportunities that link water, open space and recreation that were identified in the Western City District Plan, including green grid connections between Camden Park and Menangle to the Georges River Open Space Corridor, Campbelltown Collaboration Area actions, to activate the Nepean River as a focal point and a destination.

The Green Plan also provides an opportunity for DPE to consider resilience issues in the landscape approach for the Growth Area, including climate change impacts to water management, flooding and biodiversity, as well as the landscape-level measures to mitigate urban heat.

Link between design decisions and water management

Greater Macarthur 2040's commitment to plan for diverse urban typologies is very positive.

Land and water planning for South Creek has highlighted benefits to stormwater, cooling, tree canopy, amenity, and public domain benefits that can be achieved by improving the performance of current-practice urban typologies. Improvements can be gained by planning for increased tree canopy, rationalising the space required for houses, streets and carparking, retaining and enhancing water in the landscape, and using higher performing building materials.

By implementing better performing typologies, the Growth Area also provides the opportunity to embed the low carbon direction of the Western City District Plan. Sydney Water is pursuing several circular economy and energy efficient projects in the Western City.

Achieving a range of diverse and better performing typologies will require detailed review of existing planning controls, to ensure controls are sophisticated enough to drive the delivery of high performing places and buildings, and adequately deliver the water, biodiversity protection, and amenity improvements flagged by the Interim Plan. It will also require more detailed water planning requirements.

It would be helpful if the final LUIIP set out a clear process that shows how the performance of urban development areas will be driven by the landscape, place-built form objectives, and the performance required will affect the type and location of local infrastructure (including green infrastructure).

Introduction to servicing information for the growth precincts

The information below summarises the capacity of Sydney Water's infrastructure to service the growth precincts within the Greater Macarthur Growth Area. We provide an overview of our strategic planning to date, availability to service dwelling yields included in *Greater Macarthur 2040*, and identify future infrastructure that we believe will be required to support development in the Greater Macarthur.

Servicing Concepts for the Greater Macarthur Growth Area

We completed a strategic level infrastructure review for the Greater Macarthur Growth Area in 2016. For our review, we considered the requirement for servicing approximately 66,400 new dwellings by 2046 in the Greater Macarthur. This included the growth areas in Wilton that are now excluded from the plan. The investigation considered multiple servicing pathways including drinking water, wastewater, recycled water and stormwater.

The strategic investigation identified the following servicing pathways.

Drinking water

Supply of drinking water to the Greater Macarthur would be from the Macarthur Delivery System. In the longer term, additional storage facilities and associated trunk infrastructure would potentially be required to service Menangle and the Appin precincts.

Wastewater

Permanent treatment plants would likely be the most effective method for servicing the Greater Macarthur area. Treated effluent could be recycled for non-drinking water use or for water-sensitive features – highlighting the benefits of considering open space planning in conjunction with wastewater planning. Transfer options to the Malabar and West Camden systems were considered but found to be costly and these could not be done without upgrades in the receiving systems.

Recycled water

We assessed recycled water as part of our overall water servicing arrangements for the area. If recycled water is not a component of our least cost method of servicing, then the availability of third pipe recycled water services will be dependent on the willingness of developers to fund the additional cost of this infrastructure and provide the third pipe to new dwellings as well as meeting regulatory requirements.

Stormwater and Waterway Health Management

Stormwater servicing has historically been outside of our responsibility in most greenfield release areas but we have considered it as part of a total integrated water servicing review. In the adjacent South Creek Catchment, Sydney Water is currently co-ordinating both waterway health and flood management planning for the Aerotropolis LUIIP area. The feasibility of using stormwater as a supply source can depend on the overall water cycle planning strategy. The

servicing review recommended that rain gardens and wetlands be implemented to improve the quality of stormwater flows and create water sensitive environments.

As noted above, we look forward to working with DPE and the Planning Partnership to identify and implement measures to improve the health and enjoyment of the waterways in the Growth Area and understand what the best approach to management and governance of waterways in the Growth Area. As discussed above, a holistic approach to land use planning and water management, can lead to improvements in urban form that enable more effective stormwater management.

Next steps in regional planning

The work Sydney Water is doing through its Western Sydney Regional Masterplan is demonstrating how we can identify a range of feasible servicing pathways and water management approaches across the entire water cycle. Our Western Sydney Regional Masterplan will be followed with a Greater Macarthur Sub-Regional Masterplan. This Masterplan will build upon the investigations we have already made in the strategic level infrastructure review for the Greater Macarthur Growth Area.

The review will consider a long-term approach to servicing the area, including all products and drivers (growth, liveability, reliability, drought and climate change) through an adaptive pathways process informed by broader stakeholder engagement, especially with DPE. The key benefit of this study will be to ensure we are strategically ready to provide an integrated servicing option to cater for the growth and development needs in the Greater Macarthur. The review will take place through 2019 and early 2020.

Servicing Capability of the Glenfield to Macarthur rail corridor

While Sydney Water is shifting our approach to integrated water cycle management, we continue to meet growth demands with core drinking water and wastewater servicing. In preparation of our submission on *Greater Macarthur 2040*, we have assessed the capacity of our systems to service the infill growth precincts along the Glenfield to Macarthur corridor.

Drinking water and recycled water

A high-level assessment indicates that the current trunk drinking water system has adequate capacity to service all proposed development as set out in *Greater Macarthur 2040* in Macquarie Fields, Ingleburn, Minto, Leumeah, Campbelltown and Macarthur.

Development proposed in Glenfield can be serviced until approximately 2026. Amplification of drinking water and recycled water services will likely be required around 2026, including amplification of a drinking water main along Campbelltown Road.

Wastewater

The Glenfield Water Recycled Plant (WRP) has capacity to service development until about 2025-2026. If Menangle Park, Gilead and Appin require servicing in line with growth set out in *Greater Macarthur 2040*, a new wastewater treatment facility may be required. If a new

wastewater treatment facility is built, this would free capacity for the Glenfield WRP to service Glenfield to Macarthur until 2036. We will need to monitor the need for a new treatment facility in the Menangle Park, Gilead and Appin area.

To service the Glenfield to Macarthur precincts, we will need to upgrade wastewater pumping station SP0353 as soon as growth occurs in the area.

The Glenfield to Campbelltown precincts can be serviced by an existing trunk wastewater main until about 2030. However, the trunk main in the Macarthur precinct is slightly smaller and would need to be amplified by around 2026 to service Macarthur. This upgrade may not be required if Menangle Park, Gilead and Appin flow is diverted back to a new treatment plant in 2026.

Update on Menangle Park and Glenlee Industrial

We built a wastewater pumping station (SP 1185) in the north of the Menangle Park Release Area. This can service approximately 1,000 dwellings in the northern part of the release area.

We are currently working on a drinking water and wastewater servicing assessment for the remaining area in the Menangle Park Release Area in addition to the Glenlee industrial area and some adjacent existing and rezoned land planned for development. We anticipate that new infrastructure required to service these areas will be delivered in 2023.

We note that *Greater Macarthur 2040* identifies a yield of 4,000 new dwellings in Menangle Park which is line with the growth forecasts we are adopting for our servicing assessment. If there is any proposed increase to this or adjacent land that may be included for future rezoning, DPE should provide this information as soon as possible. This includes early consultation for the area identified as 'future employment potential subject to investigation'.

Gilead, Appin and North Appin

Sydney Water is working with the proponent of the rezoned portion of Mount Gilead to provide drinking water and wastewater services. Delivery of the infrastructure will be staged to meet the timing requirements of the development. Subject to Sydney Water approval and the relevant planning approval conditions being met, the proponent will deliver all the necessary trunk and reticulation wastewater infrastructure to service the development. Sydney Water will deliver the trunk infrastructure to provide water supply to the development and the proponent will deliver the reticulation water infrastructure.

Our strategic investigation from 2016 identified significant infrastructure would be required to service land in Gilead, Appin and North Appin. It could include a new facility to treat wastewater. There is a long lead time to deliver this type of major infrastructure.

DPE should consult with Sydney Water on the release and timing of development in these three precincts. To date, development in these precincts has not been considered in the short or medium term.

Final comments and further collaboration

We would like to ask for access to the water quality technical study referred to on Page 15 of *Greater Macarthur 2040*.

Finally, we wish to reiterate the need for ongoing updated growth forecasts, especially in the areas of Gilead, Appin and North Appin.

We look forward to working with DPE and the Western Sydney Planning Partnership to coordinate the delivery of integrated water infrastructure and facilitate new technical and design standards for water management that will enable sustainable greenfield (and infill development).

If you require further information, please contact Fernando Ortega, Acting Manager of Growth Planning and Development on 02 8849 5207 or fernando.ortega@sydneywater.com.au.

Yours sincerely

 5/2/19
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