

Appendix C

Considerations of the Sydney Regional Environmental Plan No 20 –
Hawkesbury-Nepean River (No 2 – 1997)

General planning considerations, planning policies and recommended strategies from SREP 20

SREP 20 planning consideration	Where considered or addressed
General planning considerations	
<p>a) the aim of this plan: “The aim of this plan is to protect the environment of the Hawkesbury-Nepean River system by ensuring that the impacts of future land uses are considered in a regional context”, and</p>	<p>The impacts on the proposal on South Creek, which forms part of the Hawkesbury-Nepean River system, and the regional context have been considered in Section 6.6, including identification of safeguards and management measures as required to protect the environment.</p>
<p>b) the strategies listed in the Action Plan of the Hawkesbury-Nepean Environmental Planning Strategy, and</p>	<p>The strategies listed in the Action Plan are grouped in five categories: Community (C), Productivity (P), Biodiversity (B), Urban Liveability (UL) and Resilient Landscapes (RL). The most relevant strategies to the proposal, are as follows:</p> <ul style="list-style-type: none"> • C1: Support Aboriginal people to manage projects across culturally significant landscapes and values • B1: Maintain the diversity and health of natural systems • B2: Maintain viable populations of native species, especially those found only in our region (endemic) and those under threat • B3: Make connections across the landscape including the aquatic ecosystem • B4: Reduce the risk of decline or extinction of native species • UL2: Create a more liveable and water sensitive city by implementing WSUD • UL3: Promote actions which support urban resilience through mitigation and adaptation to impacts of climate change • UL4: Improve aquatic and terrestrial habitat condition, connectivity and recreational value in urban areas • UL5: Enhance and protect Sydney’s natural places to support a liveable city <p>The proposal is aligned with strategy C1 as it involved substantial engagement and consultation with Aboriginal people (refer to Section 5.3).</p> <p>Strategies B1, B2, B3, B4 were specifically considered during design refinement to minimise biodiversity impacts and preparation of the BDAR (refer to Section 2.5 and 6.1).</p>

SREP 20 planning consideration	Where considered or addressed
	<p>Safeguards, management measures and biodiversity offsets would be implemented to minimise impacts on terrestrial and aquatic ecosystems and species.</p> <p>Strategies UL2, UL3, UL4 and UL5 were considered during the development of urban design, landscaping and WSUD features for the proposal. The proposal also involved consideration of climate change on flooding patterns during the drainage design.</p>
c) whether there are any feasible alternatives to the development or other proposal concerned, and	The alternatives to and justifications of the preferred option for this proposal are discussed in Section 2.4.
d) the relationship between the different impacts of the development or other proposal and the environment, and how those impacts will be addressed and monitored.	The impacts of the proposal on the environment is discussed in Chapter 6. Safeguards and management measures have been developed to manage and/or minimise the identified potential impacts (refer to Chapter 7).

Specific planning policies and recommended strategies

(1) Total catchment management

Policy: Total catchment management is to be integrated with environmental planning for the catchment.

Strategies:

(a) Refer the application or other proposal for comment to the councils of each adjacent or downstream local government area which is likely to suffer a significant adverse environmental effect from the proposal.	TfNSW has developed the proposal in consultation with Penrith City Council and has considered any feedback provided on the proposal (refer to Section 5.4 and 5.5). The proposal is not likely to result in any impacts to land or water within any other LGA.
(b) Consider the impact of the development concerned on the catchment.	The potential impact of the proposal on the South Creek catchment, which is part of the Hawkesbury-Nepean catchment, is discussed in Sections 6.4 and 6.6.
(c) Consider the cumulative environmental impact of development proposals on the catchment.	The cumulative impacts resulting from the proposal on the catchment are considered in Section 6.12.

(2) Environmentally sensitive areas

Policy: The environmental quality of environmentally sensitive areas must be protected and enhanced through careful control of future land use changes and through management and (where necessary) remediation of existing uses.

Strategies:

SREP 20 planning consideration	Where considered or addressed
(a) Rehabilitate parts of the riverine corridor from which sand, gravel or soil are extracted so that attached aquatic plant beds are replaced and water quality and faunal habitats improved.	The proposal would involve rehabilitation of disturbed areas and landscaping along the road corridor near South Creek, with an aim to improve water quality and fauna habitats where possible.
(b) Minimise adverse impacts on water quality, aquatic habitats, riverine vegetation and bank stability.	The potential impacts on water quality, aquatic habitats, riverine vegetation and bank stability have been considered in Sections 6.1 and 6.6. Safeguards and management measures have been proposed to minimise any adverse impacts.
(c) Minimise direct and indirect adverse impacts on land reserved or dedicated under the NPW Act or the <i>Forestry Act 1916</i> and conservation area sub-catchments in order to protect water quality and biodiversity.	The proposal does not involve any work on land reserved or dedicated under the NPW Act or <i>Forestry Act 1916</i> (note: this Act has now been repealed). Safeguards and management measures to protect water quality and biodiversity are outlined in Sections 6.1.4, 6.1.5 and 6.6.5.
(d) Protect wetlands (including upland wetlands) from future development and from the impacts of land use within their catchments.	No wetlands are located within the proposal area.
(e) Consider the need to include buffer zones (such as adequate fire radiation zones) for proposals on land adjacent to land reserved or dedicated under the NPW Act or the <i>Forestry Act 1916</i> .	The proposal is not within or next to land reserved or dedicated under the NPW Act or <i>Forestry Act 1916</i> (note: this Act has now been repealed).
(f) Consider the views of the Director-General of National Parks and Wildlife about proposals for land adjacent to land reserved or dedicated under the NPW Act.	The proposal is not within or next to land reserved or dedicated under the NPW Act.
(g) Consideration should be given to the impact of the development concerned on the water table and the formation of acid sulfate soils.	Potential impacts of the proposal on the water table and acid sulfate soils have been considered in Section 6.6.
(h) New development in conservation area sub-catchments should be located in areas that are already cleared.	The proposal has tried to maximise use of areas that are already cleared. However, some vegetation clearance in conservation areas is proposed due to the limited area available for widening of Mamre Road. Biodiversity offsets have been proposed for these impacts (refer to Section 6.1.5).

SREP 20 planning consideration	Where considered or addressed
<p>(3) Water quality</p> <p>Policy: Future development must not prejudice the achievement of the goals of use of the river for primary contact recreation (being recreational activities involving direct water contact, such as swimming) and aquatic ecosystem protection in the river system. If the quality of the receiving waters does not currently allow these uses, the current water quality must be maintained, or improved, so as not to jeopardise the achievement of the goals in the future. When water quality goals are set by the Government these are to be the goals to be achieved under this policy.</p> <p>Strategies:</p>	
<p>(a) Quantify, and assess the likely impact of, any predicted increase in pollutant loads on receiving waters.</p>	<p>An assessment of the likely quantity and impact of increased pollutant loads has been provided in Section 6.6 and Appendix I. This involved development of a MUSIC model.</p>
<p>(b) Consider the need to ensure that water quality goals for primary contact recreation and aquatic ecosystem protection are achieved and monitored.</p>	<p>Consideration of water quality goals and required safeguards and management measures to monitor potential water quality impacts is provided in Section 6.6 and Appendix I.</p>
<p>(c) Approve development involving primary contact recreation or the withdrawal of water from the river for human contact (not involving water treatment), such as showers, only in locations where water quality is suitable (regardless of water temperature).</p>	<p>The proposal does not involve primary contact recreation or the withdrawal of river water for human contact.</p>
<p>(d) Do not carry out development involving on-site disposal of sewage effluent if it will adversely affect the water quality of the river or groundwater. Have due regard to the nature and size of the site.</p>	<p>The proposal does not involve on-site disposal of sewage effluent.</p>
<p>(e) Develop in accordance with the land capability of the site and do not cause land degradation.</p>	<p>The proposal has been developed in consideration of the land capability of the proposal area and has incorporated safeguards and management measures to avoid land degradation (refer to Section 6.6).</p>
<p>(f) Consider the need for an Erosion and Sediment Control Plan (to be in place at the commencement of development) where the development concerned involves the disturbance of soil.</p>	<p>Erosion and Sediment Control Plans (ESCP) would be prepared and implemented during construction in consideration of soil impacts discussed in Section 6.6.</p>
<p>(g) Minimise or eliminate point source and diffuse source pollution by the use of best management practices</p>	<p>Best management practices would be implemented during construction to avoid or minimise pollution. These practices would be outlined in a Soil and Water Management Plan.</p>

SREP 20 planning consideration	Where considered or addressed
(h) Site and orientate development appropriately to ensure bank stability. Plant appropriate native vegetation along banks of the river and tributaries of the river, but not so as to prevent or inhibit the growth of aquatic plants in the river and consider the need for a buffer of native vegetation.	The design of the proposal has considered the need for bank stability and landscaping (with prioritisation of native species) along the road corridor, near South Creek.
(i) Consider the impact of the removal of water from the river or from groundwater sources associated with the development concerned.	Removal of water for the proposal would be limited to minor dewatering of excavations as required, which is expected to result in negligible impacts on water sources.
(j) Protect the habitat of native aquatic plants.	Safeguards and management measures would be implemented to protect the habitat of native aquatic plants, where possible (refer to Sections 6.1.4 and 6.6.5).

(4) Water quantity

Policy: Aquatic ecosystems must not be adversely affected by development which changes the flow characteristics of surface or groundwater in the catchment.

Strategies:

(a) Future development must be consistent with the interim or final river flow objectives that are set for the time being by the Government.	The proposal would consider river flow objectives, where relevant.
(b) Ensure the amount of stormwater run-off from a site and the rate at which it leaves the site does not significantly increase as a result of development. Encourage on-site stormwater retention, infiltration and (if appropriate) reuse.	The proposal has considered the potential impacts of stormwater runoff and proposed safeguards and mitigation measures as required (refer to Section 6.6). The proposal would also involve establishment of temporary and permanent water quality basins and swales to minimise impacts of stormwater runoff (refer to Sections 3.1 and 3.2.3).
(c) Consider the need for restricting or controlling development requiring the withdrawal or impoundment of water because of the effect on the total water budget of the river.	The proposal does not require the withdrawal or impoundment of river water.
(d) Consider the impact of development on the level and quality of the water table.	Potential impacts of the proposal on the level and quality of the water table are discussed in Section 6.6.

(5) Cultural heritage

Policy: The importance of the river in contributing to the significance of items and places of cultural heritage significance should be recognised, and these items and places should be protected and sensitively managed and, if appropriate, enhanced.

SREP 20 planning consideration	Where considered or addressed
Strategies:	
(a) Encourage development which facilitates the conservation of heritage items if it does not detract from the significance of the items.	The proposal has been refined to minimise impacts on heritage items, where possible (refer to Section 2.5). The design for the proposal has minimised impacts on non-Aboriginal heritage through sympathetic urban and landscaping designs and identification of heritage interpretation opportunities based on specialist heritage advice.
(b) Protect Aboriginal sites and places of significance.	Impacts to Aboriginal heritage have been avoided where possible through the design refinement process. However potential impacts on Aboriginal heritage sites could not be completely avoided. TfNSW would apply for an AHIP prior to any impact or harm to Aboriginal sites. Section 6.2.4 outlines safeguards and management measures to minimise impacts on Aboriginal heritage.
(c) Consider an Aboriginal site survey where predictive models or current knowledge indicate the potential for Aboriginal sites and the development concerned would involve significant site disturbance.	Aboriginal site surveys and archaeological test excavations have been carried out for the proposal to confirm the potential for Aboriginal sites including subsurface archaeological deposits in the proposal area (refer to Section 6.2.1).
(d) Consider the extent to which heritage items (either identified in other environmental planning instruments affecting the subject land or listed in Schedule 2) derive their heritage significance from the river.	The potential importance of South Creek to the significance of the Aboriginal and non-Aboriginal heritage sites within and near the proposal area has been considered (refer to Sections 6.2 and 6.3). It is noted that the resources of Wianamatta/South Creek and its tributaries were of great importance to the Aboriginal people living in the region.
<p>(6) Flora and fauna</p> <p>Policy: Manage flora and fauna communities so that the diversity of species and genetics within the catchment is conserved and enhanced.</p> <p>Strategies, generally:</p>	
(a) Conserve and, where appropriate, enhance flora and fauna communities, particularly threatened species, populations and ecological communities, aquatic habitats, wetland flora, rare flora and fauna, riverine flora, flora with heritage value, habitats for indigenous and migratory species of fauna, and existing or potential fauna corridors.	The design for the proposal has been specifically refined to minimise impacts on native species and ecological communities, where possible. The potential impact of the proposal on biodiversity and the relevant safeguards and management measures proposed are discussed in Section 6.1.

SREP 20 planning consideration	Where considered or addressed
(b) Locate structures where possible in areas which are already cleared or disturbed instead of clearing or disturbing further land.	The proposal has tried to maximise use of areas that are already cleared. However, some vegetation clearance in conservation areas is proposed due to the limited area available for widening of Mamre Road. Biodiversity offsets have been proposed for these impacts (refer to Section 6.1.5).
(c) Minimise adverse environmental impacts, protect existing habitat and, where appropriate, restore habitat values by the use of management practices	Several safeguards and management measures to minimise adverse environmental impacts and protect existing habitat values through management practices have been proposed (refer to Section 7.2).
(d) Consider the impact on ecological processes, such as waste assimilation and nutrient cycling.	The proposal is unlikely to result in issues associated with waste assimilation and nutrient cycling, assuming management measures are implemented (refer to Section 7.2).
(e) Consider the range of flora and fauna inhabiting the site of the development concerned and the surrounding land, including threatened species and migratory species, and the impact of the proposal on the survival of threatened species, populations and ecological communities, both in the short and longer terms.	The potential impact on flora and fauna species that may use the land within and surrounding the proposal area, including threatened and migratory species have been considered (refer to Section 6.1 and Appendix D).
(f) Consider the need to provide and manage buffers, adequate fire radiation zones and building setbacks from significant flora and fauna habitat areas.	Fire radiation zones and building setbacks are not relevant to the proposal.
(g) Consider the need to control access to flora and fauna habitat areas.	The proposal would not notably change access to flora and fauna habitat areas.
(h) Consider the need to maintain corridors for fish passage, and protect spawning grounds and gravel beds.	The proposal would be carried out in accordance with the TfNSW Code of Practice with Fisheries to protect aquatic habitat. The proposal is not expected to directly impact on fish passage or spawning grounds.
Strategies for wetlands - (i) to (q)	Not relevant as the proposal area does not include any land mapped as wetlands.
<p>(7) Riverine scenic quality</p> <p>Policy: The scenic quality of the riverine corridor must be protected.</p> <p>Strategies:</p>	

SREP 20 planning consideration	Where considered or addressed
(a) Maintain areas of extensive, prominent or significant vegetation to protect the character of the river	The design for the proposal has been specifically refined to minimise impacts to areas of extensive, prominent or significant native vegetation, where possible.
(b) Ensure proposed development is consistent with the landscape character as described in the Scenic Quality Study.	South Creek was recognised for its scenic significance in the <i>Hawkesbury-Nepean Scenic Quality Study</i> (NSW Department of Urban Affairs and Planning, 1996). The potential impacts of the proposal on landscape character is discussed in Section 6.8.4.
(c) Consider the siting, setback, orientation, size, bulk and scale of and the use of unobtrusive, non-reflective material on any proposed building or work, the need to retain existing vegetation, especially along river banks, slopes visible from the river and its banks and along the skyline, and the need to carry out new planting of trees, and shrubs, particularly locally indigenous plants.	The proposal has considered potential visual impacts during development of the design, including the urban design and landscaping concept plan provided in Appendix K. This included consideration of the need to consider siting, setback, scale, retaining existing vegetation and planting new native vegetation.
(d) Consider the need for a buffer between new development and scenic areas of the riverine corridor shown on the map as being of significance beyond the region (which are also scenic areas of significance for the region) or so shown as being of regional significance only.	The proposal area includes an area mapped as 'scenic protection' under the SREP 20, which follows the alignment of South Creek. As the proposal involves widening of an existing road, which is already within the scenic protection area, implementation of a buffer to avoid this area is not considered feasible. However, the need to minimise visual impacts has been considered for the proposal to maintain the existing scenic nature of the area (refer to Section 6.8).
(e) Consider the need for controls or conditions to protect those scenic areas.	Safeguards and management measures to minimise landscape character and visual impacts have been proposed in Section 6.8.4.
(f) Consider opportunities to improve riverine scenic quality.	The urban design and landscaping plan for the proposal will consider opportunities to improve riverine scenic quality.
<p>(8) Agriculture / aquaculture and fishing</p> <p>Policy: Agriculture must be planned and managed to minimise adverse environmental impacts and be protected from adverse impacts of other forms of development.</p> <p>Strategies:</p>	

SREP 20 planning consideration	Where considered or addressed
(a) Give priority to agricultural production in rural zones	The proposal area includes lots zoned as RU2: Rural Landscape under the Penrith LEP near Mandalong Close on the western side of Mamre Road. The proposal is unlikely to noticeably impact on agricultural production within these zones.
(b) Ensure zone objectives and minimum lot sizes support the continued agricultural use of Class 1, 2 and 3 Agricultural Land (as defined in the Department of Agriculture's Agricultural Land Classification Atlas) and of any other rural land that is currently sustaining agricultural production	The potential impact of the proposal on agricultural operations is considered in Section 6.9.
(c) Incorporate effective separation between intensive agriculture and adjoining uses to mitigate noise, odour and visual impacts	The proposal is not near any intensive agriculture. Safeguards and management measures to mitigate noise, air quality and visual impacts are provided in Sections 6.7.5, 6.8.4 and 6.9.5.
(d) Protect agricultural sustainability from the adverse impacts of other forms of proposed development	The proposal is not likely to impact agricultural sustainability.
(e) Consider the ability of the site to sustain over the long term the development concerned	Safeguards and mitigation measures related to maintenance of the proposal in the long-term during operation have been outlined in Section 7.2, where required.
(f) Consider the likely effect of the development concerned on fish breeding grounds, nursery areas, commercial and recreational fishing areas and oyster farming	Assuming implementation of the safeguards and management measures outlined in Section 6.6, the proposal is unlikely to affect any fish breeding grounds, nursery areas, commercial and recreational fishing areas or oyster farming.
<p>(9) Rural residential development</p> <p>Policy: Rural residential development should not reduce agricultural sustainability, contribute to urban sprawl, or have adverse environmental impacts (particularly on the water cycle or on flora or fauna).</p>	Not applicable to the proposal as the proposal does not involve rural residential development.
<p>(10) Urban development</p> <p>Policy: All potential adverse environmental impacts of urban development must be assessed and controlled.</p>	

SREP 20 planning consideration	Where considered or addressed
(a) When considering a proposal for the rezoning or subdivision of land which will increase the intensity of development of that land (for example, by increasing cleared or hard surface areas) so that effluent equivalent to that produced by more than 2500 people will be generated, consider requiring the preparation of a Total Water Cycle Management Study or Plan.	The proposal does not involve any rezoning or subdivision of land.
(b) Consider urban design options to reduce environmental impacts (such as variable lot sizes and shapes, and the clustering of development).	The urban design and landscaping concept for the proposal (refer to Appendix K) has been designed in consideration of the need to reduce environmental impacts, where possible.
<p>(11) Recreation and tourism</p> <p>Policy: The value of the riverine corridor as a significant recreational and tourist asset must be protected.</p>	
(a) Provide a wide range of recreational opportunities along the river which are consistent with conserving the river's natural values and character.	The proposal has included access to future parkland along South Creek, which flows into the Hawkesbury River, via the western leg of the Banks Drive and Solander Drive intersections.
(b) Provide a wide range of recreational opportunities along the river which are consistent with conserving the river's natural values and character.	The proposal would support future recreational opportunities along South Creek through improved road access.
(c) Minimise conflicts between recreational uses.	Not relevant to the proposal.
(d) Consider the availability of, or need to provide, land for vehicle parking and for suitable access (including access for cars and buses), for boat service areas and for water, electricity and sewage disposal.	Not relevant as there are no suitable access points for boats near the proposal.
(e) Consider the environmental impact of ancillary services for recreation and tourist developments, such as amenities blocks and vehicle parking.	Not relevant as no ancillary services for recreation and tourist developments are proposed.
(f) Consider the visual impact of development on the surrounding area	The potential visual impact on the recreational area along South Creek has been considered in Section 6.8.3. Safeguards and management measures to mitigate visual impacts are provided in Section 6.8.4.
<p>(12) Metropolitan strategy</p> <p>Policy: Development should complement the vision, goal, key principles and action plan of the Metropolitan Strategy.</p>	