

6 May, 2019

Director-Infrastructure Projects
Department of Planning and Environment
GPO Box 39
Sydney NSW 2001

Dear Sir/Madam,

I wish to lodge my objection to the route of the shared cycle and pedestrian pathway (western option E) and its southern extension to Chuter Avenue as outlined within the Preferred Infrastructure Report (PIR) 2019.

Once again the Roads and Maritime Services (RMS) has released a document and called for submissions within tight timeframes during a holiday period (Easter and School Holidays). The RMS appears to have become a serial offender in regards to releasing substantial and complex documents on the eve of holiday periods:

- First submissions due 14 December 2017 (Christmas no 1)
- Second Submissions due 14 December 2018 (Christmas no2)
- Third Submission due 8 May 2018 (Easter and Anzac Day)

A cynic would see this as an effective means of restricting community feedback.

There also appears to have been a complete lack of consultation with our local community about the proposed southern extension. There was no public exhibition of the proposal or letter box drop that I am aware of. It appears bike user groups have been consulted and responded to. However, bike user groups are special interest groups they do not reflect the views of the wider community.

Compounding my lack of understanding of the proposal I found the PIR:

- Biased and some cases misleading
- Lacking in clarity and convoluted (required to keep referring back to the EIS)
- Lacking side elevations, plans, maps or artist impressions
- Does not acknowledge community opposition to Option E cycle route through Patmore Swamp
- Underestimates the visual cumulative impacts
- Does not adopt the correct curtilage definition for Patmore Swamp (inflates the area and diminishes the percentage impact)
- Does not recognise Patmore Swamp as a Freshwater Wetland Endangered Ecological Community
- Does not quantify the existing area of endangered plant communities within the swamp
- Does not map the key fish habitat
- Does not identify the presence of the Southern (Large Footed) Myotis
- Does not address the fate of the existing network of grassed walking paths
- Does not quantify soil contamination

I believe the proposed Option E shared cycle and pedestrian pathway and southern extension should not be built through Patmore Swamp. It is simply a bad idea to construct a pathway through one of the last remaining freshwater wetlands on the western side of Botany Bay. The negative impacts on the wetland far outweigh any perceived benefits the shared cycle and pedestrian pathway will bring by “promoting the aesthetic significance of the swamp”. In summary the project will:

- Visually alter the landscape character of Patmore Swamp
- Directly impact Patmore Swamp Freshwater Wetland Endangered Ecological Community
- Potentially impact to two EEC’s located in the area known as the Hawthorne Nature Reserve
- Diminish the bio diversity value of Patmore Swamp
- Impact the habitat of the Southern (Large Footed) Myotis
- Put at risk the Key Fish Habitat within the adjacent water course
- Threaten the opportunity to restore the functionality of Patmore Swamp
- Diminish the heritage values and landscape of Patmore Swamp
- Diminish the heritage value of the remaining section of the Moorefield race track
- Diminish the cultural significance of the landscape to its indigenous owners
- Restrict access to the greater part of Patmore Swamp
- Introduce safety and security risks to users

The basis of all risk assessment is to identify, assess and control impacts. The highest form of control is elimination. The route the raised boardwalk is taking through the best remaining parts of our natural wetlands is not justified. I believe the Option E route the raised boardwalk is taking through our wetlands should be abandoned and a new route located on open grassland on the eastern side of Patmore Swamp.

I request that the Department of Planning and Environment reject the RMS preferred western route option E through Patmore Swamp and compel RMS to find an engineering solution that avoids direct impact on our freshwater wetlands and delivers the preferred eastern option the bicycle user groups’ desire.

Overview

I found the reasoning for the southern extension of the shared pathway (Option E) contained within the PIR overview was biased as it implied support for the route through Patmore Swamp and did not acknowledge any opposition. The overview focussed on the support of bicycle user groups for the southern extension to the east. However, the support of these groups for a southern extension doesn't mean these groups support the proposed route through Patmore Swamp. I reviewed the bicycle group submissions to the Environmental Impact Statement (EIS) and found the issues raised by the bicycle groups concerned the pathway's destination and design not the route through Patmore Swamp. In fact the Bikeeast and St George Bicycle User Group submissions opposed the western route (option E) through Patmore Swamp and preferred the eastern options A, B, C and D. Bayside Council also opposed the route through Patmore Swamp on ecological grounds. These opposing views should have been made clear in the overview.

Civic Avenue has never been an appropriate or logical destination for the shared pathway. There is no existing cycle route on the Civic Avenue side of Patmore Swamp, nor justification or demand for one. The logical destination has always been the existing shared pathway at Chuter Avenue. The original intention of RMS was to connect with the existing bicycle path on the eastern side of Patmore Swamp that's why the eastern options A B C and D were explored. To bring the path through Patmore Swamp on the western side and then bring it back to the eastern side by the proposed southern extension is an environmentally destructive and expensive exercise.

RMS appears hell bent on constructing a shared pathway through Patmore Swamp identified as the western route option E. The justification for choosing the western route is given as the bridge over President Avenue. The RMS states that in order to traverse President Avenue (to be raised on an embankment) the shared pathway bridge and its approach on the southern side would be so high that it would affect the privacy of residents living in Colson Crescent whose homes back onto Patmore Swamp.

The justification for building the bridge is given as providing a "corridor scale connection" but what is meant by "corridor scale connection" and why does it only appear to apply to President Avenue? An examination of the entire length of the shared pathway reveals the route proposed crosses Bestic and Bay Streets at the same level using pedestrian traffic lights. The shared pathway also leaves the reserved freeway corridor at one point and follows Bruce, Francis, Bay and England Streets. In fact the Option E route through Patmore Swamp requires the shared pathway to leave the reserved freeway corridor. So much for corridor scale connections!! There appears to be no obligation to cross President Avenue on a bridge and onwards through Patmore Swamp!! It appears the RMS is trying to create a high visibility showpiece.

An examination of the eastern option bridge site at President Avenue near Colson Crescent also reveals that about six residences backing onto Patmore Swamp could potentially be affected by the height of the proposed bridge and southern approach. The exact location and number of residences that the RMS believes are affected is not made clear in the EIS. However, now that Chuter Avenue has been fixed as the destination it appears viable to build a southern approach to the bridge on a sweeping 'S' that lands on the grassed reserve behind the houses on Colson Crescent and follows the

grassed corridor all the way to Chuter Avenue. I believe a sweeping 'S' on the southern bridge approach of the cycle bridge would address height and privacy concerns.

I request that the Department of Planning and Environment reject the RMS preferred western route through Patmore Swamp and compel RMS to find an engineering solution that avoids direct impact on the freshwater wetlands and delivers the preferred eastern option the bicycle user groups' desire.



Figure 1: Showing the area available on the eastern side of Patmore Swamp for the bridge crossing and shared cycle and pedestrian pathway including the southern extension to Chuter Avenue

Description of change

I found the written descriptions of the infrastructure proposed are not clear or located in the one place. The reader is required to piece together scattered descriptions or follow circular references to obtain the required information. A prime example of this lack of clarity is the trouble I had piecing together a full description of the raised boardwalk for the proposed southern extension of the shared cycle and pedestrian pathway. I had to source information from five different areas of the PIR to build an understanding of what is proposed as follows:

- 3 metre wide boardwalk **(3.2 - Description of Change p.12)**
- with hand rails and lighting **(3.2.1 - Construction activities p.13)**
- standing up to an elevation of 2.5 metres above the existing ground level **(3.4.6.4 Potential impacts –operation p.44)**
- including a one metre buffer either side of the existing pathway **(3.4.4.2 Existing environment p.37)**
- light poles off set one metre from path **(EIS 6.9.7 Lighting p.6.28)**

Based on the description above I use the term raised boardwalk when referring to the shared cycle and pedestrian pathway in this submission

However, it is still not clear to me where the junction of the proposed southern extension with the existing proposal will be located or what it will look like. Will the junction be made with the Civic Avenue pathway on the proposed viaduct, embankment, boardwalk or ground level? How far will the raised boardwalk be from the western bank of the pond within Patmore Swamp? How much vegetation will be removed in the vicinity of the pond due to the raised boardwalk? What will the raised boardwalk look like as it emerges from the reedland and passes through A.S. Tanner Reserve? What will the steel bridge over the waterway with Patmore Swamp look like and how high will it be?

Safety & Security

The proposed route of Option E and southern extension raised boardwalk will traverse the most remote areas of Patmore Swamp. Visibility of the current walking tracks through the swamp from the surrounding streets is currently very limited. Many members of our local community are reluctant to visit the swamp late in the day due to concerns for their wellbeing. Placing the raised boardwalk on the proposed route will introduce security concerns for users. The proposed vegetation plantings to visually integrate the raised boardwalk into the environment will further exacerbate the security issue.

The proposal for a pathway shared by cyclists and pedestrians also has safety implications. The proposed 3 metre width will not allow separation of cyclists and pedestrians. I note concerns about pathway width and separation have been raised by Bayside Council and bicycle user group submissions in the interests of user safety. Pedestrians wishing to walk slowly or stop to enjoy the view or read interpretive signage will be disadvantaged or put at risk by speeding cyclists. Many dog owners use the current grassed walking paths within the swamp. Will dog walkers be able to use the raised boardwalk? Dog walkers and cyclists are not a good mix!!

Due to the proposed shared pathways remoteness it will be difficult to summon help if someone is injured or attacked on the pathway. Access by emergency services will also be hampered by the proposed pathway's remoteness.

How will safety and security concerns be dealt with? Will the existing vegetation along the pathway be removed to improve visibility? Will the visual integration of the pathway with new plantings be altered to improve visibility? Will the intensity of the lighting be maximised to improve security to conform to the Australian Standard. What level of lighting as per standard will it be? Has this intensity of lighting been properly assessed for its effects on visual landscape and fauna?

Lighting

I cannot find any reference about how high the path lighting will stand. The reference provided for further information about lighting within the EIS at **5.4 Shared Cycle and pedestrian pathways p.60** is a good example of the time consuming circular nature of the PIR & EIS. The reference provided as 6.11.7 is incorrect and should read 6.9.7, which is on page 6.28. The entry at 6.9.7 then refers the reader to AS 1158 Lighting for Roads and Public Spaces. I found there were six parts to this standard and there are other associated standards referenced.

What is the proposed height of the lighting over the raised boardwalk? Will lighting be at maximum brightness at night for security and safety reasons as per the standard? Has the required level of security lighting been assessed for its visual impacts at night and its impact on the Myotis bat?

Memorial

On the western bank of the pond within Patmore Swamp stands a memorial to identify the location of the death, by misadventure, of a young male who drowned in the pond. This memorial in the form of a cross with relics of the deceased arranged around its base has been in place for many years and is dutifully maintained by the mother of the deceased. She regularly visits the memorial to place fresh keepsakes and light a small candle. This sad memorial has never been interfered with or vandalised.

The local community accepts and respects this memorial but the PIR makes no mention of it. What will happen to the memorial and how will the grieving mother be able to access the memorial once the raised boardwalk blocks access to the pond?

Landscape character impact

It was also unhelpful to find the Preferred Infrastructure Report did not contain side elevations, plans or artist impressions to show how the raised boardwalk will impact the landscape character of the freshwater wetland.

I noticed the viewpoints selected are described as being within Scarborough Park North rather than using the local and heritage listed name Patmore Swamp. I also noticed the viewpoints are dominated by open space and thus the descriptions of the surrounding area contained references to open space and parkland with very minimal or no reference to the freshwater wetland and reed beds. Thus a reader unfamiliar with the area could be left with the impression that the pathway is traversing parkland rather than wetland. Additional viewpoints should be chosen that enable the reader to assess the visual impact of the proposed shared cycle and pedestrian pathway on the freshwater wetland and reed beds.

Also a viewpoint should be shown to give the reader some idea of the cumulative impact of the total option E and southern extension shared boardwalk. The assessment for the entire route through Patmore Swamp is effectively split between the original EIS and the PIR. Therefore, the PIR when reviewed in isolation is very misleading and does not illustrate the cumulative impact of both parts of the project.

Viewpoint 16: View southeast from within Scarborough Park North (Patmore Swamp)

Table 3-6 Viewpoint 16 – Impact Assessment Table

The small embankment referred to in the description of setting is the remains of Moorefield race track. The viewpoint is framed so it cuts from view the junction of the southern extension raised boardwalk with shared pathway leading to Civic Avenue.

Operation Magnitude

I disagree with the description of the viewpoint and finding. The description does not align with the descriptions of the proposed shared cycle and pedestrian pathway scattered throughout the Preferred Infrastructure Report. The proposed pathway will be a:

- 3 metre wide boardwalk with hand rails raised at an elevation up to 2.5 metres above the existing ground level with lighting and a one metre buffer either side

In this view the shared pathway exiting at Civic Avenue would sweep across in the forefront of the view. The raised boardwalk would be seen coming in from the left and entering the vegetation to the south. The raised boardwalk will not be “in keeping in character with a developed parkland setting” due to its elevation and visual prominence in the landscape. The visual integration of the boardwalk into the wetland setting by new plantings will most likely not occur so as to provide better visibility of the raised boardwalk from the street due to security concerns. The vegetation to the north (left) would be removed as it will be in the way of the raised boardwalk. Some of the vegetation to the south (right) of the view may also be removed due to security concerns.

I assess the magnitude of change in this case as being “High” visual impact rather than “Low”.

At night the raised boardwalk would be brightly lit to a high level as recommended in the Australian standard due to security and safety concerns. As both the exit to Civic Avenue and raised boardwalk will be in view and brightly lit with a minimum of screen plantings due to security concerns both routes will be visually prominent in the land scape at night.

I assess the magnitude of change in this case as being “High” visual impact rather than “Moderate-low adverse”

Viewpoint 17: View northwest from AS Tanner Reserve

Table 3-7 Viewpoint 17 – Impact Assessment Table

Operation Magnitude

I disagree with the description of the viewpoint and finding. The finding in this viewpoint is incorrect as it is a cut and paste from the entry against the previous viewpoint 16. There will be no curve in the cycleway at this point. The bridge over the waterway will be visible in the background. A raised boardwalk will lead directly from the bridge through the reedland visible in the centre of the view. The raised boardwalk would gradually lower to meet the grass level and travel straight through the middle foreground to Chuter Avenue.

I assess the magnitude of change in this case as being “High” visual impact rather than “Low”.

At night the bridge and raised boardwalk would be brightly lit to a high level as recommended in the Australian standard due to security and safety concerns. The bridge and raised boardwalk would stand visually prominent in an otherwise dark landscape.

I assess the magnitude of change in this case as being “High” visual impact rather than “Moderate-low adverse”

Alternative Viewpoints

I wish to nominate two alternative viewpoints to those illustrated in the PIR, which I have identified as 16A and 17A. I believe these views illustrate the cumulative magnitude of change (16A) and the magnitude of change on the freshwater wetland (17A)



Figure 2: Alternative viewpoint 16A. The above view adopts a similar position to viewpoint 16 however the viewer is facing north. This view shows the junction of the raised boardwalk with the shared pathway ramp leading to Civic Avenue. This viewpoint also illustrates the cumulative impact of the option E western route and southern extension.

I assess the magnitude of change in this case as being “High” visual impact



Figure 3: Alternative viewpoint 17A. The above view is from the eastern side of the freshwater wetland in Patmore Swamp looking west to the opposite bank. The raised boardwalk will emerge from the vegetation on the north side (right). The raised boardwalk will be visually prominent as it follows the pond's western bank and then rises over a bridge crossing the channel to the south (left). Most of the Coastal Freshwater Swamp Forest visible on western bank running from the centre of the photograph to the north will have been removed as the path will be more than 20 metres from the bank so as to comply with NSW Department of Primary Industries (2012) Guidelines for riparian corridors on waterfront land.

I assess the magnitude of change in this case as being "High" visual impact

Soils and contamination

The Preferred Infrastructure Report acknowledges that there have been no soil and contamination investigations conducted within Patmore Swamp or the footprint of the shared cycle and pedestrian pathway. However the PIR and EIS make the claim Patmore Swamp is a highly disturbed environment with large amounts of historical landfill without site specific data to back these claims up.

The Preferred Infrastructure Report does not provide a map of the location of the boreholes identified at **Table 3-10 Summary of previous investigations**. Borehole location identifiers such as TP1306 in isolation are not helpful for the reader and make it difficult to critique their relevance. I was required to search the EIS for the location of the boreholes nominated in table 3-10, which I found to be located outside the borders of Patmore Swamp and nowhere near the construction footprint. I believe the findings from these boreholes are not site specific and therefore not relevant.

I fail to see how the RMS recognises the potential for contamination associated with historical filling and illegal dumping within the swamp but does not feel the obligation to carry out geotechnical investigation within the construction footprint prior to the release of the report. The RMS instead relies on the findings from previous geotechnical investigations conducted outside of Patmore Swamp, which I believe are not valid.

The EPA in their submission in response to the EIS was quite scathing about the lack of detail regarding historical landfill to confirm risks arising from contamination. The RMS would have us believe Patmore Swamp is full of landfill but does not seem too concerned about contamination even though the PIR recognises the potential for contamination associated with historical filling and illegal dumping.

<p>Why have no geotechnical investigations been carried out within Patmore Swamp to determine the locations of historical landfill? Why has no soil sampling been undertaken to determine the level of contamination prior to the release of the PIR? How does the RMS substantiate its claims about landfill if it hasn't carried out geotechnical investigations within the swamp?</p>
--

Curtilage area of Patmore Swamp

It is difficult to assess the biodiversity impact on the Patmore Swamp when the definition of the area known as Patmore Swamp is not correctly defined. I was disappointed that the RMS team are still unable to define the Patmore Swamp with a level of accuracy that would allow me to assess the true impact of its proposals on the wetlands.

The RMS has clarified its definition of the curtilage of Patmore Swamp to be the heritage listing identified as Listing I202, Rockdale Local Environment Plan 2011. The heritage listing identified as I202 is made up of two DPs that extend from President Avenue to Barton Street. However, Lot 1 1177511 is the southern area bordering Barton Street and is completely taken up by sport fields and recreation areas that form the northern part of Scarborough Park, whereas the area most impacted by the project is the freshwater swamp and endangered ecological communities within Patmore Swamp contained within Lot 1 DP 1113262.

I believe the true southern boundary of Patmore Swamp is a line drawn across from the northern boundary of the heritage listed Chinese market gardens (I199) towards AS Tanner Reserve. This line delineates the boundary between Patmore Swamp and Scarborough Park (see EIS Appendix N, page 4-11, Fig 4-6 1906 Parish of St George). Therefore the true curtilage definition for Patmore Swamp should conform to the boundaries of Lot 1 DP 1113262.

The photograph below shows clearly what the boundary line looks like on the ground between Patmore Swamp and Scarborough Park:



Figure 4: The southern boundary of Patmore Swamp with Scarborough Park

Biodiversity

Dr Arthur White, a local authority on freshwater wetlands, considers Patmore Swamp to be a freshwater swamp and therefore identified as an Endangered Ecological Community:

- Sydney Freshwater Wetlands in the Sydney Basin Bioregion

Dr White has also identified two other Endangered Ecological Communities further downstream of the project area that will potentially be impacted by the construction works. The two EEC's located in the area known as the Hawthorne Nature Reserve are:

- Swamp Oak Floodplain Forest in the NSW North Coast, Sydney Basin and South-east Bioregion
- Swamp Schleropyll Forest in the NSW North Coast, Sydney Basin and South-east Bioregion (Kurnell Dune Forest)

The PIR and supporting EIS has not identified or addressed the above EECs. This lack of recognition exposes this project to legal challenge. By not recognising these EECs the Preferred Infrastructure Report and supporting EIS have not adequately identified and assessed the impacts to these communities or suitable impact control measures.

In the case of Patmore Swamp the PIR and supporting EIS by focusing on threatened plant communities individually have underestimated the impact on the endangered status of Sydney Freshwater Wetland EEC as whole. When assessing the cumulative impact of the Option E shared cycle and pedestrian pathway on Patmore Swamp it is sobering to be mindful of the NSW Threatened Species Scientific Committee's justification for listing Sydney Freshwater Wetlands as an EEC, which I quote below:

"In view of the small size of existing remnants, and the threat of further clearing, disturbance and degradation, the Scientific Committee is of the opinion that the Sydney Freshwater Wetlands in the Sydney Bioregion are likely to become extinct in nature in New South Wales unless the circumstances and factors threatening its survival or evolutionary development cease to operate and that listing as an endangered ecological community is warranted"¹

Endangered plant communities

The proposed shared cycle and pedestrian pathway and southern extension will destroy a large area of the best preserved Common Reedland and Coastal Freshwater Swamp Forest within Patmore Swamp. The bio diversity assessment and supporting EIS does not correctly quantify the true extent of this loss. The EIS states that a total 4% of Patmore Swamp will be resumed for the widening of President Avenue and construction of the proposed shared cycle and pedestrian pathway. The RMS

¹ Environment.nsw.gov.au, home\threatened species\NSW threatened species scientific committee\determinations, Sydney Freshwater Wetlands in the Sydney Bioregion-endangered ecological community listing

has since clarified that the area used to produce this figure is the heritage listing identified as Listing I202, Rockdale Local Environment Plan 2011. The Submissions report states that “the total area of Patmore Swamp heritage listing is around 262,020 metres squared”. However, the heritage curtilage for I202 is made up of two DP’s that extend from President Avenue to Barton Street. Patmore Swamp is contained within the boundaries of Lot 1 DP 1113262. According to the Native Vegetation Regulatory Map Lot 1 DP 1113262 is 184,722.43 metres squared. There appears to be a large discrepancy.

The other DP within the heritage curtilage is Lot 1 1177511 but this area is taken up by sport fields and recreation areas and belongs to Scarborough Park, whereas the area most impacted by the project is the freshwater swamp and endangered ecological communities within Patmore Swamp. The true curtilage for Patmore Swamp conforms to the boundaries of Lot 1 DP 1113262.

The report and EIS do not provide a figure to quantify the existing areas of reedland or swamp forest within the true area of Patmore Swamp, nor do they subtract the areas to be removed and give a percentage figure for the extent of the individual and total areas of the EEC impacted. By my calculation if the true curtilage for Patmore Swamp is used the total percentage EEC area impacted would be a much greater figure than the 4% given for the impact to the heritage curtilage as a whole.

I seek clarification of how RMS calculated the area of Patmore Swamp. I also seek a breakdown of the existing area of each plant community within Patmore Swamp using the boundaries that conform to Lot 1 DP 1113262 and a calculation of the percentage that each is impacted by the cumulative impacts of the F6 project.

When I take into account the entire proposed route of Option E and its southern extension it appears to me that the route has been designed to target the endangered plant communities and have maximum impact on the landscape of the Freshwater Wetland. Options to avoid these sensitive areas do not appear to have been explored. Could it be that the real goal of the RMS is to seek an attractive landscape in which to place an active transport route?

Coastal Freshwater Swamp Forest

The description for Coastal Freshwater Swamp Forest appears to minimize its significance as an endangered ecological community. The brief description provided in the PIR focuses on the “high occurrence of weeds in the understory”. The presence of weeds is not surprising as the NSW Scientific Committee noted in its final determination about the endangered status of the Swamp Oak Floodplain Forest stated that:

“Very few examples of Swamp Oak Floodplain Forest remain unaffected by weeds.”

However the location of the freshwater swamp forest the PIR is assessing is not very clear. Its location is described as being “along the drainage line”. The drainage line that I think the author referring to is located on the northern tip of freshwater swamp forest and is indeed weed invaded.

However, the forest is in much better condition further southwards when viewed from the grassed walkway.

The combined Option E route and raised boardwalk will impact two of the best stands of Coastal Freshwater Swamp Forest within Patmore Swamp (see Fig 5)

Cumulative biodiversity and landscape impacts

The PIR does not acknowledge the cumulative impact of the southern extension boardwalk on the ECC Freshwater Wetland within Patmore Swamp. Patmore Swamp will lose almost a hectare of endangered common reed (1808) in total if the proposed option E shared pathway and extension goes ahead.

The reedland to be removed is amongst some of the finest stands of reedland contained within the swamp. Not only does the direct removal of reed land need to be considered. The remaining broad vista reed landscape will be interrupted as the shared pathway will cut through the middle of it.

I cannot determine the total figure of Coastal Freshwater Swamp Forest (1232) currently existing in Patmore Swamp nor the percentage cumulative loss due to the option E route and extension as this figure is not provided within the PIR or EIS.

To view the loss of ECC due to the extension of the raised boardwalk alone is misleading and understates the total loss to the community.

Table 1: Summary of endangered plant community types identified as removed within the original EIS Assessment Area

Type	PCT	Biodiversity Conservation Act listing status	Vegetation Integrity	Biodiversity credits	Development footprint	How much will be left?
Swamp Oak	1232	Endangered	Moderate to good	8	0.47	0
Swamp Mahogany	1795	Endangered	Moderate to good	10	0.30	0
Common reed	1808	Endangered	Moderate to good	8	0.77	0
				26 (total)		

The PIR details the additional area of endangered plant communities types in the Patmore Swamp that will be removed if the southern extension of the shared cycle way is approved:-

Type	PCT	Biodiversity Conservation Act listing status	Vegetation Integrity	Biodiversity credits	Development footprint	How much will be left?
Swamp Oak Floodplain	1232	Endangered	Moderate to good	0	0.22	0
Common reed	1808	Endangered	Moderate to good	2	0.20	0

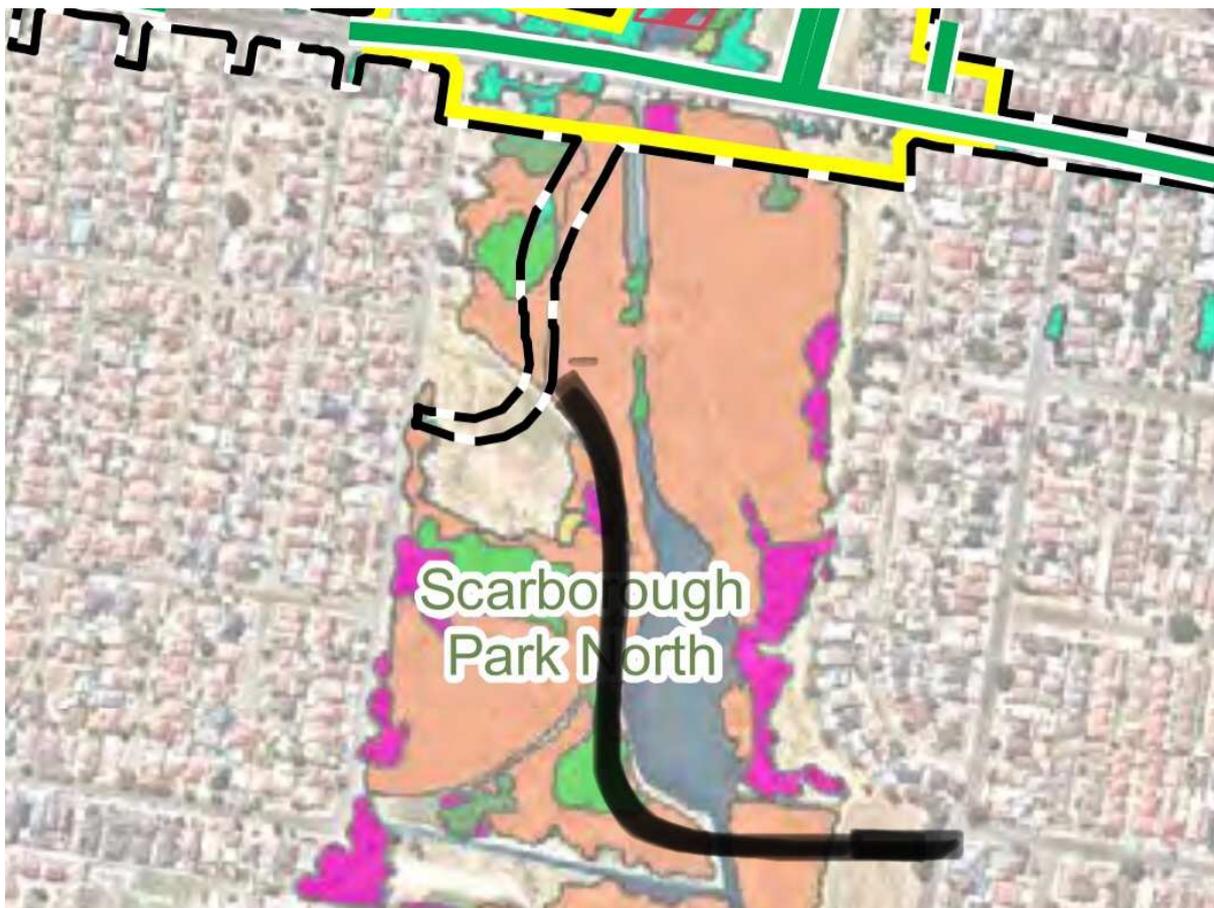


Figure 5: Vegetation map showing the cumulative impact option E route will on the Patmore Swamp Freshwater Wetland EEC

Threatened species

The bio diversity assessment has not identified that the Patmore Swamp and Scarborough Ponds is known habitat for the Large Footed Myotis or Fishing Bat. It is known that Myotis bats are roosting in Hawthorne reserve and the bat has been observed in Patmore Swamp. Freshwater wetlands which includes Common Reed (1808) Swamp Forest (1232) and Typha are recognised habitat for the Myotis bat. Overall the F6 project and Option E route is removing a total of one hectare of common reed and an unknown figure of Coastal Freshwater Swamp Forest from Patmore Swamp.

The EIS acknowledges the presence of Myotis Bat within Patmore Swamp at **Appendix C1 Place Making and Urban Design Strategy, Place Making Opportunity No.6, page 87**. The EIS also explores opportunities for providing roosting habitat for this bat in Patmore Swamp but does not make any firm commitments.

Why then hasn't the Large Footed Myotis been considered by the PIR so that potential impacts can be identified and assessed? The shared pathway project is bringing about three impacts that the Office of Environment and Heritage describe as threats to the Myotis bat:

- loss or disturbance of roosting sites - removal of hollow trees and Swamp Forest (1232)
- clearing of adjacent foraging areas – removal of one hectare of Common Reed (1808)
- reduction in stream water quality affecting food resources – potential contaminated and acid sulphate soils discharge into the receiving environment

The impact from lighting of the shared cycle and pedestrian pathway was not assessed for its impact on the Myotis bat. Will the bat be affected by the height and glare from the shared cycle and pedestrian pathway lighting?

Aquatic habitats

The bio diversity assessment in the PIR states that the dissolved oxygen concentration was poor and unlikely to support fish life. The EIS states that the samples used to arrive at this conclusion were taken from the narrow channel just south of President Ave. However, no water sampling was undertaken of the north pond within Patmore Swamp. The results of the sampling in the narrow channel shouldn't be extrapolated to the north pond. Fish and turtles can be observed within the pond and recreational fishers regularly fish at various locations around the pond's banks. The bank of the north pond is promoted as a fishing attraction for the Civic Avenue Reserve entry at Postcard Sydney website (www.postcardsydney.com.au). Therefore, the statement "the dissolved oxygen concentration was poor and unlikely to support fish life" is clearly wrong in the case of the north pond.

Key Fish Habitat

The Preferred Infrastructure Report and EIS do not provide a map to clearly demonstrate the boundaries of the area mapped as Key Fish Habitat by the Department of Industries – Fisheries. However, in the absence of a map the Preferred Infrastructure Report states the area is "about 800 metres south of President Avenue." To my knowledge the Key Fish Habitat Maps are not precise maps but indicative only so I am curious to understand how the report arrives at the conclusion that the northern boundary of the Key Fish Habitat is 800 metres south of President Avenue? It is my understanding that the north pond in Patmore Swamp is part of the Key Fish Habitat mapped by the Department of Industries. I also estimate the proposed bridge for the shared cycle and pedestrian pathway over the southern end of the north pond will be constructed very near the 800 metre mark nominated within the report. Therefore, I believe the earth works associated with the raised boardwalk and bridge works in the area bordering the Key Fish Habitat have not been properly assessed for their impact on this key habitat.

The Bicentennial Ponds, Patmore Swamp and Scarborough Ponds are identified by Department of Industries as an estuarine habitat classified as a Zostera. The Zostera habitat contains sea grass that is critical as a nursery for fish and the habitat for coastal ecosystems (www.dpi.nsw.gov.au Mapping the estuarine habitats of NSW)

The Preferred Infrastructure Report and EIS do not demonstrate how the project will comply with the NSW Department of Primary Industries (2012) Guidelines for Controlled Activities within riparian corridors on waterfront land and Guidelines for Controlled Activities watercourse crossings on waterfront land.

Lost opportunity to restore the functionality of Patmore Swamp

Patmore Swamp is one of the few sites in the lower wetland corridor where groundwater and surface water filtration take place. Patmore Swamp has the potential to be restored to improve water quality downstream. Bayside Council has been carrying out effective remediation works for some time now but cannot undertake any major work as Patmore Swamp is reserved for a transport corridor. The proposed road widening and shared cycle and pedestrian pathway will compromise any attempt to restore these wetlands as functional ecosystems.

Patmore Swamp's heritage listing and cultural significance should be respected and its biodiversity preserved and enhanced. A restored Patmore Swamp would provide improved habitat for the Myotis Bat and ultimately the Green and Golden Bell Frog, which historically was once common in Patmore Swamp

Non-aboriginal heritage

The heritage impact assessment contained within the Preferred Infrastructure report and the non-aboriginal heritage assessment in Appendix N (Statement of heritage impact) of the EIS that it relies on completely underestimates the historical significance of Patmore Swamp.

I was very disappointed to read the RMS response to concerns about the damage the F6 project will bring to the heritage value of Patmore Swamp.

Scarborough Park and Patmore Swamp two distinct histories

RMS makes a fundamental error by blurring the distinction between Scarborough Park and Patmore Swamp. The locations we know today as Patmore Swamp and Scarborough Park were in pre-colonial time's one freshwater wetland that extended from present day Bay Street, Rockdale to Park Road, Ramsgate. Over time the wetlands were subdivided and Patmore Swamp and Scarborough Park developed two distinct histories.

Scarborough Park was dedicated for public recreation on 23 May, 1879 and its boundaries extended from the southern boundary of Patmore Swamp (aligned with present day Marshall Street and Chinese Market Garden) southwards to Park Road, Ramsgate (see EIS Appendix N, page 4-11, Fig 4-6 1906 Parish of St George). During 1933 a drainage channel running north-south through Scarborough Park was widened to 100 feet and deepened to about 30 feet. A suction pump was used to pump and spread the sand and mud over the marsh land.² The reclaimed Scarborough Park Sports Area was officially opened on 24 November, 1934. Patmore Swamp survived reclamation as it formed part of the Moorefield Racecourse.

The wetland that became known as Patmore Swamp was granted to Patrick Moore in 1812. In 1888 Peter Moore constructed a race track through Patmore Swamp, which operated as a racecourse until 1951 and continued as a training track until sold in 1955. From 1951 Patmore Swamp was reserved as a freeway corridor. Consequently Patmore Swamp is the last remnant of the greater wetland that stretched southwards from present day Bay Street.

The RMS relies on the heritage curtilage (Listing I202, Rockdale Local Environmental Plan 2011) for its definition and assessment of Patmore Swamp, which also blurs the boundaries between Patmore Swamp and Scarborough Park and is the fundamental cause of the confusion. The heritage curtilage for Patmore Swamp includes the reclaimed portion of Scarborough Park north of Barton Street. The confusion the blurred boundary causes is evident in the original summary of heritage significance for Patmore Swamp I202³. Although the subject is labelled as Patmore Swamp the summary describes the physical area as the Scarborough Ponds watercourse 2.5km in length, which includes Scarborough Park. The summary mistakenly implies that Patrick Moore's 60 acre grant of 1812 included the area we know as Scarborough Park 2.5km downstream, which is not correct (see EIS Appendix N, page 4-11, Fig 4-6 1906 Parish of St George). In fact all the photographs accompanying the heritage statement are taken in Scarborough Park. There are no photographs of Patmore

² Early Settlers of the St George District Vol.2 p.26

³ <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2330166>

Swamp! The original summary of heritage significance is misleading as it mostly reflects the history of Scarborough Ponds not Patmore Swamp. The RMS noted the original summaries of heritage significance had not been updated as part of the project (EIS Chapter 19, page 19-10) and appears to rely on the original heritage summary as the single source of truth.

The RMS heritage assessment is fundamentally flawed as it fails to define the true historical boundaries of Patmore Swamp and consequently it fails to understand its true historical context. The RMS has not carried out thorough heritage due diligence but has accepted the summary of heritage significance (an inaccurate secondary source) without checking its veracity. This failure to understand the heritage context leads to the diminution of the heritage significance of Patmore Swamp and a dilution of the true impacts of the RMS proposal.

I request the Department of Planning and Environment arrange for an independent heritage assessment of Patmore Swamp taking into consideration all the issues I have raised. I suggest that this include an accurate definition of the curtilage of Patmore Swamp and a review and update of the heritage listing for Patmore Swamp.

Heritage Significance of Patmore Swamp

Patmore Swamp is:

- of historical significance as one of the last remnants of pre-colonial local freshwater wetland
- a significant local landmark. The name Kogarah is derived from the aboriginal “the place where rushes grow”. The wetland is a direct link with the indigenous name for the area and serves to explain its meaning and context.
- the place that Cook and Banks observed and described as meadow land and one of the factors that led to the British Government's decision to send the first fleet to Botany Bay.
- historically associated with the:
 - Bidjigal aboriginal clan and Pemulway the aboriginal warrior
 - The two retaliatory missions led by Watkin Tench (c.1758-1833) in 1790 to avenge Pemulway's spearing of Governor Phillip's gamekeeper
 - Moore Family (land grant 1812 included Patmore Swamp) and Peter Moore who established a race course and continuously resided on the estate between 1854-1925
 - Moorefield Racing Club & Australian Jockey Club that operated the eastern arc of its Moorefield racecourse through the wetland between 1888-1955

Moorefield Race Track

The RMS response regarding the heritage significance of the race track formation through Patmore Swamp and its connection with the Moorefield racecourse lacks clarity and is incorrect. (F6 Extensions Stage 1 Submissions report C18.1)

The race course was not “subdivided by 1910 onwards.” The Moorefield race track operated between the years 1888-1951 and as a training track until 1955. The arc of the race track running through Patmore Swamp is clearly visible in the 1943 aerial photograph (see Fig 6). The present day walking track utilizing the old track and following the same arc is visible in the satellite image today (see Fig 7).

The race track through the swamp was not “disturbed by subsequent landscaping works post 1943” as the race track was still in operation beyond these years until 1955. Although a large part of the racecourse was sold off for educational and residential development post 1955 the section of the race track through Patmore Swamp has never been developed for housing as the swamp was in the corridor reserved for freeway development. Ground level investigation in Patmore Swamp today reveals the battered banks of the race track formation are still discernible rising from the freshwater wetland at the natural ground level.

Land Reclamation

In many places the EIS makes the claim that much of Patmore Swamp has been reclaimed, disturbed or landscaped. This is incorrect. Patmore Swamp has escaped development and survived into the 21st century as it remained under the control and ownership of the Moore Family and subsequent racing clubs between 1812 -1955. From 1951 it has been reserved for freeway development.

Apart from the original section of race track through the swamp any reclamation that has occurred since 1955 has been performed by the Rockdale Council and has been opportunistic and spasmodic. It is quite easy to identify the various reclaimed areas of Patmore Swamp as the fill stands about a metre higher than the natural ground level and contains building rubble. Much of the swamp remains at its natural ground level and is either permanently submerged underwater or seasonally inundated. The raised ground can be also identified by the vegetation cover of weeds such as lantana and blackberry whereas the natural ground is covered with Common Reedland and Coastal Freshwater Swamp Forest plant communities as well as some areas of Swamp Mahogany Forest on the higher fringes.

The reclaimed areas of the eastern side of Patmore Swamp are restricted to the Civic Avenue reserve, the nature strip along the length of Civic Avenue, ad hoc filling along the race track formation, and the creation of banks around the pond.

I fail to understand how RMS can substantiate their claims about reclamation and landscaping when they have not carried out geotechnical investigation within Patmore Swamp. I am aware of only one

borehole (BH 1214) that was drilled within Patmore Swamp. BH 1214 is located in the south east corner of Civic Reserve. It showed that the top surface contained less than a metre of sandy soil

Aboriginal heritage

The Patmore Swamp formed part of the territory occupied by the Bidjigal clan of aborigines. Wetlands are of material and cultural importance to indigenous people and it is highly likely Patmore Swamp held profound cultural significance and value for the Bidjigal clan.

The Metropolitan Local Aboriginal Land Council report contained within the EIS supports the view that Patmore Swamp holds cultural significance as:

"The swamp area and channels (creeks) would have been very suitable as hunting and breeding grounds for Aboriginal people due to the abundance of bird and fish life, native food, fresh drinking water and swimming areas. This indicates a high likelihood that the area was a significant spiritual and social area."

The Patmore Swamp is also described in Watkin Tench's account of the settlement of Port Jackson. Tench led a party of redcoats on two retaliatory missions to avenge the spearing of Governor Phillip's gamekeeper by Pemulway the Bidjigal warrior:

"Our march ended at sun-set, without our seeing a single native. We had passed through the country, which the discoverers of Botany Bay extol as 'some of the finest meadows in the world.' These meadows, instead of grass, are covered with high coarse rushes, growing in a rotten spongy bog, into which we were plunged knee-deep at every step."⁴

References in the EIS to Patmore Swamp being "drained" or "highly disturbed" are incorrect and misleading. A channel was dug to improve stormwater run-off as the swamp regularly overflowed its banks and flooded the surrounding area in times of heavy rain. However, the greater part of Patmore Swamp was not disturbed and to this day remains a freshwater wetland. The common reed and swamp forest flourish on the undisturbed areas. The 1930's reclamation and creation of artificial lakes to which the EIS refers relates to Scarborough Park not Patmore Swamp. This fundamental error is the result of the RMS blurring the distinction between Scarborough Park and Patmore Swamp. (refer entry Scarborough Park and Patmore Swamp two distinct histories)

The Bayside Council area has one of the largest indigenous populations in the Sydney metropolitan area. I met an indigenous lady in the Patmore Swamp last week. She was fully aware of the RMS proposals for Patmore Swamp and she was greatly distressed about the impacts on the wetland landscape.

The proposed Option E route and raised boardwalk will destroy and cut through large tracts the best preserved areas of the freshwater wetland. A landscape the local indigenous people would have well known and a landscape that is well recognised as having material and cultural importance to

⁴ Watkin Tench A Complete Account of the Settlement at Port Jackson Chapter XII published 1793

indigenous people. The Option E route and raised boardwalk extension will destroy large tracts of original vegetation and forever change the visual character of Patmore Swamp.

The RMS has committed to an interpretive signage strategy acknowledging the significance of Patmore Swamp to the Bidjigal people in consultation with the Metropolitan Local Aboriginal Land Council. It is hypocritical for the RMS to acknowledge the significance of the wetland landscape to indigenous persons after cutting a pathway through the best parts of the freshwater wetland and destroying large areas of EEC in the process. Applying a bandage over the wound with interpretive signage does not show respect for the spiritual significance of the landscape to its indigenous owners.

Assessment of operational impacts

The proposed southern extension of the shared cycle and pedestrian pathway would be built on part of the eastern arc of the original race track. The proposed raised boardwalk with handrails would negatively impact the heritage value of the remaining section of race track through the swamp as it would sever the remaining eastern arc of the old track.

The PIR makes the claim that “the project has the potential to have a positive heritage outcome through promoting the aesthetic significance of the swamp”. This is nonsense. We don’t need a raised boardwalk to achieve this outcome. A number of strategically placed viewing platforms with interpretative signage located within the swamp would achieve the same result and without having the landscape impacted by a bridge, embankment and raised boardwalk built through the middle of the view.

Bayside Council maintains a network of grassed walking tracks within Patmore Swamp. The walking path following the line of the old race track starts at Civic Avenue near Marshall Street and ends at Annette Ave. Another grassed pathway connects with the arc and follows the edge of the pond and back along a drainage channel to Civic Ave. Both these paths are used by the local community and people from surrounding areas to walk their dogs or for the peaceful enjoyment of the natural landscape.

A raised boardwalk will sever these existing walking tracks within Patmore Swamp. The raised boardwalk will also prevent direct access to the western bank of the pond. However, the proposal does not address the network of walking tracks or how the severed sections will be dealt with. Under the present proposal the dead end tracks would most likely fall into disuse and become overgrown. Convenient access to the greater part of Patmore Swamp will be lost.

The St George Archery club has used Tanner Park for archery practice over many years. During archery sessions a large portion of the practice area is delineated for public safety. The raised boardwalk will emerge from Patmore Swamp within the current delineated danger area.

What will happen to the archers in Tanner Park? Has consultation occurred with the archery club?

Any potential positive heritage outcomes from the completed shared cycle and pedestrian pathway are negated by the very real adverse impacts to the cultural significance, heritage value and accessibility of Patmore Swamp.



Figure 6: 1943 Aerial view of Patmore Swamp showing the significant connection with Moorefield racecourse



Coastal Freshwater Swamp Forest near Civic Ave

Undisturbed Freshwater Swamp covered with common reedland – which remains intact today

Dne Park

Original Moorefield Racetrack now a local walking path for the community.

North Pond

Civic Avenue Reserve

The sixth furlong chute which remains as a local walking path for the community.

Figure 7: Satellite view of Patmore Swamp showing the 1943 features today

Surface water and flooding

Figure 3-9 shows the raised boardwalk corridor skirting the banks of the pond in Patmore Swamp using the route of the existing grassed walkway. There are no details and the figure is labelled indicative only subject to design development. This map with no accompanying detail is most unsatisfactory and appears misleading. The PIR fails to demonstrate how it will comply with the NSW Department of Primary Industries (2012) Controlled activities on waterfront land:

- Guidelines for riparian corridors on waterfront land
- Guidelines for watercourse crossings on waterfront land

The guidelines for riparian corridors on waterfront land indicate that the vegetation riparian zone (VRZ) extends 40 metres from the bank of the pond and that a pathway no wider than four metres total disturbance footprint can be built in the outer 50 per cent of the VRZ. How can a 3 metre wide boardwalk with 1 metre wide buffer on either side comply with the guidelines? None of this detail is addressed by the PIR.

By my calculation the raised boardwalk will not use the existing grassed walkway at all, as it falls within the inner 50 per cent of the VRZ. The raised boardwalk will instead cut through the trees identified as Coastal Freshwater Swamp Forest growing in the outer 50 per cent of the VRZ.

Figure 3-9 shows a large tract of coastal freshwater swamp forest growing in the vicinity of the western bank of the pond within Patmore Swamp. I can only assume this is the same swamp forest referred to as located “along the drainage line” on page 37 of the PIR. Figure 3-9 appears to show the raised boardwalk as only cutting through the edges and projections of the freshwater swamp forest when in actual fact it will cut straight through the middle of it.

Removal of the riparian corridor creates the potential for contaminated and acid sulphate soils to be washed into the watercourse reducing water quality. The reduced water quality potentially risks the Key Fish Habitat and the food resources of the Myotis Bat.
--