



STEP Inc

Community-based Environmental Conservation since 1978

28 Feb 2021

Planning & Assessment,
Department of Planning Industry and Environment
Locked Bag 5022
Parramatta NSW 2124
Via: NSW Government Major Projects submissions weblink

Attention: Director, Transport Assessments

Dear Sir/Madam

Objection: Beaches Link and Gore Hill Freeway Upgrade – SSI_8862

STEP Inc is a local community-based environmental group, with a membership of over 500 in the Hornsby/Ku-ring-gai area. Our main objective is to preserve natural bushland in northern Sydney from alienation or degradation and ensuring proper management of this bushland including ensuring its role as habitat for animal species. Our group has considerable experience in environmental issues and regenerating and preserving natural bushland and native vegetation.

STEP is a member of the Powerful Owl Coalition. The Coalition has been formed by several community based environmental groups working in collaboration with the Powerful Owl Project run by Birdlife Australia. Our aim is to educate the community and land managers on protecting and enhancing habitat for Powerful Owls. Powerful Owls are listed as vulnerable in NSW and therefore require protection under the NSW Biodiversity Conservation Act. They are the top predator in urban bushland and maintain the balance of species. Powerful Owls will be impacted by the Beaches Link Project as well as many other species.

Inadequate Analysis of Alternatives

We oppose strongly the current proposal for construction of the Beaches Link Tunnels and the associated supporting works. The development of public transport facilities will provide better long-term infrastructure provision to cater for anticipated population growth and traffic congestion problems. It is hugely disappointing that the NSW Government has been so short-sighted in not considering alternative public transport improvements such as express buses services from Dee Why to Chatswood or metro type train services that can move people much more efficiently than private cars. The use of a dedicated express bus lane in the tunnels is also not considered.

The government has a policy of reducing greenhouse gas emissions to zero by 2050 and yet this project will be increasing car use as against public transport that will reduce emissions. The actual construction will also have a huge environmental footprint with massive truck movements, use of machinery, waste generation and manufacture of concrete.

Why STEP objects to the Proposed Project

Some reasons for our opposition to the project as described in the EIS are listed below. We then go on to describe our concerns about the environmental damage that will be caused by the construction project and widened roads, particularly in relation to the widening of Wakehurst Parkway.

1. The project is hugely expensive and will not provide sufficient financial benefits to justify its expense. The projections in the EIS of reductions in traffic congestion are selective and have a limited timeframe. A more comprehensive analysis is required.

2. The impacts on local roads and roads near the tunnel access points, such as Warringah Road and Condamine St are not adequately analysed and are unacceptable.
3. What will happen to the additional traffic that will emerge at the northern end of the Wakehurst Parkway near the Northern Beaches Hospital? The continuation of this road alongside Narrabeen Lagoon is busy already and floods frequently. More frequent heavy rainfall associated with climate change will exacerbate this issue. Widening along this road is not an option in this environmentally sensitive area.
4. The changes in travel volumes and patterns in response to COVID-19 have not been considered

Environmental Impacts

1. Burnt Bridge Creek

The works along the Burnt Bridge Creek will reduce water flows significantly and may destroy the essential cool habitat for the vulnerable Grey-headed Flying Fox. The camp next to the Burnt Bridge Creek has been established for many years and is an important nesting site. The Grey-headed Flying Fox has been severely affected by loss of habitat and foraging sites due to the recent bushfires and urban development. The camp is occupied by up to 10,000 flying foxes.

Noise from truck movements and rock hammering, lights and dust from the construction site in Balgowlah is likely to disturb the camp.

At the end of the construction period Balgowlah Golf Course will become an operations centre and playing fields. The stormwater detention lake will be removed. The bats use this lake as a water source and for cooling in hot weather.

These impacts create a strong risk that the camp will be abandoned.

2. Widening of Wakehurst Parkway

It is proposed that Wakehurst Parkway will be widened from 2 to 4 - 6 lanes. This road runs along a high ridge. The wider road will have many detrimental effects on the wildlife and quality of bushland of the Manly Dam catchment to the east and Garigal National Park to the west. These effects will be more serious if there is lighting along the road that will make it visible from many kilometres away.

An alternative should be considered of continuing the tunnel under the Wakehurst Parkway to the Northern Beaches Hospital so that the widening will be unnecessary. Another alternative that would reduce the cost of tunnelling would be building a narrower tunnel to be used for public transport only. Public transport can then continue directly to the west (Chatswood and St Ives) or east (Brookvale, Dee Why and Mona Vale). The congestion impacts on feeder roads approaching Wakehurst Parkway would be eliminated.

The current widening proposal will have the following detrimental effects:

- It will affect the ability of wildlife to move across from east to west and vice versa for mating, nesting and foraging purposes. The sides of the road will be fenced off during construction. Some overhead and tunnel crossings are proposed for the finished roadway but the width of the road and the bright lights may deter many animals from movement across the road. A ladder across a 4 lane highway, 40 metres wide with noisy traffic, will be daunting to wildlife. Glide poles have been successful in allowing gliders to cross a highway near Port Macquarie but this example is not a highway with street lighting (ABC, 2018).
- Car and glass strikes are the leading causes of mortality of Powerful Owls, with estimates in Sydney of 12% of the population dying **each year** this way. The relationship between the road way and nearby vegetation must be assessed in order to minimise the risks of road strike by all nocturnal birds. Birdlife Australia's Powerful Owl Project has undertaken detailed research on avoidance of this problem.
- What will happen to fauna during the disruptive construction process and in the longer term? The EIS admits that mobile species will try to move away but suitable habitat may not be available because of competition and lack of suitable food. Where else is there an open ridge with rocky features as occurs along Wakehurst Parkway? The mobile species may not return, for example, the vulnerable Rosenberg's Goanna. Less mobile species may not survive.
- Over 15 ha of bushland will be cleared including 1.5 ha of Duffys Forest endangered ecological community. Biodiversity offsets cannot make up for the loss of this habitat and hence its loss is

classified as a Serious and Irreversible Impact under the Biodiversity Conservation Act. The use of offsets will be endorsing local extinctions because of the loss of food sources.

- The loss of a significant area of bushland includes at least 3,500 trees. Many of these species are essential sources of food (seeds, pollen and nectar) for many animals and birds including flying foxes and pygmy possums.
- The road will be built up in parts leading to change in water flows through the bush and edge effects on the neighbouring bushland. Native vegetation is very sensitive to changes in the water table and stormwater flows so additional vegetation that is not cleared will be put at risk.
- Polluted water from the construction and the widened road flow through to the waterways of Middle Harbour and Manly Dam, the last unpolluted lake in Sydney. Detention and treatment of water overflows along the length of the Parkway cannot be expected to cope with the high volumes of water associated with heavy rain events that are occurring more frequently.
- The EIS notes that there will be polluted run-off into Curl Curl Creek. This may destroy the habitat for the only population of the unique Climbing Galaxias fish in Sydney (reported to have existed in just one or two small creeks in the Northern Beaches for 60,000 years).
- Biodiversity surveys have identified the areas near the Parkway and, in particular, the Sydney Water land near the Wakehurst Golf Course as habitat for a wide range of fauna species, 5 of which are threatened, namely the Eastern Bent-winged bat and 3 other bat species, Grey-headed Flying Fox, Rosenberg's Goanna and the Powerful Owl. Large parts of their habitat will be damaged. There is also a threatened plant species, the Magenta Lilly Pilly that will be wiped out.
- The aboriginal rock engravings that have already been affected by foot and mountain bike traffic will be further compromised.
- Noise and lighting along Wakehurst Parkway will have harmful effects on wildlife: Light and noise pollution have the potential to affect the physiology, behaviour and reproduction of a range of animal species. Types of effects include changes in foraging and reproductive behaviours, reduction in animal fitness, increased risk of predation and reduced reproductive success. These could have flow-on consequences at the population and ecosystem levels. Behavioural studies have shown that as noise increases, abundance and species richness of fauna decreases). Noise also increases vigilance, predation avoidance and reduces foraging. Noise may also affect all stages of reproduction from mate selection to feeding young, for example begging calls (Newport et al., 2014).
- More details about the effects of night lighting on animal behaviour are provided in the attachment.

Conclusion

The Beaches Tunnels project has been designed to encourage the use of private cars. It is totally inconsistent with the Government's objective to reduce greenhouse gas emissions to zero by 2050. The Project should be radically revised with different parameters that emphasise the use public transport.

The deleterious impacts on bushland and essential habitat for vulnerable species like the Powerful Owl and Grey-headed Flying Fox are unacceptable. The environments of Manly Dam catchment and Garigal National Park are precious areas that have been given conservation status for the ecosystem services they provide, as well as the aesthetic and passive recreation benefits for the residents of Sydney. They must not be degraded by the construction of a brightly lit 4 to 6 lane highway through the middle of them.

Yours sincerely,



Jill Green
President

Attachment: Effects of Light Pollution on Wildlife

The **National Light Pollution Guidelines for Wildlife** (Department of Environment and Energy, 2020 p6) state that:

‘Natural darkness has a conservation value in the same way that clean water, air and soil has intrinsic value’ and

‘Artificial light is known to adversely affect many species and ecological communities. It can change behaviour and/or physiology, reducing survivorship or reproductive output. It can also have the indirect effect of changing the availability of habitat or food resources. It can attract predators and invasive pests, both of which may pose a threat to listed species.’

“The aim of the Light Pollution Guidelines is that artificial light will be managed so wildlife is:

1. Not disrupted within, nor displaced from important habitat
2. Able to undertake critical behaviours such as foraging, reproduction and dispersal.

The effects of artificial light on biodiversity can be summarised into three key categories: physiology, behaviour and reproduction.

1. Physiology

a) Eyesight

- Nocturnal vertebrates have dark adapted eyes and sudden increases in light can reduce vision and require a long recovery period
- Many nocturnal animals, including marsupials have vision with sensitivity in the ultra violet range, emitted by Metal Halide lamps. Without specific experiments, it is difficult to assess how light pollution containing UV affects the foraging, and mating behaviour of crepuscular and nocturnal species. The spectral impact of different night time lighting has been examined by some authors (Gaston *et al.*, 2013).
- Marsupials’ eyes have a different pigment than eutherians, possibly making them more susceptible to artificial light. For example Sugar Gliders were negatively impacted under street lights causing reduced foraging time. At high street lighting (12 lux) foraging ceased, perhaps because of the risk of increased predation.

b) Circadian cycles

- These are thought to have evolved to maximise foraging efficiency, reduce the risk of predation and to enhance parental care
- Artificial light that causes shortening or brightening of the night can adversely affect animals by disrupting circadian rhythms
- Light affected animals may be out of rhythm with neighbouring animals and this would potentially affect mating success and other social interactions
- Many plants and fungi exhibit night time activity such as flowering, perfume production, growing, spore dispersal or germination. They could therefore be deleteriously affected by night lighting

2. Behaviour

a) Foraging

- Artificial light of similar intensity to moon light can reduce activity and movement of nocturnal animals. With moonlight or artificial light animals have one of three options
 - Accept increased predation risk
 - Minimise predation risk even if it means less foraging and hence less body weight
 - No longer survive in the area
- Increased illumination may extend diurnal behaviours into the night-time and this could increase competition between diurnal and nocturnal species and reduce resource partitioning
- Insectivorous bats can feast on insects attracted by lights. This can have a deleterious impact on the insects. This can also alter the community structure of the bats with the fast flying bats attracted to the lights benefitting and the slower bats that avoid the lights negatively impacted.

b) Spatial behaviour

- Artificial light can attract or repel animals and can increase the edge effects already created by the widening of the road.
- Disruptions to spatial behaviour can impact on wellbeing by increasing travel time, decreasing territory and an increase in stress hormones.

3. Reproduction

- Reproduction may be altered by artificial lighting. This includes territorial and mating communication and mate and nesting site selection, as well as breeding time and readiness
- Artificial light could reduce population size of animals through direct loss of individuals, reproduction failure and altered sex ratios.

In summary all animals are potentially affected by artificial light, Diurnal animals may extend their activity well beyond normal sunset but nocturnal animals may be particularly affected due to their eye sight, actual and feared predation, and reduced breeding success.

References

<https://www.abc.net.au/news/2018-07-19/gliding-mammals-use-fauna-power-poles-to-cross-road-study-finds/9991528>

Gaston, K., Bennie, J., Davies, T., & Hopkins, J. (2013). The ecological impacts of nighttime light pollution: a mechanistic appraisal. *Biological Reviews* , 88 (4), 912–927.

Newport, J., Shorthouse, J., & Manning, A. (2014). The effects of light and noise from urban development on biodiversity: Implications for protected areas in Australia. *Ecological management*

<https://www.environment.gov.au/system/files/resources/2eb379de-931b-4547-8bcc-f96c73065f54/files/national-light-pollution-guidelines-wildlife.pdf>