A41066087
SF2012/052148

12 January 2022

Kiersten Fishburn
Secretary
Department of Planning, Industry and Environment
GPO Box 39
Sydney NSW 2001

Dear Kiersten,

Newcastle Inner City Bypass – Rankin Park to Jesmond (SSI 6888)
Infrastructure Approval Condition A1 and Table 1 definitions – Dark Creek culvert sealing low impact work submission

Transport for NSW (Transport) are currently completing early work for the fifth section of the Newcastle Inner City Bypass between Rankin Park and Jesmond. Transport are also continuing to refine the design and plan for the main work. In 2019 a small colony of microbats were found roosting in gaps between the crown units in Dark Creek culvert, the microbats have not been found in subsequent surveys.

Table 1 of the instrument of approval includes a definition of construction applicable to the project. The definition specifically excludes low impact work (where it is either listed or determined by the Environmental Representative or the Planning Secretary as low impact work) from requiring approval of a CEMP prior to the activity being carried out. Where heritage items or threatened species or threatened ecological communities are affected or potentially affected by any low impact work, that work is construction, unless otherwise determined by the Planning Secretary in consultation with the relevant heritage authority, OEH or DPI Fisheries (in the case of impact upon fish, aquatic invertebrates or marine vegetation).

In the project staging report the project stages were identified and defined as construction or low impact work. A Microbat Management Strategy has been prepared and includes the sealing of gaps which is a mitigation measure to minimize any potential impacts on threatened microbats. This is the subject of the enclosed low impact work submission. Transport are seeking approval from the Planning Secretary for the sealing of Dark Creek culvert to be considered as low impact work under Condition A1 and Table 1 definitions.

The sealing of the culvert would be carried out in accordance with the Microbat Management Strategy and the low impact work submission.

As the Dark Creek culvert is potential habitat for microbats listed under the Biodiversity Conservation Act 2016, consultation as identified in Table 1 of the instrument of approval with Biodiversity Conservation Division has been carried out to assist the Planning Secretary in their determination. BCD has advised that they do not consider these works to meet the definition of low impact work and have suggested a Threatened Species License under the BC Act or a modification to the project. Copies of the correspondence to and from the agency can be found as an attachment to the low impact work submission.

A licence under the BC Act would not allow Transport to complete the mitigation as early works, as the project approval would still require approval from the Planning Secretary to carry out the work as per the definition in the approval. A license is also not required as the work is subject to a planning approval. Impact to the bats has been assessed under Transport's Unexpected Finds Procedure, which found that there is unlikely to be a significant impact to the microbats within the culvert of the proposed works. The residual impact of the work is the loss of one opportunistic over-wintering roosting location and no direct impacts to individual bats are expected. This impact would not require offsetting under the Biodiversity Assessment Method. A Microbat Management Strategy has been developed as the key mitigation measure.

The proposed early works are mitigation for threatened species impacts, not maintenance activities for the culvert itself. Most threatened species mitigation is likely to be associated with some level of disturbance to that species. Therefore it would be inappropriate to classify these works as construction on the basis of an impact to threatened species.

Yours sincerely

Antonn Russek
Project Manager
Northern Project Office - Hunter

Encl: 1. Newcastle Inner City Bypass Rankin Park to Jesmond Dark Creek – Microbat Management Stage 1 low impact work submission and consultation with BCD.

2. Newcastle Inner City Bypass:Rankin Park to Jesmond – Microbat Management Strategy.

Transport for NSW

NOVEMBER 2021

FOR INTERNAL USE

Newcastle Inner City Bypass: Rankin Park to Jesmond

Microbat Management Strategy

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Microbat Management Strategy

Transport for NSW

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REV	DATE	DETAILS
C	1 November 2021	Final issue to client after review

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Reviewed by:	Toby Lambert	1 November 2021	
Approved by:	Alex Cockerill	1 November 2021	

WSP acknowledges that every project we work on takes place on First Peoples lands.
We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

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1 Project Background

1.1 Purpose of this Microbat Management Strategy

The purpose of this Microbat Management Strategy (MMS) is to provide safeguards to minimise potential impacts during each construction phase for threatened microbats that have been recorded, or that have a high likelihood of occurring within the project area.

Six threatened microbat species have been recorded or are predicted to occur within the project area including:

- Eastern Free-tail bat (*Mormopterus norfolkensis*)
- Yellow-bellied Sheathtail-bat (*Saccolaimus flaviventris*)
- Greater Broad-nosed Bat (*Scoteanax rueppellii*)
- Little Bent-winged Bat (*Miniopterus australis)*
- Large Bent-winged Bat (*Miniopterus orianae oceanensis*)
- Southern Myotis (*Myotis macropus*).

In May 2019 during a daytime structural inspection of the Dark Creek culvert, a colony of microbats was observed roosting in a 50–75-millimetre gap between the crown units of the existing culvert. The microbats were unable to be identified to species level from the video footage.

To confirm the microbat species roosting within the Dark Creek culvert, a targeted survey of the culvert was undertaken in October 2019. The survey confirmed that the Little Bent-winged Bat and the Large Bent-winged Bat were roosting inside the Dark Creek culvert (SMEC, 2019). Both species are listed as Vulnerable under the NSW *Biodiversity Conservation Act 2016*. Based on the number of calls recorded, it is most likely that the colony was dominated at the time by the Little Bent-winged Bat, but both species have similar roosting habitat requirements.

The safeguards and mitigation measures proposed as part of this strategy would be incorporated into the project's Construction Environmental Management Plan (CEMP) and project design.

This is required by the project's Conditions of Approval (E10) where '*before the removal or clearing of any vegetation, or the demolition of structure identified as potential roosting sites for microbats, commences, pre-clearing/demolition inspections for the threatened species must be undertaken. The inspections, and any subsequent relocation of fauna and associated management/offset measures, must be undertaken under the guidance of a suitably qualified and experienced ecologist. Survey and relocation methodologies and management/offset measures must be included in the Construction Flora and Fauna Management Sub-plan required under Condition C4*' (DPIE, 2019).

Pre-clearing surveys and other industry standard mitigation measures for hollow-tree dependent microbats (Eastern Free-tail bat, Yellow-bellied Sheathtail-bat and the Greater Broad-nosed Bat) would be included in the CEMP Construction Flora and Fauna Management Sub-plan.

The main focus of this Microbat Management Strategy is to minimise potential impacts on cave-dwelling microbats (Little Bent-winged Bat, Large Bent-winged Bat and Southern Myotis) during construction, especially within the Dark Creek Culvert and its vicinity.

1.2 Description of works

The Rankin Park to Jesmond Project (RP2J) is the fifth section of the Newcastle Inner City Bypass (NICB), which will be approximately 3.4 kilometres between Lookout Road at New Lambton Heights and Newcastle Road at Jesmond, to the west of the John Hunter Hospital. The project is funded by the NSW State Government. A concept design has been completed for the Project and Environmental approvals were received in early 2019.

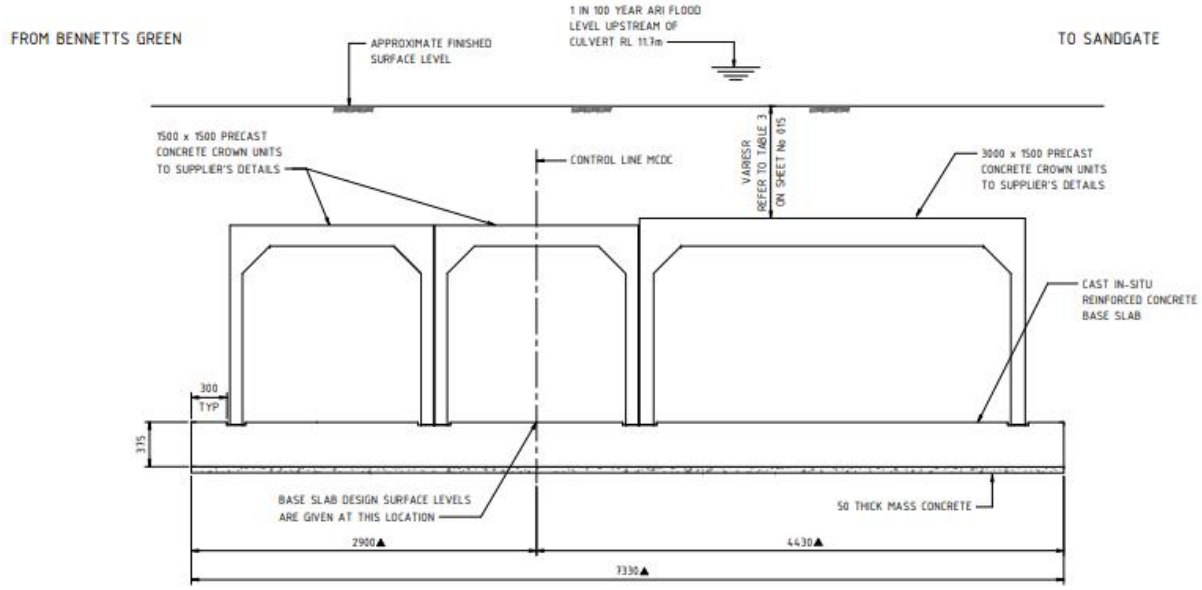
Stage 2 of the project requires the demolition of the existing sub-surface drainage structure and construction of a new channel and culvert as part of the diversion of Dark Creek. The Detailed Design report for the Dark Creek culvert (Aurecon, 2020) outlines that the existing culvert is proposed to be abandoned and a new alignment is proposed to the west with the inlet near the existing culvert inlet. The new proposed culvert structure will consist of three cells of two different sizes – two 1500 mm x 1500 mm cells and one 3000 mm x 1500 mm cell (internal dimensions of the precast crown units) (see Figure 1.1 below)

1.2.1 Provision of microbat roost habitat within the new Dark Creek culvert

The Project has also committed to providing long-term compensatory threatened microbat habitat into the new Dark Creek culvert. While the design is subject to change, any new design would incorporate the following:

- leaving the transport/lift holes in the new culvert unsealed and roughened internally to a 1-2mm thickness
- where possible, habitat in the form of horizontal or longitudinal recesses
- applying coarse cement render (aggregate) and/or silicon on the roof of the culvert.

Figure 1.1 Detailed design drawing of the proposed Dark Creek culverts (Aurecon, 2020)



2 Microbat population status

2.1 Microbat species likely to occur in project area

2.1.1 Hollow-bearing tree dependent microbats

The following three (3) threatened hollow-bearing tree dependent microbats have potential roosting and foraging habitat within the vegetated sections of the project area, especially where hollow-bearing trees area present:

- Eastern Free-tail bat (*Mormopterus norfolkensis*), listed as Vulnerable on the BC Act
- Yellow-bellied Sheathtail-bat (*Saccolaimus flaviventris*), listed as Vulnerable on the BC Act
- Greater Broad-nosed Bat (*Scoteanax rueppellii*), listed as vulnerable on the BC Act.

None of the above-mentioned microbats are listed under the EPBC Act.

2.1.1.1 Eastern Free-tail bat (*Mormopterus norfolkensis*)

The Eastern Freetail-bat is found along the east coast from south Queensland to southern NSW. Occur in dry sclerophyll forest and woodland east of the Great Dividing Range. Roost mainly in tree hollows but will also roost under bark or in man-made structures (Churchill, 2008). Potential habitat was recorded in the study area. This species has previously been recorded within the project area by Umwelt (2006).

2.1.1.2 Yellow-bellied Sheathtail-bat (*Saccolaimus flaviventris*)

The Yellow-bellied Sheathtail Bat is widespread through tropical Australia and migrates to southern Australia in summer. Occurs in eucalypt forest where it feeds above the canopy and in mallee or open country where it feeds closer to the ground. Generally, a solitary species but sometimes found in colonies of up to ten. It roosts and breeds in tree hollows but has also been recorded roosting under exfoliating bark, in burrows of terrestrial mammals, in soil cracks and under slabs of rock and in the nests of bird and sugar gliders (Churchill, 2008). Potential habitat was recorded in the Project area. This species has previously been recorded within the project area by Umwelt (2006).

2.1.1.3 Greater Broad-nosed Bat (*Scoteanax rueppellii*)

The preferred hunting areas of this species include tree-lined creeks and the ecotone of woodlands and cleared paddocks but it may also forage in rainforest. Typically it forages at a height of 3–6 metres but may fly as low as one metre above the surface of a creek. It feeds on beetles, other large, slow-flying insects and small vertebrates. It generally roosts in tree hollows but has also been found in the roof spaces of old buildings (Churchill, 2008). Potential habitat was recorded in the study area. This species has previously been recorded within the project area by Umwelt (2006).

2.1.2 Cave-dwelling microbats

The following three (3) threatened cave-dwelling microchiropteran bats have potential foraging habitat within the project area, and potential artificial roosting habitat within the project area especially within the Dark Creek Culvert and its vicinity:

- Little Bent-winged Bat (*Miniopterus australis*), listed as Vulnerable on the BC Act
- Large Bent-winged Bat (*Miniopterus orianae oceanensis*), listed as Vulnerable on the BC Act
- Southern Myotis (*Myotis macropus*), listed as vulnerable on the BC Act.

None of the above-mentioned microbats are listed under the EPBC Act.

2.1.2.1 Little Bent-winged Bat (*Miniopterus australis*)

The Little Bent-winged Bat is listed as Vulnerable under the BC Act. The Little Bent-winged Bat is distributed between northern Queensland to southern New South Wales, along the Great Dividing Range. The Little Bent-winged Bat utilises moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, *Melaleuca* swamps, dense coastal forests and *Banksia* scrub for foraging.

The species is generally found in well-timbered areas.

Little Bent-winged Bats roost over winter in caves, tunnels, tree hollows, abandoned mines, stormwater drains, culverts, bridges and sometimes buildings or tree hollows during the day, and at night forage in densely vegetated habitats.

In late spring, pregnant females disperse from the east coast and migrate to maternity roosts in caves (Dwyer 1968) where the species congregates in the thousands with Large Bent-winged Bats in a single known maternity cave in NSW to breed over summer, showing high maternity roost fidelity (Churchill 2008). They give birth in the maternity caves and raise young over summer before returning east in autumn (Dwyer 1963; Hoye and Spence 2004).

2.1.2.2 Large Bent-winged Bat (Miniopterus orianae oceanensis)

The Large Bent-winged Bat is listed as Vulnerable under the BC Act. The Large Bent-winged Bat is distributed from southern Queensland to northern Victoria, along the Great Dividing Range (with a small number of scattered recordings outside this range. Large Bent-winged Bats utilises moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, *Melaleuca* swamps, dense coastal forests and Banksia scrub for foraging. The species is generally found in well-timbered areas. Over winter, Large Bent-winged Bats will use caves, culverts, bridges, abandoned mines and tunnels as hibernation / winter roosts (Churchill 2008). At night they forage in densely vegetated habitats.

Individuals use a network of roosts throughout the year. In late spring, pregnant females disperse from the east coast and migrate to one of three known maternity roosts in caves in New South Wales (NSW), where they give birth and raise young over summer before returning east in autumn (Dwyer 1963; Hoye and Spence, 2004).

They congregate in the thousands in a small number of caves in NSW, often shared with Little Bent-winged Bats, to breed over summer. The species use the same maternity roost year after year. Females disperse to maternity roosts in limestone caves in late spring/early summer and return to coastal roots in March/April (Dwyer 1963; Hoye and Spence, 2004; White, 2011).

2.1.2.3 Southern Myotis (Myotis macropus)

The Southern Myotis is listed as Vulnerable under the BC Act. The Southern Myotis is patchily distributed in a broad coastal band in northern and eastern Australia and is closely associated with waterways (Churchill 2008, Gorecki, 2020). The project occurs in the core of their distribution but the closest Southern Myotis maternity roost to the Dark Creek culvert is the bridge over Ironbark Creek near Hexham approximately seven kilometres away.

The Southern Myotis utilises habitat near water, generally roosting in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage. Roosting habitat is often used across years and occupied year-round, but each colony will have a network of roosts within foraging range (Churchill 2008). Southern Myotis show high maternity roost fidelity however, situated usually over or within 100 m from water (Campbell 2009).

Southern Myotis forage over streams and pools catching insects and small fish by raking their feet across the water surface. The species' close association with waterways reflects this highly specialised foraging behaviour (Thompson and Fenton 1982).

2.2 Potential Impacts

2.2.1 Hollow-bearing tree dependent microbats

Potential impacts to hollow-bearing tree dependent microbats from construction of the project include:

- removal of approximately 50.9 hectares of vegetation comprising about 39.2 hectares of native vegetation and associated habitat for roosting and foraging habitat
- removal of about 320 hollow-bearing trees within the construction area
- injury and mortality during construction when vegetation and habitat is being removed, machinery and plant during construction, and from operational traffic.

Unavoidable impacts to hollow-bearing tree dependent microbats were assessed and quantified in accordance with the NSW FBA (OEH, 2014) in the Environment Impact Statement for the project (GHD, 2016).

In accordance with the project Conditions of Approval (E10), pre-clearing inspections for threatened species must be undertaken and included in the CEMP (DPIE, 2019).

Minimising the removal of native vegetation and mature trees, undertaking pre-clearing surveys and implementing other industry standard construction mitigation measures for hollow-tree dependent microbats (Eastern Free-tail bat, Yellow-bellied Sheathtail-bat and the Greater Broad-nosed Bat) are not a focus of this Microbat Management Strategy, but would be included in the CEMP Construction Flora and Fauna Management Sub-plan.

To minimise potential impacts to hollow-bearing tree dependent microbats, it is recommended the Construction Flora and Fauna Management Sub-plan of the CEMP includes industry-standard measures such as those outlined in the *Biodiversity Guidelines: Protecting and managing biodiversity on TfNSW projects* (Transport for NSW, 2011).

2.2.2 Cave-dwelling dependent microbats

Potential impacts to cave-dwelling microbats from construction of the project include:

- removal of approximately 50.9 hectares of vegetation, of which, only a small proportion would be suitable foraging habitat
- temporary removal of occasional roosting habitat at the Dark Creek culvert (for Little Bent-winged Bat and Large Bent-winged Bat).

In accordance with S7.3 of the BC Act, significance assessments were undertaken for the three cave-dwelling microbats (WSP, 2021). The assessments concluded that the project is unlikely to have a significant impact, provided the mitigation measures outlined in the low impact work procedure in Section 3 of this Microbat Management Strategy are implemented.

Works on Dark Creek culvert can only be undertaken when no microbats are present.

If microbats return to Dark Creek culvert during construction, works must be rescheduled for when the bats are absent (usually absent in December to February when they are at maternity caves).

2.3 Importance of microbat habitat at Dark Creek culvert

There have been no threatened microbats (Little Bent-winged Bats or Large Bent-winged Bats) recorded roosting in the Dark Creek culvert since December 2020 when pregnant females would have migrated to maternity caves to give birth (see Table 2.1 below).

Table 2.1 Summary of survey results for the Dark Creek culvert from 2019-2021.

DATE	SURVEY TYPE	RESULTS
May 2019	Remote camera survey during structural inspection	Approximately 200-300 Little Bentwing Bats roosting in a 50-75 millimetre gap between the crown units of the culvert.
October 2019	Evening flyout survey and Anabat survey of culvert (SMEC)	Emergence of Little Bent-winged and the Large Bent-winged Bat. The majority of calls recorded on Anabat were attributed to the Little Bent-winged Bat.
December 2020	Remote camera survey	No microbats were present during this inspection.
January 2021	Evening flyout survey and Anabat survey of culvert (WSP)	No microbats were observed exiting the culvert and none were recorded on the Anabat call recording devices, placed at either ends of the culvert.
September 2021	Consecutive evening flyout survey and Anabat survey of culvert (WSP)	No microbats were observed exiting the culvert and none were recorded on the Anabat call recording devices, placed at either ends of the culvert.
September 2021	Remote camera survey	No microbats were present during this inspection.

Gonslaves and Law (2018) demonstrated that fidelity to roost sites varies by individual and is closely linked to the availability of foraging habitat (such as large, open spaces with artificial lighting). White (2011) also recorded *Miniopterus orianae oceanensis* shuffling between artificial roosts (disused military tunnels and underground bunkers) in association with changes in weather conditions.

Prior to December 2020, the Dark Creek culvert was used opportunistically as an over-wintering non-maternity roost site for Little Bent-winged Bats and a small number of Large Bent-winged Bats. The carrying capacity of the 50-75 millimetre gap between the crown units of the Dark Creek culvert is relatively small and as such does not meet the requirements of a high conservation over-winter roost site (unlike other sites such as Balickera and Brookfield Tunnels that have carrying capacities in the thousands).

The Southern Myotis was not recorded roosting/breeding in Dark Creek culvert or foraging in the vicinity of the culvert.

3 Infilling/sealing of microbat habitat

The infilling/sealing of gaps (low impact works) which may be known or potential microbat roosting habitat in Dark Creek can only be undertaken when threatened microbats are not present. If microbats return to Dark Creek culvert during construction, works must be rescheduled for when the bats are absent (usually absent December to February when they are at maternity caves).

The infilling/sealing of gaps whilst threatened microbats are not present in the culvert has been committed to by TfNSW as a mitigation measure to minimise any potentially significant impacts to threatened microbats, in particular the Little Bent-winged Bat (WSP, 2021) and must be implemented.

The infilling/sealing of gaps between the culvert crown units in Dark Creek culvert while microbats are absent from the culvert is considerably less of an impact compared with implementing potentially disruptive exclusion measures when an entire colony of threatened microbats may be present within the culvert.

3.1 Prior to works

A suitably qualified project ecologist would be appointed prior to works to ensure the Microbat Management Strategy, in particular, the infilling/sealing of gaps procedure in Section 3.2 is implemented successfully.

A suitably qualified ecologist is considered to be an individual with:

- a minimum of five years of experience in microbat ecology and management.
- experience undertaking microbat surveys, especially roost site searches for Little and Large Bent-winged Bats and the Southern Myotis
- experience in emergence surveys, ultrasonic recording and thermal camera recording.

The project ecologist must also hold a current NPWS S132 Scientific Licence and a relevant Animal Research Authority issued by an approved Animal Care and Ethics Committee.

3.2 Infilling/sealing procedure

It is recommended the following infilling/sealing procedure is implemented by the contractor/contractor's representative.

1. A pre-clearing evening flyout/emergence survey of the Dark Creek culvert would be undertaken by a suitably qualified ecologist prior to any works commencing. An evening flyout/emergence and Anabat survey of the culvert should be done the evening before works are proposed to start.
2. A diurnal remote camera survey should be undertaken on the morning works are proposed to start to ensure microbats are not present.
3. A suitably qualified ecologist must be on site to determine if microbats are present during the remote camera pre-clearing survey.
4. *(Hold point)* Ecologist to sign pre-clearing checklist that microbats are not present and sealing works of the gaps can commence.
5. The gaps would be sealed with a smooth grout product. If expandable foam is used to infill the gaps, it would need to be covered with thin plywood or similar to remove roughened surface, microbats may grip onto.
6. The preferred product is a smooth concrete grout or similar as it reduces the likelihood of microbats gripping onto infilled surfaces.
7. Once infilled, the surface must be smoothed and contain no edges/divots that the microbats may be able to grip onto. Painting over the surface with a glossy paint may achieve this.
8. The contractor should commence filling in gaps closest to where the microbats have been recorded roosting previously, approximately 45 metres downstream of the inlet (from Jesmond Park side).

9 If works continue over consecutive days, a pre-clearing survey is required each morning prior to any sealing works commencing.

10 Following sealing works and construction of the new culvert/s, provision of long-term compensatory microbat habitat into the new Dark Creek culvert would be provided including:

- Leaving the transport/lift holes in the new culvert unsealed and roughened internally to a 1-2mm thickness.
- Where possible, habitat in the form of horizontal or longitudinal recesses
- Applying coarse cement render (aggregate) and/or silicon on the roof of the culvert.
- Monitoring of the new roosting habitat for use by threatened microbats.

This procedure is summarised in Table 3.1.

Table 3.1 Infilling/sealing of gaps at Dark Creek culvert procedure

Management measure	Timing	Details	Responsibility
Engage suitably qualified project ecologist	Pre-construction	Engage a suitably qualified project ecologist as outlined in Section 3.1.	Contractor
Emergence survey of Dark Creek culvert	Construction	Undertake a pre-clearing survey/ evening flyout (emergence survey) and Anabat survey of the Dark Creek culvert the evening before works are proposed to start.	Project Ecologist
Remote camera survey	Construction	Undertake a pre-clearing survey/ remote camera survey the morning works are proposed to start to ensure microbats are not present. *(Hold point)* Ecologist to sign pre-clearing checklist that microbats are not present and sealing works of the gaps can commence.	Contractor's or TfNSW tunnel inspection specialist Project Ecologist
Seal gaps/microbat habitat in culvert	Construction	Infill/ seal gaps and holes/cracks with a smooth grout product. Use a smooth concrete grout or similar to reduce the likelihood of microbats gripping onto infilled surfaces. If expandable foam is used, cover it with thin plywood or similar. Smooth the surface and ensure it contain no edges/divots that the microbats may be able to grip onto.	Contractor
	Construction	Seal gaps starting closest to where the microbats have been recorded previously, approximately 45 metres downstream of the inlet (Jesmond Park side).	Contractor
	Construction	If infilling/sealing gaps occurs over consecutive days, undertake a pre-clearing survey remote camera survey each morning of works to ensure no microbats have moved in overnight. *(Hold point)* Ecologist to sign pre-clearing checklist that microbats are not present and sealing works of the gaps can commence.	Contractor's or TfNSW tunnel inspection specialist Project Ecologist

Management measure	Timing	Details	Responsibility
Recreation of roosting habitat in new culvert/s	Construction	Recreate long-term compensatory microbat habitat into the new Dark Creek culvert/s by: leaving the transport/lift holes in the new culvert unsealed and roughened internally to a 1-2mm thickness. Where possible, providing habitat in the form of horizontal or longitudinal recesses Applying coarse cement render (aggregate) and/or silicon on the roof of the culvert Installing microbat habitat approximately 45-60 metres downstream of the inlets on the Jesmond Park side)	Contractor
Monitoring of Dark Creek culvert and long-term compensatory microbat habitat	Construction/ Post-construction	Engage a suitably qualified ecologist as outlined in Section 3.1 to monitor the new roosting habitat for use by threatened microbats.	TfNSW
	Post-construction	1. After construction is complete, undertake monthly daytime remote camera surveys (between March and November) of the new Dark Creek culverts and new roosting habitat. 2. Ecologist to review monthly remote camera video footage for threatened microbats: - If microbats are detected on remote camera video footage, ecologist to undertake survey to obtain information on the microbat population in the culvert/s and potential use of the new roosting habitat. Surveys may include emergence surveys, ultrasonic recordings and thermal camera recording. - If no microbats are found, monthly daytime remote camera surveys should be undertaken between March and November for 24 months after construction is complete, or until threatened microbats are recorded. If no threatened microbats are detected after 24 months of monthly daytime remote camera surveys between March and November, then monitoring of the new Dark Creek culverts and new roosting habitat can be discontinued.	TfNSW tunnel inspection specialist Ecologist
	Post-construction	Submit a report to TfNSW documenting the findings of the remote camera and/or microbat population surveys.	Ecologist

4 Conclusion

The purpose of this Microbat Management Strategy is to provide safeguards to minimise potential impacts during each construction phase for threatened microbats that have been recorded, or that have a high likelihood of occurring within the project area.

Six threatened microbat species have been recorded or are predicted to occur within the project area including:

- Eastern Free-tail bat (*Mormopterus norfolkensis*)
- Yellow-bellied Sheathtail-bat (*Saccolaimus flaviventris*)
- Greater Broad-nosed Bat (*Scoteanax rueppellii*)
- Little Bent-winged Bat (*Miniopterus australis)*
- Large Bent-winged Bat (*Miniopterus orianae oceanensis*)
- Southern Myotis (*Myotis macropus*).

The main focus of this Microbat Management Strategy is to minimise potential impacts on cave-dwelling microbats (Little Bent-winged Bat, Large Bent-winged Bat and Southern Myotis) during construction, especially within the Dark Creek Culvert and its vicinity.

Section 3 provides a procedure for the infilling/sealing of gaps in Dark Creek that can be implemented when threatened microbats are not present.

The Contractor would recreate long-term compensatory microbat habitat into the new Dark Creek culvert/s including:

- leaving the transport/lift holes in the new culvert unsealed and roughened internally to a 1-2mm thickness.
- where possible, providing habitat in the form of horizontal or longitudinal recesses
- applying coarse cement render (aggregate) and/or silicon on the roof of the culvert
- installing microbat habitat approximately 45-60 metres downstream of the inlets on the Jesmond Park side)

After construction is complete, undertake monthly daytime remote camera surveys (between March and November) of the new Dark Creek culverts and new roosting habitat. Monthly daytime remote camera surveys should be undertaken between March and November for 24 months after construction is complete.

The Ecologist would review monthly remote camera video footage for threatened microbats.

If microbats are detected on remote camera video footage, ecologist to undertake survey to obtain information on the microbat population in the culvert/s and potential use of the new roosting habitat. Surveys may include emergence surveys, ultrasonic recordings and thermal camera recording.

If no microbats are found, monthly daytime remote camera surveys should be undertaken between March and November for 24 months after construction is complete, or until threatened microbats are recorded.

If no threatened microbats are detected after 24 months of monthly daytime remote camera surveys between March and November, then monitoring of the new Dark Creek culverts and new roosting habitat can be discontinued.

A report would be submitted to TfNSW by the microbat ecologist documenting the findings of the remote camera and/or microbat population surveys.

5 Limitations

This Report is provided by WSP Australia Pty Limited (*WSP*) for Transport for NSW (*Client*) in response to specific instructions from the Client

PERMITTED PURPOSE

This Report is provided by WSP for the purpose described in the Agreement and no responsibility is accepted by WSP for the use of the Report in whole or in part, for any other purpose (*Permitted Purpose*).

QUALIFICATIONS AND ASSUMPTIONS

The services undertaken by WSP in preparing this Report were limited to those specifically detailed in the Report and are subject to the scope, qualifications, assumptions and limitations set out in the Report or otherwise communicated to the Client.

Except as otherwise stated in the Report and to the extent that statements, opinions, facts, conclusion and / or recommendations in the Report (*Conclusions*) are based in whole or in part on information provided by the Client and other parties identified in the report (*Information)*, those Conclusions are based on assumptions by WSP of the reliability, adequacy, accuracy and completeness of the Information and have not been verified. WSP accepts no responsibility for the Information.

WSP has prepared the Report without regard to any special interest of any person other than the Client when undertaking the services described in the Agreement or in preparing the Report.

USE AND RELIANCE

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A35886461
SF2012/052148

19 January 2021

Steven Cox
Senior Team Leader Planning
Biodiversity and Conservation Division
Department of Planning, Industry and Environment
Level 4, 26 Honeysuckle Drive
Locked Bag 1002, Dangar 2309
Newcastle NSW 2300

Dear Steve

Newcastle Inner City Bypass – Rankin Park to Jesmond (SSI 6888)
Infrastructure Approval Table 1 definitions – consultation regarding biodiversity impacts from infilling of gaps in the Dark Creek culvert

Transport for NSW (TfNSW) are currently completing early work for the fifth section of the Newcastle Inner City Bypass between Rankin Park and Jesmond. We are also continuing to refine the detailed design and plan for the main bypass work.

As per previous correspondence on 18 September 2019, the project approval instrument prescribes that any impact to threatened biodiversity is “construction”, unless determined by the NSW Planning Secretary that the works are suitably described as “low impact work”, in consultation with OEH.

During a structural inspection in May 2019 a number of microbats were observed roosting in a 50-75mm gap between the crown units of the Dark Creek culvert which is proposed for decommissioning. A targeted survey including Echolocation calls completed in October 2019 confirmed the presence of the Little Bent-winged Bat (*Miniopterus australis*) and the Large Bent-winged Bat (*Miniopterus orianae oceanensis*). Both species are listed as Vulnerable under the *NSW Biodiversity Conservation Act 2016*.

A remote survey of the entire Dark Creek culvert was carried out for TfNSW in December 2020 during the prescribed maternity period to determine if any of the Bent-winged Bats were using the culvert as a maternity roost and to identify if any other microbat species were roosting in the culvert. No microbats were present during this inspection. This indicates Bent-winged Bats are not using the Dark Creek culvert as a maternity roost and would have returned to offsite maternity roosts in limestone caves to give birth. Similarly, no Southern Myotis were recorded during the 2019 targeted survey or the recent remote survey, suggesting they are unlikely to be breeding in the Dark Creek culvert. This was further supported by an evening fly-out survey of Dark Creek culvert on 18 January 2021 where no microbats were observed or recorded on the Anabat call recording devices.

This indicates that the majority of the colony is still away in the maternity caves attending to young and would most likely return towards end February/ beginning of March 2021. In order to minimise impacts on threatened Bent-winged bats during the next breeding season and prevent potentially disruptive exclusion measures when threatened microbats may be present within the culvert, TfNSW are proposing to seal off the existing roosting habitat and any other suitable

habitat in Dark Creek culvert as soon as possible, before the microbats return from their breeding caves. A review of the surrounding area have identified that there are numerous structures within the locality that could provide suitable roosting habitat.

In the event that microbats return to roost in Dark Creek culvert prior to the low impact works commencing, the works would not be completed.

The purpose of this correspondence is to consult on the impacts to threatened species associated with infilling the gaps in Dark Creek culvert and gain DPIE Biodiversity and Conservation Division (formally OEH) concurrence on the Transport for NSW consideration that the proposed activity can be described as “low impact work”.

Any comments received, among other things, would be provided to the Planning Secretary to assist with a determination of a low impact work submission. For further information or to provide comments, please contact Melissa Mayfield-Smith on 0408 199 626 or by email Melissa.mayfield-smith@transport.nsw.gov.au.

Yours sincerely

Steve Dalley
Project/ Contract Manager
Northern Project Office - Hunter

Encl: 1) Newcastle Inner City Bypass Rankin Park to Jesmond: Dark Creek – Microbat Management Stage 1 low impact work submission

2) Ecologist advice supporting low impact work submission

From:	Steven Cox
To:	Melissa Mayfield-smith
Cc:	Brendan Mee
Subject:	RE: HPE CM: SSI 6888 - PR2J - Low impact work consultation for Dark Creek
Date:	Friday, 29 January 2021 5:04:37 PM
Attachments:	image004.jpg image001.jpg

Hi Melissa,

Thanks for your email requesting BCD's review of the impacts to threatened species associated with sealing of existing microbat roosting habitat in Dark Creek. We have reviewed the Dark Creek – Microbat Management document (dated January 2021) and have some queries in relation to the request:

- The information provided refers to a colony of microbats, however there is no indication on how many microbats are utilising the culverts. Can you please provide an estimation on the numbers of each species of microbat that may be utilising the culverts?
- Can you provide further information (including photos if available) on the location of the microbats within the culverts and extent of roosting habitat (we note that the culverts are 250m in length – is there roosting habitat along the whole length?)
- Can you provide further information on the extent of works (is the entire 250m length of the culverts proposed to be sealed/grouted?)
- Can you provide further information on whether the microbat roosting habitat within the culverts was identified and assessed within the Environmental Impact Statement as part of the SSI application for the project?
- Condition E10 of the SSI consent requires that before the demolition of any structures identified as potential roosting sites for microbats, pre-clearing inspections must be undertaken. The condition also requires that survey and relocation methodologies and management/offset measures must be included within the Construction Flora and Fauna Management Sub-plan. Can you provide further information on any offset measures that are proposed for removal of the microbat roosting habitat?

Kind regards,
Steven

Steven Cox
Senior Team Leader Planning, Hunter Central Coast Branch

Biodiversity and Conservation Division | Department of Planning, Industry and Environment
T 02 4927 3140 | **M** 0472 800 088 | **E** steven.cox@environment.nsw.gov.au
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From: Melissa Mayfield-smith <Melissa.MAYFIELD-SMITH@transport.nsw.gov.au>
Sent: Tuesday, 19 January 2021 8:13 PM
To: OEH ROD Hunter Central Coast Mailbox <rog.hcc@environment.nsw.gov.au>
Subject: HPE CM: SSI 6888 - PR2J - Low impact work consultation for Dark Creek

Hi Steve,

In relation to the Rankin Park to Jesmond project (SSI 6888), I am writing to consult on the impacts to threatened species associated with sealing of existing microbat roosting habitat in Dark Creek and gain DPIE, Biodiversity and Conservation Division (formally OEH) concurrence on the Transport for NSW consideration that the proposed activity can be described as "low impact work".

Please find attached the formal consultation letter and low impact works submission that includes ecologist advice. I am happy to arrange a meeting with our ecologist to discuss the proposal further.

Regards,

Melissa Mayfield-Smith
Environment Officer
Safety, Environment and Regulation division
Transport for NSW

T 02 4908 7668 **M** 0408 199 626
266 King Street Newcastle NSW 2300

I acknowledge the traditional owners and custodians of the land in which I work and pay my respects to Elders past, present and future.

immediately.
Any views expressed in this email are those of the individual sender except where the sender expressly and with authority states them to be the views of the NSW Office of Environment and Heritage.

PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL

From:	Melissa Mayfield-smith
To:	Steven Cox
Cc:	Brendan Mee; Hunter Central Coast Branch central mailbox (rog.hcc@environment.nsw.gov.au)
Subject:	RE: HPE CM: SSI 6888 - PR2J - Low impact work consultation for Dark Creek
Date:	Wednesday, 2 June 2021 1:09:00 PM
Attachments:	Low impact work submission - Dark Creek response to BCD.PDF 20190513 Dark creek bats 2.mov 20190513 Dark Creek bats 1 .mov image001.jpg image002.jpg

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Hi Steven,

Firstly apologies for the very slow reply. Please find attached additional information regarding the microbat's roosing in Dark Creek Culvert under Jesmond Roundabout. I have also attached some videos that were taken when they were first encountered in 2019, so you can see the gap they were found in.

We won't be looking to do any works in this area for at least the next 4 months as we suspect the microbat's have returned and are completing further survey, so no rush with a response, but if you could get back to me within the next month or so, that would be great.

On a separate note, we lodged a modification request with DPIE last Friday for additional compound sites. The modification request does include a BDAR for additional impacts to a small area of native vegetation (0.2 hectares of low condition native vegetation associated with an artificial wetland). I just wanted to flag that with you in case that was something that came to your team for review.

Regards,

Melissa Mayfield-Smith
Environment Officer
Safety, Environment and Regulation division
Transport for NSW

M 0408 199 626
266 King Street Newcastle NSW 2300

I acknowledge the traditional owners and custodians of the land in which I work and pay my respects to Elders past, present and future.

From: Steven Cox [mailto:Steven.Cox@environment.nsw.gov.au]
Sent: Friday, 29 January 2021 5:04 PM
To: Melissa Mayfield-smith <Melissa.MAYFIELD-SMITH@transport.nsw.gov.au>
Cc: Brendan Mee <Brendan.Mee@environment.nsw.gov.au>
Subject: RE: HPE CM: SSI 6888 - PR2J - Low impact work consultation for Dark Creek

Hi Melissa,

A36030772
SF2012/052148

31 May 2021

Steven Cox
Senior Team Leader Planning
Biodiversity and Conservation Division
Department of Planning, Industry and Environment
Level 4, 26 Honeysuckle Drive
Locked Bag 1002, Dangar 2309
Newcastle NSW 2300

Dear Steve

Newcastle Inner City Bypass – Rankin Park to Jesmond (SSI 6888)
Infrastructure Approval Table 1 definitions – consultation regarding biodiversity impacts from infilling of gaps in the Dark Creek culvert

Thank you for your response to our correspondence from 19 January 2021 regarding the low impact work submission for Dark Creek microbat management. Transport for NSW provides the following additional information in relation to your queries.

1. *The information provided refers to a colony of microbats, however there is no indication on how many microbats are utilising the culverts. Can you please provide an estimation on the numbers of each species of microbat that may be utilising the culverts?*

Based on video recordings and the number of echolocation calls detected during a targeted survey in October 2019 it is estimated that there were the following number of individuals:

- *Miniopterus australis* (Little Bent-winged Bat) 100-600 individuals.
- *Miniopterus orianeae oceanensis* (Large bent-winged Bat) 30-100

2. *Can you provide further information (including photos if available) on the location of the microbats within the culverts and extent of roosting habitat (we note that the culverts are 250m in length – is there roosting habitat along the whole length?)*

As the culvert is a confined space, entry is only permitted by appropriately qualified personnel with suitable PPE. The mircobats were found by confined space specialist using breathing apparatus roosting in the gap between the top of the crown units. They were roosting in a gap about 40 metres from the inlet, as show in Figure 1. This gap was approximately 30mm wide. The confined space specialist also took videos of the microbats in the gap, which is attached with this response and a screenshot is provided in Figure 2.

This is the only area the microbats have been found to date as subsequent surveys have been complete at the entrance and exits to the culvert including echolocation survey and fly out survey. A survey within the culvert using a remote camera in December 2020 as well as an evening fly-out and anabat survey completed on 18 January 2021 failed to find any microbats within the culvert including those previously identified.

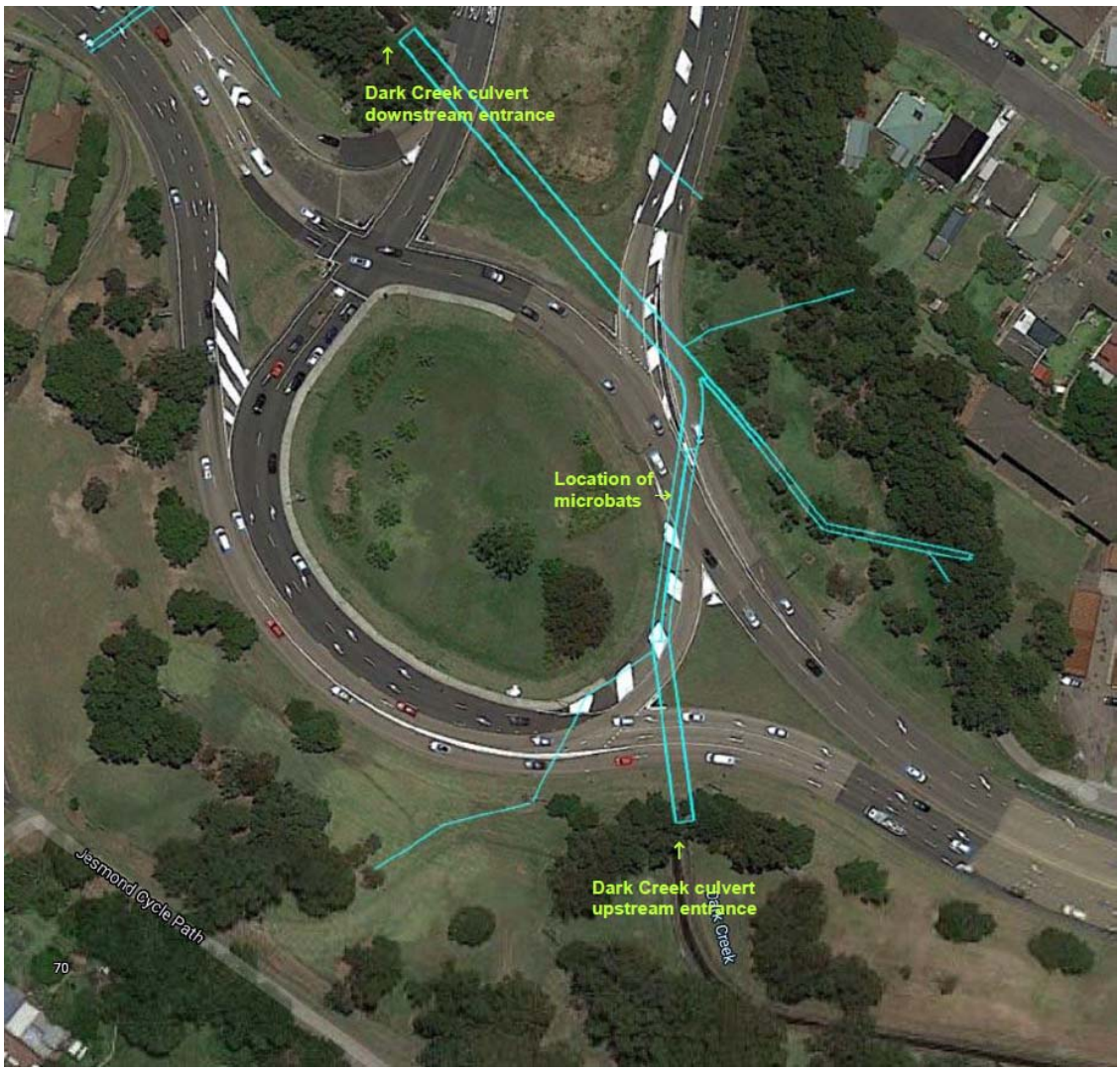

Figure 1: location of the microbats along the culverts.

Figure 2: Screenshot from video showing microbats roosting in the culvert.

As outlined in figure 1 above, microbats have been visually identified within the existing section of concrete culvert located underneath Newcastle Road (the eastern end). This section of the culvert (shown in pink in figure 3) is the oldest section and was constructed insitu circa 1930 and is 1.45m high and 1.8m wide. A Transport for NSW culvert condition assessments undertaken in May 2019 identified gaps between crown units up to 30mm wide and a major transverse crack in the order of 40mm wide near to the inlet as the eastern end.

Based on the 2019 condition assessment, these cracks and gaps do not extend to the western end where there precast units underneath the Newcastle Inner City Bypass are planned to be retained.

3. *Can you provide further information on the extent of works (is the entire 250m length of the culverts proposed to be sealed/grouted?)*

While the design is not finalised, the section of culvert where the bats were observed is currently proposed to be abandoned (and likely grout filled). The downstream section of the culvert (approx. 100m upstream of the outlet) is proposed to be retained. A new multi-cell box culvert is proposed to the west with an inlet near the existing inlet in Jesmond Park.

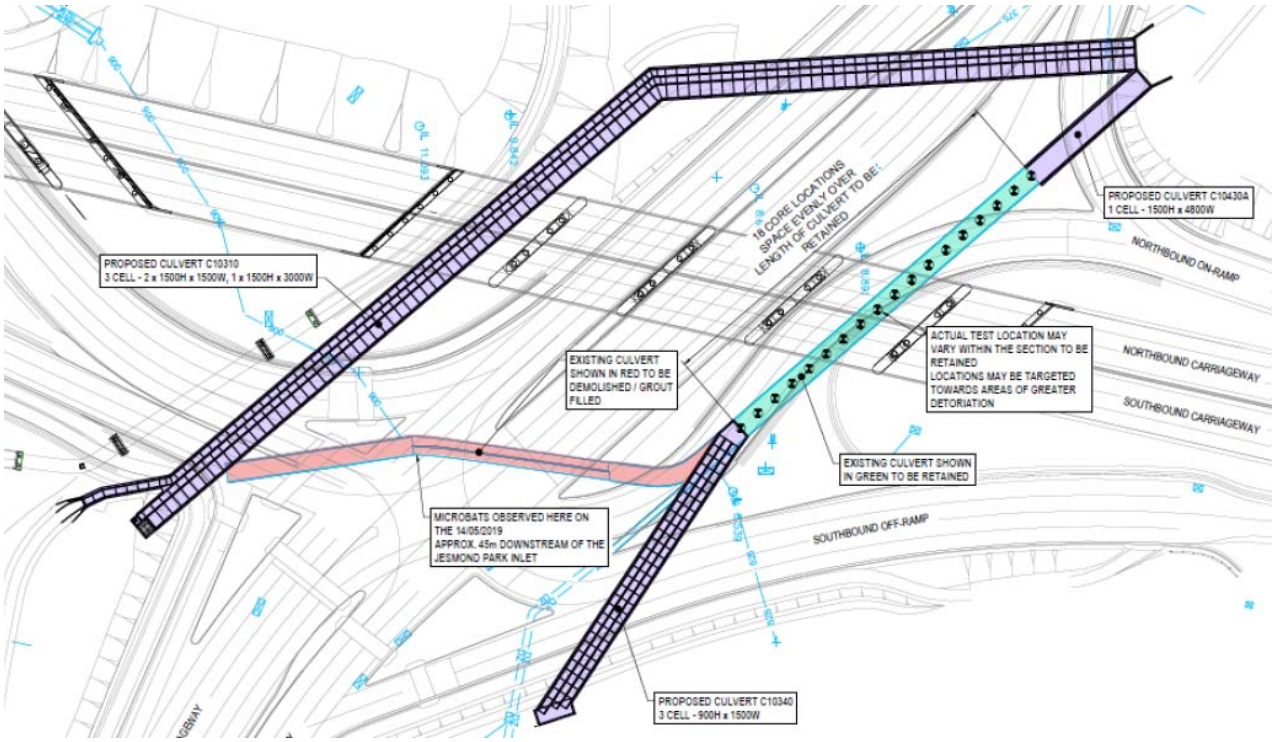

Figure 3: Existing culvert to be removed (pink), culvert under NCIB to be retained (cyan) and new box culverts (purple)

4. *Can you provide further information on whether the microbat roosting habitat within the culverts was identified and assessed within the Environmental Impact Statement as part of the SSI application for the project?*

Suitable foraging and roosting habitat for hollow-dependent microbats was identified within the study area. The concept design retained the existing culvert, so no specific microbat investigation was undertaken at the Dark Creek culvert as part of the biodiversity assessment associated with the EIS or Submission and Preferred Infrastructure Reports (SPIR). Transport for NSW are currently implementing the Department of Planning, Industry and Environmental (DPIE) approved project unexpected finds procedure and preparing an assessment for this removal. This assessment includes further survey to gather more information on likely numbers.

During field surveys for the Biodiversity Assessment Report (BAR) the Little Bent-winged Bat (*Miniopterus australis*) was detected using ultrasonic detection and recorded at five locations in bushland in the wider project study area. The BAR states that suitable foraging habitat for cave-dwelling microbat species was identified within the study area, but no caves were observed within the study area that would provide suitable roosting/breeding habitat for these species.

5. *Condition E10 of the SSI consent requires that before the demolition of any structures identified as potential roosting sites for microbats, pre-clearing inspections must be undertaken. The condition also requires that survey and relocation methodologies and management/offset measures must be included within the Construction Flora and Fauna Management Sub-plan. Can you provide further information on any offset measures that are proposed for removal of the microbat roosting habitat?*

A pre-clearing survey would be undertaken prior to any works being carried out within Dark Creek. Due to the culvert being a confined space, this survey could be achieved by using a remote controlled camera. An ecologist would be present on site for this inspection. In the event that threatened microbats are present within the culvert the works would not be completed. Transport for NSW are seeking approval by the Planning Secretary that the works are suitably categorised as 'low impact work', in accordance with Condition A1 and the definitions provided in Table 1. If approved, an Environmental Work Method Statement would be prepared, which would include survey methodologies and that no relocations are to be carried out as part of these works

A further pre-clearing inspection would be completed prior to the demolition of the culvert by the main construction contractor. This would be included within the Construction Flora and Fauna Management Sub-Plan required under Condition C4 and would be prepared to meet the requirements of Condition E10.

Transport for NSW have completed a near detail design process which includes a design of the new section of Dark Creek culvert. This design will be confirmed by the successful principal design and construction contractor expected to be awarded in the second half of 2021. To inform this design Transport for NSW engaged WSP to prepare a technical memo and provide advice on suitable compensatory roosting habitat for threatened microbats within the new culvert. This memo provided three recommendations, which Transport for NSW will adopt for any culvert additions or changes within Dark Creek. The recommendations include:

- Leaving transport/lift holes in the new culvert unsealed and roughened internally to a 1-2mm thickness. This can be done in the pre-cast yard with a scabbling gun or by spraying Rugasol on the surface.
- Providing habitat in the form of horizontal/longitudinal recesses of about 55-75mm.

- Applying a coarse cement render (aggregate) and/or silicon on the roof of the new and retained existing culvert.

For further information or to provide comments, please contact Melissa Mayfield-Smith on 0408 199 626 or by email Melissa.mayfield-smith@transport.nsw.gov.au.

Yours sincerely

Steve Dalley
Project/ Contract Manager
Northern Project Office - Hunter

From:	Melissa Mayfield-smith
To:	Andrew Grainger; Danielle Martin
Subject:	FW: HPE CM: RE: HPE CM: SSI 6888 - PR2J - Low impact work consultation for Dark Creek
Date:	Thursday, 25 November 2021 7:37:18 PM
Attachments:	image002.jpg image003.jpg image001.jpg DOC21 950860-4 BCD Letter - Dark Creek Culvert - Low impact work submission - November 2021.pdf image005.jpg

[redacted]

From: Jayme Lennon <jayme.lennon@environment.nsw.gov.au>
Sent: Thursday, 25 November 2021 5:27 PM
To: Melissa Mayfield-smith <Melissa.MAYFIELD-SMITH@transport.nsw.gov.au>
Cc: Steven Crick <Steven.Crick@environment.nsw.gov.au>; Lee McCourt <Lee.McCourt@planning.nsw.gov.au>
Subject: FW: HPE CM: RE: HPE CM: SSI 6888 - PR2J - Low impact work consultation for Dark Creek

Hi Melissa,
Please see attached BCD's response to the low impact work consultation for the Dark Creek culvert.

Kind regards,
Jayme Lennon
Senior Conservation Planner, Hunter Central Coast Branch

Biodiversity and Conservation Division | Department of Planning, Industry and Environment
P 02 9585 6935 | **E** jayme.lennon@environment.nsw.gov.au
Level 3, 6 Stewart Avenue, Newcastle West NSW 2302
Locked Bag 1002, Dangar NSW 2309
www.dpie.nsw.gov.au

Please note our branch email address has changed. Please send all new planning requests to huntercentralcoast@environment.nsw.gov.au where they will be entered into our document management system and be forwarded to our Senior Team Leader.

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The Department of Planning, Industry and Environment acknowledges that it stands on Aboriginal land. We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

From: Sarah May <Sarah.May@environment.nsw.gov.au> **On Behalf Of** OEH ROD Hunter Central Coast Mailbox
Sent: Friday, 29 October 2021 11:11 AM
To: Steven Crick <Steven.Crick@environment.nsw.gov.au>
Subject: FW: HPE CM: RE: HPE CM: SSI 6888 - PR2J - Low impact work consultation for Dark Creek

Email and attachments in CM9

Kind Regards,

Sarah May
Coordination & Planning Officer
Hunter Central Coast Branch
Biodiversity & Conservation | Department of Planning, Industry and Environment
T 02 9995 6564 | **M** 0499 488 697 | **E** sarah.may@environment.nsw.gov.au
4 Parramatta Square, 12 Darcy St, Parramatta, Sydney 2150
(Locked Bag 5022, Parramatta NSW 2124)
www.dpie.nsw.gov.au

The Department of Planning, Industry and Environment acknowledges that it stands on Aboriginal land. We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

From: Melissa Mayfield-smith <Melissa.MAYFIELD-SMITH@transport.nsw.gov.au>
Sent: Thursday, 28 October 2021 12:37 PM
To: Steven Cox <Steven.Cox@environment.nsw.gov.au>; OEH ROD Hunter Central Coast Mailbox <huntercentralcoast@environment.nsw.gov.au>
Cc: Brendan Mee <Brendan.Mee@environment.nsw.gov.au>; Jayme Lennon <jayme.lennon@environment.nsw.gov.au>
Subject: HPE CM: RE: HPE CM: SSI 6888 - PR2J - Low impact work consultation for Dark Creek

Hi Steven,

Following on from our meeting on 23 June, Transport have completed further survey and assessment to support our low impact work submissions for Rankin Park to Jesmond to fil the gaps in the Dark Creek culvert.

The additional survey completed includes consecutive evening flyout surveys and an Anabat survey. No microbats where detected. A remote camera survey was then completed, which confirmed that there were no microbats roosting in Dark Creek culvert. These surveys were

completed in optimal conditions during a period which we expected the bat to have returned from their maternity caves.

An assessment of significance of the Little Bent-winged Bat (*Miniopterus australis*), Large Bent-winged Bat (*Miniopterus orianae oceanensis*) and Southern Myotis – (*Myotis macropus*) has also been completed for the project as a whole, including the removal of the occasional roosting habitat in Dark Creek. This assessment found that provided the mitigation measures outlined in the low impact work procedure are implemented, there is unlikely to be a significant impact to the Little Bent-winged Bat, Large Bent-winged Bat and Southern Myotis.

The low impact work submission has been updated to accommodate these surveys and assessment and a microbat management strategy is currently being reviewed internally. Transport are now to resubmitting the low impact work submission to seek concurrence from Biodiversity and Conservation Division that the proposed works can be described as "low impact" in accordance with the definition of Construction in our Approval (attached).

Feel free to contact me if you have any questions, I am also happy to arrange a meeting to discuss.

Regards,

Melissa Mayfield-Smith
Senior Environment and Sustainability Officer
Safety, Environment and Regulation division
Transport for NSW

M 0408 199 626
Level 6, 6 Stewart Street Newcastle West NSW 2302

I acknowledge the traditional owners and custodians of the land in which I work and pay my respects to Elders past, present and future.

From: Melissa Mayfield-smith
Sent: Wednesday, 2 June 2021 1:10 PM
To: Steven Cox <Steven.Cox@environment.nsw.gov.au>
Cc: Brendan Mee <Brendan.Mee@environment.nsw.gov.au>; Hunter Central Coast Branch central mailbox (rog.hcc@environment.nsw.gov.au) <rog.hcc@environment.nsw.gov.au>
Subject: RE: HPE CM: SSI 6888 - PR2J - Low impact work consultation for Dark Creek

Hi Steven,

Firstly apologies for the very slow reply. Please find attached additional information regarding the microbat's roosing in Dark Creek Culvert under Jesmond Roundabout. I have also attached some videos that were taken when they were first encountered in 2019, so you can see the gap they were found in.

Planning, Industry & Environment

Our ref: DOC21/950860-4

Melissa Mayfield-Smith

Senior Environment and Sustainability Officer
Safety, Environment and Regulation division
Transport for NSW
Melissa.MAYFIELD-SMITH@transport.nsw.gov.au

Dear Melissa,

Low impact work submission – Dark Creek Culvert – Rankin Park to Jesmond (SSI 6888)

I refer to your email dated 28 October 2021 requesting concurrence from Biodiversity and Conservation Division (BCD) that the proposed works can be described as low impact in accordance with the definition of Construction in the Instrument of Approval for the Rankin Park to Jesmond Project (SSI 6888). The submission seeks to gain approval to seal a culvert under the Jesmond roundabout.

Transport for NSW (TfNSW) has identified that at least three microbat species utilise this culvert as roosting habitat, including the Little Bent-wing Bat (*Miniopterus australis*) and Large Bent-winged Bat (*Miniopterus orianae oceanensis*) both of which are listed as Vulnerable under the *Biodiversity Conservation Act 2016* (the BC Act). The southern Myotis (*Myotis macropus*) is also considered to have the potential to use this culvert. These species were not assessed under the Environmental Impact Statement (EIS) which was completed for the instrument of approval (the approval).

BCD has reviewed the approval and notes that the following criteria are used to define 'low impact work':

a. survey works including carrying out general alignment survey, installing survey controls (including installation of global positioning systems (GPS)), installing repeater stations, carrying out surveys of existing and future utilities and building and road dilapidation surveys;

b. investigations including investigative drilling, contamination investigations and excavation;

c. operation of ancillary facilities if the Environmental Representative (ER) has determined the operational activities will have minimal impact on the environment and community;

d. minor clearing and relocation of native vegetation, as identified in the documents listed in Condition A1;

e. installation of mitigation measures including erosion and sediment controls, exclusion fencing, hoardings and temporary or at property acoustic treatments;

f. property acquisition adjustment works including installation of property fencing, and relocation and adjustments of utilities to property including water supply and electricity;

g. relocation and connection of utilities where the relocation or connection has a minor impact to the environment and sensitive receivers as determined by the ER;

h. archaeological testing under the Code of practice for archaeological investigation of Aboriginal objects in NSW (DECCW, 2010) or archaeological monitoring undertaken in association with (a)-(g) and (i) to ensure that there is no impact on Aboriginal artefacts or objects, and archaeological salvage works in accordance with A1, E17 and E18;

i. other activities determined by the ER to have minimal environmental impact which may include construction of minor access roads, temporary relocation of pedestrian and cycle paths and the provision of property access; and

j. maintenance of existing buildings and structures required to facilitate the carrying out of the SSI.

BCD considers that the proposed action is not consistent with any of these criteria. Further to this, the approval states that where threatened species are affected or potentially affected by any low impact work, that work is construction, unless otherwise determined by the Planning Secretary in consultation with BCD.

BCD has reviewed the information provided in support of the request for concurrence and advises that the potential for impact of these proposed works on threatened species is not consistent with the definition of low impact works under the approval. TfNSW may consider a Threatened Species Licence under Part 2 of the Biodiversity Conservation Act 2016 or a Review of Environmental Factors (REF) under Part 5 of the *Environmental Planning and Assessment Act 1979* (which may include assessment under the Biodiversity Assessment Methodology (BAM)) as advised in our meeting on 23 June 2021.

If you have any further questions in relation to this matter, please contact Jayme Lennon, Senior Conservation Planning Officer, on 9585 6935 or via email at huntercentralcoast@environment.nsw.gov.au

Yours sincerely

STEVEN CRICK
Senior Team Leader Planning
Hunter Central Coast Branch
Biodiversity and Conservation Division

25 November 2021

From:	Danielle Martin
To:	jayme.lennon@environment.nsw.gov.au
Cc:	rog.hcc@environment.nsw.gov.au; Jason Clements
Subject:	SSI 6888 - RP2J - low impact work consultation Dark Ck culvert
Date:	Friday, 17 December 2021 1:28:00 PM
Attachments:	image001.jpg PS122282-Microbat Management Strategy.pdf

Hi Jayme,

Thanks for your time last week. Attached is the Microbat Management Strategy for the Rankin Park to Jesmond project.

Following our meeting, we have undertaken internal consultation with our senior planning and biodiversity specialists and I've spoken with DPIE. Unfortunately, obtaining a licence under the BC Act wouldn't allow Transport to complete the mitigation as early works, as the project approval would still require approval from the Planning Secretary to carry out the work as per the definition in the approval. A license is also not required as the work is subject to a planning approval.

The requirement to consult with BCD in this instance comes from the definition of construction within the project approval. Transport have been consulting with BCD to date to get agreement that the sealing of the culvert can be done under the definition of low impact work within the approval instrument and can therefore take place prior to start of construction when the microbats may have returned to the culvert.

As discussed, the impact to these bats has been assessed under Transport's Unexpected Finds Procedure, which found that there is unlikely to be a significant impact to the microbats within the culvert of the proposed works. This is a standard procedure for assessing impacts on threatened biodiversity that is identified after project approval and is part of the approved EIS. The residual impact of the works is the loss of one opportunistic over-wintering roosting location and no direct impacts to individual bats are expected . This impact would not require offsetting under the Biodiversity Assessment Method. A Microbat Management Strategy has been developed as the key mitigation measure.

It is important to distinguish the proposed early works are mitigation for threatened species impacts, not maintenance activities for the culvert itself. Most threatened species mitigation is likely to be associated with some level of disturbance to that species. Therefore it would be inappropriate to classify these works as construction on the basis of an impact to threatened species.

We are currently in a unique situation to reduce the impacts to these species by excluding the culvert while there are no bats present. If the low impact works are not undertaken now, it will be undertaken during a time when bats may be present. This will obviously present different challenges and a revision of the Microbat Management Strategy will be needed. Additional measures may include culvert exclusion works at night, or pre-work surveys to ensure no bats are present before sealing the culverts.

We are interested in seeing the best outcome for the bats with the approved works. Transport will be seeking DPIE's approval for these works to be included as low impacts work on the basis

that they are intended to protect bats and no bats will be impacted by the proposal. We note that this issue has been in discussion with BCD since early 2021 and we are now on the critical path for project commencement. We would appreciate your support for our efforts to manage this species in accordance with our approval.

Kind regards,

Danielle Martin
A/Senior Manager Environment and Sustainability
Regional Project Development & Delivery North – Hunter
Environment Regions | Safety, Environment and Regulation

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