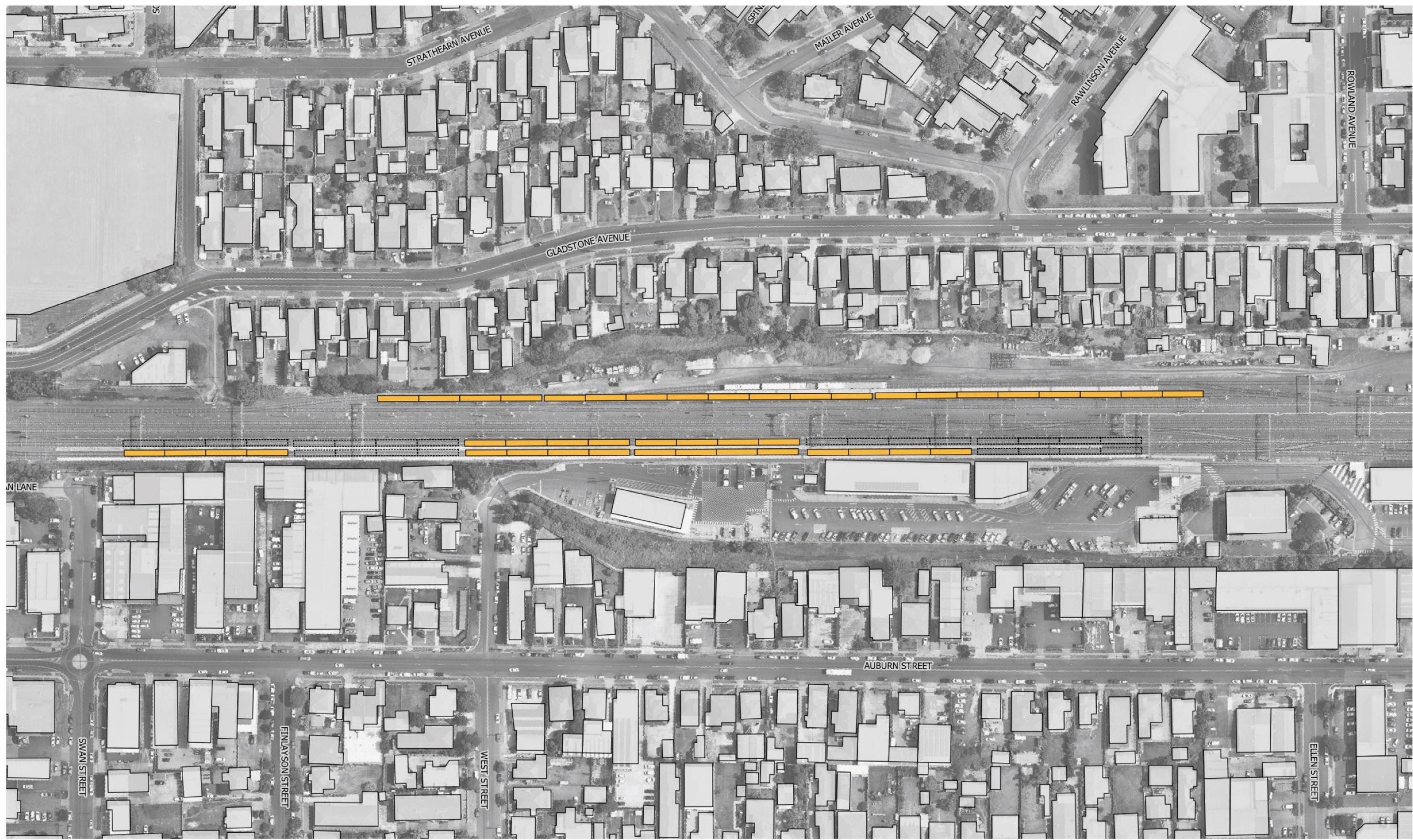


## **APPENDIX E**      **Operational noise assessment train location assumptions**





**Train locations and operating state**

- Idle (stabled)
- None

Client:  
Jacobs

Project:  
MTMS  
Wollongong Stabling Yard

Description:  
Operational noise assessment  
Existing - Night (Stabled) (~2:30am)



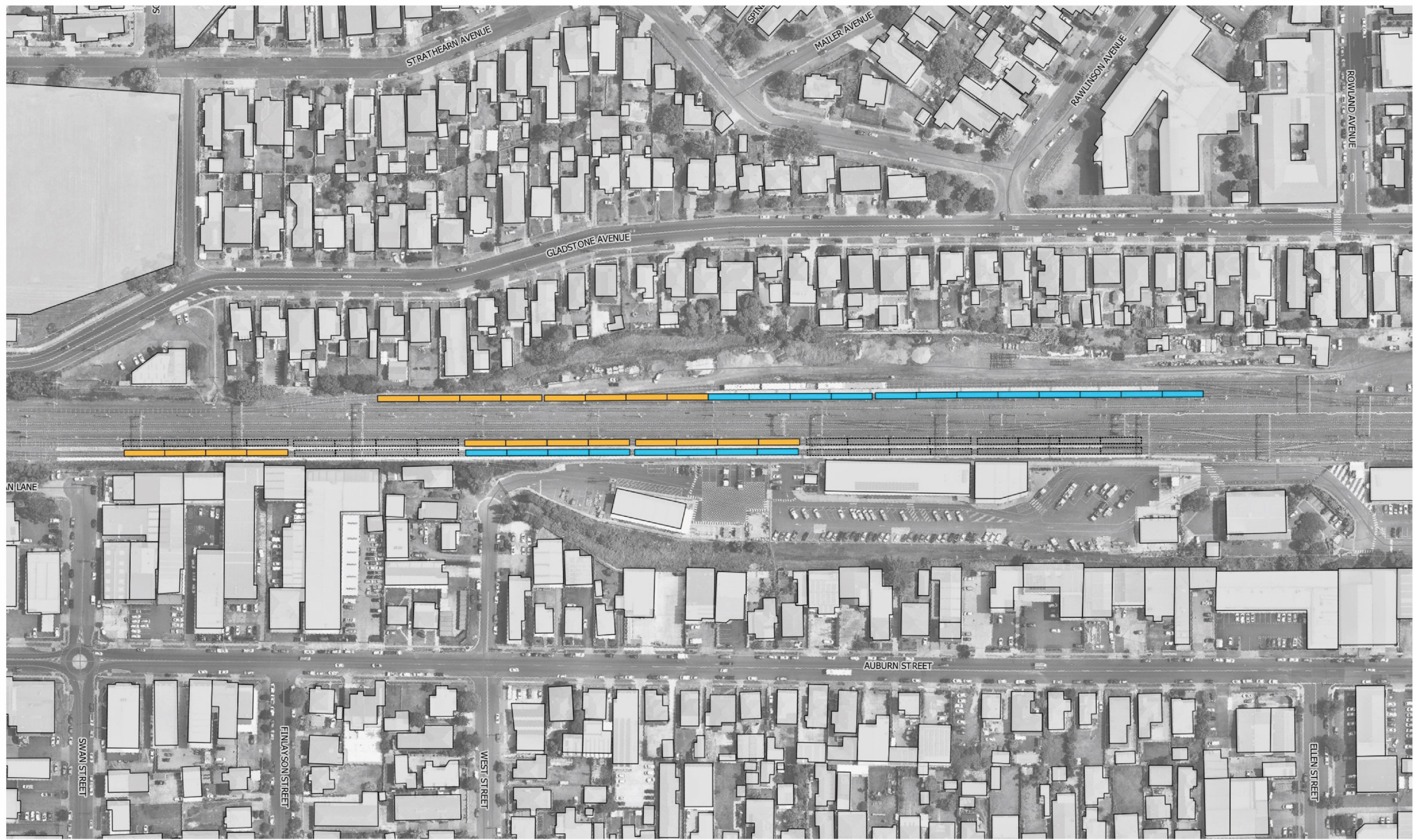
Notes  
 1. Existing train locations are approximate and have been based upon the current stabling markers as per July 2019. Locations on individual trains can change vary based upon the requirements of an individual night.  
 2. Future LNF locations based upon drawings MTMS-LNS-KBR-CV-TR-DRG-011131 to MTMS-LNS-KBR-CV-TR-DRG-011134, Revision B.

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**RENZO TONIN & ASSOCIATES**  
*Inspired to achieve*  
 1/418A Elizabeth Street, SURRY HILLS NSW 2010  
 P: 02 8218 0500 F: 02 8218 0501

Created by: ALE  
 Figure No: TK877-01 6 1 2 B2-007-1 (r4)  
 Date: 05-08-2019  
 Scale: 1:1750 @ A3





**Train locations and operating state**

- Idle (stabled)
- Preparation
- None

Client:  
Jacobs

Project:  
MTMS  
Wollongong Stabling Yard

Description:  
Operational noise assessment  
Existing - Night (Preparation) (~3:30am)

Notes  
1. Existing train locations are approximate and have been based upon the current stabling markers as per July 2019. Locations on individual trains can change vary based upon the requirements of an individual night.  
2. Future LINF locations based upon drawings MTMS-LNS-KBR-CV-TR-DRG-011131 to MTMS-LNS-KBR-CV-TR-DRG-011134, Revision B.

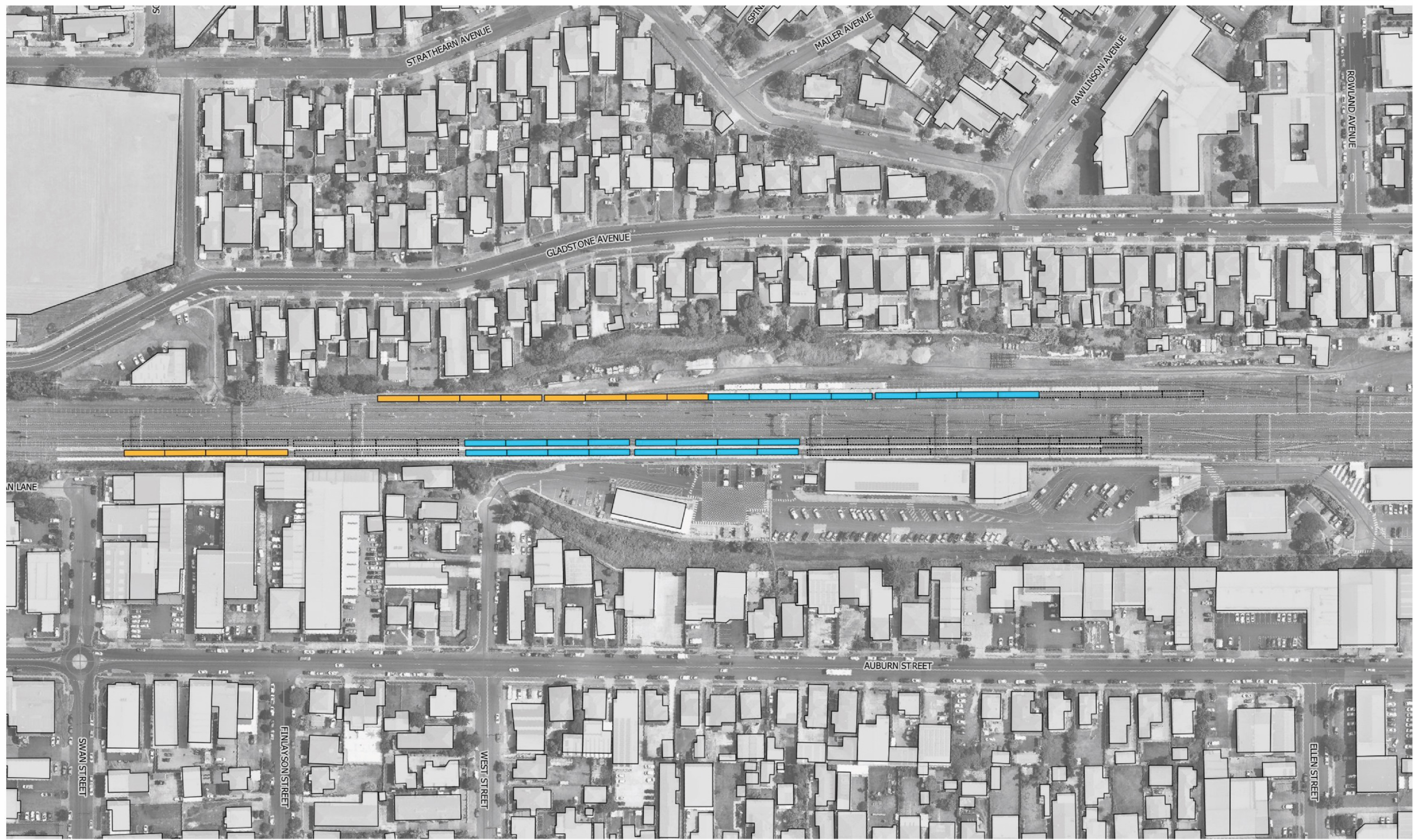
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*Inspired to achieve*  
1/418A Elizabeth Street, SURRY HILLS NSW 2010  
P: 02 8218 0500 F: 02 8218 0501

Created by: ALE  
Figure No: TK877-01 6 1 2 B2-007-1 (r4)  
Date: 05-08-2019  
Scale: 1:1750 @ A3







**Train locations and operating state**

- Idle (stabled)
- Preparation
- None

Client:  
Jacobs

Project:  
MTMS  
Wollongong Stabling Yard

Description:  
Operational noise assessment  
Existing - Night (Preparation) (~4:30am)

Notes  
1. Existing train locations are approximate and have been based upon the current stabling markers as per July 2019. Locations on individual trains can change vary based upon the requirements of an individual night.  
2. Future LINF locations based upon drawings MTMS-LNS-KBR-CV-TR-DRG-011131 to MTMS-LNS-KBR-CV-TR-DRG-011134, Revision B.

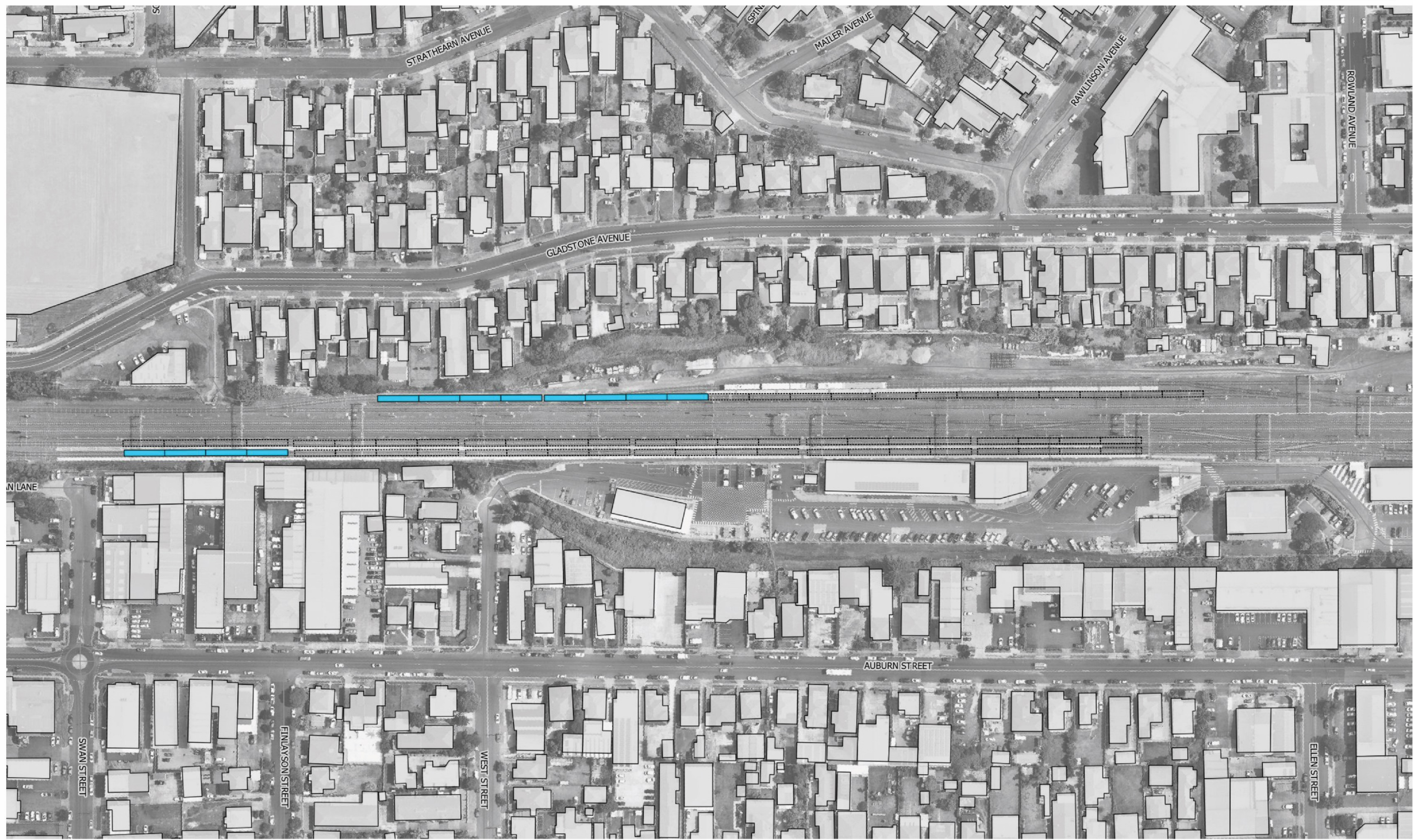
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*Inspired to achieve*  
1/418A Elizabeth Street, SURRY HILLS NSW 2010  
P: 02 8218 0500 F: 02 8218 0501

Created by: ALE  
Figure No: TK877-01 6 1 2 B2-007-2 (r4)  
Date: 05-08-2019  
Scale: 1:1750 @ A3







**Train locations and operating state**

- Preparation
- None

Client:  
Jacobs

Project:  
MTMS  
Wollongong Stabling Yard

Description:  
Operational noise assessment  
Existing - Night (Preparation) (~5:30am)



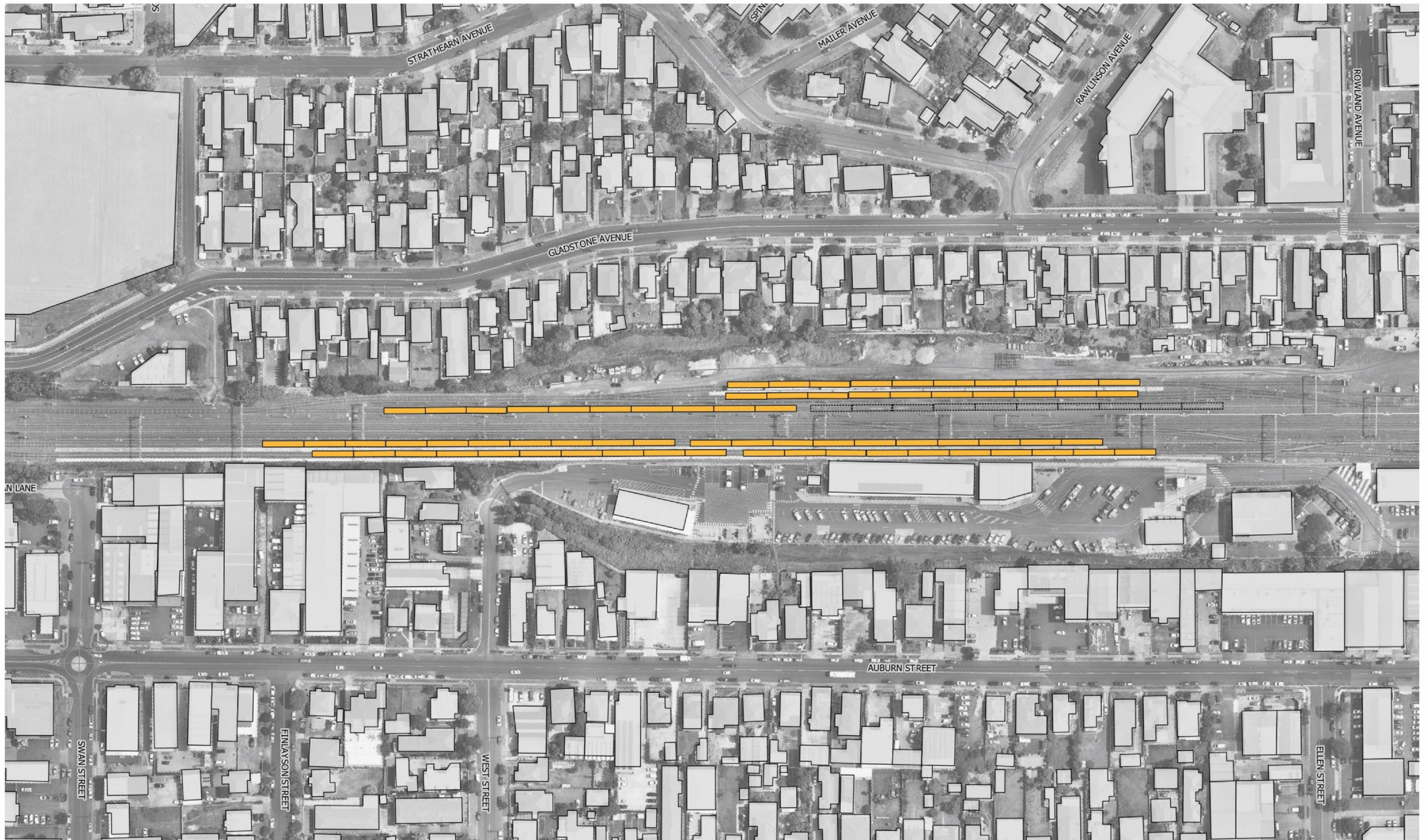
Notes  
 1. Existing train locations are approximate and have been based upon the current stabling markers as per July 2019. Locations on individual trains can change vary based upon the requirements of an individual night.  
 2. Future LNF locations based upon drawings MTMS-LNS-KBR-CV-TR-DRG-011131 to MTMS-LNS-KBR-CV-TR-DRG-011134, Revision B.

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 P: 02 8218 0500 F: 02 8218 0501

Created by: ALE  
 Figure No: TK877-01 6 1 2 B2-007-3 (r4)  
 Date: 05-08-2019  
 Scale: 1:1750 @ A3





**Train locations and operating state**

Idle (stabled)

None

Client:  
Jacobs

Project:  
MTMS  
Wollongong Stabling Yard

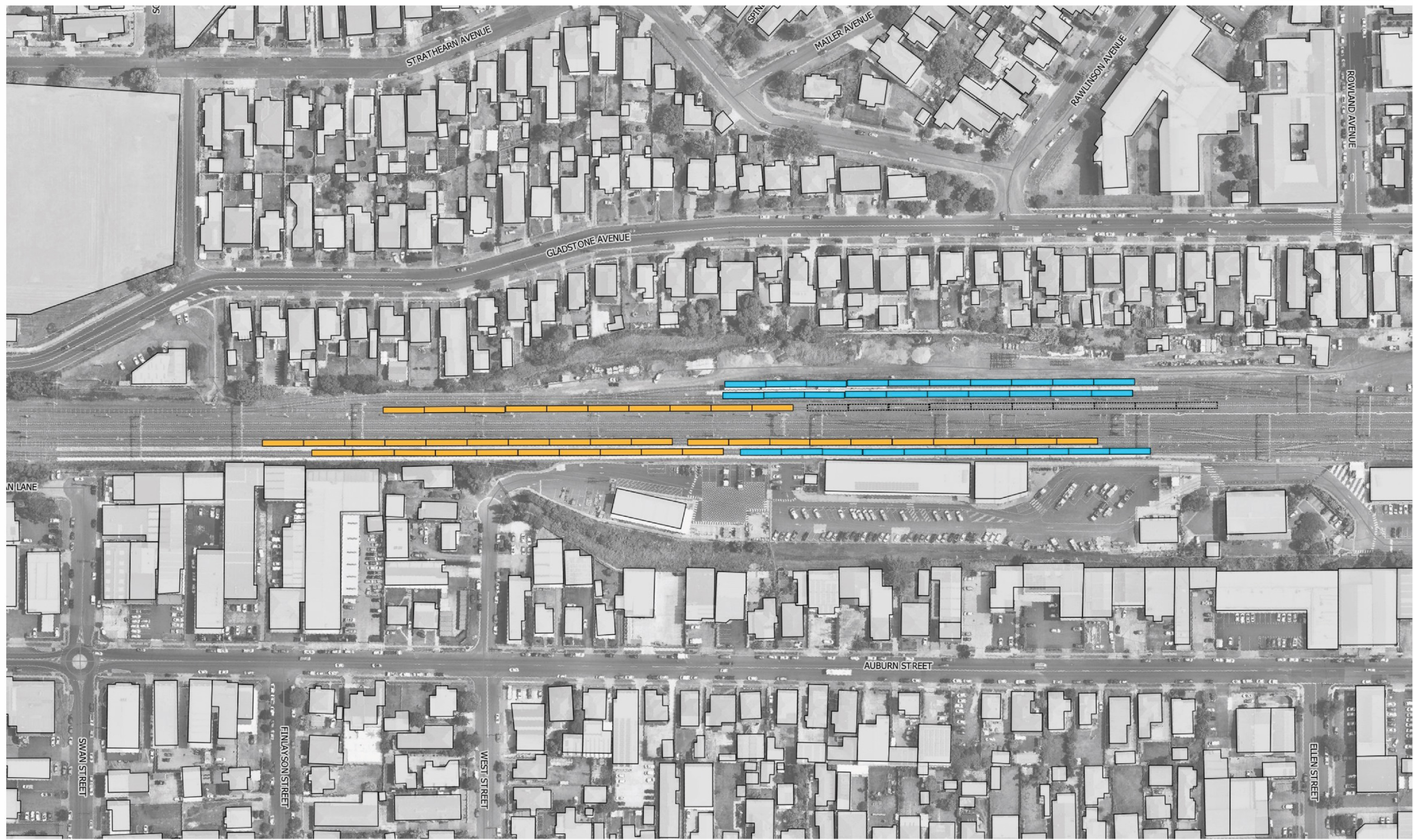
Description:  
Operational noise assessment  
Train locations - Future LNIF - Night (Stabled) (~2:30am)



Notes  
1. Existing train locations are approximate and have been based upon the current stabling markers as per July 2019. Locations on individual trains can change vary based upon the requirements of an individual night.  
2. Future LNIF locations based upon drawings MTMS-LNS-KBR-CV-TR-DRG-011131 to MTMS-LNS-KBR-CV-TR-DRG-011134, Revision B.

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**Train locations and operating state**

- Idle (stabled)
- Preparation
- None

Client:  
Jacobs

Project:  
MTMS  
Wollongong Stabling Yard

Description:  
Operational noise assessment  
Train locations - Future LNIF - Night (Preparation) (~3:30am)

Notes  
1. Existing train locations are approximate and have been based upon the current stabling markers as per July 2019. Locations on individual trains can change vary based upon the requirements of an individual night.  
2. Future LNIF locations based upon drawings MTMS-LNS-KBR-CV-TR-DRG-011131 to MTMS-LNS-KBR-CV-TR-DRG-011134, Revision B.

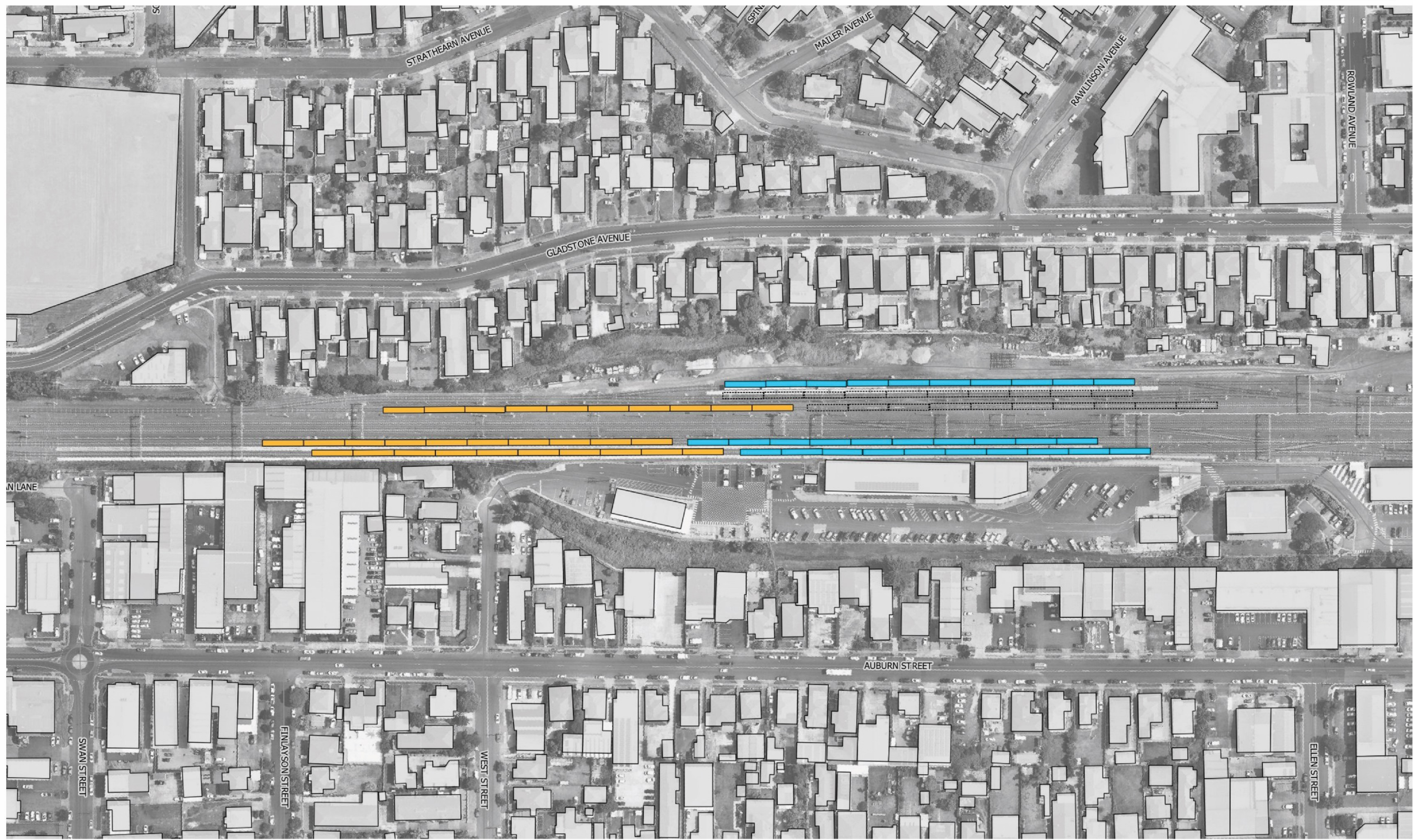
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*Inspired to achieve*  
1/418A Elizabeth Street, SURRY HILLS NSW 2010  
P: 02 8218 0500 F: 02 8218 0501

Created by: ALE  
Figure No: TK877-01 6 1 2 B2-007-12 (r4)  
Date: 05-08-2019  
Scale: 1:1750 @ A3







**Train locations and operating state**

- Idle (stabled)
- Preparation
- None

Client:  
Jacobs

Project:  
MTMS  
Wollongong Stabling Yard

Description:  
Operational noise assessment  
Train locations - Future LNIF - Night (Preparation) (~4:30am)

Notes  
 1. Existing train locations are approximate and have been based upon the current stabling markers as per July 2019. Locations on individual trains can change vary based upon the requirements of an individual night.  
 2. Future LNIF locations based upon drawings MTMS-LNS-KBR-CV-TR-DRG-011131 to MTMS-LNS-KBR-CV-TR-DRG-011134, Revision B.

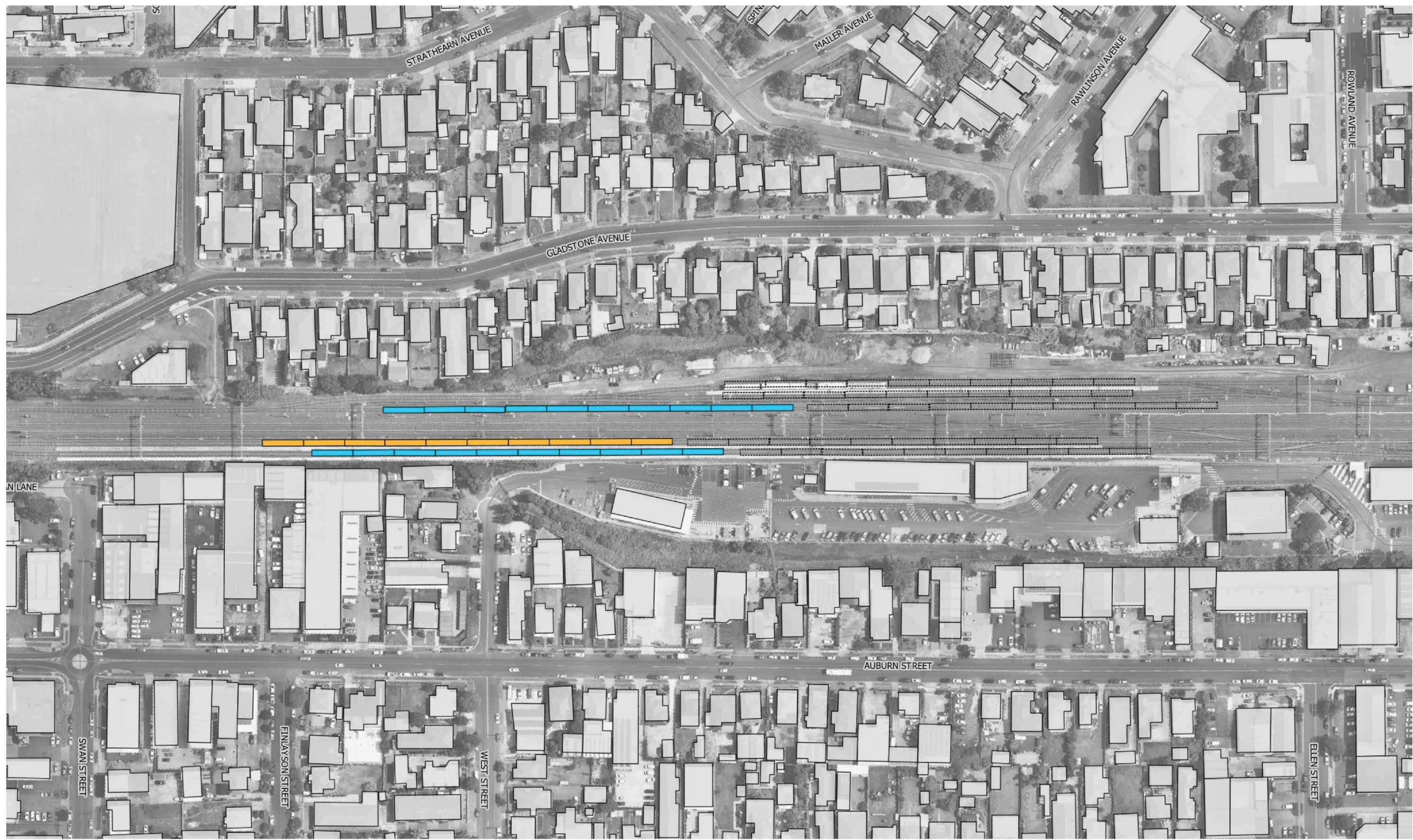
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*Inspired to achieve*  
 1/418A Elizabeth Street, SURRY HILLS NSW 2010  
 P: 02 8218 0500 F: 02 8218 0501

Created by: ALE  
 Figure No: TK877-01 6 1 2 B2-007-13 (r4)  
 Date: 05-08-2019  
 Scale: 1:1750 @ A3







**Train locations and operating state**

- Idle (stabled)
- Preparation
- None

Client:  
Jacobs

Project:  
MTMS  
Wollongong Stabling Yard

Description:  
Operational noise assessment  
Train locations - Future LNIF - Night (Preparation) (~5:30am)

Notes  
 1. Existing train locations are approximate and have been based upon the current stabling markers as per July 2019. Locations on individual trains can change vary based upon the requirements of an individual night.  
 2. Future LNIF locations based upon drawings MTMS-LNS-KBR-CV-TR-DRG-011131 to MTMS-LNS-KBR-CV-TR-DRG-011134, Revision B.

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*Inspired to achieve*  
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 P: 02 8218 0500 F: 02 8218 0501

Created by: ALE  
 Figure No: TK877-01 6 1 2 B2-007-14 (r4)  
 Date: 05-08-2019  
 Scale: 1:1750 @ A3

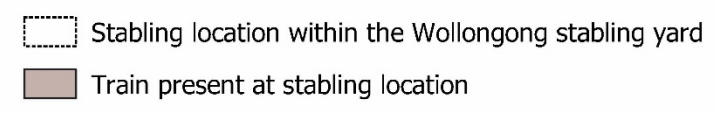
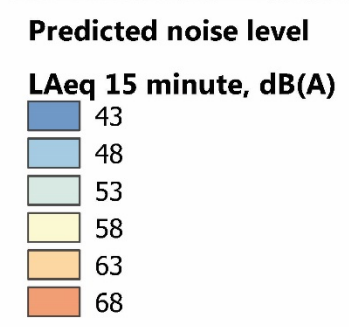
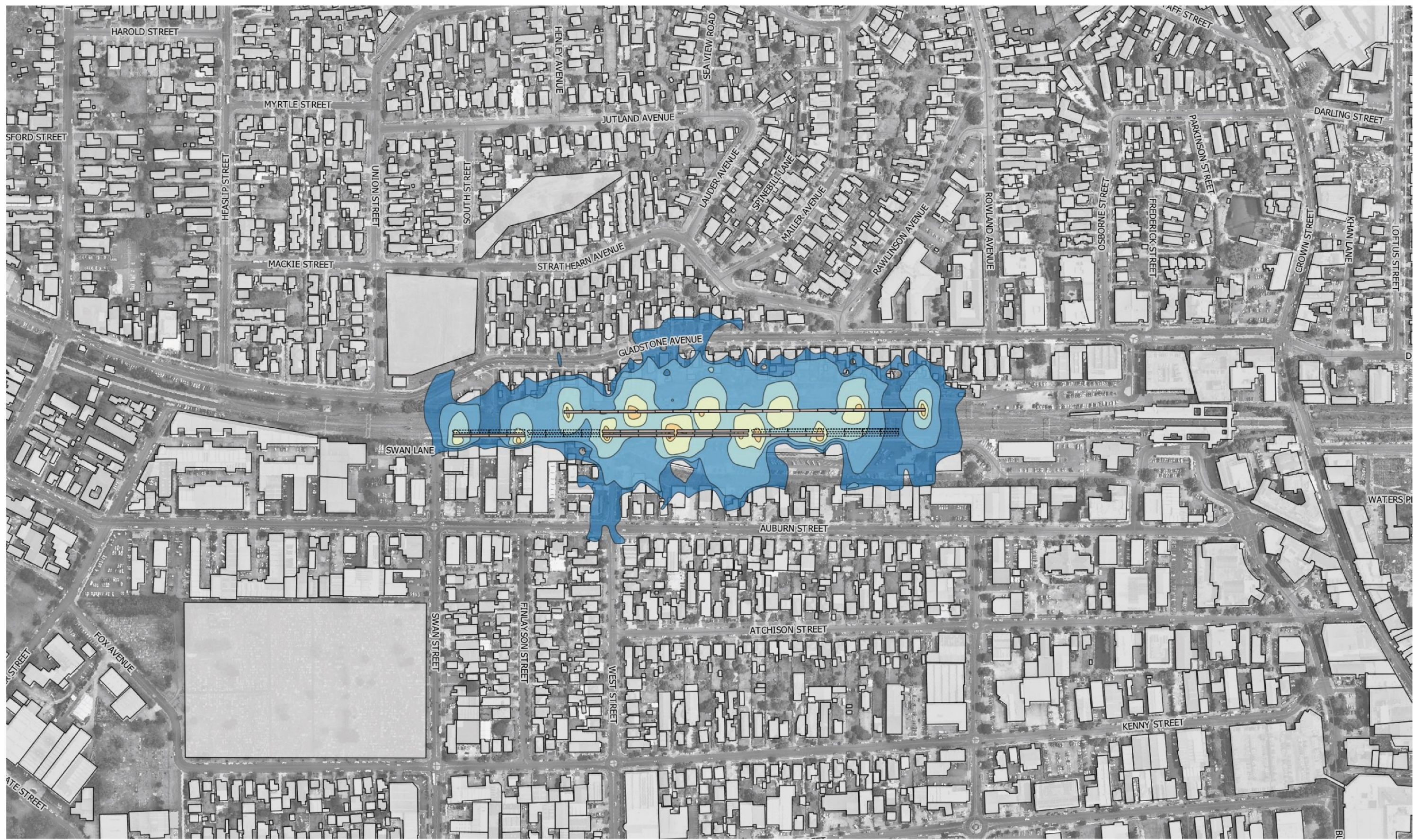




## APPENDIX F Predicted operational noise contours

### F.1 Predicted operational noise levels ( $L_{Aeq, 15 \text{ minute}}$ ) for the existing scenario





Client:  
Jacobs

Project:  
MTMS  
Wollongong Stabling Yard

Notes  
 1. Noise Levels are approximate due to interpolation of contours and should be used for reference only  
 2. Noise contours are predicted at 1.5m above the local ground level  
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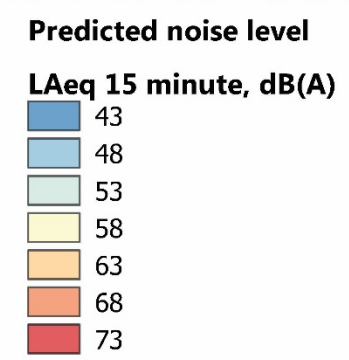
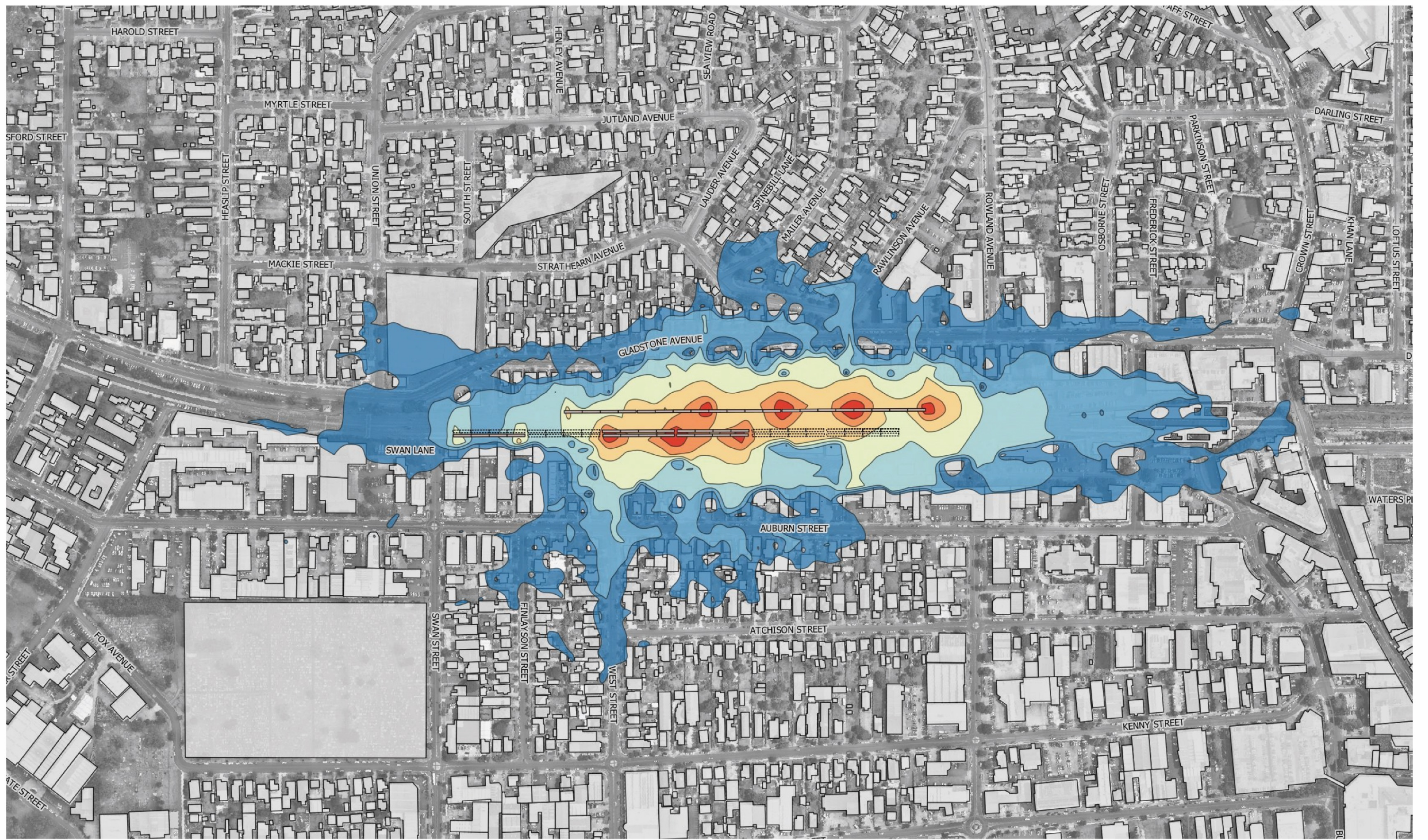
Description:  
 Operational noise assessment  
 Operational noise levels (LAeq 15min) - Scenario 1 - Existing - Night (Stabled) (~2:30am)



Created by: ALE  
 Figure No: TK877-01 6 1 2 B2-005-4 (r4)  
 Date: 05-08-2019  
 Scale: 1:4000 @ A3







Stabling location within the Wollongong stabling yard  
 Train present at stabling location

Client:  
Jacobs

Project:  
MTMS  
Wollongong Stabling Yard

Notes  
 1. Noise Levels are approximate due to interpolation of contours and should be used for reference only  
 2. Noise contours are predicted at 1.5m above the local ground level

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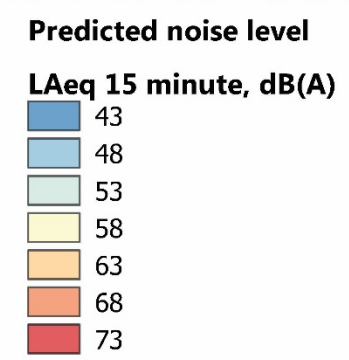
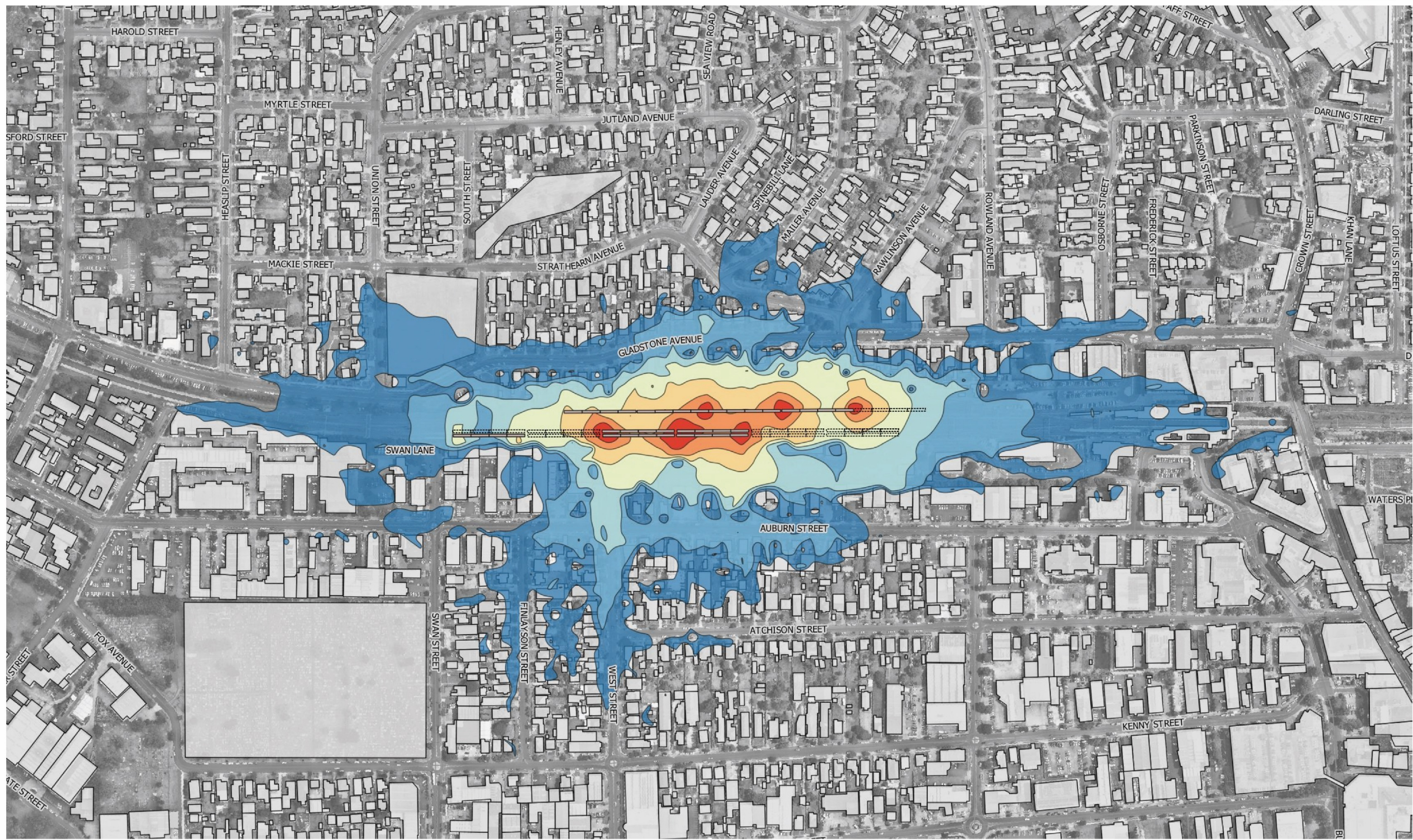
Description:  
 Operational noise assessment  
 Operational noise levels (LAeq 15min) - Scenario 2 - Existing - Night (Prep) (~3:30am)

**RENZO TONIN & ASSOCIATES**  
*Inspired to achieve*  
 1/418A Elizabeth Street, SURRY HILLS NSW 2010  
 P: 02 8218 0500 F: 02 8218 0501

Created by: ALE  
 Figure No: TK877-01 6 1 2 B2-005-5 (r4)  
 Date: 05-08-2019  
 Scale: 1:4000 @ A3







Stabling location within the Wollongong stabling yard  
 Train present at stabling location

Client:  
Jacobs

Project:  
MTMS  
Wollongong Stabling Yard

Notes  
 1. Noise Levels are approximate due to interpolation of contours and should be used for reference only  
 2. Noise contours are predicted at 1.5m above the local ground level

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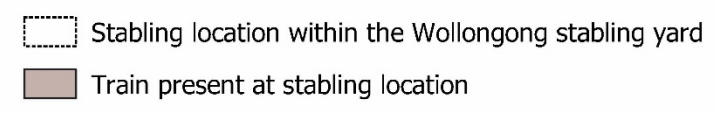
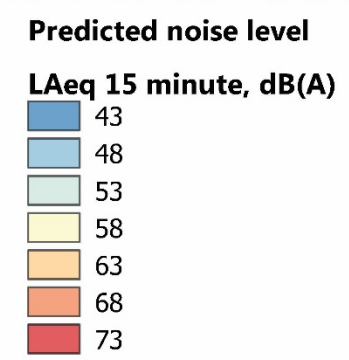
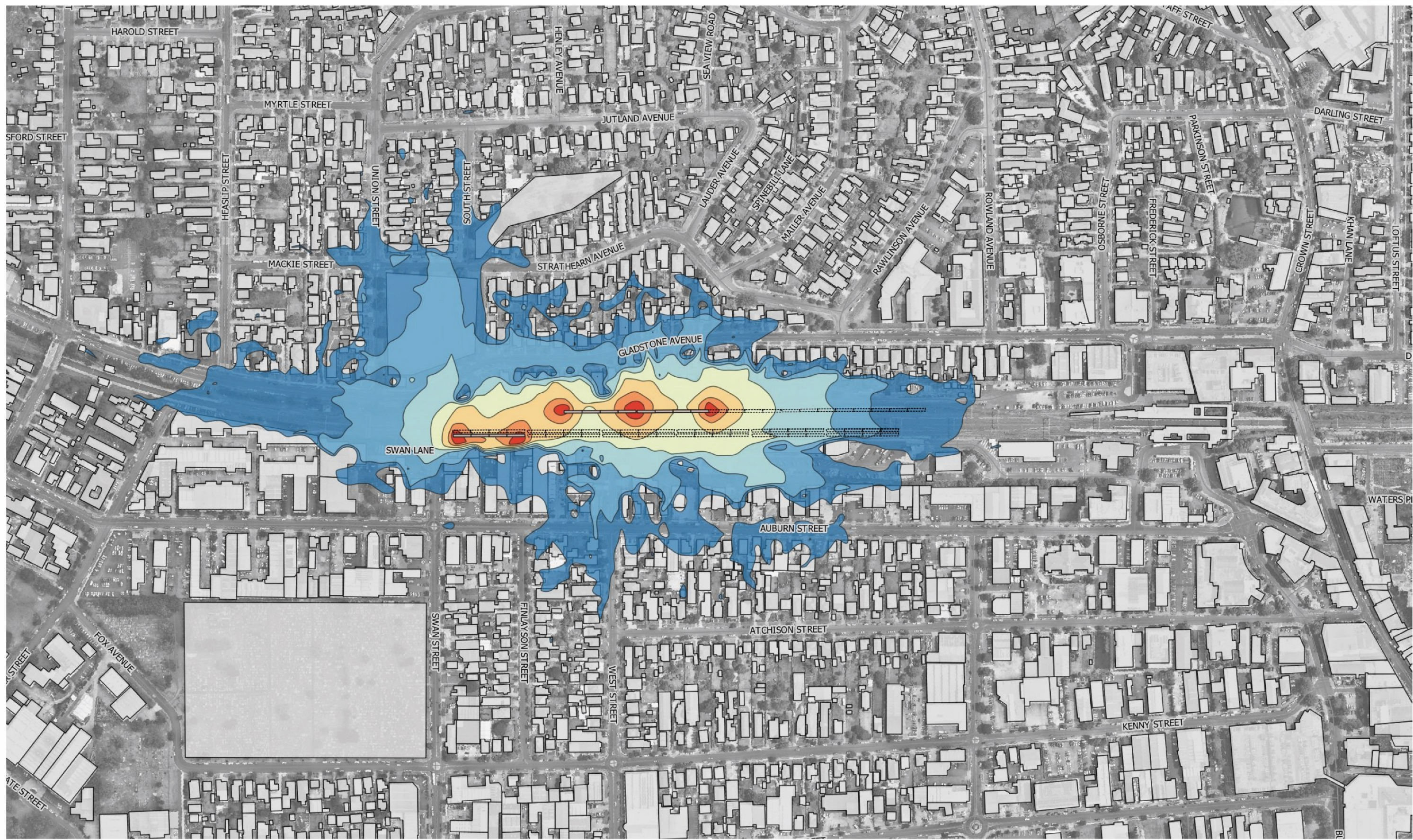
Description:  
 Operational noise assessment  
 Operational noise levels (LAeq 15min) - Scenario 3 - Existing - Night (Prep) (~4:30am)

**RENZO TONIN & ASSOCIATES**  
*Inspired to achieve*  
 1/418A Elizabeth Street, SURRY HILLS NSW 2010  
 P: 02 8218 0500 F: 02 8218 0501

Created by: ALE  
 Figure No: TK877-01 6 1 2 B2-005-6 (r4)  
 Date: 05-08-2019  
 Scale: 1:4000 @ A3







Client:  
Jacobs

Project:  
MTMS  
Wollongong Stabling Yard

Notes  
 1. Noise Levels are approximate due to interpolation of contours and should be used for reference only  
 2. Noise contours are predicted at 1.5m above the local ground level

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Description:  
 Operational noise assessment  
 Operational noise levels (LAeq 15min) - Scenario 4 - Existing - Night (Prep) (~5:30am)

**RENZO TONIN & ASSOCIATES**  
*Inspired to achieve*  
 1/418A Elizabeth Street, SURRY HILLS NSW 2010  
 P: 02 8218 0500 F: 02 8218 0501

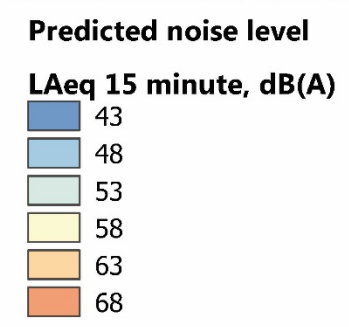
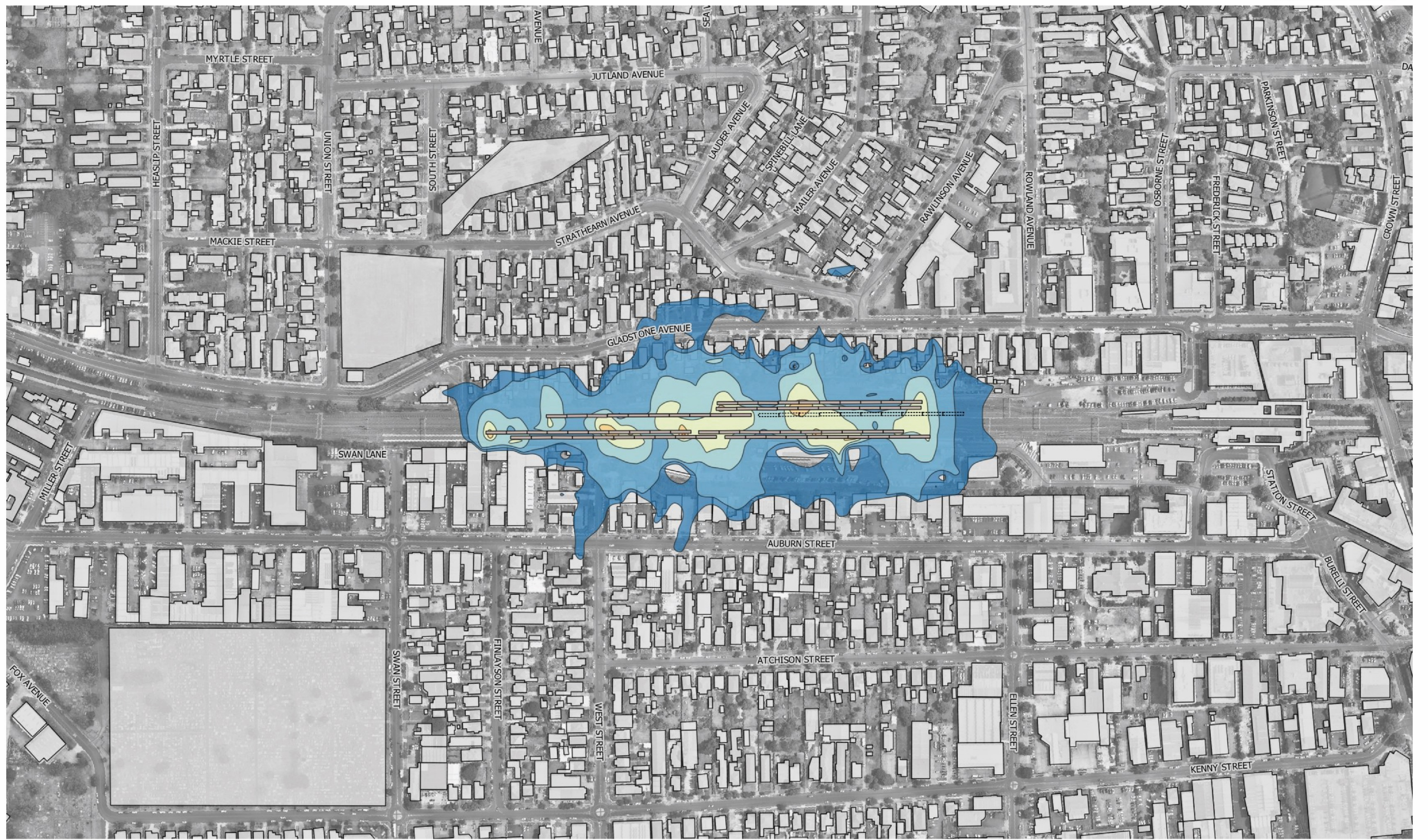
Created by: ALE  
 Figure No: TK877-01 6 1 2 B2-005-7 (r4)  
 Date: 05-08-2019  
 Scale: 1:4000 @ A3





## F.2 Predicted operational noise levels ( $L_{Aeq}$ 15 minute) for the future scenario





Stabling location within the Wollongong stabling yard  
 Train present at stabling location

Client:  
Jacobs

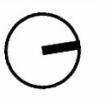
Project:  
MTMS  
Wollongong Stabling Yard

Notes  
 1. Noise Levels are approximate due to interpolation of contours and should be used for reference only  
 2. Noise contours are predicted at 1.5m above the local ground level  
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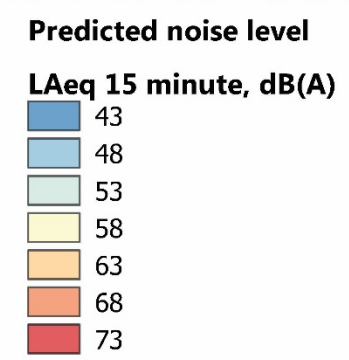
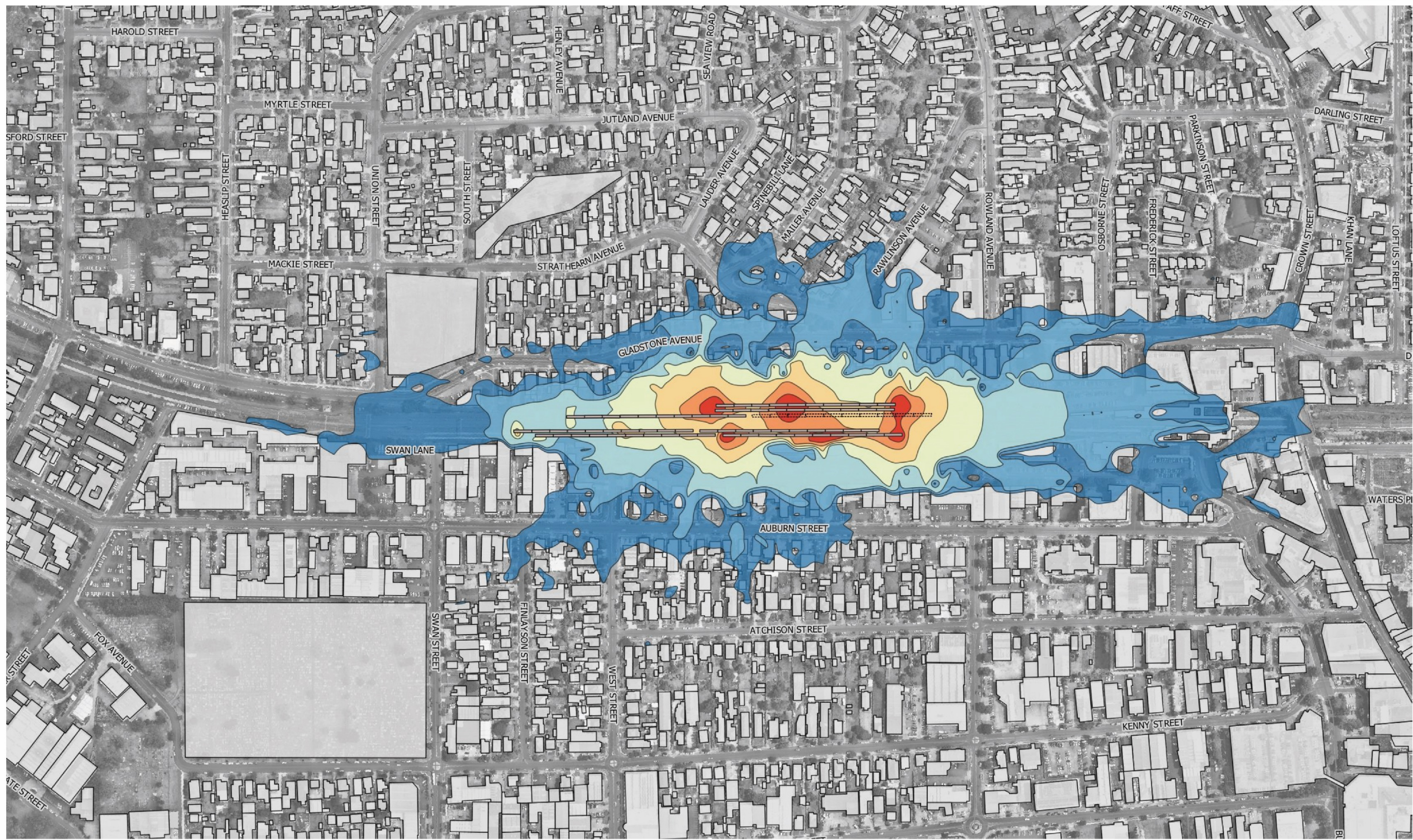
Description:  
Operational noise assessment  
Operational noise levels (LAeq 15min) - Scenario 5 - Future LNIF - Night (Stabled) (~2:30am)

**RENZO TONIN & ASSOCIATES**  
*Inspired to achieve*  
 1/418A Elizabeth Street, SURRY HILLS NSW 2010  
 P: 02 8218 0500 F: 02 8218 0501

Created by: ALE  
 Figure No: TK877-01 6 1 2 B2-005-15 (r4)  
 Date: 05-08-2019  
 Scale: 1:3500 @ A3







Stabling location within the Wollongong stabling yard  
 Train present at stabling location

Client:  
Jacobs

Project:  
MTMS  
Wollongong Stabling Yard

Notes  
 1. Noise Levels are approximate due to interpolation of contours and should be used for reference only  
 2. Noise contours are predicted at 1.5m above the local ground level

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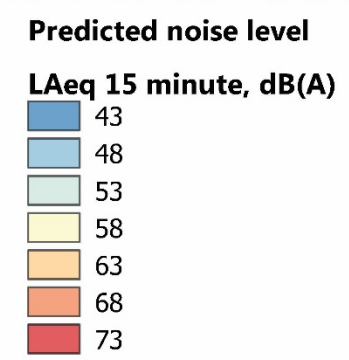
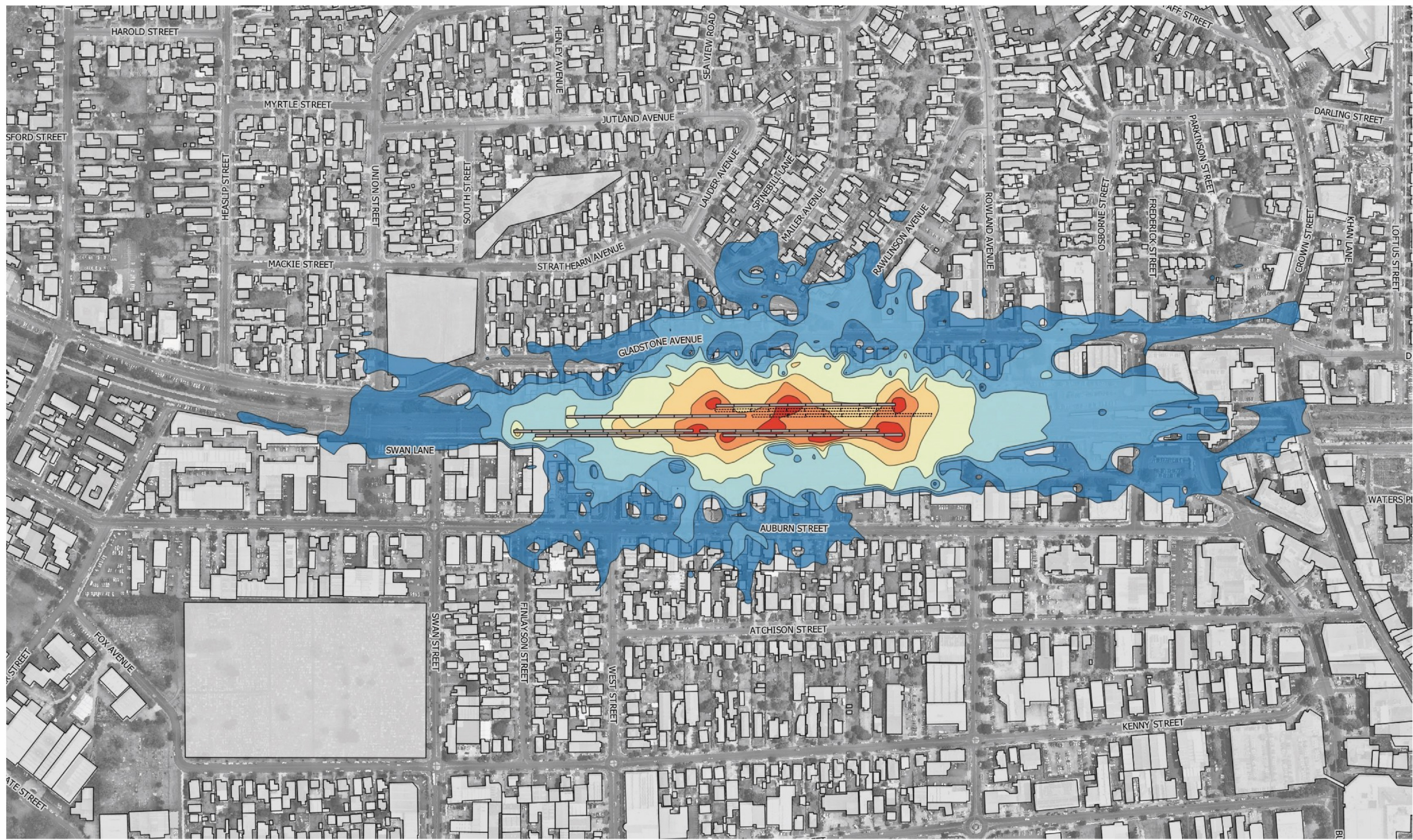
Description:  
 Operational noise assessment  
 Operational noise levels (LAeq 15min) - Scenario 6 - Future LNIF - Night (Prep) (~3:30am)

**RENZO TONIN & ASSOCIATES**  
*Inspired to achieve*  
 1/418A Elizabeth Street, SURRY HILLS NSW 2010  
 P: 02 8218 0500 F: 02 8218 0501

Created by: ALE  
 Figure No: TK877-01 6 1 2 B2-005-16 (r4)  
 Date: 05-08-2019  
 Scale: 1:4000 @ A3







Stabling location within the Wollongong stabling yard  
 Train present at stabling location

Client:  
Jacobs

Project:  
MTMS  
Wollongong Stabling Yard

Notes  
 1. Noise Levels are approximate due to interpolation of contours and should be used for reference only  
 2. Noise contours are predicted at 1.5m above the local ground level

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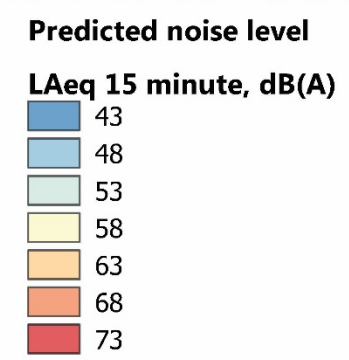
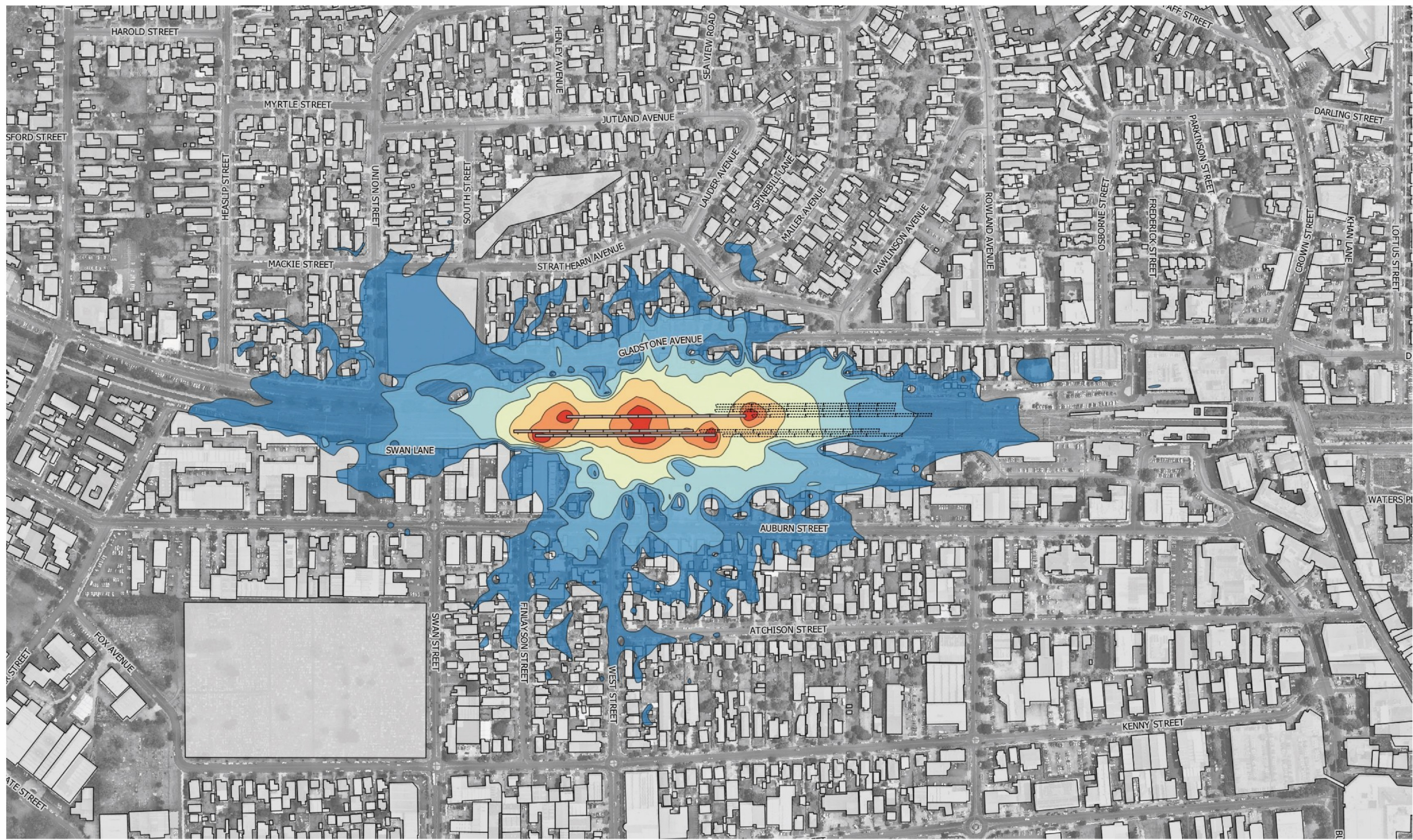
Description:  
 Operational noise assessment  
 Operational noise levels (LAeq 15min) - Scenario 7 - Future LNIF - Night (Prep) (~4:30am)

**RENZO TONIN & ASSOCIATES**  
*Inspired to achieve*  
 1/418A Elizabeth Street, SURRY HILLS NSW 2010  
 P: 02 8218 0500 F: 02 8218 0501

Created by: ALE  
 Figure No: TK877-01 6 1 2 B2-005-17 (r4)  
 Date: 05-08-2019  
 Scale: 1:4000 @ A3







Stabling location within the Wollongong stabling yard  
 Train present at stabling location

Client:  
Jacobs

Project:  
MTMS  
Wollongong Stabling Yard

Notes  
 1. Noise Levels are approximate due to interpolation of contours and should be used for reference only  
 2. Noise contours are predicted at 1.5m above the local ground level

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Description:  
 Operational noise assessment  
 Operational noise levels (LAeq 15min) - Scenario 8 - Future LNIF - Night (Stabled) (~2:30am)

**RENZO TONIN & ASSOCIATES**  
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 1/418A Elizabeth Street, SURRY HILLS NSW 2010  
 P: 02 8218 0500 F: 02 8218 0501

Created by: ALE  
 Figure No: TK877-01 6 1 2 B2-005-18 (r4)  
 Date: 05-08-2019  
 Scale: 1:4000 @ A3





### F.3 Predicted operational noise levels ( $L_{Amax}$ ) for the existing scenario





**Predicted noise level**  
**LAFmax, dB(A)**  
 65

Stabling location within the Wollongong stabling yard  
 Train present at stabling location

Client:  
 Jacobs

Project:  
 MTMS  
 Wollongong Stabling Yard

Description:  
 Operational noise assessment  
 Operational noise levels (L<sub>Amax</sub>) - Scenario 1 - Existing - Night (Stabled) (~2:30am)



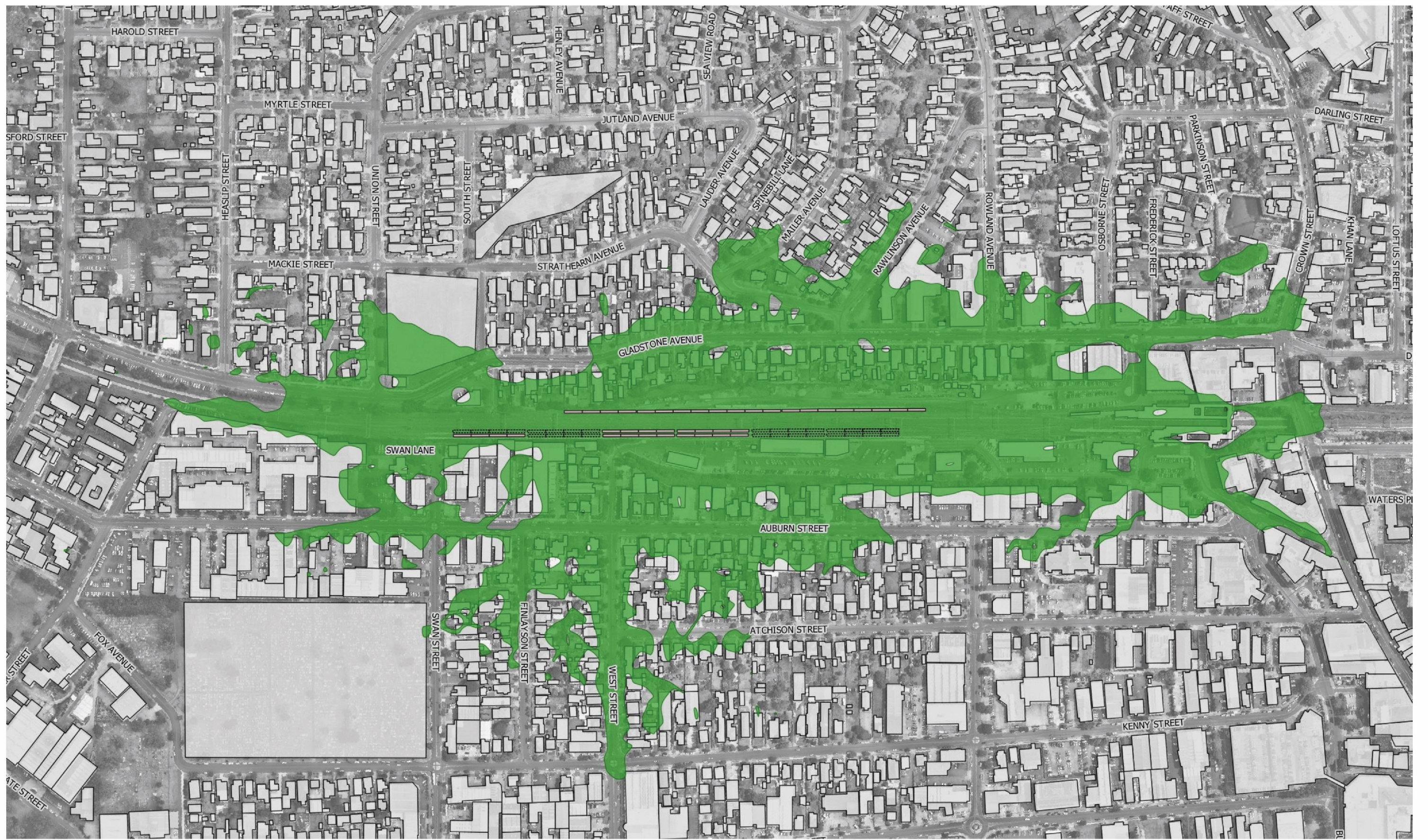
Notes  
 1. Noise Levels are approximate due to interpolation of contours and should be used for reference only  
 2. Noise contours are predicted at 1.5m above the local ground level

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**RENZO TONIN & ASSOCIATES**  
*Inspired to achieve*  
 1/418A Elizabeth Street, SURRY HILLS NSW 2010  
 P: 02 8218 0500 F: 02 8218 0501

Created by: ALE  
 Figure No: TK877-01 6 1 2 B2-005-8 (r4)  
 Date: 05-08-2019  
 Scale: 1:4000 @ A3





**Predicted noise level**  
**LAFmax, dB(A)**  
 65

Stabling location within the Wollongong stabling yard  
 Train present at stabling location

Client:  
 Jacobs

Project:  
 MTMS  
 Wollongong Stabling Yard

Description:  
 Operational noise assessment  
 Operational noise levels (L<sub>Amax</sub>) - Scenario 2 - Existing - Night (Prep) (~3:30am)

Notes  
 1. Noise Levels are approximate due to interpolation of contours and should be used for reference only  
 2. Noise contours are predicted at 1.5m above the local ground level

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*Inspired to achieve*  
 1/418A Elizabeth Street, SURRY HILLS NSW 2010  
 P: 02 8218 0500 F: 02 8218 0501

Created by: ALE  
 Figure No: TK877-01 6 1 2 B2-005-9 (r4)  
 Date: 05-08-2019  
 Scale: 1:4000 @ A3







**Predicted noise level**  
**LAFmax, dB(A)**  
 65

Stabling location within the Wollongong stabling yard  
 Train present at stabling location

Client:  
 Jacobs

Project:  
 MTMS  
 Wollongong Stabling Yard

Description:  
 Operational noise assessment  
 Operational noise levels (L<sub>A</sub>max) - Scenario 3 - Existing - Night (Prep) (~4:30am)

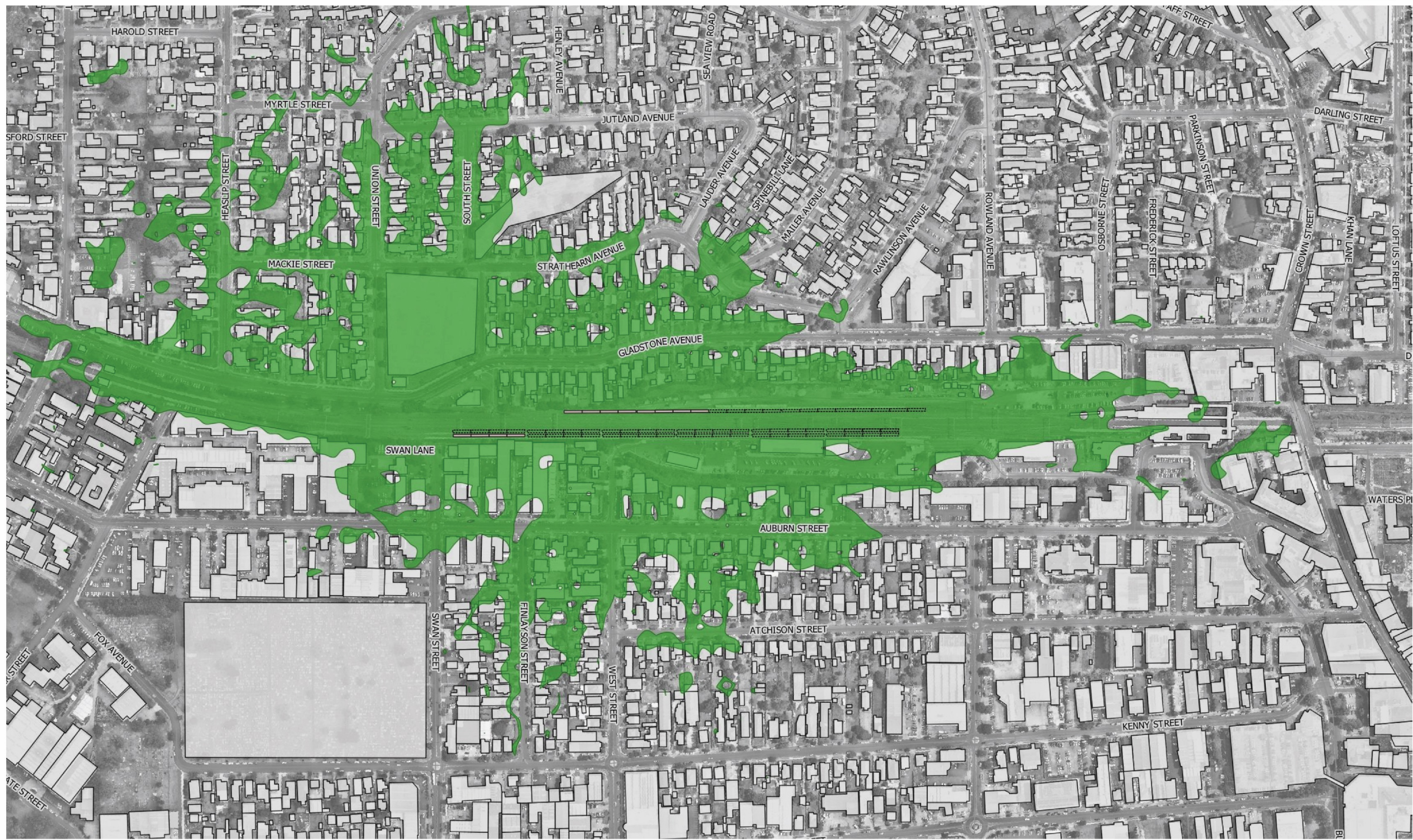
Notes  
 1. Noise Levels are approximate due to interpolation of contours and should be used for reference only  
 2. Noise contours are predicted at 1.5m above the local ground level

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*Inspired to achieve*  
 1/418A Elizabeth Street, SURRY HILLS NSW 2010  
 P: 02 8218 0500 F: 02 8218 0501

Created by: ALE  
 Figure No: TK877-01 6 1 2 B2-005-10 (r4)  
 Date: 05-08-2019  
 Scale: 1:4000 @ A3





**Predicted noise level**  
**LAFmax, dB(A)**  
 65

Stabling location within the Wollongong stabling yard  
 Train present at stabling location

Client:  
 Jacobs

Project:  
 MTMS  
 Wollongong Stabling Yard

Description:  
 Operational noise assessment  
 Operational noise levels (L<sub>A</sub>max) - Scenario 4 - Existing - Night (Prep) (~5:30am)



Notes  
 1. Noise Levels are approximate due to interpolation of contours and should be used for reference only  
 2. Noise contours are predicted at 1.5m above the local ground level

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 1/418A Elizabeth Street, SURRY HILLS NSW 2010  
 P: 02 8218 0500 F: 02 8218 0501

Created by: ALE  
 Figure No: TK877-01 6 1 2 B2-005-11 (r4)  
 Date: 05-08-2019  
 Scale: 1:4000 @ A3



## **F.4 Predicted operational noise levels ( $L_{Amax}$ ) for the future scenario**





**Predicted noise level**  
**LAFmax, dB(A)**  
 65

Stabling location within the Wollongong stabling yard  
 Train present at stabling location

Client:  
 Jacobs

Project:  
 MTMS  
 Wollongong Stabling Yard

Description:  
 Operational noise assessment  
 Operational noise levels (L<sub>A</sub>max) - Scenario 5 - Future - Night (Stabled) (~2:30am)

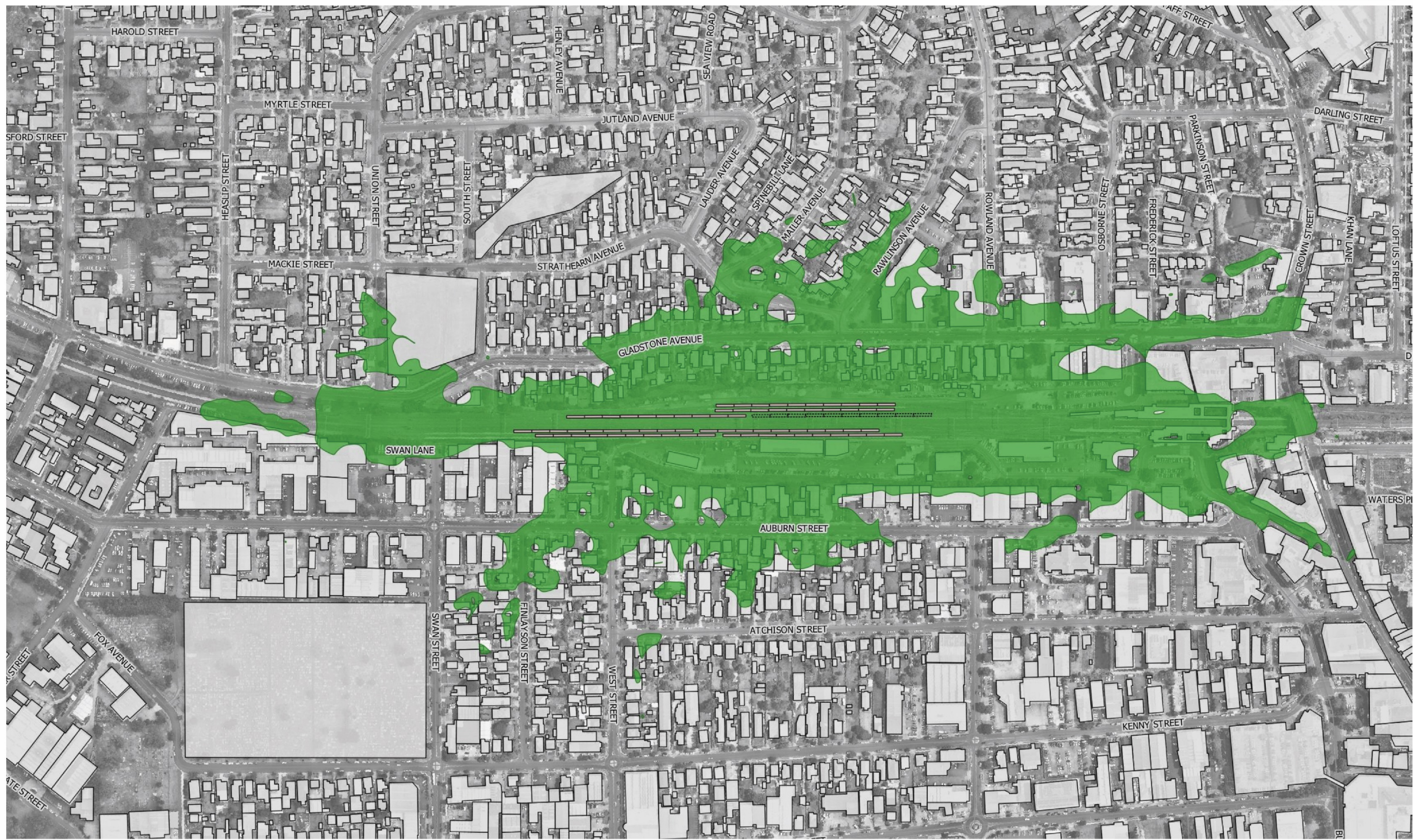
Notes  
 1. Noise Levels are approximate due to interpolation of contours and should be used for reference only  
 2. Noise contours are predicted at 1.5m above the local ground level

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*Inspired to achieve*  
 1/418A Elizabeth Street, SURRY HILLS NSW 2010  
 P: 02 8218 0500 F: 02 8218 0501

Created by: ALE  
 Figure No: TK877-01 6 1 2 B2-005-19 (r4)  
 Date: 05-08-2019  
 Scale: 1:4000 @ A3





**Predicted noise level**  
**LAFmax, dB(A)**  
 65

Stabling location within the Wollongong stabling yard  
 Train present at stabling location

Client:  
 Jacobs

Project:  
 MTMS  
 Wollongong Stabling Yard

Description:  
 Operational noise assessment  
 Operational noise levels (L<sub>Amax</sub>) - Scenario 6 - Future - Night (Prep) (~3:30am)

Notes  
 1. Noise Levels are approximate due to interpolation of contours and should be used for reference only  
 2. Noise contours are predicted at 1.5m above the local ground level

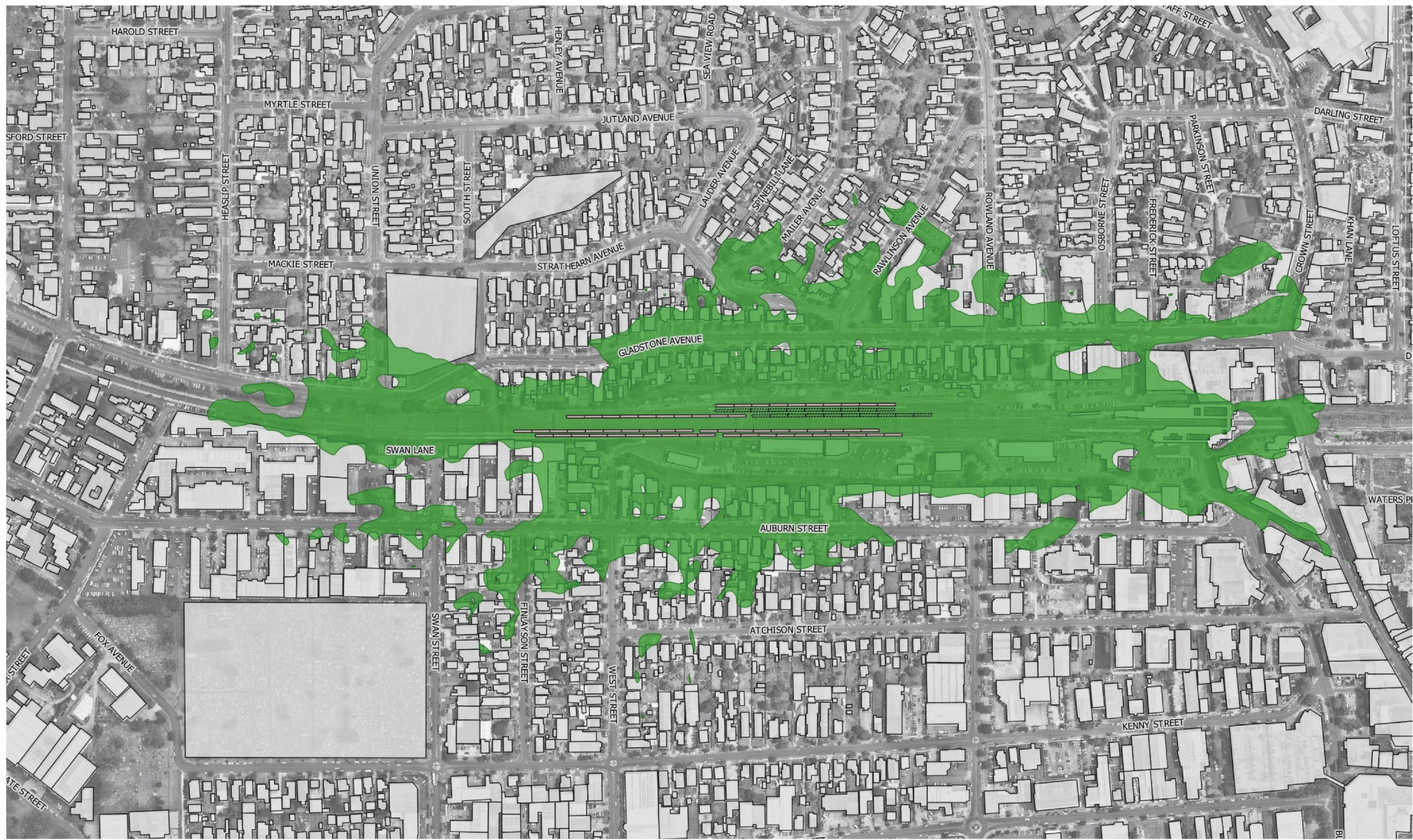
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**Predicted noise level**  
**LAFmax, dB(A)**  
 65

Stabling location within the Wollongong stabling yard  
 Train present at stabling location

Client:  
 Jacobs

Project:  
 MTMS  
 Wollongong Stabling Yard

Description:  
 Operational noise assessment  
 Operational noise levels (L<sub>Amax</sub>) - Scenario 7 - Future - Night (Prep) (~4:30am)



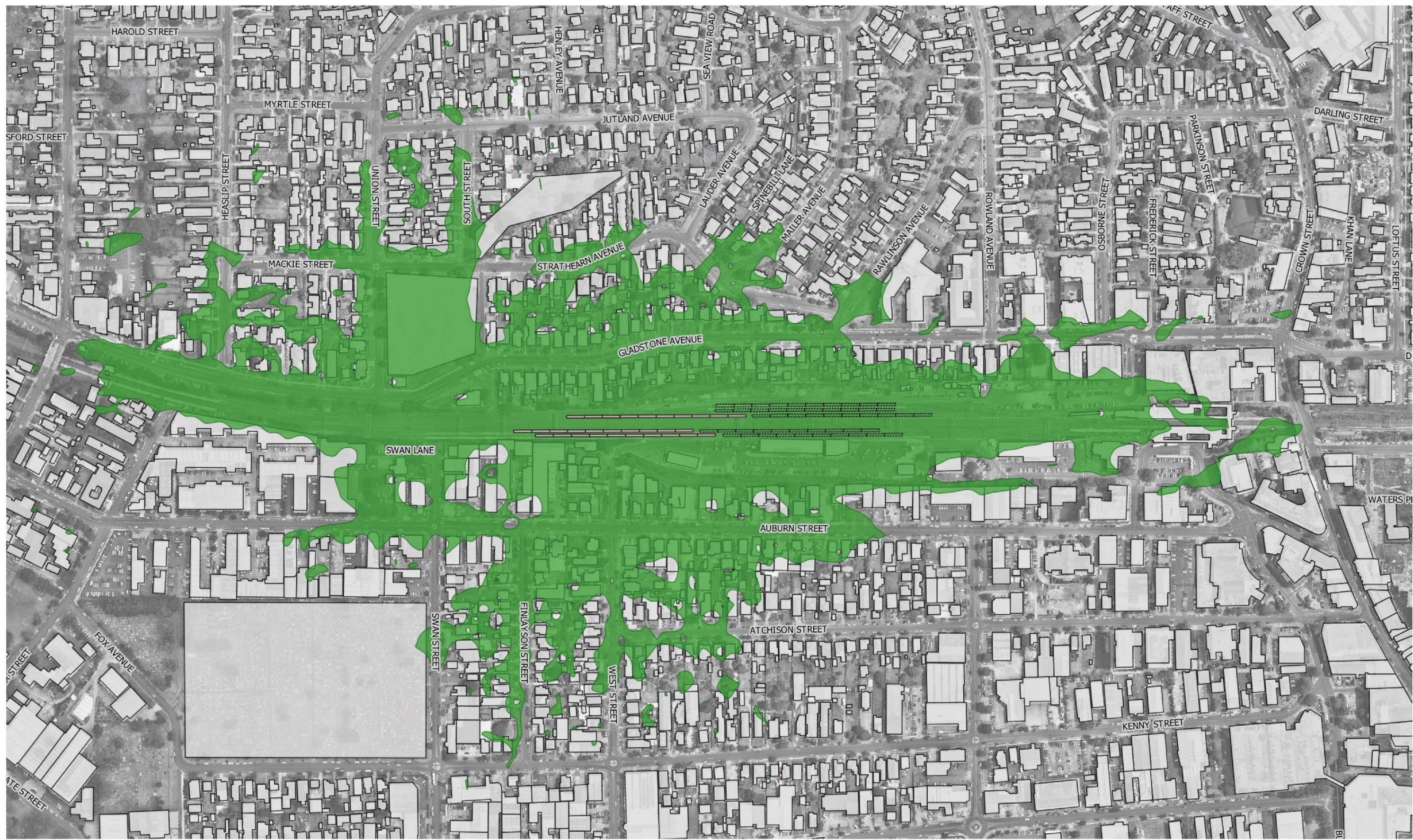
Notes  
 1. Noise Levels are approximate due to interpolation of contours and should be used for reference only  
 2. Noise contours are predicted at 1.5m above the local ground level

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**Predicted noise level**  
**LAFmax, dB(A)**  
 65

Stabling location within the Wollongong stabling yard  
 Train present at stabling location

Client:  
 Jacobs

Project:  
 MTMS  
 Wollongong Stabling Yard

Description:  
 Operational noise assessment  
 Operational noise levels (L<sub>Amax</sub>) - Scenario 8 - Future - Night (Prep) (~5:30am)

Notes  
 1. Noise Levels are approximate due to interpolation of contours and should be used for reference only  
 2. Noise contours are predicted at 1.5m above the local ground level

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