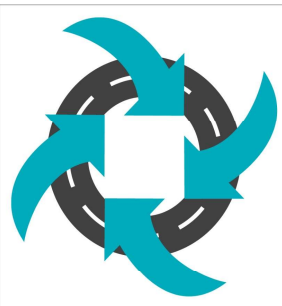


# Northbourne Avenue Stage 1 Foamed Asphalt Pavement Recycling

Alvaro Amorim, Senior Project Manager  
Transport Canberra and City Services



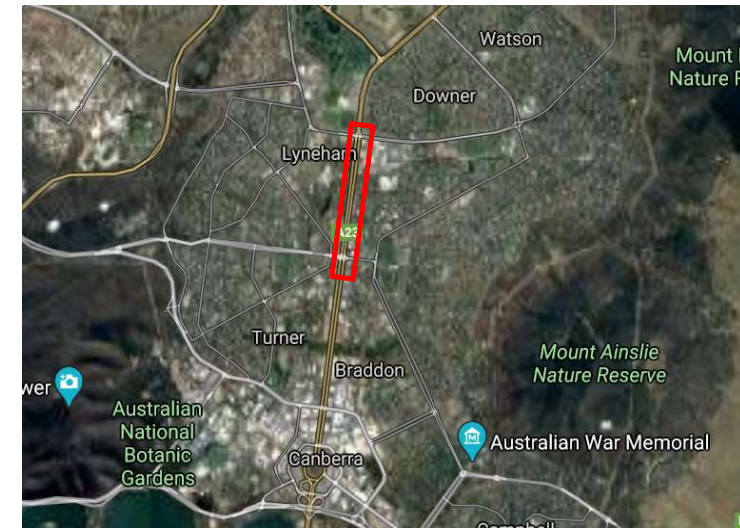
## **Australian Pavement Recycling and Stabilisation Conference**

*Pavement Recycling for Sustainable Roads*

Novotel Brighton Beach, Sydney • 10th August 2022

# Introduction and Background

- Long term solution for Northbourne Avenue, Canberra
- Stage 1 with Stage 2 completed afterwards in same FY
- Stage 1 = 1.3km between Macarthur Ave and Mouat St
- Northbound carriageway
- Significant traffic – approx. 14,000 vehicles per day ( $9.34 \times 10^6$  DESA)



**Australian Pavement Recycling  
and Stabilisation Conference**

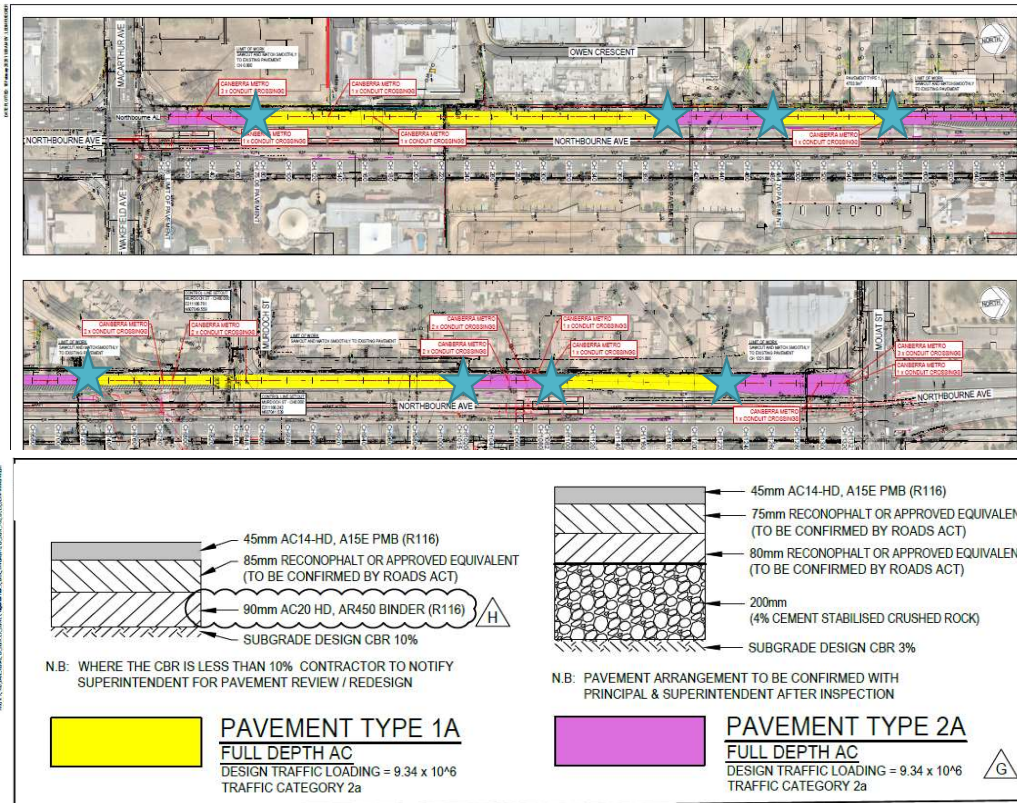
*Pavement Recycling for Sustainable Roads*

Novotel Brighton Beach, Sydney • 10th August 2022



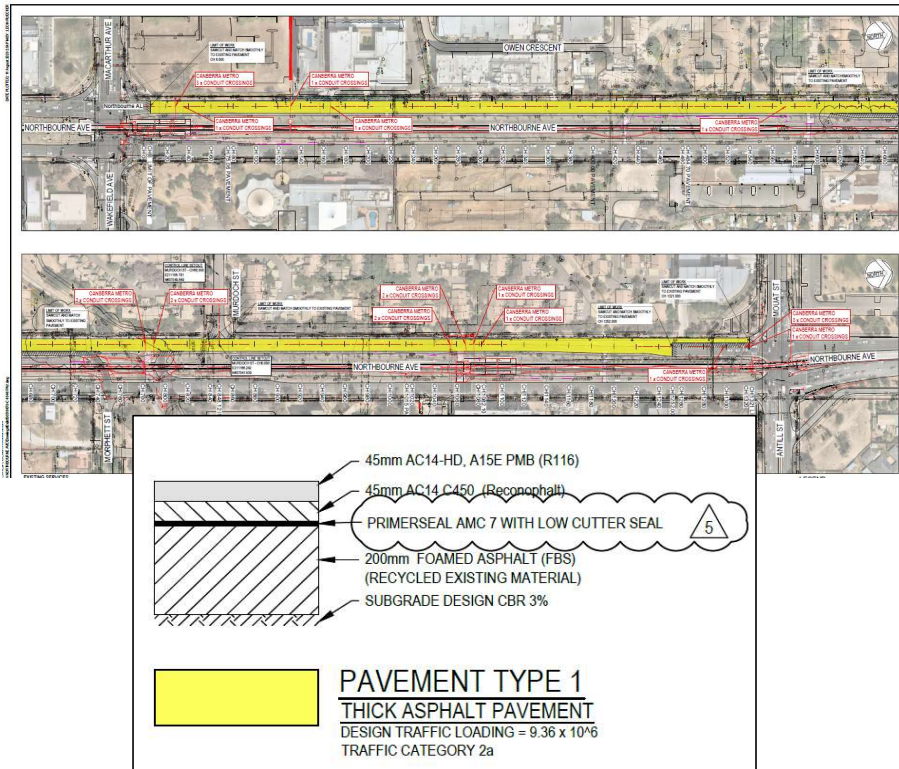
Pavement Recycling and Stabilisation Association

# Original Asphalt Construction Method

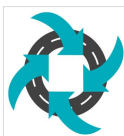


- Project was tendered as deep lift asphalt with areas of additional subgrade replacement
- Complete excavation of all existing pavement and replace with layers of new asphalt
- Extra subgrade replacement in pink zones
- Alternating between pavement types at 8 points along the project ★
- One lane at a time
- 26-week construction program

# Foamed Asphalt using Paver Laid Insitu Recycling



- Proceeded with an alternative
- Successful delivery of the first Foamed Asphalt project by an Australian State Road Authority
- Pavement maintenance innovation
- Recycles the existing road materials into a new asset
- New design with one pavement type
- Immense sustainability benefits (environmental, cost and social)
- 6-week program



**Australian Pavement Recycling  
and Stabilisation Conference**

*Pavement Recycling for Sustainable Roads*

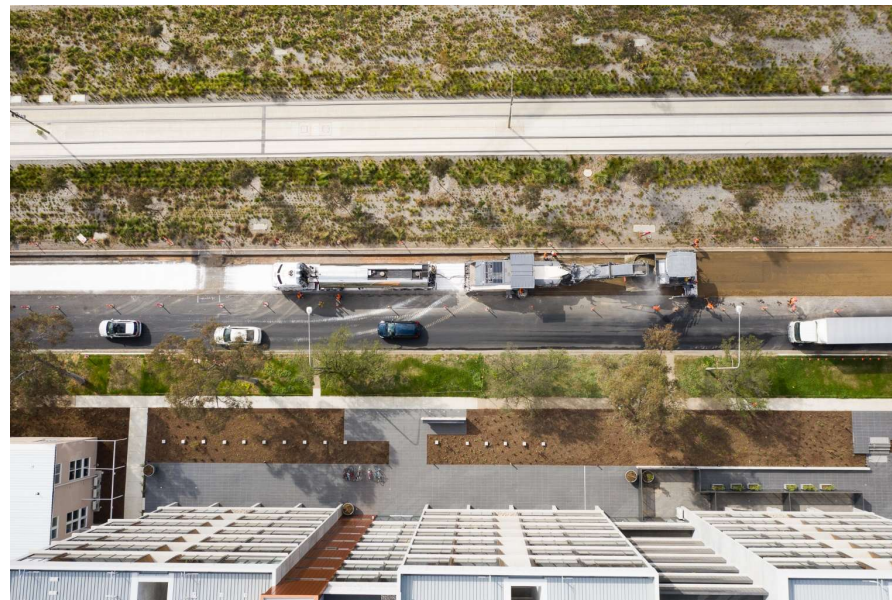
Novotel Brighton Beach, Sydney • 10th August 2022



Pavement Recycling and Stabilisation Association

# Construction Program

- ✓ Two single-passes only to rehabilitate 3 lanes + cycle lane
- ✓ Continuous traffic during works
- ✓ Two lanes opened at end of the shift for peak hour
- ✓ Completed pavement able to be trafficked after each shift before seal
- ✓ Paver benefits
  - ✓ Width
  - ✓ Thickness
  - ✓ Partially compacted
  - ✓ Electronically controlled levels



**Australian Pavement Recycling  
and Stabilisation Conference**

*Pavement Recycling for Sustainable Roads*

Novotel Brighton Beach, Sydney • 10th August 2022

# Sustainability

- Recycled 6,173 tonnes of existing material insitu into a renewed pavement
- Prevented exporting 4,904 tonnes of material off-site, compared to the original asphalt design
- Imported material to site was reduced by 65%
- At least 61% savings in emissions
- Fast work program of only 6 weeks total (including wearing course) compared to 26 weeks
- Cost savings associated with the overall more efficient process



**Australian Pavement Recycling  
and Stabilisation Conference**

*Pavement Recycling for Sustainable Roads*

Novotel Brighton Beach, Sydney • 10th August 2022



Pavement Recycling and Stabilisation Association

# Other Points of Interest

- Draft specification used, which was developed by industry and verified by third party superintendent
- Extensive mix design testing undertaken
- Strict working hours to allow for afternoon peak hour traffic
- Underground services from newly constructed light rail remained uninhibited during construction
- Northbourne Avenue Stage 2 was rehabilitated in the same way later in the 20-21 Financial Year



**Australian Pavement Recycling  
and Stabilisation Conference**

*Pavement Recycling for Sustainable Roads*

Novotel Brighton Beach, Sydney • 10th August 2022



Pavement Recycling and Stabilisation Association

# Post Construction with Final Wearing Course



**Australian Pavement Recycling  
and Stabilisation Conference**

*Pavement Recycling for Sustainable Roads*

Novotel Brighton Beach, Sydney • 10th August 2022



Pavement Recycling and Stabilisation Association