Assessment of Grand Avenue Overbridge

Presented by Marcia Prelog & Nasir Hossain
Presentation Outline

i. Project Background
ii. Bridge Description
iii. Assessment Findings
iv. Analysis
v. Repair Solution
Project Background

- Name: Grand Avenue Overbridge
- Year Built: 1980
- Design Live load: T44 loading to NAASRA 1976
- Approved B-Double route
Bridge Description
Bridge Description

Typical mid span Girder

Typical end span Girder
Bridge Description

Pier end profile
Design Features

Span ratio
10 / 27 = 0.37

Girders continuous at bottom flange

Deck fixity at pier
Design Features

Joint detail

- Joint Compression Seal: 'Advanca/Ac204' or approved equivalent.
- 50 mm Asphallic concrete wearing surface (not in car).
- 22 mm x 20 mm neoprene bearing strip with holes to suit dowels.
- 80 mm polystyrene.
Assessment Findings

Approach slab joint failure
Assessment Findings

Barrier impact

Spalling

Overstressed bearing
Bending Moment DL

- SW deck ends
- SW girders
- SW middle deck (continuous)
Shear Force DL

SW deck ends

SW girders

SW middle deck (continuous)
59t vehicle midspan bending

2660 kN-m
59t vehicle bending moment as simply supported
Solution - Granor XJS Expansion joint

FROM PARRAMATTA

EXISTING ASPHALT

'SILSPEC 900 PNS' POLYMER NOSING

12 x 12 CHAMFER TYP

'GRANOR 902 RCS' SEALANT

'FIBERTEK 900 PNS' POLYMER NOSING

TO CAMELLIA

EXISTING ASPHALT

APPROACH SLAB

ABUTMENT BACKWALL

CELLULAR POLYSTYRENE SHEET

BACKER ROD

BRIDGE DECK
Thank you
Questions will be answered within Panel