

# ENHANCING CONNECTIVITY ON THE GREAT NORTHERN

**B**indoon is a small town located in Western Australia, about 84 kilometres north-east of Perth. It is situated in the fertile and resource-rich Chittering Valley, and is known for its close-knit community, natural beauty, and historical significance.

Connecting this resource-rich region to the state's capital, is the Great Northern Highway. It serves as a vital transportation artery, playing a crucial role in moving goods, people and services; all of which are essential for regional connectivity and economic growth.

As a measure to improve freight productivity and safety, a new 64-kilometre link is being constructed to bypass Bindoon. The \$275 million project is being jointly funded by the Federal (\$220 million) and Western Australian governments (\$55 million). The project showcases a commitment to sustainable infrastructure development and prioritises Aboriginal engagement.

Construction of the new Bypass includes new bridge and causeway structures that traverse the Brockman River and its tributaries (including Udumung Brook) and Lennard Brook. Key requirements for their construction were to minimise impacts to existing water flow paths and regimes and to maintain the water quality of the waterways and wetlands that lie within or adjacent to the development envelope.

## CULVERT CAUSEWAYS TO MINIMISE FLOODING

Using a series of precast concrete box culverts, causeway structures were designed to span minor watercourse crossings and wetlands, with an intent of maintaining water flows and ensuring that flooding is minimised.

According to National Precast CEO Sarah Bachmann, highly durable and long-lasting precast box culverts offered an ideal solution. The culvert causeways would be integral to ensuring proper water drainage while maintaining the integrity and



Works on the Bindoon Bypass in Western Australia.

**PROJECT:** Bindoon Bypass, SLK 103.8-110.2, Great Northern Highway

**LOCATION:** WA

**MASTER PRECASTER:** MJB Industries Pty Ltd

**CLIENT:** Main Roads Western Australia

**HEAD CONTRACTOR:** Garli Pty Ltd

## 64 KILOMETRE BYPASS TO IMPROVE FREIGHT EFFICIENCY

The construction of the Bindoon Bypass will increase freight productivity and efficiency, enabling triple road trains (53.5 metres trucks) to travel the entire length of the Great Northern corridor. Shorter travel times - through higher speeds - will result in cost savings by reducing the number of daily freight trips, while at the same time reducing the number of heavy vehicles that pass through the Bindoon Town Centre.

### The new Bypass consists of:

- 62 kilometres of new highway west of Bindoon, connecting Chittering Roadhouse and New Norcia Bypass;
- Two kilometres of improvements to the existing Great Northern Highway near Seven Mile Hill and connecting to the New Norcia Bypass;
- Connection to Brand Highway;
- Connections to the local road network through a mix of grade-separated and at-grade intersections;
- Overtaking lanes every 5-10 kilometres; and
- Four new rest stops for light vehicles and road trains.





Precast concrete elements are forming a central component of the Bindoon Bypass Project.

functionality of the road.

This is particularly important in a region like Western Australia, where variable weather conditions – including heavy rainfall and occasional flooding – can impact the stability of the road and compromise the safety of travellers.

Understanding the benefits of highly durable reinforced precast concrete, head contractor Garli Pty Ltd engaged National Precast Master Precaster MJB Industries to supply the Main Roads designed box and pipe culverts for the project.

240 no. 2100 wide x 1800 high box culverts were manufactured and supplied for the causeways, as well as 102 no. 1800 millimetre diameter pipes, for an installation configuration measuring 41 metre in length and six pipes wide.

#### SUSTAINABILITY AND COMMUNITY BENEFITS

Sustainability is at the forefront of any modern-day infrastructure development, and the Bindoon North project is no exception. As well as incorporating innovative stormwater management systems to protect local waterways and preserve the natural ecosystem, the project's environmental practices include engaging

offsite manufacturing benefits, using recycled materials and implementing erosion control measures.

Measures are in place to protect and preserve significant environmental features, such as flora, fauna, and sensitive habitats. Additionally, the project adheres to strict environmental regulations, ensuring that noise and dust levels are kept to a minimum during construction. By

the final outcome aligns with the aspirations of the community.

A major focus of the project has been Aboriginal engagement, with, to date, over 53 percent Aboriginal employment. With Aboriginal owned and operated business Garli completing the work so far together with LendLease, more than 90 percent of expenditure has been made by Aboriginal businesses.

**“THE CONSTRUCTION OF THE BINDOON BYPASS EXEMPLIFIES A COMMITMENT TO IMPROVING SAFETY AND EFFICIENCY AND ENHANCING CONNECTIVITY, WHILE FOSTERING ECONOMIC GROWTH, ENVIRONMENTAL SENSITIVITY AND COMMUNITY ENGAGEMENT.”**

prioritising environmental considerations, the project aims to strike a balance between development and ecological sustainability.

Successful infrastructure projects also prioritise community engagement and consultation.

Throughout the construction of the Bypass, stakeholders, including local residents, businesses, and indigenous communities, have been consulted to ensure their needs and concerns are addressed. This collaborative approach is fostering transparency, building trust, and ensuring that

The construction of the Bindoon Bypass exemplifies a commitment to improving safety and efficiency and enhancing connectivity, while fostering economic growth, environmental sensitivity and community engagement.

As Western Australia continues to grow, initiatives like the Bypass contribute to a robust and efficient transportation network that supports economic prosperity while respecting the environment and benefiting the local community for many years to come. ■