DMMARINE™

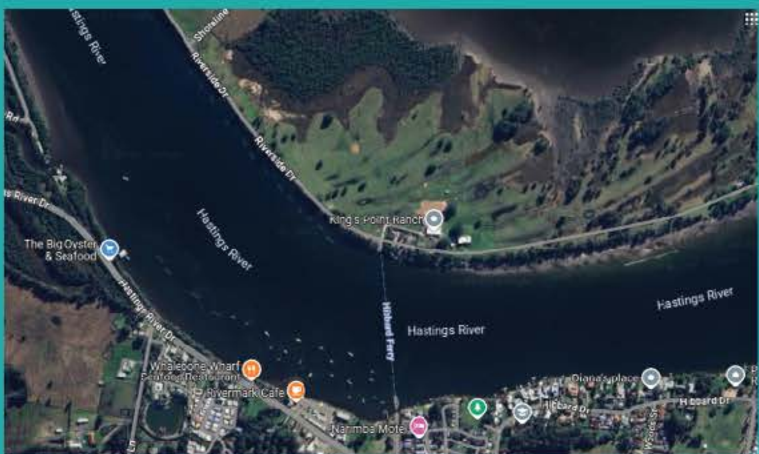
NORTH HIBBARD JETTY UPGRADE

PROJECT BACKGROUND

In the wake of catastrophic flooding events that struck the Port Macquarie region in 2021 and 2022—including a 1-in-100-year flood—the original North Hibbard Jetty was deemed beyond repair. Severely damaged during the March 2021 floods and subsequently battered by additional events, the structure had remained closed to the public for nearly four years.
Port Macquarie-Hastings Council initiated a full reconstruction project as part of a broader disaster recovery initiative funded by the NSW and Australian Governments. The vision: to deliver a durable, low-maintenance, and flood-resilient public jetty using materials capable of withstanding the next generation of extreme weather.

LOCATION:
Riverside, Port Macquarie, NSW, Australia

CONSTRUCTION COMPLETION:
April 2025



DM COMPOSITES' INVOLVEMENT

DM Composites was engaged to deliver a comprehensive FRP (Fibre Reinforced Polymer) solution for the jetty superstructure, including design certification, fabrication detailing, and material supply. Our role spanned:

- Preparation of shop drawings for FRP decking, substructure, and connection
- Engineering certification of all FRP elements in compliance with AS standards and maritime code
- Supply of pultruded FRP beams, joists, and anti-slip FRP gratings
- Collaboration with contractors and Council engineers to align tolerances with timber pile foundations

This project reaffirmed DM Composites' position as a leading supplier of composite materials for public marine infrastructure across regional Australia.

DESIGN & MATERIALS

The final jetty design combined traditional H6 marine-treated timber piles with modern FRP superstructure components, offering an elegant hybrid structure tailored to Port Macquarie's coastal environment.

MATERIALS SUPPLIED:

- FRP Decking Panels: Moulded mini-mesh, dark grey, anti-slip grit finish
- FRP Stringers & Bearers: Pultruded I-beams and channels with structural engineering certification
- Connection Kits: Pre-cut, site-drilled, sealed to prevent moisture ingress using Enduroseal
- 316 Stainless Steel Fasteners & Handrails: As per coastal zone durability requirements
- Protective Resin System: UV-stable, marine-grade, high glass transition temperature (>82°C)

ENGINEERING SPECIFICATIONS:

- Design to AS 4997 (Maritime Structures), AS 1170, and the ASCE Pre-Standard for Pultruded FRP Structures
- Flood and debris load resilience: ULS 2.5m/s flow rate with 10kN/m debris impact resistance
- Pedestrian live loading: 5kPa or 4.5kN point loads
- Structural design life: 25 years minimum with low-maintenance profile

KEY CHALLENGES & SOLUTIONS

CHALLENGE 1: FLOOD RESILIENCE

To combat the historically severe river flows and debris loads, all FRP elements were engineered for high stiffness-to-weight ratios, lateral stability, and anchorage precision.

CHALLENGE 2: MIXED MATERIAL INTERFACE

FRP was mounted atop traditional hardwood piles, requiring DM Composites to provide precise drill patterns, adjustable bracing, and stainless-steel connections tolerating minor site variability.

CHALLENGE 3: ENVIRONMENTAL COMPLIANCE

Installation procedures were aligned with the REF (Review of Environmental Factors), including:

- Offsite cutting and sealing of FRP to prevent microplastic release
- Greywater and sediment control during construction
- All resin systems tested for marine safety compliance

BEFORE

AFTER

COMMUNITY AND ENVIRONMENTAL IMPACT

The North Hibbard Jetty serves as a critical community access point for boating, fishing, and recreational activity along the Hastings River. Its restoration represents not just infrastructure recovery, but a symbolic return of public space after natural disaster.

COMMUNITY BENEFITS:

- Reopened a key riverside access point after years of closure
- Enhanced public safety with non-slip FRP surfaces and safety railings
- Low-maintenance structure minimizes future council expenditure
- Structure designed for future-proofing against climate-intensified flooding

SUSTAINABILITY GAINS:

- FRP's long lifecycle and resistance to saltwater, rot, and UV reduce environmental degradation
- No leaching of toxins (e.g. from treated timbers or rusting metals)
- Modular construction method reduces on-site waste and installation impact

KEY OUTCOMES

- Full design and supply scope completed on time and on budget
- First hybrid timber–FRP jetty delivered in the region using engineered composite systems
- Reinforced DM Composites' role as a trusted infrastructure partner in government recovery programs
- Provided a replicable model for future flood-resilient marine infrastructure

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