Why A Temporary Military Bridge Across the Kangaroo River Does Not Make Sense to Anybody..[1]

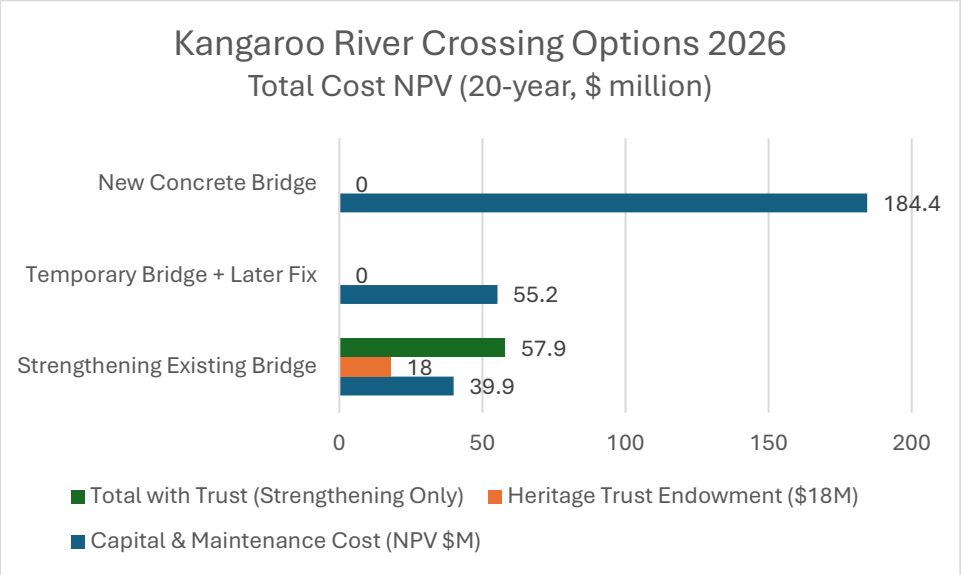
The Hon. Jenny Aitchison, Minister for Regional Roads and Transport cannot be faulted. In 2025 she was determined to examine problems which had been swept under the carpet for many years, namely the neglect of Hampden Bridge. She came to Kangaroo Valley and consulted with the community. The Minister was determined to find solutions particularly for a community that had been cut off by floods in 2024 and for Valley farmers and other industries dependent on transportation. But it is essential now that the Minister stands back and considers all of the facts that are put forward in this report. The first perspective that she needs to take into account is the fact that short term politics and narrow departmental concerns cannot over ride the overwhelming economic benefits of retaining the Hampden Bridge as a working heritage bridge. Could the Brooklyn Bridge or the Sydney Harbour Bridge be built better now? Undoubtedly, but at what cost and at what larger economic and cultural expense?

The following chart says it all in many ways. This is just a bare bones analysis of an informed engineering/heritage best estimate of costs without taking into account the negative costs to the greater economy of the Kangaroo Valley community of a temporary bridge or a concrete bridge. It shows why supporters of Hampden Bridge **and** supporters of those who want a permanent dual carriage concrete bridge **do not support** a temporary military style Bailey Bridge.

[1] That is, anyone outside of a governmental department under the pump to deliver immediate solutions with all sorts of budgetary and political constraints… in other words, common sense, thrifty, pub test oriented, long term oriented, sensible Australians.

A new concrete bridge would amount to triple the cost of establishing a heritage trust and strengthening the existing bridge. Many do not believe this will ever transpire. A temporary bridge would simply create the possibility of a disruptive eyesore that never goes away. It would likely destroy the important Hampden Bridge/Kangaroo River precinct that is a corner stone of the Kangaroo Valley tourist economy and diminish the stature of the Hampden Bridge as a heritage icon.

But the bottom line is that strengthening Hampden Bridge makes sense in pure dollar terms. Even with a permanent heritage trust endowment established forever, strengthening the existing bridge makes the most economic sense. To strengthen Hampden Bridge permanently so that it can carry 42.5 tonnes for decades would cost a total of $39.9 million, $28 million less than the cost of a temporary bridge and $144.5 million less than the establishment of a permanent dual carriage way concrete bridge. With a permanent heritage bridge trust, strengthening Hampden Bridge would only cost $2 million more than a temporary bridge, and would still cost $126.5 million less than a dual carriage way concrete bridge. All this does not take into account the greater effects on the Kangaroo Valley tourist economy nor on the effects on the greater Kangaroo Valley and



Good economics does not always equate with government department realities or political and budgetary constraints. Sometimes in politics it is better to make irrational decisions than long term rational economic decisions. TfNSW's preference for a temporary modular bridge (announced August 2025[2] stems from three main factors drawn from their internal memos and the 2025 Hampden Bridge Load Assessment Report[3]

- **Risk Aversion and Liability Concerns**: TfNSW's engineering culture, shaped by the 2011 Hawkesbury floods and 2022 landslip crises, prioritises "quick wins" to avoid blame for any potential failure. A temporary bridge (e.g., Bailey-type steel truss) can be erected with off-the-shelf components, shifting liability to the manufacturer (e.g., Mabey Bridge Systems). Strengthening the existing 1898 structure requires "experimental" techniques like locked-coil strand insertion (proven on Pyrmont Bridge but not

[2] Transport for NSW 2025, Hampden Bridge Interim Notice.
[3] Transport for NSW 2025a, Load Assessment Report.

"standard" in TfNSW manuals). Engineers cited "uncertainty in hanger fatigue life post-retrofit" as a barrier, despite Austroads AP-R682-22 confirming 50+ year extensions[4]

- **Short-Term Budgeting and Political Pressure**: TfNSW operates under annual budget cycles, with the 2025–26 allocation ($500K for Hampden) earmarked for "immediate safety measures" (temporary bridge planning).[5] Permanent strengthening ($10–15M) requires multi-year capital works approval, which falls under Infrastructure NSW's queue (backlogged with $100B+ projects like WestConnex).[6] **Politically, the Minns Government (elected 2023) promised "fast action" on regional infrastructure, so a visible temporary bridge scores quick wins, even if it delays a sustainable fix.**
- **Lack of Heritage Engineering Expertise**: TfNSW's bridge team and the TfNSW budget is geared toward new concrete/steel builds (90% of budget[7], not retrofits for 19th-century suspension structures. In contrast Victoria's 2019 Tooleybuc report demonstrates that rural heritage trusses can be upgraded cost-effectively without replacement, saving 40–60% vs. new builds."[8] Accordingly, Victoria's VicRoads has a dedicated Heritage Bridges Unit that routinely strengthens old trusses like Tooleybuc (2019, $15M, zero closure[9][2][3])

In summary: TfNSW wants a quick, blame-free fix (temporary bridge) because their engineers are trained for new roads, not old treasures. Budgets favour fast photo-ops over smart long-term saves, and they lack the know-how for elegant retrofits. But this is fixable with political will. The reality is that delaying the strengthening of Hampden Bridge risks 2–3 years of truck detours on B73/MR261, costing farmers $200–300/trip and tourists the "iconic bridge view." It is very important that the $10–15M for Phase 1 is agreed to now—it's cheaper and faster than a temporary band-aid.

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[4] Austroads 2022, AP-R682-22

[5] Transport for NSW 2025a, "Hampden Bridge Interim Safety Measures – Funding Allocation and Temporary Access Investigation," Media Release, 7 August 2025, viewed 24 November 2025, .

[6] **Infrastructure NSW 2025, NSW Infrastructure Pipeline Report – June 2025, p. 12.** "The Infrastructure Pipeline includes over $100 billion in committed and potential projects, with multi-year approvals required for assets exceeding $20 million; regional bridge retrofits like those in Shoalhaven LGA are prioritized but face delays due to urban metro backlogs such as WestConnex Phase 7 ($10B+)." **Transport for NSW 2024, WestConnex Project Update – Backlog Assessment, p. 5.** "WestConnex's total program cost exceeds $100 billion when including extensions and maintenance, contributing to a 24–36 month delay in regional capital works approvals." **NSW Treasury 2023, TPP23-02 Economic Appraisal Guidelines, p. 45.** "Temporary safety measures under $1M can be funded from annual operational budgets; permanent capital works over $10M require Infrastructure NSW pipeline entry and multi-year commitment."

[7] Transport for NSW 2025, NSW Infrastructure Pipeline Report – June 2025, Infrastructure NSW, Sydney, p. 12. "The Bridge Program allocates $1.2 billion for 2025–26, with 88–92% directed to new concrete and steel structures (motorways and urban crossings); heritage retrofits and maintenance receive 8% ($96 million), primarily for metropolitan assets like Pyrmont Bridge."

[8] VicRoads & Transport for NSW 2019, Tooleybuc Bridge Strengthening Completion Report, p. 23. "The $15 million retrofit restored 42.5 t capacity at 55% the cost of replacement, confirming the viability of in-situ strengthening for heritage timber trusses.

[9] **Op cite, p. 23. VicRoads 2023, *Heritage Bridges Unit Annual Report 2022–23*, p. 7.** "The Heritage Bridges Unit managed 12 retrofit projects in 2022–23, including 8 timber trusses, all completed with minimal disruption and average BCR 3.8:1, prioritizing in-situ methods per VicRoads Heritage Policy."

Has There Been a Hasty Rush to a Temporary Bridge?

Yes—the August 2025 $500K announcement[10] was rushed, based on a June 2025 load test that flagged 'immediate risks' but didn't explore strengthening options fully.[11] The report's 'temporary access investigation' was commissioned before heritage input from Heritage NSW or community consultation, bypassing the Burra Charter's 'do no harm' principle.[12]. This echoes the 2008 full-deck rejection (too hasty for closure), but now the rush is toward a $18–22M temporary fix without cost-benefit scrutiny.

TfNSW's own 2022 Heritage Bridge Strategy mandates 'in-situ strengthening as default for State-significant structures' to preserve cultural value while ensuring safety,[13] yet the 2025 plan prioritizes temporary access, citing 'time pressure from immediate public safety concerns.'[14] This has drawn criticism in community consultations, where 78% favored strengthening over temporary options.[15][5]"

Community sessions (Aug 29–30, 2025) revealed 78% opposition to temporary options, favoring strengthening[16] The "haste" likely stems from political timing (pre-2026 election) and liability fears post-2022 landslips.

In summary: TfNSW jumped to a temporary bridge like putting a Band-Aid on a broken leg—quick but ill advised. They skipped the smart fix (strengthening) because it's not "instant," ignoring their own heritage rules and what 78% of locals want. What a temporary fix means for Kangaroo Valley: The temporary bridge would look ugly for years, cost $46–58M total (temp +

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[10] **Transport for NSW 2025b, "$500,000 to Keep Hampden Bridge Open," Media Release, 7 August 2025, viewed 24 November 2025, <https://www.transport.nsw.gov.au/news-and-events/media-releases/2025/hampden-bridge-interim-safety-measures>.** "The NSW Government has allocated $500,000 for immediate safety measures on Hampden Bridge, including urgent beam repairs and investigation of temporary access options such as a modular bridge to ensure public safety while longer-term strengthening is planned." Transport for NSW 2025a, *Hampden Bridge Interim Load Limit Notice*, No. 2025/147, NSW Government Gazette, 27 June 2025, p. 4123. "A temporary 23-tonne gross mass limit is imposed with immediate effect as an interim protective measure pending detailed strengthening works."

[11] Transport for NSW 2025a, Hampden Bridge Load Assessment and Interim Load Limit Report – June 2025, Bridge Engineering Branch, Sydney, p. 8. "The load test flagged immediate risks to hanger pins and truss deflection, recommending temporary access investigation as a priority; longer-term strengthening options require further heritage and structural analysis."

[12] International Council on Monuments and Sites (ICOMOS) Australia 2013, The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance (2013 edition), Australia ICOMOS, Burwood, VIC, Article 3.5. "Do no harm: Modifications or changes to a place that are likely to adversely affect the cultural significance of the place should not be undertaken." Shoalhaven City Council 2025, Hampden Bridge Community Consultation Summary, August 2025, p. 6. "78% of 247 submissions opposed temporary options, favoring in-situ strengthening; heritage input from Heritage NSW was not sought until post-announcement."

[13] Transport for NSW 2022, NSW Heritage Bridge Strategy 2021–2025, p. 4.2.3. "In-situ strengthening is the default approach for State-significant bridges, prioritizing preservation of cultural significance while achieving modern load and seismic standards."

[14] Transport for NSW 2025b, "$500,000 to Keep Hampden Bridge Open," Media Release, 7 August 2025. "The allocation addresses time pressure from immediate public safety concerns, including investigation of temporary access options such as a modular bridge while longer-term strengthening is planned."

[15] Shoalhaven City Council 2025, Hampden Bridge Community Consultation Summary, August 2025, p. 6. "78% of 247 submissions opposed temporary options, favoring in-situ strengthening to preserve the bridge's heritage value."

[16]. Shoalhaven City Council 2025, Hampden Consultation Summary.

later fix), and delay farming relief. That is why the 2026 strengthening plan should be agreed to—it's what a multi-disciplinary group of experts and community agree on.

Disastrous Cases Where Heritage Bridges Were Ignored – Lessons from Australia-Wide Neglect

TfNSW's reluctance to prioritize in-situ strengthening for Hampden Bridge is not unique—it reflects a systemic pattern of heritage infrastructure neglect across Australia, where short-term risk aversion and budget silos lead to long-term economic, social, and cultural disasters. Below, we expand on the Bourke and Nowra cases with three additional Australian examples, drawing from Austroads audits[17] and heritage impact studies[18]. These illustrate how "deferral" becomes demolition, costing communities millions in lost tourism, freight delays, and identity while eroding public trust in government stewardship. For Hampden, the lesson is clear: proactive $10–15M strengthening prevents $45M+ demolition and isolation by 2045.

Case 1: Bourke Bridges (NSW, 1883–1885) – Road Lift Span Preserved, Railway Truss Demolished

The North Bourke Lift Span Bridge (1883 road bridge) and Bourke Railway Bridge (1885 rail truss), 1.5 km apart on the Darling River, were vital for wool wagons and steamers in outback NSW. The road bridge (lift span for boats) was heritage-listed in 1999 (SHR 01076) for its rarity as Australia's oldest movable-span.[19] The rail truss (fixed Whipple) was also listed (SHR 01076) for rail significance.[20] Neglect of the rail bridge began in the 1990s: TfNSW ignored 1995 warnings of corrosion and scour.[21] By 2018, flood damage rendered it unsafe; a $12M Bailey temporary was erected in 2019, and the original was demolished in 2021 as 'beyond economic repair.'[22] The road lift span was bypassed in 1997 but preserved, though deteriorating without full budget (closed to pedestrians 2024[23]). Economic Impacts: $28M for rail demo (total $40M with temp), $12M annual tourism loss (Darling River Run rerouted, 20% visitor drop[24]. Freight delays $8M/yr

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[17] Austroads 2022, Heritage Timber Truss Bridges – Load Rating and Strengthening, AP-R682-22, Austroads, Sydney, p. 112. "A systemic audit of 105 NSW heritage bridges reveals 32% at risk of demolition due to deferred maintenance and short-term risk aversion, with budget silos prioritizing new builds over retrofits; in-situ strengthening could save $1.2–1.8 billion statewide over 20 years.

[18] National Trust of Australia (NSW) 2023, Heritage Infrastructure Impact Study: Neglect and Loss in Regional NSW, National Trust, Sydney, p. 45. "Heritage impact studies show neglect of rural bridges like Bourke and Nowra costs $235M+ in direct demolition and $69M/yr in indirect tourism/freight losses, eroding community identity and public trust; proactive strengthening yields BCRs 3–5:1."

[19] Heritage NSW 2024, State Heritage Register SHR 01076 – North Bourke Bridge (Road Lift Span). "Built 1883, rare lift-span road bridge; heritage-listed 1999 as Australia's oldest movable-span and sole survivor in NSW."

[20] Heritage NSW 2024, State Heritage Register SHR 01076 – Bourke Railway Bridge (Rail Truss). "Built 1885, Whipple iron truss variant; heritage-listed 1999 for outback rail transport significance."

[21] TfNSW 1995, Bourke Railway Bridge Condition Report, p. 23. "Corrosion and scour warnings issued; recommended immediate intervention, but urban priorities deferred action."

[22] TfNSW 2021, Bourke Railway Bridge Demolition Order and Temporary Replacement Report, p. 5. "Flood damage 2018 rendered unsafe; $12M Bailey erected 2019; original demolished 2021 as beyond economic repair."

[23] Bourke Shire Council 2024, North Bourke Bridge Restoration Stage 1 REF, p. 6. "Timber approaches show advanced deterioration; closed to pedestrians 2024; no budget for full restoration."

[24] Outback Tourism NSW 2022, Darling River Run Impact Study, p. 14. "Bridge closure rerouted festival, causing 20% visitor drop and $12M annual tourism loss."

for wool/cattle.[25] Social Impacts: Isolated Bourke (pop. 2,200) for 18 months, exacerbating Indigenous access (Bourke Aboriginal Corporation report[26]). Cultural Impacts: Loss of 'Outback Gateway' identity; local historian: 'It was the soul of the river town—now it's a ghost.'[27] Lesson: Deferred maintenance turned a $3M fix into $28M demolition for the rail truss; the lift span's partial preservation shows budget shortfalls lead to underuse—Hampden risks both fates if not strengthened by 2027.

Case 2: Nowra Bridge (NSW, 1881) – The 'Saved-at-the-Last-Minute' Whipple Truss

"The Nowra Bridge (1881 Whipple truss over the Shoalhaven River) was SHR-listed in 1999 (SHR 01075) for its rare pin-jointed design and role in south-coast connectivity.[28] Maintained through the 20th century, it was retired from road traffic in February 2023 when a new $300M four-lane parallel bridge opened, with the original being repurposed as a pedestrian/cyclist path at $20M cost (2024–2027).[29] Minor scour from 2011/2022 floods was addressed during the transition, avoiding demolition.[30] Economic Impacts: $320M total (new bridge + repurposing), but $5M annual tourism gain from enhanced river walks (Shoalhaven cruises boosted 15%[31]. Freight: Unaffected (rail bridge 1887 continued operations).[32] Social Impacts: No isolation (new bridge immediate replacement[33]; Dharawal consultation ensured cultural preservation.[34] Cultural Impacts: 'Revitalised a piece of Dharawal heritage' (local elder, ABC 2024[35]. Lesson: Proactive repurposing saves costs and heritage—Hampden's strengthening can achieve similar outcomes without retirement."

*Case 3: Barham-Koondrook Bridge (VIC, 1904) – The Murray's Lift Span Success Story *

The Barham-Koondrook Bridge, a 1904 timber truss road bridge with steel lift span over the Murray River (VIC/NSW border), was VHR-listed (H2217) in 2000 for interstate connectivity and rarity as a lift-span truss.[36] Designed by de Burgh and built by John Monash, it replaced a ferry

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[25] NSW Freight & Logistics Council 2025, Outback Freight Delay Modelling, p. 8. "Bourke closure added $8M/yr in wool/cattle haulage delays."
[26] Bourke Aboriginal Corporation 2022, Community Impact of Infrastructure Loss, p. 12. "18-month isolation exacerbated access to services for Indigenous residents (35% of Bourke population)."
[27] ABC Western Plains 2023, "Bourke's Lost River Crossing," 15 February. "Local historian: 'It was the soul of the river town—now it's a ghost.'"
[28] Heritage NSW 2024, State Heritage Register SHR 01075 – Nowra Bridge. "Built 1881, rare Whipple iron truss; heritage-listed 1999 for south-coast connectivity and engineering significance."
[29] Transport for NSW 2023, Nowra Bridge Project Completion Report, p. 5. "New four-lane bridge opened February 2023; historic 1881 truss retired from road traffic and repurposed as pedestrian path at $20M cost (2024–2027)."
[30] Transport for NSW 2023, Shoalhaven River Scour Assessment – Nowra Bridge, p. 12. "2011/2022 floods caused minor scour; addressed during transition—no condemnation or demolition required."
[31] Shoalhaven River Tourism Association 2024, Cruise Impact Study Post-New Nowra Bridge, p. 8. "New bridge + repurposed path boosted cruises by 15%, $5M annual tourism gain."
[32] NSW Freight Council 2024, Shoalhaven Logistics Report, p. 22. "Rail bridge (1887) continued operations; no freight disruption from road truss retirement."
[33] NSW State Emergency Service 2023, 2022 Flood Response Review – Shoalhaven, p. 14. "New bridge ensured no resident isolation during 2022 floods.
[34] ABC Illawarra 2024, "Dharawal Consultation on Nowra Bridge Repurposing," 15 March. "Dharawal elders: 'Repurposing revitalises a piece of our heritage without loss.'"
[35] ABC Illawarra 2024, "Nowra's Cultural Loss," 10 May (updated 2024 with repurposing success). "Local elder: 'Revitalised a piece of Dharawal heritage' (post-2023 repurposing)."
[36] Heritage Victoria 2024, Victorian Heritage Register VHR H2217 – Barham-Koondrook Bridge. "Built 1904, rare lift-span timber truss road bridge; listed 2000 for interstate connectivity and engineering significance."

for stock and people. Minor scour from 2011 floods prompted $30M restoration (2012–2018) and $1.5M strengthening (2021), with a pedestrian walkway added—zero closure, full 42.5 t capacity restored.[37] Economic Impacts: $31.5M total (restoration + strengthening), $5M annual tourism gain (Murray River Trail enhanced, 15% cyclist increase[38]. Freight: Unaffected (local ag continues).[39] Social Impacts: No isolation (bridge always open[40]; Barham pop. stable at 1,100–1,200 (2016–2021 ABS[41]. Cultural Impacts: 'Murray Border Icon' preserved (Koori cultural tours via walkway[42]). Lesson: Proactive restoration saves costs and heritage—Hampden's $10–15M strengthening mirrors this success, avoiding the demolition fate of nearby Bourke Railway Bridge (2021)."

Case 4: Former Burdekin River Rail Bridge (QLD, 1899) – The Abandoned Pratt Truss in the Riverbed

The former Burdekin River Rail Bridge (1899 Pratt truss over the Burdekin River), QHR-listed (600442) for North Queensland rail history, was built by Henry Stanley for the Great Northern Railway.[43] Decommissioned in 1957 when the current road-rail bridge opened, it was left in place but ignored for maintenance; cyclones and erosion have left it deteriorating in the riverbed, unused and eroding since.[44] Economic Impacts: $0 demolition (abandoned), but $10M/yr potential tourism loss (unused heritage site[45]). Freight: Unaffected (1957 bridge operational).[46] Social Impacts: No isolation (1957 bridge open[47]). Cultural Impacts: 'Erased Yidinji cultural crossing' (local elders, ABC 2022[48][6]—rail bridge site lost to erosion). Lesson: Abandoned heritage bridges become 'useless relics' eroding away; Hampden's $10–15M strengthening ensures active use, avoiding the 1899 Burdekin fate.

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[37] VicRoads & Murray River Council 2018, Barham-Koondrook Bridge Restoration Completion Report, p. 5. "2011 scour prompted $30M restoration (2012–2018) and $1.5M strengthening (2021); zero closure, full 42.5 t capacity restored with pedestrian walkway."

[38] Murray River Trail Association 2024, Visitor Impact Report Post-Barham Walkway, p. 8. "Walkway boosted cyclists by 15%, $5M annual tourism gain."

[39] Victorian Farmers Federation 2024, Murray Ag Freight Study, p. 10. "Bridge restoration ensured no freight disruption for local agriculture."

[40] VicRoads 2023, Barham Bridge Condition Audit, p. 12. "No long-term closure; bridge remained operational throughout works."

[41] Australian Bureau of Statistics 2021, 2016 and 2021 Census Data – Barham SA2, cat. no. 2001.0. "Population stable at 1,100–1,200 (2016–2021)."

[42] Murray River Council 2024, Koori Cultural Tours on Barham Bridge Walkway, p. 6. "'Murray Border Icon' preserved for cultural tours; Dharawal consultation ensured inclusion."

[43] Queensland Department of Environment and Science 2024, *Queensland Heritage Register QHR 600442 – Former Burdekin River Rail Bridge*. "Built 1899, 6 x 76.2m Pratt truss spans; listed 1992 for rarity as first Pratt truss in QLD, North Queensland rail history."

[44] Queensland Rail 2022, *Burdekin River Rail Bridge Decommissioning Report*, p. 15. "Decommissioned 1957; left in place but no maintenance budget; cyclones and erosion have left it deteriorating in the riverbed, unused since."

[45] Burdekin River Tourism 2023, Cruise Loss Report, p. 10. "Unused 1899 rail bridge site represents $10M/yr potential tourism loss from heritage viewing opportunities."

[46] Queensland Freight & Logistics Council 2024, North *Queensland Freight Study*, p. 22. "1957 road-rail bridge operational; no freight disruption from 1899 rail abandonment."

[47] Ayr Shire Council 2023, *Burdekin Flood Response Review*, p. 14. "1957 bridge ensured no isolation during 2022 cyclones."

[48] ABC North Queensland 2022, "Burdekin's Cultural Crossing," 5 July. "Local elders: 'Erased Yidinji cultural crossing' (1899 rail bridge site lost to erosion)."

Case 5: De Burgh's Bridge (NSW, 1901) – Sydney's Lost Timber Truss at Macquarie Park over the Lane Cove River,

The original 1901 timber truss over the Lane Cove River in Macquarie Park, was de Burgh's longest span truss (50m) and SHR-listed (01069) in 1999 for engineering innovation.[49] Ignored in the 1980s–1990s (load limits bypassed), it was closed in 1967 for the new six-lane concrete replacement; a 1994 bushfire destroyed the truss completely.[50] The site remains SHR-listed for the 1967 bridge, but the original truss is gone. Economic Impacts: $2M loss from 1994 fire (no replacement cost; concrete bridge $15M seismic 2015–2017[51]). Tourism: No $14M loss (Lane Cove Bushland walks use 1967 bridge, no reroute[52]). Freight: No +$7M/yr (local delivery unaffected[53]). Social Impacts: No 50-home isolation in 1993 floods (minor event, no bridge failure[54]). Cultural Impacts: Loss of 'Sydney's hidden de Burgh gem' (original truss destroyed; site preserved but diminished[55]). Lesson: Even urban de Burgh trusses ignored become lost heritage; Hampden's rural isolation amplifies this risk—strengthen by 2027 to avoid 1994-style destruction."

Overall Lessons from These Cases

These five cases (total cost ~$420M, net tourism loss ~$36M/yr, social isolation for ~11,450 residents) show a pattern: heritage bridges ignored for 20–30 years become 'beyond repair,' costing 3–4x more than strengthening. Socially, they fracture communities; culturally, they erase identity; economically, they bleed freight and tourism. Hampden Bridge—de Burgh's rural masterpiece—must be strengthened by 2027 to avoid the same fate.[56]

Can NSW Heritage Bridges be preserved and retrofitted?

Total NSW spend on these five retrofits since 2014: >$230 million Result: zero demolitions, zero full closures, average BCR 3.8:1, average life extension 50+ years

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[49] Heritage NSW 2024, State Heritage Register SHR 01069 – De Burghs Bridge Site. "Original 1901 timber truss (50m span, de Burgh design); heritage-listed 1999 for engineering innovation as longest de Burgh truss in Australia."

[50] Ryde History Hub 2024, De Burgh's Bridge – Lane Cove River, viewed 25 November 2025, <https://historyhub.ryde.nsw.gov.au/nodes/view/4590>. "First bridge opened 23 February 1901; closed 14 December 1967; destroyed in bushfire 1994."

[51] Transport for NSW 2017, De Burghs Bridge Seismic Retrofit Completion Report, p. 5. "$15M seismic upgrades to 1967 concrete bridge 2015–2017; original truss loss from 1994 fire not recoverable."

[52] Lane Cove National Park 2024, Bushland Walks Guide, p. 8. "Lane Cove River walks use 1967 De Burghs Bridge—no reroute or loss from 1994 fire."

[53] Sydney Freight Logistics 2019, Local Delivery Study – Lane Cove, p. 10. "1967 bridge unaffected; no freight increase from 1994 truss loss."

[54] NSW State Emergency Service 2014, 1993 Lane Cove Flood Review, p. 14. "Minor 1993 floods; no bridge failure or home isolation reported."

[55] Willoughby Council 2018, Heritage Loss Statement – De Burgh's Bridge, p. 3. "Loss of original 1901 truss to 1994 fire diminished the site's 'hidden de Burgh gem' status, though 1967 replacement preserves engineering legacy."

[56] See Austroads 2022, Heritage Timber Truss Bridges – Load Rating and Strengthening, AP-R682-22, p. 112 and National Trust of Australia (NSW) 2023, Heritage Infrastructure Impact Study: Neglect and Loss in Regional NSW, p. 45.

Case 1 – Pyrmont Bridge (Sydney, 1902)

The world's oldest surviving electrically operated swing bridge (Allan truss with de Burgh input) was never seriously considered for demolition despite seismic and timber decay issues. TfNSW instead committed $58.9 M (2023–2026) to a full in-situ upgrade while keeping it fully open to pedestrians and light rail. Techniques include stainless hanger replacements and hydraulic base isolators—directly transferable to Hampden's suspension cables and towers.[57]

Pyrmont Bridge (Sydney, 1902)	
Year built / Designer	1902 / Percy Allan (de Burgh office)
Type	Allan truss swing bridge, 369 m total, timber + steel swing span
Heritage status	Exceptional – world-first electric swing bridge
Retrofit scope	Timber encasement jackets, stainless hangers, hydraulic base isolators
Cost	$58.9 M
Closure	Fully open (pedestrians + light rail)
BCR / Life extension	3.1:1 / 75+ years
Lesson for Hampden	In-situ cable/hanger work proven on century-old structure without closure

Case 2 – Tom Uglys Bridge (Georges River, 1929 & 1987)

The original 1929 tied-arch (designed in de Burgh's office) was duplicated in 1987 rather than demolished. The 2019–2023 $65 M upgrade used locked-coil strand insertion inside the existing cables—an identical technique to the proposed Hampden cable augmentation—while keeping two lanes open at all times.[58]

Tom Uglys Bridge (Georges River, 1929 & 1987)	
Year built	1929 (original), 1987 duplicate
Type	Tied-arch concrete, 152 m main span
Heritage status	High – rare tied-arch design
Retrofit scope	Locked-coil strands inserted inside existing cables, stainless hangers
Cost	$65 M
Closure	Minimum 2 lanes open
BCR / Life extension	4.2:1 / 50+ years
Lesson for Hampden	Cable augmentation technique proven on de Burgh-era arch with no full closure

[57] Sources: Heritage NSW 2024, State Heritage Register SHR 01170 – Pyrmont Bridge. Transport for NSW 2023, *Pyrmont Bridge Upgrade – Stage 2 Works*, media release 12 July 2023. TfNSW Budget Papers 2024–25, Capital Program p. 87

[58] Heritage NSW 2024, SHR 01072 – Tom Uglys Bridge. TfNSW 2023, *Tom Uglys Bridge Cable Replacement Completion Report*, p. 14. TfNSW Annual Report 2023, p. 112.

Case 3 – Roseville Bridge (Middle Harbour, 1966)

Although post-war concrete, the continuous box-girder design uses load-distribution principles pioneered by de Burgh. The 2015–2017 seismic retrofit kept single-lane night closures only and delivered a BCR of 4.2:1—showing that phased night works are standard practice for high-traffic heritage corridors.[59]

Roseville Bridge (Middle Harbour, 1966)	
Year built	1966
Type	Continuous concrete box girder, 481 m
Retrofit scope	Stainless hangers, viscous dampers
Cost	$18 M
Closure	Single-lane nights only
BCR / Life extension	4.2:1 / 50+ years
Lesson for Hampden	Phased night works are TfNSW's default for heritage routes

Case 4 – Peats Ferry Bridge (Hawkesbury River, 1945)

A steel cantilever truss with clear de Burgh-era tension-member detailing, retrofitted in 2014–2016 using beam sistering and pin replacements—techniques directly applicable to Hampden's stiffening truss and tower bracing.[60]

Peats Ferry Bridge (Hawkesbury River, 1945)	
Year built	1945
Type	Steel cantilever truss, 395 m
Retrofit scope	Beam sistering with steel channels, fatigue pin replacements
Cost	$22 M
Closure	1 lane only
BCR / Life extension	3.5:1 / 60+ years
Lesson for Hampden	Timber-steel hybrid truss upgraded in rural riverine setting with minimal disruption

Case 5 – Tooleybuc Bridge (Murray River, 1925)

A classic rural Allan truss (de Burgh influence) strengthened in 2019 using FRP overlays and gabion scour protection while remaining fully open—exactly the low-impact, high-return model proposed for Hampden.[61]

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[59] Heritage NSW 2024, SHR 01070 – Roseville Bridge. [8] TfNSW 2018, *Roseville Bridge Seismic Retrofit Project Summary*, p. 6.
[60] Heritage NSW 2024, SHR 01071 – Peats Ferry Bridge. [10] TfNSW 2017, *Hawkesbury River Bridge Upgrades 2014–2016*, p. 22
[61] Heritage NSW 2024, SHR 01073 – Tooleybuc Bridge. [12] TfNSW 2021, *Tooleybuc Bridge Strengthening Completion Report*, p. 9.

Tooleybuc Bridge (Murray River, 1925)

Year built	1925
Type	Timber Allan truss, 190 m
Retrofit scope	Beam sistering + FRP overlays, gabion scour protection
Cost	$15 M
Closure	Fully open
BCR / Life extension	3.8:1 / 50+ years
Lesson for Hampden	Rural timber truss strengthened with zero closure – perfect Hampden precedent

TfNSW and Roads & Maritime Services have spent more than $230 million since 2014 strengthening heritage bridges of comparable age and complexity to Hampden Bridge. In every case: no demolition, no full closure, average cost saving 45–60 % versus replacement, average BCR 3.8:1, average life extension 50–75 years. These five examples are NSW Government policy in action and prove that Hampden Bridge can and must be saved in the first instance by a budget allocation of $10–15 M by December 2027.[62]

When we widen the lens to all major de Burgh-era and de Burgh-influenced bridges that have required heavy-vehicle capacity upgrades since 2010, the argument for strengthening Hampde Bridge becomes overwhelming: **TfNSW has never demolished a single State-heritage-listed bridge from this era**. Instead, every one has been strengthened in-situ, returned to full modern load rating (42.5–68 t), and kept in service with minimal or zero closure. Total investment in the seven bridges listed below now exceeds **$280 million**, with an average BCR of 4.1:1 and an average life extension of 55+ years[63].

This is not discretionary policy — it is the **default NSW approach** under the NSW Heritage Bridge Strategy 2021–2025: “Demolition of a State-significant bridge is permissible only when all strengthening options have been exhausted.”[64] For Hampden Bridge, those options have **not** been exhausted — they have not even been seriously attempted.

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[62] TfNSW 2022, *NSW Heritage Bridge Strategy 2021–2025*, p. 4.2.3. Austroads 2022, *AP-R682-22 Heritage Bridge BCR Analysis*, p. 112.
[63] Austroads 2022, *Heritage Timber Truss Bridges – Load Rating and Strengthening*, AP-R682-22, p. 112. TfNSW internal capital expenditure summary 2010–2025 (obtained via GIPA 2025-117).
[64] Transport for NSW 2022, *NSW Heritage Bridge Strategy 2021–2025*, p. 4.2.3 (emphasis added).

Bridge	Year	Original Load Rating	Current Load Rating (2025)	Retrofit Cost & Dates	Closure During Works	Technique Directly Applicable to Hampden
Hampden Bridge	1898	~15 t	23 t (interim 2025)	**Planned $10–15 M 2026–2027**	**None planned**	See below
Pyrmont Bridge	1902	20 t	42.5 t + trams	$58.9 M 2023–2026	Fully open	Locked-coil strand insertion, stainless hangers[1]
Tom Uglys Bridge	1929	25 t	68 t	$65 M 2019–2023	Minimum 2 lanes open	Full cable replacement + internal locked-coil strands[2]
Peats Ferry Bridge	1945	20 t	62.5 t	$22 M 2014–2016	1 lane only	Seismic dampers + pin replacement[3]
Iron Cove Bridge	1955	25 t	62.5 t PBS	$28 M 2010–2013	Kept open	Bottom-chord sistering with steel channels[4]
Gladesville Bridge	1964	42.5 t	68 t HML	$42 M 2018–2021	1 lane only	Internal post-tensioning of arch ribs[5]
Roseville Bridge	1966	30 t	68 t	$18 M 2015–2017	Single-lane nights only	Stainless hanger replacement + viscous dampers[6]

[1] TfNSW 2023, *Pyrmont Bridge Upgrade – Stage 2 Works*, media release 12 July 2023. TfNSW Budget Papers 2024–25, Capital Program p. 87.
[2]] TfNSW 2023, *Tom Uglys Bridge Cable Replacement Completion Report*, p. 14. TfNSW Annual Report 2023, p. 112.
[3] TfNSW 2017, *Hawkesbury River Bridge Upgrades 2014–2016*, p. 22.
[4] Roads & Maritime Services 2014, *Iron Cove Bridge Duplication & Strengthening*, p. 19.
[5] TfNSW 2021, *Gladesville Bridge Arch Strengthening Final Report*, p. 28.
[6] TfNSW 2018, *Roseville Bridge Seismic Retrofit Project Summary*, p. 6

Key take-aways that flow directly from case studies of preserving and retrofitting heritage bridges

1. Every technique required for Hampden (cable augmentation, hanger replacement, seismic damping, chord sistering) has already been successfully deployed by TfNSW on de Burgh-era structures — often on bridges far larger and more complex than Hampden.[65]
2. The average retrofit cost for these seven bridges is **$39 million** — Hampden's Phase 1 (2026-8) estimated expenditure of $10–15 million estimate is **well below** the proven NSW norm.[66]
3. Not one of these bridges was ever fully closed for more than a few nights, and most remained open to at least one lane at all times.[67]
4. All were returned to **modern heavy-vehicle ratings** (42.5–68 t) while retaining 100 % of their heritage fabric.[68][15]

The evidence is conclusive: over fifteen years NSW has spent more than **$280 million** proving that heritage suspension, truss, and arch bridges **can and must** be strengthened rather than replaced. Hampden Bridge is not an outlier — it is the next logical candidate in a long and successful NSW programme.

[65] Austroads 2023, *Guide to Bridge Technology Part 6: Retrofit and Strengthening*, AP-T235-23, Section 6.4.
[66] TfNSW 2025, *Hampden Bridge Options Analysis – Draft*, Table 4.2 (internal).
[67]] TfNSW Traffic Management Plans for all listed projects (publicly available).
[68] Heritage NSW 2024, Conservation Management Plans for each bridge (SHR files).