Kawarau Falls Bridge

Good things take time
Option selection

Blue sky thinking

- 11 options were identified in 2001 by Opus Consultants.
- A State highway designation was required for the extension of Douglas Street as one option but the community opposition and the cost of the option lead to the designation being uplifted in 2006.
- A option downstream at Boyd Road did not meet State highway needs.
- An elevated option connecting to Kelvin Heights was not feasible.
- Option 3 (the preferred option) and two options for widening the existing bridge were investigated further in 2007 for an addendum to the Investigation Report including geotechnical investigation.
- Widening the existing bridge did not find favour with Heritage New Zealand.
- The 45 km/hour out-of-context curve remained at the southern end of the existing bridge.
Refining the preferred option
Specimen Design

Can it be built?

- SKM (now Jacobs) were engaged through a competitive process for the Specimen Design and were retained as Principal’s Advisor.
- In 2011 Option 3 was taken through a specimen design process.
- It was determined to be feasible with a satisfactory benefit to cost ratio.
- A Notice of Requirement to alter the State highway designation was lodged with QLDC.
- Draft documentation to tender the project as a design and construct contract was prepared.
Notice of Requirement

The effects of the project and altering the SH Designation

• The Transport Agency is a Requiring Authority under the RMA.
• The Notice allowed QLDC to consider the effects and to make a recommendation on the project and the proposed conditions.
• The concerns of local iwi were addressed through the proposed conditions to the designation.
• The Agency largely agreed with the outcome of the public hearing before Commissioners but the Regional Council and one developer appealed the Agency’s decision to the Environment Court.
• The appeals were withdrawn a few days before the Court hearing after intense negotiations and some minor changes to designation conditions.
• The Resource Consents required from Otago Regional Council were granted after a non-notified process.
Second Bridge

Long-term plan

• The desirability of a second bridge in the vicinity of Boyd Road was identified in the Wakatipu Transportation Strategy in 2007 on the 30 year horizon.

• A local group promoted this as an alternative to the new bridge at Kawarau Falls because it provided a more direct access from the south to Frankton Flats.

• The option was revisited for the hearings on the alteration to the State highway designation but it was not supported as a State highway bridge to address the growing State highway traffic.

• A second bridge would provide increased security to the route but would be a local road.

• The second bridge near Boyd Road is being considered by QLDC and may be a walking and cycling bridge which also carries water and waste water pipelines.
Wakatipu Transport Strategy 2007

Passenger Transport
High Frequency and Quality
- Bus system combined with ferry service
- Bus priority lanes on SH6A
- High frequency (4 min headways)
- High quality buses and public transport infrastructure with wide network coverage

Parking Strategy
High Intensity of Management
- Completion of Man St and Gorge Road providing 1250 spaces
- Management of parking supply and charging levels to achieve mode split targets
- High quality passenger transport provides a free service to serve park and ride sites on Gorge Road and in Frankton Flats

Ferry Service
Including Park and Ride

TDM – High Intensity
- High quality PT system
- High level of parking restraint
- High intensity level travel behaviour change programme to support the use of PT, walking and cycling
- High intensity travel management approach for visitors and events
- Promote Walking and Cycling initiatives

Frankton Flats Infrastructure
1. Arterial link road covering Frankton Flats
2. SH6/Glenda Drive Intersection Upgrade
3. SH6A/SH6 intersection upgrade
4. Grants Rd/SH6 roundabout
5. Humphrey St upgrade and extension
6. Kawarau Falls Bridge Upgrade
7. Potential Frankton bypass post 2026

Eastern Route
Park and Ride
SH6A
Kelvin Heights
Peninsula Rd duplication (Local road)
Funding

Crown to the rescue

- The Benefit to Cost Ratio (BCR) was assessed as 1.5 and therefore a low priority, nationally. The bridge had no weight restrictions.

- Locally the bridge was a high priority because it constrained development south of the river with the restricted access to Queenstown, Frankton Flats and Queenstown International Airport.

- In June 2014 The National Government announced an Accelerated Regional Roading Package of which Kawarau Falls Bridge was the Otago component.

- Funding was not approved through the National Land Transport Programme but via a special allocation known as Crown funding.
Design and Construction Procurement

Working with the industry

• At an estimated $18M the contract was at the lower limit suitable for D & C procurement.
• The decision to procure through a D & C contract was based on industry feedback.
• Innovation was mostly available through the construction method on a very constrained site.
• D & C allowed the design to be developed to take advantage of efficient construction methodology.
• Launching of the majority of the superstructure from the southern abutment was the primary innovation by the successful tenderer.
• Expressions of interest were invited and five major contractors registered.
• Two withdrew early and three submitted bids.
Superstructure Launching

Meticulous planning

• McConnell Dowell allocated staff to the project who had previously launched bridge decks although most of the experience was in Australia and on straight bridges.

• The primary advantages were;
  ✓ Assembly of the deck was undertaken at ground level
  ✓ Less temporary access trestle required
  ✓ Less work over the river and therefore safer conditions for the staff

• The additional work included intense planning, the construction of a ‘launching nose’, the use of temporary bearings and greater stresses on the structure at certain times.

• The process was a big success and provided the opportunity for community involvement cycling the slipper pads on the temporary bearings.
Public Open Day  17th December 2017

Build it and they come
Two Lanes Opening

The queuing is over

- It was necessary to return to single lane operation in January. The west side of the northern approach could not be constructed until the historic bridge was permanently closed.
- The north west corner of the new bridge deck overlapped the historic bridge.
- The cycling and pedestrian underpass needed extending under the western side of the highway
- Exiting services required diversion and new services installed connecting to the new bridge.
- With winter approaching the surfacing required particular attention.
- The highway was surfaced and the bridge opened to two-way traffic on 10th May 2018.
**Historic Bridge**

A meeting place for people

- Built in 1926 as a dam but incorporating a single-lane road bridge.
- A successful dam but a failure as a gold mining venture
- MBIE and its predecessors owned it. A transfer of ownership to QLDC is being negotiated.
- The Transport Agency commissioned a Conservation Plan to understand;
  - What is historically important
  - The nature of appropriate conservation
  - The maintenance obligations for future owners
  - And to meet the requirements for transfer of heritage assets
- The work to make the bridge fit for purpose as a walking and off-road cycling route was developed in this context.
Contract Completion

Almost there

• Practical completion of the contract is expected in September.

• Landscaping and final work to the historic bridge will be completed in October.

• A final community event will be held on the historic bridge at the end of October to celebrate the completion of the project and connection of the trails.