ALASKA RAILROAD

PROJECT FACTS

Bridge Program

Project Scope

The Alaska Railroad (ARRC) 500-plus miles of mainline and branch track includes 175 bridges and large culverts (10 or more feet in diameter) that cross barriers ranging from streams to gulches. Railroad bridges may be constructed from steel, concrete, wood or a combination of materials, with different span types included in a single bridge.

The ARRC Bridge Program identifies structures requiring upgrade, overhaul or replacement. In pursuit of this program, ARRC's current 5-year plan calls for dozens of bridges to be replaced or rehabilitated by internal and contract workers. In addition to these large projects, ARRC's bridge crews accomplish annual repair, rehabilitation and reconstruction activities to ensure bridge structures continue to safely support ARRC operations.

Some of the existing railroad bridges have been identified as eligible, or potentially eligible, for the National Register of Historical Places, either individually or as contributing elements to a potential historic district. As necessary, ARRC will consult with the Alaska Office of History and Archaeology (OHA)/State Historic Preservation Officer (SHPO).

Need, Purpose and Benefits

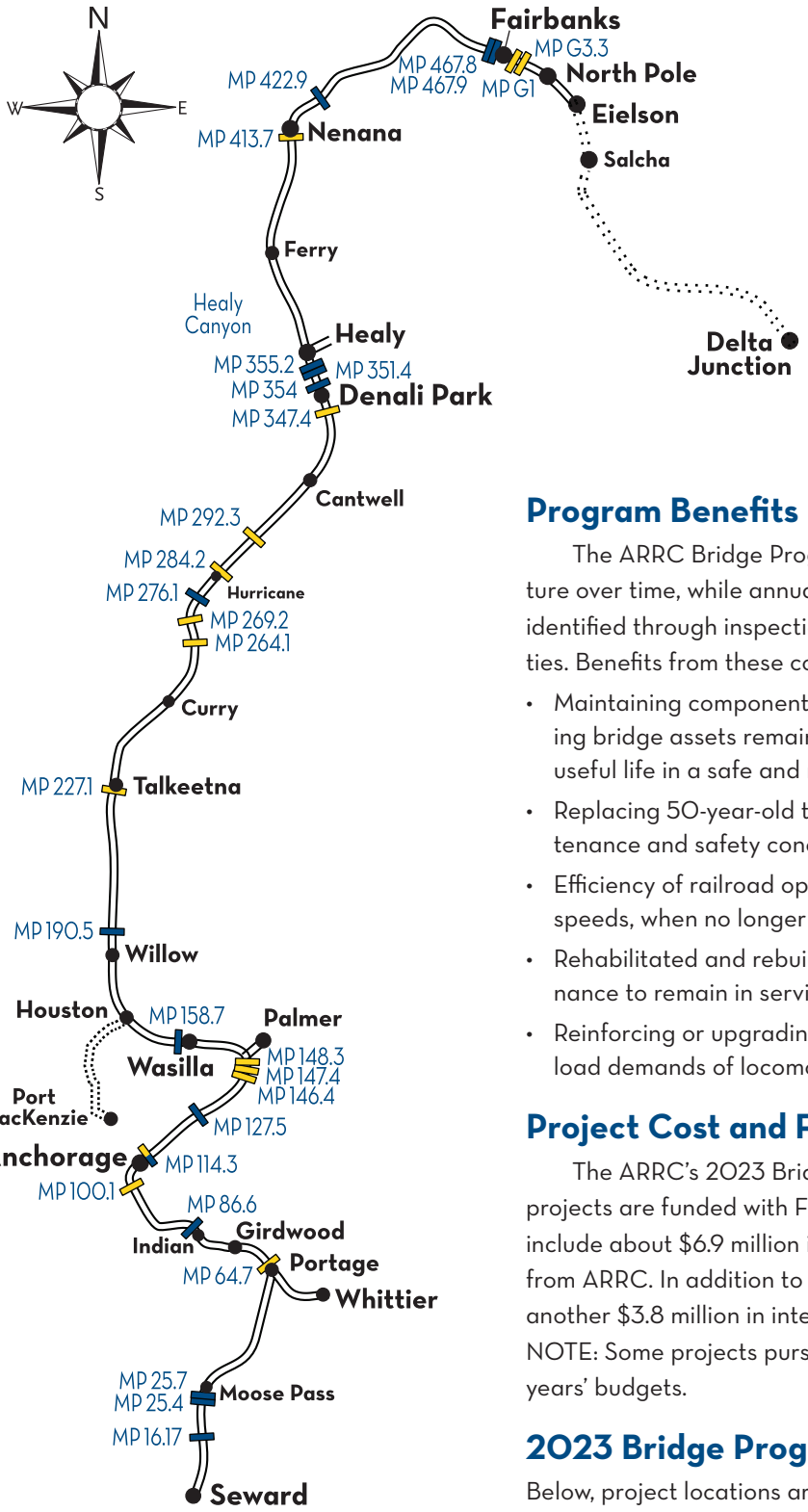
The ARRC Bridge Program focuses on infrastructure integrity that underpins safe, reliable railroad transportation services. The Alaska Railroad operates over the oldest transportation infrastructure in the state. Many rail system bridges were constructed decades ago. The ARRC Bridge Program pursues heavy maintenance, rehabilitation and replacement to maintain bridges in a state of good repair.

Program activities will address operational efficiency. ARRC is forced to slow train speeds due to bridge age and deterioration. ARRC must also perform more preventive maintenance and repairs in order to keep older bridges in safe and serviceable condition.

Existing rail bridge limitations also make freight business more costly to operate. ARRC must consistently limit loads on railcars to accommodate rail bridge weight capacity that is significantly lower than the rest of North America's rail freight network.

Top-right: The triple-span pony truss bridge at MP 351.4 will be replaced witha triple-span deck plate girder bridge. Inset photo: Crews weld steel components on a replacement bridge at MP F9.4.

April 25
2023



The deck girder bridge at MP 127.5 over Eagle River will be replaced with a deck plate girder bridge.

Program Benefits

The ARRC Bridge Program's multi-year plans strengthen bridge infrastructure over time, while annual rehabilitation activities address high priority projects identified through inspections and other ongoing preventive maintenance activities. Benefits from these concurrent efforts include:

- Maintaining components that wear over time improves operating safety, ensuring bridge assets remain in a state of good repair, able to fulfill their intended useful life in a safe and reliable manner.
- Replacing 50-year-old timber bridges and bridge components addresses maintenance and safety concerns.
- Efficiency of railroad operations will improve as trains move at consistent speeds, when no longer required to slow while traveling over bridges.
- Rehabilitated and rebuilt bridges are in better condition, requiring less maintenance to remain in service, thus lowering overall maintenance expense.
- Reinforcing or upgrading bridges and/or their components will meet current load demands of locomotives and trains.

Project Cost and Funding

The ARRC's 2023 Bridge Program budget is just under $11 million. Most projects are funded with Federal Transit Administration (FTA) grant money, to include about $6.9 million in current year grants, which requires a 20% match from ARRC. In addition to providing grant-matching funds, ARRC has budgeted another $3.8 million in internally generated funds to support the bridge program. NOTE: Some projects pursued in 2023 are continuing with funding from previous years' budgets.

2023 Bridge Program Projects

Below, project locations are noted by milepost (MP) along the main or branch line; then by geographic features the bridge crosses; then by closest community; followed by proposed work. Schedules may change due to funding availability, operations considerations and evolving priorities.

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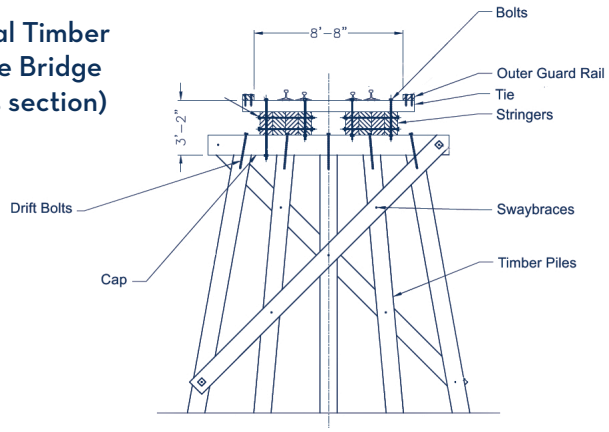
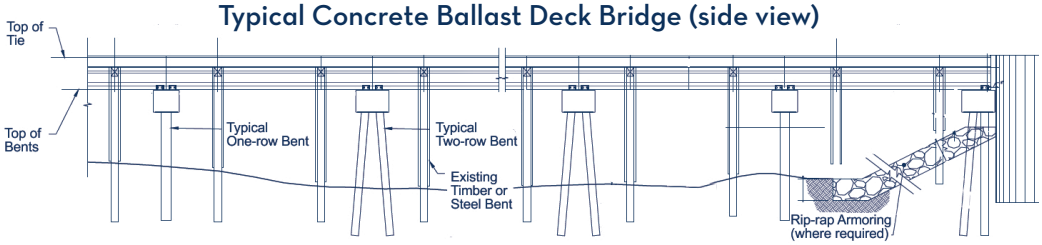
Typical Timber Trestle Bridge (cross section)



Above: The timber trestle bridge at MP 25.4 over Falls Creek is being replaced with a four-span concrete ballast deck bridge (see drawing at left for reference).

Typical Concrete Ballast Deck Bridge (side view)



Rehabilitation and Repair Projects

- ***MP 147.4*** *(Matanuska Flood Plain between Wasilla and Palmer)* – replace the north concrete pier on the triple-span 179-foot through-girder / I-beam deck bridge.
- Rehabilitate components to strengthen and extend the life of bridges reaching the end of their useful lifes. These bridge rehabilitation project locations include:
  - ***MP 3.7*** *(Salmon Creek just north of Seward)* 103-foot seven-span tmber nridge.
  - *MP 14.5 (Snow River north of Seward)* 718-foot eight-span through-truss and I-beam bridge.
  - ***MP 54.1*** *(Placer River South of Portage)* 256-foot five-span through-truss and timber nridge.
  - ***MP 64.7*** *(Twenty Mile River just north of Portage)* – 490-foot, seven-span deck truss bridge
  - ***MP 199.0*** *(Kashwitna River North of Willow)* preliminary engineering for bridge protection alternatives
  - ***MP 227.1*** *(Talkeetna River in Talkeetna)* – 400-foot, two-span through-truss bridge
  - ***MP 284.2*** *(Hurricane Gulch)* – 870-foot, nine-span, deck truss and deck girder bridge
  - ***MP 413.7*** *(Tanana River in Nenana)* – 1,300-foot, 12-span through-truss, deck truss and deck girder bridge
- Repair or replace rivets, diaphragms, bearings, seats, ties, plates, guard rail, signage, bracing and other elements at various bridges throughout the system, including:
  - ***MP 64.7*** *(Twenty Mile River just north of Portage)*
  - ***MP 100.1*** *(Potter Creek just south of Anchorage)*
  - ***MP 114.3*** *(Ship Creek in the Anchorage Rail Yard)*
  - ***MP 146.4*** *(Knik River, south of Palmer Branch jucture)*
  - ***MP 148.3*** *(Matanuska River near Palmer Branch jucture)*
  - ***MP 264.1*** *(Big Susitna River, 16 miles north of Curry)*
  - ***MP 269.2*** *(Indian River, 12 miles south of Hurricane)*
  - ***MP 292.3*** *(Chulitna River, 10 mile north of Hurricane)*
  - ***MP 347.4*** *(Riley Creek, 10 miles north of Hurricane)*
  - ***MP G-1.0*** *(Noyes Slough, just west of Fairbanks Yard)*
  - ***MP G-3.3*** *(Chena River, 3 miles west of Fairbanks Yard)*

Replacement Projects

- ***MP 15.6*** *(Snow River tributary north of Seward)* – replace a 45-foot three-span timber bridge with a bridge/structure determined best-suited via the environmental process.
- ***MP 15.9*** *(Snow River tributary north of Seward)* – replace a 15-foot single-span timber bridge with a bridge/structure determined best-suited via the environmental process.
- ***MP 16.17*** *(Snow River flood basin 9 miles south of Moose Pass)* – construct a new 70-foot timber bridge on steel bents to address biennial flooding.
- ***MP 25.4*** *(Falls Creek in Crown Point)* – replace the eight-span 120-foot timber deck bridge with a concrete ballast deck bridge comprised of four 28-foot spans.

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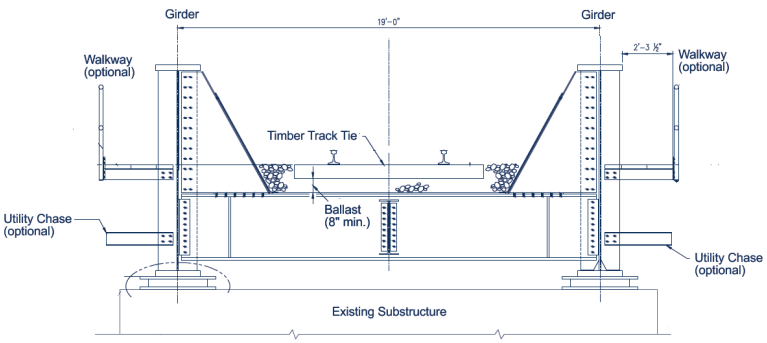
- ***MP 25.7*** *(Lower Trail Lake in Crown Point)* – replace the 360-foot timber deck bridge with a steel beam bridge comprised of twenty-four 15-foot spans.
- ***MP 56.0*** *(Spencer Pit Drainage south of Portage)* – replace a 60-foot four-span timber bridge with a bridge/structure determined best-suited via the environmental process.
- ***MP 86.6*** *(Bird Creek near Indian)* – replace the 123-foot pony truss and two 14-foot timber trestles with a 125-foot through-plate girder and two 14-foot steel beam spans.
- ***MP 114.3*** *(Ship Creek in the Anchorage Rail Yard)* – replace the 123-foot pony truss bridge with a bridge determined to be best-suited via the environmental process.
- ***MP 127.5*** *(Eagle River north of Joint Base Elmendorf-Richardson)* – replace a five-span 308-foot deck girder bridge, with a three-span 360-foot steel beam bridge.
- ***MP 152.1*** *(Spring Creek south of Wasilla)* – replace a 70-foot five-span timber bridge with a bridge/structure determined best-suited via the environmental process.
- ***MP 152.3*** *(Spring Creek drainage south of Wasilla)* – replace a 25-foot two-span timber bridge with a bridge/structure determined best-suited via the environmental process.
- ***MP 158.7*** *(Cottonwood Creek in Wasilla)* – replace the six-span 84-foot timber trestle bridge with a bridge determined to be best-suited via the environmental process.
- ***MP 190.5*** *(Little Willow Creek north of Willow)* – replace the single-span 80-foot deck plate girder bridge with a 125-foot deck plate with through-plate girder bridge.
- ***MP 276.1*** *(Pass Creek 8 miles south of Hurricane)* – replace the four-span 56-foot timber bridge with a timber bridge on steel bents.
- ***MP 351.4*** *(gully / creek just north of Denali Park entrance)* – replace the triple-span 369-foot pony truss bridge with a 175-foot steel plate girder and two 65-foot steel spans.
- ***MP 354.0*** *(Bison Gulch about 5 miles south of Healy)* – replace a 123-foot pony truss and four 31-foot I-beam spans with a bridge determined to be best-suited via the environmental process.
- ***MP 355.2*** *(gully / creek about 4 miles south of Healy)* – replace a 123-foot pony truss bridge and a 14-foot timber trestle with a 125-foot steel through-plate girder bridge and improved stabilization.
- ***MP 364.8*** *(Panguingue Creek north of Healy)* – replace a 84-foot six-span timber bridge with a bridge/structure determined best-suited via the environmental process.
- ***MP422.9*** *(Little Goldstream Creek about 10 miles north of Nenana)* – replace a single-span 62-foot thru-girder bridge with a 75-foot steel span bridge.
- ***MP 467.8*** *(Noyes Slough flood area near the Fairbanks Rail Yard)* – replace a seven-span 98-foot timber deck bridge with three 48-inch-diameter steel culverts.
- ***MP 467.9*** *(Noyes Slough at the west end of the Fairbanks) Rail Yard)* – for 336-foot bridge, repair the through-truss span and replace timber bridges with steel beam spans.

Above: The pony truss and timber trestle bridge at MP 86.6 over Bird Creek will be replaced with a bridge comprised of two steel beam spans and a thru-plate girder span (see drawings at right for reference).

Typical Thru-Plate Girder Bridge (cross section)



Typical Thru-Plate Girder Bridge (side view)