Bridge Program

Project Scope

The Alaska Railroad (ARRC) 500-plus miles of mainline and branch track includes 178 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 13 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 render the Alaska Railroad’s freight business more costly to operate. ARRC must consistently limit loads on railcars.
in order to accommodate rail bridge weight capacity that is significantly lower than the rest of North America’s rail freight network.

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 increasing load demands of a more modern, yet larger and heavier, fleet of locomotives and trains. Increased bridge weight-bearing capacity will eventually enable ARRC trains to match industry norms for car loading capacity.

Project Cost and Funding

The ARRC’s 2021 Bridge Program budget is just over $40 million. Most projects are funded with Federal Transit Administration (FTA) grant money, to include $20.43 million in current year grants, $1.18 from prior year grants, and a required 20% match from ARRC. Another $15.96 million comes from a Federal Railroad Administration (FRA) Consolidated Rail Infrastructure and Safety Improvements Program (CRISI) grant that is half funded by CRISI grant money and half by ARRC as the required 50% match.

In addition to providing grant-matching funds, ARRC has budgeted another $2.8 million in internally generated funds to the bridge program.
2021 Bridge Program Projects

Below, bridge project location is noted by milepost (MP) along the ARRC main line (or branch line, if indicated), then by the geographic feature the bridge crosses, and then by the closest community. Following location is a brief description of proposed replacement or rehabilitation work.

Scheduled work is subject to change due to funding availability, operations considerations and evolving priorities.

Rehabilitation and Repair Projects

- **MP 147.4** (Matanuska Flood Plain between Wasilla and Palmer) — replace the north concrete pier on the single-span thru-girder ballast deck bridge.
- **MP 370.7** (Nenana River near Ferry) — replace bearings on one of the three steel thru-truss / girder spans comprising this 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 51.8** (Placer River between Grandview and Spencer)
  - **MP 199** (Kashwitna River, between Houston and Talkeetna)
  - **MP 211** (Montana Creek, 16 miles south of Talkeetna)

Replacement Projects

- **MP 16.17** (Snow River flood basin about 9 miles south of Moose Pass) — construct a new 70-foot timber bridge on steel bents to address biennial flooding from the Snow Glacier Jokulhlaup (glacier-dammed lake outburst).
- **MP 25.4** (Falls Creek in Crown Point) — replace the 120-foot timber trestle bridge with a concrete ballast deck bridge comprised of four 28-foot spans.
- **MP 25.7** (Lower Trail Lake in Crown Point) — replace the 360-foot timber trestle bridge with a steel beam bridge comprised of twelve 30-foot spans.
- **MP 86.6** (Bird Creek near Indian) — replace the 123-foot pony truss bridge and two 14-foot timber trestles with a 125-foot thru-plate girder span bridge and two 14-foot steel beam spans.
- **MP 127.5** (Eagle River north of Joint Base Elmendorf-Richardson) — replace a 308-foot five-span deck girder bridge, with a 400-foot steel beam bridge comprised of a 70-foot and two 165-foot spans.

Monitor and address roadbed and bank stability through Healy Canyon with retaining walls and slope dressing.
• **MP 190.5** (Little Willow Creek north of Willow) — replace the 80-foot deck girder bridge with a 125-foot single-span thru-plate girder bridge.

• **MP 351.4** (gully / creek just north of Denali Park entrance) — replace the 369-foot tri-span pony truss bridge with a 9-foot diameter multi-plate culvert.

• **MP 354.1** (Bison Gulch about 5 miles south of Healy) — replace a 123-foot single-span pony truss bridge with a 124-foot four-span I-beam bridge and two 125-foot thru-plate girder spans.

• **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 bridge comprised of a 125-foot thru-plate girder span and a 26-foot steel beam span.

• **MP 422.9** (Little Goldstream Creek 10 miles north of Nenana) — replace a 62-foot thru-girder bridge with 75-foot single-span deck-plate girder bridge.

• **MP 467.8** (Noyes Slough flood area near the Fairbanks Rail Yard) — replace a 98-foot seven-span timber trestle bridge with a 112-foot four-span concrete ballast deck bridge.

• **MP 467.9** (Noyes Slough at the west end of the Fairbanks Rail Yard) — replace a 335-foot bridge comprised of thru-truss and I-beam spans and timber trestles with proposed 112-foot four-span concrete ballast deck bridge.

• **MP F10.7** (tributary to Portage Creek in Portage Valley) — replace a 70-foot timber bridge along the Whittier Branch with a timber bridge on steel bents.

• **MP F9.4** (tributary to Portage Creek in Portage Valley) — replace the 56-foot timber bridge along the Whittier Branch with a timber bridge on steel bents.

The long timber trestle bridge at MP 25.7 over Lower Trail Lake will be replaced with a bridge comprised of 12 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).