



Healy Canyon Safety and Reliability

PROJECT FACTS

Proposed Project Scope

Healy Canyon lies between Denali Park Station at Milepost (MP) 348 and Healy (MP 358). Tracks follow the Nenana River gorge on a narrow grade. The Alaska Railroad (ARRC) proposes projects to:

- Stabilize the track bed (*ongoing*)
- Control the rock fall problems
- “Daylight” (remove the top) Moody Tunnel at MP 353.6 (*complete*).
- Realign tracks around Garner Tunnel (*complete*).
- Realign the tracks to enhance safety at MP 353.6 (Moody Tunnel) and MP 357 (*complete*).

Benefits

- **Enhanced safety** — Stabilization projects would address rock slide problems associated with steep slopes and erosion-prone soil; track-straightening would decrease the risk of derailment.
- **Enhanced reliability** — Track realignment and improvements would decrease delays, enhancing intercity passenger service.
- **Reduced operational costs** — Maximum train speed is 15 mph. Realignment would increase train speeds, reducing operational costs and lost revenue opportunities due to slow speeds.

Project Summary and Costs

Below is a summary of projects and spending needed to resolve major safety and reliability problems, and improve transit times through Healy.

Project Focus	Estimated Cost
Track realignment.....	\$ 50 million
Track bed and slide stabilization	16 million
Tunnel engineering and upgrades (done)	4 million
Bridge upgrades and replacement	1.5 million
Total.....	\$71 million

While seeking federal funding for these projects, ARRC also pursues a year-by-year stabilization and realignment improvement program in the area.

Project Status & Funding

- The ARRC Engineering Services Department began the engineering in 2002.
- **Slide Zone Stabilization:** In 2002-2004, \$1 million from the Federal Railroad Administration (FRA) spent to stabilize the slopes above Garner Tunnel. Blasting and rock barrier construction helps to control slide zones and protect against falling debris. Slide zone stabilization reduces maintenance and increases safety for trains moving through the area.
- **Garner Tunnel:** In 2005, \$1.9 million in FRA funds spent to realign the track outside of Garner Tunnel, improve drainage to reduce erosion, and seal the tunnel.
- **Moody Tunnel:** In 2006-2008, spent \$4.3 million in Federal Transit Administration (FTA) funds to remove the earthen top (i.e. “daylight”) from Moody Tunnel. Three of four phases were completed in 2007-2008. In 2009, completed Phase 4 (final blasting and material removal to facilitate track realignment). 2009 budget was \$915,000, funded by FTA-backed revenue bonds.
- **Retain/Stabilize MP 354.1 and 355.2:** Procured materials and retaining structures in 2009; completed in 2010. \$1 million funded 75% by the Federal Emergency Management Agency (FEMA) and 25% by Alaska Division of Emergency Services (ADES).
- **Realign MP 357:** Work began in late 2009 and was complete in 2011. \$1.18 million funded 80% FRA; 20% ARRC. \$2.88 million funded 75% FEMA; 25% ADES.
- **Stabilize MP 352.9:** Geotechnical study of stabilization options completed in 2009/10 with \$796,800 funded 80% FRA; 20% ARRC. Stabilization measures (horizontal drains, rip-rap embankment reinforcement, and slope cover) began 2011 and will be complete in 2012.

Recent Accomplishments and Near Future Plans to Improve Healy Canyon Safety and Reliability



1999: A rock slide at Garner Tunnel closed the track for 24 hours. No one was injured.



2005: Track is realigned to bypass Garner Tunnel, which is no longer used.

2005: BYPASS
MOODY TUNNEL



2008: Moody Tunnel is prepped for the demolition step to remove the top from the tunnel.



Crews clear debris after a demolition explosion April 17, 2008. Tunnel daylighting was completed in 2009.

2008/09: DAYLIGHT
MOODY TUNNEL



The track bed retaining wall at MP 354.1 needs to be replaced.



The track retaining wall at MP 354.1 is replaced with a well-engineered improvement.

2009/10: REPLACE
RETAINING WALLS



The retaining wall at MP 357 is deteriorating and the track needs to be realigned away from Nenana River.



The track at MP 357 is moved further away from the Nenana River with a realignment project during 2011.

2009/11: REALIGN
AWAY FROM RIVER