



FREQUENTLY ASKED QUESTIONS: NORTHWEST RAIL TECHNOLOGY – BURLINGTON NORTHERN SANTA FE LETTER

Why did Burlington Northern Santa Fe (BNSF) send a letter to RTD?

The letter, dated July 24, 2007, states the BNSF's position on several issues related to the potential electrification of the Northwest Rail corridor. The letter was generated in response to questions posed by RTD related to the possibility of electrification in the corridor.

What were the major issues covered in the letter?

While the letter covers several areas, the primary issue covered in the letter addresses the height of the catenary (electric wire) that would power electrified commuter rail vehicles. The letter states that if RTD considers using electric power for passenger service on a shared freight track in the corridor, the catenary must have a minimum clearance of 26 feet above the top of rail. This is higher than traditional catenaries, such as those being used for light rail service. BNSF is requesting this variance from standard design to ensure safety clearance for its freight operations and right-of-way maintenance requirements.

What is the impact to the NW Rail project of this requirement?

The biggest impact is on bridge structures crossing over the railroad right-of-way. Traditional non-electrified freight clearance below bridges is 23 feet. Adding a catenary at 26 feet to meet BNSF requirements would require rebuilding several bridges in the corridor. Bridge reconstruction would be required for at least 9 and possibly 10 locations, based on RTD's current information, and some of these locations have more than one structure. This could result in additional costs of \$400-\$550 million, effectively doubling the cost of the project.

Why can't the track just be lowered to meet this requirement?

Lowering the track would also be very costly as any revision to railroad grade would require use of freight standards, resulting in long trenches, potential crossing reconstruction, utility relocations, drainage challenges, and disruption to freight and cross street vehicular traffic during construction. In addition, changing the freight alignment to meet these clearance requirements would introduce a roller coaster effect to the track, an undesirable condition for freight operations that would be highly subject to acceptance by the BNSF.



What were the other major issues covered in the letter?

The BNSF letter also focused on two major additional areas:

- **Future expansion:** BNSF reserves the right to expand to three tracks in the future to accommodate future freight and passenger needs. If that occurs, there is no opportunity to bring tracks closer together than 25' from track centerline to track centerline because of catenary poles. This could result in significant additional right-of-way acquisition in areas where right-of-way is currently narrow, including at many station areas.
- **Maintenance:** Existing BNSF equipment used to maintain track, ties, and ballast cannot be used under a catenary, so BNSF would be required to purchase new equipment just for this corridor, further increasing RTD's cost.

Why can't RTD use a "third rail" electrification system such as that used by the San Francisco, Atlanta, and Washington transit systems?

RTD examined and rejected the potential use of a "third rail" system during the early phases of the US 36 EIS (the predecessor to the Northwest Rail project). A third rail system is often used for extremely high-density, high-capacity transit systems in conjunction with subways. Because it uses a ground-level electrification system, it presents significant safety and liability issues that require complete segregation from pedestrians and roadways. This would include grade separation of all street and pedestrian crossings, resulting in capital costs of \$50-\$100 million per mile.

Why isn't the use of electrified vehicles on the Gold Line affected by the BNSF response?

While the Northwest Rail project has always assumed it would share the existing BNSF freight track and add one more track in most locations, the Gold Line project has always assumed it would use two new tracks separate from freight. The key difference is that freight would operate under catenaries on the NW Rail corridor and would not do so on the Gold Line corridor.

When will RTD make a decision on electrification of the corridor?

RTD and its project team are currently conducting an initial environmental analysis and cost effectiveness study comparing non-electrified and electrified vehicles; that analysis is planned for completion in mid-September. The Northwest Rail Team is planning to provide a recommendation to the RTD Board in October 2007..



Will RTD be implementing “quiet zones” in the corridor?

RTD will examine the noise impacts of the vehicles recommended for the corridor as part of its environmental analysis of the Northwest Rail alignment. Since RTD vehicles in this corridor would be required to use the same operating procedures as freight, current rules call for the use of a warning horn at all crossings. However, if the addition of passenger service in the corridor is determined to be a “severe” noise impact due to, among other things, the use of a warning horn, RTD could recommend mitigation measures that include crossing upgrades that would allow the implementation of quiet zones. Local jurisdictions would have to apply to the Federal Railroad Administration to implement quiet zones and allow trains to no longer use horns at crossings. As part of the Northwest Rail project, RTD intends to work with local jurisdictions to implement a coordinated, streamlined process to implement quiet zones where needed in the corridor as a result of the environmental analysis.