



# How shared use can **pay off**

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In early 2009, the Obama Administration laid the groundwork for state-sponsored DOTs to apply for federal funding to provide new passenger train services. The federal funding was intended to develop new right-of-way, or to augment existing lines for new passenger operations. Building separate infrastructure would be the ideal approach, as this would allow for higher passenger train speeds and service frequencies.

In North America, however, building of new infrastructure faces impediments. While most states have transportation development plans, the hurdles to building new rail lines are enormous—from finding capital and acquiring right-of-way to environmental concerns and winning approval from all stakeholders.

In the near term, new intercity passenger services likely will need to utilize existing freight infrastructure. Such “shared use” systems can be found in Europe, Asia, and Australia. The difference, however, is that in most of the world, governments build and own the infrastructure, putting freight and passenger rail operators on an equal footing. In North America, the private sector owns the freight railroad network. All parties need to consider operating and financial models where passenger operations can successfully coexist on this private network. The public benefits derived from shared-use infrastructure cannot be allowed to diminish the quality of current and proposed private freight services, the availability of scarce line capacity, and continued access to private capital by private entities.

There are workable solutions for bridging the gap between passenger and freight rail needs. Passenger rail entities need to understand what is at risk for freight owners with shared use. Conversely, freight rail operators need to be aware of the potential opportunities shared use could offer—particularly to attract investment, improve capacity, and grow revenues.

North American freight railroads must show shareholders they can demonstrate acceptable risk management practices in order to access investment funds. This is a tall order in an industry that is among the most capital-intensive in North America. With continuing uncertainties around customer demand and

the capital markets, the freight railroads must demonstrate operational and financial stability to maintain and grow their businesses, plus produce profits that exceed their cost of capital.

Prospective passenger authorities seeking access to freight rail networks can exacerbate the challenges that freight railroads face in their business processes across many functional areas:

- **Engineering and financial:** Freight railroads face the same issues as passenger rail authorities when they seek to increase capacity by expanding infrastructure. Network expansion is a time-intensive process, requiring internal cost justification, project planning, materials procurement, construction permitting, environmental approvals, and construction. These projects add to the tremendous capital costs freight railroads already bear, even before expansions are considered. Adding passenger service needs to the capital planning process will translate into additional infrastructure costs. In most cases, passenger trains consume more capacity than an average freight train, due to higher speeds and the need to protect schedules. Existing freight rail infrastructure must be improved to handle the higher speeds of passenger trains. Additional funds must then be found to maintain the infrastructure to this higher standard.
- **Operations:** Most North American freight railroads operate trains according to a schedule to optimize capacity usage, reduce service variability, and meet customer requirements for increasingly tight delivery windows. Scheduled trains depart their origin terminals in slots so that they do not consume the same line capacity at the same time. Non-scheduled bulk and late trains also require flexibility in scheduling. The presence of passenger trains can impede freight’s ability to operate trains in this flexible manner. One passenger train consumes at least two freight-train-equivalent slots; most consume more since train dispatchers are generally instructed to set up the line for a passenger train movement far in advance (illustration, opposite page). As passenger speeds increase relative to freight speeds, the problem of accommodating both will be exacerbated.
- **Legal exposure:** North American freight railroads are highly

safety-conscious, heavily regulated, and carry large insurance policies to cover catastrophic events. They also must self-insure against smaller occurrences such as grade crossing collisions and minor derailments. They mitigate the risks of small incidents by constructing physical barriers between rail lines and the public. The addition of passenger trains, however, significantly increases the number of people on or near railroad infrastructure, and the presence of these trains effectively makes stations and terminals public space. Since freight railroads generally maintain operating, dispatch, and maintenance authority on shared-use infrastructure, all of these factors increase their legal exposure.

The impact of increased passenger service on the North American rail freight network and its private owners would be considerable. There is, however, a range of potential options and strategies for building consensus and optimizing a shared-use network for the benefit of all parties:

- **Planning/modeling:** Passenger authorities must come to the table with realistic passenger operating plans, backed by detailed modeling to understand their true costs and capacity impacts.
- **Line capacity:** Passenger trains should pay for the actual line capacity they consume—not just the number of trains operated but the freight-train-equivalent slots used.
- **Train slotting:** Clear rules must be established for train prioritization, and payment for slotting should mirror actual train operations. If the freight railroad is the infrastructure owner, passenger trains that miss their designated slot should pay for the additional slot consumed.
- **Infrastructure improvements and maintenance costs:** A formula similar to slotting should be established that ensures the freight railroad is adequately compensated for new infrastructure construction and ongoing maintenance requirements.
- **Future infrastructure needs:** Development costs for shared-use routes should be absorbed at a greater level by the passenger authority since improvements may not be required if the route remained freight-only.
- **Separating ROW:** Passenger authorities should seek out the use of separate but parallel right-of-way where the freight infrastructure has available space. This can minimize disruption to freight railroad operations and enable higher passenger train densities and speeds than could be realized on shared-use track.
- **Legal liability:** Since the presence of passenger trains enormously increases insurance liabilities, passenger authorities must bear the liability risks for passenger services.
- **Train safety:** Positive Train Control will be required as an extra safety precaution. Since freight locomotives that would otherwise not employ this technology will require PTC to operate on shared track, a formula to split costs should be considered to offset freight railroad PTC costs.
- **Technology:** Passenger rail authorities can examine technology improvements as a way to address shared-use impacts. For example, electrified operations can speed up passenger train acceleration and deceleration times in commuter districts to reduce their capacity footprint.

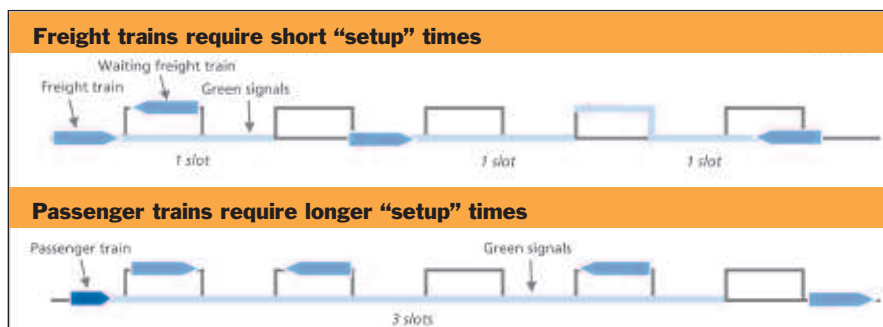
Shared use could offer new opportunities to freight railroads.

At a minimum, freight railroads could generate incremental revenues from operating passenger trains and take advantage of new short-haul market opportunities during off-peak hours (due to improved infrastructure capacity/velocity). But a more fundamental question relates to what “role” would generate the most benefits for freight railroads in a shared-use system.

Since the creation of Amtrak and VIA, the freight railroads have been landlords, providing paths for passenger trains, maintaining negotiated schedules, and receiving payment on a per-mile basis. A new option, however, could be to take on an expanded partner role—working closely with passenger authorities to successfully grow both markets. As a partner, a freight railroad would continue to collect a per-train-mile fee. But it could also benefit from a stronger incentive system for operating trains on time, turning dormant facilities and land into lucrative revenue streams, and providing a variety of incremental services such as equipment maintenance, operation of train equipment, trained railway personnel, etc.

Some Class I's are embarking on this route. Union Pacific, which owns California's Capitol Corridor, has worked with Amtrak and the state to increase density, with a consequent mushrooming of revenues earned by both partners. Revenues are earned not only from train-mile payments, but also from additional compensation for ontime operation of Capitol Corridor trains. Freight railroads that are proactive in managing their interaction with passenger operations will likely be in a better position to attract government investment in infrastructure as well. Railroads can profit better from capturing consistent sources of income that are impervious to traffic downturns and that can be delivered reliably on existing or expanded infrastructure.

In the UP/Amtrak example, investments in infrastructure



improvements have paid off dramatically for both parties. In FY2008, the Capitol Corridor achieved better ontime performance than the *Acela Express* service in the Northeast Corridor. A strict maintenance program utilizes a team of dedicated employees that provide round-the-clock coverage so that trains can operate at maximum authorized speeds, ensuring schedule adherence. The corridor has few infrastructure-related failures and sustains intense freight demand.

As a result of such partnerships, shared use of infrastructure will likely become more common in North America, with freight railroads continuing to own the majority of the network. Progressive models for how that infrastructure is utilized could evolve from being merely acceptable to being more lucrative for freight railroads, as well as providing a new source for critical third-party investment in rail capacity.