3.2.3 MIXED PASSENGER AND FREIGHT OPERATION

3.2.3.1 Infrastructure

When planning for mixed use on a corridor, consideration should be given to the design of railroad infrastructure in order to accommodate the needs of both the freight and passenger operations utilizing the corridor.

3.2.3.1.1 Sole to Mixed-Use Considerations

Track and other right-of-way (ROW) design considerations for mixed use passenger and freight lines will be driven in most cases by corridor ownership and must be designed and maintained to support and achieve the operational goals of both passenger and freight. Typically, corridors are owned by railroads, states, DOTs and/or other authorities. The owner of the corridor usually dictates the types of design elements that are required along with the materials to be used and the frequency and maintenance standards to be followed. When converting an existing ROW from a sole use to mixed-use, some factors should be taken into consideration:

- Freight-to-Mixed: If a freight operator owns the corridor and operates most of the trains, the infrastructure will possess characteristics that primarily support the overall operational goals of the freight railroad(s). In such a case, passenger train considerations such as speeds and schedules are secondary but should be considered, especially in terms of safety requirements.
- Passenger-to-Mixed: If a passenger operator owns the corridor and operates most of the trains, the infrastructure will reflect and can be optimized to primarily support the frequency, velocity, ride quality, and on time performance associated with passenger operations. In such a case, freight train considerations are secondary but should be considered, especially in terms of safety requirements.

3.2.3.1.2 Freight Ownership

In the case of freight ownership, there may be opportunity to make improvements to the owner's infrastructure in support of the passenger operation, provided that the passenger operator can provide funding and demonstrate that any changes to the infrastructure will support both the freight and passenger operation.

Examples of infrastructure improvements to accommodate passenger trains on freight railroads include new sidings, platforms, and signal system adjustments. Additionally, any changes to track structure must include lengthening spirals to accommodate operation at increased cant deficiency, maximum authorized speeds, and clearances. Infrastructure changes can also be required by passenger operations to address ride quality, velocity, frequency, and on time performance of the passenger trains.

3.2.3.1.3 Passenger Ownership

In the case of passenger ownership, it is important to consider design factors such as cant deficiency, L/V ratios, clearances and rail wear, particularly on curves. Freight trains may not be able to safely traverse tracks that are designed exclusively for passenger trains and therefore, the track geometry, clearances, and signal system should be reviewed to determine if any changes need to be made to the infrastructure in order to accommodate freight trains.

Additionally, large tonnage associated with freight use can impose wear on track infrastructure that would not otherwise occur on an exclusive passenger right-of-way. Consideration should be given to the increased maintenance costs associated with freight traffic, such as curve worn rail, accelerated degradation of ties and rail under tonnage, and excess elevation in curves.

3.2.3.1.4 Maintenance

Passenger service that operates at Class 5 or below would not require increased frequency of maintenance and inspection. Although not required by FRA Part 213 Subparts A-F, consideration should be given to maintaining acceptable ride quality. This may require additional maintenance, particularly in curves and through switches.

Railroads operating passenger service at Class 6-9 typically require higher inspection and maintenance frequencies than freight railroads. See Chapter 17 for further information on maintaining high speed tracks.

3.2.3.2 Operations

The 2016 Transportation Research Board's National Cooperative Rail Research Program (NCRRP) Report 6: Guidebook for Intercity Passenger Rail Service and Development provides best practices for intercity passenger rail.

On corridors where a freight railroad is the owner, the passenger operator will typically have to configure its service plan to fit within existing freight train operations. On corridors where a passenger railroad is the owner, the freight operator will typically have to configure its service plan to fit within existing passenger train operations. In both scenarios, collaboration between the freight and passenger operators is recommended in order to optimize the scheduling needs of both train types. In either case, the host railroad typically is responsible for dispatching.

3.2.3.3 Cost Sharing

Regardless of ownership, in mixed freight and passenger corridors, there must be an agreement developed by both the freight and passenger operator to share basic maintenance, programmed maintenance, and capital costs. A way to share the maintenance and capital costs could be based on tonnage, velocity, and numbers of train movements. The sharing of these costs may vary by asset type.

There is no one general rule that fits all situations. For example, the cost for rail, ties, ballast and surfacing may be based on the tonnage of the freight trains versus that of the passenger trains since ton miles is the predominate factor in the wear and tear of this type of asset. However, the need to operate the passenger train at a higher velocity may affect the minimum numbers of good ties required, the condition of rail and rail appliances, and the desired ride quality to be achieved. Therefore, the split of costs in a joint use corridor can be complicated and are most often developed on a case by case basis.

In another example, assets that control the movement of trains such as the dispatcher requirements and the signal system, train movements might be used since the weight of a train generally doesn't govern the maintenance of the signal system. A single passenger train would count the same as a single freight train regardless of weight and length. However, the addition/frequency of passenger trains may reduce the number of available work windows on a line segment and indirectly affect the timing and cost of inspection, maintenance, programmed maintenance, and capital improvements.