

GENERAL PRINCIPLES GUIDING
NORFOLK SOUTHERN'S EVALUATION OF
PASSENGER STATION PROPOSALS

The following principles are a guide for planners of passenger station proposals when working with Norfolk Southern. Of course, each proposal necessarily is unique, and NS' application of the principles to particular proposals will often be context-specific as well. These principles should be read together with the latest General Principles Guiding NS's Evaluation of Intercity and Commuter Passenger Rail Proposals, when relevant. Early discussions with NS concerning any Passenger Station Proposal is highly recommended.

I. Important General Considerations.

- A. Safety is our paramount concern. Design, maintenance practices, and operating patterns will always emphasize safety.
- When NS refers to safety in the context of proposed passenger projects, we refer to the safety of all touched by the proposal.
 - We refer to the residents of the communities through which we operate.
 - We refer to the safety of the passengers who will use the proposed passenger project, as well as invitees and others who will be visiting the rail corridor to pick up, drop off, or provide services to passengers.
 - And we refer to the safety of railroad employees – those who operate trains and maintain our right of way.
 - Ultimately, the safety of passengers, invitees, and even trespassers, will be the responsibility of the passenger rail operator and the station owner, and safety must be their paramount concern as well.
- B. Existing stations should not be considered to be precedent for station standards.
- Planners should not consider a particular feature or standard acceptable just because that feature or standard appears at an existing station.
 - A great deal of regulatory, corporate, operations, technical, equipment and best practice history has gone into creating the current rail infrastructure, and what might have applied in the past may no longer be relevant.

C. Modifications to existing stations should be guided by these principles.

- Any substantial modification or rehabilitation of an existing passenger station should be guided by these principles, at least to the extent of the modification.
- Consultation with NS is necessary to determine whether efforts at compliance beyond the planned modification or rehabilitation are advisable in any particular proposal.

D. All potential impacts of a proposal must be evaluated as part of the planning process.

- As described in the General Principles Guiding Norfolk Southern's Evaluation of Intercity and Commuter Passenger Rail Proposals, any proposed or modified passenger operation must achieve "transparency" in the affected rail system. Transparency is the capacity for passenger trains and freight trains to operate without delay, however minimal, to each other, while still allowing for route maintenance.
- As applied to any modification of an existing station that would potentially affect rail operations, any proposed modification or rehabilitation must be evaluated by NS to determine that no operating restrictions of any kind are being introduced and that there will be the same level of system fluidity following the project as before the project, if not more.
 - For example, if a passenger station proposal is to convert an existing low-level platform station to a high-level platform station, some combination of newly constructed additional track(s) and relocation of existing track(s) would be necessary to provide required clearances for freight operations.
 - If a passenger station proposal is to create a new parking facility at an existing station, a full review of passenger safety infrastructure would be necessary.
- As applied to the introduction of a new station, a proposed project must be evaluated assuming full utilization of the proposed station – not only in terms of proposed passenger service that is currently covered by the immediate proposal but also other passenger service that could reasonably be foreseeable as utilizing the proposed new station.
- NS will coordinate the operational feasibility study. The cost of the study (including NS' time) is the responsibility of the sponsoring public agency. For

planning purposes, NS can estimate study costs in advance. Studies are detailed and specific and take a year, and often longer, to complete.

II. Separate Dedicated Passenger Station Tracks.

A. Separate dedicated passenger station tracks will be required whenever a planned station dwell is other than brief.

- Whenever a station is to be the site for maintenance, layover, crew change, equipment change, refueling, or extended boarding and debarking activities, that station's platform track(s) and ancillary track(s) must be separate, dedicated passenger station track(s) in order to release the mainline for through operations.
- Accommodating these station related track(s), while preserving future locations for railroad facilities (e.g., track alignment(s), signal and communications installations) for freight operations, can be costly. Any necessary property purchase would be the responsibility of the project sponsor.

B. Separate, dedicated, passenger station tracks will be required whenever there is a high-level platform or other clearance obstruction involved that does not comply with NS's standard clearance requirements.

- Separate, dedicated, passenger station tracks should be double ended, connecting with the main line track on each end with dispatcher controlled, power turnouts. The turnout should be sufficient to provide reasonable passenger ride quality and reduced maintenance – in railroad terms not less than a “No. 15 turnout”.

III. High-Level vs Low-Level Platforms.

A. High-level platforms are acceptable on separate dedicated passenger station tracks only.

- Because high-level platforms preclude the movement of extra-dimensional shipments and greatly restrict the movement of standard shipments, high-level platforms are reserved for locations with separate dedicated station tracks. Design of station tracks must preserve the ability of NS to expand its own freight railroad facilities and operations, including modifications and additions to the existing track corridor and signal and communications installations.
- Extra attention should be paid to safeguards at locations with high-level platforms to ensure the safety of passengers, railway workers and trespassers who (intentionally or not) happen to be located on the ground and in the

“well” between two high-level platforms or between a high-level platform and any fencing or other barrier.

- High level platforms must provide a horizontal clearance of at least 5 feet – 7 inches measured from the centerline of the nearest track to the edge of platform, and have an elevation not higher than 4 feet – 0 inches above the top of the rail.
- High-level platforms should be designed to be located completely along tangent track. Construction of a high-level platform along a curve is highly discouraged.
 - If a high-level platform cannot be constructed along tangent track, then adjacent curves may not be sharper than 1 degree 40 minutes.
 - Constructing a high-level platform along a curve introduces the need to modify the horizontal clearance to correct for the introduced curvature.
 - Constructing a high-level platform along a curve further introduces modifications to the gap that will exist between passenger rail cars and the high-level platform. The project sponsor must take into consideration any resulting modifications to the gap anticipated by the construction of a high-level platform along a curve.
 - Clearance information must be submitted to NS for review.

B. Low-level platforms are required where the passenger station platform is on shared freight/passenger trackage.

- Low-level platforms must provide a horizontal clearance of at least 5 feet - 4 inches measured from the centerline of the nearest track to the edge of platform, and rise to a level no higher than 8 inches above the top of the rail.
- Low-level platforms must not be located on or within 90 feet of a curve.

C. Mini-high-level platforms are discouraged.

- If permitted, mini-high-level platforms must be constructed with the platform edge no closer than 8 feet - 6 inches from the centerline of the nearest freight track.
- Passenger car vestibule/platform edge gap reduction methods may not result in clearance less than the 8 feet - 6 inches requirement.

IV. Station Track Separation.

- Station track vicinities must be designed to permit maintenance of the freight tracks either: (1) by separation from the nearest freight track by a minimum of 26 feet measured between the track centerlines of the freight and nearest station track with the separation being minimally held between the measured ends of the nearest platform, or (2) accommodating additional track or right of way separation to permit maintenance on the side away from the affected station track(s).
- Station tracks must be separated from the nearest freight track by a barrier fence installed not closer than 15 feet from the centerline of the nearest freight track and being not less than 6 feet in height. For potential maintenance purposes, barrier fence will consist of sections, including the above ground posts, which can be temporarily removed and restored by hand without further disassembly, damage or the need for machine assistance.

V. Pedestrian and Rubber Wheeled Vehicle Safety.

A. Particular attention should be focused on ensuring the safety of all pedestrians in the greater passenger station area.

- Passenger stations must be designed to ensure the safety of persons on foot whether those people are following established entry/exit routes, trespassing in order to reach the station or parking facilities, or attempting to exit the area in the event of an emergency.
- Passenger station facilities must be designed to create easy and safe established entry/exit routes to facilitate compliance with those routes.
 - Overhead bridges or under grade tunnels are required for any station parking facilities located across the tracks from the station platform.
 - Emergency exit routes should be developed to facilitate the movement of passengers from the platform area in the event of an emergency that precludes the use of established entry/exit routes.
- Passenger station facilities should be designed and located to discourage trespassing and unauthorized entry/exit routes.
 - Fencing will be required to discourage efforts to enter or exit the platform, or to move from one platform to another, over active rail lines.

- Passenger stations must be located away from highway-rail grade crossing locations so as to discourage the use of the roadway as a means for pedestrians crossing the tracks.
- Split platforms (platforms bisected by an active roadway) are not permitted.

VI. Single vs Dual Track Access; Center Island vs Outside Platforms.

- A. Stations located along a double-track segment should have platforms adjacent to each outside main line.
- Any station located along a single-track segment must be designed in such a way as to easily be converted to a double-track configuration in the event that a second track is constructed. All costs associated with a single-track to double track conversion will be the responsibility of the station owner.
- B. A center island platform may be permitted only in the event that outside platforms prove unworkable.
- A center island platform should be low-level and provide emergency, alternate, footpath exit routes which do not cross any track at grade but lead to safe zones when grade separated routes are not feasible.
 - Platforms must have controlled access to prevent passengers from accessing the platform prior to the arrival of a passenger train.
 - Gauntlet tracks are not permitted.
 - Passenger access to a center island platform must be by undertrack tunnel or overhead walkway bridge.

VII. Canopies and other features.

- A. Canopies are permitted subject to design, clearance and maintenance considerations.
- Only gutter-less canopies are permitted.
 - Gutter-less canopies must slope away from the tracks to focus rain runoff away from the rail right of way.
 - The side clearance for gutter-less canopies must be at least 9 feet on tangent track.

- The side clearance for gutter-less canopies must be increased 1 and 1/2 inch per degree of curvature in curved track.
 - In addition, the side clearance for gutter-less canopies must be increased 4 and 1/2 inch per inch of super elevation, measured at a height of 16 feet - 2 inches above top of rail, where the cars lean into the canopy.
 - If the project sponsor desires for the canopy to extend over the track, it must provide at least 23 feet of vertical clearance measured from the top of rail or the top of the high rail (if track is super-elevated).
- B. Any railing or other feature that occupies the space above the top of the platform surface must meet the same clearance requirements of this section.

VIII. Future Modifications to Stations and Discontinuance of Use.

- A. Should regulatory mandates require modifications to stations, the station owner will incur all modification costs.
- Such modification must be performed in a manner that does not adversely affect safety, freight operations, freight capacity, and maintenance of the track and station infrastructure.
- B. If the use of a station facility is or is expected to be discontinued for a period exceeding three (3) years, the platform and other features affecting drainage and impeding track maintenance must be removed and any modified track geometry restored to the satisfaction of NS.
- a. Such modifications shall be performed at no cost to NS.

IX. Costs Associated with Passenger Station Projects.

- A. All costs associated with the study, implementation and maintenance of a passenger station project will be covered by parties other than NS.
- The cost of a passenger station project includes fair compensation for use of NS's transportation corridors.
 - NS's transportation corridors consist of track and right-of-way that might, or might not, be fully utilized at any given time. As rail traffic flows change over time, this capacity, and the flexibility and potential it represents, is a key NS asset.

- In determining a fair price for use of assets, NS will factor in any new equipment (including Positive Train Control) and costs, as well as additional property and other taxes that would not be incurred absent passenger service project.
- It is possible that public funding may be taxable to NS. Any public funding provided in support of a passenger station project must be grossed up to offset identified tax liabilities incurred by NS.

B. New and expanded passenger projects require adequate liability protection.

- Passenger station operators must indemnify NS for additional risk created by the passenger station projects, and any such indemnification needs to be backed up by an adequate level of insurance. This includes coverage for risks that may not be covered by the current passenger rail operator, if any.
- Liability issues can create major hurdles. Often, sovereign immunity issues must be overcome. The cost to the passenger carrier for insurance and indemnification is substantial, as borne out by our experience with commuter authorities.

C. Any new or substantially modified passenger station or related facility must be owned by parties other than NS.

- The project sponsor or another party must be designated for ownership and ongoing responsibility of any new or substantially modified facilities.

Additional Station Planning Guidelines.

There are several aspects of the station planning process that NS will be subject to regulations or guidelines set forth by others. Those should be consulted.

NS cannot provide regulatory compliance advice, but does recommend that planners consult and comply with applicable regulations imposed by the Federal Transit Administration and the Federal Railroad Administration.

Also, in its Station Program and Planning Guide, Amtrak sets forth guidelines on platform length, width and live loading. Passenger station planners should refer to these guidelines in designing the proposed station, keeping in mind and accommodating the principles set forth by NS. The Amtrak Station Program and Planning Guide is available at: <http://www.greatamericanstations.com/planning-development/station-planning-guidelines>.