13. Glossary

13. Glossary

Table 13-1 lists terminology and usage that is specific to NEC FUTURE or that is general in nature In addition, the table includes information describing the NEC FUTURE Study Area and its many variations.

Table 13-1: Frequently Used Terminology

Term	Comments
Action Alternatives	Refers to the alternatives that recommend new changes to the passenger railroad system and are compared to the No Action Alternative.
Affected Environment	The Affected Environment is defined as a swath centered on the Representative Route. The width of the Affected Environment swath varies based on the resource; it is at least 2,000 feet wide. In some cases, the Affected Environment encompasses the entire Study Area. The Affected Environment is the area in which existing conditions and Environmental Consequences are identified for each of the Action Alternatives.
Alternatives (Initial, Preliminary, Reasonable)	See brief descriptions for each of these types of alternatives.
area of potential effects (APE)	Term specific to compliance with Section 106 of the National Historic Preservation Act (54 USC § 306101 et seq.) and implementing regulations (36 CFR Part 800.16(d)), "Area of potential effects means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking."
at grade	Railroad tracks or roads and railroad tracks can cross at ground level. When a train crosses another set of tracks at grade, it momentarily blocks other trains from using those tracks. Conversely, an underpass, tunnel, or flyover allows a train to cross other tracks without passing through them, thereby ensuring free flow of traffic on both sets of tracks. At-grade construction is used where the topography is flat and where existing highway and roadway rights-of-way are grade separated on aerial structures above the tracks.
ballast	Ballast is the layer of foundation beneath railroad tracks that is composed of crushed stone. Ballast prevents the tracks from shifting under train traffic and allows the track surface to drain properly.

Table 13-1: Frequently Used Terminology (continued)

Term	Comments
base year	Base-year conditions (often referred to as "existing conditions") are presented in each of the resource areas analyzed in this Tier 1 Draft EIS. Base year is the current year for analysis purposes and to the extent possible, is standardized across resource areas based on availability of data. Some resource areas present the latest population and employment data, performance measures (travel time, capacity, frequency, etc.), and ridership numbers, with these then compared against projected values in the 2040 horizon year under the No Action and Action Alternatives. Similar base-year descriptions of conditions within the defined Affected Environment are provided for each of the environmental impact categories (e.g., Land Use, Hydrologic/Water Resources, Cultural Resources and Historic Properties) to set the stage for assessment of potential impacts under each alternative in the horizon year analyses.
Basic Infrastructure (investment category)	The routine capital investments that must be made each year to keep the Northeast Corridor's structures and systems functioning properly and in a state of good repair for safe train operations. The category includes renewal or replacement of rails, ties, ballast, communication systems, electric traction power systems, under-grade bridges, and other similar items. Basic Infrastructure investments may perform normalized replacement and eliminate the Basic Infrastructure backlog.
capacity	The number of trains (and/or riders) that can pass through an area in a certain period of time (e.g., trains per hour), depending on the quantity and configuration of tracks. A section of rail is said to be "at capacity" when it can accommodate no additional trains during busy hours. For example, both of the single-track tunnels below the Hudson River carry their maximum of 24 trains per hour during peak travel times.
catenary	Electrical wires suspended above railroad tracks from which passing trains draw power using a mechanical arm called a pantograph mounted on top of a train.
CEQ Pilot Program	See "Early Engagement with Resource Agencies."
commuter rail service	As defined by the Code of Federal Regulations, "short-haul rail passenger transportation in metropolitan and suburban areas usually having reduced fare, multiple ride, and commuter tickets and morning and evening peak period operations" (*49 U.S.C. 24102(3)*). In the context of NEC FUTURE, this term refers to existing service. For all Action Alternatives, "Regional rail" refers to service within a metropolitan area.
connecting corridor	Passenger rail corridor that connects directly to another rail corridor (in this instance, the NEC) via a station transfer or through-train service. See "Northeast Corridor connecting corridor" and "Study Area connecting corridor" for variations on this term.

Table 13-1: Frequently Used Terminology (continued)

Term	Comments
Context Area	The Context Area is a 5-mile-wide swath centered on a Representative Route and surrounds the Affected Environment. The purpose of the Context Area is to provide a qualitative assessment of resource-specific potential indirect effects or the direct effects should the footprints of the Representative Routes shift during future stages of planning.
conventional rail	Intercity trains that travel at speeds of 125 mph or slower. Though definitions of conventional and high-speed rail vary, for the purposes of this Tier 1 Draft EIS, all non-Acela Express Amtrak trains that operate on the NEC (i.e., Northeast Regional, Keystone, etc.) are referred to as conventional rail.
core market area	See also "market area." The core travel market area addresses all travel within the NEC Spine service area, from the Greater Washington, D.C., area to the Greater Boston, MD, area and all points in between, including the New York City metropolitan area. North of New York City, the core market area includes the NEC Spine "shore line" via Providence, RI, and the so-called "Inland Route" via Springfield, MA. This market-based definition extends beyond the cities of Washington, D.C., and Boston, MA, where the NEC Spine rail service terminates at Washington Union Station and Boston South Station, respectively, to include Northern Virginia and Southeastern New Hampshire, which are also part of the greater metropolitan areas and within the catchment area of the NEC services and stations.
culverts	Small structures beneath the railroad that allow for proper drainage and prevent pools of water from degrading the quality of the track.
cumulative impact	This term is used in documentation pertaining to the Tier 1 EIS. "Cumulative impact" is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.
curve modification (infrastructure element)	A shift or straightening of existing NEC track alignments to improve speeds, including straightening a curve or eliminating the curve entirely. Curve modifications address the compromised performance of the existing NEC by reducing, or eliminating speed restrictions at certain locations along the NEC.
data collection geography	The geographic area for which data were collected as part of the NEC FUTURE data collection effort. Generally, the FRA collected data for the entirety of Washington, D.C., Maryland, Delaware, Pennsylvania, New Jersey, New York, Connecticut, Rhode Island, and Massachusetts. The standard for referencing this geography is to orient from south to north.

Table 13-1: Frequently Used Terminology (continued)

Term	Comments
Data Viewer	The GIS-based tool developed for NEC FUTURE. The Data Viewer provides a standardized base map for viewing data across the entire Study Area in layers created for each resource. The Data Viewer includes reference data for all sources incorporated in its database.
direct effects	This term is used in documentation pertaining to the Tier 1 EIS. Direct effects are caused by the action and occur at the same time and place.
Early Engagement with Resource and Regulatory Agencies	This term describes the engagement activities that the FRA has undertaken with federal and state resource and regulatory agencies to develop a shared understanding of NEC FUTURE and the agencies' needs and concerns. This effort was specifically initiated under the CEQ Pilot Program during Phase 1 (*http://www.necfuture.com/environmental/ceq.aspx*).
Empire Corridor	The existing rail corridor connecting Penn Station New York in New York City, NY, and Buffalo, NY. The corridor is owned by Amtrak, CSX Transportation, Inc., and the Metropolitan Transportation Authority's Metro-North Railroad. Amtrak provides Empire and Maple Leaf service for the entire length of the corridor, and the Metro-North Railroad Hudson Line provides Regional rail service from Poughkeepsie, NY, to New York City. Only the segment from New York City to Albany (Rensselaer Station), NY, is included within the NEC FUTURE Study Area.
existing conditions	Existing conditions is defined as the current condition of a resource.
extended market area	See also "market area." The extended travel market area addresses all travel between the NEC Spine service area and areas served by the connecting and/or extended through services that operate off of the spine to/from Norfolk/Newport News, VA; Lynchburg, VA; Harrisburg, PA; Albany, NY; Brunswick, ME and other nearby places. Travel entirely within these off-spine areas, however, is not addressed. For example, while travel between Richmond, VA, and New York City is addressed by the study, travel between Richmond and Fredericksburg, VA, is not.

Table 13-1: Frequently Used Terminology (continued)

Term	Comments
external market area	See also "market area." The external travel market area includes longer-distance corridor service and long-distance intercity trains that travel to/from NEC markets and thus use existing and future operating slots along the NEC Spine. This includes existing and proposed corridor services to/from Buffalo, NY, Pittsburgh, PA, North Carolina, and Montreal. Thus while the Study Area does not include the full service area of these longer-distance corridor services, their current and future service levels will be incorporated into the service planning and demand analysis. This external market area also includes markets that are not served by rail but may be in the future under one or more preliminary alternative (e.g., Scranton-Wilkes-Barre, PA).
flyover	A form of bridge that carries one or more tracks up and over another set of tracks. Flyovers enable trains to cross over a set of tracks without interfering with the movement of trains below.
footprint	The footprint is the horizontal and vertical limits of disturbance for which direct impacts could occur. A footprint is defined for each Representative Route. Generally, the horizontal footprint for the alternatives are 150–300 feet wide, including rights-of-way. The vertical dimensions of the footprint are yet to be defined.
freight rail	Freight operation constitutes the movement of goods and cargo in purpose-built freight rolling stock (e.g., boxcars, flatcars), which are typically, but not necessarily, hauled by diesel-powered locomotives.
grade-separated	Railroad tracks or roads and railroad tracks that cross without intersecting. Underpasses, flyovers, bridges, or tunnels allow all traffic to move freely, without conflict.
Greenfields	Potential site for development—currently undeveloped or used as agricultural land—that lacks any existing structures.
high-performance trainset/equipment/rolling stock	New state-of-the-art train equipment consisting of electric multiple units (EMU) cars with high rates of acceleration and deceleration and capable of operating at speeds of 150 mph or greater.
high-speed rail (HSR)	The definition of high-speed rail varies depending on context and purpose. For NEC FUTURE, high-speed rail consists of service provided by Intercity-Express operating at a range of speeds from 150 to 220 mph.

Table 13-1: Frequently Used Terminology (continued)

Term	Comments
horizon year	Refers to the future timeframe within which environmental consequences associated with the construction and operation of the Reasonable Alternatives will be assessed. The horizon year is used to forecast future population and employment growth as well as travel demand for Reasonable Alternatives. The horizon year is used for planning and analysis purposes to forecast conditions and as such has some degree of uncertainty.
Improvements (investment category)	Projects that introduce new assets above and beyond existing NEC infrastructure, facilities, and equipment in order to improve reliability, increase capacity, reduce travel time, and/or improve the customer experience.
Indian (tribe)	Only used when referring to Section 106 government-to-government consultations with "federally recognized Indian tribes." Indian can be used to describe the parties with whom the FRA is engaged in government-to-government consultation. For all other references outside the Section 106 consultation, Native American is the term used.
indirect effects	Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.
Infrastructure elements	See curve modification, junctions, new segment, new track, stations and station areas, and storage and maintenance facilities.
Initial Alternatives	Those alternatives developed early in NEC FUTURE to include all potential alternative concepts developed by the FRA or collected in the public scoping process with the potential to meet the program's Purpose and Need. The FRA further organized and consolidated the Initial Alternatives to create the Preliminary Alternatives.
Inland Route	The existing rail corridor connecting New Haven Union Station and Boston South Station via Hartford, CT, and Springfield, MA. The route is owned by Amtrak between New Haven and Springfield, CT, by CSX Transportation between Springfield and Worcester, MA, and by Massachusetts between Worcester and Boston, MA. *Note*: Unlike other corridors in this list, this is not an Amtrak-named corridor like Empire, Keystone, etc. Instead, this is a term used in other studies and plans and referred to in various NEC FUTURE documents.

Table 13-1: Frequently Used Terminology (continued)

Term	Comments
Intercity (rail service) (also Intercity-Express, Intercity-Corridor, and Intercity-Corridor-Other)	As defined by the Code of Federal Regulations (C.F.R.), "intercity rail passenger transportation means rail passenger transportation, except commuter rail passenger transportation." As used more specifically in NEC FUTURE, Intercity rail refers to passenger rail service that provides transportation between cities or metropolitan areas at speeds and distances greater than that of commuter or Regional rail.
Intercity-Corridor (rail service)	The regular or conventional Intercity trains that operate *both* on the NEC and on connecting corridors that reach markets beyond the NEC on non-electrified lines owned by freight railroads. These trains provide connectivity and direct one-seat service to large and mid-size markets on the NEC. Intercity-Corridor also includes long-distance service, such as the existing Amtrak services to Florida, New Orleans, LA, Chicago, IL, and Canada. These services are assumed to operate on the NEC outside of the travel peaks and therefore run in the slots provided for Intercity Corridor trains.
Intercity-Express (rail service)	The premium Intercity high-speed rail service offered on the NEC, making limited stops along the NEC serving the largest markets only. Amtrak's Acela Express provides such service on the NEC between Washington, D.C., and Boston. Intercity-Express service offers the shortest travel times for intercity trips, with a higher quality of onboard amenities, at a premium price, using state-of-the-art high-speed trainsets.
Intercity-Corridor-Other	Intercity-Corridor service that provides connectivity and direct one-seat service between non-electrified connecting corridors and the large and mid-size markets on the NEC (as opposed to Metropolitan service that can operate only in electrified territory).
interlocking	A place on a railroad where one or more tracks converge, diverge, or cross, controlled by signals to prevent conflicting movements of trains. An interlocking may be where a connecting line joins a main line, where a railroad adds to or subtracts from its number of main line tracks, or simply where a railroad enables trains to switch between tracks.
Interregional Model	A new ridership model, developed for NEC FUTURE (primarily from a household survey conducted by the FRA) that addresses travel between metropolitan market areas in the NEC.
investment category	See Basic Infrastructure, Improvements, Major Backlog Project, and Mandates

Table 13-1: Frequently Used Terminology (continued)

Term	Comments
junctions (infrastructure element)	Junctions include construction of major track connections or interlockings at points where tracks converge or diverge allowing trains to switch from one set of tracks to another. Junctions are identified at every point where a new route segment connects with the existing NEC, and at locations where grade-separated track connections provide relief to existing chokepoints. This category also includes the additional railroad infrastructure to provide station sidings at new or upgraded stations where stopping trains need to use platform tracks separate from the through tracks used by non-stopping high-speed trains. The footprint for these junctions or major connections can extend beyond the rights-of-way to accommodate grade-separated, conflict-free movement between tracks or between the NEC and connecting corridors, Regional rail branch lines, and storage yards.
Keystone Corridor	The existing rail corridor connecting Philadelphia and Pittsburgh, PA. The tracks from Pittsburgh to Harrisburg, PA, are owned by Norfolk Southern, and the tracks between Harrisburg and Philadelphia are owned by Amtrak. Amtrak runs two Intercity services – the Keystone from Harrisburg to New York City, and the Pennsylvania from Pittsburgh to New York City. The Keystone Corridor joins the NEC at Zoo Interlocking near the Philadelphia Zoo and Philadelphia 30th Street Station, PA.
level-of-service; LOS	A qualitative measure describing operational road (traffic) conditions and the perception of motorists of the existing conditions. Six levels of service are defined for each type of facility, ranging from A to F, with LOS A representing the best operating conditions and LOS F the worst.
Limited Express	A rail service pattern where trains make stops in all primary markets and most (if not all) secondary markets.
Long-Distance (rail service)	Intercity service connecting the Study Are with other parts of the United States, farther than 750 miles away, often including sleeping and dining car service (e.g., to Florida, New Orleans, LA, Chicago, IL)
maglev (magnetic levitation)	A transportation system requiring a dedicated exclusive right-of-way and using technology that levitates vehicles along a fixed guideway.

Table 13-1: Frequently Used Terminology (continued)

Term	Comments
market area	Market area refers to the geographic areas included in the ridership and revenue analyses. The market area is more broadly defined than the Study Area to include areas beyond the geography of the Study Area metropolitan statistical areas. The market area provides for the consideration of areas outside the geography of the Study Area where potential trips and new services might contribute to the overall demand and needs for service within the Study Area. Descriptions of multiple elements of the market area in a series (such as states, stations, cities, etc.) start from (1) south and proceed north and (2) west and proceed east. There are three geographic areas that comprise the totality of the market area: the core market area, the extended market area, and the external market area. See definitions for each term, which address the geography and the type of ridership analysis that applies to the specific market area. Study Area and market area are used interchangeably. See "Study Area" to distinguish.
Metropolitan (rail service)	Limited-stop, run-through service for longer-distance trips between broad metropolitan areas or trips connecting secondary markets. A new service concept that upgrades the level of Intercity-Corridor rail service provided on the NEC, offers frequent service (2–4 trains per hour) to large and mid-size markets and key transfer locations, and stops at more stations than current Intercity service.
milepost	A convention used by railroads and others to define specific locations or sections along the NEC.
major backlog project (investment category)	These are projects that are necessary for achieving a state of good repair (e.g., rehabilitation or replacement of major bridges and tunnels) but are not undertaken on a routine basis. These projects may include improvement elements where in-kind replacement is impossible or undesirable. When replacing a major structure, it makes sense to scope all contemplated work into a single project to save both time and money.
mandates (investment category)	Capital projects required by law or regulation or to protect public health. These include environmental remediation, right-of-way fencing, infrastructure and station resiliency and security systems, Positive Train Control (PTC), and station access improvements.
movable bridge	A bridge that carries railroad tracks over a body of water that is required to open for boat traffic to pass. A movable bridge may be a "swing bridge," where a segment swivels 90 degrees to create an opening, or a "bascule bridge," where a span tilts up to allow passage.

Table 13-1: Frequently Used Terminology (continued)

Term	Comments
Native American, Native American tribe	Appropriate reference to federally recognized Indian tribes when reference is outside the Section 106 Government-to-Government consultation framework. See "Indian (tribe)."
NEC FUTURE	The NEC FUTURE program is led by the FRA and involves the preparation of a Passenger Rail Corridor Investment Plan (PRCIP) for the NEC, including, in this case, the following two elements: (a) a Service Development Plan; and (b) a Tier 1 Environmental Impact Statement.
NEC FUTURE team	Includes all project team members from the Federal Railroad Administration (FRA), other agencies of the U.S. Department of Transportation (U.S. DOT), and the Parsons Brinckerhoff / AECOM Joint Venture.
NEC Spine (or NEC)	The transportation rail spine of the Study Area, anchored by Washington Union Station in the south, Penn Station New York in the center, and Boston South Station in the north, that is served by Intercity-Express trains. NEC Spine or NEC references do not include connecting corridors. (See connecting corridor definition.)
New Haven-Hartford-Springfield Corridor	Rail corridor connecting New Haven, CT; Hartford, CT; and Springfield, MA. The corridor continues to Essex Junction, VT, in the north and intersects with the Inland Corridor to Boston, MA, and Albany, NY.
new segment (infrastructure element)	New track construction on new right-of-way that does not follow the existing NEC. New segments diverge from and reconnect to the existing NEC, which expand the capacity of the railroad and/or relieve chokepoints
New Starts program	The New Starts and Small Starts programs are the Federal Transit Administration's primary mechanism for financially supporting local transit "guideway" capital investments.
new track (infrastructure element)	Improvements that increase capacity or improve trip times, generally contained within the right-of-way of the existing NEC; typical upgrade projects include: ■ Signal system upgrade ■ Catenary and electrification system upgrade ■ One or two new tracks constructed within existing right-of-way -- includes new track as well as all associated construction to enable new tracks to be utilized, including new or modified catenary, signaling, interlockings and civil and structural work
NextGen	Shortened version of "Next Generation," which refers to Amtrak's proposed 220-mph NEC service operating on a new dedicated right-of-way.
No Action Alternative	This alternative includes all projects and plans that are projected to proceed by 2040 without action resulting from NEC FUTURE.

Table 13-1: Frequently Used Terminology (continued)

Term	Comments
No Build Alternative	See "No Action Alternative."
Northeast Corridor (NEC)	The existing rail transportation spine of the Northeast region—anchored by Washington Union Station in the south, Penn Station New York in the center, and Boston South Station in the north.
Northeast Corridor (NEC) connecting corridors	Those travel corridors that connect directly to a station on the NEC. These include (1) corridor service south of Washington Union Station to markets in Virginia (i.e., Lynchburg, Richmond, Newport News, Norfolk) and North Carolina (i.e., Charlotte); (2) Keystone (connects to Philadelphia 30th Street Station); (3) Empire (to Penn Station New York); and (4) New Haven-Hartford-Springfield (to New Haven Union Station). See "Study Area connecting corridors" to distinguish.
Northeast Corridor Infrastructure and Operations Advisory Commission (NEC Commission)	The Northeast Corridor Infrastructure and Operations Advisory Commission (NEC Commission) was established by Congress to bring NEC stakeholders together in a coordinated manner to develop and implement a long-term investment strategy for the NEC and to educate the public about the NEC's role in economic growth and development. The NEC Commission is also charged with developing a cost allocation formula that ensures that there is no cross-subsidization of commuter, intercity, and freight transportation on the NEC and to make annual recommendations to Congress about infrastructure needs and operational improvements. The NEC Commission comprises members from each of the NEC states and Washington, D.C., Amtrak, and the U.S. Department of Transportation and includes non-voting representatives from freight railroads and states with connecting corridors. The FRA coordinates with the NEC Commission with regular meetings and presentations. However, the FRA and the NEC Commission have differing, if complementary, missions.
Northeast Megaregion; megaregion	See the discussion of "Northeast region" for clarification.
Northeast region	The Northeast region means different things in different contexts. Most federal agencies, for example, define the Northeast region as the five New England states plus New York, New Jersey, and Pennsylvania. However, if used to refer to the eight states served by the NEC, this excludes two New England states (New Hampshire and Maine) but includes Delaware, Maryland, and Washington, D.C. For NEC FUTURE, the Northeast region refers to the Study Area, which is defined as the large study area that is based on the metropolitan statistical area boundaries within D.C., MD, DE, PA, NJ, NY, RI, CT, and MA.

Table 13-1: Frequently Used Terminology (continued)

Term	Comments
off-corridor	This term refers to representative routing related to the Preliminary Alternatives and Reasonable Alternatives that are "off" the existing NEC Spine. Off-corridor is applied to anything that is a Representative Route not on the existing NEC Spine. Off-corridor routes could include connecting corridors that are also off the NEC Spine.
on-corridor	This term refers to routing related to the existing NEC Spine. On-corridor does not imply that all potential improvements would occur within existing rights-of-way; expansion of the rights-of-way is possible.
pantograph	A mechanical arm mounted on top of an electricity-powered train that draws power from overhead catenary wires.
Passenger Rail Corridor Investment Plan (PRCIP)	The NEC FUTURE program involves preparation of a PRCIP for the NEC, including, in this case, the following two elements: (a) a Service Development Plan; and (b) a Tier 1 Environmental Impact Statement.
peak hour	The hour of the day during which the maximum number of trains are operated or the maximum number of passengers are carried over a segment of railroad. In the metropolitan regions of the NEC study area, the peak hours typically occur on weekdays, in the morning within the 7:00 a.m. to 9:00 a.m. period and in the evening between 4:00 p.m. and 6:00 p.m.
peak travel time	The time required to travel from origin to destination or on a rail line from boarding station to alighting station during the peak hour. Travel time is also referred to as trip time or journey time.
Phase 1, Phase 2, Phase 3	Refers to the internal project phases of NEC FUTURE.
positive train control (PTC)	A modern signaling technology designed to reduce the risk of train collisions. The installation and use of PTC along the NEC is mandated by the federal government.
Preferred Alternative (preferred investment program)	Term used to describe the FRA's Preferred Alternative, which will be identified in the Tier 1 Final EIS. The preference will be based on supporting information fully documented in the Tier 1 Draft EIS and public input. When an alternative has been selected by the FRA, it is referred to as the Selected Alternative. The Selected Alternative will be documented in the Record of Decision (ROD) and the Service Development Plan.
Preliminary Alternatives	Those alternatives that resulted from the consolidation and organization of the Initial Alternatives. Preliminary Alternatives were analyzed and screened to develop the Reasonable Alternatives.

Table 13-1: Frequently Used Terminology (continued)

Term	Comments
Premium Express	A rail service pattern where trains make stops in all primary and some secondary markets.
primary markets	The four largest passenger markets within the core market area: Boston, MA; New York City, NY; Philadelphia, PA; and Washington, D.C.
Programmatic EIS	See Tier 1 Environmental Impact Statement.
Project-level EIS	See Tier 2 Environmental Impact Statement.
pulse-hub operation	Trains from different lines and service tiers that arrive at a Hub station concurrently or in close succession. Passengers can then transfer to a range of services during the simultaneous dwell of these multiple trains. Trains then leave the station in close intervals.
Reasonable Alternatives	Those alternatives that resulted from the screening of the Preliminary Alternatives and that are analyzed in the Tier 1 Draft EIS. The Reasonable Alternatives refer to the Action Alternatives considered in the Tier 1 Draft EIS. (The term "Reasonable Alternative" is used more particularly in the alternatives development context, while the term "Action Alternative" is used for this Tier 1 Draft EIS.)
Record of Decision (ROD)	The ROD is the final step in the EIS process. The ROD is a document that states what the decision is and identifies the alternatives considered—the Preferred Alternative, the Environmentally Preferable Alternative, and the Selected Alternative—and discusses mitigation strategies at Tier 1, including any enforcement and monitoring commitments. In the ROD, the FRA discusses all the factors, including any considerations of national policy that were contemplated when it reached its decision on whether to, and if so how to, proceed with the proposed action. The ROD will also discuss if all practical means to avoid or minimize environmental harm have been adopted, and if not, why they were not.
Regional rail	Rail services that are concentrated within the travel shed of a single metropolitan region. Regional rail trains provide local and commuter-focused service characterized by relatively low fares compared and a high percentage of regular travelers.
regional trips	Trips that start and end within the same metropolitan area.
Related Projects	Related Projects are ongoing independent rail projects that are either fully or partially funded and are located in a connecting corridor and not on the NEC; unfunded projects along the NEC with ongoing or a completed National Environmental Policy Act/Programmatic Agreement; or fully or partially funded transit or freight rail projects off of but connecting to the NEC.

Table 13-1: Frequently Used Terminology (continued)

Term	Comments
reliability	The degree to which trains operate according to their scheduled departure and arrival times.
Representative Route	A Representative Route refers to a proposed route or potential alignment for an Action Alternative. The Representative Route includes horizontal and vertical dimensions, which are based on typical cross sections that define its footprint. Typical cross sections identify construction methods (tunnel, viaduct, bridge, fly-over, bypass, track type, etc.) and right-of-way requirements for tracks, structures, ancillary facilities, and stations associated with each Action Alternative. The Representative Route is the physical footprint used to assess potential effects of an Action Alternative within the Affected Environment. The Representative Route is used as a proxy for estimating the potential effects of a route whose location could shift during subsequent project-level reviews.
retaining wall	Structures that hold earth in place either above or below the track to keep the railroad's slopes manageable despite changes in natural topography.
Scoping	Describes one major public involvement aspect of the NEPA EIS process. The overall goal is to define the scope of issues to be addressed in depth in the analyses that will be included in the EIS.
screenline	An imaginary line used to count rail traffic at a specific location in the Study Area.
secondary markets	All markets within the core market area not defined as one of the four primary markets.
service and inspection (S&I) facility	A shop located at a rail yard where trains are monitored and maintained to ensure safe, reliable, and efficient operations.
Service Plans	The FRA developed Service Plans for the No Action and Action Alternatives to describe the types and levels of passenger train service operating on the NEC in 2040. These Service Plans are a representative train schedule for a typical future weekday, and include the train stops by station for both peak and non-peak periods. The Service Plans are operator-neutral and provide a technical basis that allows the FRA to estimate future ridership and capital investment needs and costs, as well as assess the environmental impacts associated with planned construction and future operations.
signals	A system used to control the movement of trains on a railroad to ensure safe distances and prevent collisions.

Table 13-1: Frequently Used Terminology (continued)

Term	Comments
significant; significantly	"Significant" and "significantly" are key terms used in NEPA compliance to describe thresholds of effects on the human or natural environment. NEPA does not require determinations of significance with regard to specific impacts, but does focus on the significance of impact of an action on a resource, considering context and intensity. For example, this might mean making a significance determination about effects to wetlands in Maryland or Delaware rather than the significance of each impact to every unique wetland in those states.
speed and passenger rail operations	An official FRA designation that defines the operational characteristics of a segment of railroad line based on the physical characteristics of the line and the type of railroad equipment operated on the line. It defines the extent to which and conditions under which different types of trains (e.g., freight and passenger) can operate on the same tracks. It also specifies certain characteristics for railroad equipment operating on the line, such as the maximum allowable speed. See Appendix B, Technical Assumptions appendix to *Service Plans and Train Equipment Options Technical Memorandum* for a more detailed definition and description.
standard peak hour	The unit of time used for analysis of peak train movements and passenger volumes in NEC FUTURE. It permits the peaking of both Intercity and Regional rail traffic to be taken into account by assuming that the peak hours for these travel markets occur simultaneously and are equivalent in the weekday morning and evening periods. It therefore approximates but does not precisely match actual peak-hour conditions at all locations on the NEC, which vary by location and exhibit somewhat different patterns in the morning and evening.
state of good repair	The condition in which the existing physical assets, both individually and as a system (a) are functioning as designed within their "useful lives," and (b) are sustained through regular maintenance and replacement programs; state of good repair represents just one element of a comprehensive capital investment program that also addresses system capacity and performance.
state-of-good-repair backlog	The condition in which an infrastructure asset no longer functions as designed or is in service beyond its expected useful life. Backlog is composed of both basic infrastructure programmatic elements and major projects.

Table 13-1: Frequently Used Terminology (continued)

Term	Comments
station types	**Major Hub** serve the largest markets in the Study Area and have the full complement of rail services types. Major Hub stations serve the four primary markets: Washington, D.C.; Philadelphia, PA; New York City, NY; and Boston, MA; as well as other major markets within the Study Area, including but not limited to Baltimore, MD; Stamford, CT; and Providence, RI. Major Hub stations are located in the most populous and densely developed metropolitan areas along the NEC, serving Intercity and Regional rail travel to these major population and employment centers. **Hub stations** offer some Intercity service, although the Intercity-Express services is more limited than the service levels offered at Major Hub stations. Hub stations include the existing smaller intermediate Amtrak stations, as well as selected key Regional rail stations and new stations that have the potential to fill connectivity gaps in the existing passenger rail network, serve special trip generators, and/or provide important inter-modal connections. **Local stations** are served almost exclusively by Regional rail trains, on the portions of the NEC where Regional rail service is offered. Examples of local stations include Halethorpe, MD; Claymont, DE; Torresdale, PA; Edison, NJ; Larchmont, NY; Westport, CT; Wickford Jct., RI; and Attleboro, MA. There are a limited number of locations on the NEC outside of Regional rail territory where the existing Amtrak stations are best classified as Local stations (e.g., Mystic and Westerly stations). Similarly, smaller stations on connecting corridors beyond the NEC are considered Local stations (e.g., Ashland, VA; Mt. Joy, PA; Rhinecliff, NY; Wallingford, CT)..
stations and station areas (infrastructure element)	The footprint for physical improvements associated with station tracks, platforms, passenger waiting areas and facilities, access and parking, and ancillary buildings. Existing Local stations that are not slated for expansion or upgrading were omitted from the list of location-specific line items, since there are no incremental capital costs associated with these locations.
storage and maintenance facilities (infrastructure element)	These facilities support fleet requirements of the Action Alternatives. Horizontal dimensions could extend beyond the limits of the footprint defined for new segments, new tracks, or curve modifications.
Study Area	The NEC FUTURE Study Area is defined as the large study area that is based on the metropolitan statistical area boundaries within D.C., MD, DE, PA, NJ, NY, RI, CT, MA. See “market area” to distinguish.
Study Area connecting corridors	Those connecting corridors that provide service within the Study Area. These include Keystone, Empire, and New Haven-Hartford-Springfield. See “Northeast Corridor connecting corridors” to distinguish.
Super Express	A rail service pattern where trains make stops only in primary markets.

Table 13-1: Frequently Used Terminology (continued)

Technical Working Group (TWG)	Refers to the group of technical experts both inside and outside of the NEC FUTURE team who periodically join the respective technical team to advise on methodology, data, approach, etc. Various phases of NEC FUTURE have different TWGs focusing on different technical areas.
Tier 1 EIS	Consistent with the above described "tiering" of NEPA documents, a Tier 1 EIS is the broad, programmatic assessment of effects, often applied area-wide or corridor-wide. More-specific project actions are subsequently reviewed as additional information is available.
Tier 2 EIS	A NEPA environmental document for a project-specific action, often referred to as Tier 2, where the specific project is considered in a previous Tier 1 EIS.
Tiering	Tiering is a NEPA procedure that allows an agency to avoid duplication of paperwork through the incorporation by reference of the general discussions and relevant specific discussions from an environmental impact statement of broader scope into one of lesser scope or vice versa.
track class	An official FRA designation that defines the physical, operational and maintenance characteristics of railroad tracks in the United States, applicable to all tracks over which trains are operated. In general, higher track classes permit higher maximum train speeds. See Appendix B, Technical Assumptions appendix to *Service Plans and Train Equipment Options Technical Memorandum* for a more detailed definition and description.
tripmaking	The act of traveling or making a trip, utilizing one or more modes of transportation.
typical cross section	Representative cross sections that identify construction methods and right-of-way configurations for track and track structures developed for construction on new track and new segments.
undergrade bridge	A small railroad bridge that allows creeks, roadways, and other natural or manmade features to pass below tracks.
urban rail transit (service)	Transit-style rail service on the NEC characterized by short distance, short headway, and high-capacity trains within a single urban area. Equipment used to operate this service would comply with the requirements of general railroad operations and may or may not use specially designed hybrid vehicles.
yard	An area consisting of a network of tracks where trains are stored and/or maintained.

Table 13-2: Acronyms and Abbreviations

AC	alternating current
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
AIS	Abbreviated Injury Scale
APE	Area of potential effect
B&P	Baltimore and Potomac (Tunnel)
BCA	Benefit-Cost Analysis
BEA	Bureau of Economic Analysis
BFE	Base Flood Elevation
BLS	Bureau of Labor Statistics
Btu	British thermal unit
BWI	Baltimore-Washington International
C&S	Communications and signaling
C.F.R.	Code of Federal Regulations
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CBD	central business district
CD	Cost Definitions
CEQ	Council on Environmental Quality
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CORRACTS	Corrective Actions
CPI	Consumer Price Index
CSA	Combined Statistical Area
CSXT	CSX Transportation
CTDECD	Connecticut Department of Economic and Community Development
CTDEEP	Connecticut Department of Energy and Environmental Protection
CWA	Clean Water Act of 1972
CZMA	Coastal Zone Management Act
DEDNREC	Delaware Department of Natural Resources and Environmental Control
DelDOT	Delaware, the Delaware Department of Transportation
DMU	diesel multiple unit
DOT	department of transportation
DPM	diesel particulate matter
DPS	Distinct Population Segment
DVRPC	Delaware Valley Regional Planning Commission

Table 13-2: Acronyms and Abbreviations (continued)

EFH	Essential Fish Habitat
EIS	environmental impact statement
EJ	Environmental Justice
EMF	electromagnetic fields
EMI	electromagnetic interference
EMU	electric multiple unit
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESH	Ecologically Sensitive Habitat
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIMA	Federal Insurance and Mitigation Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GCT	Grand Central Terminal
GDP	gross domestic product
GHG	greenhouse gas
GIS	geographic information system
GWP	Global Warming Potential
HC	hydrocarbon
HOV	high-occupancy vehicle
HSIPR	High-Speed Intercity Passenger Rail
HSR	high-speed rail
HUD	Housing and Urban Development
HWCM	hazardous waste and contaminated material
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IIA	Independence from irrelevant alternatives
IPCC	Intergovernmental Panel on Climate Change
kV	kilovolt
Ldn	day/night equivalent [sound]level
Leq	energy equivalent [sound] level
LIRR	MTA-Long Island Rail Road
LOS	level-of-service
LRT	light rail transit
LRTP	long-range transportation plan

Table 13-2: Acronyms and Abbreviations (continued)

LWCF	Land and Water Conservation Fund
MADEP	Massachusetts Department of Environmental Protection
maglev	magnetic levitation
MAIS	Maximum Abbreviated Injury Score
MAP	metropolitan area planning
MAP-21	Moving Ahead for Progress in the 21st Century Act
MARC	Maryland Area Regional Commuter
MBTA	Massachusetts Bay Transportation Authority
MDDE	Maryland Department of the Environment
MNR	MTA-Metro-North Railroad
MPE	Maximum Permissible Exposure
MPO	metropolitan planning organizations
MRE	magnetic resonance equipment
MRI	magnetic resonance imaging
MSA	metropolitan statistical areas
MSAT	mobile-source air toxics
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MTA	Metropolitan Transportation Authority
N.J.A.C.	New Jersey Surface Water Quality Standards
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NCA	National Climate Assessment
NEC	Northeast Corridor
NEC Commission	Northeast Corridor Infrastructure and Operations Advisory Commission
NEPA	National Environmental Policy Act
NHHS	New Haven-Hartford-Springfield
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NJ TRANSIT	New Jersey Transit
NJDEP	New Jersey Department of Environmental Protection
NJTPA	North Jersey Transportation Planning Authority
NL	nested logit
NMFS	National Marine Fisheries Service
NNEPRA	Northern New England Passenger Rail Authority
NO	nitric oxide

Table 13-2: Acronyms and Abbreviations (continued)

NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTC	new track construction
NTD	National Transit Database
NTP	Notice to Proceed
NTSB	National Transportation Safety Board
NWI	National Wetlands Inventory
NYCDEP	New York City Department of Environmental Protection
NYCOER	New York City Office of Environmental Remediation
NYDEC	New York Department of Environmental Conservation
NYMTC	New York Metropolitan Transportation Council
NYSDOT	New York State Department of Transportation
O&M	operations and maintenance
O_3	ozone
OCS	overhead catenary system
OMB	Office of Management and Budget
OSHA	Occupational Safety and Health Administration
OTR	Ozone Transport Region
PADEP	Pennsylvania Department of Environmental Protection
PANYNJ	Port Authority of New York & New Jersey
PATH	Port Authority Trans-Hudson
Pb	lead
PCSM	Post Construction Stormwater Management
PDO	Property damage only
PennDOT	Pennsylvania Department of Transportation
PIP	Public Involvement Plan
PM	particulate matter
PM_{10}	particulate matter less than 10 microns
$PM_{2.5}$	particulate matter less than 2.5 microns
POM	polycyclic organic matter

Table 13-2: Acronyms and Abbreviations (continued)

PRCIP	Passenger Rail Corridor Investment Plan
PRIIA	Passenger Rail Investment and Improvement Act of 2008
PSNY	Penn Station New York
PTC	Positive Train Control
RCRA	Resource Conservation and Recovery Act
RIDEM	Rhode Island Department of Environmental Management
RIPDES	Rhode Island Pollutant Discharge Elimination System Program
RITA	Research and Innovative Technology Administration
rms	root mean square
ROD	Record of Decision
ROW	right-of-way
RPA	Regional Plan Association
RTP	regional transportation plan
SDP	Service Development Plan
Section 106	Section 106 of the National Historic Preservation Act of 1966
Section 4(f)	Section 4(f) of the Surface Transportation Act of 1966
Section 401	Section 401 of the Clean Water Act of 1972
Section 404	Section 404 of the Clean Water Act of 1972
Section 6(f)	Section 6(f) of the Land and Water Conservation Fund Act of 1965
Section 7	Section 7 of the Endangered Species Act
SEHSR	Southeast High-Speed Rail
SEPTA	Southeastern Pennsylvania Transportation Authority
SFHA	special flood hazard area
SHPO	State Historic Preservation Office
SIP	state implementation plan
SLE	Shore Line East
SOV	single-occupancy vehicle
SO_x	sulfur oxides
SRHP	State Register of Historic Places
STIP	State Transportation Improvement Program
STOPS	Simplified Trips on Project Software
STP	Surface Transportation Program
SWRPA	South Western Regional Planning Agency
T&E	Threatened and Endangered
TBM	tunnel boring machine

Table 13-2: Acronyms and Abbreviations (continued)

TDAT	Tribal Directory Assessment Tool
THPO	Tribal Historic Preservation Officer
TIGER	Transportation Investment Generating Economic Recovery
TIP	Transportation Improvement Program
TMDL	total maximum daily load
TOD	transit-oriented development
TPSS	traction power substation
TSCA	Toxic Substances Control Act of 1976
TSDF	Treatment, Storage, and Disposal Facilities
TSM	transportation system management
TWG	Technical Working Group
U.S. DOT	U.S. Department of Transportation
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
v/c ratio	volume-to-capacity ratio
VdB	vibration velocity level
VHT	vehicle hours traveled
VMS	variable message signs
VMT	vehicle-miles traveled
VOC	volatile organic compounds
VRE	Virginia Railway Express
WUTMP	Washington Union Terminal Master Plan