

## 29.0 Glossary

### A

**Accessibility:** The ease with which a site or facility may be reached by passengers and others necessary to the facility's intended function. Also, the extent to which a facility is usable by persons with disabilities, including wheelchair users.

**Action Alternative:** An alternative that must be rigorously explored and objectively evaluated under consideration in an Environmental Impact Statement (EIS). An alternative that proposes some Federal action in contrast to the No Action Alternative. See also **No Action Alternative**.

**Adverse:** Negative or detrimental.

**Adverse Effect:** (1) National Environmental Policy Act of 1969 (NEPA)—an effect that may cause unfavorable or undesirable outcomes to the natural or human environment. (2) National Historic Preservation Act of 1966 (NHPA)—the diminishment of a historic property's integrity, with respect to its location, design, setting, materials, workmanship, feeling, or association. The term is applied by federal agency officials, in consultation with the State (or Tribal) Historic Preservation Office, as part of the Section 106 process. See also **Historic Property**.

**Affected Environment:** The existing environment, resource conditions, and trends that may be affected by the Action Alternatives. Can include the physical, biological, social, and economic setting potentially affected by one or more of the alternatives under consideration.

**Air Pollution:** A general term that refers to one or more chemical substances that degrade the quality of the atmosphere.

**Alignment:** The horizontal and vertical route of a transportation corridor or path.

**All Possible Planning:** All reasonable measures identified in the Section 4(f) evaluation to minimize harm or mitigate for adverse impacts and effects must be included in the project. See also **Section 4(f)**.

**Americans with Disabilities Act of 1990 (ADA):** Federal regulation establishing legal requirements for accessibility for persons with disabilities. Codified at 42 USC 12101 *et seq.*

**Anthropogenic:** Relating to, or resulting from the influence of, human beings on nature.

**Aquifer:** Subsurface geologic unit (rock or sediment) that contains and transmits groundwater.

**Archaeological Site:** A place (or group of physical sites) in which physical remains of past human activity that are at least 50 years old are preserved, and which has been, or may be, investigated using the discipline of archaeology and represents a part of the archaeological record. The archaeological record consists of artifacts, features, and ecological evidence along with their preserved positions in or on the earth.

33 **Area of Critical State Concern:** An area containing, or having a significant impact upon, environmental or  
34 natural resources of regional or statewide importance.

35 **Area of Potential Effects (APE):** The geographic area or areas within which the project may directly or  
36 indirectly cause alterations in the character or use of historic properties, if any such properties exist. See  
37 also **Historic Property**.

38 **At-Grade:** At ground surface level; used to describe roadways, track alignments, and road-track  
39 intersections.

40 **Attainment:** A geographic area that meets the national ambient air quality standards. See also  
41 **Maintenance and Nonattainment**.

42 **A-Weighted Sound Level:** A measure of sound intensity, expressed in decibel notation as dBA, which is  
43 weighted to approximate the response of the human ear; describes the way sound will affect people  
44 near a noise source.

## 45 **B**

46 **Ballasted Track:** Railways installed over a specific type of crushed rock that is graded to support heavily  
47 loaded rolling stock.

48 **Baseline:** Foundation or basis to use for comparison purposes.

49 **Beneficial effect:** Potential to cause positive outcomes to the natural or human environment.

50 **Best Management Practices (BMPs):** Methods designed to minimize adverse effects to the  
51 environment. Examples of BMPs include practices for erosion and sedimentation controls, watering for  
52 dust control, perimeter silt fences, rice straw bales, and sediment basins.

53 **Biodiversity:** An assessment of the numbers, types, and relative abundance of plant and animal species  
54 in natural (biotic) communities. Biodiversity encompasses species richness as well as the genetic  
55 differences among individuals, abundance or variety of habitats, communities, ecosystems, and  
56 landscapes where species occur.

57 **Biological Resources:** Plant and wildlife species, terrestrial and aquatic habitats (including jurisdictional  
58 waters), and habitats of concern (including sensitive plant communities, critical habitat, core recovery  
59 areas, mitigation banks, and wildlife corridors).

60 **Bulkhead:** A dividing wall or barrier between compartments in a vehicle; a structural safety device.

## 61 **C**

62 **Capital Cost:** The total cost of acquiring an asset or constructing a project.

63 **Carbon Dioxide (CO<sub>2</sub>):** A colorless, odorless gas that occurs naturally in the atmosphere, produced by  
64 burning carbon and organic compounds, and by respiration. Fossil fuel combustion emits significant  
65 quantities of CO<sub>2</sub>.

66 **Carbon Monoxide (CO):** A colorless, odorless, toxic, and flammable gas formed by the incomplete  
67 combustion of carbon. CO gas generated in the urban environment is primarily due to the incomplete  
68 combustion of fossil fuels in motor vehicles.

69 **Census Block:** A subdivision of a census block group (or, prior to 2000, a block numbering area); a block  
70 is the smallest geographic unit for which the U.S. Census Bureau tabulates 100-percent data (data  
71 collected from all houses, rather than sample houses). In urban areas, many census blocks correspond to  
72 individual city blocks bounded by streets.

73 **Clean Air Act of 1970 (CAA):** The Federal law that defines the United States Environmental Protection  
74 Agency's (EPA's) responsibilities for protecting and improving the nation's air quality and the  
75 stratospheric ozone layer. The CAA protects the public from exposure to airborne contaminants that are  
76 known to be hazardous to human health and requires that the EPA rate Environmental Impact  
77 Statements (EISs). Codified at 42 USC 7401 *et seq.*

78 **Clean Water Act of 1972 (CWA):** The primary Federal law protecting the quality of the nation's surface  
79 waters, including wetlands. The CWA regulates discharges and spills of pollutants, including hazardous  
80 materials, to surface waters and groundwater. Codified at 33 USC 1251 *et seq.*

81 **Cofferdam:** A watertight closure used for construction in water that can be pumped dry to permit  
82 construction work below the waterline.

83 **Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA):**  
84 Commonly known as Superfund, this law provides broad Federal authority to respond directly to  
85 releases or hazardous substances that may endanger public health or the environment. Codified at 42  
86 USC 9601 *et seq.*

87 **Construction:** The act or process of building.

88 **Constructive Use:** A type of indirect use in which a transportation project's proximity impacts (as  
89 opposed to direct impacts) are so severe that the protected activities, features, or attributes that qualify  
90 a resource for protection under Section 4(f) are substantially impaired. Examples include excessive noise  
91 level increases, diminished aesthetic features, ecological intrusions, and other indirect impacts to the  
92 resource's environment or utility.

93 **Consulting Party:** Parties that have a consultative role in the Section 106 process. These may include the  
94 State Historic Preservation Office (SHPO); Indian tribes and Native Hawaiian organizations;  
95 representatives of local governments; applicants for Federal assistance, permits, licenses, and other  
96 approvals; and individuals and organizations with a demonstrated interest in the undertaking.

97 **Cooperating Agency:** Any agency invited by the lead Federal agency that has agreed to participate in the  
98 National Environmental Policy Act of 1969 (NEPA) process, and has legal jurisdiction over, or technical  
99 expertise regarding, environmental impacts associated with a proposed action.

100 **Corridor:** A geographic belt or band that follows the general route of a transportation facility (for  
101 example, highway or railroad).

102 **Cowardin Classification System:** A comprehensive classification system of wetlands and deepwater  
103 habitats developed for the United States Fish and Wildlife Service (USFWS) in 1979. Under this system,  
104 wetlands are of two basic types: coastal (also known as tidal or estuarine wetlands) and inland (also  
105 known as non-tidal, freshwater, or palustrine wetlands).

106 **Crashwall:** Walls used to limit damage by the deflection and redirection of railroad equipment. Any  
107 object located within a clear distance of 25 feet from the centerline of a railroad track, such as piers  
108 supporting bridges over railways, are required to be protected by a reinforced concrete crashwall.

109 **Criteria Pollutants:** Pollutants for which Federal and state air quality standards have been established:  
110 carbon monoxide (CO), sulfur oxides (SOx), nitrogen oxides (NOx), ozone (O3), particulate matter with a  
111 diameter of 10 micrometer or less (PM10), particulate matter with a diameter of 2.5 micrometer or less  
112 (PM2.5), and lead (Pb).

113 **Critical Habitat:** Designated areas that provide suitable habitat for Federally listed threatened or  
114 endangered species, and in which are the geographical locations and physical features essential to the  
115 conservation of a particular species.

116 **Cultural Resources:** Resources related to the tangible and intangible aspects of cultural systems, living  
117 and dead, that are valued by a given culture or contain information about the culture. Cultural resources  
118 include, but are not limited to, sites, structures, buildings, districts, and objects associated with or  
119 representative of people, cultures, and human activities and events.

120 **Cumulative Impact:** (1) Council on Environmental Quality (CEQ)—the result of two or more individual  
121 impacts that, when considered together, are considerable or that compound or increase other  
122 environmental impacts; (2) National Environmental Policy Act of 1969 (NEPA)—an impact on the  
123 environment that results from the incremental impact of the action when added to other past, present,  
124 and reasonably foreseeable future actions; (3) National Historic Preservation Act of 1966 (NHPA)—the  
125 impact on the environment that results from the incremental impact of the action when added to other  
126 past, present, and reasonably foreseeable future actions regardless of what agency (Federal or  
127 non-Federal) or person undertakes such other actions.

## 128 **D**

129 **Decibel (dB):** A logarithmic measurement of noise intensity.

130 **De Minimis Impact:** When conducting Section 4(f) analysis of historic sites, *de minimis* impact means  
131 that FRA has determined, in accordance with 36 CFR part 800, that no historic property is affected by  
132 the project or that the project will have "no adverse effect" on the historic site in question. For parks,  
133 recreation areas, and wildlife and waterfowl refuges, a *de minimis* impact is one that will not adversely  
134 affect the features, attributes, or activities qualifying the property for protection under Section 4(f).

135 **Deck Plate Girder Bridge:** A bridge consisting of multiple steel I-shaped girders with a steel or reinforced  
136 concrete bridge deck at the top of the girders. This type of structure is generally preferred when  
137 clearance is not an issue.

138 **Demographics:** Quantifiable statistics of a given population such as race, age, sex, income, etc.

- 139 **Demucking:** To remove muck or peat to provide a stable substrate for construction.
- 140 **Detention Pond:** A pond designed to temporarily store and slowly release runoff water.
- 141 **Direct Effect:** A consequence to the environment caused by a proposed project that occurs at the same  
142 time and place.
- 143 **Disproportionately High Adverse Effects:** An Environmental Justice term used to describe the unequal  
144 treatment to low-income and minority populations because of a proposed project or action. Executive  
145 Order 12898 directs each Federal agency to identify and address disproportionately high and adverse  
146 human health or environmental effects of its projects and actions. See also **Environmental Justice**.
- 147 **Disturbance:** A discrete natural or human-induced event that causes a change in the condition of an  
148 ecological system.
- 149 **Duration of Effects:** Short-term effects are those that may occur only during a specific phase of the  
150 project, such as during construction or commissioning activities. Long-term effects are those that would  
151 occur over a longer duration, such as the lifetime of the project’s operation.
- 152 **E**
- 153 **Ecosystem:** An interconnected network of living organisms, including people, and their local physical  
154 environment; often viewed as an ecological unit.
- 155 **Effect:** A change in the condition or function of an environmental resource or environmental value due  
156 to human activity. Synonym to **Impact**.
- 157 **Endangered Species:** Any species listed under the Endangered Species Act of 1973 (ESA) as being in  
158 danger of or threatened with extinction throughout all or most of its range. See **Endangered Species Act**  
159 **of 1973**.
- 160 **Endangered Species Act of 1973 (ESA):** The ESA and subsequent amendments (Sections 7, 9, and 10)  
161 provide guidance for conserving Federally listed species and the ecosystems upon which they depend.  
162 Codified at 16 USC 1531 *et seq.*
- 163 **Environmental Impact Statement (EIS):** Documentation required by the National Environmental Policy  
164 Act of 1969 (NEPA) for certain actions “significantly affecting the quality of the human environment.” An  
165 EIS is a decision-making tool that presents detailed analysis of a proposed action and alternatives to the  
166 proposed action. The EIS presents the project’s potential effects—both beneficial and adverse—and any  
167 mitigation measures to reduce adverse effects. See also **National Environmental Policy Act of 1969**.
- 168 **Environmental Justice:** The fair treatment and meaningful involvement of all people regardless of race,  
169 color, national origin, or income, with respect to the development, implementation, and enforcement of  
170 environmental laws, regulations, and policies.
- 171 **Environmental Site Assessment:** An analysis that identifies potential or existing environmental  
172 contamination liabilities. Phase I and Phase II investigations assess whether identified historic on-site or

173 off-site hazardous uses have impacted the soil or groundwater conditions beneath a property, as  
174 necessary. See also **Phase I Investigation**, **Phase II Investigation**, and **Phase III Investigation**.

175 **Erosion:** Process by which earth materials are worn down by the action of flowing water, ice, or wind.

176 **Essential Fish Habitat:** Includes all types of aquatic habitat—wetlands, coral reefs, seagrasses, rivers—  
177 where fish spawn, breed, feed, or grow to maturity.

178 **Estuary:** A tidal body of water where salt water from an ocean mixes with fresh water from a river.

179 **Ethnicity:** A grouping or categorization of people based on shared cultural traits such as ancestral origin,  
180 language, custom, or social attitude.

181 **Extraordinary Magnitude:** A reference to exceedingly high costs or other objectionable factors  
182 associated with a project alternative, extraordinary magnitude characterizes the impacts to Section 4(f)  
183 or non-Section 4(f) properties as beyond the boundaries of feasible and prudent. See **Feasible and**  
184 **Prudent**.

## 185 **F**

186 **Feasible:** Capable of being implemented.

187 **Feasible and Prudent:** A feasible and prudent avoidance alternative avoids using Section 4(f) property  
188 and does not cause other severe problems of a magnitude that substantially outweighs the importance  
189 of protecting the Section 4(f) property. An alternative is not feasible if it cannot be built as a matter of  
190 sound engineering judgment. An alternative is not prudent if it compromises the project to a degree  
191 that it is unreasonable to proceed with the project in light of its stated purpose and need; it results in  
192 unacceptable safety or operational problems; or, after reasonable mitigation, it still causes:

- 193 • Severe social, economic, or environmental impacts;
- 194 • Severe disruption to established communities;
- 195 • Severe disproportionate impacts to minority or low-income populations; or
- 196 • Severe impacts to environmental resources protected under other Federal statutes.

197 An alternative is also not prudent if it results in additional construction, maintenance, or operational  
198 costs of an extraordinary magnitude; it causes other unique problems or unusual factors; or it involves  
199 multiple factors previously described in this definition, that while individually minor, cumulatively cause  
200 unique problems or impacts of extraordinary magnitude.

201 **Federal Railroad Administration (FRA):** An agency within the United States Department of  
202 Transportation (USDOT) that administers financial assistance programs and regulates the operation and  
203 safety of freight and passenger railroads throughout the United States.

204 **Finger Pier:** A pier for use in water areas. Consists of driving piles securely into the earth and  
205 constructing a bridge-like surface to support construction loads. Spacing of the finger piers is dependent  
206 upon loading and activities.

207 **Floating Turbidity Curtains:** Designed to contain and control the dispersion of silt in a water body; often  
208 implemented in areas with marine construction, pile driving, site work, or dredging activities.

209 **Footprint:** The area covered by a facility or affected by construction activities.

## 210 **G**

211 **General Conformity Rule:** The requirement that Federal, state, tribal, and local governments in air  
212 quality nonattainment or maintenance areas ensure that Federal actions conform to the initiatives  
213 established in the applicable state implementation plan or tribal implementation plan.

214 **Geographic Information System (GIS):** An information management system designed to store and  
215 analyze data referenced by spatial or geographic coordinates.

216 **Girder:** A steel support beam used for bridge construction.

217 **Grade Crossing:** The intersection of a railroad and a highway at the same elevation (grade); an  
218 intersection of two or more highways; an intersection of two railroads.

219 **Grade-Separated:** At different elevations; on separate levels.

220 **Greenhouse Gases (GHGs):** A class of air pollutants believed to contribute to the greenhouse global  
221 warming effect, including nitrogen oxides (NOx), hydrocarbons (HC), and carbon dioxide (CO<sub>2</sub>).

222 **Groundwater:** Water contained and transmitted through open spaces within rock and sediment below  
223 the ground surface.

224 **Groundwater Recharge:** Hydrologic process where water moves downward from surface water into the  
225 ground water by deep drainage or deep percolation.

## 226 **H**

227 **Habitat:** An environment where plants or animals naturally occur; an ecological setting used by animals  
228 for a particular purpose (for example, roosting habitat, or breeding habitat).

229 **Hazard Analysis:** The initial safety analysis conducted during Project Development to evaluate the  
230 potential for safety hazards and hazardous conditions and allow for the mitigation of risks through  
231 project design.

232 **Hazardous Materials:** Any material that, because of quantity, concentration, or physical or chemical  
233 characteristics, poses a significant present or potential hazard to human health and safety, or the  
234 environment, if released.

235 **Hazardous Waste:** A hazardous material that is no longer of use and will be disposed of. Hazardous  
236 waste is regulated by the United States Environmental Protection Agency (EPA) under the Resource  
237 Conservation and Recovery Act of 1976 (RCRA). See also **RCRA**.

238 **Headway:** The time between buses, trains, or other transit vehicles at a given point (for example,  
239 a 15-minute headway means that one bus arrives every 15 minutes).



240 **Historic Property:** Any prehistoric or historic district, site, building, structure, or object included in, or  
241 eligible for inclusion in, the National Register of Historic Places (NRHP). The term includes properties of  
242 traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that  
243 meet the National Register criteria. See also **National Register of Historic Places** and **Traditional**  
244 **Cultural Properties**.

245 **Hydrocarbons:** Various organic compounds, including methane, emitted principally from the storage,  
246 handling, and combustion of fossil fuels.

## 247 I

248 **Impact:** A change in the condition or function of an environmental resource or environmental value due  
249 to human activity. Synonym to **Effect**.

250 **Impervious Surface:** Surface covered by impenetrable materials, such as parking lots and buildings that  
251 increases the potential for water runoff and reduces the potential for groundwater recharge.

252 **Indirect Impact:** Reasonably foreseeable indirect consequences to the environment caused by a  
253 proposed project that would occur either in the future or near to, but not the same location as, the  
254 direct impacts associated with the project. Synonym to **Secondary Impact**.

255 **Induced Growth:** An indirect impact of a project triggering community growth (increases in population,  
256 development, etc.) that is influenced and stimulated by the Proposed Action.

257 **Infrastructure:** The facilities required for a societal function or service (such as transportation and utility  
258 infrastructure—roads, bridges, railroads, pipelines, power lines, etc.).

259 **Interlocking:** An arrangement of train signal apparatus that prevents conflicting movements through an  
260 arrangement of tracks such as junctions or crossings.

261 **Intermodal:** Transportation of people or goods (freight) that involves more than one mode (for example,  
262 walking, biking, auto, transit, taxi, train, bus, and air) during a single journey. See also **Multimodal**.

263 **Intermodal Station:** A transit station that provides connections among more than one mode of  
264 transportation.

265 **Invasive Species:** A species that is non-native to the ecosystem and whose introduction causes or is  
266 likely to cause economic or environmental harm or harm to human health.

267 **Invertebrate:** Organisms lacking a vertebral column.

## 268 J

269 **Joint Lead Agency:** Project Sponsor that is a state or local government entity receiving funds from the  
270 United States Department of Transportation (USDOT) serves as a Joint Lead Agency for preparation of  
271 any environmental document in accordance with the National Environmental Policy Act of 1969 (NEPA).  
272 Other Federal agencies may also serve as Joint Lead Agencies.



273 **K**

274 **L**

275 **Lead (Pb):** A stable element that can have toxic effects and that persists and accumulates in the  
276 environment, humans, or animals.

277 **Lead Agency:** The Federal agency that has the principal responsibility for carrying out or approving a  
278 project or action and is responsible for preparing environmental review documents in compliance with  
279 the National Environmental Policy Act of 1969 (NEPA) and the National Historic Preservation Act of 1966  
280 (NHPA).

281 **Leq:** A measure of the average noise level during a specified period of time.

282 **Leq(h), dBA:** Equivalent or average noise level for the noisiest hour, expressed in A-weighted decibels.

283 **Level of Service (LOS):** A rating using qualitative measures to characterize operational conditions within  
284 a traffic stream and their perception by motorists and passengers.

285 **Limits of Disturbance (LOD):** The geographic area within which ground disturbance is anticipated to  
286 occur for the project.

287 **Listed Species:** A species, subspecies, or distinct vertebrate population segment that has been added to  
288 the Federal lists of Endangered and Threatened Wildlife and Plants as they appear in 50 CFR 17.11 and  
289 17.12.

290 **M**

291 **Maintenance:** 1) the process of maintaining or preserving something to keep it in safe and operable  
292 condition; 2) Clean Air Act of 1970 (CAA) – an air basin that was formerly in nonattainment, but now  
293 meets the established standards for that pollutant. See also **Attainment** and **Nonattainment**.

294 **Major Purpose:** A Section 4(f) property's primary function and how it is intended to be managed. In  
295 order to determine a piece of land's major purpose, a Project Sponsor will have to consult with the  
296 Officials with Jurisdiction and review its master plan (if available) to see if the purpose is explicitly stated  
297 and formally consult with the officials with jurisdiction over the likely impacts and avoidance,  
298 minimization or mitigation measures. See also **Official with Jurisdiction**.

299 **Memorandum of Agreement (MOA):** An agreement between agencies that specifies the terms of the  
300 project, documents the requirements for responsible party participation, and establishes the specific  
301 authority that each responsible party has for making decisions.

302 **Mesoscale:** Describes an air quality analysis at the regional level.

303 **Metapopulation:** A group of spatially separated populations of the same species that interacts at some  
304 level.

305 **Microscale:** Describes an air quality analysis for a localized area such as an intersection.

306 **Minimization:** Measures developed during the planning and Project Development phase of a project to  
307 reduce proposed impacts to a resource. Minimization measures could include alignment shifts, a  
308 commitment to off-season construction, replacement of land or facilities, restoration, or landscaping.

309 **Mitigation:** Action or measure undertaken to minimize, reduce, eliminate, or rectify the adverse impacts  
310 of a project, practice, action, or activity.

311 **Mitigation Bank:** A large block of land that is preserved, restored, and enhanced for mitigating projects  
312 that impact special-status species, wetlands, or otherwise vegetated biological communities.

313 **Mobility:** Movement of people across areas.

314 **Multimodal:** Transportation that involves more than one mode (for example, walking, biking, auto,  
315 transit, taxi, train, bus, and air) during a single journey. See also **Intermodal**.

## 316 **N**

317 **National Ambient Air Quality Standards (NAAQS):** Federal standards stipulating the allowable ambient  
318 concentrations of specific criteria pollutants.

319 **National Environmental Policy Act of 1969 (NEPA):** Federal law that establishes national policies and  
320 goals for the protection of the environment and requires Federal agencies to consider the  
321 environmental impacts of major Federal projects or decisions; share information with the public;  
322 identify and assess reasonable alternatives; identify appropriate measures to mitigate potential impacts;  
323 and coordinate efforts with other planning and environmental reviews taking place. Codified at 42 USC  
324 4331 *et seq.*

325 **National Historic Preservation Act of 1966 (NHPA):** Federal law intended to preserve the nation's  
326 historic properties. The act created the National Register of Historic Places (NHRP), the list of National  
327 Historic Landmarks (NHL), and the State Historic Preservation Offices (SHPO). Codified at 54 USC 300101  
328 *et seq.* See also **Section 106 of the NHPA, National Register of Historic Places, and National Historic**  
329 **Landmarks.**

330 **National Register of Historic Places (NRHP):** The official list of the Nation's historic places worthy of  
331 preservation, maintained and approved by the National Park Service (NPS). Codified at 54 USC 302101 *et*  
332 *seq.* For a property to be eligible for listing in the NRHP, it must meet the NPS National Register Criteria  
333 for Evaluation. See also **Historic Property**.

334 **National Priorities List (Superfund List):** A Federal list of sites that have been identified as posing an  
335 immediate public health hazard and where an immediate response is necessary.

336 **Navigable Waters:** Those waters that are subject to the ebb and flow of the tide or are presently used,  
337 or have been used in the past, or may be susceptible for use to transport interstate or foreign  
338 commerce. A determination of navigability, once made, applies laterally over the entire surface of the  
339 waterbody, and is not extinguished by later actions or events which impede or destroy navigable  
340 capacity.

341 **Nitrogen Oxides (NO<sub>x</sub>):** A class of pollutant compounds that include nitrogen dioxide (NO<sub>2</sub>) and nitric  
342 oxide (NO), both of which are emitted by motor vehicles. See **Criteria Pollutants**.

343 **No Action Alternative:** Refers to an alternative under which no action would be taken (for example, the  
344 proposed project would not be built). Evaluation of a No Action Alternative is required under the  
345 National Environmental Policy Act of 1969 (NEPA). This analysis provides a benchmark, enabling  
346 decisionmakers to compare the magnitude of environmental effects of the Action Alternatives. It is also  
347 an example of a reasonable alternative outside the jurisdiction of the agency which must be analyzed.

348 **Nonattainment:** An air basin that exceeds Federal or state standards for a criteria pollutant. See also  
349 **Attainment and Maintenance**.

350 **Nonpoint Source Pollution:** Pollution that collects from a wide area and cannot be traced to a single  
351 source. Examples include pesticides or fertilizers that wash into rivers or percolate through the soil into  
352 groundwater.

353 **Notice of Availability (NOA):** Formal notice published in the Federal Register by the Federal lead agency  
354 that announces the issuance and public availability of a Draft or Final Environmental Impact Statement.

355 **Notice of Intent (NOI):** Formal notice published in the Federal Register by the Federal lead agency  
356 stating that an EIS will be prepared for a proposed project.

## 357 **O**

358 **Official with Jurisdiction:** The legal representative of the agency owning or administering a Section 4(f)  
359 resource, unless the agency has delegated or relinquished this authority via formal agreement. For  
360 historic properties, the Official with Jurisdiction is the State or Tribal Historic Preservation Office. Some  
361 Section 4(f) properties, such as an historic park, may have multiple Officials with Jurisdiction.

362 **On-Time Performance:** The level of success of the train service remaining on the published schedule.  
363 Factors that influence on-time performance include traffic, accidents, detours, weather, increased  
364 ridership, and breakdowns.

365 **Over-Grade Bridge:** A bridge structure located above standard grade.

366 **Ozone (O<sub>3</sub>):** A photochemical oxidant that is a major cause of lung and eye irritation in urban  
367 environments.

## 368 **P**

369 **Participating Agency:** Any Federal agency that is invited by the lead agency to participate in the  
370 environmental review process for a project.

371 **Particulate Pollution:** Air pollution such as dust, soot, and smoke that is irritating but usually not  
372 poisonous. Particulate pollution can also include bits of highly toxic solid or liquid substances. Of  
373 particular concern are particulate matter smaller than, or equal to, 10 micrometers (PM<sub>10</sub>) or 2.5  
374 micrometers (PM<sub>2.5</sub>) in size.

375 **Passing Track:** A track connected to the main line on both ends that allows a train to stop for  
376 commercial reasons (in a station, for example) or operating purposes (to deal with a delayed train) and  
377 that allows other trains to pass.

378 **Pile Bent:** Two or more piles driven in a row transverse to the long dimension of a structure and  
379 fastened together by capping and (sometimes) bracing.

380 **Pile Bent Cap:** Structural members placed on, and usually fastened to, the top of a pile and used to  
381 transmit loads into the pile or group of piles and, in the case of a group, to connect them into a pile  
382 bent.

383 **Point Source Pollution:** Pollution that can be traced to a single source (for example, a smokestack at a  
384 factory).

385 **Polychlorinated Biphenyls (PCBs):** Chemicals used in electrical transformers, hydraulic equipment,  
386 capacitors, and similar equipment.

387 **Positive Train Control (PTC) Infrastructure:** Integrated command, control, communications, and  
388 information systems for controlling train movements that improve railroad safety by significantly  
389 reducing the probability of collisions between trains, casualties to roadway workers, and damage to  
390 equipment.

391 **Positive Train Control (PTC) Systems:** The Rail Safety Improvement Act of 2008 requires that railroads  
392 implement PTC systems to prevent train-to-train collisions on certain rail lines by December 31, 2018.

393 **Potentially Contaminated Site:** Land that may contain substances in or under the land that are  
394 potentially hazardous to health or the environment but have not been tested yet for contamination.

395 **Poverty Level:** The income at which a family or individual is considered poor.

396 **Practicable:** Available and capable of being done after taking into consideration cost, existing  
397 technology, and logistics considering overall project purposes.

398 **Preferred Alternative:** The alternative identified as preferred by the lead agency or project proponent  
399 (the applicant's preferred alternative).

400 **Programmatic Agreement (PA):** An agreement between agencies that specifies the terms of compliance  
401 with one or more Federal laws. A *project-specific* PA describes the actions that will be taken by the  
402 parties to meet their environmental compliance responsibilities for a specific project. A *procedural* PA  
403 establishes a process through which the parties will meet their compliance responsibilities for an agency  
404 program, a category of projects, or a particular type of resource.

405 **Project Development:** Phase after the project planning and Scoping phase during which the alternatives  
406 are identified and developed and the environmental consequences of the alternatives are analyzed in  
407 the Environmental Impact Statement (EIS).

408 **Project Sponsor:** The entity that would advance the Long Bridge Project through final design and  
409 construction, including compliance with mitigation measures. The Virginia Department of Rail and Public  
410 Transportation will be the project sponsor for final design and construction of the Long Bridge Project.

411 **Proposed Action:** A proposal for a Federal agency to authorize, recommend, or implement an action  
412 that addresses a Purpose and Need. See **Purpose and Need**.

413 **Public (Accessibility):** Public use entails visitation for more than a select group of the public at any time  
414 during normal hours of operation.

415 **Public Easement:** Any interest in land that is not possessory and that may be owned by another person,  
416 is reserved by the department or granted to the state for use by or the benefit of the public, including an  
417 access easement, survey easement, and utility easement.

418 **Publicly Owned:** Property that is owned by a government authority via either fee simple ownership or  
419 permanent easement. In some cases, private lands that are leased by government authorities may also  
420 be considered publicly owned for the purpose of Section 4(f) depending upon the terms of the lease  
421 (length, cancellation clauses, etc.).

422 **Public Transportation:** Includes bus, trolley bus, streetcar or trolley car, trams or light rail, transit,  
423 passenger railroad, ferryboat, and taxicab service.

424 **Purpose and Need:** The reason(s) why a project or action is undertaken and the need(s) it is intended to  
425 meet or fulfill.

426 **Q**

427 **R**

428 **Real Property:** Land and any improvements thereto, including but not limited to, fee interests,  
429 easements, air or access rights, and the rights to control use, leasehold and leased fee interests.

430 **Reasonably Foreseeable Future Action:** Those future actions that are likely to occur or probable, rather  
431 than those that are merely possible. Used in determining indirect and cumulative impacts for a  
432 Proposed Action.

433 **Record of Decision (ROD):** The final step in the Environmental Impact Statement (EIS) process under the  
434 National Environmental Policy Act of 1969 (NEPA). The ROD explains the agency's decision, describes the  
435 alternatives the agency considered, and discusses the agency's plans for mitigation and monitoring, if  
436 necessary.

437 **Regulated Waste:** Pathological and microbiological wastes containing blood or other potentially  
438 infectious materials.

439 **Resource Conservation and Recovery Act of 1976 (RCRA):** Federal law that creates the framework for  
440 the proper management of hazardous and non-hazardous solid waste. The law describes the waste  
441 management program mandated by Congress that gave the United States Environmental Protection  
442 Agency (EPA) authority to develop the RCRA program. Codified at 42 USC 6901 *et seq.*

443 **Retention Pond:** An artificial pond designed to hold and manage stormwater runoff to prevent flooding  
444 and downstream erosion; improves water quality in adjacent rivers, streams, lakes, or bays. The  
445 retention pond contains stormwater and releases it slowly to mitigate storm-induced flooding on  
446 downstream receiving waters. It also collects suspended sediments.

447 **Ridership:** The number of people who ride a transportation system.

448 **Right-of-Way:** A legal right of passage over a defined area of real property. In transit usage, the corridor  
449 along a roadway or railway that is controlled by a transit or transportation agency or authority.

450 **Riparian:** Relating to, living, or located on the bank of a natural water course, lake, or tidewater.

451 **Rolling Stock:** Locomotives, carriages, wagons, or other vehicles used on a railroad.

452 **Runoff:** The draining away of water and substances carried in it from the surface of an area of land, a  
453 building, or structure.

## 454 **S**

455 **Scoping:** A process used under the National Environmental Policy Act of 1969 (NEPA) to determine the  
456 range of issues to be addressed and for identifying the significant issues related to the proposed action  
457 or project to be addressed in an Environmental Impact Statement (EIS).

458 **Secondary Impact:** Reasonably foreseeable indirect consequences to the environment caused by a  
459 proposed project that would occur either in the future or near, but not the same location as, the direct  
460 impacts associated with the project. Synonym to **Indirect Impact**.

461 **Section 4(f) of the United States Department of Transportation Act of 1966:** Provisions codified in 49  
462 USC Subtitle I, Section 303(c). Section 4(f) addresses the potential for conflicts between transportation  
463 needs and the protection of land for recreational use and resource conservation by providing protection  
464 for publicly owned parkland, recreation areas, and historic sites from use. Specifically, the provisions  
465 prohibit the Secretary of Transportation from approving any program or project that would require the  
466 use of any publicly owned land from a public park, recreation area, wildlife or waterfowl refuge, or land  
467 of an historic site of national significance as determined by the Official with Jurisdiction over these lands  
468 unless there are no feasible and prudent alternatives to the use of these lands.

469 **Section 6(f) of the Land and Water Conservation Fund Act of 1964:** Prohibits the conversion of property  
470 acquired or developed with funds granted through the act to a nonrecreational purpose without the  
471 approval of the National Park Service. Section 6(f) directs the United States Department of the Interior  
472 to ensure that replacement lands of equal value (monetary), location, and usefulness are provided as  
473 conditions to such conversions.

474 **Section 106 of the National Historic Preservation Act of 1966 (NHPA):** The section of the NHPA that  
475 requires Federal agencies to account for the effects of their undertakings on historic properties and to  
476 provide the Advisory Council on Historic Preservation (ACHP) with a reasonable opportunity to  
477 comment. In addition, Federal agencies are required to consult on the Section 106 process with State  
478 Historic Preservation Offices (SHPOs), Tribal Historic Preservation Offices (THPOs), Indian Tribes, and

- 479 Native Hawaiian Organizations (NHOs). The Section 106 process is defined in 36 CFR 800, Protection of  
480 Historic Properties. Codified at 54 USC 306108.
- 481 **Sensitive Natural Communities:** Communities of plants and wildlife interacting in the same ecosystem  
482 whose extent have been much reduced in the state and which are locally rare.
- 483 **Sensitive Receiver:** Noise-sensitive locations where increased annoyance can occur, such as residences,  
484 schools, hotels/motels, medical facilities, or other vibration-sensitive receivers.
- 485 **Sensitive Receptors:** Locations considered more sensitive to adverse effects from air pollution (for  
486 example, residences; preschools and kindergarten through grade 12 schools; daycare centers;  
487 healthcare facilities such as hospitals, retirement homes, and nursing homes; and parks and/or  
488 playgrounds).
- 489 **Shared-use Track:** Use of the same track and corridor by two transit modes (light rail transit vehicles and  
490 heavy rail, or passenger and freight).
- 491 **Significant:** In Council on Environmental Quality (CEQ) usage, describes an impact that is sufficiently  
492 adverse, intense, or prolonged to require mitigation. In National Environmental Policy Act of 1969  
493 (NEPA) usage, to determine an impact is significant the context and intensity (the degree to which the  
494 effects on quality of human environment are controversial, whether the action threatens a violation of  
495 Federal, state, or local law, and others) of the action must be considered.
- 496 **Sole Source Aquifer (SSA):** An aquifer designated by the United States Environmental Protection Agency  
497 (EPA) as the sole or principal source of drinking water for an area pursuant to subsection 1424(e) of the  
498 Federal Safe Drinking Water Act of 1974 (SDWA), as amended. EPA defines a sole or principal source  
499 aquifer as one that supplies at least 50 percent of the drinking water consumed in the area overlying the  
500 aquifer. These areas can have no alternative drinking water source(s) that could physically, legally, and  
501 economically supply all those who depend upon the aquifer for drinking water.
- 502 **Special-Status Species:** Plants and animals that are legally protected under the Endangered Species Act  
503 of 1973 (ESA) or other regulations, such as those species that meet the definitions of rare or endangered  
504 under Council on Environmental Quality (CEQ) Guidelines Sections 15380 and 15125. See **Endangered**  
505 **Species Act of 1973.**
- 506 **State Implementation Plan (SIP):** Statewide plan for complying with the Clean Air Act of 1970 (CAA). The  
507 SIP consists of guidance, rules, and agreements that the state will use to clean up polluted areas.
- 508 **Stormwater Pollution Prevention Plan (SWPPP):** A plan that specifies site management activities to be  
509 implemented during site development, including construction stormwater best management practices,  
510 erosion and sedimentation controls, dewatering (nuisance water removal), runoff controls, and  
511 construction equipment maintenance.
- 512 **Study Area:** A defined area or distance that is established to determine potential effects associated with  
513 the proposed action. Study areas vary in size and distance depending on the type of effects being  
514 considered. The Local Study Area is generally proximate to the proposed action, while the Regional  
515 Study Area encompasses a larger area to incorporate systems or transportation networks.



- 516 **Substructure:** The abutment, piers, and other support structures of the superstructure that transfer the  
517 structural load to the foundations.
- 518 **Sulfur Oxides (SOx):** Sulfur-oxygen compounds that include the important criteria pollutants sulfur  
519 dioxide (SO<sub>2</sub>) and sulfur trioxide (SO<sub>3</sub>).
- 520 **Superstructure:** The portion of the structure above its foundations that is the span and directly receives  
521 the live load.
- 522 **Surficial Aquifer:** The surficial aquifer system includes any otherwise undefined aquifers that are present  
523 at land surface. The surficial aquifer is mainly used for domestic, commercial, or small municipal  
524 supplies.
- 525 **Surficial Geology:** Unconsolidated geologic materials lying on top of bedrock. Common surficial  
526 materials include sand, gravel, glacial tills, clay, and silts.
- 527 **Switch:** A mechanical installation enabling trains to be guided from one track to another at a railway  
528 junction.
- 529 **T**
- 530 **Take:** To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to  
531 engage in any such conduct (as defined in Section 3 of the Endangered Species Act of 1973). See  
532 **Endangered Species Act of 1973.**
- 533 **Tangent:** A straight line that touches a curve, but if extended does not cross it at that point.
- 534 **Terminal Station:** The first or last station of a passenger railway route.
- 535 **Threat, Vulnerability, and Risk Assessment (TVRA):** An analysis conducted during Project Development  
536 to identify and analyze security risks associated with design alternatives and propose strategies to  
537 mitigate risk.
- 538 **Threatened and Endangered Species:** Any species listed under the Endangered Species Act of 1973 as  
539 being in danger of or threatened with extinction throughout all or most of its range.
- 540 **Through Plate Girder Bridge:** A bridge generally consisting of two main girders on the outsides of the  
541 bridge with smaller floor beams spanning perpendicular to the main girders to support the  
542 transportation load, allowing for railways to pass “through” the girders. This type of structure is  
543 generally preferred when clearance below the structure is critical.
- 544 **Traditional Cultural Properties and Resources (TCPs):** Places associated with the cultural practices or  
545 beliefs of a living community that are rooted in that community’s history. Examples of TCPs include, but  
546 are not limited to, any place where people practice a ritual activity or festival; any place of an event that  
547 is of significance to a group or community and is referred to in stories; and any place that is a vital and  
548 beloved part of the community and that may give the community a special identity or defining  
549 character.

550 **Train Control System:** System of railroad equipment designed to ensure safety by monitoring locations  
551 of trains and providing analysis and reporting.

552 **Train Set:** A complete single train, including engine(s) and cars.

553 **Travel Time:** The time spent traveling from a place of origin to a place of destination. Total travel time  
554 includes the time required to reach a station or an airport, time spent waiting for the next scheduled  
555 train or flight, time spent getting to the boarding area, time spent checking and retrieving luggage, and  
556 time spent getting a rental car or taxi, as well as time spent to reach the final destination.

## 557 **U**

558 **Under-Grade Bridge:** A bridge structure located below standard grade.

559 **Undertaking:** A project, activity, or program funded in whole or in part by a Federal agency, including  
560 those carried out by or on behalf of a Federal agency, those carried out with Federal financial assistance,  
561 and those requiring a Federal permit, license, or approval.

## 562 **V**

563 **V/C Ratio:** Volume to capacity ratio; describes the relationship between the amount of traffic a roadway  
564 was designed to carry and the amount of traffic it actually carries. Related to the Level of Service (LOS)  
565 the roadway can provide. See also **Level of Service**.

566 **Vehicle Maintenance Facility (VMF):** A dedicated facility for vehicle fueling, maintenance, repair, and  
567 washing.

568 **Vertebrate:** Organisms with a vertebral column (fish, reptiles, amphibians, birds, and mammals).

569 **Vibration:** A rapid linear motion of a particle or of an elastic solid about an equilibrium position.

570 **Vibration decibels (VdB):** A logarithmic measurement of vibration intensity.

571 **Viewshed:** The total area visible from a single observer position, or the total area visible from multiple  
572 observer positions. Viewsheds include scenes from highways, trails, campgrounds, towns, cities, or other  
573 viewer locations.

574 **Visual Character:** The physical attributes of the landscape.

575 **Visual Quality:** The character or inherent features of a viewshed.

576 **Visual Resources:** The natural and artificial features of a landscape that characterize its form, line,  
577 texture, and color.

578 **Volatile Organic Compounds (VOCs):** Colorless gaseous compounds originating, in part, from the  
579 evaporation and incomplete combustion of fuels. In the presence of sunlight, VOCs react to form ozone  
580 (O<sub>3</sub>), a pollutant regulated by the Clean Air Act of 1970 (CAA) and its amendments.

## 581 **W**

582 **Waters of the United States:** The Clean Water Act of 1972 (CWA) defines waters of the United States as  
583 (1) all waters that are currently used, or were used in the past, or may be susceptible to use in interstate  
584 or foreign commerce, including all waters subject to the ebb and flow of the tide; (2) all interstate  
585 waters including interstate wetlands; and (3) all other waters, such as intrastate lakes, rivers, streams  
586 (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows,  
587 playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or  
588 foreign commerce (33 CFR 328.3[a]). See **Clean Water Act of 1972** and **Wetland**.

589 **Watershed:** The area that contributes water to a drainage system or stream.

590 **Wayside Signaling:** A visual form of railway signaling that uses elevated flags or balls.

591 **Wetland:** An area of land with soil that is saturated with moisture, either permanently or seasonally.  
592 According to the United States Army Corps of Engineers Wetland Delineation Manual, three criteria  
593 must be satisfied to classify an area as a jurisdictional wetland: (1) a predominance of plant life that is  
594 adapted to life in wet conditions (hydrophytic vegetation); (2) soils that saturate, flood, or pond long  
595 enough during the growing season to develop anaerobic conditions in the upper part (hydric soils); and  
596 (3) permanent or periodic inundation or soils saturation, at least seasonally (wetland hydrology).

597 **Wildlife Corridor:** A belt of habitat that is essentially free of physical barriers such as fences, walls, and  
598 development, and connects two or more larger areas of habitat, allowing wildlife to move between  
599 physically separate areas.

600 **X**

601 **Xeric:** Relating to, characterized by, or containing little moisture.

602 **Y**

603 **Z**