



9.0 GLOSSARY

A

aesthetic	aesthetics; refers to the visual quality of structural or architectural elements and settings.
AADT	Average Annual Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials is an organization comprised of State DOT officials. As a group, they develop transportation design standards and guidelines for use by all states in designing, constructing, maintaining, and operating transportation facilities.
abutment	vertical end supports of a bridge structure upon which the girders bear and terminate. (see also: substructure, pier)
ACC/MVM	Accidents Per Million Vehicles Miles Traveled
ADT	Average Daily Traffic (see also: average daily traffic)
advertisement	invitation by CDOT to contractors to bid on construction projects, usually officially announced or 'advertised' in newspapers. (see also: award; bid)
alternatives	various transportation options developed and analyzed during an EA or EIS study process.
alternative screening	Evaluation of a full range of possible transportation alternatives to identify the most reasonable alternatives for further consideration.
APCD	Air Pollution Control Division
APE	Area of Potential Effect; geographical area established by the project team under Federal guidelines within which direct or indirect environmental effects could be expected to occur and to identify specific locations for further investigation and documentation. (see also: section 4(f))
apparent low bidder	the bid is 'apparent' until certain reviews are completed to make sure that the bidder has the appropriate resources available to meet the project requirements and has understood the major work elements.(see also: advertisement; bid; and award)
arterial roadway or street	high volume local roadway primarily carrying through traffic on a generally continuous route. Its primary function is to provide relatively uninterrupted travel through an urbanized area. In many cases, access to homes and businesses is limited. Arterial roadways can be further delineated as major or minor arterials depending on traffic volume and capacity.
at-grade crossing	location where crossing traffic shares the same elevation or "grade". Typically used to describe a common rail /roadway crossing or a roadway intersection.
auxiliary lane	lane(s) in addition to the through-traffic lanes that accommodate speed changes, weaving, and maneuvering of entering and leaving traffic.
average daily traffic	ADT; total volume of vehicles during a given time period, divided by the number of days in the time period.
avoidance alternatives	alternatives that avoid use of section 4(f) protected properties which can only be eliminated if they are "determined to present unique problems or unusual factors or if they would produce costs, environmental impacts or community disruption reaching extraordinary magnitudes". (see also: section 4(f))



award selection of a contractor to do work for CDOT through the advertisement and bid process. The 'award' of the contract (see also: advertisement; bid)

B

barrier physical separator between elements erected for specific purposes such as blocking noise or channeling traffic (see also: noise barrier; sound barrier; traffic barrier).

BEA Bureau of Economic Analysis

bearing device mechanical elements upon which a bridge superstructure rests or bears on the substructure allowing movements from temperature expansion and contraction and rotation from load deflections.

bid process by which construction contractors price or 'bid' a project with the contract being awarded to the lowest bidder (see also: advertisement; award; final design).

BLM Bureau of Land Management

BMP Best Management Practices

BNRR Burlington Northern Railroad; pre-merger name. (see also: BNSF)

BNSF Burlington Northern Santa Fe; railroad. Burlington Northern railroad name after acquisition of Santa Fe Rail Road. (see also: BNRR)

BRT Bus Rapid Transit. Dedicated corridor on system stations similar to light rail, except utilizing standard, rubber tired, highway bus coaches.

C

CAAA Clean Air Act Amendments

Categorical Exclusion catex; cat-x; category of project action which a federal agency (such as FHWA) identifies in its NEPA procedures, that do not individually or cumulatively have a significant effect on the environment, excluding them from the need for an EA or EIS process. (see also: NEPA; EA; EIS).

CCD City and County of Denver

CDOT Colorado Department of Transportation

CDOT-EPB Colorado Department of Transportation-Environmental Program Branch

CDOW Colorado Division of Wildlife

CDPHE Colorado Department of Public Health and Environment

CNHP Colorado Natural Heritage Program

CO Carbon Monoxide

COAHP Colorado Office of Archaeology and Historic Preservation

COG Council of Governments; organization of local municipalities established to cooperatively plan community growth and therefore are particularly involved in transportation issues.

column (see: pier column)



conceptual design	idea or feasibility phase of the design process during which various alternatives are developed and tested. During this phase various environmental and engineering issues are identified and accounted for prior to advancing a Preferred Alternative into the preliminary and final design phases. (see also: preliminary design; final design)
Cross Road	A relatively lower traveled roadway that crosses above or below a major roadway. Access to the major roadway may be provided by interchange ramps.
Cultural Resources	Historical, Archaeological and Paleontological sites and or artifacts of cultural value.
cumulative effects	effects that are the result of incremental impacts of an action, when added to other past, present and reasonably future actions regardless of which agency or person undertakes the action.
CWA	Clean Water Act

D

dba	Decibels; average noise fluctuations over an hour.
deck	concrete structural surface of a bridge supported by the girders which can include a sidewalk, vehicle lanes and medians. A bridge deck may include an asphalt wearing surface to protect the reinforcing steel in the concrete from winter road salt.
<i>De minimis</i>	Trifling minimal. (of a fact or thing) so insignificant that a court may overlook it in deciding an issue or case.
design speed	or maximum design speed; the maximum safe speed that can be maintained under ideal conditions for a given section of highway. A desired design speed is typically set to determine particular design criteria for highway geometry. The design speed is ideally 10 mph greater than the intended posted speed limit as a margin of safety. (see also: posted speed)
DHV	Design Hour Volume
directional ramp	a one way roadway that does not deviate greatly from the intended direction of travel. Example: Eastbound 6th Avenue to Northbound I-25.
DOLA	Department of Local Affairs
DOT	Department of Transportation
DOW	Division of Wildlife (Colorado)
DRCOG	Denver Regional Council of Governments

E

EA	Environmental Assessment
EB	eastbound direction of travel.
EIS	Environmental Impact Statement (see also: environmental impact statement)
Environmental Impact Statement	EIS; detailed statement required by NEPA when an agency (such as FHWA) proposes a major federal action significantly affecting the quality of the environment. (see also: NEPA)
environmental justice	pursuit of equal justice and equal protection under the law for all environmental statutes and regulations without discrimination based on race, ethnicity, and/or socioeconomic status, includes a guarantee of equal access to relief and meaningful community participation with government and industry decision-makers.



EO	Environmental Overview; typically an EO is completed for the Policy Directive 1601 to analyze the physical, social, and environmental impacts associated with the proposed improvements.
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
expansion device	mechanical joint at the end of a bridge structure deck to absorb the movement caused by temperature expansion and contraction and load deflection.

F

FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration; part of the United States Department of Transportation; provides and administers financial assistance to the States to construct and improve the National Highway System and coordinates compliance with federal safety and environmental regulations.
final design	Final phase of the design process during which a final plan and specification package is prepared. This package, also known as a 'bid' package, is used by construction contractors to price and build a project (see also: bid).
FIR	Final Internal Review; final CDOT review of project (30%) preliminary plans prior to proceeding with final design.
flyover	an interchange movement or roadway that goes over the freeway.
FOR	Final Office Review; final CDOT review of project (90%) final plans prior to proceeding with completion of final plans and bid documents.
FRA	Federal Railroad Administration
freeway	high-speed roadway with controlled access and no at-grade intersections.
FTA	Federal Transit Administration

G

geometric deficiencies	characteristics, both horizontally and vertically, that do not meet current design standards. (examples: road curvature, sight distance, shoulder widths)
girder	horizontal support members of a bridge structure spanning between abutments and over piers, depending upon the length of the bridge, to support the deck.
GOCO	Greater Outdoor Colorado
grade separation	location where a bridge (overpass) is used to separate crossing traffic by creating an elevational or "grade" difference which will allow one movement to pass over the other. (see also: at-grade crossing)
GPR	Ground Penetrating Radar; a non-destructive method of locating subsurface clusters of objects using ultrahigh-frequency radio waves. GPR is frequently used to determine the presence of potential historical and archeological artifacts.



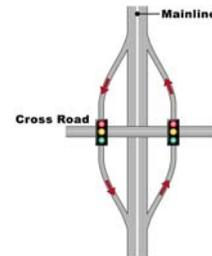
H

HCM	Highway Capacity Manual; FHWA manual for highway capacities used as a guideline to uniformly make future traffic volume projections.
highway capacity	maximum number of vehicles per hour which can reasonably traverse a road segment during current roadway and traffic conditions.
HIRSYS	a database software system used to track comments from stakeholders and the corresponding responses from the study team.
HPC	Historic Preservation Commission
horizontal alignment	horizontal geometry; alignment of a roadway horizontally, determining degree of curves, superelevation, and the lengths of, or, distances between these features based upon parameters such as design speed, sight distance, and driver comfort.(see also: vertical alignment; superelevation)
HOV	High Occupancy Vehicle

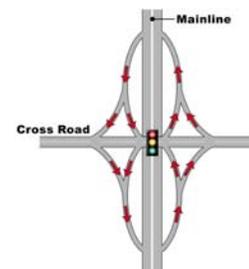
I

independent utility	federal funding term describing a project which can stand alone, when completed, requiring no additional work or funding to be functional for a given specific use.
infrastructure	basic framework or permanent installations of the highway transportation system.
interchange	Location where two converging roadways are grade separated by bridge structure with ramps connecting various directions of travel between the roadways.

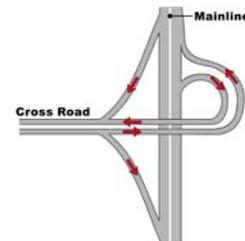
Diamond common interchange configuration deriving its name from the pattern created by the ramps. Diamonds can be described as "small", "tight", or "compressed" if they are designed to minimize space requirements, or "partial" when the configuration is combined with other types of interchange designs.



SPUI Single Point Urban Interchange. Similar to a diamond interchange, except all left turns are handled at one signalized intersection and all right movements are free-flow. Example: Belleview Avenue and Santa Fe Drive in the Denver area.



Trumpet common interchange configuration deriving its name from the pattern created by the ramps. Trumpets are the most traditional way to grade-separate a three-way junction for free flowing conditions.





intersection	location where two converging roadways meet and cross at-grade.
interstate	federally designated freeway that is typically continuous through more than one state. (see also: freeway)
ISTEA	Intermodal Surface Transportation Efficiency Act

**J
K
L**

lane balance	use of additional lanes, other than through lanes, to improve traffic movements between interchanges. Aids in accommodating on and off movements without interrupting the through lane traffic.
LEDPA	Least Environmentally Damaging Practicable Alternative
loop ramp	a free-flow ramp that utilizes a circular path. Example: Northbound I-25 to Westbound 6 th Avenue.
LOS	Level of Service; graduated scale describing traffic congestion conditions established by the Transportation Research Board where (A is best and F is worst).
LUST	Leaking Underground Storage Tank

M

Mainline	A major roadway that accommodates the main movement of traffic. This term generally describes interstate highways, state highways, or other major roadways.
Mitigation	various measures to minimize harm to NEPA and USDOT Section 4(f) protected resources, due to transportation improvements. (see also: Section 4(f);and MOA)
MOA	Memorandum of Agreement; agreement on mitigation efforts to resolve adverse effects to historic properties under the National Historic Preservation Act.
mph	miles per hour
MPO	Metropolitan Planning Organization
MSE	Mechanically Stabilized Earth; engineered system by which soil is reinforced using overlapping layers of plastic or metallic mesh and earth. MSE is used to create vertical or near vertical walls of soil for temporary purposes or finished permanently with concrete or masonry facings.
MUTCD	Manual on Uniform Traffic Control Devices

N

NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAFTA	North American Free Trade Agreement; trade agreement between Mexico, Canada and the United States intended to increase economic interaction. NAFTA is expected to increase truck and rail traffic on major north/south corridors particularly in western states.
National Environmental Policy Act	NEPA; federal legislation that establishes environmental policy for the nation. It provides a framework for federal agencies to prevent environmental damage and contains procedures to ensure that federal agency decision makers take environmental factors into account.
NB	Northbound direction of travel.



NEPA	National Environmental Policy Act (see also: National Environmental Policy Act)
NHD	National Historic District
NHP	National Heritage Program
NHPA	National Historic Preservation Act
NHS	National Highway System
No Action Alternative	no change alternative must be analyzed for all projects as a baseline for analysis of the proposed project action alternatives.
NOI	Notice of Intent (see also: Notice of Intent)
noise abatement	introduction of barriers or other measures to reduce the effects of noise created by roads and trains. (see also: noise barrier; sound barrier).
noise barrier	Barrier or wall (noise wall) erected to block or deflect noise (see also: sound barrier).
Notice of Intent	announces to the public and to interested agencies that a project is being developed and that an EIS will be prepared.
NPDES	National Pollutant Discharge Elimination System.
NPS	National Park Service
NRCS	Natural Resources Conservation Service.
NRHP	National Register of Historic Places
NTP	Notice-to-Proceed; official notification to a contractor that permission is granted to begin work under a specific contract or task order.

O

OAHP	Office of Archeology and Historic Preservation
offset urban interchange	a SPUI that is offset from the intersection of the freeway and roadway. Example: I-225 and Alameda.
OIS	Oil Inspection Section; responsible for registering, inspecting and safe removal permitting of underground storage tanks.
O&M	Operation and Maintenance
OPS	Colorado Department of Labor and Employment, Division of Oil and Public Safety
overpass	location where two converging roadways are grade separated by bridge structure and no ramps are provided to connect the roadways (see also: interchange; intersection).

P

park-n-Ride	p-n-R; RTD transit station where commuters may park their automobiles and board buses or light rail vehicles for travel to their final destination. (see also: Regional Transportation District)
peak-hour traffic	volume of traffic during the highest volume one hour period, usually during rush hour, that reflects conditions that should be used for design.
pier	vertical intermediate supports of a bridge structure located between the abutments consisting of a footing, columns and a cap beam. (see also: substructure, abutment)



pier cap	or cap beam: horizontal member of a pier supporting the girders. One or more columns support the pier cap. (see also: pier; pier column; girders)
pier column	vertically supporting member of a pier carrying the pier cap. A pier may have one or more pier columns. (see also: pier; pier cap)
PM	Project Manager
PM₁₀	Particulate Matter 10; Particulate matter less than ten microns diameter on a scale categorizing airborne particles.
p-n-R	park-n-Ride (see also: park-n-Ride)
Policy Directive 1601	CDOT Policy Directive 1601; a CDOT policy that requires that all requests for new interchanges and improvements to existing interchanges on major state highways be reviewed and evaluated in a consistent manner through the use of established guidelines.
posted speed	the maximum speed limit posted for any given section of a highway. The posted speed limit is ideally 10 mph less than the maximum design speed. (see also: design speed)
PR	Public Relations
Preferred Alternative	transportation option determined to be acceptable according to the purpose and need of the project. (see also: purpose and need).
preliminary design	first phase of the final design process during which a 30% plan package is prepared. This package is used by CDOT to troubleshoot the overall scope of a project prior to more the detailed final design. (see also: conceptual design; final design)
Project Feasibility Study	PFS; the second step required by CDOT Policy Directive 1601; a document that addresses the precise location and conceptual design configuration for a new interchange or interchange improvements, documents traffic forecasts and their associated impacts, and identifies both state highway system and off-system improvements needed to accommodate the projected traffic
PUC	Public Utilities Commission
Purpose and Need	well documented description of the reason that a given project is necessary, states the projects goals and drives the selection of the range of alternatives.

Q

QC Quality Control

R

ramp	inclined roadway connecting different levels of grade-separated roadways typically at interchanges. (see also: interchange)
RAQC	Regional Air Quality Council
raptor	any species of predatory bird.
RCRA	Resource Conservation and Recovery Act
REA	Re-evaluated Environmental Assessment
Record of Decision	ROD; public document that reflects the final decision, rationale behind that decision and commitments to monitoring and mitigation.
reinforcing steel	system of steel bars (rebar) cast within concrete structures to compliment the excellent ability of concrete to resist compression by adding excellent steel ability to resist tension.



REQA	Regional Environmental Quality Advisor (NEPA Representative).
Right-of-Way	(see: ROW)
riparian	relating to or living on the bank of a natural watercourse.
ROD	Record of Decision. (see also: Record of Decision)
ROW	Right-of-Way; Public land dedicated for use in providing public roadways.
RR	Rail Road
RTD	Region Transportation Director
RTD	Regional Transportation District; local transit authority responsible for operating the Denver Metro area bus and light rail systems.

S

SADT	Summer Average Daily Traffic
SB	Southbound direction of travel.
SB40	Senate Bill 40 gives CDOW jurisdiction and permitting authority over impacts to riparian areas and their associated streams resulting from state agency projects
scoping	identification of issues and dialogue with affected agencies and interested public.
SHPO	State Historic Preservation Officer or State Historic Preservation Office.
Section 4(f)	Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. 303), states that “it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.” The FHWA determines applicability and compliance of Section 4(f) regulations on transportation projects. (see also: FHWA)
service life	expected or actual term a facility such as a bridge structure or a roadway remains in use.
SIP	State Implementation Plan.
sound barrier	barrier or wall (sound wall) erected to block or deflect noise. (see also: noise barrier)
spall	spalling; condition where finished surface concrete separates from the main body of concrete in patches caused by age deterioration, freeze thaw action, vibration, moisture and corrosive chemicals
span	distance between the supports of a bridge, sometimes used to refer to the structural members being supported or the section of a bridge between supports (i.e. a multi-span bridge)
specifications	also known as special provisions; detailed written description of procedures, processes, and quality of workmanship, provided to supplement the project plans in addition to CDOT standard specifications.(see also: standard specifications)
standard specifications	detailed written description of procedures, processes, and quality of workmanship, published periodically in book form by CDOT for use on all projects.(see also: specifications)
STIP	State Transportation Improvement Plan



substructure	general term referring to the group of major supporting elements of a bridge including the abutments, piers, and footings.(see also: superstructure)
superelevation	the banking or tilt given to a curved roadway (the outside of the curve is higher than the inside) to counteract the effect of centrifugal force of a vehicle traveling at an assumed design speed.(see also: design speed)
superstructure	general term referring to the group of major horizontal bridging elements of a bridge including the girders and deck.(see also: substructure)
System Alternatives	project alternatives developed for the entire highway and interchange system for I-25 from Logan Street to 6 th Avenue and along 6 th Avenue from I-25 to Federal Boulevard.
System Feasibility Study	SFS; the initial step required by CDOT Policy Directive 1601; a document that addresses general traffic impacts for a new interchange or interchange improvements in the context of the regional transportation facilities and the local arterial roadway system and shows if there would be benefits to the regional transportation network.

T

TAZ	Traffic Analysis Zone
TCP	Traffic Control Plan
TDM	Traffic Demand Management
TDP	Transportation Development Program
T&E	Threatened and Endangered
TIP	Transportation Improvement Plan
TM	Transportation Management
TOD	Transit Oriented Development
TODS	Tourist Oriented Directional Signs; CDOT program responsible for installation of tourist services, historic marker, and scenic byway signage.
TPR	Transportation Planning Region
traffic barrier	barrier erected to protect traffic from roadside hazards, edges of bridge structures and walls or to separate opposing directions of traffic.
traffic flow	characterized by three elements; volume (vehicles per hour), speed (miles per hour), and density (vehicles per mile).
TREX	Transportation Expansion Project
TSM	Transportation System Management

U

UDFCD	Urban Drainage and Flood Control District
UPRR	Union Pacific Railroad
urban design	term used describe the process of determining the character (aesthetics, materials, landscaping, lighting and other amenities) associated with a project in built-up areas.



USACE	United States Army Corps of Engineers; is the agency bound with the responsibility of enforcing Federal regulations governing waters of the United States, typically reviewing findings for wetlands and water quality studies.
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency (also: EPA).
USFWS	United States Fish & Wildlife Services
UST	Underground Storage Tank (see also: LUST).

V

value engineering	independent engineering review of a given design specifically aimed at determining its cost efficiency and, if possible, offer cost saving alternatives.
VdB	Vibration Decibel: Average Vibration Fluctuations Over an Hour
vertical alignment	vertical geometry; alignment of a roadway vertically, determining grades, crests, valleys, and the lengths of, or, distances between these features based upon parameters such as design speed, sight distance, drainage and driver comfort.(see also: horizontal alignment)
viaduct	bridge consisting of a series of similar spans carrying a roadway or railroad over valleys, waterways or other roads or railroads.(see also: overpass; span
VMT	Vehicle Miles Traveled
VPD	Vehicles Per Day
VPH	Vehicles Per Hour

W

WADT	Winter Average Daily Traffic
WB	westbound direction of travel.
wearing surface	relatively easily replaceable material placed onto a bridge deck to absorb the majority of the deterioration caused by traffic and winter salting. The material can be specially formulated concrete or asphalt.
weave	weaving; crossing of traffic streams which are entering and exiting a highway system between the ramps of adjacent interchanges.
weave distance	space available between the gores of ramps from adjacent interchanges for the crossing or weave of traffic entering and exiting the system.
Wetlands	land area where at least 50% of the vegetation is hydrophic vegetation, has wetland hydrology and hydric soils. Wetlands are under jurisdiction of the USACE.
WQCD	Water Quality Control Division
WQCC	Water Quality Control Commission

W Y Z



Northwest Corridor
A TRANSPORTATION ENVIRONMENTAL STUDY

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