



---

## 9.0 GLOSSARY

---

### A

<b>aesthetic</b>	aesthetics; refers to the visual quality of structural or architectural elements and settings.
<b>AADT</b>	Average Annual Daily Traffic
<b>AASHTO</b>	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.
<b>abutment</b>	vertical end supports of a bridge structure upon which the girders bear and terminate. (see also: substructure, pier)
<b>ACC/MVM</b>	Accidents Per Million Vehicles Miles Traveled
<b>ADT</b>	Average Daily Traffic (see also: average daily traffic)
<b>advertisement</b>	invitation by CDOT to contractors to bid on construction projects, usually officially announced or 'advertised' in newspapers. (see also: award; bid)
<b>alternatives</b>	various transportation options developed and analyzed during an EA or EIS study process.
<b>alternative screening</b>	Evaluation of a full range of possible transportation alternatives to identify the most reasonable alternatives for further consideration.
<b>APCD</b>	Air Pollution Control Division
<b>APE</b>	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) )
<b>apparent low bidder</b>	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)
<b>arterial roadway or street</b>	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.
<b>at-grade crossing</b>	location where crossing traffic shares the same elevation or "grade". Typically used to describe a common rail /roadway crossing or a roadway intersection.
<b>auxiliary lane</b>	lane(s) in addition to the through-traffic lanes that accommodate speed changes, weaving, and maneuvering of entering and leaving traffic.
<b>average daily traffic</b>	ADT; total volume of vehicles during a given time period, divided by the number of days in the time period.
<b>avoidance alternatives</b>	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)



<b>conceptual design</b>	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)
<b>Cross Road</b>	A relatively lower traveled roadway that crosses above or below a major roadway. Access to the major roadway may be provided by interchange ramps.
<b>Cultural Resources</b>	Historical, Archaeological and Paleontological sites and or artifacts of cultural value.
<b>cumulative effects</b>	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.
<b>CWA</b>	Clean Water Act

## D

<b>dBA</b>	Decibels; average noise fluctuations over an hour.
<b>deck</b>	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.
<b><i>De minimis</i></b>	Trifling minimal. (of a fact or thing) so insignificant that a court may overlook it in deciding an issue or case.
<b>design speed</b>	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)
<b>DHV</b>	Design Hour Volume
<b>directional ramp</b>	a one way roadway that does not deviate greatly from the intended direction of travel. Example: Eastbound 6th Avenue to Northbound I-25.
<b>DOLA</b>	Department of Local Affairs
<b>DOT</b>	Department of Transportation
<b>DOW</b>	Division of Wildlife (Colorado)
<b>DRCOG</b>	Denver Regional Council of Governments

## E

<b>EA</b>	Environmental Assessment
<b>EB</b>	eastbound direction of travel.
<b>EIS</b>	Environmental Impact Statement (see also: environmental impact statement)
<b>Environmental Impact Statement</b>	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)
<b>environmental justice</b>	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.



<b>EO</b>	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.
<b>EO</b>	Executive Order
<b>EPA</b>	Environmental Protection Agency
<b>ESA</b>	Endangered Species Act
<b>expansion device</b>	mechanical joint at the end of a bridge structure deck to absorb the movement caused by temperature expansion and contraction and load deflection.

## F

<b>FEMA</b>	Federal Emergency Management Agency
<b>FHWA</b>	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.
<b>final design</b>	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).
<b>FIR</b>	Final Internal Review; final CDOT review of project (30%) preliminary plans prior to proceeding with final design.
<b>flyover</b>	an interchange movement or roadway that goes over the freeway.
<b>FOR</b>	Final Office Review; final CDOT review of project (90%) final plans prior to proceeding with completion of final plans and bid documents.
<b>FRA</b>	Federal Railroad Administration
<b>freeway</b>	high-speed roadway with controlled access and no at-grade intersections.
<b>FTA</b>	Federal Transit Administration

## G

<b>geometric deficiencies</b>	characteristics, both horizontally and vertically, that do not meet current design standards. (examples: road curvature, sight distance, shoulder widths)
<b>girder</b>	horizontal support members of a bridge structure spanning between abutments and over piers, depending upon the length of the bridge, to support the deck.
<b>GOCO</b>	Greater Outdoor Colorado
<b>grade separation</b>	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)
<b>GPR</b>	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.



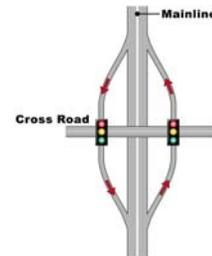
## H

<b>HCM</b>	Highway Capacity Manual; FHWA manual for highway capacities used as a guideline to uniformly make future traffic volume projections.
<b>highway capacity</b>	maximum number of vehicles per hour which can reasonably traverse a road segment during current roadway and traffic conditions.
<b>HIRSYS</b>	a database software system used to track comments from stakeholders and the corresponding responses from the study team.
<b>HPC</b>	Historic Preservation Commission
<b>horizontal alignment</b>	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)
<b>HOV</b>	High Occupancy Vehicle

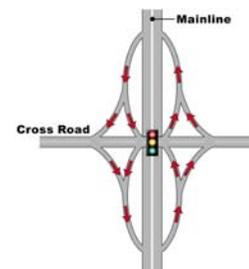
## I

<b>independent utility</b>	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.
<b>infrastructure</b>	basic framework or permanent installations of the highway transportation system.
<b>interchange</b>	Location where two converging roadways are grade separated by bridge structure with ramps connecting various directions of travel between the roadways.

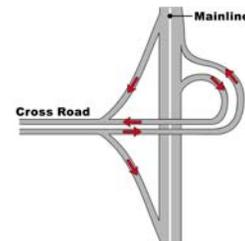
**Diamond** common interchange configuration deriving its name from the pattern created by the ramps. Diamonds can be described as "small", "tight", or "compressed" if they are designed to minimize space requirements, or "partial" when the configuration is combined with other types of interchange designs.



**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.





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

**J  
K  
L**

<b>lane balance</b>	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.
<b>LEDPA</b>	Least Environmentally Damaging Practicable Alternative
<b>loop ramp</b>	a free-flow ramp that utilizes a circular path. Example: Northbound I-25 to Westbound 6 <sup>th</sup> Avenue.
<b>LOS</b>	Level of Service; graduated scale describing traffic congestion conditions established by the Transportation Research Board where (A is best and F is worst).
<b>LUST</b>	Leaking Underground Storage Tank

**M**

<b>Mainline</b>	A major roadway that accommodates the main movement of traffic. This term generally describes interstate highways, state highways, or other major roadways.
<b>Mitigation</b>	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)
<b>MOA</b>	Memorandum of Agreement; agreement on mitigation efforts to resolve adverse effects to historic properties under the National Historic Preservation Act.
<b>mph</b>	miles per hour
<b>MPO</b>	Metropolitan Planning Organization
<b>MSE</b>	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.
<b>MUTCD</b>	Manual on Uniform Traffic Control Devices

**N**

<b>NAAQS</b>	National Ambient Air Quality Standards
<b>NAC</b>	Noise Abatement Criteria
<b>NAFTA</b>	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.
<b>National Environmental Policy Act</b>	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.
<b>NB</b>	Northbound direction of travel.



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

## O

<b>OAHP</b>	Office of Archeology and Historic Preservation
<b>offset urban interchange</b>	a SPUI that is offset from the intersection of the freeway and roadway. Example: I-225 and Alameda.
<b>OIS</b>	Oil Inspection Section; responsible for registering, inspecting and safe removal permitting of underground storage tanks.
<b>O&amp;M</b>	Operation and Maintenance
<b>OPS</b>	Colorado Department of Labor and Employment, Division of Oil and Public Safety
<b>overpass</b>	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

<b>park-n-Ride</b>	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)
<b>peak-hour traffic</b>	volume of traffic during the highest volume one hour period, usually during rush hour, that reflects conditions that should be used for design.
<b>pier</b>	vertical intermediate supports of a bridge structure located between the abutments consisting of a footing, columns and a cap beam. (see also: substructure, abutment)



<b>pier cap</b>	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)
<b>pier column</b>	vertically supporting member of a pier carrying the pier cap. A pier may have one or more pier columns. (see also: pier; pier cap)
<b>PM</b>	Project Manager
<b>PM<sub>10</sub></b>	Particulate Matter 10; Particulate matter less than ten microns diameter on a scale categorizing airborne particles.
<b>p-n-R</b>	park-n-Ride (see also: park-n-Ride)
<b>Policy Directive 1601</b>	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.
<b>posted speed</b>	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)
<b>PR</b>	Public Relations
<b>Preferred Alternative</b>	transportation option determined to be acceptable according to the purpose and need of the project. (see also: purpose and need).
<b>preliminary design</b>	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)
<b>Project Feasibility Study</b>	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
<b>PUC</b>	Public Utilities Commission
<b>Purpose and Need</b>	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

<b>ramp</b>	inclined roadway connecting different levels of grade-separated roadways typically at interchanges. (see also: interchange)
<b>RAQC</b>	Regional Air Quality Council
<b>raptor</b>	any species of predatory bird.
<b>RCRA</b>	Resource Conservation and Recovery Act
<b>REA</b>	Re-evaluated Environmental Assessment
<b>Record of Decision</b>	ROD; public document that reflects the final decision, rationale behind that decision and commitments to monitoring and mitigation.
<b>reinforcing steel</b>	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.



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

## S

<b>SADT</b>	Summer Average Daily Traffic
<b>SB</b>	Southbound direction of travel.
<b>SB40</b>	Senate Bill 40 gives CDOW jurisdiction and permitting authority over impacts to riparian areas and their associated streams resulting from state agency projects
<b>scoping</b>	identification of issues and dialogue with affected agencies and interested public.
<b>SHPO</b>	State Historic Preservation Officer or State Historic Preservation Office.
<b>Section 4(f)</b>	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)
<b>service life</b>	expected or actual term a facility such as a bridge structure or a roadway remains in use.
<b>SIP</b>	State Implementation Plan.
<b>sound barrier</b>	barrier or wall (sound wall) erected to block or deflect noise. (see also: noise barrier)
<b>spall</b>	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
<b>span</b>	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)
<b>specifications</b>	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)
<b>standard specifications</b>	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)
<b>STIP</b>	State Transportation Improvement Plan



<b>substructure</b>	general term referring to the group of major supporting elements of a bridge including the abutments, piers, and footings.(see also: superstructure)
<b>superelevation</b>	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)
<b>superstructure</b>	general term referring to the group of major horizontal bridging elements of a bridge including the girders and deck.(see also: substructure)
<b>System Alternatives</b>	project alternatives developed for the entire highway and interchange system for I-25 from Logan Street to 6 <sup>th</sup> Avenue and along 6 <sup>th</sup> Avenue from I-25 to Federal Boulevard.
<b>System Feasibility Study</b>	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

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

## U

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



<b>USACE</b>	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.
<b>USDA</b>	United States Department of Agriculture
<b>USDOT</b>	United States Department of Transportation
<b>USEPA</b>	United States Environmental Protection Agency (also: EPA).
<b>USFWS</b>	United States Fish & Wildlife Services
<b>UST</b>	Underground Storage Tank (see also: LUST).

## V

<b>value engineering</b>	independent engineering review of a given design specifically aimed at determining its cost efficiency and, if possible, offer cost saving alternatives.
<b>VdB</b>	Vibration Decibel: Average Vibration Fluctuations Over an Hour
<b>vertical alignment</b>	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)
<b>viaduct</b>	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
<b>VMT</b>	Vehicle Miles Traveled
<b>VPD</b>	Vehicles Per Day
<b>VPH</b>	Vehicles Per Hour

## W

<b>WADT</b>	Winter Average Daily Traffic
<b>WB</b>	westbound direction of travel.
<b>wearing surface</b>	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.
<b>weave</b>	weaving; crossing of traffic streams which are entering and exiting a highway system between the ramps of adjacent interchanges.
<b>weave distance</b>	space available between the gores of ramps from adjacent interchanges for the crossing or weave of traffic entering and exiting the system.
<b>Wetlands</b>	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.
<b>WQCD</b>	Water Quality Control Division
<b>WQCC</b>	Water Quality Control Commission

## W Y Z



Northwest Corridor  
A TRANSPORTATION ENVIRONMENTAL STUDY

This Page Left Intentionally Blank