
Glossary of

**Road Design
and
Construction Terms**



3-C Planning	The continuing, cooperative, comprehensive planning process in an urbanized area as required by federal law. <i>(e.g. Lincoln, Omaha, or Sioux City Area Planning)</i>
3R Project	3R stands for resurfacing, restoration and rehabilitation. These projects are designed to extend the life of an existing highway surface and to enhance highway safety. These projects usually overlay the existing surface and replace guardrails. 3R projects are generally constructed within the existing highway right-of-way.
Abutment	An abutment is made from concrete on piling and supports the end of a bridge deck.
Access Control	The extent to which the state, by law, regulates where vehicles may enter or leave the highway.
Action Plan	A set of general guidelines and procedures developed by each state to assure that adequate consideration is given to possible social, economic and environmental effects of proposed highway projects. All states were directed to develop this plan by the Federal Highway Administration.
Adapted Grasses	Grasses which are native to the area in which they are planted, but have adjusted to the conditions of the environment.
Adverse Environmental Effects	Those conditions which cause temporary or permanent damage to the environment.
Aesthetics	In the highway context, the considerations of landscaping, land use and structures to insure that the proposed highway is pleasing to the eye of the viewer from the roadway and to the viewer looking at the roadway.
Aggregate	Stone and gravel of various sizes which compose the major portion of the surfacing material. The sand or pebbles added to cement in making concrete.
Aggregate Base Course	The layer of material immediately beneath the pavement. It may be composed of crushed stone, crushed or uncrushed sand and gravel, or combinations of these materials. To provide the service intended it must be uniform in strength to support the pavement.
Air Pollutants	Those impurities which cause the atmosphere to become contaminated. These include: carbon monoxide, nitric oxides, sulfur dioxides, particulates, and hydrocarbons.

Air Pollution	The presence of contaminating particles in the air which interfere with a person's health, safety or comfort, personal property, plants and animals.
Air Rights	The property rights for the control or specific use of a designated air space involving a highway.
Alignment	The vertical and horizontal location of a road.
Alternate Routes	The various general highway locations examined in corridor studies to determine the best alignment for a highway.
Ambient Air	Any unconfined portion of the atmosphere; the outside air.
Apportionment	Method used to determine the share of funds each state highway administration receives from the Federal Government.
Archeological Salvage Program	Program to protect Indian sites or locations of historical interest which will be disturbed by plowing, leveling, clearing, dozing, etc., for excavation and investigation by professional archeologists.
Archeology	The scientific study of material remains of past human life and activities.
Arterial	A general term denoting a highway primarily for through traffic, usually on a continuous route.
Asphaltic Cement	Brownish black, solid or semisolid mix of bitumens from native deposits or a petroleum by-product used in the manufacturing of asphaltic concrete.
Average Daily Traffic or ADT	A measurement of the number of vehicle which use a highway over a period of a year divided by 365 to obtain the average for a 24-hour period.
Backfill	Material used to replace, or the act of replacing, material removed during construction. Also, may denote material placed, or the act of placing material adjacent to structures.
Backslope	The slope from the bottom of the ditch to natural ground, on the opposite side of the foreslope. <i>(see Foreslope page 13)</i>
BAM	Bituminous Aggregate Mixture

Band of Interest	The area included in a corridor study which will be examined for the best alignment.
Berm	A raised mound of earth used in different ways; as a site barrier, used to separate the roadway embankment from a drainage way, as a sound barrier, or for architectural reasons.
Bicycle Lanes	Portions of a roadway set aside for bicycle use, with the lanes distinguished from the motor vehicle portion of the roadway by painted stripes, curbs, or parking blocks.
Bicycle Routes	There are three types - Bicycle Trails, Bicycle Lanes and Shared Roadways.
Bicycle Trails	Separate paths or trails intended for the exclusive use of bicycles. When such a path is part of a highway, it is separated from the roadway for motor vehicle travel by an open space or barrier.
	
Bitumen	A natural asphalt or substance found in a natural state or a residue by-product from petroleum refinement.
Bituminous	Containing Bitumen
Board of Public Roads Classification & Standards	This Board develop minimum design, construction and maintenance standards for each functional classification of public roads and streets. The 11-member board is appointed by the Governor and approved by the legislature for 4-year terms. Two members represent the NDOR. <i>(Contact the Government Affairs Division for more information.)</i>
Borrow Excavation	When the Department specifies a new roadway to be constructed, the roadway embankment is usually constructed from earth available on the right-of-way, however, if there is insufficient earth the contractor is required to obtain the needed additional material from off the state's right-of-way (<i>land</i>). This material is called borrow excavation
Borrow Pit	The source of approved material required for the construction of embankments, or other portions of earthwork requirements.
Borrow Pit Restoration	Returning the area used for borrow to a usable condition.

Box Culvert

A box culvert is cast-in-place or pre-cast reinforced concrete and has a box shape that is located under the embankment to drain water from one side of the road to the other.

Bridge Deck Scarification To remove the existing concrete bridge driving surface in preparation for a concrete overlay. This is usually done with a cold milling machine consisting of hardened steel bits attached to a revolving drum.

Bridge Pier A bridge pier is a supporting structure at the junction of connecting spans of a bridge.

Buffer Zone The area 15 feet from the edge of the roadway surface including the rest of the right-of-way which is planted with native and adapted grasses and provides habitat for wildlife.

Bypass Routes An arterial highway that permits traffic to avoid part or all of an urban area.

Capacity Maximum number of vehicles which has a reasonable expectation of passing over a given section of a lane or a roadway in one direction during a given time period under prevailing roadway and traffic conditions.

Cement A powdered product made by grinding clinkers of limestone, clay, and other materials, and which reacts with water to form a rock like substance used to bond aggregates together in concrete.

Centroid An assumed point in a zone that represents the origin or destination of all trips to or from the zone. Generally, it is the center of trip ends rather than a geometrical center of zonal area. *(Also called Zone Centroid)*

Channel Path in which water will or does flow.

Channel Change The change in direction of the natural path of water flow, usually for a short distance.

Channel Clean Out The removal of debris, soil deposits, or heavy brush in an existing path of water flow.

Channel Excavation When the Department builds a new bridge or drainage structure over an existing waterway it is sometimes necessary to dredge out or straighten the existing waterway channel. This work is called channel excavation.

Channelization (of road) The direction of the traffic flow into definite paths, by means of traffic markings, islands, or other means.

Cofferdam When the Department specifies the construction of a bridge pier in, or adjacent to a stream, the contractor may be required to drive sheet piling into the stream, creating a cofferdam. The mud and additional stream bed material that must be excavated prior to the construction of the pier is called cofferdam excavation.

Cold Milling To prepare an existing bridge deck or roadway pavement for resurfacing, the department sometimes creates a new roadway cross section and profile by cold milling the existing surface with a machine that has hardened steel bits in a revolving drum.



Collector Consists of a group of highways and/or streets which pick up traffic from many local or land-service roads and carry it to community centers or to the arterial system. They are the main school bus routes, mail routes, and farm-to-market routes.

Collector Street A street which serves the internal traffic movement within the city and connects with the major arterial system.

Commodity Flow Path that products follow because of division of labor and specialization. For example, oranges are produced in Florida and travel to other states for consumption.

Community Participation Participation by the public in the highway planning process at orientation, information and public hearing meetings, membership on committees, and through participation in surveys and interviews.

Community Values The social, economic and environmental factors unique to a given community.

Concrete Concrete is a building material made of sand and gravel bonded together with portland cement into a hard, compact substance.

Concrete Revetment Mats As an alternative to concrete riprap along a ditch or waterway bank, sometimes a concrete revetment mat will be used. The mat is a heavy fabric envelope which is pumped full with cement mortar that hardens and conforms to the shape of the surface upon which it is placed.

- Connecting Link** A roadway on the state highway system which extends between and junctions with two other numbered routes on the state highway system. Such roads are usually relatively short in length.
- Construction Costs** Those costs after the contract has been let. This includes engineering, survey, inspection, in addition to those actual construction costs. The written contract between the Department and the contractor setting forth the obligations of the parties, including, but not limited to, the performance of the work, the furnishing of labor and materials, and the basis of state highway payment.
- Contract Specifications** The requirements which are to be followed in the construction of highways.
- Cordon Line** An imaginary line encircling a survey area defining the limits of the internal survey and location of external traffic survey stations.
- Cordon Stations** Stations located on each street crossing the cordon line where vehicles were counted and classified during survey hours.
- Cordon Survey** A roadside-interview type of study in which drivers are stopped and questioned about origin and destination of their trip and its purpose. The interviews are conducted at stations on the external or internal cordons, or on both.
- Correlation** An interdependence between variables.
- Corridor** An area of variable width between two points. In highway work, corridors are defined areas where the needs for improvement are studied.
- Corridor or Location Public Hearing** Public hearing held by the Department of Roads to inform the public and obtain their views on a proposed project location.
- Corridor Study** The study of corridor locations, social, economic and environmental considerations, and alternatives for an area.
- Cost Benefit Ratio** A method of determining the economic justification of alternative schemes for highway system improvements. The benefits and respective costs for each alternative are determined and the ratio of benefits to cost for each project is compared to the others.

- County Roads** Those roadways which are constructed and maintained primarily by county governments and which are not on the state highway system.
- Cul-de-sac** A local street open at one end only, which allows vehicles to turn around.
- Culvert** Any structure, not classified as a bridge, which provides an opening under the roadway.
- Dead End** A local street open at one end only and with no special provisions for turning around.
- Decibel** A unit of sound measurement.
- Deck Slab Repair** The wearing surface of a bridge must first be repaired before it receives a new wearing surface. The deck slab repair usually consists of partial and full depth patching followed by resurfacing.
- Defense Access Funds** Federal funds are available without regard to apportionment among the states for paying all or any part of the construction and maintenance of defense access roads (*including bridges, tubes, and tunnels*) to military reservations, to defense industries and defense industry sites, and to the sources of raw materials. The funds may be used to replace existing highway and highway connections, or to upgrade roads used for military purposes.

Department of Roads Nebraska's state highway agency which has the responsibility for initiating and carrying forward the planning, design, construction, and maintenance of highways on the state and federal highway systems. Referred to as the Department.



- Design Capacity** Maximum number of vehicles which can pass over a lane or roadway during one hour without operating conditions falling below a preselected design level.
- Design Hourly Volume** A volume determined for use in design representing the traffic that is expected to use the highway in any designated year. It is an hourly volume, usually the 30th highest hourly volume expected during the design year.
- Design Life** Initially figured to be a 20-year period for pavement.
- Design Phase** The development of a project from the conclusion of the corridor location work to the completion of final plans.

Design Public Hearing	Public hearing held by the Department to inform the public and to obtain their views on the design features of a project.
Design Speed	A speed determined for design and correlation of the physical features of a highway which influence vehicle operation.
Design Standards	Specifications for such design features as curvature, grades, roadway width, drainage facilities, etc.
Design Volume	A volume determined for use in design, representing traffic expected to use the highway 20 years in the future. Unless otherwise stated, it is an hourly volume.
Design Year	Year of initial construction, plus 20 years.
Destination	The zone in which a trip ends.
Detector Loop	New traffic signal installation contracts usually include the construction of a wire detector loop placed under the surface of the pavement in the approach area of the intersection. When a motorist drives over the detector loop, the time phase for the light is affected.
Detour	The route used for through traffic around construction areas.
Diffusion Models	A mathematical model to estimate pollution concentrations from a specific source.
Dikes	A bank, usually of earth, constructed to control or confine water.
Divided Highway	A highway with separated roadways for traffic in opposite directions.
Draft Environmental Impact Statement	A preliminary written summary of the probable effects a highway project will have on the environment, especially the human environment.
Drain Tile	An underground pipe to handle water from a farm field or used to fix areas on the right-of-way to lower water tables.
Drainage Easement	Easement for directing the flow of water.
Drainage Structure	Those structures other than drains, levees, and pumping plants which are intended to promote or aid drainage. The term includes catch-basins, bulkheads, spillways, pipe outlets, etc.

Drop Structure	A particular type of drainage structure used to carry water under or away from the roadway with a vertical drop built into the structure.
Earth Excavation	On a construction project that requires new or relocated roadway, the earth which must be moved from one place to another is called earth excavation.
Easement	A right to use or control the property of another for designated purposes. For example, drainage easement, planting easement, scenic easement, sight line easement and slope easement are five types of easements in connection with highways. Easements may be either temporary or permanent.
Ecology	The inter-relationships of living things to one another and to their environment, or the study of such inter-relationships.
Economic Interaction	Mutual impact between the community and a road or project.
Ecosystem	The interacting system of a biological community and its non-living environment.
Ecotone	A transition area between two adjacent ecological communities usually exhibiting competition between organisms common to both.
Egress	The exit points on a controlled access highway.
Emergency Relief Funds	Funds for repair or reconstruction of highways on the federal-aid highway system are available upon application of the state highway department, if an emergency has been declared by the Governor, and concurred with by the Secretary of Transportation. Such funds may also be spent on repair and reconstruction of forest highways, forest development roads and trails, park roads and trails and Indian reservation roads, whether or not such highways, roads or trails are on the federal-aid system.
Eminent Domain	The power of the state to take property for public use without owner's consent upon payment of just compensation.
Emission Rates	The rate at which the average automobile is expected to emit various air pollutants.

Emulsified Asphalt An emulsified asphalt is a common construction material used to prime, seal or resurface a highway. It consists of an asphalt that is chemically mixed with water in an emulsion.

Environmental Impact The effects a project will have upon the environment, especially the human environment.

Environmental Impact Statement A written summary of the probable effects a project will have on the environment, especially the human environment.

Erosion Control Measures Those standards used to retard deterioration or destruction of the land surface.

Excavation The act of taking out materials, the materials taken out, or the cavity remaining after materials have been removed. The Department has an agreement with the Nebraska Historical Society to permit the removal (*excavation*) and preservation or salvage of anything of historical or archeological value that may be found during highway construction.

Exhaust Emissions The air pollutants emitted from the exhaust of the internal combustion engine, namely carbon monoxide, nitrogen oxides, and hydrocarbons.

Expansion Tie Anchors Whenever the Department widens a pavement or constructs new curbing adjacent to an existing concrete pavement, these accessories are tied to the old pavement by use of steel anchor bolts drilled into the vertical edge of the pavement.

Expressway A divided arterial highway for through traffic with full or partial control of access and generally with grade separations at major intersections.



External Cordon A line encircling the study area within which the detailed study is conducted.

External Survey The phase of the survey in which traffic data was obtained by interviewing motor vehicle drivers passing through survey stations on the principal highways or streets entering the survey area.

Federal Authorization Congress authorizes the apportionment of a stipulated amount of money to be divided among the states in given fiscal year. Apportionment of this total among the states is made by the Secretary of Transportation.

Federal Highway Administration A division of the Department of Transportation, formerly the Bureau of Public Roads. The federal agency responsible for supervision and distribution of federal funds to various state highway agencies.



Federal-Aid Highway Four categories are; Interstate, primary, secondary and urban. This is the system which is normally eligible to receive federal-aid funds.

Federal-Aid Interstate Funds Funds from the Highway Trust Fund, designated for use on the Interstate highway system. The provisions governing appropriations, apportionment, and matching ratios for state participation differ from those applicable to other federal-aid highway systems.

Federal-Aid Interstate System A highway system designed and located to connect by routes, as direct as practicable, the principal metropolitan areas, cities and industrial centers, to serve the national defense and to connect at suitable border points and routes of continental importance. The routes are selected by joint action of the state highway departments of each state and adjoining state subject to approval by the Secretary of Transportation. This system is located in rural and urban areas.

Forecasting Procedure for estimating future land use, population and traffic patterns.

Foreslope The slope from the edge of the shoulder to the bottom of the ditch or to the bottom of the roadway fill.

Forest Highway Funds Funds made available from the U.S. Treasury to be used for survey, construction, reconstruction and maintenance. These are appropriated to FHWA and then apportioned annually among the states according to a formula based on the area and value of national forest lands within a state in proportion to the total area and value of all national forest lands. Funds for forest development roads and trails are appropriated to, and apportioned by, the Secretary of Agriculture according to the relative needs of the various national forests. Funds are authorized for construction of forest roads which are of primary importance to the state, counties, or communities within, adjoining or adjacent to the national forest and which are on the federal-aid system.

Frontage Road A local street or road located on the side of an arterial highway which permits access to residences and businesses from the controlled intersection of the arterial highway.

Functional Classification Identification of a road by the function it serves.

Functional Design The determination of precise alignments of a road in an established corridor. From the functional design, detailed plans are later developed which result in final design.

Geotechnical Fabric Prior to the placement of riprap on an earth bank adjacent to a stream, the Department first requires the placement of this woven cloth made from nylon types of material that are not bio-degradable.

Grade Separation A crossing of two highways, or a highway and a railroad, at different levels. The bridge that spans highways or railroad tracks (*as in an overpass*) is a grade separation structure.



Gradient The percent of vertical or longitudinal slope.

Ground Cover Grasses or other plants grown to keep soil from being blown or washed away.

Groundwater Table The level of water under the earth's surface.

Growth Center Funds Those funds which can be allocated to the three growth center areas for use on primary and secondary projects.

Growth Centers Those areas designated as such by the Federal Highway Administration for the purpose of studying economic growth performance. The areas are Norfolk, Scottsbluff, and Tri-city area (*Grand Island, Kearney and Hastings*).

Growth Factor Method A procedure for forecasting travel by projecting present travel patterns forward on the basis of anticipated growth in different areas.

Guard Rail A steel rail with two corrugations at the shoulder edge of a highway, usually in front of roadside hazards. Also cable guard rail.



- Habitat** Total environmental conditions of a place that is occupied by an organism, a biological population or a community.
- Highway Commission** An eight-member appointed board which serves in an advisory capacity to the Governor. The Board serves as a liaison with the public and chairs public hearings. All commission members are appointed for a six-year term by the Governor with the consent of the Legislature. Each represents a highway district and no more than four are from the same political party. Highway Commission meetings are open to the public and generally held the fourth Friday of every month at the central headquarters building of the Nebraska Department of Roads in Lincoln, Nebraska.
- Highway-Oriented Business** Businesses purposely built adjacent to highways to serve the traveling public. These include: motels, gas stations, restaurants, gift shops, etc.
- Highway, Street or Road** A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.
- Highway Trust Fund** Source of almost all federal-aid for highways. The fund consists of the federal taxes paid by highway users on gasoline; special motor fuels; trucks, truck trailers and buses; tires of the type used on highway vehicles; tread rubber; and on certain vehicles and other items related to highway use. The tax revenues are deposited in the Trust Fund and then redistributed to the states in accordance with formulas established by law.
- Home-Interview Survey** This survey includes a series of interviews conducted at a sample of dwelling units throughout the study area. In addition to origin and destination of trips made by residents, information is also obtained as to the time, purpose, and mode of travel used for these trips during weekdays. Data on car ownership and population are other by-products of this study. Also, sociological and economic data are collected.
- Horizontal Curve (of Highway)** Bend from a straight line or course along a roadway.
- Human Environment** The total of all external conditions and influences (*aesthetic, ecological, biological, cultural, social, economic, historical, etc.*) that affect the life of a human.

Hydraulics A branch of science that deals with practical applications *(as the transmission of energy or effects of flow)* of water or other fluid in motion.

Hydrology The study of water in the atmosphere, on the surface, and underground.

Impact Attenuators A crash cushion which collapses to dissipate the energy of an impacting vehicle to prevent injury. Impact attenuators are commonly used where roadways separate or split.



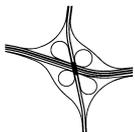
Improvement Any change to the design, structure or features of an existing road or highway. *(e.g. resurfacing, reconstruction, guard rail replacement, lighting or landscaping)*

Information Meeting Informal presentation of information by the Department relating to a proposed project or program for the purpose of informing the public and obtaining input.

Ingress The entrance points on a highway which have access control.

Inner Cordon A line established for the purpose of obtaining origin and destination information about vehicle trips within the internal area. Roadside interview stations are located along the inner cordon where the cordon intersects major roadways.

Interchange A system of interconnecting roadways providing for the free movement of traffic between two or more roadways on different levels. For example, three types of interchanges are: cloverleaf, diamond and directional. Variations of these basic types are possible.



Interdisciplinary Approach Involving a variety of professions in solving a particular problem.

Intermittent Resurfacing This is patching in certain locations where road conditions warrant, *(anywhere from a few feet to one-half mile)* and is less costly than redoing an entire highway surface.

Intermodal Transfer Change from one type of carrier to another. *(e.g. truck to airplane)*

Internal Cordon The internal cordon encloses an area within the study area, such as the central business district.

Internal Survey The phase of the survey in which traffic data are obtained by interviewing residents of selected dwelling units throughout the entire survey area and interviewing the owners or operators of a representative sample of all taxicabs and trucks registered in the survey area.

Internal Trip A trip with both origin and destination within the survey area.

Interstate



A divided arterial highway for through traffic with full control of access and ingress and egress only at interchanges. The interstates are a federally designated national system of interstate and defense highways.

Inversion

A weather term which explains what happens when, somewhere above the ground, the thermal gradient is reversed, thus not allowing the air to mix as much as normal. An inversion lowers the depth to which thermal mixing (*warm air rising*) takes place. This is of particular concern because increased pollution can result during periods of inversion.

Island (Raised or Painted) Used to separate vehicular traffic traveling in opposite directions. (*see also Traffic Island*)

Jacking and Cribbing Underground construction of tunnels, conduits and structures require the excavations be kept from caving in by the use of a supporting framework.

Land Use The functions for which various land areas are used or are planned to be used, such as: agriculture, housing, education, cultural recreations, religious, industrial and commercial uses.

Land Use Forecast An estimate of the number of acres in specific use by a specific date at a particular location.

Lane Mile One mile of a two-lane highway equals two lane miles. Therefore, if there are four "lane miles" of two-lane, there are eight actual miles to maintain.

Lateral Obstacle Clearance An area relatively flat and free of obstacles beyond the edge of the travel way for the recovery of out-of-control vehicles.

Level of Project An alphabetical designation assigned to a project which indicates factors such as type of project, degree of complexity and extent of social, economic and environmental study required.

Level of Service The term used to indicate the quality of service provided by a facility under a given set of operating conditions. These conditions include speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

Level Review Committee The group established in the Action Plan to review all proposed projects, flowing systems planning, to determine their level. The established level serves as a guideline for the type of study which is needed and procedures for the project.

Limited Access Highway Every highway, street or roadway which owners or occupants of adjacent land and other persons have no legal right of access to and from the highway except at such points and in such manner as determined by the public authority having jurisdiction over said roadway.

Link “Connecting Link” is a section of state marked and/or maintained road which forms a distance-saving connection between numbered highways. A link extends between and junctions with two other state highways. Normally, a connecting link is short in length.

Local Road A street or road primarily for access to residence, business, or other abutting property.

Local Trip A trip passing through the cordon line which either originated or ended within the survey area.

Luminaire Street light

Machine Count A traffic count made by a vehicle recording traffic counting machine on tape with a vehicle detector at a specific location on a highway.



Maintenance The preserving and keeping of each type of roadway, roadside, structure, and facility as nearly as possible in its original condition as constructed, or as later improved.

Maintenance and Operating Costs Cost of keeping the road in operating condition. (*e.g. repair of chuck holes, mowing, snow removal*)

Major Street or Major Highway An arterial highway with intersections at grade and direct access to abutting property, and on which geometric design and traffic control measures are used to expedite the safe movement of through traffic.

Manual Count	A traffic count made by stationing a person at a specific location on a highway and recording traffic by tally sheet, hand counters, or other non-automatic devices.
Mapping	A method by which any number of different factors can be examined individually and in combination in relation to one common objective. (<i>e.g. the best route for a highway after consideration of the factors</i>)
Market Value	The highest price for which property can be sold in the open market by a willing seller to a willing purchaser, neither acting with compulsion and both exercising reasonable judgment.
Mean Trip Time	Travel time determined by compiling the elapsed trip times for all trips in a particular movement and dividing the total by number of trips. This technique is used to find a weighted travel time for trips between a work zone cluster and each ring-corridor segment in which the workers live. Mean trip time is usually determined for each mode.
Median	The portion of a divided highway separating the traveled ways for traffic in opposite directions.
Median Lane	A speed-change lane within the median to accommodate left-turning vehicles.
Meteorological Conditions	Weather conditions; temperature, wind speed and direction, and thermal gradient; used to define the mixing layer depth (<i>height of inversion</i>).
Minimum Design Standards	Adopted by the Board of Public Roads Classification and Standards. These standards ensure that each road segment can handle the traffic pattern and volume it is expected to carry.
Mobilization	The Department typically reimburses the contractor when completed portions of work are performed. Contractors therefore must find financing to help start a new project. The pay item mobilization was created a few years ago to help the contractor with these early start-up costs.
Modal Split	The division of person trips between mass and private transportation.
Mode of Travel	Means of travel such as auto driver, vehicle passenger, mass transit passenger, or pedestrian.

- Model** A system of data presented in a mathematical format (*as in traffic model*).
- Mulch** A protective covering (*e.g. native hay or grain straw*) spread on the ground to reduce evaporation, maintain even soil temperature, and prevent erosion.
- Multiple Correlation** Correlation involving one dependent variable and two or more independent variables.
- Multiple Regression** A trend line involving one dependent variable and two or more independent variables.
- Multiple Use of Space** Projects in which usage by the public or some other agency can be made of that space which was acquired for the development of a highway project. This can involve use under an existing overhead structure, the use of air space above the roadway, usage alongside the highway, or a combination of these and could be developed either at the time of construction or later.
- NSI** Nebraska Serviceability Index. The value is a numerical index representing the observed surface distress on the pavement based on a scale of 0 to 100, with 0 being the worst and 100 the best condition.
- National Highway System (NHS)** A system of roads nation-wide that includes the Interstate highway system as well as other roads important to the nation's economy, defense, and mobility. Almost 160,955 miles of road, 3,000 of which are in the state of Nebraska, have been designated as being on the NHS.
- Native Grasses** Those grasses which are common to the area in which they are planted.
- Negative Declaration** A written statement that the probable effects of a project on the environment will be minimal.
- Neighborhood** A primary informal group consisting of all persons who live in local proximity. Often considered to be the locality served by an elementary school or neighborhood convenience shopping center. Neighborhoods form the more or less cohesive cells of a larger community.
- Neoprene Expansion Joint** The transverse joint found at the ends of bridge deck slabs is sometimes filled with a prefabricated black rubberized material called neoprene expansion joint. The rubber expands and contracts with the broad range of Nebraska temperatures.

Node	A specific point on a study system network where two or more links intersect and where a choice of travel routing is possible. A node may coincide with a zone centroid and may be used for the purpose of describing the network.
Noise	Unwanted sound.
Noise Level	The degree of undesired sound which affects the auditory senses. Allowable noise levels have been defined in Federal Highway Administration Policy and Procedure Memorandum 90-2.
Noise Sensitive Areas	Those areas adjacent to a proposed improvement which would be adversely affected by excessive noise levels. (<i>e.g. hospitals, schools, churches</i>)
Obligation Authority	The actual amount of federal funds which are available for expenditure within a fiscal year.
One-and Six-Year Plans	The immediate one-year construction to be done in the current fiscal year and the proposed highway construction objectives for the next five fiscal years. These plans are updated annually to include the next fiscal year. These plans are prepared by the Department.
Operating Speed	The highest overall speed at which a driver can travel on a given highway under favorable weather conditions and under prevailing traffic conditions without at any time exceeding the safe speed as determined by the design speed on a section-by-section basis.
Opportunity Model	A mathematical formula based on the premise that the probability of a trip originating in one zone will find a destination in another zone is proportional to the possible trip destinations in the other zone, and to the number of trip origins that have not previously found a destination.
Orientation Meeting	Informal presentation of information by the Department relating to a proposed project or program for the purpose of obtaining the public's views. These are the first type of meetings held with the public before a corridor study is begun. The public is informed about the area of interest, the procedures and techniques to be followed, and an estimated timetable for the project.
Origin	The zone in which a trip begins.

Origin-Destination Studies	Trip data is obtained from vehicle drivers as to where they started, where they are going, and the purpose of their trip. This data helps the Department to forecast traffic patterns.
Over-All Speed	Total distance divided by total time, including all delays.
Overpass	A grade separation where the highway passes over a highway or railroad. (<i>See Grade Separation</i>).
P.R. 1	The initial federal form submitted to the FHWA which describes project location, type of construction proposed, estimated costs of engineering, right-of-way and construction. This document serves as a request for funds to proceed with project development.
PSI	Present Serviceability Index represents the ride quality of a pavement based on a scale of 0 to 5, with 0 being the worst condition and 5 the best.
Paleontology	A science dealing with the life of past geological periods as known from fossil remains.
PAM	Pozzolanic Aggregate Mixture
Parking Lane	An auxiliary lane primarily for the parking of vehicles.
Partial Taking	The acquisition of a portion of a parcel of property.
Pavement	The part of a roadway having a constructed surface for the facilitation of vehicular movement.
Pavement Fabric	These are prefabricated sheets of steel mesh that are occasionally placed into new concrete pavements.
Pavement Life	The design life for a roadway is 50 years.
Pavement Marking	The lane lines or symbols painted on pavement surfaces. Marking can be done with several different types of materials.
Pavement/Pothole Patching	When the pavement begins to deteriorate due to the influences of the environment and traffic, holes, ruts and cracks are usually localized at existing pavement joints. The repair of this type of failure consists of sawing out, removing and replacing the material with new Portland cement concrete or bituminous concrete.



- Peak Hour** That one-hour period during which the maximum amount of travel occurs. Generally, there is a morning peak and an afternoon peak and traffic assignments may be made for each period, if desired.
- Pedestrian** Any person afoot.
- Pedestrian Crossings** Designated crossings where pedestrians may safely cross a busy highway or roadway.
- Performance Graded Binder** A performance graded binder came about with the developments of Superpave. The superpave system incorporates performance based asphalt materials characterization with the mix design and environmental conditions to improve performance by controlling rutting, low temperature cracking, and fatigue cracking.
- Permanent Seeding** Planting of ground cover after completion of the improvement. These grasses and legumes will be of a lasting nature to insure continued control of soil erosion.
- Planning and Research Funds** Federal funds are available for research on all phases of highway construction, modernization, development, design maintenance, safety, financing, and traffic conditions. The research may be conducted by government agencies or private groups. One and one-half percent of each state's federal-Aid apportionment is reserved to be used exclusively for these purposes. Federal funds made available for planning and research projects must be matched by the state in accordance with prescribed ratios unless FHWA determines that no matching funds are required.
- Planning Study Report** A Department document which is prepared at the beginning of a project. This basic document will contain a location map, type of improvement, documentation of the supporting needs for the project, statement as to whether any significant environmental impact is anticipated, statement of alternatives, and a list of study areas examined. This document will be circulated within the Department, to other agencies, and to the public for their input.
- Planting Easement** An easement for reshaping roadside areas and establishing, maintaining and controlling plant growth thereon.

Policy and Procedure Memorandum Form used by the Federal Highway Administration to inform agencies of the FHWA's interpretations and applications of federal statutes dealing with highway and transportation matters.

Population Estimate Estimating current population on the basis of demographic and economic data.

Population Forecast Estimating future population on the basis of demographic and economic data.

Possible Capacity The maximum number of vehicles that can pass a given point on a lane or roadway during one hour under prevailing roadway and traffic conditions.

Pozzolanic This is a mixture of aggregate, water and a cementing agent that consists of lime and fly ash to create a durable road surface.

Practical Capacity The maximum number of vehicles that can pass a given point on a lane or roadway during one hour under the prevailing roadway and traffic conditions without unreasonable delay or restrict to the driver's freedom to maneuver.

Precast Concrete Bridge Slab A new concrete bridge slab can be constructed by the use of either cast-in-place reinforced concrete, or by the use of precast concrete deck segments manufactured off site, transported to the job, and lifted up and set on the bridge piers. These segments are then tied together with steel bolts and the joints filled with a cement mortar. Depending upon the type of design, these precast concrete bridge slabs will be either driven upon directly or first surfaced with a bituminous concrete surface.

Preliminary Engineering Costs Includes all the survey, design, material exploration, and plan preparation up to letting the project for construction.

Priority Commercial Systems A continuous network of routes, within the State of Nebraska, which are designed to carry higher traffic volumes, especially larger volumes of commercial vehicles. This system, which includes the rural expressway system, includes about 3,300 miles of road. It directly serves all of the first class (5,001-100,00 population) and larger cities; directly serves 80 of the 113 second cities (800-5,000 population), and comes within 10 miles of 23 second class cities.

- Program (noun)** A priority listing of projects, usually for a defined period of time (*e.g. 6 years, 20 years*). Programs are subject to continued review before they are established as projects by the Department.
- Program (verb)** To establish and execute procedures.
In fiscal accounting - to allocate funds for specific projects.
- Program Balance** The amount of money left out of the Federal apportionment which has not been set aside for particular projects.
- Project** The specific section of the highway together with all appurtenances and construction to be performed thereon under the contract.
- Project Agreement** An agreement between the federal government and the state which specifies the federal funds to be used for a particular project. The form is necessary for reimbursement from FHWA. (*See Transfer of Federal Funds to State*)
- Project Number** A number with a letter prefix which is assigned to a project to identify it on correspondence, documents and plans. The number indicates location and funding.
- Public, Mass or Rapid Transit** (a) Vehicles used to convey people from one place to another. (b) The system or company which owns such vehicles.
- Radial Highway** An arterial highway leading to or from an urban center.
- Railroad Grade Crossing** The general area where a highway and a railroad cross at the same level, within which are included the railroad, roadway, and roadside facilities for traffic traversing that area.
- Raised Island** That portion of the roadway which is raised above the travel-way by means of a curb to separate traffic.
- Ramp** A connecting roadway between two intersecting highways at a highway separation.
- Random Selection** Every combination of samples of a given size from a population, no matter how small or how large, has an equal chance of being selected.
- Rate of Change** The proportional and consistent change in the size of a variable from one period to the next.

Recreation Road A roadway which is not part of the state highway system but which has been developed and improved by money from the State Recreation Road Fund in accordance with Section 39-1390 of the State Statutes.

Reflective Crack Control Treatment A method used to retard the reflective cracking into or thru the new asphalt surface; fabric, heavy overlay or other strategies are used.

Regional Growth Model A land-use model used to estimate growth and future land-use patterns.

Regional Planning Agency An area-wide A-95 Review Agency (*See A-95 Review Agency*). There is presently one such agency in Nebraska located in the southeast portion. The counties which form this agency are: Nemaha, Johnson, Pawnee, and Richardson.

Registration The registration certificate or certificates and registration plates issued under the laws of this State pertaining to the registration of vehicles.

Reinforcement Bars Concrete pavements and structures can be designed to withstand most types of loading if the concrete is reinforced with steel bars. These bars are called reinforcement bars.



Relocation Assistance Program Program for providing advice and assistance to persons, businesses, etc. which have to be relocated due to highway construction.

Remainder The portion of the tract of land retained by the owner after a part of such tract of land has been acquired.

Remnant A remainder so small or irregular that it usually has little or no economic value to the owner.

Retaining Wall Structure used to contain an embankment, also used on a backslope.

Right of Immediate Possession The right to occupy property for highway purposes, after preliminary steps for acquisition have been taken and before final settlement.

Right of Survey Entry The right to enter property temporarily to make surveys and investigations for proposed highway improvements.

- Right-of-Way** Land acquired by purchase, gift or eminent domain in order to build and maintain a public road.
- Right-of-Way Appraisal** A determination of the market value of property including damages, if any, as of a specified date, resulting from an analysis of facts.
- Right-of-Way Estimate** An approximation of the market value of property including damages, if any, in advance of an appraisal.
- Right-of-Way Strip Map** A plan of highway improvement showing its relationship to adjacent property, the parcels or portions thereof, needed for highway purposes, and other pertinent information.
- Riparian** Relating to, living, or located on a bank of a natural watercourse (*as a river*) or sometimes of a lake or a tidewater.
- Riparian Right** The rights of an owner of water-fronting lands in the bed, banks, accretions, water, access, moorage, and related items.
- Riprap** When the Department constructs an embankment adjacent to a stream or lake, the bank is lined with broken concrete or limestone rock to prevent erosion.
- Riverine** Living or situated on the banks of a river.
- Road User Benefits** The advantages, privileges or savings that accrue to drivers or owners through the use of one highway facility as compared with the use of another. Benefits are measured in terms of the decrease in road user costs and the increase in road user services.
- Road User Costs** Vehicular operating costs, usually expressed in cents per vehicle mile, covering all items involved in vehicle ownership and operation. The value of time is included as one of the items of cost.
- Road User Services** Advantages or privileges accruing to the vehicle driver or owner through features of safety, comfort, convenience, etc. In some cases these can be evaluated in cents per vehicle mile.
- Roadside Control** The public regulation of the roadside to improve highway safety, expedite the free flow of traffic, safeguard present and future highway investment, conserve abutting property values, or preserve the attractiveness of the landscape.

Roadside Development Those items necessary to complete the highway which provide for the preservation of landscape materials and features; the rehabilitation and protection against erosion of all areas disturbed by construction through seeding, sodding, mulching and the placing of other ground covers, trees and shrubs, and such suitable planting and other improvements as may increase the effectiveness and enhance the appearance of the highway.



Roadside Zoning The application of zoning for roadside control.

Roadway The portion of a highway, including shoulders, for vehicular use.

Roadway Cuts Segments of roadway lower than the surrounding ground.

Roadway Embankment A raised structure of soil, soil-aggregate, sand or rock.

Rural Area An area whose character is rural in nature and which may include towns of less than 5,000 population.

Safety Features Highway features which provide for safe travel. These include flat slopes, no hazardous obstacles within thirty feet of the driving lanes, breakaway sign supports, and safety beams and cable guards.

Safety Zone The area or space officially set apart within a roadway for the exclusive use of pedestrians and which is protected or is so marked or indicated by adequate signs as to be plainly visible at all times while set apart as a safety zone.

Salvage Saving different materials from projects where existing surfacing and structures are removed and using these in other construction.

Sawing Concrete Pavement When patching a failed area of existing pavement the contractor is required to make a full depth saw cut around the perimeter of the patch so that the segment can be dislodged and removed. Also done to control cracking in concrete.



Scenic Easement An easement for conservation and development of roadside views and natural features.

Scheduling The process of developing a plan of operations to carry out the program. The process first involves breaking down projects into activities, setting starting and ending times for those activities, determining the resources required to perform the work, then adjusting the times as necessary to balance the resource requirements.

Screening

The use of any vegetative planting, fencing, ornamental wall of masonry, or other architectural treatment, earthen embankment, or a combination of any of these which will effectively hide from view any undesirable areas, especially junkyards, from the main traveled way.

Screen Line

An imaginary line, usually along physical barriers such as rivers or railroad tracks splitting the study area into two parts. Traffic counts (*and possibly interviews*) are conducted along this line, and the crossings are compared to those calculated from the interview data as a check of survey accuracy.

Seal Coat

An existing county or township road, or state highway can be rehabilitated or given a new wearing surface by spraying it with a liquid asphalt followed by a uniform sprinkling of aggregate. This procedure is called a seal coat or chip and seal.

Seasonal Changes Changes brought about by seasons.

Section 4(f) Land Any publicly owned parks, recreation areas, historic sites, or wildlife or waterflow refuges of national, state, or local significance as determined by federal, state or local officials having jurisdiction over such lands.

Sector A combination of traffic zones which presents a more meaningful tabulation of traffic data.

Sediment Basin Structure in which water moves slowly enough for suspended particles to settle.

Severance Damages Loss in value of the remainder of a parcel resulting from an acquisition. (*Sometimes called Indirect Damages*)

Shared Roadway Facilities officially designated and marked as bicycle routes but also open to motor vehicle travel with no provision for physical separation of the two types of vehicles.

Shoo-fly Localized detour adjacent to the construction.

Shoulder

The portion of the roadway adjacent to the traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of the base and surface courses. On secondary roadways the shoulder usually consists of turf. On heavily traveled roads the shoulder is usually a bituminous mixture or concrete.

Sight Distance	The line of sight available to the driver to see another car for passing sight distance or to see a fixed object for stopping sight distance.
Sight Line Easement	An easement for maintaining or improving the sight distance.
Signing	Visual method of providing the vehicle driver with guide, warning and regulatory information along a highway.
Simulate	To reproduce synthetically. (<i>e.g., to simulate trip distribution</i>)
Slope Drains	The drainage structures used to prevent water erosion damage to slopes.
Slope Easement	An easement for cuts or fills.
Social Costs	Costs that are not included in the usual calculations concerning engineering, construction and right-of-way costs.
Social and Economic Generators	Those social and economic activities which generate traffic.
Socio-Economic Factors	These are used to assess the effect of the highway on the human environment. Some include: population trends and growth, economic activity, transportation facilities, wildlife, scenic and wildlife, scenic and recreational facilities, historical resources, aesthetics, social service facilities, land use, and national defense.
Soil Erosion	The wearing away of soil by the action of water, wind, or glacial ice.
Space Utility	Added value gained by movement of a product from one place to another, e.g. wheat increases in value as it moves from farm to market.
Special Excavation	On a roadway contract that runs through a city, there are numerous miscellaneous items that need to be removed (<i>curb, sidewalk, driveways, earth, etc.</i>). These items are combined under the item Special Excavation.
Specifications	The standard specifications, supplemental specifications, special provisions, and all written or printed agreements and instructions pertaining to the method and manner of performing the work or to the quantities and qualities of the materials to be furnished under the contract.

Speed-change Lane An auxiliary lane including tapered areas, primarily for the acceleration or deceleration of vehicles entering or leaving the through traffic lanes.

Spurs A roadway on the state highway system which radiates from another numbered route on the state highway system. The principal characteristic is that only one end of the route junctions with another highway route.

Stability Classes A weather term which denotes classes A through F derived from meteorological data that determine the severity of air pollution potential. Class A - very much turbulent mixing of air; class F - very little mixing, pollution stays where it is emitted.

Standard Metropolitan Statistical Area (SMSA) Area or SMSA: An integrated economic and social unit with a large population nucleus. Each SMSA contains: (a) one central city of 50,000 or (b) two cities with contiguous boundaries, for economic and social purposes, a single community with a combined population of 50,000, the smaller of which must have a population of 15,000. It includes counties and may cross state lines.

State Highway Agency The agency with the primary responsibility for initiating and carrying forward the planning, design and construction of highway. In Nebraska this is the Department of Roads (*DOR*).

State Highway System Roads, streets and highways provided for in the Nebraska Highway and Bridge Law which form the group of transportation lines for which the Department will have primary responsibility. The system shall include, but not be limited to, right-of-way, connecting links, drainage facilities, and bridge appurtenances, easements and structures used in conjunction with such roads, streets, and highways.

State User Funds Revenue from state tax on motor fuel, motor vehicles registration and motor carrier fees. Not all of these go into the State Road Fund - some are withheld for administrative costs and other state, county, or municipal costs. Other sources include property rental, sale of surplus property and equipment, sale of sign permits and interest on invested funds.

Statewide Traffic Assignment Model A computerized procedure for simulating present and/or future vehicular trips on an existing or proposed network of highways on a statewide basis.

- Station (Survey)** A numerical designation for points on a project centerline which denote the distance of that point from another point on the project.
- Station (Traffic)** A location at the external cordon line where driver interviews are conducted. Also vehicle count station or vehicle weight station.
- Steel Bascule Bridge** A kind of drawbridge counter-weighted so that it can be raised and lowered easily.
- Storage Lane** An auxiliary lane, primarily to allow those vehicles which turn to wait for through traffic to proceed across the intersection.
- Study Area** The area encircled by the external cordon. (*See External Cordon*)
- Surfacing** Material used to construct the roadway. There are four types: Asphalt, Bituminous, Concrete, Gravel.
- Survey Period** That time during which the external origin and destination survey is conducted. The survey period begins the day that the first interview station is operated up to and including the day of the last interview station.
- Systematic Interdisciplinary** The involvement of persons, from professions in addition to engineering, in the planning, location and design phases of project development. The purpose of this involvement is to approach and insure adequate consideration of the social, environmental and economic effects of highway programs.
- Systems Planning** The study of transportation needs in a particular area. The area studied may be an urban area, a DOR field district or the entire State. The result of systems planning may be a recommendation of improvements or additions to the existing transportation system, or the creation of new modes.
- Systems Planning Phase** The preliminary work to study *need* and establish *priorities*.
- Terminus** The origin or destination of a trip. Also the location of the starting point and ending point of a highway construction project.

Terrain	The physical features of a tract of land.
Thermal Gradient	A weather term which describes the change in temperature with a change in altitude (<i>height above ground</i>). Normally temperature decrease with increasing altitude. (<i>See Inversion</i>)
Through Street or Through Highway	Every highway or portion thereof at the entrance to which vehicular traffic from intersecting highways is required to stop or yield before entering or crossing and where appropriate signs are erected as provided by law, unless entry or crossing is made on the proper indication of a traffic-control signal.
Through Trip	A trip having both origin and destination outside the Survey Area, passing completely through the area and crossing the cordon line twice.
Time Cost	Travel time by car or transit (<i>door-to-door</i>), converted to cost values (<i>cents per minute</i>) so that time costs may be combined with other items of cost.
Topography	Representation on maps or charts depicting natural and man-made features of an area or region.
Tourism	Pleasure trips usually of longer than local distance.
Traffic	All types of conveyances, together with their load, whether singly or as a whole, as well as pedestrians, while using any roadway for the purpose of transportation or travel.
Traffic Assignment	A method of distributing trips on a road network or on a theoretical network to illustrate how various sets of physical conditions and travel characteristics would affect the traffic flow pattern, for instance, speed, distances, etc.
Traffic Control Device	Any sign, signal, marking or installation placed or erected under public authority, for the purpose of regulating, warning, informing or guiding traffic.
Traffic Count	A count of total vehicular traffic passing a given point on a highway during a specified time period. This might be a manual or machine count.
Traffic Demands	The number of vehicles desiring to use a particular route.
Traffic Flow	The movement of vehicles on a highway system or on a single route.

Traffic Forecasting	Estimating future traffic patterns on the basis of known transportation variables.
Traffic Island	An island provided in a roadway to separate or direct streams of traffic; includes both divisional and channelizing islands.
Traffic Lane	The portion of the traveled way for movement of a single line of vehicles.
Traffic Marking	A traffic control device consisting of line, patterns, or colors on the pavement, curbs, or other objects within or adjacent to the roadway, or words or symbols on the pavement.
Traffic Sign	A traffic control device mounted on a fixed or portable support which conveys a specific message by means of words or symbols, and is officially erected for the purpose of regulating, warning, or guiding traffic.
	
Traffic Signal	A power-operated traffic control device by which traffic is regulated, warned, or alternately directed to take specific actions.
Traffic Volume	The amount of traffic on a particular route.
Traffic Zone	A subdivision of the study area established for the purpose of tabulating, analyzing, and projecting future vehicular travel.
Transfer of Federal Funds to State	Federal-aid for highways is received by the state in the form of reimbursement for work already done and paid for by the state. The state may claim the federal share of the cost of work in the form of monthly progress payments. All federal-aid highway projects must be approved in advance by FHWA. A project agreement is required before a state may receive any reimbursement from the FHWA.
Travel Time	The time of travel, including stops and delays, except those off the traveled way.
Traveled Way	The portion of the roadway for the movement of vehicles, exclusive of shoulders and auxiliary lanes.
Trench Backfill	Soil or sand used to backfill storm sewer trenches.
Trip	A one-direction movement of a vehicle which begins at the origin at the start time, ends at the destination at the arrival time, and conducted for a specific purpose.

Trip Generation Commonly used to describe the number of trips starting or ending in a particular area in relation to the land use or socio-economic characteristics of that area. A study of trip generation does not attempt to describe all of the characteristics of trips, direction, length, or duration, but simply to identify and quantify the trip ends in a particular area/unit.



Tubular Thrie Beam Retrofit Rail Several of the bridges constructed years ago were provided with side rails that were designed to standards that have since been upgraded to better redirect errant vehicles. In front of the old rail a new metal beam retrofit rail is constructed, consisting of three corrugations similar to a guard rail, and will redirect most vehicles.

Unchannelized Intersection An at-grade intersection without islands for directing traffic into definite paths.

Underdrains The pipe that is put into the trench next to the highway (*a multi-lane divided highway*). It is backfilled with porous sand which lowers the water table and makes the grade of the highway more stable.

Underpass A grade separation where the highway passes under an intersecting highway or railroad. (*See Grade Separation*)

Unrestricted Access Crossings of the highway are permitted at-grade along the entire length.

Urban Area An area whose character is urban in nature and which may include towns of more than 5,000 population.

Vehicle Every device, in, upon, or by which any person or property is or may be transported or drawn upon a highway, excepting devices moved by human power or used exclusively upon stationary rails or tracks.

Vehicle Miles Normally obtained by multiplying the average daily traffic by 365 and by multiplying the mileage of road to which the average daily traffic is applicable.

Vehicles Per Day or VPD Number of vehicles that pass a particular point on the road during a period of 24 consecutive hours.

Vertical Curve A smooth transition between two sloping grade lines; a hill or valley.

Vertical Curve (of Highway) A curve on the longitudinal profile of a road to provide for change of gradient.

Viaduct	A bridge for carrying a road over a valley, another road, or railroad.
Visibility	The farthest object that can be observed. In daylight landmarks are used; but at night unfocused lights serve as reference points.
Visual Impact	Appearance of the roadway and appurtenances to an observer.
VMT	Vehicle miles of travel.
Volume	The number of vehicles that pass over a given section of a lane or roadway during a time period of one hour or more. Volume can be expressed in terms of daily traffic or annual traffic, as well as on an hourly basis.
Water Pollution	The addition of harmful or objectionable material to water in concentrations or in sufficient quantities to result in measurable degradation of water quality.
Waterproofing Membrane System	A combination liquid asphalt and fabric placed on top of the concrete bridge deck prior to the placement of the bituminous wearing surface. On certain types of bridge decks, a bituminous wearing surface is specified on top of the concrete deck.
Watershed	The area contained within a divide above a specific point on a stream.
Weekday Traffic	The number of vehicles that passes a given point on the road during a consecutive 24-hour period from Monday to Friday, inclusive.
Weight Related Cost	The extra cost of highway construction brought about by building capacity for heavy loads.
Wetland	Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.
Wildlife Habitat	The environmental conditions of a specific place that is occupied by a specific species of wildlife.
Wind Rose	Historical data for a specific time period that shows cumulative wind directions and speeds. Such a diagram shows what direction the wind blows from for a certain percentage of the time.



Zone	A portion of the study area, delineated as such for particular land use and traffic analysis purposes. There may be two types of zones used in the traffic assignment process: (a) Survey zone - A subdivision of the study area which is used during the data collection phase of the study. (b) Traffic assignment zone - A subdivision of the study area represented by a centroid.
Zone Centroid	A point of trip origin or destination.
Zoning	The division of an area into districts and the public regulation of the character and intensity of land use and improvements thereon.

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