

APPENDIX D.

ACRONYMS AND GLOSSARY

D.1 ACRONYMS

ADT	Average Daily Traffic
AASHTO	American Association Of State Highway and Transportation Officials
ADA	Americans with Disabilities Act of 1990
ATMS	Automated Traffic Management System
AVI	Automatic Vehicle Identification Program
AVO	Average Vehicle Occupancy
BMS	Bridge Management System
BTS	Brazos Transit System
CAAA	Clean Air Act Amendments of 1990
CBD	Central Business District
CMAQ	Congestion Mitigation and Air Quality Improvement Program
CMS	Congestion Management System
CMSA	Consolidated Metropolitan Statistical Area
CNG	Compressed Natural Gas
CO₂	Carbon Dioxide
CTMS	Computerized Transportation Management Systems
DOT	U.S. Department of Transportation
E+C	Existing Plus Committed
EPA	Environmental Protection Agency

FHWA	Federal Highway Administration (part of USDOT)
FONSI	Finding of No Significant Impact
FTA	Federal Transit Administration (part of USDOT)
GIS	Geographic Information System
H-GAC	Houston-Galveston Area Council
HOV	High Occupancy Vehicles
I/M	Inspection and Maintenance
IMS	Intermodal Transportation Management System
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITS	Intelligent Transportation System (formerly IVHS)
IVHS	Intelligent Vehicle Highway System
LOM	Level of Mobility
METRO	Metropolitan Transit Authority of Harris County
MIS	Major Investment Study
MM	Metropolitan Mobility
MPO	Metropolitan Planning Organization
MTP	Metropolitan Transportation Plan
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHS	National Highway System
NHTSA	National Highway Traffic Safety Administration (part of USDOT)
NO_x	Nitrogen Oxides
O₃	Ozone
PMIS	Pavement Management Information System
RCTSS	Regional Computerized Traffic Signal System
RM	Rural Mobility
ROD	Record of Decision
ROW	Right of Way
SIP	State Implementation Plan
SMS	Safety Management System
SOV	Single Occupancy Vehicle
STIP	Statewide Transportation Improvement Program
STP	Surface Transportation Program
TAC	Technical Advisory Committee

TCM	Transportation Control Measure
TDM	Travel (or Transportation) Demand Management
TIP	Transportation Improvement Program
TMA	Transportation Management Area
TNRCC	Texas Natural Resource Conservation Commission
TPC	Transportation Policy Council
TSM	Transportation System Management
TTI	Texas Transportation Institute
TxDOT	Texas Department of Transportation
UM	Urban Mobility
UPWP	Unified Planning Work Program
USDOT	U.S. Department of Transportation
UTP	Unified Transportation Program
V/C	Volume to Capacity Ratio
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

D.2 GLOSSARY

Access, accessibility: The opportunity to reach a given destination within a certain time frame or without being impeded by physical or economic barriers.

Action scenario (Build): A conformity test of the vehicle emissions of the future transportation system that would result if the proposed transportation plans and programs (proposed transportation investments) were implemented in a specific year. Emissions of the Action Scenario network are compared to the Baseline (No Build) network.

Alignment (geometry): The exact location, design, and arrangement of a facility (such as a roadway or rail line) within a corridor.

Alternative: (Regarding a MIS) A possible solution to an identified transportation deficiency. Since there is often confusion regarding the exact definition of an alternative, we refer to alternatives using three different terms. An alternative begins as a *conceptual alternative* (at which stage most of the conceptual alternatives are eliminated), then as a *preferred alternative* (which occurs at the end of an MIS as a result of the elimination of all other conceptual alternatives, or by combining several conceptual alternatives into a single preferred alternative), and finally it becomes an *adopted alternative* (which is the approved preferred alternative, modified as needed). The adopted alternative is also considered a *project*.

Alternative fuels: Any motor fuel other than ordinary gasoline that generally results in lower levels of air pollutants. Examples include reformulated gasoline, natural gas, and liquid propane.

Americans with Disabilities Act (ADA) of 1990: Federal Law that requires accessible public transportation services (including complementary or supplemental paratransit services in areas where fixed route transit service is operated) for persons with disabilities.

The Act expands the definition of eligibility for accessible services to persons with mental disabilities, temporary disabilities, and the conditions related to substance abuse. The Act is an augmentation to—but does not supersede—Section 504 of the Rehabilitation Act of 1973 which prohibits discrimination on the basis of disability against otherwise qualified individuals in programs receiving federal assistance.

Arterial: A street classification for roadways other than highways that serve major traffic volumes.

Attainment area: An area considered to have air quality at least as good as the US Environmental Protection Agency health standards used in the Clean Air Act. An area may be an attainment area for one pollutant and a non-attainment area for others.

Average daily traffic (ADT): The average number of vehicles passing a fixed point in a 24-hour period. Used as a measure of traffic volume on a roadway.

Base year: An analysis or study's baseline or lead-off year. The year to which other years are compared to.

Baseline (No-build): A conformity test of the emissions of the existing transportation system without any proposed transportation investments. Emissions of the Baseline network are compared to that of the *Action Scenario* ("Build") network.

Bike route: Bike routes are roadways that have significant bicycle usage or are a link in the bicycle network. Bike routes are designated with signage. Since bicyclists are attracted to marked routes, these bikeways warrant a higher standard of street maintenance than a "shared" roadway. Some may have no special treatments beyond this. Others may have a wide outside lane, with a width of 14 to 15 feet. This is the standard width considered desirable for an outside lane to safely accommodate a bicycle and motor vehicle. Restriping of the roadway or other improvements may also be necessary. On both types of bike routes pedestrians are prohibited.

Bikeway: The inclusive term for any facility that accommodates bicycle travel for commuting or recreational purposes. Often these facilities are a part of a roadway.

Build test (Action scenario): See *Action Scenario*.

Bus lane: A lane reserved for bus use only. Also known as 'diamond lane' because of the diamond symbol used to denote such lanes. See also *High-occupant vehicle*.

Clean Air Act (CAA): 1970 Federal Act designed to improve air quality.

Clean Air Act Amendments (CAAA): 1990 amendments to the Clean Air Act that aim to substantially reduce air pollutants by specified target dates. This federal regulation classified the Houston-Galveston area as a nonattainment area for the pollutant ozone.

Conformity: An analysis that determines whether vehicle emissions from proposed transportation project are in accordance with State Implementation Plan requirements for air quality.

Congestion: The level at which transportation system performance is no longer acceptable due to traffic interference. The level of acceptable system performance may vary by type of transportation facility (major arterial, minor arterial, principal, transit), geographic location (metropolitan area or subarea, rural area) and/or time of day. Congestion can be classified as either recurrent or non-recurrent. Recurrent congestion includes regular work commute or planned event trip delays and accounts for approximately 35% of all congestion; non-recurrent congestion includes minor and major incident delays and accounts for approximately 65% of all congestion.

Congestion Management System (CMS): A management system or systematic process for identifying traffic congestion, mitigating congestion, and monitoring the effectiveness of congestion mitigation measures.

Congestion Mitigation and Air Quality Improvement Program (CMAQ): (ISTEA, Title I, Part A §1008; 23 USC §149) A \$6 billion program which helps implement projects designed to reduce emissions in areas not meeting federal health standards for air quality.

Consolidated Metropolitan Statistical Area (CMSA): An aggregate of Primary Metropolitan Statistical Areas as designated by the US Bureau of the Census. The Houston-Galveston-Brazoria CMSA includes eight counties: Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller counties. It includes the six counties of the Houston PMSA and the single counties from the Brazoria PMSA and the Galveston-Texas City PMSA.

Controlled access highway: Also called a limited access highway, with a limited number of ingress and egress points.

Corridor: An area within the Metropolitan area that includes a particular travel market or markets that are all affected by the same or similar transportation needs and mobility problems. The area, essentially a linear *subarea*, includes both origins and destinations.

Council of Governments: A voluntary organization of local governments

Demand: see *Travel demand*.

Demand-responsive: Descriptive term for a transit service type, usually considered paratransit, which can be variably routed and timed to meet changing rider needs on a semi-daily basis. Demand-responsive service may concentrate on serving a particular type of rider, such as the elderly or physically challenged. Compare to *Fixed route*.

Demography: Characteristics of a total population. Characteristics can include, but are not restricted to ethnic makeup, age distribution, education levels, and occupation patterns. Study of a region's demographics helps to determine travel demand.

Department of Transportation (DOT): see *United States Department of Transportation*.

Emissions budget: Allowable emissions levels that the MTP future transportation system emissions levels must not exceed. An emission budget (identified in the *State Implementation Plan*) has been set for *Volatile Organic Compounds*, but not yet for *Nitrogen Oxides*.

Enhancement activities: Refers to activities conducted in relationship to a particular transportation project that ‘enhances’ the existing or proposed project. Examples of such activities include provision of facilities for pedestrians or bicyclists, landscaping or other scenic beautification projects, historic preservation, control and removal of outdoor advertising, archeological planning and research, and mitigation of water pollution due to highway runoff. In Texas, enhancement projects can receive specific funding through the Statewide Transportation Enhancement Program (STEP).

Facility: Any type of transportation infrastructure such as highways, local roads, transit centers, HOV lanes, etc. that is used to move people and goods.

Federal Highway Administration (FHWA): A part of the US Department of Transportation. FHWA is responsible for approving and funding all federal aid for any highway project or program.

Federal Transit Administration (FTA): A part of the US Department of Transportation. FTA is responsible for approving and funding all federal aid for any transit program or project.

Fixed route: Regularly scheduled transit service, operating over a set route or path. Also known as local service.

Gulf-Coast State Planning Region: An area designated by the state legislature for planning purposes and including 13 counties: Austin, Brazoria, Chambers, Colorado, Fort Bend, Galveston, Harris, Liberty, Matagorda, Montgomery, Walker, Waller, and Wharton counties. The Houston-Galveston Area Council is assigned to serve this region as its representative Council of Governments.

Headway: A transit term referring to the length of time between buses at any specific point along a route.

High-occupancy vehicle (HOV): A vehicle with two or more occupants. Freeways and other roads carrying large traffic volumes may have lanes designated for HOV use, specifically vanpools, carpools, and buses. The term ‘HOV’ sometimes refers to the HOV lanes themselves.

Hike and Bike trails: Hike and Bike trails, often called multi-use trails, are generally designed for recreation purposes. The bicyclist and pedestrian often share this type of facility with rollerbladers, joggers, and other recreationalists. Hike and bike trails are similar to bike trails and independent sidewalks, although many hike and bike trails have a crushed gravel or bark mulch surface. Motorized vehicles are prohibited on trails.

Houston-Galveston Area Council (H-GAC): The *metropolitan planning organization* for the Houston-Galveston area. One of its functions is to develop and coordinate the transportation planning and projects being implemented in the *Gulf Coast State Planning Region*.

Impact analysis: An examination of all impacts that may result from a transportation improvement. Impacts may include environmental, social, and economic impacts.

Improvement: A transportation project or program.

Infrastructure: Term used to describe the physical assets of a society or community including roads, bridges, transit facilities, bikeways, sidewalks, parks, sewer/water systems, communications networks and other capital facilities.

Intelligent Transportation Infrastructure (ITI): ITS components, such as traffic signal control, freeway management, transit management, incident management, and electronic payment and toll technologies, which operate on a shared communication backbone with a common information “language” and makes for a more efficient use of resources.

Intelligent Transportation System (ITS): Formerly Intelligent Vehicle Highway-System (IVHS). A computerized communications technology that provides the motorist with information about road and transit conditions and monitors and controls vehicle operations on roadways. ITS includes such concepts as freeway management systems, urban signal control systems, and automated highways.

Intelligent Vehicle Highway-System (IVHS): See *Intelligent Transportation Systems (ITS)*

Intermodal: Refers to the connections between transportation modes. Also used as a modifying adjective indicating the use of connecting modes (such as an ‘intermodal trip’).

Intermodal Surface Transportation Act (ISTEA) of 1991: Federal legislation that restructures funding for highway and transit programs. The Act requires transportation plans and programs developed by metropolitan planning organizations to be comprehensive, multimodal and intermodal.

Land use: The way specific portions of land or the structures on them are used. Example land uses includes commercial, residential, industrial, retail, agricultural, vacant, etc.

Level of mobility (LOM): A measurement of the efficiency of a facility, particularly the congestion along a segment of an arterial, highway, or other roadway. LOM is based on a *volume to capacity* ratio. The V/C ratio determines the level of mobility: tolerable (V/C between 0.00 and 0.85), moderate (V/C between 0.85 and 1.00), serious (V/C between 1.00 and 1.25), severe (V/C greater than 1.25). See also *Level of Service*.

Limited access highway: See also *controlled access highway*.

Local street: A street intended solely for access to properties contiguous to it.

Major investment study (MIS): the analytical process designed to examine various transportation alternatives in order to solve corridor or subarea’s mobility problems. The scale of an MIS can vary depending on the size of the corridor/subarea, but must include several elements, the most important of which are (1) a set of varied conceptual alternatives, (2) a consideration of the socio-economic and environmental impacts of each alternative, and (3) active public involvement.

Major investment: (often called **major metropolitan transportation investment**) A high-type highway or transit improvement of substantial cost that is expected to have a significant effect on capacity, traffic flow, level of service, or mode share at the transportation corridor or subarea scale. Examples include: (1) Construction of new partially or fully controlled principal arterials; (2) extension (of one or more miles) of

partially or fully controlled principal arterials; (3) significant expansion of capacity (equivalent to one or more lanes) for one or more miles on partially or fully controlled principal arterials; (4) construction of new HOV facilities or fixed guideway transit facilities; (5) extension of HOV facilities or fixed guideway transit facilities; (6) additional lanes or tracks along a fixed guideway; and (7) substantial increases in transit service along a guideway.

Management systems: ISTEA established 6 management systems (23 CFR Part 500), to fulfill 2 fundamental purposes: (1) to develop a systematic process that will improve the effectiveness of the existing and future transportation network; (2) to provide information and solutions that will protect the public and private investments made in these systems. This systematic process should be more analytical and quantitative in nature rather than qualitative. The 6 management systems concern: highway pavement on federal-aid highways (PMS); bridges on and off federal-aid highways (BMS); highway safety (SMS); traffic congestion (CMS); public transportation facilities and equipment (PTMS); intermodal transportation facilities and systems (IMS).

Metropolitan Planning Organization (MPO): A forum for cooperative transportation decision making which is responsible for conducting and coordinating a region's transportation planning process. Development of the Metropolitan Transportation Plan is the MPO's responsibility.

Metropolitan transportation plan (MTP): Formerly known as the Long-Range Transportation Plan. The official twenty-year planning document which identifies existing and future transportation deficiencies and multimodal needs, as well as network improvements needed to meet mobility requirements over the planning period. In nonattainment areas, this plan must also address how the region's transportation system will improve air quality. To receive federal funding a transportation project must be included in the MTP and programmed in the *Transportation Improvement Program* (TIP).

The MTP is developed by the metropolitan planning organization through its established planning process.

Mobility: Safe, comfortable, convenient rapid movement of people from one point to another.

Modal split: The regional or area-wide numbers or percentages of people distributed among the various modes of transportation available in that region or area.

Multimodal: Refers to the diversity of transportation options for the same trip; also, an approach to transportation planning or programming which acknowledges the existence of or need for a variety of transportation options.

National Ambient Air Quality Standard (NAAQS): Federally mandated maximum levels (i.e. federal health standards) for air pollutants such as ozone.

National Environmental Policy Act (NEPA): Federal act requiring a study on any environmental impact a federally funded or federally permitted project might cause.

National Highway System (NHS): The network of roads including all interstate routes, regionally significant urban and rural principle arterials, potential strategic defense routes,

critical highway connectors, and access to major ports, airports, public transportation, and intermodal facilities. The adopted nationwide NHS network is approximately 160,000 miles in length.

Network: A transportation system with its many roadways and routes often shown either graphically or mathematically.

Nitrogen oxides (NO_x): A pollutant produced during fossil fuel combustion that contributes to ground-level *ozone*. Common sources of nitrogen oxides include automobiles, incineration, power generation, industrial processes, space heating, and fireplaces.

No-build (Baseline scenario): See *Baseline*.

Non-attainment area: A designation by the Environmental Protection Agency of any place in the United States failing to meet national air quality standards (NAAQS). The Houston-Galveston area is a non-attainment area for *ozone*.

Ozone (O₃): A gas, commonly called *smog*, which in excess quantities at ground level is a pollutant and irritant. Ozone is created when *nitrogen oxides* (NO_x) react with *volatile organic compounds* (VOCs) in sunlight. Ozone in the upper atmosphere protects us from harmful ultraviolet rays, ground-level ozone is harmful.

Paratransit van: A van specially modified to carry disabled or mobility-impaired passengers.

Performance measures: Any of a variety of methods that can be used to determine the level at which a transportation system is operating. Performance measures gauge the degree to which performance standards are attained. As an example, performance measures for congestion management may include travel time, delay, level of service, speed, and time rate.

Preferred alternative: (Regarding a MIS) The preferred alternative is selected from the group of conceptual alternatives. Note that the preferred alternative could actually include several conceptual alternatives, or portions thereof, in any combination found to be the most beneficial. It could also be a strategy or policy, as well as a project.

Regional Commute Alternative Program (RCAP): A program designed to replace the Employer Trip Reduction (ETR) program. The RCAP is a cooperative program that coordinates TNRCC, H-GAC, METRO, TxDOT, and Transportation Management Organizations to reduce commuting trips by providing incentives and services to commuters directly.

Regional Computerized Traffic Signal System (RCTSS): A system designed to minimize traffic delays by diverting travel from blocked or congested routes to alternate roads.

Regional Intelligent Transportation System (RITS): The ITI system for the Houston-Galveston TMA.

Right-of-way (R-O-W): Priority paths for the construction of highways, HOV lanes, commuter rail, railroads and other transportation facilities. Includes all the land set aside for a facility's construction and operation.

Shoulder lanes: In bicycle terminology, these are roadway shoulders that are paved, all-weather surfaces with no ridges, seams, or other obstructions. These types of facilities are common to Farm-to-Market roads and State Highways in less populated areas. Automobiles are generally prohibited and vehicle parking may be prohibited. Pedestrians may be prohibited, but are frequent users where no sidewalk is provided.

Single occupant vehicle (SOV): Any vehicle where the operator is driving alone to work, school, and other destinations.

Smog: A term often used interchangeably with *ozone*, although the two are not identical. Ozone is actually a component of smog ('photochemical smog'), along with hydrogen peroxides, organic nitrates, water droplets, and fine particulate matter.

State Implementation Plan (SIP): The CAAA requires the State to prepare a plan demonstrating how its nonattainment areas will reduce emissions from identified sources and achieve national air quality standards by specified dates. The MTP must comply with or conform to the SIP.

Surface Transportation Program (STP): A block grant federal program designed to create flexible funding for transit, highway construction, and enhancements.

Technical Advisory Committee (TAC): Committee that advises the Houston-Galveston Transportation Planning Council (TPC) on technical matters relating to transportation planning within the region. This committee is composed of representatives of local government, transportation modes, environmental interests, and other interests relevant to transportation planning and air quality.

Telecommuting: Using a home computer or a neighborhood work center for work, effectively eliminating the need to travel to a conventional workplace.

Texas Department of Transportation (TxDOT): State agency responsible for construction and maintenance of all Interstate, US, State Highways, and Farm-to-Market (FM) Roads within the state.

Transit: Transportation mode involving buses, trains, and other vehicles that individually move larger numbers of people than do individual automobiles. Also known as mass transit, public transit, public transportation, or urban transit.

Transportation conformity: A requirement of the CAAA that a regional emissions analysis be conducted on transportation programs and plans to ensure that these plans meet the *State Implementation Plan's* air quality goals.

Transportation control measure (TCM): TCMs are transportation management strategies and projects intended to improve the mobility of goods and people with quantifiable air quality benefits. There are essentially two definitions, one for *CMAQ* purposes and one for the *Congestion Management System*. (1) The CMAQ program defines TCM strategies as relatively low capital-cost solutions to congestion mitigation

problems, countering the traditional capital-intensive solutions relying on additional *single occupant vehicle* (SOV) general purpose lanes. Included under TCMs are *transportation systems management*, *travel demand management*, and air quality improvement strategies.

(2) The CMS definition is similar, but in addition to TDMs, TSMs, and air quality strategies, additional SOV facilities are considered. However, although SOV strategies are considered, they must reduce congestion sufficiently to significantly reduce emissions, while remaining cost effective and not promoting additional emissions.

Transportation Improvement Program (TIP): An MPO-prepared document that identifies specific highway and transit projects to be implemented in an area over a three-year period. To receive federal funding, a transportation project must be included in the Metropolitan Transportation Plan and TIP. The TIP is a programming document, while the MTP is a planning document.

Transportation management area (TMA): An urbanized area with more than 200,000 people that has been delineated for transportation planning purposes. The local TMA is known as the Houston-Galveston Transportation Management Area.

Transportation management organization (TMO): An entity that works within an employment center to reduce traffic problems, specifically by reducing employee commute trips. TMOs operate as a facilitator, lobbyist, and resource center for employers and employees. Targeted employment centers are those with a geographic concentration of 50-100 employers.

Transportation Policy Council (TPC): A body of 21 locally elected officials and area agency representatives which determines the policy direction of intermodal and multimodal transportation planning in the *Gulf Coast State Planning Region*, i.e. the Houston-Galveston *transportation management area*.

Transportation systems management (TSM): TSMs are generally low-cost strategies that are designed to improve the efficiency and effectiveness of the existing transportation facilities through improvements in facility design and construction and through supplemental strategies. Examples include improved signalization and intelligent transportation systems.

Travel demand: The counted or projected volume of traffic that is or will be utilizing a roadway in a specified time period (i.e., 24-hours, peak periods, etc.).

Travel demand management (TDM): TDMs are generally low-cost strategies that are designed to ease or reduce the transportation demand in an area, thus improving the efficiency and effectiveness of the existing transportation facilities. The specific aim is often to divert people from driving alone; as well as to improve air quality and congestion by decreasing vehicle miles traveled and vehicle trips. Congestion pricing and flexible work hours are examples of TDMs.

Travel time: The estimated time it takes a vehicle to travel a set distance at a set time of the day. Travel time can be determined through a number of methods: the floating car technique, the license plate matching technique, the cellular telephone reporting technique, the detector systems technique, automatic vehicle identification systems (AVI), and global

positioning systems (GPS). All are described in Appendix L of TTI's report (see *Travel rate*).

Unified Planning Work Program (UPWP): Annual report prepared by the *MPO* describing transportation planning activities which will take place within the *Gulf-Coast State Planning Region*.

United States Department of Transportation (DOT or USDOT): Principal federal funding and regulating agency for transportation facilities. *FHWA* and *FTA* are agencies within DOT.

Vehicle miles traveled (VMT): Term used for describing the total number of miles traveled by vehicles in a given time in a specified area.

Volatile organic compounds (VOC): Toxic residual chemicals from fossil fuel combustion, solvents, paints, glues, and some dry-cleaning processes. VOCs contribute to *ozone* formation and other pollutants.

Volume to capacity (V/C): A ratio used to measure the *level of service* of a roadway, which identifies congestion or mobility problems. The ratio divides the surveyed or modeled volume for a road by the design capacity for the road. The volume is often the *Average Daily Traffic* for the road section, with capacity based on the number of lanes for the roadway.