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Glossary of Regional Transportation Systems Management and Operations Terms

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Glossary of Regional Transportation Systems Management and Operations Terms

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for the
Regional Transportation Systems Management and Operations Committee
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Contents

Foreword

Common terms are necessary for us to understand one another as we develop and improve the management and operations of our transportation systems. Without a universal understanding, it is not possible for us to quickly and efficiently work together. Too often, we use different terms to describe a single concept, event, or device. This glossary was developed to avoid frequently occurring misconceptions that arise as we use different terms for the same meaning.

The glossary was developed by professionals in the transportation community to be used by fellow professionals as well as by individuals with whom these professionals deal in the management and operations of transportation systems. It was reviewed by members of various committees of the Transportation Research Board (TRB) and the Institute of Transportation Engineers (ITE), including:

- TRB Committees
  - Regional Transportation Systems Management and Operations
  - Freeway Operations
  - Traffic Signal Systems
  - Access Management
- ITE Council on Management and Operations; Intelligent Transportation Systems

Individuals from these committees who provided comments include

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An initial draft of the glossary was developed by John Mason for TRB's Regional Transportation Systems Management and Operations Committee. Louis G. Neudorff took the draft and guided it through an update, the review process, and final editing. The efforts of these authors and the reviewers are appreciated and acknowledged.

This glossary should be viewed as a starting point and not as a final product. It is hoped that it will be a living document with periodic reviews and updates to stay abreast of the changes in the management and operations of our transportation systems.

—Walter H. Kraft
Chair, TRB Regional Transportation Systems Management and Operations Committee

Introduction

The increasing interest in regional and corridor-based transportation operations and the incorporation of transportation system management and operations into the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) have made it important for the transportation operations and planning communities to use a common vocabulary. The purpose of this glossary is to provide clear definitions of terms as they are typically used in the context of regional transportation systems management and operations (RTSMO).

This glossary is a first attempt at providing a comprehensive document of this nature. The definitions herein and any additional explanatory information are, to the greatest extent possible, based on existing definitions and descriptions identified in law or regulation, or in various documents developed and published by national transportation organizations (e.g., U.S. Department of Transportation, Transportation Research Board, Institute of Transportation Engineers). These references are cited for each term in the glossary. In some cases, the definitions have been enhanced or modified slightly to reflect current thinking within the profession. Whenever such changes or additional definitions were deemed necessary (as noted within the glossary), care was taken to solicit input from within the transportation operations and planning communities, typically by inviting comment from several TRB Committees and the National Transportation Operations Coalition (NTOC), which includes participation by a wide range of transportation-related constituencies.

A number of transportation-related fields participate in regional transportation operations and management. This glossary provides a common vocabulary that may be used by practitioners in these fields to facilitate communication with each other and between disciplines about their regional transportation operations activities, and in dialogue with the transportation planning community.

These various transportation-related fields differ in the portion of their total vocabulary that is focused on regional transportation operations. Some fields may be entirely focused on regional transportation operations. Other endeavors (e.g., public safety) may only have a few terms within the domain of RTSMO as transportation operations are peripheral to their daily work. Nevertheless, these transportation-related fields and endeavors influence one another via their physical proximity within the transportation network, their institutional relationships and connections, and their operational (and occasionally overlapping) responsibilities. A common vocabulary among these entities will be useful towards achieving the goals of regional transportation systems management and operations.

It is recognized that several of these transportation-related fields (e.g., traffic management for freeways and arterials, transit management, emergency management, transportation planning) may have slightly differing definitions of common terms. It is not the intent of this glossary to argue for changing definitions in any particular field. Rather, this glossary is aimed at providing a common vocabulary for working across the wide range of transportation operations activities and their interface with transportation planning activities.

Given that language is generally in a continuous state of change, and that technical language tends to be in an even greater state of flux (including the introduction of new terms), coupled with the fact that RTSMO is a relatively recent concept, it is anticipated that subsequent versions of this glossary will provide for refinement and expansion. Accordingly, comments and suggestions are welcomed and should be forwarded to Louis Neudorff at lgn@iteris.com.

Glossary

Access Management. The systematic control of the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway, as well as roadway design applications that affect access, such as median treatments and auxiliary lanes, and the appropriate separation of traffic signals.

[TRB, *Access Management Manual*, 2003]

Attainment Area. Any geographic area in which levels of a given criteria air pollutant (e.g., ozone, monoxide, PM10, PM2.5, and nitrogen dioxide) meet the health-based National Ambient Air Quality Standards (NAAQS) for that pollutant. (See also "Nonattainment Area")

[23 CFR 450.104]

Bus Rapid Transit. A bus system that operates on bus lanes or other transitways in order to combine the flexibility of buses with the efficiency of rail.

A *bus lane* is a traffic lane on a surface street reserved for the exclusive use of buses. A *busway* is a special roadway designed for the exclusive use of buses. A busway can be in its own right-of-way, or in a railway or highway right-of-way. BRT operates at faster speeds, provides greater service reliability and increased customer convenience. It also utilizes a combination of advanced technologies, infrastructure, and operational investments that provide significantly better service than traditional bus service.

[FTA, http://www.fta.dot.gov/assistance/technology/research]

Capacity. A transportation facility's ability to accommodate a moving stream of people or vehicles in a given time period, under prevailing conditions (e.g., infrastructure, traffic, control).

[FHWA, *Transportation Planning Capacity Building Glossary*, http://www.planning.dot.gov/glossary.asp. Note: Added "under prevailing conditions …" to provide consistency with the *Highway Capacity Manual*.]

Collaboration. Any cooperative effort between and among governmental entities (as well as with private partners) through which the partners work together to achieve common goals.

Such collaboration can range from very informal ad hoc activities to more planned, organized, and formalized ways of working together. The collaborative parties work toward mutual advantage and common goals. They share a sense of common purpose, leverage resources to yield improved outcomes, and bridge traditional geographic, institutional, and functional boundaries.

[*Planning for Operations—Glossary*, http://plan4operations.dot.gov/glossary.htm. Note: Replaced the term "public purpose" with "common purpose" to indicate that collaboration involves more than just public agencies.]

Collaboration should go beyond solving a problem. Its purpose should be that of combining the knowledge, expertise, and information of many agencies across jurisdictions to produce and operate an efficient regional transportation system.

[FHWA, *Regional Transportation Operations Collaboration and Coordination: A Primer for Working Together to Improve Transportation Safety, Reliability, and Security*, FHWA-OP-03-008, 2002]

Concept of Operations. A formal document that provides a user-oriented view of a proposed new system (or regional operations program).

[FHWA, *Building Quality Intelligent Transportation Systems Through Systems Engineering*, April 2002]

A Concept of Operations is a high-level description of what the major system capabilities will be, and it should be written such that people with a wide range of technical backgrounds may easily understand it. The concept of operations attempts to answer the following questions:

- What—the known elements and the high-level capabilities of the system
- Where—the geographical and physical extents of the system
- When—the time-sequence of activities that will be performed
- How—resources needed to design, build, and operate the system
- Who—the stakeholders involved with the system, and their respective responsibilities
- Why—justification for the system, identifying what the agency currently lacks that the system will provide
- Measures of Success—The performance measures to be used in determining how well the transportation system is achieving the desired or expected outcomes.

[FHWA, *Developing and Using a Concept of Operations in Transportation Management System*. Note: Added "Measures of Success."]

Conformity. A Clean Air Act [42 U.S.C. 7506(c)] requirement that ensures that federal funding and approval are given to transportation plans, programs, and projects that are consistent with the air quality goals established by a State Implementation Plan (SIP).

Conformity, to the purpose of the SIP, means that transportation activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the NAAQS. The transportation conformity rule (40 CFR part 93) sets forth policy, criteria, and procedures for demonstrating and assuring conformity of transportation activities.

[23 CFR 450.104]

Congestion. Congestion is travel time or delay in excess of that normally incurred under light or free-flow travel conditions.

[NCHRP Report 398, *Quantifying Congestion*, TRB, National Research Council, Washington, D.C., 1997]

Congestion Management Process (CMP). A systematic approach to addressing congestion through effective management and operation.

A systematic approach required in transportation management areas (TMAs) that provides for effective investment, management, and operation, based on a cooperatively developed and implemented metropolitan-wide strategy, of new and existing

transportation facilities eligible for funding under title 23 U.S.C., and title 49 U.S.C., through the use of operational management strategies.

[23 CFR 450.104. Note: Inserted "investment" in front of "management and operations" to indicate that CMP may also include new capacity in growing areas]

Congestion Management Process (CMP), which has evolved from what was previously known as the Congestion Management System (CMS), is a systematic approach, collaboratively developed and implemented throughout a metropolitan region, that provides for the safe and effective management and operation of new and existing transportation facilities through the use of demand reduction and operational management strategies.

[FHWA, *An Interim Guidebook on the Congestion Management Process in Metropolitan Transportation Planning*, FHWA-HOP-08-008]

Congestion Management System (CMS). A systematic and regionally accepted approach for managing congestion that provides accurate, up-to-date information on transportation system operations and performance and assesses alternative strategies for congestion management that meet state and local needs.

[23 CFR 500.109]

Through SAFETEA-LU, the congestion management system has been replaced by the congestion management process. According to SAFETEA-LU, under certain conditions the congestion management system may constitute the congestion management process.

[23 U.S.C. 135 (i)]

Congestion Pricing. A system of surcharging users of a roadway network during periods of peak demand to reduce congestion.

Congestion pricing—sometimes called value pricing—is a way of harnessing the power of the market to reduce the waste associated with traffic congestion. There are four main types of pricing strategies:

- Variably priced lanes, involving variable tolls on separated lanes within a highway, such as Express Toll Lanes or High Occupancy Toll (HOT) lanes
- Variable tolls on entire roadways—both on toll roads and bridges, as well as on existing toll-free facilities during rush hours
- Cordon charges—either variable or fixed charges to drive within or into an area within a city
- Area-wide charges—per-mile charges on all roads within an area that may vary by level of congestion

[FHWA, *Congestion Pricing: A Primer*, December 2006]

Corridor. A broad geographical band that follows a general directional flow connecting major sources of trips that may contain a number of streets, highways, and transit route alignments.

[FHWA, *Transportation Planning Capacity Building Glossary*. http://www.planning.dot.gov/glossary.asp]

A largely linear geographic band defined by existing and forecasted travel patterns involving both people and goods. The corridor serves a particular travel market or

markets that are affected by similar transportation needs and mobility issues. The corridor includes various networks (e.g., limited access facility, surface arterial(s), transit (rail and bus), bicycle, pedestrian pathway, and waterway) that provide similar or complementary transportation functions. Additionally, the corridor includes cross-network connections that permit the individual networks to be readily accessible from each other.

[FHWA, *Integrated Corridor Management (ICM) Implementation Guidance*, FHWA-JPO-06- 042 / EDL #14284, April 2006. Note: Added "rail and bus" after the word "transit."]

Data Archiving. The systematic retention and re-use of transportation data that is typically collected to fulfill real-time transportation operation and management needs. Data archiving is also referred to as data warehousing or operations data archiving. Transportation operations and their respective sensors and detectors, and other data collection processes, are a potentially rich and detailed source of data about transportation system performance and characteristics.

[*Guidelines for Developing ITS Data Archiving Systems*, Report 2127-3, Texas Transportation Institute, September 2001. Note: Inserted the phrase "and other data collection processes" to address private sector data collection.]

Emergency Management. Also known as emergency transportation operations (ETO). The process of preventing, preparing, responding, and recovering from an emergency, where an emergency is an unexpected, or "no-notice," large-scale, damaging event.

When an emergency has occurred (or the imminent threat of one has become known), ETO focuses on minimizing the time it takes to get an adequate force of emergency responders to the scene where they can help victims, provide assessments, and control access; and maximizing the proportion of the population moved away from the hazardous area without being subjected to other risks.

[FHWA Office of Operations–Emergency Management, http://www.ops.fhwa.dot.gov/OpsSecurity]

Event. An occurrence, which includes all types of incidents, emergencies and disasters (natural or human caused), that affects the transportation system, and requires actions to maintain the safety and mobility of the system.

[ETO Strategic Plan, NYS DOT]

Financially Constrained or Fiscal Constraint. The metropolitan transportation plan, TIP, and STIP include sufficient financial information for demonstrating that projects in the metropolitan transportation plan, TIP, and STIP can be implemented using committed, available, or reasonably available revenue sources, with reasonable assurance that the federally supported transportation system is being adequately operated and maintained.

For the TIP and the STIP, financial constraint/fiscal constraint applies to each program year. Additionally, projects in air quality nonattainment and maintenance areas can be included in the first two years of the TIP and STIP only if funds are ''available'' or ''committed.''

[23 CFR 450.104]

Goals. Generalized statements that broadly relate the future of the physical environment and the condition of the system to values.

> [FHWA, *Transportation Planning Capacity Building Glossary*, http://www.planning.dot.gov/glossary.asp. Note: Added "future of the" and "condition of the system."]
>
> Goals are developed with a view to mitigate any existing operational issues and needs, and to help achieve the long-term vision. Goals also provide the framework for developing objectives. (Refer to "Objectives.")

Greenhouse Gases (GHG). Gases in the atmosphere that trap the earth's heat.

> The most prevalent greenhouse gases (GHGs) are carbon dioxide (CO_2) and water vapor. Other GHGs include methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perflourocarbons, and sulfur hexafluoride. GHGs vary in their effectiveness at trapping the earth's heat—also known as their global warming potential.
>
> Transportation sources—including roads, rail, air, and marine travel—accounted for approximately 27 percent of all GHG emissions in the United States in 2005.
>
> [AASHTO, *Primer on Transportation and Climate Change*, April 2008]

High-Occupancy Toll (HOT) Lanes. Limited-access, normally barrier-separated highway lanes that provide free or reduced cost access to qualifying HOVs, and also provide access to other paying vehicles not meeting passenger occupancy requirements.

> HOT lanes utilize sophisticated electronic toll collection and traffic information systems that make variable, real-time toll pricing of non-HOV vehicles possible. Information on price levels and travel conditions is normally communicated to motorists via variable message signs, providing potential users with the facts they need in order to decide whether or not to utilize the HOT lanes or the parallel general-purpose lanes that may be congested during peak periods. By using price and occupancy restrictions to manage the number of vehicles traveling on them, HOT lanes maintain volumes consistent with uncongested levels of service even during peak travel periods.
>
> [FHWA, *A Guide for HOT Lane Development*, March 2003]

Incident. Any nonrecurring event that causes a reduction of roadway capacity. Such events include traffic crashes, disabled vehicles, spilled cargo, adverse weather conditions, highway maintenance and reconstruction projects.

> [FHWA, *Traffic Incident Management Handbook*, November 2000, EDL# 13286. Note: Added "adverse weather conditions."]

Incident Command System (ICS). A systematic tool used for the command, control, and coordination of emergency response. ICS allows agencies to work together using common terminology and operating procedures controlling personnel, facilities, equipment, and communications at a single incident scene. It facilitates a consistent response to any incident by employing a common organizational structure that can be expanded and contracted in a logical manner based on the level of required response.

> [FHWA, *Simplified Guide to the Incident Command System for Transportation Professionals*, FHWA-HOP-06-004]

ICS is typically considered part of the broader National Incident Management System (NIMS). ICS refers to the command and control protocol at the highway incident scene. NIMS covers the entire incident management process, including command structures like ICS as well as preparedness activities, resource management, and communications and information management. NIMS specifies an ICS organization consisting of five major functions:

- Command—provide on-scene management and control authority
- Operations—direct incident tactical operations
- Planning—prepare incident action plan and maintain situation and resources status
- Logistics—provide services and support to the incident
- Finance and Administration—track incident costs and account for reimbursements

A sixth function, intelligence, is sometimes added to an ICS organization in response to the NIMS guideline that an ICS must establish a process for gathering, sharing, and managing incident-related information and intelligence. (See also "National Incident Management System.")

[FHWA, *Simplified Guide to the Incident Command System for Transportation Professionals*, FHWA-HOP-06-004]

Incident Management (also known as Traffic Incident Management). The systematic, planned, and coordinated use of human, institutional, electrical, mechanical, and technical resources to reduce the duration and impact of incidents, and improve the safety of motorists, crash victims, and incident responders. These resources are also used to increase the operating efficiency, safety, and mobility of the surface transportation network by systematically reducing the time to detect and verify an incident occurrence; implementing the appropriate response; and safely clearing the incident, while managing the affected flow until full capacity is restored. (See also "Incident" and "Incident Command System.")

[FHWA, *Traffic Incident Management Handbook*, November 2000, EDL# 13286. Note: Added "electrical"; replaced "highway" with "surface transportation network."]

Integration. To make into a whole by bringing all parts together; unite

[*The American Heritage Dictionary of the English Language*, 4th Edition]

A term that is used to describe a bridging function between all of the various components, activities, and related attributes that comprise and impact the surface transportation network. The goal of integration is to bring the management and operation of the surface transportation network into a unified whole, thereby making the various transportation modes and facilities perform better and work together.

[FHWA, *Freeway Management and Operations Handbook*, FHWA-OP-04-003, September 2003]

Institutional Integration. Coordination among various agencies and jurisdictions to achieve seamless operations and/or interoperability.

> In order to achieve effective institutional integration of systems, agencies, and jurisdictions must agree on the benefits of ITS and the value of being part of an integrated system. They must agree on roles, responsibilities, and shared operational strategies. Finally, they must agree on standards and, in some cases, technologies and operating procedures to ensure interoperability. The transportation agencies must also coordinate with agencies for which transportation is a key, but not a primary part of their business, such as emergency management and law enforcement agencies.
>
> [*Federal Register*, Department of Transportation, FHWA, 23 CFR Parts 655 and 940, Supplementary Information]
>
> Institutional integration involves the coordination and collaboration between various agencies and jurisdictions (network owners) in support of Integrated Corridor Management (or Regional Transportation Systems Management and Operations), including establishing corridor–region-wide measures of performance, the distribution of specific operational responsibilities, and the sharing of control functions in a manner that transcends institutional boundaries.
>
> [FHWA, *Integrated Corridor Management (ICM) Implementation Guidance*, FHWA-JPO-06-042 / EDL #14284, April 2006. Note: Added "Regional Transportation Systems Management and Operations," and "establishing corridor–region-wide measures of performance."]

Integrated Corridor Management (ICM). ICM consists of the operational coordination of multiple transportation networks and cross-network connections comprising a corridor, and the coordination of institutions responsible for corridor mobility. The goal of ICM is to improve mobility, safety, and other transportation objectives for travelers and goods.

> ICM may encompass several activities, such as cooperative and integrated policy among stakeholders, concept of operations for corridor management, communications among network operators and stakeholders, improving the efficiency of cross-network junctions and interfaces, mobility opportunities, including shifts to alternate routes and modes, real-time traffic and transit monitoring, real-time information distribution (including alternate networks), congestion management (recurring and nonrecurring), incident management, travel demand management, public awareness programs, transportation pricing and payment, access management, and growth management. Integrated Corridor Management may result in the deployment of an actual transportation management system (ICMS) connecting the individual network-based transportation management systems; or integrated corridor management may just be a set of operational procedures—agreed to by the network owners—with appropriate linkages between their respective systems.
>
> [FHWA, *Integrated Corridor Management (ICM) Implementation Guidance*, FHWA-JPO-06- 042 / EDL #14284, April 2006. Note: Added "access management, and growth management."]

Integrated Transportation Management System (ITMS). Provides for the automated, real-time sharing of information among ITS-based systems and the coordination of management activities among agencies.

> An ITMS enhances system interoperability and enables an area-wide view of the transportation network.

[Transportation Research Board Freeway Operations Committee as cited in the *4th Integrated Transportation Management Systems (ITMS) Conference: Conference Proceedings,* August 2001, http://www.itsdocs.fhwa.dot.gov/JPODOCS/REPTS_TE/13661.pdf]

Intelligent Transportation System (ITS). The application of advanced electronics, computers, communications, and sensor technologies—in an integrated manner—to increase the efficiency and safety of the surface transportation network.

[ITS America 10-Year Vision]

ITS improves transportation safety and mobility and enhances productivity through the use of advanced information and communications technologies.

Intelligent transportation systems (ITS) encompass a broad range of wireless and wire line communications-based information and electronics technologies. When integrated into the transportation system's infrastructure, and in vehicles themselves, these technologies relieve congestion, improve safety, and enhance productivity.

[FHWA, *Transportation Planning Capacity Building Glossary*, http://www.planning.dot.gov/glossary.asp]

Intermodal. The ability to connect, and the connections between, modes of transportation.

[FHWA, *Transportation Planning Capacity Building Glossary*, http://www.planning.dot.gov/glossary.asp]

Interoperability. The ability of two or more systems or components to exchange information and to use the information that has been exchanged.

[Institute of Electrical and Electronics Engineers, *IEEE Standard Computer Dictionary: A Compilation of IEEE Standard Computer Glossaries*]

The term is frequently used in the context of public safety communications and Dedicated Short Range Communications (DSRC). For example:

- "It is critical that transportation agency communications systems be *interoperable* with those of the other responders with whom they will be working at incident scenes. *Interoperability* is an important issue for law enforcement, fire fighting, emergency services, and other public health and safety departments, because first responders need to be able to communicate during wide-scale emergencies. The nation's lack of interoperability in the public safety realm became evident during the 9/11 attacks on the Pentagon and World Trade Center structures."
- "Standards for dedicated short-range communication (DSRC) are intended to meet the requirements of applications that depend upon transferring information between vehicles and roadside devices as well as between vehicles themselves. SAE J2735 (Dedicated Short Range Communications [DSRC] Message Set Dictionary) is to support *interoperability* among DSRC applications."

ITS Architecture. A framework within which interrelated systems can be built that work together to deliver transportation services.

An ITS architecture defines a framework within which interrelated systems can be built that work together to deliver transportation services. It defines how systems functionally

operate and the interconnection of information exchanges that must take place between these systems to accomplish transportation services.

[U.S. Department of Transportation, *Regional ITS Architecture Guidance—Developing, Using, and Maintaining an ITS Architecture for Your Region, Version 2.0*, July 6, 2006. Combines definitions of "architecture" and "ITS architecture."]

Long-Range Transportation Plan (LRTP). A document resulting from regional or statewide collaboration and consensus on a region or state's transportation system, and serving as the defining vision for the region's or state's transportation systems and services.

Sometimes referred to as long-range plan (LRP), constrained long-range plan (CLRP), or regional transportation plan.

In metropolitan areas, the plan indicates all of the transportation improvements scheduled for funding over the next 20 years. It is fiscally constrained, i.e., a given program or project can reasonably expect to receive funding within the time allotted for its implementation.

[FHWA, *Transportation Planning Capacity Building Glossary*, http://www.planning.dot.gov/glossary.asp]

Maintenance. The preservation (scheduled and corrective) of infrastructure.

The preservation of the entire transportation infrastructure (e.g., highway, transit line), including surface, shoulders, roadsides, structures, and such traffic-control devices as are necessary for safe and efficient utilization of the highway/transit line.

[23 U.S.C. 101(a). Note: Added "transportation infrastructure" and "transit line."]

"Response Maintenance" involves actions performed on an as-needed basis (i.e., emergency maintenance); it is required when equipment breaks down or malfunctions.

"Preventative Maintenance" involves actions performed on a regularly scheduled basis using a set of procedures to preserve the intended working condition of the system.

[Kraft, W., and J. Giblin. Traffic Control Systems Operations, Installation, Management, and Maintenance, ITE, 2000]

Managed Lanes. Highway facilities or a set of lanes where operational strategies are proactively implemented and managed in response to changing conditions.

The managed lane concept may vary in specific definition from one agency to the next, but all the definitions have common elements:

- The managed lane concept is typically a "freeway-within-a-freeway" where a set of lanes within the freeway cross section is separated from the general-purpose lanes.
- The facility incorporates a high degree of operational flexibility so that over time operations can be actively managed to respond to growth and changing needs.
- The operation of and demand on the facility is managed using a combination of tools and techniques in order to continuously achieve an optimal condition, such as free-flow speeds.
- The principal management strategies can be categorized into three groups: pricing, vehicle eligibility, and access control.

Examples of operating managed lane projects include high-occupancy vehicle (HOV) lanes, value-priced lanes, high-occupancy toll (HOT) lanes (refer to definition herein), or exclusive or special use lanes.

[FHWA, *Managed Lanes: A Primer*, http://ops.fhwa.dot.gov/publications/managelanes_primer/index.htm]

Management. The allocation of necessary resources for the proper functioning of the system. (See also "Emergency Management," "Incident Management," "Integrated Corridor Management," and "Special Event Management.")

[Kraft, W., and J. Giblin. Traffic Control Systems Operations, Installation, Management, and Maintenance, ITE, 2000]

Metropolitan Planning Area. The geographic area in which the metropolitan transportation planning process required by 23 U.S.C. 134 and Section 8 of the Federal Transit Act (49 U.S.C. app. 1607) must be carried out.

[FHWA, *Transportation Planning Capacity Building Glossary*, http://www.planning.dot.gov/glossary.asp]

Metropolitan Planning Organization (MPO). The forum for cooperative transportation decision making for the metropolitan transportation planning area.

[23 CFR 972.104]

Regional planning body, required in urbanized areas with a population over 50,000, and designated by local officials and the governor of the state. Responsible, in cooperation with the state and other transportation providers, for carrying out the metropolitan transportation planning requirements of federal highway and transit legislation. Formed in cooperation with the state, develops transportation plans and programs for the metropolitan area. For each urbanized area, a Metropolitan Planning Organization (MPO) must be designated by agreement between the governor and local units of government representing 75% of the affected population (in the metropolitan area), including the central city or cities as defined by the Bureau of Census, or in accordance with procedures established by applicable state or local law.

[23 U.S.C. 134(b)(1) and Federal Transit Act of 1991 Sec. 8 (b)(1)]

Metropolitan Transportation Plan (MTP). The official multimodal transportation plan addressing no less than a 20-year planning horizon that is developed, adopted, and updated by the MPO through the metropolitan transportation planning process.

[23 CFR 450.104]

The plan shall include both long-range and short-range strategies/actions that lead to the development of an integrated intermodal transportation system that facilitates the efficient movement of people and goods. The transportation plan shall be reviewed and updated at least triennially in nonattainment and maintenance areas and at least every five years in attainment areas to confirm its validity and consistency with current and forecasted transportation and land use conditions and trends and to extend the forecast period.

[23 CFR 450.322]

The following factors shall be explicitly considered, analyzed as appropriate, and reflected in the metropolitan transportation planning process products: (1) Preservation of existing transportation facilities and, where practical, ways to meet transportation needs by using existing transportation facilities more efficiently; (2) Consistency of transportation planning with applicable federal, state, and local energy conservation programs, goals, and objectives; (3) The need to relieve congestion and prevent congestion from occurring where it does not yet occur; (4) The likely effect of transportation policy decisions on land use and development and the consistency of transportation plans and programs with the provisions of all applicable short- and long-term land use and development plans; (5) Programming of expenditures for transportation enhancement activities; (6) The effects of all transportation projects to be undertaken within the metropolitan planning area, without regard to the source of funding; (7) International border crossings and access to ports, airports, intermodal transportation facilities, major freight distribution routes, national parks, recreation areas, monuments and historic sites, and military installations; (8) Connectivity of roads within metropolitan planning areas with roads outside of those areas; (9) Transportation needs identified through the use of the management systems; (10) Preservation of rights-of-way for construction of future transportation projects, including future transportation corridors; (11) Enhancement of the efficient movement of freight; (12) The use of life-cycle costs in the design and engineering of bridges, tunnels, or pavement (operating and maintenance costs must be considered in analyzing transportation alternatives); (13) The overall social, economic, energy, and environmental effects of transportation decisions; (14) Expansion, enhancement, and increased use of transit services; (15) Capital investments that would result in increased security in transit systems; and (16) Recreational travel and tourism. In addition, the metropolitan transportation planning process shall include a proactive public involvement process that provides complete information, timely public notice, full public access to key decisions, and supports early and continuing involvement of the public in developing plans.

[23 CFR 450.316]

Mobility. The ability to move or be moved from place to place.

[FHWA, *Transportation Planning Capacity Building Glossary*, http://www.planning.dot.gov/glossary.asp]

Mobility is at the heart of America's culture. Americans love the freedom of easily moving where they want, when they want. Mobility is at the heart of our economy, getting goods to market and getting people to work. Infrastructure—roads, bridges, tunnels—provides the foundation that makes mobility possible.

[FHWA, *Fact Sheet—Infrastructure: Providing for America's Mobility*]

Multimodal. The availability of transportation options using different modes within a system or corridor.

[FHWA, *Transportation Planning Capacity Building Glossary*, http://www.planning.dot.gov/glossary.asp]

National Incident Management System (NIMS). A unified national framework for incident management, providing a consistent nationwide approach for federal, state, local, and tribal

governments; the private sector; and nongovernmental organizations to work effectively and efficiently together to prepare for, respond to, and recover from domestic incidents, regardless of cause, size, or complexity.

NIMS includes a core set of concepts, principles and terminology, identified as the ICS; multi-agency coordination systems; training; identification and management of resources; qualification and certification; and the collection, tracking, and reporting of incident information and incident resources. (Refer to Incident Command System [ICS].)

[National Incident Management System, Department of Homeland Security, March 2004]

National ITS Architecture. A common framework for ITS interoperability that defines (A) the functions associated with intelligent transportation system user services; (B) the physical entities or subsystems within which the functions reside; (C) the data interfaces and information flows between physical subsystems; and (D) the communications requirements associated with the information flows.

[SAFETEA-LU Section 5310]

The National ITS Architecture is maintained by the United States Department of Transportation (DOT) and is available at http://www.its.dot.gov.

Objectives. Specific, measurable statements related to the attainment of goals.

[FHWA, *Transportation Planning Capacity Building Glossary*, http://www.planning.dot.gov/glossary.asp]

The differences between goals (refer to definition herein) and objectives may be summarized as follows:

- Goals are broad: objectives are narrow.
- Goals are general intentions; objectives are precise.
- Goals are intangible; objectives are tangible.
- Goals are abstract; objectives are concrete.
- Goals can't be validated as is; objectives can be validated.

Operational Concept [in ITS architecture]. Identifies the roles and responsibilities of participating agencies and stakeholders.

It defines the institutional and technical vision for the region and describes how the system will work at very high level, frequently using operational scenarios as a basis. (Also refer to "Concept of Operations.")

[U.S. Department of Transportation, *Regional ITS Architecture Guidance—Developing, Using, and Maintaining an ITS Architecture for Your Region, Version 2.0*, July 6, 2006]

Operational Integration. The implementation of multiagency transportation management strategies, often in real time, that promote information sharing and cross-network coordination and operations among the various transportation networks in the corridor–regions, and facilitate management of the total capacity and demand of the corridor–region.

[FHWA, *Integrated Corridor Management (ICM) Implementation Guidance*, FHWA-JPO-06-042 / EDL #14284, April 2006. Note: Added the term "region."]

Operations. All decision making and actions necessary for the proper functioning of a system, such as information gathering (from a variety of sources), synthesis and processing, and dissemination and distribution of the decisions and information to traffic control equipment, other agencies and decision makers (including those associated with maintenance activities), and the public. (Also see Transportation Systems Management and Operations.)

> [Kraft, W., and J. Giblin. Traffic Control Systems Operations, Installation, Management, and Maintenance, ITE, 2000. Note: Added the context of "decision making" and "decision makers."]
>
> This is done in anticipation of, or in response to, both recurring and non-recurring conditions. Operations includes a range of activities in both urban and rural environments, including: routine traffic and transit operations, public safety responses, incident management, snow and ice management, network/facility management, planned construction disruptions, and traveler/shipper information.
>
> [*Planning for Operations—Glossary*, http://plan4operations.dot.gov/glossary.htm]

Performance Measurement. A process of assessing progress toward achieving predetermined goals.

> Performance measurement is a process of assessing progress toward achieving predetermined goals, including information on the efficiency with which resources are transformed into goods and services, the quality of those outputs (how well they are delivered to clients and the extent to which clients are satisfied) and outcomes (the results of a program activity compared to its intended purpose), and the effectiveness of government operations in terms of their specific contribution to program objectives.
>
> [National Performance Review, as reported in *Performance Measures of Operational Effectiveness for Highway Segments and Systems—A Synthesis of Highway Practice*, NCHRP Synthesis 311, Transportation Research Board of the National Academies, Washington, D.C., 2003]
>
> Performance measurement supports the decision making process by generating indicators of how well the transportation system is achieving the desired or expected outcomes.
>
> [*Planning for Operations—Glossary*, http://plan4operations.dot.gov/glossary.htm]

Performance Measures. Indicators that provide the basis for evaluating the transportation system operating conditions and identifying the location and severity of congestion and other problems.

> Performance measures provide the basis for evaluating the transportation system operating conditions and identifying the location and severity of congestion and other problems. The performance measures provide the mechanism for quantifying the operation of the network, and should also be used to evaluate the effectiveness of implemented transportation management strategies and to identify additional improvements. Another aspect of performance measurement is sharing and providing managers and users with access to real-time and archived system performance data.
>
> [FHWA, *Freeway Management and Operations Handbook*, FHWA-OP-04-003, September, 2003]
>
> Performance measures are often described as input, output, or outcome measures. *Input measures* look at the resources dedicated to a program; *output measures* look at the

products produced; and *outcome measures* look at the impact of the products on the goals of the agency. For example, with respect to increasing roadway capacity, an input measure might be materials consumed; output measures could include lane miles added; while an outcome measure might include the reduction in hours of user delay, resulting from the increased capacity.

[Transportation Data and Performance Measurement, from *Performance Measures to Improve Transportation Systems and Agency Operations*, Conference Proceedings 26, TRB, National Research Council, Washington, D.C., 2002]

Integrated corridor management (ICM) and regional transportation systems management and operations (RTSMO) requires performance measures that are "mode-neutral," reflecting overall corridor–regional mobility and reliability (e.g., person-based or trip-based utilizing travel times and delays). Moreover, three dimensions of corridor–regional operations should be tracked with performance measures: source of congestion–problem, temporal aspects, and spatial detail. Customer satisfaction measures should also be considered. It is emphasized that these "corridor–regionwide" performance measures are in addition to any network-specific performance measures. As such, the relationship between the corridor–regional performance measures and network-specific measures needs to be addressed.

[FHWA, *Integrated Corridor Management (ICM) Implementation Guidance*, FHWA-JPO-06-042 / EDL #14284, April 2006. Note: Added the term "region" and "RTSMO."]

Planned Special Event. A public activity with a scheduled time, location, and duration that may impact the normal operation of the surface transportation system because of increased travel demand or reduced capacity because of event staging.

[FHWA, *Managing Travel for Planned Special Events*, FHWA-OP-04-010, June 2007]

Planned Special Event Management. Developing and implementing a transportation management plan that contains operations and service strategies specific to managing traffic, transit, and travel demand for a planned special event.

The goals of planned special event management include achieving predictability (e.g., define the area and transportation system components impacted, conduct analyses of parking demand and traffic demand), ensuring safety (e.g., minimize pedestrian/vehicular conflicts, provide unimpeded access routes for emergency services), and maximizing efficiency (e.g., use all available resources and excess transportation system capacity, including road and transit capacity).

[FHWA, *Managing Travel for Planned Special Events*, FHWA-OP-04-010, June 2007]

Planning Factors. A set of broad objectives defined in federal legislation to be considered in both the metropolitan and statewide planning process.

Planning factors are a set of broad objectives defined in federal legislation to be considered in both the metropolitan and statewide planning process. Both SAFETEA-LU and its predecessors, TEA-21 and ISTEA, identify specific factors that must be considered in the planning process. TEA-21 consolidated what were previously 16 metropolitan and 23 statewide planning "factors" into seven broad "areas" to be considered in the planning process, at both the metropolitan and statewide levels.

SAFETEA-LU increased the number of planning factors to eight by creating separate planning factors for safety and security. SAFETEA-LU added language to emphasize the correspondence between transportation improvements and economic development and growth plans. The planning factors are as follows:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
- Increase the safety of the transportation system for motorized and nonmotorized users;
- Increase the security of the transportation system for motorized and nonmotorized users;
- Increase the accessibility and mobility of people and for freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation; and
- Emphasize the preservation of the existing transportation system.

[SAFETEA-LU Section 6001(a) and 23 U.S.C. 134 (h)(1)]

Planning for Operations. A set of activities that takes place within the context of an agency, jurisdiction, and/or regional entity with the intent of establishing and carrying out plans, policies, and procedures that enable and improve the management and operation of transportation systems.

Planning for Operations is a joint effort between operations and planning that encompasses the important institutional underpinnings needed for effective Regional Transportation Systems Management and Operations. Planning for Operations includes three important aspects:

1. Regional transportation operations collaboration and coordination activity that facilitates Regional Transportation Systems Management and Operations,
2. Management and operations considerations within the context of the ongoing regional transportation planning and investment process, and
3. The opportunities for linkage between regional operations collaboration and regional planning.

[*Planning for Operations—Glossary*, http://plan4operations.dot.gov/glossary.htm]

Procedural Integration. The legislative, policy, planning, programming, and budgeting environment in which the transportation infrastructure functions.

Management and operations, and the associated technical, operational, and institutional integration, require that those in authority make decisions to pursue integration of the surface transportation network, and then support this integration by providing the necessary resources. Decision making is aided by a variety of procedures and processes—both formal and informal ones.

[FHWA, *Freeway Management and Operations Handbook*, FHWA-OP-04-003, September, 2003]

Program. A coordinated, interrelated set of strategies, procedures, and activities, all intended to meet the goals and objectives articulated in vision statements and policies.

A program has a long-term temporal view, whereas individual projects (refer to definition below) generally have a shorter implementation period. Managing a program involves trade-offs between budget and timing, and determinations as to appropriate sequence and scope of the associated projects.

[FHWA, *Freeway Management and Operations Handbook*, FHWA-OP-04-003, September 2003]

Project. Well-defined, individual actions and activities that make up a program. The implementation of projects is how the program is realized.

[FHWA, *Freeway Management and Operations Handbook*, FHWA-OP-04-003, September 2003]

Region. Metropolitan or any other multi-jurisdictional area.

[*Planning for Operations—Glossary*, http://plan4operations.dot.gov/glossary.htm]

In the context of ITS, a region is the geographical area that identifies the boundaries of the "regional ITS architecture" and is defined by and based on the needs of the participating agencies and other stakeholders. In metropolitan areas, a region should be no less than the boundaries of the metropolitan planning area.

[23 CFR Part 940.3]

For the purposes of an RCTO, a region is considered to be any multi-jurisdictional area defined by the collaborative partners. That area may or may not coincide with the boundaries of a metropolitan planning organization (MPO).

[FHWA, "Regional Concept for Transportation Operations: The Blueprint for Action," FHWA-HOP-07-122, June 2007]

Regional Concept for Transportation Operations (RCTO). A framework that guides collaborative efforts to improve system performance through management and operations strategies. The RCTO is a management tool to assist in planning and implementing these strategies (within a region) in a collaborative and sustained manner.

[FHWA, *Regional Concept for Transportation Operations: The Blueprint for Action*, FHWA-HOP-07-122, June 2007. Note: Added "within a region."]

The RCTO promotes a more systemic and sustained approach to collaboration. Consistent with well-established systems engineering principles, the RCTO elevates the focus from agencies' individual responsibilities to a global view of the region's transportation system. Developing an RCTO helps partnering agencies think through and reach consensus on what they want to achieve in the next 3 to 5 years and how they are going to get there.

The scope of an RCTO is defined in terms of three major dimensions: functional, institutional, and geographic. The functional dimension defines the operations areas addressed within the RCTO, the institutional dimension defines the partnering entities

engaged in developing and carrying out the RCTO, and the geographic dimension defines the region (i.e., political boundaries) for which the RCTO is developed. Each dimension is shaped by the collaborative activity among transportation operators from multiple jurisdictions.

[FHWA, *Regional Concept for Transportation Operations: The Blueprint for Action*, FHWA-HOP-07-122, June 2007]

Regional ITS Architecture. A regional framework for ensuring institutional agreement and technical integration for the implementation of ITS projects or groups of projects.

[23 CFR Part 940.3]

The regional ITS architecture shall include, at a minimum, the following: (1) A description of the region; (2) Identification of participating agencies and other stakeholders; (3) An operational concept that identifies the roles and responsibilities of participating agencies and stakeholders in the operation and implementation of the systems included in the regional ITS architecture; (4) Any agreements (existing or new) required for operations, including at a minimum those affecting ITS project interoperability, utilization of ITS related standards, and the operation of the projects identified in the regional ITS architecture; (5) System functional requirements; (6) Interface requirements and information exchanges with planned and existing systems and subsystems (for example, subsystems and architecture flows as defined in the National ITS Architecture); (7) Identification of ITS standards supporting regional and national interoperability; and (8) The sequence of projects required for implementation.

[23 CFR Part 940.9]

Development of the regional ITS architecture should be consistent with the transportation planning process for Statewide and Metropolitan Transportation Planning.

[23 CFP Part 940.5]

Regional Planning Organization (RPO). An organization that performs planning for multijurisdictional areas. MPOs, regional councils, economic development associations, rural transportation associations are examples of RPOs.

[FHWA, *Transportation Planning Capacity Building Glossary*, http://www.planning.dot.gov/glossary.asp]

Regional Transportation System Management and Operations (RTSMO). An integrated program to optimize the performance of the existing infrastructure though implementation of multimodal and intermodal, cross-jurisdictional systems, services, and projects designed to preserve capacity and improve security, safety, and reliability of transportation systems.

Examples of programs and project areas where RTSMO can be implemented include (but not limited to) emergency management, incident management, road weather management, special events management, managed lanes, work zone management, demand management, congestion pricing, and integrated corridor management (refer to definitions).

[*Planning for Operations—Glossary*, http://plan4operations.dot.gov/glossary.htm]

RTSMO requires “regional transportation operations collaboration and coordination”—a deliberate, continuous, and sustained activity that takes place when transportation agency

managers and officials responsible for day-to-day operations (i.e., stakeholders) work together at a regional level to solve operational problems, improve system performance, and communicate better with one another.

[FHWA, *Regional Transportation Operations Collaboration and Coordination: A Primer for Working Together to Improve Transportation Safety, Reliability, and Security,* 2003. Note: Added "stakeholders." Refer to definition for "stakeholders."]

Reliability. A measure of the extent to which the ease of movement varies from day to day, and the extent to which the traveler can predict these temporal variations.

[Meyer, M. D. *A Toolbox for Alleviating Traffic Congestion and Enhancing Mobility*, Institute of Transportation Engineers, Washington, D.C. 1997]

A related performance measure is that of "travel time reliability," defined as the consistency or dependability in travel times, as measured from day to day and/or across different times of the day.

[http://ops.fhwa.dot.gov/perf_measurement/reliability_measures/index.htm]

Road Weather Management. Mitigation strategies employed in response to various weather threats including fog, high winds, snow, rain, ice, flooding, tornadoes, hurricanes, and avalanches.

Three types of road weather management strategies may be employed in response to environmental threats: advisory, control, and treatment strategies. Advisory strategies provide information on prevailing and predicted conditions to both transportation managers and motorists. Control strategies alter the state of roadway devices to permit or restrict traffic flow and regulate roadway capacity. Treatment strategies supply resources to roadways to minimize or eliminate weather impacts. Many treatment strategies involve coordination of traffic, maintenance, and emergency management agencies.

[FHWA, *Best Practices for Road Weather Management, Version 2.0,* FHWA-OP-03-081, May 2003]

Stakeholder. Person or group affected by a transportation plan, program, or project. Person or group believing that they are affected by a transportation plan, program, or project. Residents of affected geographical areas.

[FHWA, *Transportation Planning Capacity Building Glossary*, http://www.planning.dot.gov/glossary.asp]

Stakeholders include any person or group with a direct interest (a "stake" as it were) in the integrated operation of the corridor–region and the associated networks and cross-network linkages. Stakeholders are sources of the corridor–regional vision, goals and objectives, operational approaches and strategies, and requirements.

[FHWA, *Integrated Corridor Management (ICM) Implementation Guidance*, FHWA-JPO-06-042 / EDL #14284, April 2006]

State Transportation Improvement Program (STIP). A statewide prioritized listing or program of transportation projects covering a period of four years.

Must be consistent with the long-range statewide transportation plan, MPO plans, and TIPs; required for projects to be eligible for funding under title 23 U.S.C. and title 49 U.S.C. Chapter 53.

[23 CFR 450.104]

Systems Engineering. A process incorporating a set of management and technical tools to analyze problems and provide structure to projects involving system development. A requirements-driven process in which user requirements are the overriding determinant of system design, component selection, and implementation.

Systems engineering focuses on ensuring that requirements are adequately defined early in the process and that the system built satisfies all defined requirements. It ensures that systems are robust yet sufficiently flexible to meet a reasonable set of changing needs during the system's life. It helps manage projects to their cost and schedule constraints and keeps realism in project cost and schedule estimates.

Systems engineering helps accomplish four key activities that impact a project's success—identify and evaluate alternatives; manage uncertainty and risk in our systems; design quality into our systems; and handle program management issues that arise.

[FHWA, *Building Quality Intelligent Transportation Systems Through Systems Engineering*, April 2002]

Technical Integration. Provides the means (e.g., communication links between agencies, system interfaces, and the associated standards) by which information and system operations and control functions can be effectively shared and distributed among networks and their respective transportation management systems, and by which the impacts of operational decisions can be immediately viewed and evaluated by the affected agencies.

[FHWA, *Integrated Corridor Management (ICM) Implementation Guidance*, FHWA-JPO-06-042 / EDL #14284, April 2006]

3-C Process. Continuing, cooperative, and comprehensive planning process.

A continuing, cooperative, and comprehensive (3-C) process to encourage and promote the development of a multimodal transportation system that ensures safe and efficient movement of people and goods while balancing environmental and community needs. Statewide and metropolitan transportation planning processes are governed by federal law and applicable state and local laws.

[FHWA, *Transportation Planning Capacity Building Acronym List*, http://www.planning.dot.gov/glossary.asp#acronyms]

Transportation Demand Management (TDM). Programs designed to reduce vehicle demand on the transportation system during the peak hours through various means, such as the use of transit and of alternative work hours.

[*Planning for Operations—Glossary*, http://plan4operations.dot.gov/glossary.htm. Note: Added "vehicle" and "during the peak hours."]

In the broadest sense, transportation demand management (TDM) is any action or set of actions intended to influence the intensity, timing, and spatial distribution of

transportation demand for the purpose of reducing the impact of traffic or enhancing mobility options.

[Meyer, M. D. *A Toolbox for Alleviating Traffic Congestion and Enhancing Mobility.* Institute of Transportation Engineers, Washington D.C., 1997]

Transportation Improvement Program (TIP). A prioritized listing/program of transportation projects covering a period of four years that is developed and formally adopted by an MPO as part of the metropolitan transportation planning process.

Must be consistent with the metropolitan transportation plan; required for projects to be eligible for funding under title 23 U.S.C. and title 49 U.S.C. Chapter 53.

[23 CFR 450.104]

Transportation Management Area (TMA). An urbanized area with a population over 200,000, as defined by the Bureau of Census and designated by the Secretary of Transportation, or any additional area where TMA designation is requested by the Governor and the MPO and designated by the Secretary of Transportation.

[23 CFR 450.104]

Transportation Systems Management and Operations (TSM&O). An integrated program to optimize the performance of existing infrastructure through the implementation of systems, services, and projects designed to preserve capacity and improve security, safety, and reliability of the transportation system.

The term includes regional operations collaboration and coordination activities between transportation and public safety agencies; and improvements to the transportation system such as traffic detection and surveillance, arterial management, freeway management, demand management, work zone management, emergency management, electronic toll collection, automated enforcement, traffic incident management, roadway weather management, traveler information services, commercial vehicle operations, traffic control, freight management, and coordination of highway, rail, transit, bicycle, and pedestrian operations.

[*Planning for Operations—Glossary,* http://plan4operations.dot.gov/glossary.htm]

Unified Planning Work Program (UPWP). A statement of work identifying the planning priorities and activities to be carried out within a metropolitan planning area.

At a minimum, the UPWP includes a description of the planning work and resulting products, who will perform the work, time frames for completing the work, the cost of the work, and the source(s) of funds.

[23 CFR 450.104]

Vision. An agreed statement of the overall aims of a transportation plan.

In the context of regional transportation, a vision is the regionally agreed-upon statement of the overall aims of the regional transportation plan; describes the target end-state. Typically, a regional transportation vision will drive its goals (policy statements—the ends toward which effort is directed), objectives (measurable results), and strategies (ways/means to achieve objectives).

[*Planning for Operations—Glossary*, http://plan4operations.dot.gov/glossary.htm]

The purpose of a vision statement is to portray the future system and its operation for a specific time horizon, providing a platform for establishing goals and objectives. The vision statement must also be simple, easy to read, and accessible to a wide audience.

[FHWA, *Integrated Corridor Management (ICM) Implementation Guidance*, FHWA-JPO-06-042 / EDL #14284, April 2006]

Work Zone. An area of highway or transit line with construction, maintenance, or utility work activities.

A work zone is typically marked by signs, channelizing devices, barriers, pavement markings, and/or work vehicles.

[*Planning for Operations—Glossary*, http://plan4operations.dot.gov/glossary.htm. Note: Added "transit line."]

Work Zone Management. Strategies implemented for managing traffic during construction as necessary to minimize traffic delays, maintain or improve motorist and worker safety, complete roadwork in a timely manner, and maintain access for businesses and residents.

Transportation management strategies for a work zone include temporary traffic control measures and devices, public information and outreach, and operational strategies such as travel demand management, signal retiming, and traffic incident management.

[FHWA, http://ops.fhwa.dot.gov/wz/traffic_analysis/wztm.htm]

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