

**PART 8
GLOSSARY**

This part of the manual presents definitions for the various transit terms discussed and referenced in the manual. Other important terms related to transit planning and operations are included so that this glossary can serve as a readily accessible and easily updated resource for transit applications beyond the evaluation of transit capacity and quality of service. As a result, this glossary includes local definitions and local terminology, even when these may be inconsistent with formal usage in the manual.

Many systems have their own specific, historically derived, terminology: a motorman and guard on one system can be an operator and conductor on another. Modal definitions can be confusing. What is clearly light rail by definition may be termed streetcar, semi-metro, or rapid transit in a specific city. It is recommended that in these cases local usage should prevail.

A **AADT** — annual average daily traffic; see *traffic, annual average daily*.
AAR — Association of American Railroads; see *organizations, Association of American Railroads*.
AASHTO — American Association of State Highway and Transportation Officials; see *organizations, American Association of State Highway and Transportation Officials*.
AAWDT — annual average weekday traffic; see *traffic, annual average weekday*.
ABS — automatic block signal; see *control system, automatic block signal*.
AC — alternating current.
ADA — Americans with Disabilities Act of 1990; see *legislation, Americans with Disabilities Act of 1990*.
ADB — advanced design bus; see *bus, advanced design* and *ATTB*.
ADT — average daily traffic; see *traffic, average daily*.
ATTB — Advanced Technology Transit Bus.
AFC — automatic fare collection; see *fare collection system, automatic*.
AGT — automated guideway transit; automated guided transit; see *transit system, automated guideway*.
ALRT — advanced light rail transit, see *transit system, light rail*.
APC — automatic passenger counter.
APM — automated people-mover, see *people-mover*.
APTA — American Public Transportation Association; see *organizations, American Public Transportation Association*.
APTS — Advanced Public Transportation Systems.
ATC system — automatic train control system.
ATIS — Advanced Traveler Information Systems.
ATO — automatic train operation.

ATP — automatic train protection.
ATS — automatic train supervision; automatic train stop system.
ATU — Amalgamated Transit Union; see *union, transit*.
AVL — automatic vehicle location system.
AW0, AW1, AW2, AW3 — see *car, weight designations*.
absolute block — see *block, absolute*.
absolute permissive block — see *block, absolute permissive*.
acceleration — increase in velocity per unit time; in transit, usually measured in feet per second squared (meters per second squared) or, in the United States, sometimes in miles per hour per second.
access, limited (controlled access) — in transportation, to have entry and exit limited to predetermined points, as with rail rapid transit or freeways.
accessibility — **1.** A measure of the ability or ease of all people to travel among various origins and destinations. **2.** In transportation modeling and planning, the sum of the travel times from one zone to all other zones in a region, weighted by the relative attractiveness of the destination zones involved. **3.** In traffic assignment, a measure of the relative access of an area or zone to population, employment opportunities, community services, and utilities.
accessibility, persons with disabilities (full accessibility) — the extent to which facilities are free of barriers and usable by persons with disabilities, including wheelchair users.
accessibility, station — a measure of the ability of all people within a defined area to get to a specific transit station.
accessibility, transit — **1.** A measure of the availability to all people of travel to and from various origins and destinations by transit. **2.** A measure of the ability of all people to get to and from the nearest transit stop or station and their actual origin or destination. **3.** In

AADT—accessibility, transit

accessible station—area, fare paid

common usage, often used to mean the ability of persons with disabilities to use transit.

accessible station — see *station, accessible*.

accessible vehicle — see *vehicle, accessible*.

accessible transit system — see *transit system, accessible*.

accessible transportation facilities — transportation facilities that are barrier-free, allowing their use by all travelers, including, elderly, transportation disadvantaged, and persons with disabilities.

access mode — see *mode, access*.

access time — see *time, access*.

active vehicle — see *vehicle, active*.

activity center — see *major activity center*.

act — see *legislation*.

add fare — 1. an additional fare to upgrade an existing ticket. 2. an additional fare paid on exit from a distance based fare system when there are insufficient funds remaining on a stored value ticket, see also *fare, differential*.

adult cash fare — see *fare, adult cash*.

advanced design bus — see *bus, advanced design*.

Advanced Public Transportation Systems — collection of technologies to increase efficiency of public transportation systems and offer users greater access to information on system operation.

Advanced Railroad Grade Crossing — National ITS Architecture Market Package that manages highway traffic at *highway-rail intersections* where operational requirements demand advanced features (e.g., where rail speeds are greater than 80 mph or 128 km/h). It includes all capabilities from the *Standard Railroad Grade Crossing Market Package* and augments these with additional safety features to mitigate the risks associated with higher rail speeds.

Advanced Traveler Information Systems — technologies that provide travelers and transportation professionals with the information they need to make decisions, from daily individual travel decisions to larger-scale decisions that affect the entire system, such as those concerning incident management.

advisory committee — see *organizations, citizen advisory committee*.

aerial lift — ropeways on which passengers are transported in cabins or on chairs and that circulate in one direction between terminals without reversing the travel path.

aerial structure — in transportation, any structure other than a culvert that carries a roadway or track or other guideway above an earth or water surface; see also *guideway, elevated*.

aerial tramway — ropeways on which passengers are transported in cable-supported carriers and are not in contact with the ground or snow surface, and in which the carrier(s) reciprocate between terminals. Also called a *reversible tramway*.

agencies, federal — see *U.S. Government*.

agency, regional planning — see *organizations, regional planning agency*.

agency, transit — see *transit district*.

air brake — see *brake, air*; and *brake, automatic air*.

air distance — see *distance, air*.

alight — to get off or out of a transportation vehicle.

alignment — in transportation, the horizontal and vertical layout of a roadway, railroad, transit route, or other facility as it would appear in plan and profile. The alignment is usually described on the plans by the use of technical data, such as grades, coordinates, bearings, and horizontal and vertical curves, see also *roadbed* and *formation*.

all-or-nothing trip assignment — see *trip assignment, all-or-nothing*.

all-stop station — see *station, all-stop*.

alternate fuel — alternatives to conventional diesel fuel for urban transit buses, intended to reduce pollution, includes methanol, propane, CNG (compressed natural gas), LNG (liquefied natural gas), hydrogen (for fuel cells) and biomass derived fuels. All carry premium costs that trend in larger or more cost-conscious operators toward “clean diesel” solutions. See also *buses, hybrid*.

alternating-current motor — see *motor, alternating-current*.

alternative fuel — see *fuel, alternative*.

Amalgamated Transit Union — see *union, transit*.

amenity, passenger — see *passenger amenity*.

American Association of State Highway and Transportation Officials — see *organizations, American Association of State Highway and Transportation Officials*.

American Public Transit Association — see *organizations, American Public Transportation Association*.

American Public Transportation Association — see *organizations, American Public Transportation Association*.

a.m. peak — see *peak*.

Amtrak — see *U.S. Government, National Railroad Passenger Corporation*.

annual average daily traffic — see *traffic, annual average daily*.

annual average weekday traffic — see *traffic, annual average weekday*.

area, auto-free — see *auto-free zone*.

area, auto-restricted — see *auto-restricted zone*.

area, coverage — in transit operations, the geographical area that a transit system is considered to serve, normally based on acceptable walking distances (e.g., ¼ mile, 0.4 km) from loading points. For suburban rail transit that depends on automobile access (park-and-ride or kiss-and-ride), coverage may extend several miles (kilometers). Coverage is usually computed for *transit-supportive areas*. See also *area, service*.

area, fare paid — 1. An area that a passenger may enter only after having paid a fare or with proper credentials. 2. The area in a station that is set off by barriers, gates, or other structures to permit ready access to transit only by those who have paid fares or secured passes before entering.

area, free — a portion of a transportation facility that people are permitted to enter without the payment of a fare.

area, fringe — the portion of a municipality immediately outside the central business district or the portion of an urban area outside of a central city or cities (urban fringe) that is characterized by a variety of business, industrial, service, and some residential activity.

area, loading — see *loading area*.

area, service — 1. The jurisdiction in which the transit property operates. 2. The geographic region in which a transit system provides service or that a transit system is required to serve. See also *area, coverage*.

area, transit-supportive — an area with sufficient population and/or employment density to warrant at least hourly fixed-route transit service.

area, urbanized (UA) — as defined by the Bureau of the Census, a population concentration of at least 50,000 inhabitants, generally consisting of a central city and the surrounding, closely settled, contiguous territory (*suburbs*). The boundary is based primarily on a population density of at least 1,000 people/mi² (370 people/km²) but also includes some less densely settled areas, as well as such areas as industrial parks and railroad yards, if they are within areas of dense urban development. The boundaries of UAs, the specific criteria used to determine UAs, or both may change in subsequent censuses. It should be noted that some publications abbreviate urbanized area *UZA*.

area occupancy — in station and other facility design and in pedestrian movement, the area provided per person.

arterial roadway — a signalized street that primarily serves through traffic and secondarily provides access to abutting properties; signal spacing is typically 2 miles (3 km) or less.

arterial service — see *service, arterial*.

articulated bus or articulated trolleybus — an extra-long, high-capacity bus or trolleybus that has the rear body section or sections flexibly but permanently connected to the forward section. The arrangement allows the vehicle to bend in curves and yet have no interior barrier to movement between the two parts. The *puller* type features a powered center axle while the *pusher* type features a powered rear axle. Articulated buses with powered center and rear axles exist but are not common. Typically, an articulated bus is 54-60 ft (16-18 m) long with a passenger seating capacity of 60 to 80 and a total capacity of 100 to 140.

articulated rail vehicle (articulated car) — 1. An extra-long rail vehicle with two or more bodies connected by joint mechanisms that allow bending in curves yet provide a continuous interior. Typically, the vehicle is 55-100 ft (17-33 m) long. It is common on light rail but is also found on several heavy rail systems. 2. Rapid transit cars with separate bodies that share a common center truck.

aspect, signal — see *signal aspect*.

assignment, traffic or trip — see *trip assignment*.

Association of American Railroads — see *organizations, Association of American Railroads*.

attendant — the individual assigned to particular duties or functions in the operation of a ropeway. Also called a *conductor*.

attraction, trip — see *trip attraction*.

attributes, service — see *service attributes*.

authority, transit — see *transit district*.

automated guideway transit — see *transit system, automated guideway*.

automated people-mover — see *people-mover*.

automatic block signal — see *signal, automatic block*.

automatic block signal control system — see *control system, automatic block signal*.

automatic coupler — see *coupler, automatic*.

automatic fare collection — see *fare collection system, automatic*.

automatic passenger counter (APC) — an automated system that counts the number of passengers boarding and alighting a transit vehicle. The information may be used for later data analysis, or for real-time activities, such as providing signal priority only to buses that are at least half full.

automatic signal — see *signal, automatic*.

automatic train control system (ATC system) — 1. A system for automatically controlling train movement, enforcing train safety, and directing train operations by computers; see also *automatic train operation, automatic train protection, and automatic train supervision*. 2. A trackside system working in conjunction with equipment installed on the train, arranged so that its operation will automatically result in the application of the brakes to stop or control a train's speed at designated restrictions, should the operator not respond. The system usually works in conjunction with cab signals (more correctly called *automatic train stop*).

automatic train operation (ATO) — the subsystem within automatic train control that performs such functions as speed control, programmed stopping, and (sometimes) door operation.

automatic train protection (ATP) — the subsystem within automatic train control that provides fail-safe protection against collisions, and sometimes against excessive speed or other hazardous conditions.

automatic train stop system (ATS) — a system that works in conjunction with equipment installed on the electric rail car or locomotive to apply the brakes at designated restrictions or on a dispatcher's signal, should the operator not respond properly.

automatic train supervision (ATS) — the subsystem within automatic train control that monitors trains, adjusts the performance of individual trains to maintain schedules, and provides data for adjusting service to minimize the inconveniences otherwise caused by irregularities. May also be used for systems that merely display train status and rely on staff intervention for any corrective action.

automatic vehicle location system (AVL) — a system that determines the location of vehicles carrying special electronic equipment that communicates a signal back to a central control facility. AVLs are used for

area, free—automatic vehicle location system (AVL)

automobile equivalent unit (AEU)—board

detecting irregularity in service and are often combined with a computer-aided dispatch system.

automobile equivalent unit (AEU) — measure of a vessel's capacity to transport vehicles that reflects the amount of space used by each vehicle type. Vehicle types are assigned a size in AEU's based on the space they occupy compared with a standard automobile.

automobile or auto occupancy — see *vehicle occupancy*.

availability, transit system — see *transit system availability*.

average daily traffic — see *traffic, average daily*.

average fare — see *fare, average*.

average speed — see *velocity, effective*.

average trip length — passenger miles divided by unlinked passenger trips. Can be computed for pedestrian trips and vehicle trips, based on special surveys.

B **barn** — older term for streetcar storage building (also known as a *carhouse*), or for buses (*garage*), infrequently applied for light and heavy rail vehicles (alternates: *yard, depot, shop, maintenance and storage facility*.)

barrier-free — containing no obstacles that would prevent use by persons with disabilities or any other person.

barrier-free fare collection system — see *fare collection system, self-service barrier free*.

base fare — see *fare, base*.

base headway — see *headway, base*.

base period (off-peak period) — in transit, the time of day during which vehicle requirements and schedules are not influenced by peak-period passenger volume demands (e.g., between morning and afternoon peak periods). At this time, transit riding is fairly constant and usually moderate in volume when compared with peak-period travel. See also *off peak*.

base-period fleet — in transit, the number of transit units (vehicles or trains) required to maintain base-period schedules.

base-period service — see *service, base-period*.

basic fare — see *fare, base*.

basic operating unit — in rail rapid transit, the smallest number of rapid transit vehicles that can operate independently in revenue service, usually one to three (exceptionally more) cars.

battery bus — see *bus, electric*.

bay, bus — see *bus bay*.

beacon — short-range roadside transceiver for communicating between vehicles and the traffic management infrastructure. Common transmission technologies include microwave and infrared.

belt, passenger — see *moving walkway*.

berth, bus — see *bus bay*.

berth, ferry — see *ferry berth*.

berth, train — see *train berth*.

bicable system — an *aerial ropeway* that uses track cable(s) to support the carriers and

separate haul rope(s) to control motion of the carriers (see also *monocable system*).

bicycle-friendly — characterized by features and elements that make bicycling safe and convenient. A bicycle-friendly environment at a transit stop might include bicycle parking that is well-lit, sheltered, secure, and easily accessed.

bicycle locker — a lockable, enclosed container used for storing a bicycle. Typically provided at major transit stops and stations and rented on a monthly basis.

bicycle rack — **1.** A fixed post or framework to which bicycles may be secured and locked, typically provided on a first-come, first-served basis. **2.** A device mounted to a transit vehicle that allows bicycles to be transported outside the passenger compartment. Typically provided on a first-come, first-served basis; many transit operators require that passengers obtain a permit to use them.

bidirectional car — see *car, bidirectional*.

bidirectional transit unit — see *double-ended transit unit*.

bi-level car — see *car, bi-level*.

blister — see *bus bay*.

block — **1.** A section of track or guideway of defined limits on which the movement of trains is governed by block signals, cab signals, or both; also known as a *signal block*.

2. A section of track of defined length, the occupancy of which is regulated by fixed signal(s), telephone or radio orders, or timetables; also known as a *block section*. **3.** The daily operating schedule of a transit unit (vehicle or train) between pull-out and pull-in, including scheduled and deadhead service. A block may consist of a number of runs.

block, absolute — a signal block that no train may enter while the block is occupied by another train.

block, absolute permissive — a signal system for a single track or guideway that prevents simultaneous opposing train movements between sidings but permits following movements at a safe distance.

block, signal — a standard railroad signal system that uses a fixed signal at the entrance of a block to govern the separation of trains entering the block; see also *block*.

block control system, dynamic — see *control system, moving block*.

block control system, fixed — see *control system, fixed block*.

block control system, manual — see *control system, manual block*.

block control system, moving — see *control system, moving block*.

block indicator — a device, generally located near a turnout switch, that is used to indicate the presence of a train in the block or blocks leading to that switch.

block section — see *block*.

block signal — see *signal, block*.

block signal control — see *control system, block signal*; and *control system, automatic block signal*.

board — to go on to or into a transportation vehicle.

bollard — an upright fixed block (usually concrete) used to prevent the unauthorized or unintended entry of vehicles into an area.

brake, air — a brake in which the mechanism is actuated by manipulation of air pressure. The term is often used to describe brakes that employ air under pressure above brake atmospheric, in contrast to vacuum brakes, which employ pressure below atmospheric.

brake, blended — see *brake, dynamic*.

brake, continuous (trainlined brake) — a system of brakes interconnected among rail cars so that the brakes on all cars in the train can be operated simultaneously from the locomotive or from any car in a multiple-unit train.

brake, disc — a brake used primarily on rail passenger cars that uses brake shoes clamped by calipers against flat steel discs.

brake, dynamic (electric brake, electrodynamic brake, motor brake) — a system of electrical braking in which the traction motors, used as generators, retard the vehicle by converting its kinetic energy into electrical energy. This energy is absorbed by resistors. See also *brake, regenerative*. Dynamic brakes may be used to control train speed and to brake a train to a low speed, after which air brakes are blended in to bring the train to a full stop.

brake, electric or electrodynamic — 1. alternate to air brake for some streetcars and light rail vehicles — most notably immediately post-war PCC cars. 2. braking through electric motors, see *brake, dynamic*.

brake, electromagnetic — see *brake, track*.

brake, electropneumatic (pneumatic brake) — an automatic air brake that has electrically controlled valves to expedite applying and releasing the brakes.

brake, friction (mechanical brake) — a brake that presses brake shoes against the running wheel tread or pads against inboard or outboard disc surfaces.

brake, hydraulic — hydraulically operated brake typical of automotive practice, used on small buses and vans and entering use on some rail vehicles as alternate to air brake.

brake, magnetic — see *brake, track*.

brake, mechanical — see *brake, friction*.

brake, motor — see *brake, dynamic*.

brake, pneumatic — see *brake, electropneumatic*.

brake, regenerative — a form of dynamic brake in which the electrical energy generated by braking is returned to the power supply line instead of being dissipated in resistors. In rare cases the traction substations can return this power to the electric utility or burn it in resistors, then the line is always receptive, eliminating on-board resistors.

brake, service — 1. The primary train brake system. 2. The braking rate used for normal deceleration requirements, in contrast to emergency braking, which may provide greater retardation. Typically 0.13g, 3.0 mph/s, or 1.3 m/s², a level beyond which standing passengers become uncomfortable or may lose their balance.

brake, slip-slide control — an electronic control used on most current rail vehicles to

sense and correct wheel slip or slide by modulating braking or reducing acceleration.

brake, track (electromagnetic brake, magnetic brake) — a brake that consists of electromagnets suspended above the track rail between the two wheels on both sides of a truck. When applied, the brakes are attracted onto the steel rails, exerting braking force through friction. The brakes are difficult to apply gradually and so are reserved for emergencies (often from battery power) and are always supplementary to another braking system. This type of brake is used on most light rail vehicles and streetcars and on some heavy rail cars (modulated electromagnetic track brakes are used on the Vancouver SkyTrain.)

brake, trainlined — see *brake, continuous*.

brake shoe — the non-rotating portion of a tread or disc brake assembly. The shoe is pressed against the tread, disc, or drum when the brake is applied.

braking, closed loop — braking under continuous modulation by means of feedback from the train control system.

braking, emergency (emergency application) — in rail operations, applying the brakes to stop in the minimum distance possible for the equipment, usually at a higher retardation rate than that obtained with a maximum service brake application. Once the brake application is initiated, it often cannot be released until the train has stopped or a predetermined time has passed.

braking, full service — see *braking, maximum service*.

braking, maximum service (full service braking) — in rail operations, a non-emergency brake application that obtains the maximum brake rate that is normally regarded as comfortable for passengers and consistent with the design of the primary brake system.

braking, open-loop — unmodulated braking without feedback control from the train control system.

braking, programmed — automatically controlled braking that causes a train to stop or reduce its speed to a predetermined level at a designated point within a specified range of deviation.

braking rate — see *deceleration*.

braking, service (service application) — in rail operations, retardation produced by the primary train braking system at the maximum rate of retardation regarded as comfortable for repeated use in service stopping. See *brake, service* for rates.

broad gauge — see *gauge, broad*.

Broadcast Traveler Information — National ITS Architecture Market Package that provides the user with a basic set of ATIS services. It involves the collection of traffic conditions, advisories, general public transportation, toll and parking information, incident information, and air quality and weather information, and the dissemination of this information over a wide area through existing infrastructures and low-cost user equipment (e.g., FM subcarrier, cellular data broadcast).

bulb — see *bus bulb*.

bollard—bulb

bull wheel—bus, urban transit

bull wheel — a terminal sheave that deflects the haul rope 150 degrees or more. When under power, the sheave is referred to as a drive sheave (or drive bull wheel). When acting as a movable tensioning device, it is referred to as a tension sheave (or tension bull wheel). When it is acting simply as a fixed return for the haul rope, it is referred to as a fixed return sheave (or fixed return bull wheel).

bunching — with transit units, a situation that occurs when passenger demand is high and dwell times at stops are longer than scheduled. Headways become shorter than scheduled, and platoons of transit units (vehicles or trains) develop, with longer intervals between platoons. The same effect (one transit unit caught by the following) can also be caused by lack of protection from general road traffic congestion or by traffic signal timing. Bunching can become cumulative and can result in delay to passengers and unused capacity.

bus — a self-propelled, rubber-tired road vehicle designed to carry a substantial number of passengers (at least 16, various legal definitions may differ slightly as to minimum capacity), commonly operated on streets and highways. A bus has enough headroom to allow passengers to stand upright after entering. Propulsion may be by internal combustion engine, electric motors or hybrid; see also *alternate fuels*. Smaller capacity road transit vehicles, often without full headroom, are termed vans.

bus, advanced design (ADB) — a prototype bus, originally introduced in the mid-1970s, that incorporates new styling and design features specified by the then Urban Mass Transportation Administration.

bus, articulated — see *articulated bus* or *articulated trolleybus*.

bus, battery — see *bus, electric*.

bus, commuter — see *service, commuter*.

bus, cruiser — name for highway coaches used in transit service (probably a contraction of Scenicruiser or Americruiser), high floor over luggage compartments with depressed aisle, usually with single, swing front door.

bus, double-decker — a high-capacity bus that has two levels of seating, one over the other, connected by one or two stairways. Total bus height is usually 13-14.5 ft (4.0-4.4 m), and typical passenger seating capacity ranges from 60 to 80 people.

bus, dual-mode — **1.** A bus designed to operate both on city streets and on rails or other types of guideway; also known as a *dual-control bus*. **2.** Sometimes used to refer to a trolleybus with a diesel or gasoline engine that can operate away from overhead wires; also known as a *dual-powered bus*.

bus, electric (battery bus) — a bus that is propelled by electric motors mounted on the vehicle. The power source, usually a battery or battery pack, is located in the vehicle or on a trailer.

bus, express — see *service, express bus*.

bus, hybrid — a bus combining two power sources, usually a small diesel, gas, or Sterling engine and batteries. The engine drives an electrical generator at constant speed, optimizing efficiency and minimizing

pollution. When maximum power is required the generator plus batteries feed the traction motor(s), often hub type. At other times the generator and regenerative braking power charges the batteries. Combinations can include fuel cells and/or flywheels.

bus, intercity (over-the-road coach) — a large bus with luggage space, used primarily for transportation between cities. It usually has reclining seats and restroom facilities.

bus, limited stop — see *service, limited stop*.

bus, local — see *service, local bus*.

bus, low-floor — a bus without steps at entrances and exit. The low floor may extend throughout the bus or may use a ramp or steps to access the raised rear portion over a conventional axle and drive train. Wheelchair access is provided by a retracting ramp.

bus, motor (motor coach) — a bus that has a self-contained source of motive power, usually a diesel engine.

bus, New Look — generally refers to a bus model manufactured by General Motors in the United States and Canada between 1959 and 1983. New Look buses are characterized by large slanting windows, often with an additional row of small windows to allow standing passengers to see out. Also similar designs from other makers. Colloquial term: *fishbowl*.

bus, owl — see *run, owl*.

bus, replica streetcar — see *bus, trolley replica*.

bus, school — **1.** A vehicle operated by a public or private school or by a private contractor for the purpose of transporting children (through grade 12) to and from school or to and from other school-sponsored activities. The vehicle is externally identifiable as a school bus, typically by color (yellow) and lettering that identifies the school or school district served by the vehicle. This definition includes vehicles designed and built as school buses as well as other vehicles, such as vans and station wagons. See also *service, school bus*. **2.** A vehicle designed and built as a school bus, typically with body-on-chassis construction. Such a vehicle may be used for other purposes than school bus service (e.g., military or church service.)

bus, small — bus that is less than 20 ft (6 m) long.

bus, standard urban (transit coach, urban transit bus) — a bus for use in frequent-stop service with front and (usually) center doors, normally with a rear-mounted engine and low-back seating. Typically 35-40 ft (10-12 m) long.

bus, subscription — see *service, subscription bus*.

bus, suburban transit (suburban coach) — a bus with front doors only, normally with high-backed seats, reading lights, and without luggage compartments or restroom facilities for use in longer-distance service with relatively few stops.

bus, trolley — see *trolleybus*.

bus, trolley replica — a bus with an exterior (and usually an interior) designed to look like a vintage streetcar.

bus, urban transit — see *bus, standard urban*.

bus bay — **1.** A branch from or widening of a road that permits buses to stop, without obstructing traffic, while laying over or while passengers board and alight; also known as a *blister*, *duckout*, *turnout*, *pullout*, *pull-off* or *lay-by*. As reentry of the bus into the traffic stream can be difficult, many transit agencies discourage their construction. **2.** A specially designed or designated location at a transit stop, station, terminal, or transfer center at which a bus stops to allow passengers to board and alight; also known as a *bus dock* or *bus berth*. **3.** A lane for parking or storing buses in a garage facility, often for maintenance purposes.

bus bay, angle — a bus bay design similar to an angled parking space that requires buses to back up to exit; allows more buses to stop in a given linear space. Typically used when buses will occupy the berth for a long period of time (for example, at an intercity bus terminal).

bus bay, drive-through (pull-through) — a bus bay design providing several adjacent loading islands, between which buses drive through, stop, and then exit. Allows bus stops to be located in a compact area. Sometimes used at intermodal transfer centers, as all buses can wait with their front destination signs facing the direction passengers will arrive from (e.g., from a rail station exit).

bus bay, linear — a bus bay design where buses stop directly behind each other; requires the bus in front to leave its bus bay before the bus behind it can exit. Often used when buses will use the bus bay only for a short time (e.g., at an on-street bus stop). Also called *on-line bus stop*.

bus bay, sawtooth — a bus bay design where the curb is indented in a sawtooth pattern, allowing buses to enter and exit bus bays independently of other buses. Often used at transit centers.

bus berth — see *bus bay* and *loading area*.

bus bulb — an extension of the sidewalk into the roadway for passenger loading without the bus pulling into the curb, gives priority to buses and eases reentry into traffic, often landscaped and fitted with bus shelter and other passenger amenities. Also called *bus bulge*, *curb bulge*, and *curb extension*.

bus dock or turnout — see *bus bay*.

bus gate — **1.** A bus priority signal control for intersection approaches. Signals located upstream from the intersection stop traffic in regular lanes while the bus lane remains open, allowing buses to proceed to any lane at the intersection signal ahead of other traffic. **2.** In some areas, a crossing gate on highway ramps that opens only for buses. **3.** A bus-only passageway between suburban sub-divisions, controlled by a gate, or a pit that is too wide for automobiles to pass — examples in Calgary, also known as a *vehicle trap*.

business district — see *central business district* and *outlying business district*.

bus lane — see *lane, bus*.

bus mile (bus kilometer) — one bus operated for 1 mile (kilometer.)

bus-only street — see *street, bus-only*.

bus platoon — several buses operating together as a convoy, with each bus following the operating characteristics of the one in front.

buspool — group of people who share the use and cost of a special bus transportation service between designated origins and destinations on a regular basis; for example, daily trips to work.

bus priority lane — see *lane, bus*.

bus priority system — a system of traffic controls in which buses are given special treatment over general vehicular traffic (e.g., bus priority lanes, preemption of traffic signals, or adjustment of green times for buses.)

bus priority system, metered freeway — a means of giving buses preferential access to enter a freeway by restraining the entrance of other vehicles through the use of ramp metering; see also *freeway, metered*.

bus rapid transit — see *transit system, bus rapid*.

bus run — see *run, bus*.

bus shelter — see *transit shelter*.

bus stop — see *stop, transit*.

bus turnout — see *bus bay*.

busway — a special roadway designed for exclusive use by buses. It may be constructed at, above, or below grade and may be located in separate rights-of-way or within highway corridors. Variations include grade-separated, at-grade, and median busways. Sometimes called a *transitway*.

bypass, queue — see *queue jumper*.

bypass lane — see *queue jumper*.

C

CBD — central business district.

CNG — Compressed natural gas.

CTC — Centralized traffic control; see *control system, centralized traffic*.

centralized traffic.

CUTA — Canadian Urban Transit Association; see *organizations, Canadian Urban Transit Association*.

cab — **1.** The space or compartment in a locomotive or a powered rail car containing the operating controls and providing shelter and seats for the engine crew or motor operator **2.** A taxicab.

cab car — see *car, cab*.

cab signal — see *control system, cab signal*.

cabin — an enclosed or semi-enclosed compartment for transporting passengers. Most often used on aerial tramways and detachable-grip aerial lifts.

cable — wire rope consisting of several strands twisted together.

cable, track — a wire rope or strand used to support a carrier or carriers on a bicable system.

cable car — see *car, cable*.

cable-hauled automated people-mover — see *people-mover*.

cableway — a *ropeway* similar to an *aerial tramway*, but having the added ability to raise and lower a load during transport. Generally only used for freight movement.

bus bay—cableway

call, road—car, double deck

call, road — see *road call*.

cam controller — a device to regulate direction, accelerating, running, and braking of an electric vehicle with switched resistor control. Cams on a rotating shaft open or close spring-loaded contacts that make or break electric circuits between the power supply and the traction motors.

Canadian Urban Transit Association — see *organizations, Canadian Urban Transit Association*.

capacity, achievable — the maximum number of passengers that can be transported over a given section of a transit line in one direction during a given time period, factored down to reflect the uneven passenger demand during the peak hour, uneven vehicle occupancy and, for rail, the uneven loading of cars within a train. Usually the maximum capacity with unlimited vehicles, if constrained by number of vehicles this must be clearly stated.

capacity, crush (crush load) — the maximum feasible passenger capacity of a vehicle, that is, the capacity at which one more passenger cannot enter without causing serious discomfort to the others. Note that the crush load specification for some rail transit vehicles does not relate to an achievable passenger loading level but is an artificial figure representing the additional weight for which the car structure is designed or for which the propulsion and braking system will meet minimum performance criteria.

capacity, design — **1.** for transit lines, a synonym for *person capacity*. **2.** for transit vehicles, a synonym for *scheduled design load*. **3.** For highways, the maximum number of vehicles that can pass over a given section of a lane or roadway in one or both directions during a given time period under prevailing environmental (e.g., weather and light), roadway, and traffic conditions.

capacity, fleet (rolling stock capacity) — **1.** the total number of passenger spaces in all vehicles of a transit fleet. **2.** Maximum system or line capacity when the entire fleet, less maintenance spares, are deployed, *not in common use*.

capacity, line — the maximum number of passenger spaces that can be moved past a fixed point in one direction per unit of time (usually 1 hour) without station stops or dwells; see also *capacity, achievable* and *capacity, design*. (Real operating conditions will reduce this capacity. Except for busways without stops, this is an academic measure that should be avoided.)

capacity, normal vehicle — see *capacity, vehicle*.

capacity, person — the maximum number of persons that can be carried past a given location during a given time period under specified operating conditions without unreasonable delay, hazard, or restriction. Usually measured in terms of persons per hour.

capacity, productive — a measure of efficiency or performance. The product of passenger capacity along a transit line and speed.

capacity, rolling stock — see *capacity, fleet*.

capacity, seating (seated capacity) — the number of passenger seats in a vehicle.

capacity, standing — the number of standing passengers that can be accommodated in a vehicle under specified comfort standards, expressed in area per standee.

capacity, theoretical line — see *capacity, line*.

capacity, vehicle — **1.** The maximum number of passengers that the vehicle is designed to accommodate comfortably, seated and standing; may sometimes refer to number of seats only. Also known as *normal vehicle capacity* or *total vehicle capacity*. **2.** The maximum number of vehicles that can be accommodated in a given time by a transit facility.

capital cost — nonrecurring or infrequently recurring costs of long-term assets, such as land, guideways, stations, buildings, and vehicles. These costs often include related expenses: for example, depreciation and property taxes. See also *operating costs*.

captive (transit) rider — see *rider, captive transit*.

car — **1.** A vehicle running on rails, for example, streetcar, light rail car, rapid transit car, railroad car. **2.** An automobile.

car, articulated — see *articulated rail vehicle*.

car, bidirectional (double-ended) (DE) — a powered rail car that has controls at both ends and symmetrically designed sides and ends for operation in either direction.

car, bi-level — a rail car that has two levels for passenger accommodation. The upper level may extend through the entire length of the car or only over a part of it. In this latter case the car has three different levels, two in the middle and an intermediate level over the trucks at each end, hence the term *tri-level* is occasionally seen. Bi-level cars include double-deck and gallery cars.

car, cab — **1.** A rail car with a driving cab. **2.** A passenger-carrying car used in push-pull service and fitted with a cab at one end, to be used to operate the train when the locomotive is pushing; see also *car, commuter rail*.

car, cable — **1.** An individually controlled rail passenger vehicle operating in mixed street traffic and propelled by gripping a continuously moving endless cable located in an underground slot between the rails. The cable (which can haul many cable cars simultaneously) is powered by a large stationary motor at a central location. **2.** A term sometimes applied to *aerial tramways*.

car, commuter rail — a passenger rail car designed for commuter rail services, usually with more seats than a conventional long-distance rail passenger car. The car may be hauled by a locomotive, have a self-contained internal combustion engine, or be electrically propelled by power from a third rail or overhead wire. See also *car, cab*.

car, diesel multiple-unit — see *car, multiple-unit*.

car, diesel rail — see *car, rail diesel*.

car, double-deck — a bi-level rail car with a second level that covers the full width of the car but may or may not extend the full length.

car, electric multiple-unit — see *car, multiple-unit*.

car, electric rail — an electric rail car powered by current from an overhead wire or third rail.

car, gallery — a bi-level rail car that has seating and access aisles on a second level along each side of an open well. Tickets of passengers on the second level can be inspected or collected from the lower level. Now unique to Chicago and Montreal.

car, light rail (LRV, light rail vehicle) — a streetcar or rail vehicle similar to a streetcar, often articulated, operating on light rail systems with substantial amounts of segregated track and higher speeds than traditional *on-street* streetcar operation. Designs available with folding steps, capable of boarding and discharging passengers at either track or car-floor level, as in San Francisco and Hannover. See also *car, streetcar*.

car, light rail vehicle, low-floor — a light rail vehicle with low floor for level boarding and exiting. Floor height is 10-14 in. (250-350 mm), requiring a platform or raised curb at this height. Wheelchair access is provided directly or by a hinged or removable bridge plate, or by an electrically operated retractable plate. Partial low-floor light rail vehicles have internal steps to access high-floor area(s) over trucks and (rarely) any articulations. In this way conventional trucks and propulsion equipment can be used.

car, motor — see *car, rail motor*.

car, multiple-unit (MU) — a powered rail car arranged either for independent operation or for simultaneous operation with other similar cars, when connected to form a train of such cars. It may be designated as *DMU (diesel multiple-unit)* or *EMU (electric multiple-unit)*, depending on the source of power.

car, PCC (PCC, Presidents' Conference Committee car) — a streetcar first produced in 1935. Its performance and efficiency were significantly improved over those of any streetcar previously built. The PCC car, characterized by lightweight construction, smooth and rapid acceleration and deceleration, and soft ride, became the standard for U.S. streetcars for many years. About 5,500 cars were manufactured in North America, 16,000 in Europe, and many using PCC features in Russia, as recently as 1997. See *organizations, Presidents' Conference Committee*.

car, powered — see *car, rail motor*.

car, rail diesel (RDC, diesel rail car) — a self-powered rail car, usually with two diesel engines capable of multiple-unit operation. (DMU)

car, rail motor (motor car, powered car, self-powered car, self-propelled car) — a rail car that is propelled by an electric motor or internal combustion engine located on the car itself, see *car, electric rail* and *car, rail diesel*.

car, rail rapid transit (rapid transit car, subway car, heavy rail car) — bidirectional rail car for rapid transit systems, usually powered, multiple unit equipped, and with a control cab at one or both ends. Characterized by multiple double doors per

side, designed for fast boarding and alighting from high-level platforms.

car, self-propelled or self-powered — see *car, rail motor*.

car, single-unit (SU) — a powered rail car, equipped with a control cab at one or both ends, that operates alone.

car, streetcar — an electrically powered rail car, with width and turning radius suitable for operating on city streets and equipped with lower skirt and safety devices to protect pedestrian falling under car; see also *car, light rail*.

car, track — a self-propelled rail car (e.g., burro crane, highway rail car, detector car, weed burner, tie tamper) that is used in maintenance service and that may or may not operate signals or shunt track circuits.

car, trailer — 1. An unpowered rail car operated in trains with powered cars (rapid transit) or towed by locomotives (regional rail). 2. In some rail rapid transit systems, a trailer may be powered; however, it does not have operator control and thus can only be operated in consists with cars that do.

car, trolley — 1. A local term for a streetcar. 2. Recently, also a local term for a bus with a body simulating that of an old streetcar (see *streetcar, replica*).

car, unidirectional — a rail car (usually light rail or streetcar) that has doors on one side and an operating cab at only one end so that it must be turned around by separate means (loop tracks or wyes) at terminals.

car, urban rail — a light rail, rail rapid transit, or commuter rail car.

car, weight designations — AW0, empty weight, AW1, weight with seated passenger load, AW2, weight with average peak-hour passenger load, AW3, crush loaded weight. Passengers are usually assumed to weigh an average of 155 lb (70 kg). Peak-hour passenger load is normally based on 0.4 p/ft² (4 passengers/m²) of floor space in North America, 0.4-0.5 p/ft² (4-5 p/m²) in Europe and 0.5-0.6 p/ft² (5-6 p/m²) in Asia, after discounting space used for cabs, stairwells and seated passengers at 0.2/ft² (2/m²). Crush loads are 0.6, 0.6-0.7, and 0.8 p/ft² (6, 6-7 and 8 p/m²) respectively. **Caution:** some systems and manufacturers use different designations, some systems report loading in excess of 0.8 p/ft² (8 p/m²).

car equivalence, passenger — see *passenger car equivalence*.

carhouse — see *barn*.

car operator — see *operator, train*.

carpool — an arrangement in which two or more people share the use, cost, or both of traveling in privately owned automobiles between fixed points on a regular basis; see also *vanpool*.

carpool, casual — an informal carpool where commuters gather at a location to be picked up at random by motorists who do not have sufficient passengers to use an HOV facility (U.S. West Coast usage). See also *slug*.

carpool lane — see *lane, carpool*; and *lane, exclusive carpool*.

carrier — 1. A person or company in the business of transporting passengers or goods. 2. The structural and mechanical assemblage

car, electric multiple-unit—carrier

carrier, common—command and control system

in or on which the passengers of a ropeway system are transported. Unless qualified, the carrier includes the carriage or grip, hanger, and cabin or chair.

carrier, common — in urban transportation, a company or agency certified by a regulatory body to carry all passengers who fulfill the contract (e.g., pay the required fare). The service is open to the public.

catamaran — commonly used type of ferry vessel. Water jet propulsion combines relatively good fuel economy with speed and passenger comfort.

catenary system — that form of electric overhead contact system (OCS) in which the overhead contact wire is supported from one or more longitudinal wires or cables (*messengers*), either directly by hangers (*simple catenary*) or by hangers in combination with auxiliary conductors and clamps (*compound catenary*). Attachment of the contact wire to the messenger is made at frequent and uniform intervals to produce a contact surface nearly parallel to the top of the running rails.

center, major activity — see *major activity center*.

center, modal interchange — see *transit center*.

center platform — see *platform, center*.

central business district (CBD) — defined by the Bureau of the Census, an area of high land valuation characterized by a high concentration of retail businesses, service businesses, offices, hotels, and theaters, as well as by a high traffic flow. A CBD follows census tract boundaries; that is, it consists of one or more whole census tracts. CBDs are identified only in central cities of MSAs and other cities with populations of 50,000 or more. See also *outlying business district*.

central city — as defined by the Bureau of the Census, the largest city, or one of the largest cities, in a metropolitan statistical area or urbanized area. The criteria for designating a central city vary with the type of area and the particular census.

centralized traffic control system — see *control system, centralized traffic*.

chair — an open or semi-open seat used on an aerial lift.

check — in transit operations, a record of 1. the passenger volume on all transit units that pass a specific location or time point (also known as a *passenger riding count or check*), 2. the actual time the unit passes it (also known as a *schedule check*), 3. the number of passengers who board and alight at each stop on a route or line (also known as an *on-and-off count or check*), or any combination of these items. The checker may ride the transit unit (an *on-board or ride check*), follow it in another vehicle, or check the transit units from a particular location (a *point or corner check*).

choice rider — see *rider, choice*.

chopper — solid-state electronic device that controls electric current flow to traction motors by rapidly turning the power on and off, resulting in gradual vehicle acceleration at reduced current use. Replaced less efficient switched resistor controls from 1960s. Now replaced with more advanced power conversion units (PCU) feeding three phase

alternating current motors, which may themselves contain a “chopper,” usually to control regenerative braking.

circuit, track — see *track circuit*.

circulator service — see *service, circulator*.

city, central — see *central city*.

city transit service — see *service, city transit*.

civil speed limit — in rail operations, the maximum speed authorized for each section of track, as determined primarily by the alignment, profile, and structure.

clearance time — see *time, clearance*.

clock headway — see *headway, clock*.

close-in time — see *time, close-in*.

close-up — in rail transit operations the process where a train approaching a station will close-up to the train berthed in the station to the minimum distance permitted by the signaling or train control system. This is usually the critical line condition that, combined with the dwell at the maximum load section station, establishes the minimum headway.

closed-loop braking — see *braking, closed-loop*.

coach, motor — see *bus, motor*.

coach, over-the-road — see *bus, intercity*.

coach, suburban — see *bus, suburban transit*.

coach, transit — see *bus, standard urban*.

coach, trolley — see *trolleybus*.

coasting (freewheeling) — of a vehicle, running without influence of either the propulsion or braking systems, that is, with tractive and braking forces at zero. Use of coasting on rail transit sometimes increased outside peak periods to reduce energy consumption. Desirable feature of automatic train operation.

coefficient, riding frequency or habit — see *riding frequency coefficient*.

coefficient, utilization — see definition of *load factor*.

coefficient of directness — 1. The ratio of the length (measured in units of either distance or time) of a transit trip between two points and the length of the most direct highway route between the two points. 2. The ratio of the length (measured in units of either distance or time) of a trip between two points by one mode and the length of the trip by another mode.

coefficient of variation — the standard deviation divided by the mean. Usually expressed as a percentage.

cog railway (rack railway, mountain railway) — a rail transportation mode with auxiliary or full traction provided by a geared wheel in the middle of a powered axle that is engaged with a rack (toothed bar) installed along the track center. This system used to overcome steep gradients. Similar *Fell system* uses adhesion grip on center rail without gear teeth.

collector, current — see *current collector*.

command and control system (C&C) — in rail systems, any means of adjusting and maintaining prescribed headways; effecting starting and stopping, merging, and switching; and controlling other such functions. It is usually considered to include

transit unit (car or train) protection, transit unit operation, and line supervision to ensure safe movement of the transit unit within the system. Preferred usage is *train control system*. See also *control system*.

common carrier — see *carrier, common*.

commission — **1.** Eastern Canadian term for transit agency — particularly in Ontario. **2.** To prepare new transit vehicles or other hardware for revenue service.

communication based control system — see *control system, moving block*.

commute — regular travel between home and a fixed location (e.g., work, school). The term is often applied only to travel in the direction of the main flow of traffic, to distinguish from reverse commute.

commute, reverse — a commute in the direction opposite to the main flow of traffic, for example, from the central city to a suburb during the morning peak. Increasingly common with growth in suburban employment. Valuable to operator as provides additional passengers and revenue at little or no marginal cost.

commute ticket — in rail systems, a ticket sold at a reduced rate for a fixed or unlimited number of trips in a designated area during a specified time period.

commuter — a person who travels regularly between home and a fixed location (e.g., work, school.)

commuter bus — see *service, commuter*.

commuter lane — see *lane, high-occupancy vehicle*.

commuter rail — see *transit system, commuter rail*.

commuter rail car — see *car, commuter rail*.

commuter service — see *service, commuter*.

compound catenary — see *catenary system*.

concession — in transit, the right to operate a transit service for a given number of years. May or may not include: public contribution to capital and operating costs; regulation of service standards and fares charged; design or construction of any facilities.

conductor — **1.** In rail transit operations, the operating employee who may control the doors on rail transit vehicles, or who may have fare-collecting duties, or both. Also called a *guard* on some systems. **2.** In railroad operations, the operating employee in charge of the train and train crew. **3.** In some bus operations, an operating employee (other than the bus driver) who collects fares and may control doors. **4.** The individual assigned to particular duties or functions in the operation of a ropeway.

confidence level — a statement of assurance of the accuracy of a statistical statement, e.g., if it is asserted that a population parameter is indeed within the computed confidence interval at confidence level α , this means that the risk of error is $1-\alpha$. For example, a 95% confidence level has a risk of 5%.

confidence limit — a boundary of the confidence interval, usually referred to as lower and upper confidence limits.

connectivity — the ability of a public transportation network to provide service to the maximum number of origin-and-destination trip pairs through the optimal

integration of routes, schedules, fare structures, information systems, and modal transfer facilities.

consist — in rail systems, the makeup or composition (number and specific identity) of individual units of a train. Pronounced with the first syllable emphasized.

contact rail — see *rail, third*.

contact shoe, overhead — see *overhead contact shoe*.

contact wire (trolley wire) — an overhead electric conductor that supplies power to electric rail vehicles and trolleybuses.

continuous brake — see *brake, continuous*.

continuous inductive train control system — see *control system, continuous train*.

continuous train control system — see *control system, continuous train*.

continuous welded rail — see *rail, continuous welded*.

contraflow — movement in a direction opposite to the normal flow of traffic. The term usually refers to flow opposite to the heavier flow of traffic. See also *commute, reverse*.

contraflow lane — see *lane, contraflow*.

control, deadman — see *deadman control*.

control, quality — see *quality control*.

control device, grade crossing traffic — see *grade crossing traffic control device*.

controlled access — see *access, limited*.

controlled access right-of-way — see *right-of-way, limited*.

controller, cam — see *cam controller*.

controls, passenger — see *passenger controls*.

control system, automatic block signal (ABS) — a system of governing train separation in which the signals are controlled by the trains themselves. The presence or absence of a train in a block is determined by a track circuit. If the circuitry fails, a restrictive signal is displayed.

control system, automatic train — see *automatic train control system*.

control system, block signal — a standard railroad signal system that uses a fixed signal at the entrance of a block to govern the separation of trains entering the block.

control system, cab signal — in rail systems, a signal located in the cab, indicating a condition affecting the movement of a train and used in conjunction with interlocking signals and in conjunction with or in lieu of block signals. Can indicate status of next signal(s) or show designated maximum speed.

control system, centralized traffic (CTC) — in rail systems, a traffic control system in which signals and switches are controlled from a remotely located (centralized traffic control) panel.

control system, communication based — see *control system, moving block*.

control system, fixed block — an automatic train control system that records the presence of a train (or a part of it) in each track section (block) and activates the signals on the line to indicate the block is occupied. In some cases, a following train is prevented from entering

common carrier—control system, fixed block

control system, manual block—
current collector

the block by a forced emergency stop, see *automatic train stop*.

control system, manual block — a system of manually governing train movement in a block or a series of consecutive blocks by means of signals, train orders, telephone, or radio.

control system, manual train — system in which train movement is controlled by the operator (motorman) or engineer.

control system, moving block — an automatic train control system that spaces trains according to their location and relative velocity, and stopping performance, plus a safety distance. Often includes automatic train operation. Moving-block signaling systems are also called transmission or communication based systems. The latter is becoming the preferred term.

control system, multiple-unit — a system that controls the operation of two or more rail motor cars in a train through the simultaneous control of the train by one operator.

control system, overlay — A train control system, usually software controlled, that is overlaid on top of a conventionally fixed block control system. Permits closer headway of trains equipped for the overlay while providing operation and safe separation of non-equipped trains.

control system, traffic — see *control system, centralized traffic*.

control system, transmission based — see *control system, moving block*.

controlling dwell — the dwell, usually at the busiest station on a rail transit line, that, added to the minimum separation time of the train control system for the applicable speed, sets the closest headway possible. Can also apply to a bus line.

conventional rail transport — transportation systems that consist of steel-wheeled trains running on duo-rail tracks. Trains may be self-propelled or hauled by locomotive, with diesel or electric propulsion.

conveyor, passenger or pedestrian — see *moving walkway*.

cordon count — in planning, a count of vehicles and people across a designated (cordon) line to determine 1. the total flow (people and vehicles by mode and time period) into and out of the study area and 2. the accumulation (people and vehicles) within the cordon area by time of day.

cordon line — in planning, an imaginary line circumscribing a specific geographic study area.

corner check — see *check*.

corridor — in planning, a broad geographical band that follows a general directional flow or connects major sources of trips. It may contain a number of streets and highways and transit lines and routes.

cost recovery ratio — the ratio of total revenues to total costs; the inverse of operating ratio. It is often used for evaluation of alternative plans. Usually total direct operating and maintenance costs are used although outside the United States; many agencies include annualized capital costs and/or depreciation in the calculation.

Farebox recovery ratio is the ratio of operating revenue to operating costs.

costs — see *capital costs* and *operating costs*.

count — 1. In transportation, a process that tallies a particular movement of people or vehicles past a given point during a stated time period. It may be a directional or a two-way value and is also known as a *traffic count*. 2. In transportation, a volume of people or vehicles.

count, cordon — see *cordon count*.

count, on-and-off — see *check*.

count, passenger — see *passenger count*.

count, passenger riding — see *check*.

count, traffic — see *traffic count*.

coupler — a device for connecting one rail vehicle to another. The mechanism is usually placed in a standard location at both ends of all rail cars and locomotives.

coupler, automatic — 1. A coupler that operates automatically. It may also be capable of uncoupling automatically. May have to take place on tangent track although some designs have automatic centering and can be used on curves. 2. An automatic connector that joins electric or pneumatic train lines together between rail cars.

coverage area — see *area, coverage*.

critical line condition — in rail transit operations the factor that constrains headway. This is usually the close-in at the maximum load section station or the terminal turnback process, occasionally at junctions.

crossing, grade (railroad grade crossing) — a crossing or intersection of highways, railroad tracks, other guideways, or pedestrian walks, or combinations of these at the same level or grade.

crossing, highway/railroad — a place, at grade or grade separated, where highway traffic crosses railroad tracks.

crossing, railway — see *crossing, track*.

crossing, track (railway crossing) — an assembly of rails and frogs that allows crossing of two tracks at grade.

crossing control device, grade — see *grade crossing traffic control device*.

crossover — 1. In rail systems, a track with two switches that connects two parallel tracks. 2. Pedestrian or vehicular links (at grade or grade separated) across a transportation facility.

cross-tie (railroad tie, tie) — the transverse member of the track structure to which the rails are fastened. Its function is to provide proper gauge and to cushion, distribute, and transmit the stresses of traffic through the ballast to the roadbed; normally wood or concrete; can be metal or plastic. Also known as a *sleeper*.

cross-town service — see *service, cross-town*.

cruise speed or velocity — see *velocity, cruise*.

cruiser — see *bus, cruiser*.

crush load — see *capacity, crush*.

curb bulb — see *bus bulb*.

curb extension — see *bus bulb*.

current collector — the mechanical component on an electric rail car that makes contact with the conductor that distributes

the electric current; see also *overhead contact shoe*, *pantograph*, *third-rail shoe*, and *trolley pole*.

customer satisfaction survey — see *survey*, *customer satisfaction*.

cut-and-cover — a method of construction that consists of excavating the terrain from ground level, placing a structure in the excavation, and then filling over the structure.

cutting — see *run cutting*.

D DC — **1.** District of Columbia. **2.** direct current.
 DE — double ended, rail or streetcar with driving positions at both ends.
 DHV — design hourly volume.

DMU — diesel multiple-unit car; see *car*, *multiple-unit*.

DOT — department of transportation; see *organizations*, *department of transportation*; and *U.S. Government*, *Department of Transportation*.

DPM — downtown people mover; see *people mover*, *downtown*.

day pass or daypass — ticket for unlimited travel for one day, usually to end of service the following day, may be for one or more zones of travel, may be restricted in morning peak period, may be good for one adult, one concession rider or for a family or similar group. Can be valid through a weekend. Often contains “scratch” panels for user to designate day and month of use.

deadhead — an unproductive or non-revenue move without passengers aboard, often to and from a garage, or from one route to another. (Some agencies carry passengers on these runs and still use the term deadhead.)

deadman control — a pedal, handle, or other form of switch, or combination thereof, that the operator must keep in a depressed or twisted position while a rail vehicle (or train) is moving. If the control is released, the power is cut off and the brakes are applied.

deceleration, retardation, braking rate — decrease in velocity per unit time; in transit practice, often measured in ft/s² (m/s²) or, in the United States, mph/s.

deck, vessel — a platform in a vessel that accommodates passengers and/or autos.

default value — a design value that is based on experience or on studied conclusions and that is used as a substitute value when an actual value is not available.

defensible space — a concept in architecture and urban design that precludes designs resulting in dark alleys, corners, or spaces where visibility and openness to other people is severely limited.

delay, re-entry — the time required for a suitable gap in traffic to occur to allow a bus to re-enter the street from an off-line stop; a component of clearance time. Re-entry delay is influenced by the traffic volume in the curb lane and upstream traffic signals.

delay time — see *time*, *delay*.

demand — **1.** The quantity (of transportation) desired. **2.** In an economic sense, a schedule of the quantities (of travel)

consumed at various levels of price or levels of service offered (by the transportation system.)

demand, effective — the number of people or vehicles prepared to travel in a given situation, at a given price.

demand jitney service — see *service*, *jitney*.

Demand Response Transit Operations — National ITS Architecture Market Package that performs automatic driver assignment and monitoring as well as vehicle routing and scheduling for demand-responsive transit services.

demand-responsive transportation system — see *transportation system*, *demand-responsive*.

denial, service — see *service denial*.

density, pedestrian — average number of pedestrians per unit of area within a walkway or queuing area; expressed as pedestrians per square foot or meter.

density, population — average number of people per unit area; typically expressed as persons per square mile or square kilometer.

density, train — see *train density*.

department of transportation — see *organizations*, *department of transportation*; and *U.S. Government*, *Department of Transportation*.

departments, U.S. — see *U.S. Government*.

dependent, transit — see *transit dependent*.

depot — see *garage*, *terminal*, *carhouse* and *barn*.

derail — **1.** To run off the track. **2.** A track safety device designed to guide a rail car off the rails at a selected location to prevent collisions or other accidents, commonly used on spurs or sidings to prevent unattended rolling cars from fouling the main line; also known as a *derailer*.

derailment — an instance of the wheels of a rail vehicle coming off the track.

deropement — the term used when a rope or cable leaves its operating position relative to the groove of a sheave, carriage wheel, or saddle.

design capacity — see *capacity*, *design*.

design hourly volume (DHV) — the amount of traffic a transportation facility is designed to carry in 1 hr.

desire line — a straight line on a map that connects the origin and destination of a trip (theoretically, the ideal or most desirable route) and may indicate by its width or density the volume of trips between that origin and destination.

destination — **1.** The point at which a trip terminates. **2.** In planning, the zone in which a trip ends.

destination sign or blind — a sign on a transit unit (vehicle or train) indicating the route and/or route number or letter, direction, destination of the unit, or any combination thereof. Destination signs are most commonly located on the front of the transit unit but may also be located on the back, side, or both. Includes roll signs printed on cloth or plastic and electronic signs, most usually dot matrix. See also *head sign*.

detachable-grip lift — a ropeway system on which carriers circulate around the system alternately attaching to and detaching from a

customer satisfaction survey—
detachable-grip lift

deviation, point—driving wheels

moving haul rope. The ropeway system may be *monocable* or *bicable*.

deviation, point — see *point deviation*.

device, grade crossing traffic control — see *grade crossing traffic control device*.

device, signal-actuating — see *pedestrian signal-actuating device* and *vehicle signal-actuating device*.

device, traffic control — see *traffic control device*.

dial-a-bus or dial-a-ride — see *transportation system, dial-a-ride*.

diamond lane — see *lane, diamond*.

diesel-electric locomotive — see *locomotive, diesel-electric*.

diesel multiple-unit car (DMU) — see *car, multiple-unit*.

diesel rail car — see *car, rail diesel*.

differential fare — see *fare, differential*.

direct current (DC) — fixed polarity electrical distribution system universally used for heavy rail, light rail and trolleybuses. For a given load at the voltages used, there are lower losses and longer distances possible between feeder points and sub-stations than with alternating current (AC).

direct current motor — see *motor, direct current*.

directional route miles — see *route miles*.

directional split — the proportional distribution between opposite flows of traffic on two-way facilities.

directness, coefficient of — see *coefficient of directness*.

disability, public transportation — see definition of *persons with disabilities*.

disadvantaged, transportation — see *transportation disadvantaged*.

disc brake — see *brake, disc*.

discharge — in transit operations, to let passengers exit the vehicle.

disembark — to transfer from a vessel to shore.

disincentive — something that discourages people from acting in a certain way. For example, high parking fees or tolls are disincentives to automobile use.

dispatcher — 1. In bus operations, the individual who assigns buses to runs, makes up work assignments to fill runs, directs the operators at the start of their assignments, and in some cases, maintains a constant awareness of status of the operation, via radio, telephone, or other means. 2. In rail operations, an operating person whose function it is to dispatch transit units (cars or trains), monitor their operation, and intervene in the event of disruption of schedule or when any change in service or routing is required. 3. In demand-responsive transportation, the person who assigns the vehicles to customers and notifies the appropriate drivers and who may schedule and route vehicles and monitor their operation.

dispatching — 1. In rail operations, the process of starting a transit unit (car or train) into service from a terminal, yard, or transfer track. 2. In demand-responsive

transportation systems, the process of relaying service instructions to drivers. The procedure may include vehicle scheduling, routing, and monitoring, and it can be manual or partly or fully automated. 3. The relaying of service instructions to vehicle drivers or operators.

distance, air — straight-line measure of walking distance between two points that does not consider the availability, connectivity, or condition of pathways between the two points; used in planning-level calculation of service coverage. Compare with *distance, walk*.

distance, linked trip — see *trip distance, linked*.

distance, maximum walking — the maximum distance that people will walk to transit; affected by grade, pedestrian environment, and pedestrian characteristics.

distance, total travel — see *trip distance, linked*.

distance, walk — measure of walking distance between two points following continuous pathways or sidewalks. Compare with *distance, air*.

distribution, flow — see *trip assignment*.

distribution, trip — see *trip distribution*.

district, central business — see *central business district*.

district, outlying business — see *outlying business district*.

diversity, loading — a measure of the unevenness of the passenger loading of transit vehicles in time (e.g., between buses or trains on the same route) or location (e.g., between cars of a train). See also *peak hour factor*.

dock — 1. Facility defined as a multiple number of berths providing access to vessels. 2. The process of “parking” a vessel and tying it into its berth.

door, double-stream — a door on a transit vehicle with sufficient width (generally 3.75-4.5 ft or 1.14-1.37 m) to permit two passengers to board and/or alight simultaneously. A handrail may or may not be provided to separate the two passenger streams.

door, single-stream — a door on a transit vehicle that allows passenger flow in only one direction at a time.

district, transit — see *transit district*.

door-to-door service — see *service, door-to-door*.

double — see *extra section*.

double-deck car — see *car, double-deck*.

double-decker bus — see *bus, double-decker*.

double-ended car — see *car, bidirectional*.

double-ended transit unit (bidirectional transit unit) — rail car or train with an operating cab at each end.

downtown people mover — see *people mover, downtown*.

draft — the depth of a vessel’s keel below the water line.

driving wheels — wheels that are powered by a motor or engine and that provide the tractive effort, through contact with the running surface, that propels the vehicle.

dual control or mode — see *transit system, dual-mode*; and *bus, dual-mode*.

dual-mode bus — see *bus, dual-mode*.

dual-mode light rail — see *transit system, light rail, dual-mode*.

dual-mode transit system — see *transit system, dual-mode*.

dual-mode vehicle — see *vehicle, dual-mode*.

dual-powered bus — see *bus, dual-mode*.

dual-powered locomotive — see *locomotive, dual-powered*.

dual-power propulsion system — see *propulsion system, dual-power*.

dwelt time — see *time, dwell*.

dynamic block control system — see *control system, moving block*.

dynamic brake — see *brake, dynamic*.

Dynamic Ridesharing — National ITS Architecture Market Package that enhances the Interactive Traveler Information package by adding an infrastructure providing dynamic ridesharing/ride matching capability.

Dynamic Route Guidance — National ITS Architecture Market Package that offers the user advanced route planning and guidance which is responsive to current conditions.

dynamic routing — in demand-responsive transportation systems, the process of constantly modifying vehicle routes to accommodate service requests received after the vehicle began operations, as distinguished from predetermined routes assigned to a vehicle.

E EMU — electric multiple-unit car; see *car, multiple-unit*.

EPA — Environmental Protection Agency; see *U.S. Government, Environmental Protection Agency*.

edge treatment — A standardized surface feature or a physical barrier built in or applied to the walking surface to warn visually impaired people of hazards along the path of travel.

effective demand — see *demand, effective*.

effectiveness — **1.** In transportation, the correspondence of provided service to intended output or objectives, particularly the character and location of service; in other words, producing the intended result (doing the right things). **2.** In transit, the degree to which the desired level of service is being provided to meet stated goals and objectives; for example, the percentage of a given service area population that is within the desired ¼ mile (400 meters) of a transit stop.

effectiveness, measure of — see *performance indicator*.

effective operating speed — see *speed, overall trip*.

effective velocity — see *velocity, effective*.

egress time — see *time, egress*.

el — abbreviation for elevated (railway), mainly east coast; see *transit system, rail rapid*.

elasticity — the percentage change in demand for service for each 1% change in the price or amount of that service.

electric brake — see *brake, dynamic*.

electric bus — see *bus, electric*.

electric locomotive — see *locomotive, electric*.

electric motor — see *motor*.

electric multiple-unit car — see *car, multiple-unit*.

electric rail car — see *car, electric rail*.

Electric Railway Presidents' Conference Committee — see *organizations, Presidents' Conference Committee*.

electric sub-station — transformers, breakers (and rectifiers) to convert supply from electric utility to direct current supply for rapid transit, streetcar or trolleybus systems.

electric trolleybus — see *trolleybus*.

electrification (railway electrification) — in rail systems, a term used to describe the installation of overhead wire or third-rail power distribution facilities to enable operation of electrically powered transit vehicles.

electrodynamic brake — see *brake, dynamic*.

electromagnetic brake — see *brake, track*.

electropneumatic brake — see *brake, electropneumatic*.

elevated, the — see *transit system, rail rapid*.

elevated guideway — see *guideway, elevated*.

elevated-on-fill guideway — see *guideway, elevated-on fill*.

elevator — a mechanical device for moving people vertically between different levels of a building or transit station.

elevator, inclined — see *inclined elevator*.

embark — **1.** To transfer from shore to a vessel. **2.** To board a vessel.

emergency application or braking — see *braking, emergency*.

En-Route Transit Information — National ITS Program User Service that provides information to travelers using public transportation after they begin their trips.

end, head — see *head end*.

end, trip — see *trip end*.

end wall — see *station end wall*.

engine, gas turbine — an internal combustion engine in which the hot compressed gases of combustion drive a turbine.

engine, internal combustion (ICE) — an engine in which the power is developed through the expansive force of fuel that is fired or discharged within a closed chamber or cylinder.

equity — in transportation, a normative measure of fairness among transportation users.

equivalence, passenger car — see *passenger car equivalence*.

escalator — a device providing a continuous series of pallets or treads for standing pedestrians, transporting pedestrians both vertically and horizontally.

exact fare — see *fare, exact*.

excess time — see *time, excess*.

exclusive bus lane — see *lane, exclusive transit*.

exclusive carpool lane — see *lane, exclusive carpool*.

dual control or mode—exclusive carpool lane

exclusive right-of-way—
farecard reader

exclusive right-of-way — see *right-of-way, exclusive*.

exclusive transit facilities — transportation system infrastructure elements that are set aside for the use of transit vehicles only. Examples include some freeway ramps, queue jumpers, bus lanes, off-street bus loading or unloading areas, and separated and fully controlled rights-of-way.

exclusive transit lane — see *lane, exclusive transit*.

exclusive transit right-of-way — see *right-of-way, exclusive transit*.

express bus — see *service, express bus*.

express service — see *service, express*.

expressway — a divided arterial highway for through traffic. An expressway has full or partial control of access and generally has grade separations at major intersections.

extra section (double) (overload) (duplicate Br.) — a second bus added to accompany a regularly scheduled bus to handle passenger overloads.

FHWA — Federal Highway Administration; see *U.S. Government, Federal Highway Administration*.

FRA — Federal Railroad Administration; see *U.S. Government, Federal Railroad Administration*.

FTA — Federal Transit Administration; see *U.S. Government, Federal Transit Administration*.

facilities, accessible transportation — see *accessible transportation facilities*.

facilities, exclusive transit — see *exclusive transit facilities*.

facility, intermodal transfer — see *transit center*.

factor, K — see *K factor*.

factor, load — see *load factor*.

factor, peak hour — see *peak hour factor*.

factor, travel time — see *travel time factor*.

fail-safe — incorporating a feature that ensures that malfunctions that affect safety will cause the system to revert to a state that is safe.

far-side stop — see *stop, far-side*.

fare — 1. The required payment for a ride on a public transportation vehicle. It may be paid by any acceptable means, for example, cash, token, ticket, transfer, farecard, voucher, or pass or user fee. 2. A passenger who pays a fare.

fare, adult cash — basic full fare paid by one adult for one ride, may exclude transfer and zone charges.

fare, average — the arithmetic average of all fares paid by all revenue passengers, including those who received special or reduced fares. It is usually derived by or generally equivalent to dividing total fare revenue by total origin-to-destination trips, although it may be based on unlinked trips.

fare, base (basic fare, regular fare, full fare) — the price (with no discounts) charged to an adult for regular local service or, for systems with zone pricing, a one-zone fare with no discounts, that is, what it costs an adult

paying a single cash fare to take a one-zone ride. On systems with time-based fares it is normally the peak period fare,

fare, concession — British and Canadian term for a reduced fare for various classes or passengers: children, students, seniors. A single concession fare reduces the complexity of having multiple fares for different classes of passengers into two, full and concession.

fare, exact — a transit operations policy that precludes the making of change for passengers. A passenger must therefore have the correct change for the fare or else overpay it. Almost universal on North American transit except where ticket kiosks or ticket vending machines make change.

fare, flat — method of travel pricing that uses a single fare for the entire service area regardless of the trip's distance, time of day, area of travel, or other characteristics.

fare, graduated — a fare that is proportional to the distance traveled (also known as mileage fare) or to the length of time that a passenger may ride on a service.

fare, mileage — see *fare, graduated*.

fare, off-peak or peak — see *fare, time-of-day*.

fare, peak period surcharge — see *fare, time-of-day*.

fare, pre-paid — any fare not paid on-board a transit vehicle (e.g., a transit pass, a ticket purchased at a machine prior to boarding a vehicle, or a fare paid prior to entering a fare-paid area).

fare, reduced — a special fare for children, students, senior citizens, or others that is less than the regular fare.

fare, regular — see *fare, base*.

fare, single-coin — a fare that can be paid with a single coin (e.g., a quarter) or token.

fare, time-of-day — a fare that varies by time of day. It is usually higher during peak travel periods (peak fare) and lower during non-peak travel periods (off-peak fare).

fare, zone (zoned fare) — a method of transit pricing that is based on the geographical partitioning of the service area. The price is determined by the location and number of zones traversed. Zone fares are frequently used as a method of charging graduated or distance-based fares but may also be used to provide for differential fares for certain markets.

farebox — a device that accepts coins, bills, tickets, tokens, or other fare media given by passengers as payment for rides.

farebox, registering — a farebox that counts the money and fare media processed and records fare information.

farebox recovery ratio — see *fare recovery ratio*.

farebox revenue — see *revenue, farebox*.

farecard — see *magnetic farecard*.

farecard reader — a device that determines the value stored in a farecard when the farecard is inserted. A farecard reader may also be used for appropriately altering the value stored in a farecard when used in conjunction with a passenger turnstile, gate or registering farebox.

fare collection system — the procedures and devices used to collect fares and to accumulate and account for fares paid.

fare collection system, automatic (AFC) — the controls and equipment that automatically admit passengers on insertion of the correct fare in an acceptable form, which may be coins, tokens, tickets, or farecards (magnetically encoded or smart card). On systems with distance based fares stored value farecards must be inserted again on exit, at which point an additional fare may be subtracted. The system may include special equipment for transporting and counting revenues.

fare collection system, proof of payment, self-service, barrier-free, open — various names for an open fare collection system that has no turnstiles or fare gates. *Proof of payment is the preferred name.* It requires that the passenger display proof of payment (e.g., validated ticket, prepaid pass, valid transfer) while on board the transit vehicle or in other designated *fare paid* areas. Enforced through random checking by specific transit employees, security staff or police with the power to collect premium “on-board” fares (more common in Europe) or issue tickets or citations, typically resulting in revenue loss below 2-3%. Widely used in Europe and on North American light rail systems, the system combines flexibility and low cost with the fewest impediments to passengers with disabilities. Often combined with “self-service” ticket vending machines. Erroneously called an “honor” system, a name that applies only to systems without enforcement.

fare recovery ratio (farebox recovery ratio) — the ratio of fare revenue to direct operating expenses; see also *operating ratio*.

fare-registering fare gate (turnstile) — a fare gate that records the fares paid.

fare structure — the system set up to determine how much is to be paid by various categories of passengers using the system in any given circumstance.

fare gate — a device that unlocks to allow a passenger to enter the paid area after a pass, smart card, farecard, or the correct amount of money or tokens has been inserted into it.

federal agencies — see *U.S. Government*.

Federal Highway Administration — see *U.S. Government, Federal Highway Administration*.

Federal Railroad Administration — see *U.S. Government, Federal Railroad Administration*.

Federal Transit Act of 1964 — see *legislation, Federal Transit Act of 1964*.

Federal Transit Administration — see *U.S. Government, Federal Transit Administration*.

feeder service — see *service, feeder*.

ferry — a vessel that carries passengers, vehicles, and/or goods over a body of water, usually for short distances and with frequent, regular service. A ferry is generally a conventional shallow-draft boat, but hydrofoils, catamarans, and hovercraft are also used. Often such vessels are double-ended with a pilot house at each end for control purposes so that the vessel need not be turned around for the next trip.

ferry, urban — Ferries that have at least one terminal within an urbanized area, excluding international, rural, rural interstate, island, and urban park ferries.

ferry berth — a platform extending from a shore over water and supported by piles or pillars, used to secure and provide access to vessels.

ferry passenger loading platform — see *platform, ferry*.

few-to-few service — see *service, few-to-few*.

few-to-many service — see *service, few-to-many*.

first-track miles or kilometers — see *right-of-way miles*.

fishbowl — see *bus, New Look*.

fixed-block control system — see *control system, fixed-block*.

fixed-grip lift — ropeway system on which carriers remain attached to a haul rope. The ropeway system may be either continuous or intermittently circulating, and either *monocable* or *bicable*.

fixed guideway transit system — see *transit system, fixed guideway*.

fixed route — see *transportation system, fixed route*.

fixed signal — see *signal, fixed*.

flag stop service — see *service, flag stop*.

flange, wheel — see *wheel flange*.

flat fare — see *fare, flat*.

fleet, (rolling stock) — the vehicles in a transit system. Usually, “fleet” refers to highway vehicles and “rolling stock” to rail vehicles.

fleet, base-period — see *base-period fleet*.

fleet capacity — see *capacity, fleet*.

flotsam — floating refuse or debris.

flow, passenger — see *passenger flow*.

flow distribution — see *trip assignment*.

flow rate (rate of flow) — in transportation, the number of units (passengers or vehicles) passing a point on a transportation facility during some period of time, usually counted or recomputed in units per hour. For example, if 8 buses pass a point in the first half hour and 15 in the second, the volume for the hour is 23. However, the flow rate for the first half hour is 16 buses/h, and for the second half hour the flow rate is 30 buses/h. See also *volume*.

flying junction — see *junction, flying*.

force, tractive — see *tractive effort*.

forecasting — in planning, the process of determining the future conditions, magnitudes, and patterns within the urban area, such as future population, demographic characteristics, travel demand.

free area — see *area, free*.

free transfer — see *transfer, free*.

freeway — a divided highway for through traffic that has full access control and grade separations at all intersections. In some countries, it is also known as a motorway.

freeway, metered — a freeway to which access is controlled by entrance ramp signals that use fixed-time signal settings or are regulated by a computerized surveillance system. This procedure is used to prevent

fare collection system—freeway, metered

freewheeling—grade crossing traffic control device

freeway congestion. See also *bus priority system, metered freeway*.

freewheeling — see *coasting*.

frequency, service — see *service frequency*.

frequency coefficient, riding — see *riding frequency coefficient*.

frequency distribution, trip length — see *trip length frequency distribution*.

friction brake — see *brake, friction*.

fringe, urban — see *urban fringe*.

fringe area — see *area, fringe*.

frog — a track component used at the intersection of two running rails to provide support and guidance for the wheels. It allows wheels on each rail to cross the other rail. Also applied to similar overhead components on electric rail or trolleybus systems. On streetcar systems the flangeway at the frog can be ramped up. Cars run on their flanges substantially reducing track noise.

fuel, alternative — a non-petroleum fuel with lower pollution than traditional diesel; includes alcohol fuels, mineral fuels, methanol, propane, hydrogen, compressed and liquefied natural gas.

full accessibility — see *accessibility, persons with disabilities*.

full service braking — see *braking, maximum service*.

funicular railway — a passenger transportation mode consisting of a pair of rail vehicles (or short trains) permanently attached to two ends of the same cable, counterbalancing each other. It may have a single track with a turnout or a double track. In the former case, wheels on one side of the car(s) will have double flanges, on the other side, no flanges. This system is used to overcome steep gradients. See also *ropeway, inclined plane, and inclined elevator*.

funitel — a form of detachable-grip *aerial lift* that uses two track cables to support the carrier, rather than the usual one, in order to provide greater stability during windy conditions. The name was coined from the words funicular and *télépherique*, the French-Swiss name for *gondolas*.

furniture, street — see *street furniture*.

G GIS — Geographic Information System.

G GPS — Global Positioning System.

G GRT — group rapid transit; see *transit system, group rapid*.

GTO — Gate turn off thyristor, used in chopper controls for electric rail cars and trolleybuses.

gallery car — see *car, gallery*.

gangway — a walking surface which spans any two marine facilities or vessels. Gangways are not fixed and their slope depends on the relative position of the facilities they are spanning.

garage — in bus systems, the location in which buses are stored and serviced and where operators report for work and receive supplies and assignments. Also sometimes known as a *depot* or *barn*.

gas turbine engine — see *engine, gas turbine*.

gate, bus — see *bus gate*.

gather service — see *service, many-to-one*.

gauge, broad (wide gauge) — a rail track gauge greater than standard, wide gauge is slightly greater, broad gauge is substantially greater.

gauge, narrow — rail track gauge that is less than standard, commonly 3 ft 3.4 in. or 1,000 mm (meter gauge), or 3 ft 6 in. or 1,067 mm (Cape gauge).

gauge, standard — a rail track gauge that is 4 ft 8.5 in. (1,435 mm) wide.

gauge, track — the distance between the inside faces of the two rails of a track measured 5/8 in. (16 mm) below the top of the rails and perpendicular to the gauge line.

gauge, wide — see *gauge, broad*.

gauntlet track — a track configuration where the four rails are interlaced without switches. Used as an alternative to single-track sections where insufficient space exists for double tracks, saving capital and maintenance costs, as well as potential operating problems due to frozen or clogged switch points.

gear, running — see *running gear*.

generation, trip — see *trip generation*.

generator, trip — see *trip generator*.

Geographic Information System (GIS) — a computerized database management system in which geographic databases are related to one another via a common set of location coordinates. GIS can provide a spatial, interactive visual representation of transit operations and allows users to make queries and selections of database records based on geographic proximity and attributes such as bus stop activity levels and demographic data.

Global Positioning System (GPS) — A system that determines the real-time position of vehicles using communications with a satellite. Also, refers more specifically to a government-owned system of 24 Earth-orbiting satellites that transmit data to ground-based receivers and provides extremely accurate latitude/longitude ground positions.

gondola — 1. A cabin used on an aerial lift. 2. Name popularly used to describe a continuously circulating aerial lift using cabins.

government, U.S. — see *U.S. Government*.

governor — 1. A device that keeps a transit vehicle from exceeding a set (maximum) speed. 2. A device that holds the rotational speed of an engine approximately constant regardless of the load or prevents it from exceeding a predetermined value.

grade — or gradient, rise in elevation within a specified distance. As an example, a 1% grade is a 1 ft (m) rise in elevation in 100 ft (m) of horizontal distance, in Britain expressed as 1/100 or 1 in 100, and in Europe 10°/1000.

grade crossing — see *crossing, grade*.

grade crossing protection signal — see *signal, grade crossing protection*.

grade crossing traffic control device — any form of protective or warning device installed at a railroad or transit guideway

grade crossing for the protection of highway or street traffic.

grade separation — a vertical separation of intersecting facilities (road, rail, etc.) by the provision of crossing structures.

graduated fare — see *fare, graduated*.

grid network — see *network, grid*.

grips, detachable — grips that are attached and detached from the moving haul rope at station(s) or terminal(s) during normal operation.

grips, fixed — grips that remain continuously attached to the haul rope during normal operation.

group, low mobility — see *transportation disadvantaged*.

group rapid transit — see *transit system, group rapid*.

group riders — see *riders, group*.

guided busway — see *busway, guided*.

guideway — in transit systems, a track or other riding surface (including supporting structure) that supports and physically guides transit vehicles specially designed to travel exclusively on it.

guideway, elevated — a grade-separated guideway on a structure that provides overhead clearance for vehicles at ground level; see also *aerial structure*.

guideway, elevated-on-fill — a grade-separated guideway above the prevailing surface of the terrain that is supported by an embankment instead of by a structure.

guideway, open cut — a guideway below the prevailing surface of the terrain in a trench like excavation (cut or cutting).

H **HCM** — Highway Capacity Manual.

HEP — head end power, see *locomotive, passenger*.

HOV — high-occupancy vehicle; see *vehicle, high-occupancy*.

HOV lane — high-occupancy-vehicle lane; see *lane, high-occupancy-vehicle*.

HOV Lane Management — National ITS Architecture Market Package that manages HOV lanes by coordinating freeway ramp meters and connector signals with HOV lane usage signals. Preferential treatment is given to HOV lanes using special bypasses, reserved lanes, and exclusive rights-of-way that may vary by time of day.

HRI — Highway-Rail Intersection.

habit coefficient, riding — see *riding frequency coefficient*.

handicapped — see *persons with disabilities*.

hanger — structural element connecting a cabin, chair, or other passenger-carrying device to the ropeway track cable carriage or haul rope grip.

haul rope — a wire rope used on a ropeway that provides motion to carriers and is powered by the drive sheave.

head end — the beginning or forward portion of any train.

head sign — a sign indicating the destination of the transit unit (vehicle or train), usually located above the windshield.

headway — the time interval between the passing of the front ends of successive transit units (vehicles or trains) moving along the same lane or track (or other guideway) in the same direction, usually expressed in minutes; see also *service frequency*.

headway, base — the scheduled headway between transit unit (vehicle or train) trips, between peak periods.

headway, clock — the scheduled headway between transit unit (vehicle or train) trips, based on even times, i.e., 60, 30, 20, 15, 10 and 7½ minutes.

headway, interference — headway that is so close that one vehicle or train interferes with or delays the next.

headway, non-interference — headway such that in normal operations one train does not delay another.

headway, policy — **1.** Headway prescribed by reasons other than matching capacity to demand. **2.** The maximum permissible headway as established by the transit agency or (often) the policy board, usually for off-peak, low-demand periods.

headway adherence — the consistency or evenness of the scheduled interval between transit vehicles. A reliability measure based on the coefficient of variation of headways of transit vehicles serving a particular route arriving at a stop.

headway management — a technique for managing the operation of transit units (vehicles or trains) that focuses on maintaining a certain spacing between units on the same line, instead of on adhering to a timetable. For example, if units become bunched, corrective measures might include delaying the units at the rear of the bunch to provide regular headways and hence load distribution, even at the expense of reducing timetable adherence.

heavy rail — see *transit system, rail rapid*.

high-occupancy vehicle — see *vehicle, high-occupancy*.

high-occupancy-vehicle lane — see *lane, high-occupancy-vehicle*.

high platform — see *platform, high*.

high voltage — see *voltage, high*.

highway, street, or road — **1.** General terms denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way. The recommended usages are as follows: in urban areas, highway or street; in rural areas, street or road. **2.** Street, in common general usage, refers to the vehicular travel way, as distinguished from the sidewalk (the pedestrian travel way).

Highway Capacity Manual — A standard reference used to calculate the capacity and quality of service of roadway facilities.

Highway-Rail Intersection (HRI) — National ITS Program User Service that integrates ITS technology into already existing HRI warning systems to enhance their safety effectiveness and operational efficiency. At railroad grade crossings, HRI technologies located both in-vehicle and along the roadside ensure that train movements are coordinated with traffic

grade separation—Highway-Rail Intersection (HRI)

highway/RR crossing—
Intelligent Transportation
Systems (ITS)

signals and that drivers are alerted to approaching trains.

highway/RR crossing — see *crossing, highway/railroad*.

home-based trip — see *trip, home-based*.

honor system — type of fare collection system without controls or checks, once common only in the Soviet Union and Eastern Europe but now rapidly disappearing. Often incorrectly used to describe enforced proof of payment fare collection system, see *fare collection system, open, proof of payment, self-service, and barrier-free*.

hot, running — see *running hot*.

hour(s), rush — see *peak*.

hours of service — **1.** The number of hours during the day between the start and end of service on a transit route, also known as the service span. **2.** For calculating transit level of service, the number of hours during a day when service is provided at least hourly on a transit route.

hub (timed transfer focal point) — transit center or interchange for connections or transfers between modes and/or routes. Connections are usually timed in clock-headway pulses and allow convenient transfer between local routes and to express routes. The express routes can connect to the city center and to other hubs, thus offering better suburb-to-suburb trips than possible with a radial route system. Hubs are best located at activity centers such as shopping malls, suburban town centers and campuses.

hub-and-spoke — type of route structure based on timed connections that increases connectivity and productivity, see *hub*.

hub miles (hub kilometers) — actual logged miles (kilometers) of vehicle operation, usually read from a hubometer or odometer.

hull — the frame or body of a vessel, exclusive of masts, engines, or superstructures.

I **ICE** — internal combustion engine; see *engine, internal combustion*.

ISTEA — Intermodal Surface Transportation Efficiency Act of 1991.

ITE — Institute of Transportation Engineers; see *organizations, Institute of Transportation Engineers*.

ITS — Intelligent Transportation Systems.

ITS America — Intelligent Transportation Society of America. A non-profit, public/private scientific and educational corporation that works to advance a national program for safer, more economical, more energy efficient, and environmentally sound highway travel in the United States. Federal advisory committee used by the U.S. Department of Transportation.

ITS Data Mart — National ITS Architecture Market Package that provides a focused archive that houses data collected and owned by a single entity (e.g., agency). This focused archive typically includes data covering a single transportation mode and one jurisdiction that is collected from an operational data store and archived for future use.

ITS Data Warehouse — National ITS Architecture Market Package that includes all the data collection and management capabilities provided by the *ITS Data Mart*, and adds the functionality and interface definitions that allow collection of data from multiple agencies and data sources spanning across modal and jurisdictional boundaries.

impedance — **1.** In transportation generally, any condition that restricts or discourages travel, or a measure of that condition. **2.** In transportation modeling, any such condition explicitly accounted for within the model. Time and costs are the factors usually considered, but others may also be examined.

inbound trip — see *trip, inbound*.

inclined elevator — an elevator capable of both horizontal and vertical movement along a fixed path. Differs from *inclined planes* in that only one cabin is used and no attendant is needed to operate it.

inclined plane (incline, inclined railway) — a special type of rail vehicle permanently attached to and hauled by a cable, used for steep gradients, operating on one or two tracks. When two counter-balanced vehicles operate on railway-type tracks, it is also known as a *funicular railway*.

index — a performance measure developed by weighting two or more other performance measures.

indication, signal — see *signal indication*.

indicator, block — see *block indicator*.

indicator, performance — see *performance indicator*

induced demand or traffic — see *traffic, induced*.

induction loop sensor — see *loop detector*.

induction motor — see *motor, induction*.

information, service or user — see *user information*.

information services — see *Railroad Research Information Service, Transportation Research Information Services, and Urban Mass Transportation Research Information Service*.

infrastructure — **1.** In transit systems, all the fixed components of the transit system, such as rights-of-way, tracks, signal equipment, stations, park-and-ride lots, bus stops, maintenance facilities. **2.** In transportation planning, all the relevant elements of the environment in which a transportation system operates.

inspector (road supervisor, route supervisor, street supervisor, road foreman) — a transit employee who evaluates performance, enforces safety and work rules, and attempts to solve problems; an inspector may be mobile (covering several districts in a radio-equipped vehicle) or fixed (assigned to a post at a designated intersection).

Institute of Transportation Engineers — see *organizations, Institute of Transportation Engineers*.

insulated rail joint — see *rail joint, insulated*.

Intelligent Transportation Systems (ITS) — electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.

integration, intermodal — see *intermodal integration*.

Interactive Traveler Information — National ITS Architecture Market Package that provides tailored information in response to a traveler request. The traveler can obtain current information regarding traffic conditions, transit services, ride share/ride match, parking management, and pricing information.

interchange — **1.** facility for passenger transfers or connection between routes or modes, see *hub*. **2.** The system of interconnecting ramps between two or more intersecting travel ways (highways, transit guideways, etc.) that are grade separated.

interchange center, modal — see *transit center*.

intercity bus — see *bus, intercity*.

intercity transportation — **1.** Transportation between cities. **2.** Transportation service provided between cities by certificated carriers, usually on a fixed route with a fixed schedule.

interface, transportation — see *transportation interface*.

interline — **1.** interchange of passengers between one or more bus lines, rail transit lines, or railroads. **2.** transfer of transit vehicles or trains between routes during a day to improve staff or vehicle assignment efficiency.

interlocking — in rail systems, an arrangement of switch, lock, and signal devices that is located where rail tracks cross, join, separate, and so on. The devices are interconnected in such a way that their movements must succeed each other in a predetermined order, thereby preventing opposing or conflicting train movements.

interlocking limit — the track length between the most remote opposing home signals of an interlocking.

interlocking, solid-state — an interlocking with logic based on computers rather than traditional relays or, now obsolete, mechanical locks.

intermodal — **1.** The ability to connect, and make connections between, modes of transportation. **2.** Those issues or activities which involve or affect more than one mode of transportation, including transportation connections, choices, cooperation and coordination of various modes.

intermodal integration — service coordination between two or more different transportation modes. This arrangement may include joint (transfer) stations, coordinated scheduling, joint fares, and combined public information activities.

intermodal transfer facility — see *transit center*.

intermodalism — seamless integration of multiple travel modes.

internal combustion engine — see *engine, internal combustion*.

International Union of Public Transport — see *organizations, International Union of Public Transport*.

interrupted flow — transit vehicles moving along a roadway or track and having to make service stops at regular intervals.

intersection — the point at which two or more roadways meet or cross.

intersection, point of — see *point of intersection*.

interurban — see *transit system, interurban*.

iron maiden — full height tri-part turnstile with interlocking metal bars, impervious to fraud or vandalism, used mainly on older East Coast rapid transit systems, mainly for exiting station platforms, also on Toronto subway for unattended, token actuated, entrances.

island platform — see *center platform*.

island, loading or pedestrian — see *loading island*.

J **jaywalk** — to illegally cross a street in the middle of the block or against a pedestrian signal.

jerk — time rate of change of acceleration or deceleration of a vehicle, measured in ft/s³ (m/s³).

jitney — A transit mode comprising passenger cars or vans operating on fixed routes (sometimes with minor deviations) as demand warrants without fixed schedules or fixed stops. See also *transportation system, jitney; service, jitney; and público*.

journey, linked — see *trip, linked*.

journey time — see *time, journey*.

jumper, queue — see *queue jumper*.

junction — **1.** In transit operations, a location at which transit routes or lines converge or diverge. **2.** In traffic engineering, an intersection.

junction, flying — a grade-separated rail junction, allowing merging and diverging movements to be made without conflict and with minimal impact on capacity.

K **K&M** — see *pendulum suspension*.

K&R — kiss and ride.

K factor — in vehicle operations, the ratio of the minimum operating separation between two vehicles to the maximum emergency stopping distance. Normally, the factor is greater than 1 to provide a margin of safety.

kilometer — for all terms containing “kilometer” see equivalent term with “mile.”

kiosk — in the transportation context, an interactive computer center for traffic- or travel-related information. Usually located in shopping malls, hotels, airports, businesses, and transit terminals, kiosks provide pre-recorded and real-time information using text, sound, graphics, and video clips.

kiss-and-ride (kiss ‘n’ ride, K&R) — An access mode to transit whereby passengers (usually commuters) are driven to a transit stop and left to board a transit unit and then met after their return trip. Transit stations, usually rail, often provide a designated area for dropping off and picking up such passengers.

knot — nautical unit of speed; equivalent to 1 nautical mile (1.15 miles or 1.852 kilometers) per hour.

integration, intermodal—knot

"L"—legislation, Title 49 USC

L "L" — abbreviation for elevated (railway), mainly Chicago, see *transit system, rail rapid*.
LIM — linear induction motor; see *motor, linear induction*.

LNG — Liquefied Natural Gas.

LOS — level of service.

LRT — light rail transit; see *transit system, light rail*.

LRV — light rail vehicle; see *car, light rail*.

lane, bus (bus priority lane, preferential bus lane, priority bus lane) — a highway or street lane reserved primarily for buses, either all day or during specified periods. It may be used by other traffic under certain circumstances, such as making a right or left turn, or by taxis, motorcycles, or carpools that meet specific requirements described in the traffic laws of the specific jurisdiction.

lane, bypass — see *queue jumper*.

lane, carpool — a highway or street lane intended primarily for carpools, vanpools, and other high-occupancy vehicles, including buses, either all day or during specified periods. It may be used by other traffic under certain circumstances, such as while making a right turn. Minimum occupancy is contentious, many requirements for a minimum of three passengers have been reduced to two through political pressure or legal action.

lane, contraflow — a highway or street lane on which vehicles operate in a direction opposite to what would be the normal flow of traffic in that lane. Such lanes may be permanently designated contraflow lanes, or, more usually, they may be used as contraflow lanes only during certain hours of the day. Frequently, the use of a contraflow lane is restricted to public transit and (possibly) other specially designated vehicles.

lane, diamond — a high-occupancy-vehicle lane physically marked by diamonds painted on the pavement and often indicated by diamond-shaped signs as well. Often used synonymously with high-occupancy-vehicle lane.

lane, exclusive carpool — a highway or street lane reserved for carpools and vanpools.

lane, exclusive transit (reserved transit lane) — a highway or street lane reserved for buses, light rail vehicles, or both.

lane, high-occupancy-vehicle (HOV lane) — a highway or street lane reserved for the use of high-occupancy vehicles (HOVs), see *lane, carpool*.

lane, priority — a highway or street lane reserved (generally during specified hours) for one or more specified categories of vehicles, for example, buses, carpools, vanpools.

lane, ramp meter bypass — a form of preferential treatment in which a bypass lane on metered freeway on-ramps is provided for the exclusive use of high-occupancy vehicles.

lane, reserved transit — see *lane, exclusive transit*.

lane, reversible — a highway or street lane on which the direction of traffic flow can be changed to use maximum roadway capacity during peak-period demands.

lane, reversible bus — a highway or street lane that is reserved for the exclusive use of buses and other high-occupancy vehicles and that can be operated in alternate directions during the two peak-hour periods. It may be the center lane in an arterial street that is used for left-turning traffic in off-peak hours. Usually, bus operators who use this facility are required to have special training and a permit, and the buses may be subject to access or operation controls or both. See *lane, contraflow*.

lay-by — 1. In rail systems, a side track. 2. In bus systems, see *bus bay*.

layover, vehicle — see *time, layover*.

layover time — see *time, layover*.

layover zone — a designated stopover location for a transit vehicle at or near the end of the route or line or at a turnback point.

legislation, Americans with Disabilities Act of 1990 (ADA) — federal civil rights law which ensures people with disabilities equal opportunity to fully participate in society, the ability to live independently, and the ability to be economically sufficient.

legislation, Federal Transit Act of 1964 — federal legislation enacted in 1964 that established the federal mass transportation program. Formerly known as the Urban Mass Transportation Act of 1964. Repealed in 1994 and reenacted as chapter 53 of title 49, United States Code.

legislation, Intermodal Surface Transportation Efficiency Act (ISTEA) — signed into federal law on December 18, 1991, it provided authorizations for highways, highway safety and mass transit for 6 years and served as the basis of federal surface transportation programs. Renewed and amended in 1998 for 6 years as TEA-21, see *legislation, TEA-21*.

legislation, National Environmental Policy Act of 1969 (NEPA) — a comprehensive federal law requiring an analysis of the environmental impacts of federal actions, such as the approval of grants, and the preparation of an environmental impact statement for every major federal action that significantly affects the quality of the human environment.

legislation, TEA-21 — 1998 Transportation Efficiency Act for the 21st Century, provides authorizations for highways, highway safety, and mass transit for 6 years and is the basis of federal surface transportation programs, replaces ISTEA.

legislation, Title 49 United States Code, Chapter 53—Mass Transportation — federal legislation establishing the federal mass transportation program. Formerly known as the Federal Transit Act of 1964, and before that, the Urban Mass Transportation Act of 1964.

legislation, Title 49 United States Code, Chapter 53—Mass Transportation, Section 5335 — the section of the United States Code that authorizes the Secretary of Transportation to request and receive statistical information about the financing and operations of public mass transportation systems eligible for Section 5307 grants on the basis of a uniform system of accounts and records. This information is compiled in the

National Transit Database. Formerly Section 15 of the Federal Transit Act of 1964.

legislation, Urban Mass Transportation Act of 1964 — see *legislation, Federal Transit Act of 1964*.

level of service (LOS) — 1. A designated range of values for a particular service measure (e.g., “A” through “F” or “1” through “8”), based on users’ perceptions (see *quality of service*) of the aspect of transportation performance being measured. 2. The amount of transit service provided.

levitation, magnetic — see *magnetic levitation*.

lift, wheelchair — see *wheelchair lift*.

light rail — see *transit system, light rail*; and *transit system, light rail rapid*.

light rail car — see *car, light rail*.

light rail, dual-mode — see *transit system, light rail, dual-mode*.

light rail rapid transit — see *transit system, light rail rapid*.

light rail transit — see *transit system, light rail*.

light rail vehicle — see *car, light rail*.

limit, civil speed — see *civil speed limit*.

limited access — see *access, limited*.

limited service — see *service, limited*.

limited-stop service — see *service, limited-stop*.

limits, interlocking — see *interlocking limits*.

limits, yard — see *yard limits*.

line — 1. A transportation company (e.g., a bus line). 2. A transit service operated over a specified route or combination of routes. 3. An active (in-use) railroad track or AGT guideway. 4. In network coding, a route and its service level, including mode designation (type of service), line number, headway, and sequence of transfer points (nodes). These factors describe the line’s route as an ordered set.

line, cordon — see *cordon line*.

line, desire — see *desire line*.

line, main — the principal roadway, rail tracks, or other type of transportation right-of-way over which all or most of the traffic moves.

line speed — see *speed, line*.

linear electric motor — see *motor, linear electric*.

linear induction motor — see *motor, linear induction*.

line capacity — see *capacity, line*; and *capacity, theoretical line*.

line-clear — in rail transit, operation such that trains do not have to stop or slow down due to the train ahead but receive a succession of green signals. See also *headway, non-interference*.

line haul — see *service, line haul*.

line miles (line kilometers, miles or kilometers of directional roadway) — the sum of the actual physical length (measured in only one direction) of all streets, highways, or rights-of-way traversed by a transportation system (including exclusive rights-of-way and specially controlled facilities), regardless of the number of routes

or vehicles that pass over any of the sections; see also *route miles*.

line volume — see *passenger volume*.

link — in planning, a section of a transportation system network defined by intersection points (nodes) at each end; that is, a link connects two nodes. It may be one way or two way.

linked journey or trip or passenger trip — see *trip, linked*.

linked trip distance — see *trip distance, linked*.

linked trip time — see *time, linked trip*.

link load — in planning, the assigned volume of traffic on a link; see also *link volume*.

link volume — in planning, the total number of highway vehicles or transit passengers assigned to a network link.

load, crush — see *capacity, crush*.

load, link — see *link load*.

load, passenger — see *passenger load*.

load, scheduled design — the maximum number of people that agency policy calls for being on-board a transit vehicle at a given time. It can be expressed as an average load over a half-hour, hour, or other time period, or as a value not to be exceeded more than a certain percentage of time (or at all). Service is scheduled to ensure that sufficient vehicles are operated that passenger loads do not exceed the limits set by the agency policy.

load factor — 1. The ratio of used capacity to offered capacity of equipment or a facility during a specified time period. It is usually expressed as a percentage of seats occupied at a given point or (in continuous form) passenger miles (km) divided by seat miles (km). For rail services, the load factor is sometimes expressed as passenger miles (km) per train mile (km) to account for the ability to couple rail cars together to achieve efficiency. 2. The ratio of passengers actually carried versus the total passenger capacity of a vehicle; also known as a *utilization coefficient*.

load point, maximum — see *maximum load point*.

load section, maximum — see *maximum load section*.

load shedding — 1. reducing the amount of conventional transit service at peak hours by encouraging the use of paratransit operations to carry some of the peak-period passengers. 2. disconnecting part of electric traction network at time of power shortage or substation failure. Available power will then be rotated from section to section of line to move all trains into a station, or to keep part of the line operating normally.

loading, link — see *link loading*.

loading area — a curbside space where a single bus can stop load and unload passengers. Bus stops include one or more loading areas. See also *bus bay* and *stop, transit*.

loading island — 1. A pedestrian refuge within the right-of-way and traffic lanes of a highway or street. It is provided at designated transit stops for the protection of passengers from traffic while they wait for and board or alight from transit vehicles; also

legislation, Urban Mass Transportation Act of 1964—loading island

local bus—many-to-one service

known as a *pedestrian* or *boarding island*. **2.** A protected spot for the loading and unloading of passengers. It may be located within a rail transit or bus station. **3.** On streetcar and light rail systems, a passenger loading platform in the middle of the street, level with the street or more usually raised to curb height, often protected with a *bollard* facing traffic, also known as a *safety island*.

local bus or service — see *service, local bus*.

local train — see *train, local*.

location referencing — technology that more precisely identifies locations of vehicles, locations, and travelers. Used with GPS and AVL technologies.

location, vehicle — see *automatic vehicle location system*.

locomotive — a powered rail vehicle used for towing rail cars. It does not carry passengers and is usually powered by electric motors or diesel engines.

locomotive, diesel-electric — a locomotive that uses one or more diesel engines to drive electric generators that in turn supply electric motors geared to the driving axles. By far the dominant type of locomotive in North America.

locomotive, dual-powered — a locomotive that is capable of both diesel and electric operation, generally specific to services entering New York City (Grand Central Terminal) where diesel operation is limited.

locomotive, electric — a locomotive in which the propulsion is effected by electric motors mounted on the vehicle. The electric power comes from an external source, usually overhead catenary.

locomotive, passenger — a locomotive commonly used for hauling passenger trains and generally designed to operate at higher speeds and lower tractive effort than a freight locomotive of equal power. Usually equipped with head end power that, through power take-off from the existing generator, a separate generator, or power conversion unit(s), provides heat, light, and air conditioning power for the passenger cars.

loop — **1.** A transit route or guideway layout that is of a closed continuous form, such as a circle. **2.** A terminal track layout or bus driveway that reverses the direction of a vehicle without the vehicle itself reversing.

loop detectors — a loop of wire embedded in the roadbed that carries a small electric current used to sense a passing vehicle and to yield information about the presence of the vehicle. Loop detectors are also used to actuate traffic signals and detect roadway incidents.

low-floor bus — see *bus, low-floor*.

low-floor light rail vehicle — see *car, light rail vehicle, low-floor*.

low-floor streetcar — see *car, light rail vehicle, low-floor*.

low mobility group — see *transportation disadvantaged*.

low platform — see *platform, low*.

low voltage — see *voltage, low*.

M **MAC** — major activity center.
MAC system — major activity center system; see *transit system, major activity center*.

MAGLEV — magnetic levitation.

MG set — see *motor-generator*.

MLP — maximum load point.

MLS — maximum load section.

MSA — metropolitan statistical area.

MU — multiple unit; see *car, multiple-unit*.

MUTCD — *Manual on Uniform Traffic Control Devices*.

magnetic brake — see *brake, track*.

magnetic farecard — a card containing a magnetic tape strip or other electronic means of indicating the value purchased. The card is usually obtained from a vending machine and must be inserted into a farecard reader to gain access to the paid area of the transit system. In systems with fares by distance the card must also be inserted into a farecard reader to exit the paid area, see also *smart card* and *fare collection system, automatic*.

magnetic levitation (MAGLEV) — support technology that keeps a vehicle vertically separated from its track or riding surface by magnetic force, either attractive or repulsive. After interest in the 1970s and 1980s this technology has been discredited for urban transit use and is essentially moribund.

main line — see *line, main*.

maintenance — the upkeep of vehicles, plant, machinery, and equipment. It may be scheduled, planned, progressive, or periodic on the basis of pre-established intervals of time, hours, or mileage, and employ preprinted checklists (*preventive maintenance*), or it may be unscheduled or corrective, in which case it is generally not interval based.

major activity center (MAC, activity center) — a geographical area characterized by a large transient population and heavy traffic volumes and densities; for example, central business district, major air terminal, large university, large shopping center, industrial park, sports arena.

major activity center transit system — see *transit system, major activity center*.

mall, transit — see *street, transit*.

management, headway — see *headway management*.

management, transportation system — see *transportation system management*.

manual block control system — see *control system, manual block*.

Manual on Uniform Traffic Control Devices — standard reference published by the U.S. Department of Transportation guiding the usage of traffic and on-street light rail control devices.

manual train control — see *control system, manual train*.

many-to-few service — see *service, many-to-few*.

many-to-many service — see *service, many-to-many*.

many-to-one service — see *service, many-to-one*.

market — 1. The potential or actual consumers (or both) of a (transportation) product or service. A general market denotes the entire population of a designated geographical area, whereas a specialized market denotes particular groups, such as the elderly, persons with disabilities, or students. 2. The extent of demand for a transportation commodity or service.

Market Package — the building blocks of the National ITS Architecture. Derived from the User Services, the Market Packages provide a finer-grained breakdown tailored to fit—separately or in combination—real-world transportation problems and needs.

market share — the percentage of a (transportation) market realized by or available to a particular (transportation) provider.

married pair — two semi-permanently coupled rail cars (A car and B car) that share some mechanical and electrical equipment and must be operated together as a unit.

mass transit, mass transportation — urban public transport by bus, rail, or other conveyance, either publicly or privately owned, providing general or special service to the public on a regular and continuing basis (not including school bus, charter, or sightseeing service). The term has developed a negative connotation and its use is discouraged in favor of urban transport, transit, public transit, public transport or public transportation.

maximum load point (MLP) — see *maximum load section*.

maximum load section (MLS) — the section of a transit line or route that carries the highest total number of passengers for that line or route and direction. *Maximum load point* is commonly but inaccurately used in place of this term.

maximum service braking — see *braking, maximum service*.

maximum theoretical velocity — see *velocity, maximum theoretical*.

measure of effectiveness — see *performance measure and service measure, transit*.

mechanical brake — see *brake, friction*.

median (median strip) — the portion of a divided highway or guideway that separates the opposing flows of traffic.

messenger — see definition of *catenary system*.

metered freeway — see *freeway, metered*.

metered freeway bus priority system — see *bus priority system, metered freeway*.

metering, ramp — see *ramp metering*.

metro — short for metropolitan railway, the most common international term for subway, heavy rail, rail rapid transit, increasingly used in North America, see *transit system, rail rapid*.

metropolitan railway — see *transit system, rail rapid*.

micro-peaking — short peak periods and surges within the 15-minute or hourly peak. For stations and stops, micro-peaking is likely to occur just after a transit vehicle arrives and discharges passengers; may result in increased crowding for a short duration.

mid-block stop — see *stop, mid-block*.

midibus — a bus with a passenger capacity of approximately 20-30 people.

mileage fare — see *fare, graduated*.

miles of route or roadway — see *route miles*.

miles of travel, vehicle — see *vehicle miles of travel*.

mini-high platform — see *platform, mini-high*.

minibus — a small bus, typically capable of carrying 20 passengers or fewer. It is most often used for making short trips, demand-responsive transportation, community services or bus pools.

missed trip — see *trip, missed*.

mixed mode street — see *street, mixed mode*.

mixed or mixed-flow traffic — see *traffic, mixed*.

mixed traffic operations — the operation of transit vehicles on nonexclusive rights-of-way with non-transit vehicles.

mobility — the ability to satisfy the demand to move a person or good.

modal interchange center — see *transit center*.

modal split (mode split) — 1. The proportion of total person trips that uses each of various specified modes of transportation. 2. The process of separating total person trips into the modes of travel used; see also *urban transportation modeling system and model, sequential*.

mode — 1. A transport category characterized by specific right-of-way, technological and operational features, 2. A particular form of travel, for example, walking, traveling by automobile, traveling by bus, traveling by train.

mode, access — a feeder mode to the principal mode of transportation; for example, walking, kiss and ride, park and ride.

mode, dual — see *transit system, dual-mode*.

mode, transit — a category of transit systems characterized by common characteristics of technology, right-of-way, and type of operation. Examples of different transit modes are regular bus service, express bus service, light rail transit, rail rapid transit, and commuter rail.

model — 1. A mathematical or conceptual presentation of relationships and actions within a system. It is used for analysis of the system or its evaluation under various conditions; examples include land use, economic, socioeconomic, transportation. 2. A mathematical description of a real-life situation that uses data on past and present conditions to make a projection about the future.

mode split — see *modal split*.

monocable system — a ropeway system that uses a single haul rope to both support and control motion of the carriers.

monorail — see *transit system, monorail*.

monthly pass — see *pass, monthly*.

mooring — a secure object to which a vessel may be tied.

motor (electric motor) — a machine that transforms electrical energy into mechanical energy (torque).

market—motor

motor, alternating-current—
National ITS Architecture

motor, alternating-current — an electric motor (asynchronous, synchronous, induction, etc.) that operates on alternating current, generally three phase. The dominant motor type on modern electric transit vehicles from the mid-1990s.

motor, direct current — an electric motor (shunt, compound, etc.) that operates on direct current.

motor, electric — see *motor*.

motor, induction — an asynchronous alternating-current rotary motor that converts alternating-current electric power, delivered to the primary winding (usually the stator) and carried as induced current by the secondary winding (usually the rotor), into mechanical power.

motor, linear induction (LIM), single-sided linear induction, linear electric — an electric motor that produces mechanical force through linear, instead of rotary, motion, used to propel vehicles along a track or other guideway. The vehicle borne motor creates a “moving” magnetic field that is translated into linear motion via an inert steel guideway reaction rail, often laminated and aluminum covered. Used on the ALRT and AGT systems in Vancouver, Toronto (Scarborough), Detroit, New York JFK Airport, and Kuala Lumpur.

motor, series-wound — a motor in which the field circuit is connected in series with the armature circuit, often called a *traction motor*.

motor, shunt — a type of rotary electric motor in which the field coils are connected in parallel with the motor armature.

motor, synchronous — a synchronous machine that transforms electrical power from any alternating-current system into mechanical power. The average speed of normal operation is equal to the frequency of the power system to which it is connected.

motor, traction — an electric motor, usually direct current and series wound, that propels a vehicle by exerting its torque through the wheels; see also *motor, series-wound*.

motor brake — see *brake, dynamic*.

motor bus — see *bus, motor*.

motor car, rail — see *car, rail motor*.

motor coach — see *bus, motor*.

motor-generator (MG set) — an electrical motor, usually at line voltage, mechanically coupled to a direct current generator to provide low voltage (12, 24 or 32 volts, sometimes higher) supply for rail transit cars and trolleybuses. Now replaced with solid-state DC-DC converters.

motor operator or motorman — see *operator, train*.

move, reverse — see *reverse move*.

mover, people — see *people mover*.

moving block control system — see *control system, moving block*.

moving ramp — see *ramp, moving*.

moving sidewalk — see *moving walkway*.

moving walkway (moving sidewalk, passenger or pedestrian conveyor, passenger belt, travelator) — a fixed, level or gently inclined (up to 12°) conveyor device (usually a flexible belt) on which pedestrians

may stand or walk while being transported; see also *ramp, moving*.

Multi-modal Coordination — National ITS Architecture Market Package that establishes two-way communications between multiple transit and traffic agencies to improve service coordination. Intermodal coordination between transit agencies can increase traveler convenience at transfer points and also improve operating efficiency. Coordination between traffic and transit management is intended to improve on-time performance of the transit system to the extent that this can be accommodated without degrading overall performance of the traffic network.

multimodal — the availability of transportation options using different modes within a system or corridor.

multimodal transit agency — a transit agency operating more than one mode of service.

multiple-unit car — see *car, multiple-unit*.

multiple-unit control system — see *control system, multiple-unit*.

N NCHRP — National Cooperative Highway Research Program.
NCTRP — National Cooperative Transit Research and Development Program.

NEPA — National Environmental Policy Act; see *legislation, National Environmental Policy Act of 1969*.

NFPA — NFPA 130 — National Fire Prevention Association 130. Standards for fire and life safety on fixed guideway transit systems. Adopted into law in Canada and the United States, and, in part or whole, in some other jurisdictions. Even where not adopted the standards are generally applied in designing new fixed guideway systems worldwide. Older rail transit systems are not required to retrofit to these standards, first issued in 1983. Separate standards issued in 1998 for automated guideway transit. Available from NFPA, Batterymarch Park, Quincy, MA 02269 USA.

NPTS — Nationwide Personal Transportation Study.

NTD — see *National Transit Database*.

NTSB — National Transportation Safety Board; see *U.S. Government, National Transportation Safety Board*.

narrow gauge — see *gauge, narrow*.

National Cooperative Highway Research Program (NCHRP) — a program established by the American Association of State Highway Officials (now American Association of State Highway and Transportation Officials) to provide a mechanism for a national coordinated program of cooperative research employing modern scientific techniques. The NCHRP is administered by the Transportation Research Board.

National Environmental Policy Act of 1969 — see *legislation, National Environmental Policy Act of 1969*.

National ITS Architecture — a common framework for ITS interoperability. The National ITS Architecture comprises the

logical architecture and physical architecture that satisfy a defined set of User Services. The National ITS Architecture is maintained by the U.S. DOT and is available on the DOT web site at <http://www.its.dot.gov/>.

National Railroad Passenger Corporation — see *U.S. Government, National Railroad Passenger Corporation*

National Transit Database (NTD) — a database compiled by the Federal Transit Administration of operating and financial statistics for over 600 transit agencies in the United States (those systems eligible for grants under Title 49 United States Code, Chapter 53—Mass Transportation, Section 5307.) Formerly known as Section 15 of the Federal Transit Act.

National Transportation Safety Board — see *U.S. Government, National Transportation Safety Board*.

Nationwide Personal Transportation Study (NPTS) — the NPTS, conducted periodically by the Bureau of the Census, has been the primary source of national data on travel patterns and frequency, transit use for all purposes, and the characteristics of transit users versus all travelers.

near-side stop — see *stop, near-side*.

network — **1.** In planning, a system of links and nodes that describes a transportation system. **2.** In highway engineering, the configuration of highways that constitutes the total system. **3.** In transit operations, a system of transit lines or routes, usually designed for coordinated operation.

network, grid — **1.** In planning, an imaginary network of evenly spaced horizontal and vertical bars or lines that divides a study area into small geographic zones. **2.** In transit operations, a service pattern in which two sets of parallel routes intersect each other at right angles.

network, radial — in transit operations, a service pattern in which most routes converge into and diverge from a central hub or activity center (e.g., central business district), like the spokes of a wheel. The hub may serve as a major transfer point.

New Look bus — see *bus, New Look, fishbowl*.

node — in planning, a point that represents an intersection of two or more links, highways, or transit lines or routes or a zone centroid; used in trip assignment.

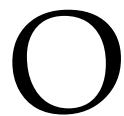
non-fixed route — see *transportation system, non-fixed route*.

non-home-based trip — see *trip, non-home-based*.

non transportation revenue — see *revenue, non transportation*.

normal vehicle capacity — see *capacity, vehicle*.

not-in-service time — see *time, deadhead*.



OBD — outlying business district.

OCS — overhead contact system.

O-D study — origin-destination study.

occupancy, area — see *area occupancy*.

occupancy, vehicle — see *vehicle occupancy*.

off-line — not in the main flow of traffic or not on the main line of traffic, for example, off-line station.

off-line station — see *station, off-line*.

off peak — the periods of time outside the peak periods; see also *base period*.

off-peak fare — see *fare, time-of-day*.

off-peak period — see *base period*.

off-street terminal — see *terminal, off-street*.

on-and-off check or count — see *check*.

on-board check — see *check*.

one-to-many service — see *service, one-to-many*.

one-way trip — see *trip*.

one-zone ride — a transit ride within the limits of one fare zone.

on-line — in the main flow of traffic.

on-line station — see *station, on-line*.

on-time performance — the proportion of the time that a transit system adheres to its published schedule times within stated tolerances; for example, a transit unit (vehicle or train) arriving, passing, or leaving a predetermined point (time point) along its route or line within a time period that is no more than *x* minutes earlier and no more than *y* minutes later than a published schedule time. (Values of 0 minutes for *x* and 5 minutes for *y* are the most common. On frequent rail services the headway can be used for *x*, with greater values indicating that the late train interferes with (delays) the following one.)

open cut guideway — see *guideway, open cut*.

open-loop braking — see *braking, open-loop*.

open fare system — see *fare collection system, proof of payment, self-service, barrier-free, open*.

operating costs — the sum of all recurring costs (e.g., labor, fuel) that can be associated with the operation and maintenance of the system during the period under consideration. Operating costs usually exclude such fixed costs as depreciation on plant and equipment, interest paid for loans on capital equipment, and property taxes on capital items. See also *capital costs*.

operating employees (operating personnel)

— **1.** Employees whose major function is operating the service, such as station employees, bus drivers, train operators, and conductors. **2.** In rail operations, those employees that have direct and supervisory responsibility for the movement of transit units (cars or trains), embodying both on-board and wayside duties.

operating expenses — the total of all expenses associated with operation of an individual mode by a given operator. In the United States, total operating expense is reported on line 14 of Form 301 for a single mode system, and is derived from Form 310 for a multimodal system. Operating expenses include distributions of “joint expenses” to individual modes, and exclude “reconciling items” such as interest expenses and depreciation. Do not confuse with “vehicle operations expense.”

operating margin — **1.** the amount of time that a train can run behind schedule without interfering with following trains. **2.** imprecise reference to operating ratio.

National Railroad Passenger Corporation—operating margin

operating ratio—organizations, Transportation Research Board

operating ratio — the ratio of operating expenses to operating revenue; the inverse of cost recovery ratio. It is used as a measure of financial efficiency. See also *fare recovery ratio*.

operating revenue, total — see *revenue, total operating*.

operating speed — see *speed, running*; and *speed, schedule*.

operating speed, effective — see *speed, overall trip*.

operating time — see *time, operating*.

operating unit — see *basic operating unit*.

operation — see *operator* and *property*.

operation, automatic train — see *automatic train operation*.

operation, train — see *train operation*.

operational characteristic — any characteristic of transit service operation, i.e., this route is frequently overcrowded.

operations, mixed traffic — see *mixed traffic operations*.

operator — 1. An employee of a transit system whose workday is spent in the operation of a transit unit (vehicle or train), such as a bus driver or train operator. Such an employee may also be known as a *platform operator*. 2. The organization that runs a transportation system on a day-to-day basis. also known as an *operation, property, agency* or *system*; see also *property*.

operator, car — see *operator, train*.

operator, motor — see *operator, train*.

operator, rapid transit — see *operator, train*.

operator, streetcar — see *operator, train*.

operator, train (motor operator, engineer) — the operating employee who controls the movement of a rail transit unit (vehicle or train.) Specific titles are also used, such as *car operator, rapid transit operator, streetcar operator*.

order, slow — see *slow order*.

orders — authorization to move a train, as given by a train dispatcher either in writing or orally.

organizations — see also *U.S. Government* and *union, transit*.

organizations, American Association of State Highway and Transportation Officials (AASHTO) — membership includes state and territorial highway and transportation departments and agencies and the U.S. Department of Transportation. Its goal is to develop and improve methods of administration, design, construction, operation, and maintenance of a nationwide integrated transportation system. It studies transportation problems, advises Congress on legislation, and develops standards and policies.

organizations, American Public Transportation Association (APTA) — a non-profit international industry association made up of transit systems and other organizations and institutions connected to or concerned with the transit industry. It performs a variety of services for the industry, and its objectives include promotion of transit interests, information exchange, research, and policy development. Known as the American Public Transit Association prior to 2000.

organizations, Association of American Railroads (AAR) — an industry association made up of individual railroads in the United States, Canada, and Mexico. It performs a variety of technical services for the railroads, and its purposes include the promotion of railroad interests and the standardization and coordination of operating and mechanical activities within the railroad industry.

organizations, Canadian Urban Transit Association (CUTA) — an industry association made up of individual transit operators and suppliers in Canada.

organizations, department of transportation (DOT) — a municipal, county, state, or federal agency responsible for transportation; see also *U.S. Government, Department of Transportation*.

organizations, Institute of Transportation Engineers (ITE) — a society of professionals in transportation and traffic engineering. It promotes education, research, the development of public awareness, and the exchange of professional information in these areas with the goal of contributing individually and collectively toward meeting human needs for mobility and safety.

organizations, International Union of Public Transport (UITP) — an association that pools information and experience of urban and interurban transportation undertakings for joint study and research and promotes technical and economic development.

organizations, Presidents' Conference Committee (PCC, Electric Railway Presidents' Conference Committee) — a group of leading streetcar producers and operators who, between 1930 and 1935, sponsored the development of the PCC car. This car had performance characteristics superior to any previous model of streetcar and became the standard of U.S. streetcars for many years. See also *car, PCC*.

organizations, Public Utilities Commission (PUC, Public Service Commission, PSC) — a state agency whose responsibilities include regulation of for-hire (public and private) carriers of passengers and goods within a state. Other jurisdictions (e.g., a city) may also have a PUC or PSC that regulates for-hire carriers within that jurisdiction.

organizations, regional planning agency (RPA) — a non-profit, quasi-public organization whose policy board is composed of member municipal government representatives. It makes recommendations related to land use, the environment, human resources, housing, and transportation for a specific region.

organizations, Transportation Research Board — a unit of the National Research Council, operating under the corporate authority of the private and nonprofit National Academy of Sciences. The purpose of TRB is to advance knowledge concerning the nature and performance of transportation systems by stimulating research and disseminating the information derived therefrom. Its affiliates and participants include transportation professionals in government, academia, and industry.

origin — 1. The point at which a trip begins.
2. In planning, the zone in which a trip begins.

origin-destination service — see *service, origin-to-destination*.

origin-destination study (O-D study) — a study of the origins and destinations of the trips of vehicles or travelers. It may also include trip purposes and frequencies.

out-of-service (not in service) — a transit vehicle or facility that is not available for transporting passengers.

outbound trip — see *trip, outbound*.

outlying business district (OBD) — the portion of an urban area that is normally separated from the central business district and fringe area but that supports considerable business activity and has its own traffic circulation, superimposed on some through traffic.

overall travel time — see *time, linked trip*.

overall trip speed — see *speed, overall trip*.

overhead — colloquial abbreviation for overhead contact system in electric traction, see *OCS*.

overhead contact shoe (contact shoe, trolley shoe) — a metal bar, usually with graphite insert, for collecting current from an overhead conductor along which it slides. It is held in place by a trolley pole, pantograph or bow.

overhead contact system (OCS) — the overhead electric supply system for rail and trolleybus systems, including contact wire, catenary, messenger wires, supporting masts, span wires and bracket arms.

overload — see *extra section*.

overload factor — a safety factor applied in designing a vehicle staging lot. The factor is obtained by dividing the vessel vehicle carrying capacity into the staging lot capacity. Allows for storage for more vehicles than can be accommodated on the vessel.

overspeed governor — see *governor*.

over-the-road coach — see *bus, intercity*.

owl bus or run — see *run, owl*.

owl service — see *service, owl*.

P **P&R** — park and ride.
PCC — Presidents' Conference Committee; see *organizations, Presidents' Conference Committee; and car, PCC*.

PCC car — Presidents' Conference Committee car; see *car, PCC*.

PCE — passenger car equivalence.

PRT — personal rapid transit; see *transit system, personal rapid, and transit system, automated guideway transit*.

PSC — Public Service Commission; see *organizations, Public Utilities Commission*.

PUC — Public Utilities Commission; see *organizations, Public Utilities Commission*.

paid area — see *area, paid*.

paid area transfer — see *transfer, paid area*.

paid miles — see *revenue vehicle miles*.

paid transfer — see *transfer, paid*.

pair, married — see *married pair*.

pantograph — a device for collecting current from an overhead conductor, characterized by a hinged vertical arm operated by springs or compressed air and a wide, horizontal contact surface that glides along the wire. Older versions usually consist of two parallel, hinged, double-diamond frames.

paratransit — forms of transportation services that are more flexible and personalized than conventional fixed-route, fixed-schedule service but not including such exclusory services as charter bus trips. The vehicles are usually low- or medium-capacity highway vehicles, and the service offered is adjustable in various degrees to individual users' desires. Its categories are public, which is available to any user who pays a pre-determined fare (e.g., taxi, jitney, dial-a-ride), and semi-public, which is available only to people of a certain group, such as the elderly, employees of a company, or residents of a neighborhood (e.g., vanpools, subscription buses). See also *transit system, demand-responsive*.

paratransit, complementary — paratransit service provided within a certain distance of fixed-route transit service to accommodate disabled passengers unable to use the fixed-route service. Required by the Americans with Disabilities Act.

park-and-ride (park 'n' ride, P&R) — an access mode to transit in which patrons drive private automobiles or ride bicycles to a transit station, stop, or carpool/vanpool waiting area and park the vehicle in the area provided for that purpose (park-and-ride lot, park-and-pool lot, commuter parking lot, bicycle rack or locker). They then ride the transit system or take a car or vanpool to their destinations.

parking facility — an area, which may be enclosed or open, attended or unattended, in which automobiles may be left, with or without payment of a fee, while the occupants of the automobiles are using other facilities or services.

parking turnover — the ratio of the total number of parked vehicles accommodated during a given period in a specified area to the total number of parking spaces in that area.

pass — 1. A means of transit prepayment, usually a card, that a transit passenger displays to the operator, conductor, or fare inspector or processes through automatic fare collection equipment instead of paying a cash fare. Passes are usually sold by the week or month. In some areas, to encourage tourism, they are also sold for shorter periods, sometimes with restricted hours for their use.
2. A means, usually a card, of granting free access to a transit system. This type of pass is issued to employees, visiting dignitaries, police, and so on. Employee passes usually carry some form of identification. See also *daypass*.

pass, monthly — a pass valid for unlimited riding within certain designated zones for a 1-month period, or sometimes for a 30-day period from purchase or initial use.

passenger — a person who rides a transportation vehicle, excluding the operator or other crew members of that transportation vehicle; see also *customer*.

origin—passenger

passenger, revenue—people-mover

passenger, revenue — a passenger who pays (or has prepaid) a fare.

passenger, transfer — a passenger who changes from one route or line to another route or line.

passenger amenity — an object or facility (such as a shelter, telephone, or information display) intended to enhance passenger comfort or transit usability.

passenger belt — see *moving walkway*.

passenger car equivalence (PCE) — the representation of larger vehicles, such as buses, as equal to a quantity of automobiles (passenger cars) for use in level of service and capacity analyses.

passenger controls — **1.** a system of railings, booths, turnstiles, fare gates and other fixtures for collecting fares and otherwise directing the movement of passengers. The controls may also be used to maintain the distinction between fare-paid and unpaid people. **2.** on proof-of-payment fare collection systems, the process of checking and enforcing fare payment.

passenger conveyor — see *moving walkway*.

passenger count — a count of the passengers on a vehicle or who use a particular facility.

passenger environment survey — see *survey, passenger environment*.

passenger flow (passenger traffic) — the number of passengers who pass a given location in a specified direction during a given period.

passenger load — the number of passengers on a transit unit (vehicle or train) at a specified point.

passenger locomotive — see *locomotive, passenger*.

passenger mile (passenger kilometer) — the transportation of one passenger a distance of 1 mile (km)

passenger miles (passenger kilometers) — the total number of passengers carried by a transit system for a unit of time multiplied by the number of miles (kilometers) they travel. The ratio of passenger miles (kilometers) and seat or place miles (kilometers) provides a measure of efficiency.

passenger miles per train mile (passenger kilometers per train kilometer) — the number of passenger miles (kilometers) accomplished by a given train mile (kilometer). The measure is the equivalent of load factor for buses, boats, or aircraft, but it also adjusts for distortions introduced as cars are added to trains. As an example, 100 people in one rail car of 100-passenger capacity is a load factor of 100%. If a car is added for 10 more passengers, the load factor drops to 55%, yet in many ways, productivity has gone up, not down.

passenger platform — see *platform*.

passenger riding count or check — see *check*.

passenger service time — see *time, passenger service*.

passenger station — see *station*.

passenger traffic — see *passenger flow*.

passenger trip — see *trip, linked; trip, passenger; and trip, unlinked*.

passenger vehicle — see *vehicle, passenger*.

passenger volume (line volume) — the total number of passengers carried (boarded) on a transit line during a given period.

passing track — see *siding*.

pass-up — circumstance in which a bus or train is full when it arrives at a stop and waiting passengers are forced to wait for the next vehicle or find another means of making their trip.

path — in planning, any series of links where each succeeding link has the ending node of a previous link as its beginning node.

patron — see *rider*.

patronage — see *ridership*.

peak (peak period, rush hours) — **1.** The period during which the maximum amount of travel occurs. It may be specified as the morning (a.m.) or afternoon or evening (p.m.) peak. **2.** The period when demand for transportation service is heaviest.

peak/base ratio (peak/off-peak ratio) — **1.** The ratio between the number of vehicles operating in passenger service during the peak hours and that during the base period. **2.** The ratio between the number of passengers carried during the peak hours and during the base period. A low ratio (<2-3) characterizes large cities with healthy transit systems.

peak fare — see *fare, time-of-day*.

peak-hour conversion factor — see *peak hour factor*.

peak hour factor (peak-hour conversion factor) — **1.** The ratio of the volume during the peak hour to the maximum rate of flow during a selected period within the peak hour, usually 15 or 20 minutes. **2.** The ratio of the volume during the peak hour to the volume during the peak period, usually the peak 2 hours, typically 60%.

peak-hour pricing — see *pricing, peak-hour*.

peak period — see *peak*.

peak period surcharge — see *fare, time-of-day*.

peak service — see *service, peak*.

pedestrian — a person traveling on foot.

pedestrian conveyor — see *moving walkway*.

pedestrian density — see *density, pedestrian*.

pedestrian-friendly — characterized by features and elements that make walking safe and convenient. A pedestrian-friendly environment near a transit stop might have pedestrian pushbuttons at street crossings and direct, paved access to adjacent development.

pedestrian island — see *loading island*.

pedestrian refuge — a space designed for the use and protection of pedestrians, including both the safety zone and the area at the approach that is usually outlined by protective deflecting or warning devices; see also *loading island*.

penalty, transfer — see *transfer penalty*.

pendulum suspension (K&M) — type of overhead suspension for trolleybuses that provides more flexible wire and allows faster speeds — particularly around curves. Attributed to dominant Swiss manufacturer, Kummeler+Matter.

people-mover — an automated transportation system (e.g., continuous belt

system or automated guideway transit) that provides short-haul collection and distribution service, usually in a major activity center. Preferred term is *automated guideway transit* although some regard people-mover as a subset of AGT.

people-mover, downtown (DPM) — a people-mover that primarily serves internal movements in a central business district.

performance, on-time — see *on-time performance*.

performance measure (performance indicator, measure of effectiveness) — a quantitative measure of how well an activity, task, or function is being performed. In transportation systems, it is usually computed by relating a measure of service output or use to a measure of service input or cost.

performance measurement system — the measures, data collection procedures, evaluation methods, goals, and reporting methods used to monitor an agency's effectiveness, efficiency, service quality, and goal achievement for the purposes of improving decision-making and meeting objectives.

period, base or off-peak — see *base period*.

period, peak — see *peak*.

peripheral parking — see *parking, fringe*.

permissive block — see *block, absolute permissive*.

person capacity — see *capacity, person*.

person trip — see *trip, person*.

personal rapid transit — see *transit system, personal rapid*.

Personal Transportation Study, Nationwide — see *Nationwide Personal Transportation Study*.

Personalized Public Transit — National ITS Program User Service in which flexibly routed transit vehicles offer more convenient service to customers.

personnel, operating — see *operating employees*.

persons with disabilities — people who have physical or mental impairments that substantially limit one or more major life activities. In the context of transportation, the term usually refers to people for whom the use of conventional transit facilities would be impossible or would create a hardship.

plan, sketch — see *sketch planning*.

plan, system — see *system planning*.

platform — the front portion of a bus or streetcar where passengers board.

platform, ferry — a platform (usually floating) located between the stable approach and vessel, from which passengers embark onto, or disembark from, the vessel.

platform, passenger — that portion of a transit facility directly adjacent to the tracks or roadway at which transit units (vehicles or trains) stop to load and unload passengers. Within stations, it is often called a *station platform*.

platform, center (island) — a passenger platform located between two tracks or guideways so that it can serve them both.

platform, high — a platform at or near the floor elevation of the transit unit (vehicle or train), eliminating the need for steps on the transit unit.

platform, low — a platform at or near the top of the running surface of the transit unit (vehicle or train), requiring the passenger to use steps to board and alight.

platform, mini-high (high block platform) — a small high-level platform that usually provides access only to the first door of a light rail train in order to allow boarding by wheelchairs, scooters, etc.

platform, side — a passenger platform located to the outside of the tracks or guideways, as distinguished from a center platform located between the tracks or guideways.

platform operator — see *operator*.

platform time — see *time, platform*.

platoon, bus — see *bus platoon*.

p.m. peak — see *peak*.

pneumatic brake — see *brake, electropneumatic*.

pocket track — a third track to store spare or disabled trains, or to act a crossover or a turn-back, often located between the two main tracks and often with switches at both ends.

point, maximum load — see *maximum load point*.

point, time — see *time point*.

point, turnover — see *turnover point*.

point check — see *check*.

point deviation — a transit routing pattern in which the vehicle passes through pre-specified points in accordance with a prearranged schedule but is not given a specific route to follow between these points. It may provide door-to-door or curb-to-curb service. See also *service, point deviation*.

points — a pair of linked, movable tapered rails used in rail switches that allow a train to pass from one line to another. Points are also used for the same function in overhead wiring for trolleybuses.

pole, trolley — see *trolley pole*.

policy headway — see *headway, policy*.

pool — see *buspool, carpool, and vanpool*.

power, dual — see *propulsion system, dual-power and bus, hybrid*.

powered car — see *car, rail motor*.

power rail — see *rail, third*.

power-to-weight ratio — a measure of the performance of locomotives. A higher power-to-weight ratio provides better acceleration characteristics.

preemption, signal — see *signal preemption*.

preferential bus lane — see *lane, bus*.

pre-metro system — see *transit system, pre-metro*.

Pre-Trip Travel Information — National ITS Program User Service that provides information for selecting the best transportation mode, departure time, and route.

Presidents' Conference Committee — see *organizations, Presidents' Conference Committee; and car, PCC*.

people-mover, downtown—
Presidents' Conference Committee

Presidents' Conference
Committee car—purpose, trip

Presidents' Conference Committee car — see *car, PCC*.

preventive maintenance — see definition of *maintenance*.

pricing — a strategy for charging users. It may be used to ration demand (change behavior), cover costs, or achieve other policy objectives.

pricing, peak-hour — charging higher prices for peak-period service than for off-peak service.

pricing, time-of-day — varying the price of service during the day.

priority lane — see *lane, priority*.

priority lane, bus — see *lane, bus*.

priority system, bus — see *bus priority system*.

private transportation — 1. Any transport service that is restricted to certain people and is therefore not open to the public at large. 2. Owned or operated by an individual or group, for his, her, or its own purposes or benefit, not by a governmental entity.

productions, trip — see *trip productions*.

productive capacity — see *capacity, productive*.

productivity — the ratio of units of transportation output to units of input (consumed resource); for example, vehicle miles (vehicle kilometers) per operator hour, or passenger miles (passenger kilometers) per unit cost of operation.

program, National Cooperative Highway Research — see *National Cooperative Highway Research Program* and *National Cooperative Transit Research and Development Program*.

program, Research, Development, and Demonstration — see *Research, Development, and Demonstration Program*.

program, Service and Methods Demonstration — see *Service and Methods Demonstration Program*.

programmed braking — see *braking, programmed*.

progression, automatic — see *automatic progression*.

progression, signal — coordination of a set of traffic signals such that vehicles moving down a street receive green signal indications at several traffic signals in a row.

proof-of-payment — see *fare collection system, proof of payment*.

property (operation, operator, system) — in the transit industry, a public transit agency or a private transit company with responsibility for transportation services such as bus, ferry, rail; see also *transit district*.

propulsion, ferry — the process of driving or propelling by way of a machine consisting of a power-driven shaft with radiating blades, placed so as to thrust air or water in a desired direction when spinning.

propulsion system — the motors, driving mechanism, controls, and other devices that propel a vehicle, frequently assumes electric operation.

propulsion system, dual-power — a propulsion system that is capable of operation from two different types of power

sources, for example, an internal combustion engine and electricity.

protection, train — see *automatic train protection*.

proximity card — see *smart card*.

public automobile service system — see *transportation system, public automobile service*.

Public Service or Utilities Commission — see *organizations, Public Utilities Commission*.

public service vehicle — see *vehicle, public service*.

public transit — passenger transportation service, usually local in scope, that is available to any person who pays a prescribed fare. It operates on established schedules along designated routes or lines with specific stops and is designed to move relatively large numbers of people at one time. Examples include bus, light rail, rapid transit.

public transit agency — see *property, transit district*.

public transportation — transportation service to the public on a regular basis using vehicles that transport more than one person for compensation, usually but not exclusively over a set route or routes from one fixed point to another. Routes and schedules of this service may be predetermined by the operator or may be determined through a cooperative arrangement. Subcategories include public transit service and paratransit services that are available to the general public.

public transportation, urban — see *urban public transportation*.

public transportation disability — see *persons with disabilities*.

Public Transportation Management — National ITS Program User Service that automates operations, planning, and management functions of public transit systems.

Public Travel Security — National ITS Program User Service that creates a secure environment for public transportation patrons and operators.

public way — any public street, road, boulevard, alley, lane, or highway, including those portions of any public place that have been designated for use by pedestrians, bicycles, and motor vehicles.

publicly owned transit system — see *transit system, publicly owned*.

público — In Puerto Rico, a transit mode comprising passenger vans or class C buses operating with fixed routes but no fixed schedules. Públicos are a privately owned and operated mass transit service that is market-oriented and unsubsidized but regulated through a public service commission, state, or local government. Públicos are operated under franchise agreements, fares are regulated by route, and there are special insurance requirements. Vehicle capacity varies from 8 to 24, and the vehicles may be owned or leased by the operator.

puller — an articulated bus with the center axle powered.

purpose, trip — see *trip purpose*.

push-pull train — see *train, push-pull*.

push-through — a bus-operating technique used in busy peak-hour street operations when heavy passenger loads can combine with general road traffic delays to create bunching. A push-through is an unscheduled bus that is held at a key point to be inserted by an inspector or street supervisor into a route when a serious gap occurs. It is used to prevent worsening of service.

pusher — an articulated bus with the rear axle powered.

Q **quadrant analysis** — method of evaluating customer satisfaction survey results in which the customer-rated importance of an attribute is plotted against the customer-rated satisfaction with that attribute.

quality, ride — see *ride quality*.

quality, service — see definition of *level of service*.

quality control — the system of collection, analysis, and interpretation of measurements and other data concerning prescribed characteristics of a material, process, or product, for determining the degree of conformance with specified requirements.

quality of service — the overall measured or perceived quality of transportation service from the user's or passenger's point of view, rather than from the operating agency's point of view. Defined for transit systems, route segments, and stops by *level of service*.

queue — A line of vehicles or people waiting to be served by the system in which the rate of flow from the front of the line determines the average speed within the line. Slowly moving vehicles or people joining the rear of the queue are usually considered a part of the queue.

queue jump(er) — 1. A short section of exclusive or preferential lane that enables specified vehicles to bypass an automobile queue or a congested section of traffic. A queue jumper is often used at signal-controlled freeway on-ramps in congested urban areas to allow high-occupancy vehicles preference. It is also known as a *bypass lane* or *queue bypass*. 2. A person who violates passenger controls.

R **RDC** — rail diesel car; see *car, rail diesel*.

ROW — right-of-way.

RPA — regional planning agency; see *organizations, regional planning agency*.

RRIS — Railroad Research Information Service.

rack railway — see *cog railway*.

radial network — see *network, radial*.

rail, contact — see *rail, third*.

rail, continuous welded (CWR) — a number of standard length rails welded together into a single length of 400 ft or more (120 m or more). It provides a smoother running surface and ride than jointed rail.

rail, girder — rail with a built in flange groove used on streetcar and light rail lines that are laid in-street where other motor vehicles must travel.

rail, power — see *rail, third*.

rail, running — a rail that supports and guides the flanged wheels of the rail vehicle.

rail, standard — a 39-ft (11.89-m) section of rail.

rail, third (contact rail, power rail) — an electric conductor, located alongside the running rail, from which power is collected by means of a sliding shoe attached to the truck of electric rail cars or locomotives. Traditionally made of mild steel, composite rail, often aluminum with a stainless steel cover, is appearing on some new systems.

rail, welded — two or more rails welded together at their ends to form a length less than 400 ft (120 m); see also *rail, continuous welded*.

railbus — a light, self-propelled rail vehicle with a body resembling that of a bus or using bus components, two-axle versions are noted for poor ride quality.

rail car, electric — see *car, electric rail*.

rail car, type — see *car, type designations*.

rail car, urban — see *car, urban rail*.

rail car, weight — see *car, weight designations*.

rail diesel car — see *car, rail diesel*.

rail motor car — see *car, rail motor*.

rail rapid transit — see *transit system, rail rapid*.

rail rapid transit car — see *car, rail rapid transit*.

railroad, commuter — see *transit system, commuter rail*.

railroad grade crossing — see *crossing, railroad grade*.

Railroad Research Information Service (RRIS) — a computer-based information storage and retrieval system developed by the Transportation Research Board with financial support from the Federal Railroad Administration. It consists of summaries of research projects in progress and abstracts of published works.

railroad tie — see *crosstie*.

rail transit system — see *transit system, rail*.

rail transport, conventional — see *conventional rail transport*.

rail vehicle, articulated — see *articulated rail vehicle*.

railway — alternate term for railroad, especially Canadian and British.

railway, cog — see *cog railway*.

railway, funicular — see *funicular railway*.

railway, inclined plane (incline) — see *inclined plane*.

railway, metropolitan — see *transit system, rail rapid*.

railway, rack — see *cog railway*.

railway, street — old term for streetcar system, see *transit system, streetcar*.

railway crossing — see *crossing, track*.

railway electrification — see *electrification*.

ramp, moving — an inclined moving walkway.

push-pull train—ramp, moving

ramp, meter bypass lane—ride, one-zone

ramp, meter bypass lane — see *lane, ramp meter bypass*.

ramp metering — **1.** The process of facilitating traffic flow on freeways by regulating the amount of traffic entering the freeway through the use of control devices on entrance ramps. **2.** The procedure of equipping a freeway approach ramp with a metering device and traffic signal that allow the vehicles to enter the freeway at a predetermined rate.

rapid bus — see *transit system, bus rapid*.

rapid, the — see *transit system, rail rapid*.

rapid rail transit — see *transit system, rail rapid*.

rapid transit — generic term introduced in the 1890s to denote any transit that was faster than its predecessor, most particularly for the replacement of horsecars with electric streetcars, now generally used for rail systems on exclusive right-of-way, i.e., heavy rail or metro. See adjacent listings and specific entries under *transit systems*.

rapid transit car — see *car, rail rapid transit*.

rapid transit operator — see *operator, rapid transit*.

rapid transit system — see *rapid transit* and specific entries under *transit systems: bus rapid, group rapid, light rail rapid, personal rapid, rail rapid, rapid*.

rate of flow — see *flow rate*.

ratio, cost recovery — see *cost recovery ratio*.

ratio, fare or farebox recovery — see *fare recovery ratio*.

ratio, operating — see *operating ratio*.

ratio, peak/base or peak/off-peak — see *peak/base ratio*.

ratio, power-to-weight — see *power-to-weight ratio*.

ratio, travel time — see *travel time ratio*.

reader, farecard — see *farecard reader*.

recovery ratio — see *cost recovery ratio* and *fare recovery ratio*.

recovery time — see *time, layover*.

rectifier station — see *electric sub-station*.

reduced fare — see *fare, reduced*.

re-entry delay — see *delay, re-entry*.

refuge, pedestrian — see *pedestrian refuge*.

regenerative brake — see *brake, regenerative*.

regional planning agency — see *organizations, regional planning agency*.

regional rail service — see *service, regional rail*.

regional transit service — see *service, regional transit*.

register or registering farebox — see *farebox, registering*.

regular fare — see *fare, base*.

relationship, speed-flow — see *speed-flow relationship*.

relay, track — see *track relay*.

relay time — see *time, layover*.

reliability — how often transit service is provided as promised; affects waiting time, consistency of passenger arrivals from day to day, total trip time, and loading levels. The service measure of route-level comfort and

convenience in the TCQSM quality of service framework.

reroute — to divert to a route other than the scheduled route, usually with preplanning and for a longer period than that for a detour.

Research Information Service — see *Highway Research Information Service, Railroad Research Information Service, Transportation Research Information Services, and Urban Mass Transportation Research Information Service*.

Research Program — see *National Cooperative Highway Research Program, National Cooperative Transit Research and Development Program and Transit Cooperative Research Program*.

reserved transit lane — see *lane, exclusive transit*.

response time — see *time, response*.

retardation — see *deceleration*.

revenue, farebox — the passenger payments for rides, including cash, farecards, tickets, tokens, pass receipts, and transfer and zone charges but excluding charter revenue.

revenue, non-transportation (other) — revenue earned by activities not associated with the provision of the system's transit service, for example, sales of maintenance services, rental of vehicles and buildings, non-transit parking lots, sale of advertising space, and investment income.

revenue, total operating — the sum of regular passenger revenue, charter revenue, and other miscellaneous revenues, such as those from advertising or concessions.

revenue miles (revenue kilometers) — miles (kilometers) operated by vehicles available for passenger service.

revenue passenger — see *passenger, revenue*.

revenue passenger trips — the number of fare-paying transit passengers with each person counted once per trip; excludes transfer and non-revenue trips.

revenue seat mile (revenue seat kilometer) — the movement of one transit passenger seat over 1 mile (km). In other words, the total number of revenue seat miles (kilometers) for a vehicle is obtained by multiplying the number of revenue seats in the vehicle by the number of revenue miles (kilometers) traveled.

revenue service — see *service, revenue*.

revenue track miles or kilometers — see *track miles, revenue*.

revenue vehicle — see *vehicle, revenue*.

revenue vehicle miles (revenue vehicle kilometers, paid miles or kilometers) — the distance in miles (kilometers) that a revenue vehicle is operated while it is available for passenger service.

reverse commute — see *commute, reverse*.

reverse move — the forward movement of a train going against the normal direction of traffic.

reversible bus lane — see *lane, reversible bus*.

reversible lane — see *lane, reversible*.

ride, check — see *check ride*.

Ride Matching and Reservation — National ITS Program User Service that makes ride sharing easier and more convenient.

ride, one-zone — see *one-zone ride*.

ride, shared — see *shared ride*.

ride quality — a measure of the comfort level experienced by a passenger in a moving vehicle, including the vibration intensity and frequency, accelerations (longitudinal, transverse, and vertical), jerk, pitch, yaw, and roll.

rider — **1.** A passenger on any revenue service vehicle; also known as a *patron*. **2.** In government reporting, someone making an unlinked trip.

rider, captive — a person limited by circumstances to use one mode of transportation; see also *transit dependent* and *transportation disadvantaged*.

rider, captive transit — a person who does not have a private vehicle available or cannot drive (for any reason) and who must use transit to make the desired trip; see also *transit dependent* and *transportation disadvantaged*.

rider, choice — a person who has at least two modes of travel available and selects one to use.

riders, group — riders who have a common origin and destination or some demographic variable in common and travel together in the same vehicle.

ridership (patronage) — the number of people making one way trips on a public transportation system in a given time period.

ridesharing — a form of transportation, other than public transit, in which more than one person shares in the use of the vehicle, such as a bus, van, or automobile, to make a trip.

riding check or count, passenger — see *check*.

riding frequency coefficient (riding habit coefficient) — the number of passenger trips during a designated time period divided by the resident population of the area served, such as transit trips per capita per year.

right-of-way (ROW) — **1.** A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes. For transit, rights-of-way may be categorized by degree of their separation: fully controlled without grade crossings, also known as *grade-separated*, *exclusive*, or *private ROW*; longitudinally physically separated from other traffic (by curbs, barriers, grade separation, etc.) but with grade crossings; or surface streets with mixed traffic, although transit may have preferential treatment. **2.** The precedence accorded to one vehicle or person over another.

right-of-way, controlled access — lanes restricted for at least a portion of the day for use by transit vehicles and/or other high-occupancy vehicles. Use of controlled access lanes may also be permitted for vehicles preparing to turn. The restriction must be sufficiently enforced so that 95% of vehicles using the lanes during the restricted period are authorized to use them.

right-of-way, exclusive — roadway or other right-of-way reserved at all times for transit use and/or other high occupancy vehicles.

right-of-way, exclusive transit — a right-of-way that is fully grade separated or access controlled and is used exclusively by transit.

right-of-way, segregated — roadway or right-of-way reserved for transit use, but which permits other modes to cross the right-of-way at defined locations such as grade crossings.

right-of-way, shared — roadway or right-of-way which permits other traffic to mix with transit vehicles, as is the case with most streetcar and bus lines.

right-of-way miles (right-of-way kilometers, first-track miles or kilometers) — the length of right-of-way occupied by one or more lanes or tracks; see also *route miles*.

road — see *highway, street, or road*.

road, collector — see *street, collector-distributor*.

roadbed — **1.** In railroad construction, the foundation on which the ballast and track rest. **2.** In highway construction, the graded portion of a highway within top and side slopes, prepared as a foundation for the pavement structure and shoulder.

road call — a mechanical failure of a bus in revenue service that necessitates removing the bus from service until repairs are made.

road miles (road kilometers) — linear miles (kilometers) of highway as measured along the centerline of the right-of-way.

road supervisor — see *inspector*.

roadway — that portion of a highway built, designed, or ordinarily used for vehicular travel, except the berm or shoulder. If a highway includes two or more separate roadways, the term means any such roadway separately but not all such roadways collectively.

rolling stock — see *fleet*.

rolling stock capacity — see *capacity, fleet*.

rope — in ropeways, the term rope means wire rope, which consists of several strands twisted together. The terms rope, wire rope, and cable are interchangeable except where, by the context, the general term cable refers to either a wire rope or strand used as a track cable.

ropeway — includes all devices that carry, pull, or push along a level or inclined path (excluding elevators) by means of a haul rope or other flexible element that is driven by a power unit remaining essentially at a single location. See *aerial lift, aerial tramway, cableway, funicular railway, inclined plane, and surface lift*.

ropeway, continuously circulating — a ropeway providing multiple carriers, cars, or trains that move around a route forming a loop. Examples include *aerial lifts (gondolas), cable cars, and cable-hauled automated people-movers*.

ropeway, reversible — a ropeway that operates in a back-and-forth, shuttle manner. Usually operates with two carriers, but sometimes only one. Examples include *inclined planes and aerial tramways*.

round trip — see *trip, round*.

route — **1.** The geographical path followed by a vehicle or traveler from start to finish of a given trip. **2.** A designated, specified path to which a transit unit (vehicle or train) is assigned. Several routes may traverse a single portion of road or line. **3.** In traffic assignments, a continuous group of links that

ride, shared—route

route deviation service—
seating, longitudinal

connects two centroids, normally the path that requires the minimum time to traverse.
4. In rail operations, a determined succession of contiguous blocks between two controlled interlocked signals.

route deviation service — see *service, route deviation*.

Route Guidance — National ITS Program User Service that provides travelers with simple instructions on how to best reach their destinations.

route miles (route kilometers) — various definitions exist for this statistic: **1.** One-way duplicating is total mileage (kilometers) of routes, where the roadway or guideway segments of each individual route are summed up in one direction. For example, a 1-mile (km) segment over which buses operate in both directions would be reported as 2 miles (km); also known as *directional route miles (kilometers)* or *miles (kilometers) of roadway or route*. **2.** One-way non-duplicating is total mileage (kilometers) of routes, where a particular roadway or guideway segment is only counted once regardless of number of routes or direction of travel on that segment; also known as *line miles (kilometers)* or *miles (kilometers) of directional roadway*. **3.** Two-way mileage (kilometers) is total mileage (kilometers) of each route covered from start to finish. No attention is given to direction of routes or number of routes using any particular segment of roadway or guideway.

route structure — **1.** A network of transit routes. **2.** The pattern of transit routes, for example, grid, radial. See *network*.

route supervisor — see *inspector*.

routing, dynamic — see *dynamic routing*.

routing, through — see *through routing*.

rule — in rail operations, a law or order authoritatively governing conduct or action.

run — **1.** The movement of a transit unit (vehicle or train) in one direction from the beginning of a route to the end of it; also known as a *trip*. **2.** An operator's assignment of trips for a day of operation; also known as a *work run*.

run, bus — the daily assignment of a bus, numbered and listed in a master schedule. Each vehicle displays its bus run number.

run, owl — a run that operates during the late night through early morning hours; most commonly, midnight to 0400h or the start of the next day's service. Some systems designate hours after midnight, when operated by vehicles starting the previous day, as 2500h, 2600h and so on.

run cutting — the process of organizing all scheduled trips operated by the transit system into runs for the assignment of operating personnel and vehicles.

run number — a two- or three-digit number displayed on a hand set or flip-dot display in the lower windshield displaying the run or schedule slot the vehicle is in; primarily used as information to inspectors, street supervisors, or checkers.

running gear — the vehicle parts whose functions are related to the movement of the vehicle, including the wheels, axles, bearings, and suspension system.

running hot (running sharp) — running ahead of schedule. Unacceptable practice on most systems.

running rail — see *rail, running*.

running speed — see *speed, running*.

running time — see *time, running*.

rush hour(s) — see *peak*.

S **SE** — Single Ended, rail or streetcar with driving position only at one end, requires loop to turn around at end of line.

SLT — shuttle-loop transit; see *transit system, shuttle-loop*.

SOV — single-occupant vehicle; see *vehicle, single-occupant*.

SU — single unit; see *car, single-unit*.

saddle monorail — see *transit system, monorail*.

safety distance — **1.** Minimum separation of trains with various control systems **2.** In a moving-block signaling system, the specific distance between the target point and the train or obstruction ahead. See *control system*.

safety island — see *loading island*.

scatter service — see *service, one-to-many*.

schedule — **1.** A listing or diagrammatic presentation in time sequence of every trip and every time point of each trip, from start to finish of service, on a transit line or route. **2.** In transit or railroad operations, a published table of departure or arrival times (or both) for arranged service over a transit line or route or a specific section of railroad; see also *timetable*.

schedule check — see *check*.

schedule checker — see *checker*.

schedule speed — see *speed, schedule*.

scheduling — in transit operations, the process of preparing the operating plan (schedule) for a transit line or network on the basis of passenger demand, policy or level of service, and operating elements (travel times, etc.)

school bus — see *bus, school*.

school bus service — see *service, school bus*.

scratch ticket — a ticket on which the user can scratch overprinting off to indicate, zone, and/or month, day (and time) of validity. Commonly used on day passes.

seating or seated capacity — see *capacity, seating*.

seating, 2+1 — (“two-by-one”) transverse seating arrangement providing three seats per row, two on one side of the aisle and one on the other side of the aisle.

seating, 2+2 — transverse seating arrangement providing four seats per row, two on each side of the aisle.

seating, 2+3 — transverse seating arrangement providing five seats per row, two on one side of the aisle and three on the other side of the aisle; not popular with passengers. This seating arrangement constrains aisle width, which may make the provision of wheelchair access difficult.

seating, longitudinal — seats that are placed parallel to the sides of a transit vehicle, so that passengers sit sideways relative to the

direction of travel. This seating arrangement increases the aisle width, allowing more standing room, but may be less comfortable for seated passengers.

seating, transverse — seats that are placed perpendicular to the sides of a transit vehicle, so that passengers face forward or backward relative to the direction of travel. This seating arrangement is often used when it is desired for most passengers to have a seat, although it is also possible to have single transverse seats on either side of the vehicle, with a wide aisle in between.

seat mile, revenue — see *revenue seat mile*.

section — for sections of legislation, see *legislation* entries.

section, block — see *block*.

section, extra — see *extra section*.

section, maximum load — see *maximum load section*.

self-propelled locomotive — see *locomotive, self-propelled*.

self-propelled or self-powered car — see *car, rail motor*.

self-service, barrier-free fare collection system — see *fare collection system, open, barrier-free, proof of payment, self-service*.

semi-metro system — see *transit system, semi-metro*.

sensor, induction loop — see *induction loop sensor*.

separation, grade — see *grade separation*.

separation, track — see *track separation*.

separation, train — see *train separation*.

series, time — see *time series*.

series-wound motor — see *motor, series-wound*.

service, arterial — generally major (long or heavily patronized) transit routes that operate on principal or major surface arterial streets.

service, base-period — the level of transit operations during the base period.

service, bus rapid transit — see *transit system, bus rapid transit*.

service, circulator — bus service confined to a specific locale, such as a downtown area or a suburban neighborhood, with connections to major traffic corridors.

service, city transit — transit serving an urban area, as distinguished from short-haul and regional transit service.

service, community — short feeder or loop route serving a local community, often operated with smaller buses.

service, commuter — transportation provided on a regularly scheduled basis during peak travel periods for users commuting to work, school, and similar destinations.

service, crosstown — non-radial transit service that does not enter the central business district.

service, demand jitney — see *service, jitney*.

service, door-to-door — a service that picks up passengers at the door of their place of origin and delivers them to the door of their place of destination. This service may necessitate passenger assistance between the

vehicle and the doors. See also *service, curb-to-curb*.

service, express — service that has fewer stops and a higher operating speed than regular service. Often used an alternative term for *limited-stop service*; when agencies provide both types of service, the express service tends to have much longer sections of non-stop running.

service, express bus — bus service with a limited number of stops, either from a collector area directly to a specific destination or in a particular corridor with stops en route at major transfer points or activity centers. Express bus service usually uses freeways or busways where they are available.

service, feeder — **1.** Local transportation service that provides passengers with connections with a major transportation service. **2.** Local transit service that provides passengers with connections to main-line arterial service; an express transit service station; a rail rapid transit, commuter rail, or intercity rail station; or an express bus stop or terminal, see also *service, community*.

service, few-to-few — a service that picks up passengers at a limited number of origins and delivers them to a limited number of destinations.

service, few-to-many — a service that picks up passengers at a few pre-selected origins, typically activity centers or transfer points, and delivers them to many destinations.

service, flag stop — **1.** In paratransit operations, a service accessed by hail. **2.** In rail operations, a nonscheduled stop that may be served if proper notice is given by a passenger or prospective passenger.

service, gather — see *service, many-to-one*.

service, jitney — a route deviation service in which small or medium-sized vehicles, such as large automobiles, vans, or minibuses, are used. The vehicles are usually owned by the drivers and the service is often independently operated. However it is authorized or regulated and distinct from unofficial, and usually illegal, "jitney service" where often-uninsured private cars or vans solicit passengers — often running ahead of transit buses. See also *transportation system, jitney*.

service, level of — see *level of service*.

service, limited — **1.** A transit service that operates only during a certain period of the day, or that serves only specific stops (also known as *limited-stop service*) or in a specified area, or that serves only certain segments of the population. **2.** Line service with some restrictions on boarding and alighting.

service, limited-stop — a bus service, often operated in conjunction with a local service, that does not serve every stop, providing a higher operating speed. It represents a middle ground between high-access, low-speed local service and low-access, higher-speed express service.

service, line haul — **1.** Transportation service along a single corridor, without branches, with stops along the way. Usually service is intensive (high capacity) and may use exclusive right-of-way. **2.** May also be used to describe express service or even main-line service, as opposed to feeder service.

seating, transverse—service, line haul

service, local—service application

service, local — 1. Transit service that involves frequent stops and consequent low average speeds, the purpose of which is to deliver and pick up transit passengers close to their destinations or origins. 2. Transit operation in which all transit units (vehicles or trains) stop at all stations. 3. Transit service in a city or its immediate vicinity, as distinguished from regional transit service or interurban lines.

service, local bus — a bus service that picks up and discharges passengers at frequent, designated places (stops) on city streets.

service, many-to-few — a service that picks up passengers at many different origins and delivers them to a few destinations.

service, many-to-many — a service that picks up passengers at many different origins and delivers them to many different destinations within the service area.

service, many-to-one (gather service) — a service that collects passengers from many origins and delivers them to a specific point, for example, an office building, train station, or bus stop.

service, one-to-many (scatter service) — a service that picks up passengers at one point of origin and delivers them to many destinations.

service, origin-to-destination — service in which the passenger carrying vehicle will not stop along the way to pick up additional passengers.

service, owl — transit service provided late at night, usually from midnight to between 0300h and start of service the next day.

service, peak — service during peak periods.

service, point deviation — public transportation service in which the transit vehicle is required to arrive at designated transit stops in accordance with a prearranged schedule but is not given a specific route to follow between these stops. It allows the vehicle to provide curbside service for those who request it. See also *point deviation*.

service, public automobile — see *transportation system, public automobile service*.

service, radial — service that connects the CBD with outlying areas.

service, regional rail — alternate term for commuter rail, specific to East Coast; see *transit system, commuter rail*.

service, regional transit — long bus or rail transit lines with few stations and high operating speeds. They primarily serve long trips within metropolitan regions, as distinguished from city transit service and local short-haul transit service.

service, research information — see *Railroad Research Information Service, Transportation Research Information Services, and Urban Mass Transportation Research Information Service*.

service, revenue — 1. Transit service excluding deadheading or layovers. 2. Any service scheduled for passenger trips.

service, route deviation — public transportation service on an exclusive basis that operates along a public way on a fixed route (but not a fixed schedule). The vehicle may deviate from the route occasionally in response to demand for service or to take a

passenger to a destination, after which it returns to its route. It is a form of demand-responsive transit. See also *service, jitney*.

service, scatter — see *service, one-to-many*.

service, school bus — service designed to transport children to or from any regularly conducted public or private school or school-related activities, either on an exclusive or nonexclusive basis.

service, shoppers' special — service provided during off-peak hours that is designed to carry passengers to or from shopping areas.

service, short-haul transit — low-speed transit service for circulation within small areas that usually have high travel density, such as central business districts, campuses, airports, exhibition grounds, and other major activity centers.

service, shuttle — 1. Service provided by vehicles that travel back and forth over a particular route, especially a short one, or one that connects two transportation systems or centers, or one that acts as a feeder to a longer route. Shuttle services usually offer frequent service, often without a published timetable. 2. For rail and other guideway systems, a service in which a single vehicle or train operates on a short line, reversing direction at each terminal.

service, skip-stop — service in which alternate transit units (vehicles or trains) stop at alternate sets of stations on the same route. Each set consists of some joint and some alternate stations.

service, subscription bus — 1. A bus service in which routes and schedules are prearranged to meet the travel needs of riders who sign up for the service in advance. The level of service is generally higher than that of regular passenger service (fewer stops, shorter travel time, and greater comfort), and the buses are usually obtained through charter or contractual arrangements. 2. Commuter bus express service operated for a guaranteed number of patrons from a given area on a prepaid, reserved seat basis. Subscription buses are often arranged for and partly subsidized by an employer to serve a specific work location.

service, subscription van — service similar to that provided by a subscription bus, except that the van may be privately owned, leased from a public or private company, or provided by the employer. The driver is usually a member of the group.

service, subsidized taxi — a taxicab service in which the fares are lower than actual taxi fares and the taxi company is reimbursed the difference. The service may be provided to the general public or to special groups, such as elderly people. Funds for the subsidy can come from a variety of sources, including local taxes or social service agency program funds. Often an economical way to provide better off-peak service in low-density areas that cannot support fixed routes.

service, taxicab (exclusive ride taxi, taxi service) — demand responsive public transportation service on an exclusive basis, in a vehicle licensed to render that service; see also *shared ride* and *service, subsidized taxi*.

service application — see *braking, service*.

service area — see *area, service*.

service attributes — those aspects of a transportation system that affect travel decisions about its use, such as travel time, reliability, comfort (e.g., crowding, standees), cost, ease of use, and safety.

service brake — see *brake, service*.

service braking — see *braking, service*; and *braking, maximum service*.

service coverage — see *area, coverage*

service denial — circumstance in which a demand-responsive transit trip cannot be provided at the requested time, even though service is operated at that time.

service frequency — the number of transit units (vehicles or trains) on a given route or line, moving in the same direction, that pass a given point within a specified interval of time, usually 1 hour; see also *headway*.

service information — see *user information*.

service measure, transit — **1.** A quantitative performance measure that best describes a particular aspect of transit service and represents the passenger's point of view. **2.** A transit performance measure for which transit levels of service are defined, referred to in the *Highway Capacity Manual* as a *measure of effectiveness*.

service performance or quality — see definition of *level of service*.

service span — see *hours of service*.

service track miles (kilometers) — see *track miles, service*.

service volume — the maximum number of vehicles that can pass a given point during a specified period while a specified level of service is maintained.

share, market — see *market share*.

shared ride — a trip, other than by conventional public transit, on which the passengers enter at one or more points of origin and disembark at one or more destinations and for which each passenger is charged an individual fare. Shared ride taxi service is a way of using taxicabs for paratransit.

sharp, running — see *running hot*.

sheaves — pulleys or wheels grooved for rope.

shedding, load — see *load shedding*.

shelter — see *transit shelter*.

shoe, brake — see *brake shoe*.

shoe, overhead contact — see *overhead contact shoe*.

shoe, third-rail — see *third-rail shoe*.

shoe, trolley — see *overhead contact shoe*.

shoofly — a temporary track to allow rail operations to bypass construction activities.

shop — see *workshop*.

shoppers' special service — see *service, shoppers' special*.

short-haul transit service — see *service, short-haul transit*.

short turn — see *turn back*.

shunt — in rail operations, to shift or switch, as a train car; also the railroad switch itself.

shunt motor — see *motor, shunt*.

shuttle-loop transit — see *transit system, shuttle-loop*.

shuttle service — see *service, shuttle*.

shuttle system — see *transit system, shuttle*.

side platform — see *platform, side*.

side track — see *siding*.

sidewalk, moving — see *moving walkway*.

siding (passing track, side track) — a track adjacent to a main or a secondary track, for meeting, passing, or storing cars or trains, see also *pocket track*.

sign, dash — see *dash sign*.

sign, destination — see *destination sign*.

sign, dot matrix — a type of destination, dash, side or rear sign consisting of electrically actuated dots that present either a matte black or bright (usually fluorescent yellow) face that make up individual letters or numbers. Early designs had very poor visibility and reliability, but improvements and the ability to display upper and lower case and double lines, have made the signs acceptable. Versions with back-lit liquid crystal displays or high intensity light emitting diodes were introduced in late 1990s. Favored for the ease with which signs can be reprogrammed and buses transferred from garage to garage, but this flexibility is often abused by alternating unnecessary messages, such as HAVE A GOOD DAY, that can confuse potential passengers.

sign, head — see *head sign*.

signal, automatic — a signal that is controlled automatically by certain conditions of the track section that it protects.

signal, automatic block — a system in which signals are actuated automatically by the presence of a train on the track section, usually with an electric track circuit to detect the presence of any vehicle, and any broken rails.

signal, block — a fixed signal installed at the entrance of a block to govern trains entering and using that section of track.

signal, cab — see *control system, cab signal*.

signal, fixed — in rail operations, a signal at a fixed location that indicates a condition that affects the movement of a train.

signal, grade crossing protection — a railroad crossing flashing light signal or automatic gate actuated by the approach of a train at a grade crossing.

signal, wayside — in rail operations, a fixed signal that is located along the track right-of-way.

signal, traffic — see *traffic signal*.

signal-actuating device — see *pedestrian signal-actuating device* and *vehicle signal-actuating device*.

signal aspect — **1.** The appearance of a fixed signal conveying an indication, as viewed from the direction of an approaching rail unit. **2.** The appearance of a cab signal conveying an indication, as viewed by an observer in the cab of a rail unit.

signal block — see *block*.

signal indication — the information conveyed by a signal.

signal preemption — in highway operations, an automatic or manual device for altering the normal signal phasing or the sequence of a traffic signal to provide preferential

service area—signal preemption

signal progression—station, accessible

treatment for specific types of vehicles, such as buses or trains.

signal progression — see *progression, signal*.

simple catenary — see *catenary system*.

single-occupant vehicle (SOV) — see *vehicle, single-occupant*.

single-unit car — see *car, single-unit*.

ski lift — a continuously circulating *aerial lift* using chairs as carriers.

skip-stop service — see *service, skip-stop*.

slack time — see *operating margin*.

sleeper — **1.** An inert passenger who remains on a transit vehicle at end of run, often inebriated. **2.** A railroad tie; see *cross-tie*.

slow order — a location where trains must temporarily travel more slowly than maximum authorized track speed for that location.

slug — **1.** A commuter, who, lacking membership in a carpool, regularly waits at designated pick-up points, hoping to catch a ride in a carpool vehicle with an unfilled seat. (particular to US East Coast). See also *carpool, casual*. **2.** Persons who, for a fee, will ride in a car so as to increase the occupancy to allow the car to use an HOV lane.

small bus — see *bus, small*.

smart card — stored-value ticket with built-in semiconductor chip. The chip is loaded with monetary value which is decremented for each ride, in flat amounts or, with exit checks, for distance-based fares. Early variants required insertion or contact with farebox or fare gate and were time consuming. Most versions in transit are proximity cards and require only to be held close to the farebox or fare gate inductive detector plate.

soft suspension — see *pendulum suspension*.

space — in the context of transportation vehicle capacity, a space is a seat or the standing area for one passenger, typically a seat consumes 5 ft² (0.5 m²) of floor space and a standing passenger 2.5 ft² (0.25 m²).

space, defensible — see *defensible space*.

spacing — the distance between consecutive vehicles, measured front to front.

special trackwork — see *trackwork, special*.

special work — term for both special trackwork and junctions on overhead electric collection systems.

speed — see *velocity*.

speed, average — see *velocity, effective*.

speed, cruise — see *velocity, cruise*.

speed, cycle — see *speed, overall trip*.

speed, effective operating — see *speed, overall trip*.

speed, line — the speed of the *haul rope* used on a ropeway system, measured in ft/s or m/s.

speed, operating — vague term with different interpretations, see *speed, running*; and *speed, schedule*.

speed, overall trip (effective operating speed, cycle speed) — in transit operations, the average speed achieved per round trip, including layover and recovery time but excluding deadheading time. It is calculated by individual trips, by running time periods, or for the entire schedule.

speed, running — the highest safe speed at which a vehicle is normally operated on a given roadway or guideway under prevailing traffic and environmental conditions; the speed between points, not including stopped time. In some areas, also known as *operating speed*, sometimes *civil speed*.

speed, schedule — the one-way distance between terminals divided by the scheduled travel time between the terminals; exclusive of layover or recovery time, in some areas, also known as *operating speed*.

speed-flow relationship — the relationship between the flow (volume) of units on a transportation facility and the speed of those units. As flow increases, speed tends to decrease.

speed limit, civil — see *civil speed limit*.

spill-back — a situation that may occur in on-street light rail transit operations when trains or motor vehicles fail to clear a signalized intersection and so prevent the following train from entering that block. Particularly acute in downtown streets where the light rail train can be the full length of the block.

split, directional — see *directional split*.

split, modal or mode — see *modal split*.

spot time — see *time, layover*.

stable approach — relative to the passenger loading platform or vessel, the last non-floating structure, including land, that passengers access on their way to the vessel.

staging lot, vehicle — the area provided for vehicles waiting to load onto auto ferries.

standard gauge — see *gauge, standard*.

standard rail — see *rail, standard*.

Standard Railroad Grade Crossing — National ITS Architecture Market Package that manages highway traffic at *highway-rail intersections* where operational requirements do not dictate more advanced features (e.g., where rail speeds are greater than 80 mph or 128 km/h). Both passive (e.g., the crossbuck sign) and active warning systems (e.g., flashing lights and gates) are supported.

standard urban bus — see *bus, standard urban*.

standees — the number of standing passengers on a transit vehicle.

standing capacity — see *capacity, standing*.

station — **1.** An off-street facility (typically) where passengers wait for, board, alight, or transfer between transit units (vehicles or trains). A station usually provides information and a waiting area and may have boarding and alighting platforms, ticket or farecard sales, fare collection, and other related facilities; also known as a *passenger station*. **2.** The location to which operating employees report and from which their work originates. **3.** In transportation planning, the location along a cordon line at which interviews are made. **4.** In railroad operations, a place designated in the timetable by name, at which a train may stop for traffic or to enter or leave the main track, or from which fixed signals are operated.

station, accessible — a public transportation passenger facility that provides ready access, is usable, and does not have physical barriers

that prohibit and/or restrict access by individuals with disabilities, including individuals who use wheelchairs.

station, all-stop — in transit systems with skip-stop schedule or express service, a station that is served by all scheduled transit units (vehicles or trains).

station, cornfield — a transit station provided in a relatively undeveloped area, to allow for low-cost parking, to protect against future increases in land costs once the area develops, and/or to allow the planned development of transit-oriented uses around the station.

station, off-line — a station at which a transit unit (vehicle or train) stops outside the main track or travel lane so that other units can pass while passengers board and alight; found on a few automated guideway transit systems and busways.

station, on-line — a station in which transit units (vehicles or trains) stop on the main track or travel lane. This is the common design, and the term is used only to distinguish this station from off-line stations.

station, passenger — see *station*.

station accessibility — see *accessibility, station*.

station platform — see *platform, passenger*.

stinger — a portable cable to connect electric rail vehicles to traction power while in the workshop.

stock, rolling — see *fleet*.

stop, far-side — a transit stop located beyond an intersection. It requires that transit units (vehicles or trains) cross the intersection before stopping to serve passengers.

stop, mid-block — a transit stop located at a point away from intersections.

stop, near-side — a transit stop located on the approach side of an intersection. The transit units (vehicles or trains) stop to serve passengers before crossing the intersection.

stop, off-line — see *station, off-line*.

stop, on-line — see *station, on-line*.

stop, terminal — a transit stop located at either end of a transit route or line.

stop, transit — an area where passengers wait for, board, alight, and transfer between transit units (vehicles or trains). It is usually indicated by distinctive signs and by curb or pavement markings and may provide service information, shelter, seating, or any combination of these. Stops are often designated by the mode offering service, for example, bus stop, car stop.

stopped time — see *time, stopped*.

stored-value card — a magnetic striped or smart (electronic) farecard, purchased with a set monetary value, from which the cost of each trip is decremented, see also *fare collection system, automatic* and *smart card*.

street — see *highway, street, or road*.

street, bus-only — a street devoted to bus traffic only.

street, mixed mode — a street carrying mixed traffic, that is, having no exclusive transit lanes or priority lanes for transit.

street, transit — a street reserved for transit vehicles only.

streetcar — an electrically powered rail car that is operated singly or in short trains in mixed traffic on track in city streets. In some areas, it is also known as a *trolley car* and, primarily in Europe and Australia, as a *tram*.

streetcar, heritage — an old streetcar or streetcar built to resemble an older vehicle, electrically operated on rail tracks, generally in downtown areas, for local distribution and tourists. Not to be confused with rubber-tired replica streetcars (see *bus, trolley replica*). Also known as a *vintage streetcar* or *vintage trolley*.

streetcar, vintage — see *streetcar, heritage*.

streetcar, low-floor — a streetcar with low floor for level boarding and exiting. Floor is typically 12-14 in. (300-350 mm) high requiring a platform or raised curb at this height. Wheelchair access is provided directly or by a hinged or removable bridge plate.

streetcar, partial low-floor — a low-floor streetcar with steps or ramps to access high-floor area(s) over trucks and/or any articulations. In this way conventional trucks and propulsion equipment can be used; sometimes termed *hybrid low-floor*.

streetcar operator — see *operator, train*.

streetcar, replica — see *bus, trolley replica*.

streetcar system — see *transit system, streetcar*.

street furniture — equipment placed on the street (off the vehicle lanes), such as lights, benches, signs, bus shelters, kiosks, and plants in containers.

street railway — early term for streetcar system. see *transit system, streetcar*.

street supervisor — see *inspector*.

strip, median — see *median*.

structure, aerial — see *aerial structure*.

structure, fare — see *fare structure*.

structure, route — see *route structure*.

stub terminal — see *terminal, stub*.

study, origin-destination — see *origin-destination study*.

subscription bus service — see *service, subscription bus*.

subscription van service — see *service, subscription van*.

subsidized taxi service — see *service, subsidized taxi*.

sub-station — see *electric sub-station*.

suburb — see definition of *area, urbanized*.

suburban coach or suburban transit bus — see *bus, suburban transit*.

subway — 1. That portion of a transportation facility or system that is constructed beneath the ground surface, regardless of its method of construction. 2. An underground rail rapid transit system or the tunnel through which it runs. 3. In local usage, sometimes used for the entire heavy rail or rapid transit system, even if it is not all beneath the ground surface.

subway car — see *car, rail rapid transit*.

superelevation — 1. In track construction, the vertical distance that the outer rail is set above the inner rail on a curve, expressed as the vertical distance of the outer rail over the inner rail or as the transverse grade percent. Permits increased operating speed on curves,

station, all-stop—superelevation

supervision, train—
telecommuting

cannot exceed a maximum, typically 10%, to allow for trains that may stop or operate at below design speed on the curve. **2.** In highway construction, the banking of the roadway on a curve.

supervision, train — see *automatic train supervision*.

supervisor, road, route, or street — see *inspector*.

supported monorail — see *transit system, monorail*.

surface lift — a ropeway on which passengers are propelled by means of a circulating overhead wire rope while remaining in contact with the ground or snow surface. Connection between the passengers and the wire rope is by means of a device attached to, and circulating with, the haul rope, known as a “towing device.”

survey, customer satisfaction — survey used to help transit operators identify the quality of service factors of greatest importance to customers; can identify areas and trends of existing passenger satisfaction and the degree to which particular factors influence customer satisfaction.

survey, passenger environment — survey in which trained checkers travel through the transit system and rate trip attributes (such as vehicle cleanliness and audibility of station announcements) to provide a quantitative evaluation of factors that passengers would think of qualitatively.

survey, travel — the collection of data that describe the social, economic, and travel characteristics of people who make trips by various modes of transportation.

suspended monorail — see *transit system, monorail*.

switch — **1.** The movable rails of a turnout that divert the wheels of passing rolling stock from one track to either one of two branching from it. **2.** To move rail cars from one place to another within a defined territory, such as an industry, a yard, or a terminal.

switch, track — see *turnout*.

switch throw and lock time — see *time, switch throw and lock*.

symmetrical monorail — see *transit system, monorail*.

synchronous motor — see *motor, synchronous*.

synfuel or synthetic fuel — see *fuel, synthetic*.

system — see *operator and property*.

system, automated highway — see *automated highway system*.

system, automatic train control — see *automatic train control system*.

system, automatic train stop — see *automatic train stop system*.

system, automatic vehicle location — see *automatic vehicle location system*.

system, bus priority — see *bus priority system*.

system, catenary — see *catenary system*.

system, command and control — see *command and control system*.

system, control — see *control system*.

system, fare collection — see *fare collection system*.

system, honor — see *fare collection system, self-service, barrier free*.

system, performance measurement — see *performance measurement system*.

system, propulsion — see *propulsion system*.

system, transit — see *transit system*.

system, transportation — see *transportation system*.

system, trolley — see *transit system, streetcar*.

system effectiveness — system effectiveness is the probability that the system can successfully meet a proper operational demand within a prescribed acceptable time when operated under specified conditions.

system management, transportation — see *transportation system management*.

system performance — see definition of *level of service*.

system planning — in transportation, a procedure for developing an integrated means of providing adequate facilities for the movement of people and goods, involving regional analysis of transportation needs and the identification of transportation corridors involved.

system safety — the application of Operating, Technical, and Management techniques and principles to the safety aspects of a system throughout its life to reduce hazards to the lowest level possible through the most effective use of available resources.

system safety engineering — the application of scientific and engineering principles during the design, development, manufacture and operation of a system to meet or exceed established safety goals.

T TCRP — Transit Cooperative Research Program.

TDM — Transportation Demand Management.

TEA-21 — Transportation Efficiency Act for the 21st Century. See *legislation, TEA-21*.

TRB — Transportation Research Board; see *organizations, Transportation Research Board*.

TRIS — Transportation Research Information Services.

TSM — Transportation System Management.

TTS — timed transfer system.

TVM — ticket vending machine.

TWU — Transport Workers Union; see *union, transit*.

target point — a continually advancing or fixed stopping point in a moving-block signaling system at which a train must always be able to stop under the most adverse conditions, including partial braking failure. See *control system, moving-block*.

taxicab — a passenger automobile or a specially designed vehicle driven by a professional driver in a for-hire taxi.

taxicab service — see *service, taxicab*.

taxi service, subsidized — see *service, subsidized taxi*.

telecommuting — the substitution, either partially or completely, of transportation to a conventional office through the use of computer and telecommunications

technologies (e.g., telephones, personal computers, modems, facsimile machines, electronic mail).

terminal — 1. The end station or stop on a transit line or route, regardless of whether special facilities exist for reversing the vehicle or handling passengers; also known as a *terminus*. 2. An assemblage of facilities provided by a railroad or intercity bus service at a terminus or at an intermediate location for the handling of passengers and the receiving, classifying, assembling, and dispatching of trains or dispatching of buses; also known as a *depot*.

terminal, off-street — a transit terminal or turnaround point for transit vehicles that is located away from other vehicular traffic.

terminal, stub — a dead-end terminal in which the entering rail (or other guided) transit unit must depart by the same guideway on which it entered. Because no loop is provided, a bidirectional transit unit (vehicle or train) is necessary.

terminal layout sheet — see *sheet, terminal layout*.

terminal stop — see *stop, terminal*.

terminal time — see *time, terminal*.

terminus — see *terminal*.

territory, train control — see *train control territory*.

theoretical line capacity — see *capacity, theoretical line*.

third rail — see *rail, third*.

third-rail shoe — a graphite sliding contact attached to the trucks of electric rail vehicles for the purpose of collecting current from the third-rail distribution system; uses gravity or spring pressure.

throughput — 1. The volume of vehicles passing or people transported past a point or series of points during a given period of time. 2. Traffic.

through routing — the efficient practice of joining the ends of radial transit routes, with similar demand, to travel through downtown instead of having each route turn back in the downtown and return to its origin.

ticket — 1. A printed card or piece of paper that gives a person a specific right to ride on a train or transit vehicle. 2. To provide a ticket or tickets.

ticket, commutation — see *commutation ticket*.

tie — see *crosstie*.

time, access — the time elapsed on a trip from the moment of leaving the point of origin (i.e. home or work) to the moment of boarding a vehicle.

time, clearance — all time losses at a stop other than passenger dwell times. It can be viewed as the minimum time between one transit vehicle leaving a stop and the following vehicle entering, including any delay associated with waiting for a sufficient gap in traffic to allow a transit vehicle to re-enter the travel lane.

time, close-in — the minimum time from when a train starts to leave the most restrictive station until the following train can berth at that station (without speed restrictions or stops).

time, deadhead (not-in-service time) — time spent moving a revenue vehicle in non-revenue service.

time, delay — the amount of time by which a transit unit (vehicle or train) in service is delayed from its scheduled time.

time, dwell — the time a transit unit (vehicle or train) spends at a station or stop, measured as the interval between its stopping and starting.

time, egress — the time elapsed on a trip from the moment of alighting from a vehicle to the moment of arriving at the point of destination.

time, excess — time delay associated with travel to or between major transit routes, for example, time spent walking, waiting, or transferring.

time, layover (recovery time, relay time, spot time, turnaround time) — time built into a schedule between arrivals and departures, used for the recovery of delays and preparation for the return trip. The term may refer to transit units (also known as *vehicle layover*) or operators. Note that layover time may include recovery time and operator rest time as two specific components.

time, linked trip (overall travel time, total travel time) — in transportation planning, the time duration of a linked trip, that is, from the point of origin to the final destination, including waiting and walking time at transfer points and trip ends.

time, not-in-service — see *time, deadhead*.

time, operating — the actual time required for a transit unit (vehicle or train) to move from one point to another, including making stops.

time, overall travel — see *time, linked trip*.

time, passenger flow, passenger service — the average time a single passenger takes to pass through a transit vehicle doorway when boarding or alighting, includes any fare collection time.

time, platform — 1. The time a transit unit is in revenue service. 2. The period during which an operator is charged with the operation or care of a transit unit (vehicle or train), including operating time in revenue service and deadhead, layover, and other time that the unit may be in operation but not in passenger service. 3. The time the operator is actually on the assigned transit unit; also known as *work time*.

time, recovery — see *time, layover*.

time, response — in demand-responsive operations, the time between a passenger's request for service and the passenger pickup.

time, running — the actual time required for a transit unit (vehicle or train) to move from one point to another, excluding time for stops.

time, slack — see *operating margin*.

time, stopped — time on a trip spent stationary because of the stoppage of other traffic.

time, switch throw and lock — the time required for the *points* of a rail switch to move from being lined for one direction of travel to being lined for the alternative direction of travel, including any time

terminal—time, switch throw and lock

time, terminal—track miles, service

needed for the points to be safely locked into the new position.

time, terminal — 1. For passengers, the time required at the ends of trips to park and pick up their private vehicles, including any necessary walking time. 2. For rail vehicles, the time allowed at a terminal between arrival and departure for turning vehicles, recovering delays, and preparing for the return trip. 3. The time required for a passenger to pass through a terminal when there is a change of mode.

time, total travel — see *time, linked trip*.

time, transfer — the time required to effect a change of mode or to transfer between routes or lines of the same mode. In transportation modeling this time is weighted, typically by a factor of 1.5.

time, trip — see *time, linked trip*; and *time, unlinked trip*.

time, turnaround — see *time, layover*.

time, unlinked trip — in planning, the time duration of an unlinked trip, that is, one made on a single vehicle.

time, wait — the time spent waiting for a transit vehicle.

time, weighted — a measure of travel time where certain components (e.g., wait time) are factored upward, see also *time, transfer*.

time, work — see *time, platform*.

timed connection or transfer — see *transfer, timed*.

timed transfer focal point — see *hub*.

timed transfer system — a transit network consisting of one or more nodes (transit centers) and routes or lines radiating from them. The system is designed so that transit vehicles on all or most of the routes or lines are scheduled to arrive at a transit center simultaneously and depart a few minutes later; thus transfers among all the routes and lines involve virtually no waiting. Typically used in suburban areas and for night service where headways are long. Transit centers (also known as *timed transfer focal points* or *hubs*) are ideally located at major activity centers, see also *hub*.

time-of-day fare — see *fare, time-of-day*.

time-of-day pricing — see *pricing, time-of-day*.

time point (timepoint) — a point on a line or route for which the time that transit units (vehicles or trains) are scheduled to pass is specified; usually, the leaving time is used.

time window — a period of time before and after a scheduled demand-responsive trip arrival in which the vehicle will arrive. If the vehicle arrives within that window, it is considered “on time.” Time windows are used because the unpredictability of traffic and the shared-ride nature of DRT service make it difficult to predict the exact vehicle arrival time.

timetable — 1. Usually refers to a printed schedule for the public. 2. A listing of the times at which transit units (vehicles or trains) are due at specified time points; also known as a *schedule*. 3. In railroad operations, the authority for the movement of regular trains subject to the rules. It contains classified schedules with special instructions for the movement of trains and locomotives.

token — 1. A pre-paid, non-monetary stamped piece used in payment for transit service, usually one trip, usually metal, sometimes plastic, sometimes with punched-out center or bi-metal to deter forgery. 2. An object allowing a train operator possession of a single track section of line, handed-off to a signalman or the operator of the opposing train.

total bus mile equivalents — the number of vehicle miles that would have been operated by a transit mode if the service had been provided by motor buses. Based on average seating plus standing capacity of the vehicle as compared with the capacity including standees (typically 65-75 people) of a standard-size motorbus.

total operating revenue — see *revenue, total operating*.

total travel distance — see *distance, linked trip*.

total travel time — see *time, linked trip*.

total vehicle capacity — see *capacity, vehicle*.

towing device — a carrier, fixed or detachable, used on surface lifts and tows to pull passengers. Classification or description is by the device configuration and action of the extension element (i.e., handle, button, J-bar, T-bar, platter, etc.).

track — 1. An assembly of rails, supporting ties, and fastenings over which rail vehicles travel. 2. A linear cam or way that physically guides (and usually supports) any matching vehicle used for transportation. 3. The width of a wheeled vehicle from wheel to wheel, usually measured between the outsides of the rims. 4. The distance between the centers of the tread of parallel wheels, as of an automobile.

track brake — see *brake, track*.

track cable — see *cable, track*.

track car — see *car, track*.

track circuit — an electrical circuit that makes use of both rails to detect train occupancy of the track and, in response, to actuate signals, train control devices, and grade crossing protective equipment.

track crossing — see *crossing, track*.

track, double — a section of rail right-of-way where two parallel tracks are provided (i.e., four running rails).

track gauge — see *gauge, track*.

track, passing — see *siding*.

track, pocket — see *pocket track*.

track, side — see *siding*.

trackless trolley — trolleybus, mainly East Coast usage, see *trolleybus*.

track miles (track kilometers) — the sum of the one-way linear miles (kilometers) of all trackage in a system, including all main track and trackage in yards, car barns, switches, and turnouts.

track miles, revenue (revenue track kilometers) — the number of miles (kilometers) of track used in passenger-carrying service.

track miles, service (service track kilometers) — the number of miles (kilometers) of track used exclusively in non-revenue service.

track separation — the distance between tracks. Significant in calculating terminal layover time at turnbacks and junctions.

track special work — see *trackwork, special*.

track switch — see *turnout*.

track trip — a device that is located near the track and interconnected with the signal system so that it triggers the emergency brakes of any train that passes when the signal is red.

trackless trolley — trolleybus, mainly East Coast usage, see *trolleybus*.

trackwork — the rails, switches, frogs, crossings, fastenings, pads, ties, and ballast or track-support slab over which rail cars are operated.

trackwork, special (track special work) — all rails, track structures, and fittings, other than plain unguarded track, that is neither curved nor fabricated before laying.

traction — 1. Colloquial term for all electric transit. 2. Grip of wheel on rail or tire on road.

traction motor — see *motor, traction*.

traction interlock, traction safety interlock — in rail transit, a series circuit of electrical switches at each door that prohibit a train from starting unless all passenger doors are closed and locked.

traction pole — pole, mast, or standard supporting electric overhead for streetcars and trolleybuses, sometimes other electric traction modes.

traction sub-station — see *electric sub-station*.

tractive effort (tractive force) — the force exerted by a locomotive or other powered vehicle on its driving wheels. It is equal to the weight on the driving wheels times the coefficient of adhesion.

trade union — see *union*.

traffic, annual average daily (AADT) — daily traffic that is averaged over a calendar or fiscal year.

traffic, annual average weekday (AAWDT) — daily traffic that is averaged over a calendar or fiscal year and that includes only weekdays (Mondays through Fridays). It may also exclude holidays.

traffic, average daily (ADT) — the average number of vehicles that pass a specified point during a 24-hour period.

traffic, mixed (mixed flow traffic) — traffic that contains different vehicle categories or different modes.

traffic, passenger — see *passenger flow*.

traffic assignment — see *trip assignment*.

traffic checker — see *checker*.

traffic control device, grade crossing — see *grade crossing traffic control device*.

traffic control system, centralized — see *control system, centralized traffic*.

traffic count — a record of the number of vehicles, people aboard vehicles, or both, that pass a given checkpoint during a given time period. It may be classified by type of vehicle. See also *count*.

traffic operations, mixed — see *mixed traffic operations*.

traffic signal — a traffic control device that allocates time among conflicting traffic

movements that seek to use the same space; uses combinations of green, yellow, and red indications.

trailer car — see *car, trailer*.

train — 1. Two or more transit vehicles physically connected and operated as a unit; see also *transit unit*. 2. One or more locomotives or self-propelled rail cars, with or without other cars but with marker lights.

train, bad order — a train that is in need of repair.

train, local — a train that stops at every station on the line; see also *service, local*.

train, push-pull — a locomotive and a set of cars equipped with one or more cab cars from which the locomotive can be controlled. The train is either pulled and controlled from the locomotive in the conventional manner or pushed by the locomotive and controlled from the leading car.

train berth — in rail operations, the space designated for a train of given length to occupy when it is stopped at a station platform, in a terminal, on a transfer track, or at some other designated place.

train control — see *automatic train control system*.

train control system, manual — see *control system, manual train*.

train control territory — the portion of a railroad division or district that is equipped with an automatic train control system.

train density — 1. The number of trains that can be operated safely over a segment of railroad in each direction during a 24-hour period. 2. The average number of trains that pass over a specified section of railroad in a specified period. In rail transit, usually expressed in trains per hour.

trainlined brake — see *brake, continuous*.

train operation — the way in which a train is operated, for example, automatic with automatic overspeed control, or manual with either automatic or manual speed control, or skip-stop.

train operation, automatic — see *automatic train operation*.

train operator — see *operator, train*.

train performance — see *performance, train*.

train protection, automatic — see *automatic train protection*.

train separation — in a train signaling system, the minimum distance between trains for a train to come to a complete stop, with a suitable safety margin between it and the train ahead.

train stop system, automatic — see *automatic train stop system*.

train supervision, automatic — see *automatic train supervision*.

tram — see *streetcar*.

tramway — see *transit system, streetcar*.

tramway, aerial — see *aerial tramway*.

transfer — 1. A passenger's change from one transit unit (vehicle or train) or mode to another transit unit or mode. 2. A slip of paper, card, or other instrument issued to passengers (either free or with a transfer fee) that gives the right to change from one transit unit or mode to another according to certain

track separation—transfer

transfer, free—transit system, accessible

rules that may limit the direction of travel or the time in which the change may be made.

transfer, free — a transfer that requires no additional payment.

transfer, paid — a transfer that requires an additional payment (*transfer fee*), either at the time of purchase or at the time of boarding another transit unit (vehicle or train).

transfer, paid area — a transfer in a controlled area, within which all patrons will have paid a fare, that allows boarding of transit units (vehicles or trains) through all doors, without fare inspection — most notably in Toronto.

transfer, timed — 1. A transfer that is valid only for a specified time. 2. The scheduling of intersecting transit routes so that they are due to arrive at a transfer point simultaneously, eliminating waiting time for transfer passengers; also known as a *timed connection*. See also *timed transfer system*.

transfer center — see *transit center*.

transfer facility, intermodal — see *transit center*.

transfer fee — see definition of *transfer, paid*.

transfer passenger — see *passenger, transfer*.

transfer penalty — a time value representing additional disutility associated with transferring between transit routes or services beyond passenger-perceived differences in transfer and in-vehicle time.

transfer surcharge — see *transfer, paid*.

transfer time — see *time, transfer*.

transit, mass or public — see *public transit*.

transit accessibility — see *accessibility, transit*.

transit agency or authority — see *transit district*.

transit bus — see *bus, standard urban*; and *bus, suburban transit*.

transit car — see *car, rail rapid transit*.

transit center — a transit stop or station at the meeting point of several routes or lines or of different modes of transportation. It is located on or off the street and is designed to handle the movement of transit units (vehicles or trains) and the boarding, alighting, and transferring of passengers between routes or lines (in which case it is also known as a *transfer center*) or different modes (also known as a *modal interchange center*, *intermodal transfer facility* or an *hub*).

Transit Cooperative Research Program — a major transit research program provided for in the Intermodal Surface Transportation Efficiency Act of 1991 and established by the Federal Transit Administration in 1992. The program is administered by the Transportation Research Board on behalf of the Federal Transit Administration and the American Public Transportation Association. The program emphasizes the distribution of research information for practical use.

transit dependent — having to rely on transit services instead of the private automobile to meet one's travel needs; see also *rider, captive*; *rider, captive transit*; and *transportation disadvantaged*.

transit district — a geographical or political division created specifically for the single purpose of providing transportation services. It is a separate legal entity and usually

possesses the authority to impose a property tax. Transit agencies can directly operate transit service or contract out for all or part of the total transit service provided. Such political divisions may also be known as a *transit agency* or *transit authority*; see also *property*.

transit facilities, exclusive — see *exclusive transit facilities*.

Transit Fixed-Route Operations — National ITS Architecture Market Package that performs automatic driver assignment and monitoring, as well as vehicle routing and scheduling for fixed-route services.

transit lane, exclusive or reserved — see *lane, exclusive transit*.

Transit Maintenance — National ITS Architecture Market Package that supports automatic maintenance scheduling and monitoring.

transit mall — see *street, transit*.

transit mode — see *mode, transit*.

Transit Passenger and Fare Management — National ITS Architecture Market Package that allows for the management of passenger loading and fare payments on-board vehicles using electronic means. The payment instrument may be either a stored value or credit card.

transit performance measure — a quantitative or qualitative factor used to evaluate a particular aspect of transit service. See *quality of service*.

transit priority measures — a blanket term for measures such as *busways*, *queue jumpers*, *signal preemption*, etc. that give transit vehicles priority over other road users.

Transit Security — National ITS Architecture Market Package that provides for the physical security of transit passengers. An on-board security system is deployed to perform surveillance and warn of potentially hazardous situations. Public areas (e.g., stops, park-and-ride lots, stations) are also monitored.

transit service measure — a quantitative performance measure that best describes a particular aspect of transit service and represents the passenger's point of view. See *quality of service*.

transit shelter — a building or other structure constructed at a transit stop. It may be designated by the mode offering service, for example, *bus shelter*. A transit shelter provides protection from the weather and may provide seating or schedule information or both for the convenience of waiting passengers.

transit stop — see *stop, transit*.

transit street — see *street, transit*.

transit-supportive area — see *area, transit-supportive*.

transit system — the facilities, equipment, personnel, and procedures needed to provide and maintain public transit service.

transit system, accessible — a transit system that can transport any mobile person, including those who are physically disabled, and in which the vehicles and stops or stations are designed to accommodate patrons who are confined to wheelchairs.

transit system, automated guideway (automated guideway transit, AGT) — A transportation system in which automated, driverless vehicles operate on fixed guideways with exclusive right-of-way.

transit system, bus rapid (bus rapid transit, BRT) — an inexact term describing a bus operation providing service similar to rail transit, at a lower cost. BRT systems are characterized by several of the following components: exclusive transitways, enhanced stations, easily identified vehicles, high-frequency all-day service, simple route structures, simplified fare collection, and ITS technologies. Integrating these components is intended to improve bus speed, reliability, and identity.

transit system, commuter rail — The portion of passenger railroad operations that carries passengers within urban areas, or between urban areas and their suburbs, but differs from rail rapid transit in that the passenger cars generally are heavier, the average trip lengths are usually longer, there are few standing passengers, and the operations are carried out over tracks that are part of the railroad system in the area. In some areas it is called *regional rail*.

transit system, diesel light rail (DLR) — A rail transit system similar to *light rail*, but with trains drawing power from diesel engines, rather than from overhead electric wires, and often using freight tracks for a portion of the route. DLR systems differ from commuter rail in that the vehicles used are not FRA-compliant in terms of crashworthiness, and therefore must be separated from freight operations in either space (separate trackage) or time (freight movements only allowed during times when the DLR system is not operating).

transit system, dual-mode — a broad category of systems wherein vehicles may be operated in both of two different types of operation or propulsion, for example, manually steered and guided, on highways and on guideways, or with diesel and electric traction.

transit system, fixed guideway — 1. A transportation system composed of vehicles that can operate only on their own guideways, which were constructed for that purpose. Examples are heavy rail, light rail, and monorail. 2. Federal usage of the term in funding legislation also includes bus priority lanes, exclusive right-of-way bus operations, trolley coaches, and ferryboats as fixed guideway transit.

transit system, group rapid (GRT) — an automated guideway transit system that uses medium-sized vehicles operating automatically as single units or coupled trains on exclusive rights-of-way with special guideways. The vehicles are usually rubber tired and electrically propelled. The systems are sometimes referred to as *people-mover systems* but the preferred term is *automated guideway transit*.

transit system, heavy rail — see *transit system, rail rapid*.

transit system, interurban — electric rail transit service between cities and towns, often running on-street within towns. Once common in North America, the Chicago,

South Shore & South Bend is the only remaining system.

transit system, light rail (LRT) — as defined by the TRB Subcommittee on Light Rail Transit, “a metropolitan electric railway system characterized by its ability to operate single cars or short trains along exclusive rights-of-way at ground level, on aerial structures, in subways, or occasionally, in streets, and to board and discharge passengers at track or car floor level.” Automated systems sharing some characteristics of heavy rail are often called *advanced light rail systems*. See also *transit system, diesel light rail*.

transit system, light rail, dual-mode — light rail transit with operation extended over railroad trackage that is shared with other trains. First examples in Karlsruhe and Saarbrücken, Germany, with cars equipped to operate at 750 volts DC and 15,000 volts AC.

transit system, light rail rapid — A Buffalo-only designation referring to a subway system with light rail type equipment and operation on a downtown mall.

transit system, major activity center (MAC system) — a transit system that provides service for short trips within small, densely populated major activity centers, such as shopping centers and downtown areas.

transit system, monorail — a transit system consisting of vehicles supported and guided by a single guideway (rail or beam), usually elevated. The basic types are *supported or straddle*, in which vehicles straddle the guideway or are laterally supported by it; and *suspended*, in which vehicles hang directly below the guideway (*symmetrical monorail*) or to one side of it (*asymmetrical monorail*).

transit system, personal rapid (PRT) — a theoretical concept for an automated guideway transit system that would operate small units (two to six passengers) under computer control over an elaborate system of guideways. Off-line stations would provide demand-responsive service (except, perhaps, during peak periods) with very short headways with travel between origin and destination stations without stopping. Only system with some of these features is in Morgantown, West Virginia.

transit system, pre-metro — a light rail transit system designed with provisions for easy conversion to heavy rail (rail rapid transit).

transit system, publicly owned — a transit system owned by any municipality, county, regional authority, state, or other governmental agency, including a system operated or managed by a private company under contract to the government agency owner.

transit system, rail — any of the family of transit modes with rail technology, see adjacent listings.

transit system, rail rapid (heavy rail, rapid rail) — a transit system using trains of high-performance, electrically powered rail cars operating in exclusive rights-of-way, usually without grade crossings, with high platform stations. The tracks may be in underground

transit system, AGT—transit system, rail rapid

transit system, rapid—
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tunnels, on elevated structures, in open cuts, at surface level, or any combination thereof. Some local terms used are *elevated*, *the el*, *the "L,"* *the rapid*, *the subway*, *metro*, (*for metropolitan railway*), *underground* (British), and *U-Bahn* (Untergrundbahn) and *Stadtbahn* (German). (Note that *Stadtbahn* is distinct from *S-Bahn*, which is generally a commuter rail type operation.)

transit system, rapid — transit service which is operated completely separate from all other modes of transportation. The term “rail rapid transit” frequently refers both to operation of light rail transit vehicles over exclusive right-of-way and heavy rail transit vehicles; the term “bus rapid transit” refers to operation of motor buses over exclusive bus roads or busways.

transit system, semi-metro — a light rail transit system that uses exclusive right-of-way for much of its length, usually at surface grade but occasionally in tunnels or on aerial structures. Also similar to *transit system, pre-metro* — built for later conversion to heavy rail. Particular to several European countries and now little used.

transit system, shuttle — a transit system that is characterized by a back-and-forth operation, usually over a short distance.

transit system, streetcar (street railway, tramway, trolley) — a street transit system consisting of electrically powered rail vehicles operating in single or multiple-unit, mostly on surface streets with mixed traffic.

transit system availability — a measure of the capability of a transit system to be used by potential passengers, including such factors as the hours the system is in operation, route spacing, and accessibility to persons with disabilities.

Transit Traveler Information — National ITS Architecture Market Package that provides transit users at transit stops and on-board transit vehicles with ready access to transit information. The information services include transit stop annunciation, imminent arrival signs, and real-time transit schedule displays that are of general interest to transit users. Systems that provide custom transit trip itineraries and other tailored transit information services are also represented by this market package.

transit union — see *union, transit*.

transit unit — one or more transit vehicles coupled and operated together. The term includes single vehicles (bus, rail, or other guideway) and multi-car trains (rail or other guideway).

transit unit, bidirectional or double-ended — see *double-ended transit unit*.

Transit Vehicle Tracking — National ITS Architecture Market Package that provides for an AVL system to track the transit vehicles’ real-time schedule adherence and updates the transit system’s schedule in real-time.

transitway — A dedicated right-of-way or roadway used by transit vehicles (buses or trains). Sometimes used, as in Ottawa, as a synonym for *busway*.

transmission-based control system — see *control system, moving block*.

transponder — electronic device designed to store information. Electronic readers access the information stored on these devices for such functions as toll collection, trucking activities, and transit signal priority.

transport, conventional rail — see *conventional rail transport*.

Transport Workers Union — see *union, transit*.

transportation, department of — see *organizations, department of transportation; and U.S. Government, Department of Transportation*.

transportation, intercity — see *intercity transportation*.

transportation, mass — see *mass transportation*.

transportation, private — see *private transportation*.

transportation, public — see *public transportation*.

transportation, purchased — see *purchased transportation*.

transportation, urban public — see *urban public transportation*.

transportation demand management (TDM) — the concept of managing or reducing travel demand rather than increasing the supply of transportation facilities. It may include programs to shift demand from single-occupant vehicles to other modes such as transit and ridesharing, to shift demand to off-peak periods, or to eliminate demand for some trips.

transportation disadvantaged (low-mobility group) — people whose range of transportation alternatives is limited, especially in the availability of relatively easy-to-use and inexpensive alternatives for trip making. Examples include the young, the elderly, the poor, persons with disabilities, and those who do not have automobiles. See also *transit dependent; rider, captive; and rider, captive transit*.

transportation facilities — see *accessible transportation facilities*.

transportation improvements, low — capital — see *low-capital transportation improvements*.

transportation interface — the point or facility at which two or more modes of transportation meet or at which two or more transit system routes or lines meet.

transportation modeling system, urban — see *urban transportation modeling system*.

transportation planning process, urban — see *urban transportation planning process*.

Transportation Research Board — see *organizations, Transportation Research Board*.

Transportation Research Information Services (TRIS) — a national network of transportation research information services developed by the Transportation Research Board. TRIS consists of the Air Transport Information Service, Highway Research Information Service, Maritime Research Information Service, Railroad Research Information Service, and Urban Mass Transportation Research Information Service.

Transportation Study, Nationwide Personal — see *Nationwide Personal Transportation Study*.

transportation system — **1.** A system that provides for the movement of people, goods, or both. **2.** A coordinated system made up of one or several modes serving a common purpose, the movement of people, goods, or both.

transportation system, demand-actuated — see *transportation system, demand-responsive*.

transportation system, demand-responsive (demand-actuated transportation system, demand-response transportation system) — passenger cars, vans or buses with fewer than 25 seats operating in response to calls from passengers or their agents to the transit operator, who then dispatches a vehicle to pick up the passengers and transport them to their destinations. A demand-responsive operation is characterized by the following:
(a) The vehicles do not operate over a fixed route or on a fixed schedule except, perhaps, on a temporary basis to satisfy a special need; and (b) typically, the vehicle may be dispatched to pick up several passengers at different pick-up points before taking them to their respective destinations and may even be interrupted en route to these destinations to pick up other passengers. The following types of operations fall under the above definitions provided they are not on a scheduled fixed-route basis: many origins-many destinations, many origins-one destination, one origin-many destinations, and one origin-one destination.

transportation system, dial-a-ride — a demand-responsive system in which curb-to-curb transportation is provided to patrons who request service by telephone, either on an ad hoc or subscription basis. It is also known as dial-a-bus when buses are the vehicles used.

transportation system, fixed-route — service provided on a repetitive, fixed-schedule basis along a specific route with vehicles stopping to pick up and deliver passengers to specific locations; each fixed-route trip serves the same origins and destinations, unlike demand response. Includes route deviation service, where revenue vehicles deviate from fixed routes on a discretionary basis.

transportation system, jitney — public transportation rendered in small or medium-sized vehicles that are licensed to render that service at a fixed rate or fare for each passenger. The vehicles operate on fixed routes along public ways, from which they may deviate from time to time in response to a demand for service or to take passengers to their destinations, thereafter returning to the fixed route. The scheduling and organization of this type of system vary among jurisdictions. It is used extensively in cities of developing countries that have inadequate transit service. See also *service, jitney* and *público*.

transportation system, non-fixed route — service not provided on a repetitive, fixed-schedule basis along a specific route to specific locations. Demand response is the only non-fixed-route mode.

transportation system, urban — the system of transportation elements (both private and public) that provides for the movement of people and goods in an urban area. The components include transit systems,

paratransit services, and highway or road systems, including private vehicles and pedestrians.

transportation system management (TSM) — that part of the urban transportation planning process undertaken to improve the efficiency of the existing transportation system. The intent is to make better use of the existing transportation system by using short-term, low-capital transportation improvements that generally cost less and can be implemented more quickly than other system development actions.

trap — in railway cars, a manually raised and lowered floor section that covers the steps at the ends of the car. When raised, the trap allows passengers to use the car steps at stations without high platforms. When lowered, the trap provides nearly level boarding at high platform stations, and keeps passengers out of the step area when the train is in motion.

Travel Demand Management — National ITS Program User Service that supports policies and regulations designed to mitigate the environmental and social impacts of traffic congestion. See also *Transportation Demand Management*.

travel distance — see *trip distance, linked*.

travel survey — see *survey, travel*.

travel time, overall or total — see *time, linked trip*.

travel time difference — the door-to-door difference between automobile and transit travel times, including walking, waiting, and transfer times as applicable. A quality of service measure representing how much longer (or in some cases, shorter) a trip will take by transit.

travel time factor — an empirically determined set of factors in which each factor expresses the effect of one particular travel time increment of trip interchanges between zones.

travel time ratio — the ratio that compares travel times between a pair of points via two different modes or facility types.

Traveler Services Information — National ITS Program User Service that provides a business directory, or “yellow pages,” of service information.

treatment, edge — see *edge treatment*.

treatment, preferential — see *preferential treatment*.

trip — **1.** A one-way movement of a person or vehicle between two points for a specific purpose; sometimes called a *one-way trip* to distinguish it from a round trip. **2.** In rail operations, a mechanical lever or block signal that, when in the upright position, activates a train's emergency braking system. **3.** The movement of a transit unit (vehicle or train) in one direction from the beginning of a route to the end of it; also known as a *run*.

trip, inbound — a trip toward the central urban area, into the central business district, or to a timed transfer point or major activity center.

trip, linked (linked journey, linked passenger trip) — a trip from the point of origin to the final destination, regardless of the number of modes or vehicles used.

transportation system—trip, linked

trip, missed—turnout

trip, missed — demand-responsive transit trip that is scheduled and booked but for which the transit vehicle does not show up. A measure of reliability.

trip, non-home-based — a trip that has neither its origin nor its destination at a residence.

trip, one-way — see *trip*.

trip, outbound — a trip away from the central urban area, out of the central business district, or away from a timed transfer point or major activity center.

trip, passenger — one passenger making a one-way trip from origin to destination.

trip, person — a trip made by a person by any mode or combination of modes for any purpose.

trip, round — the movement of a person or a vehicle from a point of origin to a destination and then back to the same point of origin.

trip, track — see *track trip*.

trip, unlinked — **1.** A trip made in a single vehicle. **2.** The boarding of one transit vehicle in revenue service; also known as an *unlinked passenger trip*. **3.** Any segment of a linked trip.

trip, vehicle — the one-way movement of a vehicle between two points.

trip arm — see *track trip*.

trip assignment (flow distribution, traffic assignment) — in planning, a process by which trips, described by mode, purpose, origin, destination, and time of day, are allocated among the paths or routes in a network by one of a number of models; see also *urban transportation modeling system*.

trip attraction — in transportation planning, the non-home end of a home-based trip or the destination of a non-home-based trip.

trip distance, linked (total travel distance) — the distance traveled on a linked trip, that is, the distance from the point of origin to the final destination, including the walking distance at trip ends and at transfer points.

trip distance, unlinked — the distance traveled on an unlinked trip, for example, a trip on a single vehicle.

trip distribution — in planning, the process of estimating movement of trips between zones by using surveys or models; see also *urban transportation modeling system* and *model, sequential*.

trip end — a trip origin or a trip destination.

trip generation — in planning, the determination or prediction of the number of trips produced by and attracted to each zone; see also *urban transportation modeling system* and *model, sequential*.

trip generator — a land use from which trips are produced, such as a dwelling unit, a store, a factory, or an office.

tripper — **1.** In transit operations, a short piece of work that cannot be incorporated into a full day's run, usually scheduled during peak hours. **2.** In transit operations, a short work schedule for operators, usually 1-3 hours long; for example, during peak periods. **3.** On some transit properties, a short run that is less than 8 hours long. **4.** On some transit properties, a transit service that operates on only a portion of a route, usually at peak hours.

trip productions — in planning, the number of trips, daily or for a specified time interval, that are produced from and return to a given zone, generally the zone of residence. Trip productions can also be defined as the home end of home-based trips or the origin of non-home-based trips.

trip purpose — the primary reason for making a trip, for example, work, shopping, medical appointment, recreation.

trip time — see *time, linked trip* and *time, unlinked trip*.

trolley — **1.** An apparatus, such as a grooved wheel or shoe, at the end of a pole, used for collecting electric current from an overhead wire and transmitting it to a motor of a streetcar, trolleybus, or similar vehicle, where it is used for traction and other purposes. **2.** Colloquial term for streetcar, and in some cities, trolleybus, vintage, and/or replica streetcar (see *bus, trolley replica*).

trolley bus — alternate spelling for *trolleybus*, the single word is recommended.

trolleybus (electric trolleybus, trolley coach, trackless trolley) — an electrically propelled bus that obtains power via two trolley poles from a dual (positive and negative) overhead wire system along routes. It may be able to travel a limited distance using battery power or an auxiliary internal combustion engine. The power-collecting apparatus is designed to allow the bus to maneuver in mixed traffic over several lanes.

trolleybus, articulated — see *articulated bus* or *articulated trolleybus*.

trolley car — see *car, trolley*.

trolley coach — see *trolleybus*.

trolley pole — **1.** A swiveling spring-loaded pole attached on the roof of a trolleybus or streetcar that holds a wheel or sliding shoe in contact with the overhead conductor (which usually takes the form of a thick wire), collects current from it, and transmits the current to the motor on the vehicle, for example, a streetcar or trolleybus. **2.** Inexact reference to traction pole or mast support trolleybus or streetcar overhead contact wiring.

trolley replica bus — see *bus, trolley replica*.

trolley shoe — see *overhead contact shoe*.

trolley system — see *transit system, streetcar*.

trolley wire — see *contact wire*.

truck (bogie, British usage) — in rail transportation, a rail vehicle component that consists of a frame, normally two axles, brakes, suspension, and other parts, which supports the vehicle body and can swivel under it on curves. A truck usually also contains traction motors.

turbine engine — see *engine, turbine*.

turn, short — see *turn back*.

turnaround time — see *time, layover*.

turn back — **1.** In transit operations, to cut short a transit trip (to turn back before reaching the end of the route or line), usually to get back on schedule or to meet peak passenger demands; also known as a *short turn*. **2.** In rail operations, a point along a track at which a train may reverse direction.

turnout — **1.** In rail transportation, the assembly of a switch and a frog with closure

rails by which rolling stock or trains can travel from a track onto either one of two diverging tracks; also known as a *track switch*.
2. A short side track or passage that enables trains, automobiles, and similar vehicles to pass one another. **3.** A short passing lane on a highway.

turnout, bus — see *bus bay*.

turnover, parking — see *parking turnover*.

turnover point — a point along a transit route at which a large proportion of passengers leave and board a transit unit.

turnstile — a mechanical device used to control and/or measure pedestrian entry or exit from an area. It uses a bar that rotates out of the way when a pedestrian presses against it. When used as a fare gate, the bars unlock only after the correct fare has been paid.

turnstile, fare-registering — see *fare-registering fare gate*.

turntable — a circular, rotating mechanical device that allows a rail car to be turned in place to change its direction of travel. It may be motorized, or as in the case of San Francisco's cable cars, require operators to physically push the car to turn it around.

U **UA** — urbanized area; see *area, urbanized*.

UITP — see *organizations, International Union of Public Transport*.

UMTA — Urban Mass Transportation Administration; previous name for FTA, see *U.S. Government, Federal Transit Administration*.

UMTRIS — Urban Mass Transportation Research Information Service.

U.S. DOT — U.S. Department of Transportation; see *U.S. Government, Department of Transportation*.

UTU — United Transportation Union; see *union, transit*.

UZA — used by some to indicate an urbanized area, although the Bureau of the Census uses UA; see *area, urbanized*.

underground — see *transit system, rail rapid*.

unidirectional car — see *car, unidirectional*.

uninterrupted flow — transit vehicles moving along a roadway or track without stopping. This term is most applicable to transit service on freeways or on its own right-of-way.

union, transit — one of the many unions representing various segments of the transit industry's work force. Three major ones in the United States and Canada are the *Amalgamated Transit Union (ATU)*, the *Transport Workers Union (TWU)*, and the *United Transportation Union (UTU)*. Their membership is limited to operators, mechanics, and other non-supervisory employees. A non-affiliated *Independent Canadian Transit Union* has raided older unions and represents some transit systems in Canada, the largest being BC Transit.

unit, basic operating — see *basic operating unit*.

unit, transit — see *transit unit*.

United States Government — see *U.S. Government*.

United Transportation Union — see *union, transit*.

unlimited access — see *access, unlimited*.

unlinked passenger trip — see *trip, unlinked*.

unlinked trip — see *trip, unlinked*.

unlinked trip distance — see *trip distance, unlinked*.

unlinked trip time — see *time, unlinked trip*.

urban ferryboat — see *ferryboat, urban*.

urban fringe — that part of an urbanized area outside the central city or cities.

Urban Mass Transportation Act — see *legislation, Urban Mass Transportation Act of 1964*.

Urban Mass Transportation Administration — see *U.S. Government, Federal Transit Administration*.

Urban Mass Transportation Research Information Service (UMTRIS) — a computer-based information storage and retrieval system developed by the Transportation Research Board under contract to the Federal Transit Administration. It consists of summaries of research projects in progress and abstracts of published works. See also *Transportation Research Information Services*.

urban place — a U.S. Bureau of the Census designated area (less than 50,000 population) consisting of closely settled territory not populous enough to form an urbanized area.

urban public transportation — transportation systems for intraurban or intraregional travel, available for use by any person who pays the established fare. It consists of transit and paratransit.

urban rail car — see *car, urban rail*.

urban transit bus — see *bus, standard urban*.

urban transportation system — see *transportation system, urban*.

urbanized area — see *area, urbanized*.

U.S. Department of Transportation — see *U.S. Government, Department of Transportation*.

user information (service information) — information on fares, stopping places, schedules, and other aspects of service essential to the efficient use of public transit. The term also refers to devices employed to convey such information, including bus stop signs, timetable brochures or books, telephone inquiries, and computerized user-interactive systems.

User Services — services available to users of ITS (drivers, passengers, system operators) as set forth by ITS America.

U.S. Government, Amtrak — see *U.S. Government, National Railroad Passenger Corporation*.

U.S. Government, Department of Energy (DOE) — a cabinet-level federal agency whose responsibilities include improving the energy efficiency of transportation.

U.S. Government, Department of Health, Education, and Welfare (HEW) — a cabinet-level federal agency that provides funds for many specialized transportation services in urbanized and rural areas as part of its social service programs.

U.S. Government, Department of Transportation (DOT) — a cabinet-level

turnout, bus—U.S. Government, Department of Transportation

U.S. Government, Federal Highway Administration—vehicle location system

federal agency responsible for the planning, safety, and system and technology development of national transportation, including highways, mass transit, aircraft, and ports.

U.S. Government, Federal Highway Administration (FHWA) — a component of the U.S. Department of Transportation, established to ensure development of an effective national road and highway transportation system. It assists states in constructing highways and roads and provides financial aid at the local level, including joint administration with the Federal Transit Administration of the 49 USC Section 5311 (formerly Section 18 of the Federal Transit Act) program.

U.S. Government, Federal Railroad Administration (FRA) — an agency of the U.S. government, established in 1966 as part of the U.S. Department of Transportation. It coordinates government activities that are related to the railroad industry.

U.S. Government, Federal Transit Administration (FTA) — a component of the U.S. Department of Transportation, delegated by the Secretary of Transportation to administer the federal transit program under Chapter 53 of Title 49, United States Code and various other statutes. Formerly known as the Urban Mass Transportation Administration.

U.S. Government, National Railroad Passenger Corporation (Amtrak) — an agency created by Congress in 1970 to operate the national railroad passenger system. It also operates commuter rail service under contract, usually to metropolitan transit agencies.

U.S. Government, National Transportation Safety Board (NTSB) — an independent agency of the federal government whose responsibilities include investigating transportation accidents and conducting studies, and making recommendations on transportation safety measures and practices to government agencies, the transportation industry, and others.

U.S. Government, Urban Mass Transportation Administration (UMTA) — former name of the Federal Transit Administration; see *U.S. Government, Federal Transit Administration*.

utilization coefficient — see *load factor*.

V **VKT** — vehicle kilometers of travel; see *vehicle miles of travel*.
VMT — vehicle miles of travel.
validation — the marking of a ticket, pass, or transfer for the purpose of verifying its legitimate use for paid travel, usually giving time and place of marking.

validator — component of ticket vending machine or separate machine that stamps date, time, and sometimes location on pre-purchased ticket or pass to validate or cancel same.

value, default — see *default value*.

van — vehicles having a typical seating capacity of 5 to 15 passengers and classified as a van by vehicle manufacturers. A

modified van is a standard van which has undergone some structural changes, usually made to increase its size and particularly its height. The seating capacity of modified vans is approximately 9 to 18 passengers.

van, subscription — see *service, subscription van*.

vanpool — vans and/or buses seating less than 25 persons operating as a voluntary commuter ride sharing arrangement, which provides transportation to a group of individuals traveling directly between their homes and their regular places of work within the same geographical area. The vans should have a seating capacity greater than seven persons, including the driver. It is a mass transit service operated by a public entity, or in which a public entity owns, purchases, or leases the vehicles. Other forms of public participation to encourage ridesharing arrangements such as the provision of parking spaces, utilization of high-occupancy vehicle (HOV) lanes, and coordination or clearing house service, do not necessarily qualify as public vanpools.

vehicle, accessible — public transportation revenue vehicles which do not restrict access, are usable, and provide allocated space and/or priority seating for individuals who use wheelchairs.

vehicle, active — the vehicles that are available to operate in revenue service, including vehicles temporarily out of service for routine maintenance and minor repairs.

vehicle, articulated rail — see *articulated rail vehicle*.

vehicle, dual-mode — a vehicle that operates both manually on public streets and automatically on an automated guideway. May also be used to describe vehicles with more than one source of power; for example, a bus that can be propelled by a diesel engine or an electric motor.

vehicle, high-occupancy (HOV) — any passenger vehicle that meets or exceeds a certain predetermined minimum number of passengers, for example, more than two or three people per automobile. Buses, carpools, and vanpools are HOV vehicles.

vehicle, light rail — see *car, light rail*.

vehicle, public service — a vehicle used for public passenger transport.

vehicle, revenue — a vehicle used to provide passenger transit service for which remuneration is normally required. It is distinct from non-revenue equipment, which is used to build or maintain facilities, provide supervision, and so on.

vehicle, single-occupant (SOV) — a vehicle occupied by the driver only.

vehicle capacity — see *capacity, vehicle*.

vehicle hours — The hours a vehicle travels while in revenue service (vehicle revenue hours) plus deadhead hours. For rail vehicles, vehicle hours refer to passenger car hours. Vehicle hours exclude hours for charter services, school bus service, operator training and maintenance testing.

vehicle layover — see *time, layover*.

vehicle location system — see *automatic vehicle location system*.

vehicle miles (or kilometers) — the miles a vehicle travels while in revenue service (vehicle revenue miles plus deadhead miles). For rail vehicles, vehicle miles refer to passenger car miles. Vehicle miles exclude miles for charter services, school bus service, operator training and maintenance testing.

vehicle miles, revenue — see *revenue vehicle miles*.

vehicle miles of travel (VMT; vehicle kilometers of travel, VKT) — **1.** On highways, a measurement of the total miles (kilometers) traveled by all vehicles in the area for a specified time period. It is calculated by the number of vehicles times the miles (kilometers) traveled in a given area or on a given highway during the time period. **2.** In transit, the number of vehicle miles (kilometers) operated on a given route or line or network during a specified time period.

vehicle occupancy — the number of people aboard a vehicle at a given time; also known as *auto or automobile occupancy* when the reference is to automobile travel only.

vehicle signal-actuating device — a device to control traffic signals that is activated by vehicles.

vehicle staging lot — see *staging lot, vehicle*.

vehicle trip — see *trip, vehicle*.

velocity (speed) — the distance passed per unit of time, or the rate of change in location relative to time. For transportation vehicles, it is usually measured in miles (kilometers) per hour.

velocity, cruise (cruise speed) — the forward velocity that a vehicle maintains when it is neither accelerating nor decelerating. It is usually less than maximum design speed but can be equal to it.

velocity, effective (average speed) — **1.** The average velocity at which a vehicle travels. For transit vehicles, it includes dwell times at stops or stations, acceleration, and deceleration. **2.** Vehicle miles divided by vehicle hours.

velocity, maximum theoretical — the highest theoretical velocity that a vehicle is physically capable of achieving, usually specified on level, tangent road or track with full service load.

viaduct — see *aerial structure*.

vintage streetcar — see *streetcar, heritage*.

vintage trolley — see *streetcar, heritage*.

voltage, high — in rail transportation, the prime propulsion power voltage supplied by an overhead wire or third rail, usually 550, 650, 750, 1,000, 1,500 and 3,000 volts DC; and 11,000, 15,000, and 25,000 volts AC.

voltage, low — in rail transportation, the voltage used for most auxiliary systems (e.g., illumination, fans, public address systems), usually 24 or 72 volts direct current or 110 to 240 volts alternating current.

voltage drop — the decrease in voltage in a current-carrying conductor.

volume — in transportation, the number of units (passengers or vehicles) that pass a point on a transportation facility during a specified interval of time, usually 1 hour; see also *flow rate*.

volume, design hourly — see *design hourly volume*.

volume, line — see *passenger volume*.

volume, link — see *link volume*.

volume, passenger — see *passenger volume*.

volume, service — see *service volume*.

W **wait assessment** — A measure of headway regularity. Defined as the percentage of transit vehicle arrivals where the actual headway exceeds the scheduled headway by more than 3 minutes.

wait time — see *time, wait*.

walkway, moving — see *moving walkway*.

walk distance — see *distance, walk*.

walking distance — see *distance, walking*.

wake — wave motion that is left behind the path of a moving vessel.

water sheet — the horizontal surface area of the water available for maneuvering and docking or mooring at a shore facility.

water taxi — **1.** A ferry system in which small watercraft serve short cross-waterway or waterway circulation routes. **2.** Ferry service providing personal, demand-responsive service over water, similar to a taxi. **3.** The type of small watercraft used by water taxi systems.

way, bicycle — see *bicycle route*.

way, public — see *public way*.

wayside — along the right-of-way, usually of rail system.

wayside control system — see *control system, wayside*.

wayside lift — see *wheelchair lift*.

wayside signal — see *signal, wayside*.

weighted time — see *time, weighted*.

welded rail — see *rail, welded*.

wheelchair lift — a device used to raise and lower a platform that facilitates transit vehicle accessibility for wheelchair users and other persons with disabilities. Wheelchair lifts may be attached to or built into a transit vehicle or may be located on the station platform (*wayside lifts*).

wheel flange — in rail systems, a projecting edge or rim on the circumference of a steel wheel that is designed to keep the wheel on a rail.

wheels, driving — see *driving wheels*.

wide gauge — see *gauge, broad*.

windscreen card — a printed or handwritten card usually placed in the bottom of the curbside windscreen to denote a destination or service information such as “via...”, express, limited stop, short turn, and so forth. Often used when the destination blind does not contain the desired destination or to display a secondary destination or route deviation.

wire, contact or trolley — see *contact wire*.

workshop (shop) — section of yard, depot, maintenance and storage facility, or garage where maintenance is carried out on vehicles.

wye — a triangular rail junction to turn trains or streetcars around without the need for a loop.

vehicle miles—wye

yard—zone or zoned fare

Yard — **1.** In rail systems, a facility within defined limits that has a system of tracks used for making up trains, storing rail cars, and other purposes. **2.** In transit systems, an open storage lot for light rail vehicles, streetcars, electric trolley buses, and motor buses.

yard limits — a slow-speed area on main railroad tracks that often extends 5-10 miles (8-16 km) from either end of a yard. For transit operations, this distance is much shorter: it is usually confined to the yard itself or to a short lead, usually less than 1 mile (1.6 km) in length.

Yellow Pages and Reservation — National ITS Architecture Market Package that enhances the *Interactive Traveler Information* package by making infrastructure-provided yellow pages and reservation services available to the user.

Zone, auto-free — see *auto-free zone*.

zone, auto-restricted — see *auto-restricted zone*.

zone, layover — see *layover zone*.

zone accessibility — see *accessibility, zone*.

zone or zoned fare — see *fare, zone*.

LIST OF SYMBOLS

This portion of the glossary lists all of the symbols used in equations in the *Transit Capacity and Quality of Service Manual* and their units. The symbol descriptions given below may be abridged versions of the descriptions given in the text, particularly where a symbol is used in multiple equations.

- ainitial service acceleration rate, ft/s² or m/s²
- a_gacceleration due to gravity, ft/s² or m/s²
- A_dnumber of disembarking autos, AEU's
- A_enumber of embarking autos, AEU's
- Bbus facility vehicle capacity, bus/h
- bseparation safety factor—surrogate for blocks
- B_lloading area bus capacity, bus/h
- B_pmaximum bus capacity of critical bus stop in pattern, bus/h
- B_sbus stop vehicle capacity, bus/h
- $B_{s,min}$minimum bus stop capacity along a bus facility, bus/h
- $B_1..B_n$vehicle capacities of a set of routes in a skip-stop pattern, bus/h
- ccapacity of a lane, veh/h
- c_rright-turn capacity, veh/h
- c_vcoefficient of variation of dwell times
- c_{ve}coefficient of variation of embarking and disembarking times
- c_{vh}coefficient of variation of headways
- Ccycle length, s
- C_ccar capacity, peak 15 minutes, p/car
- C_ccarrier capacity, p/carrier
- C_ddisembarking capacity at the constraining point, p/min
- C_eembarking capacity at the constraining point, p/min
- C_ggangway capacity, p/min/channel
- C_hcars operated per hour, car/h
- C_{max}longest cycle length in line's on-street section, s
- C_wcapacity of the waiting area exit, p/min/channel
- C_xcapacity of the walkway exit, p/min/channel
- dservice deceleration rate, ft/s² or m/s²
- d_1distance for one-block stop pattern, ft or m
- d_2distance for multiple-block stop pattern, ft or m
- d_caverage carrier/train/car spacing on the line, ft/carrier or m/carrier
- d_{eb}distance from front of stopped train to start of station exit block, ft or m
- d_{ec}pedestrian crossing delay exceeding 30 s, s
- d_paverage pedestrian delay, s
- d_sdeceleration rate, ft/s² or m/s²
- d_{ts}track separation, ft or m
- d_xdistance from cross-over to platform, ft or m
- Dpedestrian density, p/ft² or p/m²
- D_nnumber of doorways
- D_wdoorway width, ft or m
- fbus (vessel) frequency, bus/h or vessels/h
- f_aarrival type adjustment factor for the ability to fully utilize the bus stops in a skip-stop operation
- f_bbus-bus interference adjustment factor
- f_{br}braking safety factor
- f_{eff}effective frequency, bus/h
- f_ggrade factor

f_i	adjacent lane impedance factor
f_k	skip-stop capacity adjustment factor
f_l	bus stop location factor
f_m	mixed traffic adjustment factor
f_{min}	minimum frequency to accommodate peak-15-minute passenger demand without overcrowding bus, bus/h
f_p	bus-passing activity factor
f_{pop}	population factor
f_{px}	pedestrian crossing factor
f_r	right-turn adjustment factor
f_s	stop pattern adjustment factor
f_{sa}	switch angle factor
f_{sc}	street connectivity factor
g	effective green time for vehicle or pedestrian signals, s
g/C	ratio of effective green time to total traffic signal cycle length
G_i	grade into station, percent
G_o	grade out of station, percent
h	train headway, s
h_{gs}	minimum grade-separated headway, s
h_j	limiting headway at junctions, s
h_l	line headway, s
h_{lr}	minimum light rail headway, s
h_{os}	minimum on-street train headway, s
h_{st}	minimum single-track headway, s
h_v	vehicle headway, s/auto
l_v	line voltage as a percentage of specification
L	(longest) train length, ft or m
L_a	articulation length for light rail, ft or m
L_c	vehicle interior length, ft or m
L_l	line length, ft or m
L_p	platform length, ft or m
L_r	distance between the gangway and front of vehicle staging area, ft or m
L_{st}	length of single-track section, ft or m
L_t	train length, ft or m
L_w	walkway length, ft or m
L_x	crossing distance for pedestrians, ft or m
M	pedestrian space, ft ² /p or m ² /p
N	seating arrangement constant
N_b	number of berths at dock
N_c	number of cars per train
N_{ca}	number of channels for autos
N_{ce}	number of channels at the walkway exit
N_{cg}	number of gangway channels
N_{cw}	number of channels exiting the waiting area
N_{el}	number of effective loading areas
N_f	number of fare collectors
N_p	number of buses making the maneuver from the curb lane to the adjacent lane
N_s	number of stops per direction
N_{ss}	number of alternating skip-stops in pattern
N_{st}	number of stations on single-track section
N_v	number of vehicles

P	person capacity, p/h
P	person (auto) capacity on the route's maximum load section, p/h or autos/h
P_{15}	passenger volume during the peak 15 minutes, p
P_a	alighting passengers through the busiest door during the peak period, p/bus
P_b	boarding passengers through the busiest door during the peak period, p/bus
P_c	maximum design load per car, p/car
P_c	maximum schedule load per car, p/car
P_d	disembarking passenger volume, p
P_e	embarking passenger volume, p
P_e	positioning error, ft or m
P_h	passenger volume during the peak hour, p
P_i	number of people involved in activity i
P_l	average load per late bus during the peak 15 minutes, p/bus
P_m	linear passenger loading level, p/ft or p/m
P_{max}	maximum schedule load per bus, p/bus
PHF	peak hour factor
r	transit stop service radius, mi or m
r_0	ideal transit stop service radius, mi or m
s	standard deviation of dwell times
S	speed, ft/min or m/min
S_a	area of single seat, ft ² or m ²
S_b	single setback allowance, ft or m
S_{avail}	space available within the area analyzed, ft ² or m ²
S_i	space required for activity i , ft ² or m ²
S_m	speed margin
S_{mb}	moving-block safety distance, ft or m
S_p	walking speed, ft/s or m/s
S_{sp}	space per standing passenger, ft ² or m ²
S_t	travel speed, mph or km/h
S_w	seat pitch, ft or m
t_a	passenger alighting time, s/p
t_b	passenger boarding time, s/p
t_{br}	brake system reaction time, s
t_c	clearance time, s
t_{cg}	pedestrian critical gap, s
t_{cs}	train control separation, s
t_d	dwell time, s
t_{ed}	total embarking and disembarking time, s/vessel
t_f	fare collection time, s/p
t_i	dwell time value that will not be exceeded more often than the desired failure rate, s
t_{jl}	time lost to braking jerk limitation, s
t_l	bus running time losses, min/mi or min/km
t_l	terminal layover time, s
t_{oc}	door opening and closing time, s
t_{om}	operating margin, s
t_{os}	time for overspeed governor to operate, s
t_{ps}	pedestrian start-up and end clearance time, s
t_r	base bus running time, min/mi or min/km
t_s	switch throw and lock time, s
t_{st}	time to cover single-track section, s

t_v	vessel service time, s/vessel
T	line capacity, train/h or carrier/h or car/h
T_{avail}	time available as defined for the analysis period, s
T_i	time required for activity i , s
TS_{avail}	time-space available, ft ² -s or m ² -s
TS_{req}	time-space required, ft ² -s or m ² -s
v	pedestrian flow rate, p/ft/min or p/m/min
v	traffic volume in a lane, veh/h
v	vehicular flow rate, veh/s
v_a	station approach speed, ft/s or m/s
v_b	bus volume in the bus lane, bus/h
v_d	disembarking passenger speed on walkway, ft/min or m/min
v_e	embarking passenger speed on walkway, ft/min or m/min
v_l	line speed, ft/s or m/s
v_l	line speed, mph or km/h
v_{max}	maximum line speed, ft/s or m/s
v_p	bus volume in pattern, bus/h
v_r	right-turn volume, veh/h
v_v	vehicle entering/exiting speed, ft/s or m/s
V	dock vessel capacity, vessels/h
V_b	vessel capacity of the berth, vessels/h
V_{bi}	vessel capacity of berth i , vessels/h
V_c	passenger (auto) capacity of the vessel, p/vessel or autos/vessel
W_c	vehicle interior width, ft or m
W_s	stepwell width, ft or m
Z	standard normal variable corresponding to a desired failure rate