

DEC Conformity Training Course

Definition of Terms

- **AAPCA** – Anchorage Air Pollution Control Agency
- **Add-a-Lane** – an HOV lane achieved by “construction of a new lane”.
- **Approach** – A set of lanes accommodating all left-turn, through and right-turn movements arriving at an intersection.
- **Approach Links** – Those links used to model a signalized intersection located near the center of the intersection.
- **AP-42** – U.S. EPA Compilation of Air Pollutant Emission Factors
- **Area Sources** – Stationary emission sources that are too small to be inventoried individually such as residential heating sources.
- **Arterial Segment** – A one-way length of arterial from one signal to the next, including the downstream signalized intersection but not the upstream signalized intersection.
- **Average Running Speed** – The average speed of a traffic stream computed as the length of a highway segment divided by the average running time of vehicles traversing the segment, in miles per hour.

- **Average Running Time** – The average time vehicles are in motion while traversing a highway segment of given length, excluding stopped-time delay, in seconds per vehicle or minutes per vehicle.
- **Background Concentration** – The portion of a measured or modeled air quality concentration that is assumed to be due to non-local sources that will be unaffected by proposed control measures.
- **Bags 1, 2 and 3** – Portions of the FTP; Bag 1 = cold start, Bag 2 = stabilized operation, and Bag 3 = hot start.
- **BAR90** – An acronym used to refer to a computerized emissions analyzer or test analyzer system, originally developed by the California Bureau of Automotive Repair (BAR) in 1990. BAR90 emission analyzers are currently being used in the Alaska I/M program.
- **Baseline Inventory** – An emissions inventory developed for a base or current year to estimate existing emissions conditions and that serves as the basis for future emissions projections.

- **Basic I/M Program** – An I/M program that, when modeled using MOBILE5, achieves equivalent or better emissions reductions to a basic performance standard established by EPA; Alaska's I/M programs are considered basic programs.
- **CAA** – Clean Air Act
- **Capacity** – The maximum number of vehicles that a roadway can carry in a given time period under prevailing roadway, traffic and control conditions.
- **Ceiling Height** – The vertical distance to the upper bound of an inversion layer.
- **Centralized I/M Program** – A program in which emissions testing is conducted in centrally located, specially constructed facilities in which no emissions-related repairs are performed; also known as a test-only program.
- **Chassis Dynamometer** – A treadmill-like piece of equipment on which a vehicle is driven and a load placed on the engine during loaded-mode testing.

- **CNG** – Compressed natural gas
- **CMAQ** – Congestion Mitigation and Air Quality; a category of federal transportation funding authorized under SAFETEA-LU and designed to aid states in reducing emissions in nonattainment areas.
- **CO** – Carbon monoxide
- **Cold Start** – Vehicle startup after extended engine-off period.
- **Concentration** – The relative content of a pollutant in the air, based on a volume unit to volume unit and often expressed as an average for a specified time interval (e.g., the NAAQS for ambient CO concentration is 9 parts per million).
- **Contingency Measure** – A SIP measure that must be implemented if an area does not attain the NAAQS by the required date.
- **Decentralized I/M Program** – A program in which vehicle emissions testing and repairs can be conducted in the same facility; also known as a test-and-repair program.

- **Delay** – Additional travel time experienced by a driver, passenger, or pedestrian beyond what would be reasonably desired for a given trip.
- **Deposition Velocity** – An input required when using CAL3QHC to model total suspended particulate (TSP) for which the rate of settling out of the atmosphere is significant.
- **Design Concept** – The type of facility identified by the project (e.g., freeway, expressway, arterial highway, etc.).
- **Design Scope** – The design aspects that will affect the proposed facility's impact on emissions, usually as they relate to carrying capacity and control (e.g., the number of lanes or tracks to be constructed or added, length of the project, etc.).
- **Design Day** – An average day with meteorological conditions, emissions levels and other parameters that are representative of the conditions under which the design value was recorded.
- **Design Value** – Measured air quality concentration upon which determination of attainment is based.

- **Direct Emission** – Emissions of a criteria pollutant or its precursors that are caused or initiated by a Federal action and occur at the same time and place as the action.
- **Diurnal Breathing Emissions** – Evaporative HC or VOC emissions that are caused by the change in ambient temperature over the course of a day independent of vehicle use.
- **DR** – Deterioration rate; the rate at which vehicle emission rates are assumed to increase with increasing mileage.
- **ECOS** – Environmental Council of the States
- **EF** – Emission factor, the rate at which a pollutant is emitted from a given source (e.g., grams per mile) under specific conditions (e.g., speed, temperature, fuel type, etc.)
- **Emissions Budget** – Level of emissions allowed under the SIP in future years in order to reach and/or maintain attainment. On-road emission budgets are normally specified as part of transportation/air quality conformity requirements.

- **Emissions Inventory** – The total emissions produced by all sources within the area being inventoried, which is normally estimated on a design day basis.
- **Enhanced I/M Program** – An I/M program that, when modeled using MOBILE5, achieves equivalent or better emissions reductions to an enhanced performance standard established by EPA; the enhanced performance standard includes IM240 vehicle testing.
- **Evaporative Hot Soak Emissions** – HC or VOC emissions that are produced immediately after a vehicle is stopped and the engine is turned off.
- **Evaporative Running Emissions** – HC or VOC emissions that are produced due to heat build-up in the fuel during vehicle operation.
- **External Links** – Those links used to model a signalized intersection located farther away from the intersection signal in relation to approach and departure links.

- **Federal Action** – Any activity engaged in by a department, agency or instrumentality of the Federal government, or activity that the Federal government supports in any way.
- **FHWA** – Federal Highway Administration of the U.S. Department of Transportation
- **FNSB or “the Borough”** – Fairbanks North Star Borough
- **Free-Flow Speed** – The theoretical speed of traffic under uncongested conditions.
- **FTA** – Federal Transit Administration of the U.S. Department of Transportation
- **FTP** – Federal Test Procedure; a standardized test procedure that is used to test and certify new vehicles for emissions compliance using a transient loaded-mode drive cycle designed to represent a typical vehicle trip.
- **HC** – Hydrocarbons

- **Hot Spot** – Localized air quality effects within the limits of a project.
- **HPMS** – Highway Performance Monitoring System; a system established by U.S. DOT and used to track changes in VMT in urban areas nationwide.
- **Hybrid I/M Program** – A program that combines elements of both test-and-repair and test-only programs.
- **Idle Test** – A no-load emissions test procedure conducted in an I/M program during which the vehicle engine is allowed to idle.
- **IM240** – A transient loaded-mode emissions test performed on a dynamometer over a four-minute standardized drive cycle that mimics a portion of the FTP.
- **I/M program** – Vehicle emissions inspection and maintenance program.
- **I/M credit** – The amount of credit claimed for an I/M program in the SIP.

- **Indirect Emissions** – Emissions of criteria pollutants or its precursors that: (1) are caused by a Federal action but are still reasonably foreseeable; and (2) the Federal agency can practicably control and maintain control due to continuing program responsibility of the Federal agency.
- **Intersection Geometry** – Includes the width and length of up to three elements for each approach to the intersection: right turn lane(s), through lane(s), and left turn lane(s).
- **Level of Service (LOS)** – A qualitative measure describing operational conditions within a traffic stream.
- **Link** – A portion of a roadway in a highway network. Usually defined by nodes at each end-point.
- **Mixing Height** – Vertical distance to the level at which air is uniformly mixed.
- **MOA** – Municipality of Anchorage
- **MOBILE** – EPA on-road mobile source emission factor model.

- **Maintenance Area** – Any geographic region of the United States previously designated nonattainment pursuant to the CAA Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under section 173 of the CAA as amended.
- **Metropolitan Planning Organization (MPO)** – The organization designated as being responsible, together with the State, for conducting the continuing, cooperative and comprehensive planning process (i.e., it is the forum for cooperative transportation decision-making).
- **NAA** – Acronym for nonattainment area, which is an area designated by formal EPA action as being in nonattainment of one or more of the NAAQS (see below).
- **NAAQS** – National Ambient Air Quality Standard
- **NEPA** – National Environmental Policy Act of 1969

- **Nonattainment Area** – Any geographic region of the United States that has been designated as nonattainment under section 107 of the CAA for any pollutant for which a national ambient air quality standard exists.
- **Nonroad Emissions** – Emissions from sources other than on-road or point sources.
- **NOx** – Oxides of nitrogen
- **NHS or NHSDA** – National Highway Safety Designation Act of 1995
- **On-Road Emissions** – Emissions from motor vehicles traveling on the modeled roadway network in an area.
- **Oxygenated Fuel** – Gasoline containing oxygenate-based compound (e.g., ethanol or MTBE), which reduces emissions by enleaning the air/fuel combustion mixture.
- **Ozone** – Air pollutant created by photochemical reaction between various emissions precursors, particularly HC and NOx.
- **PARTS** – EPA on-road particulate emission factor model.

- **Persistence Factor** – the ratio of the 8-hour to 1-hour concentration estimate.
- **PM2.5** – Particulates with diameter of 2.5 microns or less.
- **PM10** – Particulates with diameter of 10 microns or less.
- **Point Sources** – Stationary sources that are of sufficient size to have their emissions estimated individually.
- **ppm** – parts per million; the units normally used to express ambient CO concentrations.
- **Projection Year Inventory** – An emissions inventory developed for future base or current year to estimate existing emissions conditions and that serves as the basis for future emissions projections.
- **Queued Vehicles** – Vehicles that are delayed and stopped.
- **Reasonable Further Progress** – A term used by EPA to denote acceptable progress by a nonattainment area toward attaining the NAAQS by the required deadline.

- **Reasonably Foreseeable Emissions** – Future indirect emissions that are identified at the time the conformity determination is made.
- **Receptor** – The locations at which concentrations are estimated in an air quality model.
- **Regionally Significant Action** – A Federal action for which the direct and indirect emissions for any pollutant represent 10% or more of the emission inventory for that pollutant.
- **Regionally Significant Project** – A transportation project that is on a facility which serves regional transportation needs (i.e., principal arterial and higher capacity roadways)
- **Rollback** – Modeling approach that assumes change in air quality concentrations are directly proportional to change in areawide emissions.
- **Running Emissions** – Vehicle emissions that are a function of the length of a trip.

- **SAFETEA-LU** – Safe, Accountable, Flexible, Efficient Transportation Equity Act - A Legacy for Users
- **Saturation Flow Rate** – The volume of vehicles that can be accommodated by each lane group under prevailing conditions.
- **SIP** – State Implementation Plan
- **STAPPA/ALAPCO** – State and Territorial Air Pollution Program Administrators/Association of Local Air Pollution Control Officials
- **Starting Emissions** – Vehicle emissions that are a function of the number of daily vehicle starts.
- **Surface Roughness** – The characteristic height of obstructions in the path of the wind near the surface, such as the height of trees and buildings.
- **Take-a-Lane** – An HOV lane achieved by conversion of an existing general purpose lane into an HOV lane.
- **TCM** – Transportation Control Measure

- **TECH5** – EPA model that functions as a preprocessor model to MOBILE5.
- **Transportation Improvement Plan (TIP)** – A staged multi-year intermodal program of transportation projects covering a metropolitan planning area that is consistent with the metropolitan transportation plan.
- **TRO** – Trip reduction ordinance; a program aimed at reducing vehicle starts and VMT by requiring employers to reduce employee commute trips during peak periods.
- **TTC** – An acronym for Technician Training and Certification, a training program for I/M technicians designed to increase program effectiveness by improving technician performance.
- **Two-Speed Idle Test** – A two-mode, no-load emissions test procedure conducted in an I/M program during which emissions are checked while the vehicle engine is operated at curb idle and approximately 2500 rpm. This is the test procedure currently used in the Alaska I/M program.

- **V/C Ratio** – Volume to capacity (V/C) ratio. A parameter used to measure congestion. For a given roadway link, it is calculated as total traffic volume divided by capacity of the roadway.
- **Vehicle Scrappage** – Emission control program aimed at removing older, high-emitting vehicles from the in-use fleet.
- **VOCs** – Volatile organic compounds; reactive HC emissions
- **VMT** – Vehicle Miles Traveled