Acronyms and Glossary of Terms

Acronyms and Abbreviations

This section provides a list of acronyms and abbreviations that are found in the *2017 ESPR*. The Glossary of Terms provides definitions for acronyms and abbreviations that have an asterisk (*).

Other

$\mu g/m^3$	micrograms of pollutant per cubic meter

A

ACI-NA	Airports Council International – North America
ACRP	Airport Cooperative Research Program
AC	Advisory Circular
ADG	Aircraft Design Group
AEDT	Aviation Environmental Design Tool
AFB*	(Hanscom) Air Force Base
AIP Program	Airport Improvement
ALP*	Airport Layout Plan
ALS*	Approach Lighting System
APU*	Auxiliary Power Unit
ARFF	Airport Rescue and Fire Fighting
ARTS*	Automated Radar Terminal System
ASR*	Airport Surveillance Radar
AST	Aboveground Storage Tanks
ATC*	Air route traffic control center
ATCT*	Airport traffic control tower

B

BDL	Bradley International, CT airport code
BED	Hanscom Field, MA airport code
BGR	Bangor, ME airport code
BLSF*	Bordering Land Subject to Flooding
BOS	(Logan) Boston, MA airport code
BVT	Burlington, VT airport code
BVW*	Bordering Vegetated Wetlands

C

CAA	Clean Air Act; Connecticut Airport Authority
(US)CBP	U.S. Customs and Border Protection
CEP	Comprehensive Energy Plan
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act

CGP	Construction General Permit
CH_4	Methane
CIP	Capital Improvement Plan
CMR	Code of Massachusetts Regulations
CMS*	Congestion Management System
CO*	Carbon monoxide
CO_2	Carbon dioxide
CWA	Clean Water Act

D

dB*	Decibel
dBA*	A-weighted decibel
DEP	Department of Environmental Protection
DME	Distance Measuring Equipment
DNL*	Day-Night Sound Level
DoD	Department of Defense
DOT	(U.S.) Department of Transportation

E

EA*	Environmental Assessment
EDMS*	Emissions and Dispersion Modeling System
eGSE	electric Ground Service Equipment
EIR*	Environmental Impact Report
EIS*	Environmental Impact Statement
EMS*	Environmental Management System
ENF*	Environmental Notification Form
EOEEA	Executive Office of Energy and Environmental Affairs
EOT	Executive Office of Transportation
EPA	(U.S.) Environmental Protection Agency
ESA	Endangered Species Act
EXP*	Total Noise Exposure

F

FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FBO*	Fixed Base Operator
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FICAN	Federal Interagency Committee on Aviation Noise
FICON	Federal Interagency Committee on Noise
FIRM*	Flood Insurance Rate Map
FONSI*	Finding of No Significant Impact
FY	Fiscal Year

G

GA	General Aviation
GEIR*	Generic Environmental Impact Report
GHG	Greenhouse Gas(es)

GIS	Geographic Information Systems
gpd	gallons per day
gpm	gallons per minute
GPU*	Ground Power Unit
GS*	Glide Slope
GSA	General Services Administration
GSE*	Ground Service Equipment
GWSA	Massachusetts Global Warming Solutions Act

H

HATS*	Hanscom Area Towns Committee
HFAC*	Hanscom Field Advisory Commission
HIRL*	High Intensity Runway Lighting System
HOV*	High Occupancy Vehicle
HVN	Tweed New Haven, CT airport code
Hz*	Hertz

I-J

ICAO	International Civil Aviation Organization
IFR*	Instrument Flight Rule
ILS*	Instrument Landing System
ILSF*	Isolated Land Subject to Flooding
INM*	Integrated Noise Model
IRP*	Installation Restoration Program
ISO	International Organization for Standardization
JCA	Jordan Conservation Area

K

kWh	kilowatt-hours

L

LEED*	Leadership in Energy and Environmental Design
L_{eq}*	Equivalent Sound Level
LEV / ZEV*	Low Emissions Vehicle / Zero Emissions Vehicle
LID	Low Impact Development
LOC*	Localizer antenna
LOS*	Level of Service
LSP*	Licensed State Professional
LTO*	Landing and Takeoff
LUWB*	Land under Water Bodies/ Waterways

M

M.G.L.	Massachusetts General Laws
MAAQS	Massachusetts Ambient Air Quality Standards
MACRIS*	Massachusetts Cultural Resources Information System
MAGIC	Minuteman Advisory Group on Interlocal Coordination
MALSR*	Medium Intensity Approach Lighting System and Runway Alignment Indicator Lights
MAPC	Metropolitan Area Planning Council
MassDEP	Massachusetts Department of Environmental Protection
MassDOT	Massachusetts Department of Transportation
Massport	Massachusetts Port Authority

MBTA	Massachusetts Bay Transportation Authority
MCAA	Massachusetts Clean Air Act
MCL	Maximum Contaminant Levels
MCP*	Massachusetts Contingency Plan
MDAR	Massachusetts Department Agricultural Resources
MEP	Multi-Engine Piston
MEPA*	Massachusetts Environmental Policy Act
MESA*	Massachusetts Endangered Species Act
MHC*	Massachusetts Historic Commission
MHT	Manchester-Boston, NH airport code
MIRL*	Medium Intensity Runway Lighting System
MIT	Massachusetts Institute of Technology
MMNHP*	Minute Man National Historical Park
MMT	Million Metric Tons
MOA	Memorandum of Agreement
MOVES*	Motor Vehicle Emission Simulator
MPO	Metropolitan Planning Organization
mph	miles per hour
MSASP	Massachusetts Statewide Airport System Plan (MSASP)
MSGP	Multi-Sector General Permit
MT	Metric tons
MW*	Megawatt
MWRA	Massachusetts Water Resources Authority
MWRC	Merrimack River Watershed Council

N

NAAQS*	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NAVAID*	Navigational Aid
NBAA	National Business Aviation Association
NDB*	Non-Directional Beacon
NEPA*	National Environmental Policy Act of 1969
NERASP*	New England Regional Airport System Plan
NHESP*	Natural Heritage and Endangered Species Program
NHTSA	National Highway Traffic Safety Administration
NO_2*	Nitrogen dioxide
NOI*	Notice of Intent
NOMS*	Noise and Operations Monitoring System
NO_x*	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPIAS	National Plan of Integrated Airport Systems
NPL*	National Priority List
NPS	National Park Service
NRCS	Natural Resource Conservation Service
NWIRP	Naval Weapons Industrial Reserve Plant

O

O_3*	Ozone
OFA*	Object Free Area

OFZ*	Object Free Zone
OpsSpecs	Operations Specifications
ORH	Worcester, MA airport code
ORW*	Outstanding Resource Water
OU*	Operable Unit

P-Q

PAPI*	Precision Approach Path Indicators
PAR*	Precision Approach Radar
Pb	Lead
PCB*	Polychlorinated biphenyl
PM*	Particulate matter (e.g., PM10, PM2.5)
ppm	parts per million
psi	pounds per square inch
PSM	Portsmouth, NH airport code
PV	Photovaltaic
PVD	T.F. Green, RI airport code
PWM	Portland, ME airport code

R

RACT*	Reasonably Available Control Technology
RAIL*	Runway Alignment Indicator Lights
RAO*	Response Action Outcome
RCRA	Resource Conservation and Recovery Act
RDA*	Request for Determination of Applicability
REIL*	Runway end identifier light
RIAC	Rhode Island Airport Corporation
RIDOT	Rhode Island Department of Transportation
ROD*	Record of Decision
RPZ*	Runway Protection Zone
RSA*	Runway Safety Area
RTN	Release Tracking Number
RVR*	Runway visual range

S

SAGA	Sustainable Aviation Guidance Alliance
SDSG	Sustainable Design Standards and Guidelines
SEL	Sound Exposure Level
SEP	Single Engine Piston
SFTA	Southern Flight Test Area
SIP*	State Implementation Plan
SMP	Sustainability Management Plan
SO_2*	Sulfur dioxide
SOV	Single Occupancy Vehicle
SPCC*	Spill Prevention Control and Countermeasure Plan
SSALR*	Simplified Short Approach Light System
SWPPP*	Stormwater Pollution Prevention Plan

T

TA*	Time Above
TAF	Terminal Area Forecast
TACAN*	Tactical Air Navigation
TCE*	Trichloroethylene
TDM*	Transportation Demand Management
TERPS*	Terminal Instrument Procedures
TIA	Traffic Impact Assessment
TIM*	Time-in-mode

TIP*	Transportation Improvement Plan
TL*	Taxilane
TMA*	Transportation Management Association
TMDL	Total Maximum Daily Loads
TMI*	Transportation Management Initiative
TPH*	Total petroleum hydrocarbon
TRACON*	Terminal Radar Approach Control
TRB	Transportation Research Board
TSA*	Transportation Security Administration; Taxiway Safety Area; Traffic Study Areas
TSS*	Total suspended solids
TW*	Taxiway

U

UFP	Ultrafine Particles
USACE	U.S. Army Corps of Engineers
USAF	U.S. Air Force
USC	United States Code
USDA	United States Department of Agriculture
USGBC	U.S. Green Building Council
UST	Underground Storage Tank
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey

V

v/c	Volume-to-capacity
VALE	Voluntary Airport Low Emissions Program
VASI*	Visual Approach Slope Indicators
VFR*	Visual Flight Rules
VMA	Vegetation Management Area
VMP*	Vegetation Management Plan
VMT*	Vehicle Miles Traveled
VOC*	Volatile Organic Compounds
VPD	Vehicles Per Day
VOR*	Very-High-Frequency Omni-directional Range (aviation); Vehicle Occupancy Rate (ground transportation)

W-Y

WPA*	Wetland Protection Act (MA)

Z

ZEV*	Zero Emissions Vehicle

Glossary of Terms

A

A-weighted sound level (dBA) – An adjustment to the very high and very low frequencies to approximate the human ear's reduced sensitivity to those frequencies. This adjustment is used to account for frequency dependence in measuring community noise. Customarily referred to simply as "sound levels" where the adjective "A-weighted" has been omitted. With A-weighting, a noise source having a higher sound level than another is generally perceived as louder. Also, the minimum change in sound level that people can detect outside of a laboratory environment is on the order of three decibels (dB). A change in sound level of ten dB is usually perceived by the average person as a doubling (or halving) of the sound's loudness, and this relationship holds true for loud sounds as well as for quieter sounds.

Air Route Traffic Control Center (ATC) - A facility established to provide air traffic control service to aircraft operating on Instrument Flight Rules (IFR) flight plans within controlled airspace and principally during the enroute phase of flight. When equipment capabilities and controller workload permit, certain advisory/assistance services may be provided to Visual Flight Rules (VFR) aircraft.

Airport Traffic Control Tower (ATCT) – The air traffic control unit responsible for controlling movements around an airport as well as the name of the building in which the unit operates. The height of permanent ATCT structures gives air traffic controllers visual contact with aircraft on the ground and in the air around an airport. The ATCT facility, operated by appropriate authority at an airport, promotes the safe, orderly and expeditious flow of air traffic within the airport traffic area.

Airport Layout Plan (ALP) – A scaled drawing of existing and proposed land and facilities necessary for the operation and development of the airport.

Airport Lighting – Various lighting aids that may be installed on an airport. Types of airport lighting include:

1. **Approach Light System (ALS) – An** airport lighting facility which provides visual guidance to landing aircraft by radiating light beams in a directional pattern by which the pilot aligns the aircraft with the extended centerline of the runway on his final approach for landing. Condenser-Discharge Sequential Flashing Lights/Sequenced Flashing Lights may be installed in conjunction with the ALS at some airports. Types of ALS at the Airport are Simplified Short Approach Light System (SSALR) with Runway Alignment Indicator Lights (RAIL).
2. **Runway Lights/Runway Edge Lights** – Lights having a prescribed angle of emission used to define the lateral limits of a runway. Runway lights are uniformly spaced at intervals of approximately 200 feet, and the intensity may be controlled or preset.
3. **Runway Centerline Lighting** – Flush centerline
lights spaced at 50-foot intervals

beginning 75 feet of the opposite end of the runway.

4. **Runway End Identifier Lights (REIL) –** Two synchronized flashing lights, one on each side of the runway threshold, which provide rapid and positive identification of the approach end of a particular runway.
5. **Visual Approach Slope Indicator (VASI)** – An airport lighting facility providing vertical visual approach slope guidance to aircraft during approach to landing by radiating a directional pattern of high intensity red and white focused light beams which indicate to the pilot that he is "on path" if he sees red/white, "above path" if white/white, and "below path" if red/red. Some airports serving large aircraft have three-bar VASIs which provide two visual glide paths to the same runway.

Airport Marking Aids – Markings used on runway and taxiway surfaces to identify a specific runway, a runway threshold, a centerline, a hold line, etc. A runway should be marked in accordance with its present usage such as:

- Visual
- Non-precision instrument
- Precision instrument

Airport Reference Point (ARP) – The latitude and longitude of the approximate center of the airport.

Airport Rotating Beacon (ARB) – A visual NAVAID operated at many airports. At civil airports, alternating white and green flashed lights indicate the location of the airport. At military airports, the beacons flash alternatively white and green, but are differentiated from civil beacons by dual peaked (two quick) white flashes between the green flashes.

Airport Surveillance Radar (ASR) – Approach control radar used to detect and display an aircraft's position in the terminal area. ASR provides range and azimuth information but does not provide elevation data. Coverage of the ASR can extend up to 60 miles, presenting air traffic controllers with the location of all aircraft within the range of the antenna.

Approach Control Facility – A terminal Air Route Traffic Control Center facility that provides approach control service in a terminal area.

Approach Light System (ALS) – See Airport Lighting.

Apron – A defined area on an airport or heliport intended to accommodate aircraft for purposes of loading or unloading passengers or cargo, refueling, parking, or maintenance. With regard to seaplanes, a ramp is used for access to the apron from the water.

Automated Radar Terminal System (ARTS) – A range of systems that display for the terminal controller aircraft identification, flight plan data, other flight associated information such as altitude, speed, and aircraft position.

Auxiliary Power Unit (APU) – Self-contained generator on an aircraft that provides electricity, heat and air conditioning to an aircraft when its engines are off.

Aviation Environmental Design Tool (AEDT) – A software program developed and used by the FAA to model aircraft

performance to model fuel burn, air emissions and noise.

B

Banks – Land areas that normally abut and confine a water body. Banks occur between a waterbody and a vegetated wetland or adjacent floodplain, or between a waterbody and an upland.

Base Realignment and Closure (BRAC) – A process used by the U.S. Department of Defense to close military bases and realign assets to improve efficiency and reduce cost. BRAC processes have occurred in 1989, 1991, 1993, 1995 and 2005.

Below Minimums – Weather conditions below the minimums prescribed by regulation for the particular action involved; e.g., landing minimums, takeoff minimums.

Bordering Land Subject to Flooding (BLSF) – The maximum lateral extent of floodwater, which will theoretically result from the statistical 100-year storm. The extent of Bordering Land Subject to Flooding is typically derived from examining FEMA Flood Insurance Rate Maps.

Bordering Vegetated Wetlands (BVW) – Vegetated areas that border on water bodies and waterways including vegetated freshwater wetlands. The technical criteria and methodology utilized to identify and delineate BVW is set forth in Delineating Bordering Vegetated Wetlands under the Massachusetts Wetlands Protection Act (DEP, 1995). Criteria for identifying and delineating this resource area include the presence of a plant community dominated by wetland indicator species, and signs of hydrology. The presence of hydric soils within the wetland is considered an indicator of hydrology.

C

Carbon Monoxide (CO) – A regulated air pollutant created from the combustion of fossil fuel.

Ceiling – The heights above the earth's surface of the lowest layer of clouds or obscuring phenomena that is reported as "broken," "overcast," or "obscuration," and not classified as "thin" or "partial."

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – A federal law enacted by Congress on December 11, 1980, that provides federal authority to respond to releases or threatened releases of hazardous substances that may endanger public health or the environment (also known as the Superfund Act). CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and, established a trust fund to provide for cleanup when no responsible party could be identified. The trust fund is funded by taxes on the chemical and petroleum industries.

Controlled Airspace - Airspace designated as a control zone, airport radar service area, terminal control area, transition area, control area, continental control area, and positive control area within which some or all aircraft may be subject to air traffic control.

D

Day-Night Average Sound Level (DNL) – DNL is the FAA's primary metric for measuring aircraft noise and exposure. DNL is a metric that represents the total accumulation of all sound energy spread out over a 24-hour period, on an average annual basis. DNL includes a 10-decibel penalty for nighttime noise (between 10pm and 7am).

Decibel (dB) – A logarithmic unit that is used to represent the intensity of sound. This representation is called a sound pressure level. A sound pressure level of less than 10 dB is approximately the threshold of human hearing and is barely audible under extremely quiet conditions. Normal conversational speech has a sound pressure level of approximately 60 to 65 dB. Sound pressure levels above 120 dB begin to be felt inside the human ear as discomfort and eventually pain at still higher levels.

Decision Height – With respect to the operation of aircraft, means the height at which a decision must be made during an Instrument Landing System or instrument approach to either continue the approach or to execute a missed approach.

Departure Control – A function of an approach control facility providing air traffic control service for departing IFR and, under certain conditions, Visual Flight Rules aircraft.

E

Emissions and Dispersion Modelling System (EDMS) - Computer program established by the Federal Aviation Administration (FAA) to calculate emissions and dispersion of aircraft operations at an airport. The latest version is 4.3.

Enroute Air Traffic Control Services – Air traffic control service provided aircraft on Instrument Flight Rules flight plans, generally by centers, when these aircraft are operating between departure and destination terminal areas. When equipment, capabilities, and controller work load permit, certain advisory/assistance services may be provided to VFR aircraft.

Environmental Assessment (EA) – An environmental document filed in accordance with the National Environmental Policy Act of 1969 that documents the environmental impacts of a proposed action in support of a Finding of No Significant Impact (FONSI) or the facilitation of the preparation of an Environmental Impact Statement (EIS). An EA and its FONSI document NEPA compliance. The EA process includes public review and comment on its scope and filing.

Environmental Impact Report (EIR) – An environmental document filed in accordance with the Massachusetts Environmental Policy Act, M.G.L. c. 30, sections 61 through 62H, inclusive, to study the environmental consequences of a project. Typically, the proponent files a draft and final EIR, but the Secretary of Environmental Affairs may allow a single EIR. The EIR process includes public review and comment on its scope and filings, which are noticed in the Environmental Monitor. At the close of the EIR review period, the Secretary decides whether the EIR is adequate and issues an Adequacy determination that includes enforceable mitigation commitments.

Environmental Impact Study (EIS) – An environmental document filed in

accordance with the National Environmental Policy Act of 1969 that documents the environmental impacts of a proposed action that has significant environmental impacts. An EIS describes a proposed action, its purpose and need, alternatives to the proposed action, the affected environment, and an environmental analysis of each alternative. The EIS process includes public review and comment on its scope and filing.

Environmental Management System (EMS) – A system instituted by Massport to help evaluate and mitigate the environmental impacts from airport operations and planning.

Environmental Notification Form (ENF) – An environmental document filed in accordance with the Massachusetts Environmental Policy Act, M.G.L. c. 30, sections 61 through 62H, inclusive, to begin the MEPA review process. A proponent begins the ENF process if a project is subject to MEPA jurisdiction and either it meets or exceeds one or more review thresholds or the Secretary of Environmental Affairs requires fail-safe review. The ENF process includes public review and comment on its scope and filing, which are noticed in the Environmental Monitor, and a MEPA Consultation session. At the close of the review period for an ENF, the Secretary issues an Adequacy Determination that may require an EIR or allow the proponent to take action on the project.

Equivalent Sound Level (L_{eq}) – A measure of exposure resulting from the accumulation of A-weighted sound levels over a particular period (as opposed to an event) of interest such as an hour, an eight-hour school day, nighttime, a single 24-hour period, or an average 24-hour period. Because the length of the period can differ, the applicable period should always be identified or clearly understood when discussing the metric. Such durations are often identified through a subscript, for example L_{eq} (8) or L_{eq} (24). Conceptually, the L_{eq} may be thought of as the constant sound level occurring over the designated period of interest and having as much sound energy as that created by the actual rising and falling sound pressures from multiple noise sources as they become more or less pronounced.

F

FAA Aircraft Engine Emissions Database (FAEED) - A computerized emissions inventory calculation procedure that contains air pollution emissions information for various aircraft engines and data correlating engines to specific aircraft. The emissions data from FAEED have been incorporated into the EDMS.

Federal Motor Vehicle Control Program (FMVCP) – Air pollution emission standards for new motor vehicles that have been established by the U. S. EPA. These standards have mandated increasing strict air pollution emission factors for motor vehicles.

Final Approach – That part of an instrument approach procedure which commences at the specified final approach fix or point, or where such a fix or point is not specified,

1. at the end of the last procedure turn, base turn or inbound turn of a racetrack procedure, if specified; or

2. at the point of interception of the last track specified in the approach procedure; and ends at a point in the vicinity of an aerodrome form which: a) a landing can be made; or b) a missed approach procedure is initiated.

Final Approach Fix (FAF) – The fix from which the final approach (IFR) to an airport is executed and which identifies the beginning of the final approach segment. When ATC directs a lower-than-published Glide Slope/path Intercept Altitude, it is the resultant actual point of the glide slope/path intercept.

Final Approach Point (FAP) – The point, applicable only to a non-precision approach with on depicted Final Approach Fix such as on-airport Very- High-Frequency OmniRange (VOR), where the aircraft is established inbound on the final approach course from the procedure turn and where the final approach descent may be commenced. The FAP serves as the FAF and identifies the beginning of the final approach segment.

Fixed Base Operator (FBO) – A full-service FBO is a company that handles a range of needs for based and transient aircraft, their operators, and their passengers. These include cleaning, maintaining, fueling and parking/ hangaring aircraft; providing flight planning services for pilots; and arranging for the specific needs of those flying, such as ground transportation or overnight accommodations. Although the majority of FBO activity involves servicing corporate general aviation activity, the FBOs also provide some charter activity.

Flood Insurance Rate Map (FIRM) – A map that is published by the Federal Emergency Management Agency to determine flood insurance requirements and to assist communities in regulating new development. Flood Insurance Rate Maps show areas that have a one percent chance of flooding (the 100-year floodplain) and a 0.2 percent chance of flooding in any given year (the 500-year floodplain). These areas are determined to be the areas of highest risk when a stream overflows its banks or when coastal waters experience tidal surges from tropical storms or hurricanes.

G

General Aviation – That portion of civil aviation which encompasses all facets of aviation except air carriers holding a certificate of public convenience and necessity from the Civil Aeronautics Board and large aircraft commercial operators.

General Aviation Revitalization Act (GARA) – Legislation that amends the Federal Aviation Act of 1958 to establish time limitations on certain civil actions against aircraft manufacturers.

General Management Plan (GMP) – Broad and comprehensive, long-term planning documents prepared by National Park Service for each National Park, which typically encompasses preservation of natural and cultural resources, visitor use and interpretation, roads, and facilities.

Generic Environmental Impact Report (GEIR) – An environmental filing to the Executive Office of Environmental Affairs that assesses the environmental effects of policies or plans as opposed to site-specific projects.

Glide Slope (GS) – Provides vertical guidance for aircraft during approach and landing. The glideslope / glide path is

based on the following: (1) electronic components emitting signals which provide vertical guidance by reference to airborne instruments during instrument approaches such as Instrument Landing System, or: (2) Visual ground aids which provide vertical guidance for Visual Flight Rules approach or for the visual portion of an instrument approach and landing.

Ground Power Unit (GPU) – Generator on the ground that provides electricity, heat and air conditioning to an aircraft when its engines are off.

H

Hanscom Air Force Base (AFB) – A 396-acre United States Air Force Base in Bedford, Concord, Lexington and Lincoln that supports the Electronic Systems Center of the Air Force Material Command.

Hanscom Area Towns (HATS) – The Growth and Development Policy Committee established under M.G.L. Chapter 40 Section 4I to address intergovernmental and planning issues in Bedford, Concord, Lexington and Lincoln.

Hanscom Field Advisory Commission (HFAC) – An advisory commission that was established by act of the State legislature in 1980. HFAC includes 16 members appointed by the selectmen of Bedford, Concord, Lexington and Lincoln. HFAC includes representatives from the Town of Bedford, Concord, Lexington and Lincoln; local citizens groups; other area towns affected by Hanscom Field; businesses basing aircraft at Hanscom Field; aviation or aviation-related businesses at Hanscom Field; and business-aviation general aviation organizations.

Hanscom Noise Workgroup – A group of community- and aviation-based members that was organized by Massport at the request of the Secretary of Environmental Affairs after the filing of the *1995 GEIR* in 1997. The HNWG met for a period of two years and published its findings in a report entitled "Report of the Hanscom Field Noise Workgroup," dated September 22, 1999. Their report summarizes the series of meetings by the committee and its two task groups, one devoted to abatement and mitigation, the other to metrics and modeling.

Hertz (Hz) – International System of Units measure for the number of times that a repeated event occurs during a specified unit of time.

High Occupancy Vehicle (HOV) – A vehicle carrying two or more passengers.

High Intensity Runway Lighting System (HIRLS) – A system of high intensity lights that outline edges of runways during periods of darkness or restricted visibility conditions.

I-J

Initial Approach Fix – The fixes depicted on instrument approach procedure charts that identify the beginning of the initial approach segments.

Installation Restoration Program (IRP) - A program within the DERP that focuses on releases of hazardous substances, pollutants, or contaminants that pose environmental health and safety risks.

Instrument Approach Procedure – A series of predetermined maneuvers for the orderly transfer of an aircraft under

instrument flight conditions from the beginning of the initial approach to a landing or to a point from which a landing may be made visually. It is prescribed and approved for a specific airport by competent authority.

Instrument Flight Rules (IFR) – Rules governing the procedures for conducting instrument flight. Also a term used by pilots and controllers to indicate type of flight plan.

Instrument Landing System (ILS) – A precision instrument approach system which normally consists of the following electronic components and visual aids:

- Localizer
- Glide slope
- Outer Marker
- Middle Marker
- Approach Lights

Instrument Meteorological Conditions - Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling less than the minima specified for visual meteorological conditions.

Instrument Runway - A runway equipped with electronic and visual navigation aids for which a precision or nonprecision approach having straight-in landing minimums has been approved.

Integrated Noise Model (INM) – A complex computer program that calculates aircraft noise levels around an airport from user input data and an extensive internal database of aircraft noise and performance statistics. Outputs can include DNL contours and other metrics such as Time Above and DNL values at specific points. The FAA developed the INM as the primary tool for analyzing and evaluating noise impacts from aircraft operations. Its use used to be prescribed for all FAA-sponsored projects requiring environmental evaluation; however INM has been replaced by AEDT.

Inventory of the Historic and Archaeological Assets of the Commonwealth – An inventory of historic properties and archaeological sites maintained by the Massachusetts Historical Commission.

Isolated Land Subject to Flooding (ILSF) – Isolated depressions or closed basins without an inlet or outlet. It is an area which, at least once per year, confines standing water to a volume of at least one-quarter acre-feet and an average depth of at least six inches.

K

Kilovolt (kV) - Initial Approach Fix – A unit of measure equal to 1,000 volts that is commonly used to describe the potential power of an electrical distribution system.

Kilovolt ampere (kVA) – A unit of measure equal to 1,000 volt amperes that is commonly used to describe the capacity of an electrical transformer.

L

L.G. Hanscom Field - Approximately 1,300-acre civilian airport in Bedford, Concord, Lexington, and Lincoln and operated by the Massachusetts Port Authority.

Landing Minimums – The minimum visibility prescribed for landing a civil aircraft while using an instrument approach procedure. Descent below the established

or Decision Height is not authorized during an approach unless the aircraft is in a position from which a normal approach to the runway of intended landing can be made and adequate visual reference to required visual cues is maintained.

Land Under Water Bodies/Waterways (LUWB) – The land area under any creek, river, stream, pond or lake is a resource area subject to protection under the Massachusetts Wetlands Protection Act.

Landing-Takeoff Cycle (LTO) – Aircraft operations performed at airports. The Landing-Takeoff Cycle includes: approach from a level of 3,000 feet above ground level, landing, taxi-in, taxi-out, takeoff, and climb-out to a height of 3,000 feet above ground level.

Large Airplane – An airplane of more than 12,500 pounds (5,700 kg) maximum certificated takeoff weight.

Leadership in Energy and Environmental Design (LEED) – The U.S. Green Building Council established the LEED Green Building Rating System® as a "voluntary, consensus-based national standard for developing high-performance, sustainable buildings." A rating system is used to determine four levels of LEED certification with Platinum being the highest level.

Level of Service (LOS) – Level of service is a term used to describe the quality of the traffic flow on a roadway facility at a particular point in time. It is an aggregate measure of travel delay, travel speed, congestion, driver discomfort, convenience, and safety based on a comparison of roadway system capacity to roadway system travel demand. Operating level of service is reported on a scale of A to F, with A representing the best operating conditions and F representing the worst operating conditions. LOS A represents uncongested conditions with little or no delay to motorists, while LOS F represents a forced-flow condition with delays and traffic demands that have been identified as exceeding roadway capacity. Roadway operating levels of service are calculated following procedures defined in the *2000 Highway Capacity Manual (HCM)*, published by the Transportation Research Board (TRB) for signalized and unsignalized intersections.

Licensed Site Professional (LSP) – The Massachusetts DEP has developed a licensing procedure for consultants working in the context of the MCP, consisting of testing and training requirements to assure a base level of competency. Those consultants meeting DEP requirements become LSPs and provide assistance to disposal site owners to assure the site is cleaned up following the MCP process. The LSP minimizes DEP involvement in site activities by overseeing actions conducted at the site.

Localizer (LOC) – The component of an ILS that provides course guidance to the runway, emitting a signal used to establish and maintain an aircraft's horizontal position until visual contact confirms the runway alignment and location.

Localizer Type Directional Aid (LDA) – A navigational aid used for nonprecision instrument approaches with utility and accuracy comparable to a localizer but which is not a part of a complete ILS and is not aligned with the runway.

Low Emissions Vehicle (LEV) – Motor vehicles that meet air pollution emission standards that are more-strict (lower) than those that are required for vehicles under the FMVCP.

M

Massachusetts and National Ambient Air Quality Standards (NAAQS) - Air pollutant concentrations for defined periods of time (1-hour, 24-hours, annual, etc.) established to protect the public's health and welfare in ambient (outdoor) air.

Massachusetts Contingency Plan (MCP) – A regulatory framework for cleaning up hazardous waste sites in Massachusetts. The MCP outlines the schedule and procedures to be followed at disposal sites to undertake necessary and appropriate response actions to provide protection of health, safety, public welfare and the environment. The MCP regulatory citation is 310 CMR 40.0000.

Massachusetts Cultural Resources Information System (MACRIS) – A computerized database listing of the Inventory of the Historic and Archaeological Assets of the Commonwealth that can be linked to MassGIS. MACRIS is maintained by the Massachusetts Historical Commission (MHC).

The Massachusetts Endangered Species Act (MESA) – The Massachusetts Endangered Species Act that was enacted in December 1990 to protect plant and animal species in danger of extinction. Implementing regulations were promulgated in 1992 and recently revised and implemented as of July 1, 2005. The regulation requires habitat alteration permits for projects that may alter a significant portion of habitat. The recent revisions clarify filing requirements, implement fees, and specify time lines for the regulatory review process.

Massachusetts Environmental Policy Act (MEPA) – The Massachusetts Environmental Policy Act, M.G.L. c. 30, sections 61 through 62H, inclusive. The Massachusetts Environmental Policy Act requires that state agencies study the environmental consequences of their actions, including permitting and financial assistance. It also requires them to take all feasible measures to avoid, minimize, and mitigate damage to the environment. MEPA further requires that state agencies "use all practicable means and measures to minimize damage to the environment," by studying alternatives to the proposed project, and developing enforceable mitigation commitments, which will become permit conditions for the project if and when it is permitted.

Massachusetts Environmental Policy Act (MEPA) Office – The MEPA Office is the staff of the Secretary of Environmental Affairs responsible for implementation and administration of the MEPA review process. The staff, headed by the Assistant Secretary for Environmental Impact Review (also known as the MEPA Director), consists of environmental analysts and administrative support staff. The MEPA Office reviews ENF, EIR, Notice of Project Change (NPC), and ESPR filings; makes recommendations to the Secretary regarding the adequacy of these filings and the need for additional filings; assists project proponents, agencies, and the public with questions;

interprets the MEPA regulations; publishes the Environmental Monitor and review schedule.

Massachusetts Historical Commission (MHC) – Established in 1983 to encourage preservation of the rich cultural heritage of the Commonwealth's cities and towns. The MHC is the State Historic Preservation Office.

Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) – A configuration of medium-intensity lights with Runway Alignment Indicator Lights positioned symmetrically along the extended runway centerline to provide visual lighting guidance for landing aircraft. A MALSR supports Category I precision approaches.

Medium Intensity Runway Lighting System (MIRLS) – A system of medium intensity lights that define the lateral limits of runways during periods of darkness or restricted visibility conditions.

Mesoscale air quality analysis – analysis and calculation of air emissions over a larger area, in comparison to a microscale analysis which focuses on smaller areas (e.g. an intersection).

Middle Marker – A marker beacon that defines a point along the glide slope of an Instrument Landing System normally space located at or near the point of decision height (Instrument Landing System Category I). It is keyed to transmit alternate dots and dashes, with the alternate dots and dashes keyed at the rate of 95 dot/dash combinations per minute on a 1300 Hz tone, which is received aurally and visually by compatible airborne equipment.

Minimums – Weather condition requirements established for a particular operation or type of operation; e.g., IFR takeoff or landing, alternate airport for Instrument Flight Rules flight plans, Visual Flight Rules flight, etc.

Minute Man National Historical Park (MMNHP) – The National Park Service operates the Minute Man National Historical Park, which was created in 1959. The park consists of three discontinuous sections referred to as the Battle Road, Wayside, and North Bridge Units and covers approximately 967 acres along Route 2A in Concord, Lexington, and Lincoln and off Monument Street in Concord. Minute Man National Historical Park itself and a number of individual historic properties within the park are historic resources of national significance that are designated National Historic Landmarks. The park is nationally significant as the site of the Battle of Concord, one of the two battles that marked the beginning of the Revolutionary War; for its association with prominent literary figures of the nineteenth and twentieth centuries; and as one of the earliest places in the nation to be commemorated. The park was created to " . . . provide . . . for the preservation and interpretation of historic sites, structures, and properties lying along the entire route of battle" in April 1775.

MOVES – U. S. Environmental Protection Agency system to estimate and model the emission of criteria air pollutants, greenhouse gases and other air toxics from the operation of mobile sources (cars, trucks, buses, etc.).

Movement Area – The runways, taxiways, and other areas of an airport/heliport which are utilized for taxiing/hover taxiing, air taxiing, takeoff, and landing of aircraft, exclusive of loading ramps and parking areas. At those airports/heliports with a tower, specific approval for entry onto the movement area must be obtained from Air Route Traffic Control Center.

N

National Ambient Air Quality Standards (NAAQS) - Air pollution concentrations in outdoor air that have been established by the EPA to protect the public's health and welfare. NAAQS are air pollution concentrations that may not be exceeded.

National Environmental Policy Act (NEPA) of 1969 –An Act that established the national policy for the environment and created the Council on Environmental Quality. NEPA requires that an Environmental Impact Statement or EIS be prepared on every "major federal action" undertaken or permitted. A Finding of No Significant Impact (FONSI) is issued if it is determined that the project will not have a significant effect on the environment. An EIS must consider alternatives and mitigation measures that would lessen the project's impacts. The EIS must be made available in draft form for public comment and the agency must respond to those comments received in the Final EIS.

Natural Heritage and Endangered Species Program (NHESP) – Part of the Massachusetts Division of Fisheries and Wildlife that is responsible for the conservation and protection of hundreds of species that are not hunted, fished, trapped, or commercially harvested in the state. The highest priority of NHESP is protecting the approximately 190 species of vertebrate and invertebrate animals and 258 species of native plants that are officially listed as Endangered, Threatened or of Special Concern in Massachusetts. A primary responsibility of the NHESP is the regulatory protection of rare species and their habitats as codified under the MESA (M.G.L. c.131A) and Wetlands Protection Act (M.G.L c.131s.40).

National Pollutant Discharge Elimination System (NPDES) – A program authorized under the U.S. Clean Water Act to control water pollution by regulating point sources (e.g., pipes, ditches, conduits) that discharge pollutants into waters of the United States. NPDES permits are administered by U.S. EPA or delegated to individual states to administer. General and Individual NPDES permits are typically five years in length and have provisions for automatic extensions if the permit is not reissued prior to expiration. In Massachusetts this program is administered by the EPA.

National Priority List (NPL) – List of hazardous waste sites eligible for long-term remedial action financed under the federal Superfund program.

Navigational Aid (NAVAID) – Any visual or electronic device airborne or on the surface which provides point-to-point guidance information or position data to aircraft in flight.

New England Regional Aviation System Plan (NERASP) – A joint effort by the FAA, Massport and the Massachusetts Aeronautics Commission with the involvement of major commercial service

airports throughout the six-state region. The NERASP developed forecasts from a regional perspective rather than from the perspective of an individual airport or a state system of airports. Each airport's potential to accommodate scheduled commercial passenger was based not only on the demand generated by the airport's catchment area, but also considered the attractiveness of nearby airports that passengers may also utilize.

Nitrogen dioxide (NO2) – One of the Oxides of Nitrogen (NO_x) compounds. The U. S. EPA has established regulations, including a NAAQS, for nitrogen dioxide (NO_2).

Noise and Operations Monitoring System (NOMS) – A system of six permanent noise monitors near Hanscom Field and the software that is used to monitor their operation. The system was installed in 1989 and is in the process of being upgraded by Massport.

Noise Sensitive Receptor – Site-specific location where noise exposure may be a concern. The ESPR calculates DNL and Time Above values at the following types of noise sensitive receptors: hospitals, sites on the National Register of Historic Places, public facilities, religious sites, and schools.

Nondirectional Beacon (NDB) – A Low/Medium Frequency or Ultra High Frequency radio beacon transmitting nondirectional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine his bearing to or from the radio beacon and "home" on or track to or from the station. When the radio beacon is installed in conjunction with the Instrument Landing System marker, it is normally called a Compass Locator.

Nonmovement Area – Taxiways and apron (ramp) areas not under the control of air traffic.

Nonprecision Approach Procedure – A standard instrument approach procedure in which no electronic glideslope is provided; e.g., VHF Omnidirectional Range (VOR), Tactical Aircraft Control and Navigation (TACAN), NDB, LOC, ASR, LDA, or Simplified Direction Finding (SDF) approaches.

Notice of Intent (NOI) – A filing with the Conservation Commission of a local jurisdiction that uses WPA Form 3 or, in limited circumstances WPA Form 4 (Abbreviated Notice of Intent), to seek confirmation of delineated wetland resource area boundaries

Notice of Project Change (NPC) – An environmental document filed in accordance with the Massachusetts Environmental Policy Act, M.G.L. c. 30, sections 61 through 62H, inclusive, if there is any material change in a project prior to the taking of all Agency Actions for the project. The continuation of the project by a new proponent shall not by itself constitute a change in the Project, provided that the new proponent adopts all mitigation measures to which the previous Proponent committed. The NPC shall specify in detail any change in the information provided in any previous review document. In determining whether a change in a project or the lapse of time might significantly increase environmental consequences, the Secretary shall consider the following factors:

a) Expansion of the Project: A change in a project is ordinarily insignificant if it results solely in an increase in square footage, linear footage, height, depth or other relevant measures of the physical dimensions of the project of less than ten percent over estimates previously reviewed, provided the increase does not meet or exceed any new thresholds.

b) Generation of further impacts, including an increase in release or emission of pollutants or contaminants during or after completion of the project. A change in a project is ordinarily insignificant if it results solely in an increase in impacts of less than twenty-five percent of the level specified in any review threshold, provided that cumulative impacts of the project do not meet or exceed any review thresholds that were not previously met or exceeded.

c) Change in expected date for commencement of the project, commencement of construction, completion date for the project, or schedule of work on the project.

d) Change of the project site.

e) New application for a permit or new request for financial assistance or a land transfer.

f) For a project with net benefits to environmental quality and resources or public health, any change that prevents or materially delays realization of such benefits.

g) For a project involving a lapse of time, changes in the ambient environment or information concerning the ambient environment.

O

Object – Includes, but is not limited to, above ground structures, NAVAIDs, people, equipment vehicles, natural growth, terrain, and parked aircraft.

Object Free Area (OFA) – An area on the ground centered on a runway, taxiway, or taxilane centerline provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes.

Obstacle – An existing object, object of natural growth, or terrain at a fixed geographical location or which may be expected at a fixed location within a prescribed area with reference to which vertical clearance is or must be provided during flight operations.

Obstacle Free Zone (OFZ) – The OFZ is the airspace below 150 feet (45 m) above the established airport elevation and along the runway and extended runway centerline that is required to be clear of all objects, except for frangible visual NAVAIDs that need to be located in the OFZ because of their function, in order to provide clearance protection for aircraft landing or taking off from the runway, and for missed approaches. The OFZ is subdivided as follows:

- **Runway OFZ** – The airspace above a surface centered on the runway centerline;
- **Precision Approach Category I (CAT I) Runway** – A runway with an instrument

approach procedure which provides for approaches to a decision height (DH) of not less than 200 feet (60m);

- **Runway Protection Zone (RPZ)** – An area off the runway end to enhance the protection of people and property on the ground;
- **Runway Safety Area (RSA)** – A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway;
- **Shoulder –** An area adjacent to the edge of paved runways, taxiways or aprons providing a transition between the pavement and the adjacent surface; support for aircraft running off the pavement; enhanced drainage; and blast protection;
- **Taxilane (TL) –** The portion of the aircraft parking area used for access between taxiways and aircraft parking positions;
- **Taxiway (TW)** – A defined path established for the taxiing of aircraft from one part of an airport to another;
- **Taxiway Safety Area (TSA)** – A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway;
- **Visual Runway** – A runway without an existing or planned straight-in instrument approach procedure.

The OFZ is a three dimensional volume of airspace which protects for the transition of aircraft to and from the runway. The OFZ clearing standard precludes taxiing and parked airplanes and object penetrations, expect for frangible NAVAID locations that are fixed by function. Additionally, vehicles, equipment, and personnel may be authorized by air traffic control to enter the area using the provisions of Order 7110.656, Air Traffic Control, paragraph 3-5. The runway OFZ and, when applicable, the inner-approach OFZ and the inner-transitional OFZ, comprise the OFZ.

Operable Unit (OU) – A discreet portion of a site that is investigated and cleaned up separately from other portions of the site. Dividing a site into two or more operable units allows separate investigations and cleanups to proceed at their own pace. Common examples are investigating soil and groundwater contamination separately, and cleaning up and redeveloping small portions of a larger site.

Outer Marker – A marker beacon at or near the glide slope intercept altitude of an ILS approach. It is keyed to transmit two dashes per second on a 400 Hz tone, which is received aurally and visually by compatible airborne equipment. The OM is normally located four to seven miles from the runway threshold on the extended centerline of the runway.

Outstanding Resource Water (ORW) – A water or a wetland bordering a water that has been designated by the Massachusetts Department of Environmental Protection as an Outstanding Resource Water (ORW). ORWs include public water supplies, certified vernal pools, and other waters that constitute an outstanding resource as determined by their outstanding socio-economic, recreational, ecological and/or aesthetic values.

Overhead Maneuver – A series of predetermined maneuvers prescribed for aircraft (often information) for entry into the VFR traffic pattern and to proceed to a landing. An overhead maneuver is not an IFR approach procedure. These aircraft shall be considered VFR and the IFR flight plan is canceled when the aircraft crosses the landing threshold on the initial approach portion of the maneuver.

Oxides of Nitrogen (NOX) – Regulated air pollutants representing different combinations of oxygen and nitrogen. The U. S. EPA has established regulations, including a NAAQS, for nitrogen dioxide (NO2).

Ozone (O_3) – A regulated air pollutant formed from reactions between Volatile Organic Compounds (VOC) and oxides of nitrogen in the presence of sunlight, primarily during summer months. Also generally known as smog.

P-Q

Particulate Matter ($PM_{2.5}$) – Regulated fine particle matter in the air with a diameter of 2.5 micron or less. One micron is one-millionth of a meter.

Particulate Matter (PM_{10}) – Regulated coarse particle matter in the air with a diameter of 10 micron or less. One micron is one-millionth of a meter.

Polychlorinated biphenyl (PCB) – Mixtures of up to 209 individual synthetic chlorinated compounds. PCBs have been used as coolants and lubricants in transformers, capacitors, and other electrical equipment because they don't burn easily and are good insulators. The manufacture of PCBs was stopped in the U.S. in 1977 because of evidence that they build up in the environment and can cause harmful health effects. Products made before 1977 that may contain PCBs include old fluorescent lighting fixtures and electrical devices containing PCB capacitors, and hydraulic oils. There are no known natural sources of PCBs. PCBs are either oily liquids or solids that are colorless to light yellow, and have no known smell or taste.

Precision Approach Path Indicators (PAPI) – A visual aid consisting of a system of lights installed on the side of the runway that provide visual descent guidance information during approach to a runway to provide for the aircraft crossing the runway threshold at an appropriate height. A PAPI is intended primarily for use during VFR weather conditions.

Precision Approach Procedure – A standard instrument approach procedure in which an electronic glide slope/glide path is provided; e.g., ILS/MLS and Precision Approach Radar (PAR).

Precision Approach Radar (PAR) – Radar equipment in some Air Traffic Control facilities operated by the FAA and/or the military services at joint-use civil/military locations and separate military installations to detect and display azimuth, elevations, and range of aircraft on the final approach course to a runway. PAR provides both horizontal and vertical guidance to approaching pilots.

Propylene glycol – An organic compound that is used as ingredient in aircraft deicing solutions.

R

Reasonably Available Control Technology – Requires the use of reasonably available control requirements to reduce or limit air emissions from sources in areas that do not meet national ambient air quality standards (i.e., non-attainment areas).

Response Action Outcome (RAO) – A designation applied to a disposal site, as defined under the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000), at which there is No Significant Risk, also as defined by the MCP. The goal of assessment and mitigation activities under the MCP is to achieve conditions of No Significant Risk. Attainment of a Response Action Outcome (RAO) is considered a significant milestone in the progression through MCP activities, and in many (but not all) cases serves as an endpoint to those activities.

Record of Decision (ROD) – In the Commonwealth of Massachusetts, a document issued by the Secretary of Environmental Affairs on a project where a waiver of a MEPA threshold or other MEPA requirement has been requested. At the federal level, a decision on an EIS filing.

Runway – A defined rectangular area on land airport prepared for the landing and takeoff run of the aircraft along its length. Runways are normally numbered in relation to their magnetic direction rounded off to the nearest 10 degrees; e.g., Runway 01, Runway 25.

Runway Alignment Indicator Lights (RAIL) – A visual lighting system that provides information on the approach end of the runway

Runway End Identifier Lights (REIL) – See Airport Lighting.

Runway Protection Zone (RPZ) – See Obstacle Free Zone.

Runway Safety Area (RSA) – See Obstacle Free Zone.

Runway Visual Range (RVR) – See Visibility.

S

Single Event Level (SEL) – The total noise dose, or exposure, resulting from a time-varying sound that is normalized to a one second duration so that exposures of different durations can be compared on an equal basis. Because aircraft noise events last longer than one second, the time-integrated SEL always has a value greater in magnitude than the maximum sound level of the event – usually about seven to ten dB higher for most airport environments.

Small Airplane – An airplane of 12,500 pounds (5,700 kg) or less maximum certificated takeoff weight.

Spill Prevention Control and Countermeasure Plan (SPCCP) - The cornerstone of the EPA's strategy to prevent oil spills from reaching the nation's waters. Requirements for maintaining SPCC Plans are dependent on facility operations and on site storage practices, as regulated under 40 CFR 112. SPCC Plans have prescribed elements for management and inspection of facilities' storage and handling operations, and are designed to ensure that such facilities put into place containment and other countermeasures that would prevent oil spills from reaching navigable waters.

State Implementation Plan (SIP) – A detailed plan prepared by the states to show how they will comply and maintain

compliance with national air quality rules. States prepare SIPs and submit them to the U.S. EPA for approval to meet specific requirements of the Clean Air Act, including the requirement to attain and maintain the National Ambient Air Quality Standards (NAAQS).

Stormwater Pollution Prevention Plan (SWPPP) – A plan developed in accordance with the requirements of a General or Individual NPDES permit issued pursuant to the U.S. Clean Water Act. The SWPPP sets forth the activities to be initiated at a site to minimize or prevent pollution of waters of the U.S. A SWPPP may be necessary for existing industries or planned construction projects. The development of the SWPPP includes site characterization and the implementation of specific BMPs to address activities at the site. The U.S. EPA is the permitting authority in Massachusetts. The Massachusetts DEP has review and approval of the SWPPP if the site discharges to an ORW.

Sulfur dioxide (SO_2) – A regulated air pollutant created by the combustion of materials containing sulfur. The U. S. EPA has established regulations, including a NAAQS, for SO_2.

T

Taxi – The movement of an airplane under its own power on the surface of an airport (Part 135.100 – Note). Also, it describes the surface movement of helicopters equipped with wheels.

Taxilane (TL) – See Obstacle Free Zone.

Taxiway (TW) – See Obstacle Free Zone.

Taxiway Safety Area (TSA) – See Obstacle Free Zone.

Terminal Instrument Procedures – TERPS establishes criteria that are used to formulate and publish procedures for instrument approach and departure of aircraft to and from civil and military airports.

Terminal Radar Approach Control (TRACON) – Controls aircraft in the vicinity of a large airport, between the departure or arrival airport and the Air Route Traffic Control Center.

Terminal-Very High Frequency Omnidirectional Range Station – A very high frequency terminal omnidirectional range station located on or near an airport and used as an approach aid.

Threshold – The beginning of that portion of the runway usable for landing.

Time Above a decibel threshold (TA) – Because analyses of decibels are complex and often unfamiliar to the public, the FAA has developed a supplemental noise metric that is non-logarithmic: the amount of time (in minutes or seconds) that the noise source of interest exceeds a given A-weighted sound level threshold. Every time a noise event goes above a given threshold, the number of seconds is accumulated and added to any previous periods that the noise exceeded the threshold. These time-above-thresholds, or Time Above, are usually reported for a 24-hour period. Note that TA does not tell the loudness of the various noise events. Just as a single value of the A-weighted sound level ignores the dimension of time, so the TA ignores the dimension of loudness.

Time-In-Mode (TIM) – The time an aircraft spend in each mode of the LTO cycle.

Total Noise Exposure (EXP) – The EXP metric was developed in 1982 as a screening tool for Massport to assess changes in the fleet mix of aircraft operating at Hanscom Field overtime. EXP indicates changes in total noise exposure and expected resultant changes in DNL, without the need to prepare noise contours. The metric is calculated by logarithmically summing the representative SELs for each departure of an airplane assuming it flies over a single point on the ground. Similar aircraft types are grouped together in the calculations at creating a "partial EXP" for the group. Partial EXP values for each group are then summed to obtain a single number estimate of departure noise exposure at that reference location. Similar calculations are performed for arrival operations. Separate computations are performed for civil and military operations. Massport maintains a comprehensive database of operations conducted by aircraft heavier than single engine piston aircraft. EXP uses the same summation formula as DNL: logarithmic summation of all noise events over a 24-hour day, with a 10 dB penalty applied to events occurring between 10:00 p.m. and 7:00 a.m.

Total petroleum hydrocarbon (TPH) – A term used to describe a large family of several hundred chemical compounds that originally come from crude oil, which is refined to common petroleum products such as gasoline, motor oil, and jet fuel. Because there are so many different chemicals in petroleum products, it is not practical to measure each of them individually, so TPH testing in the environment is often used as a measure of evidence of release of such products to soils, groundwater, or surface water.

Total suspended solids (TSS) – Solids in water that can be trapped by a filter (the combination of TSS and total dissolved solids together comprise Total Solids). TSS can include a wide variety of material, such as silt, decaying plant and animal matter, industrial wastes, and sewage. High levels of TSS can pose risk to the aquatic life and natural stream processes.

Touch-And-Go – An operation by an aircraft that lands and departs on a runway without stopping or exiting the runway.

Tower – A terminal facility that uses air/ground communications, visual signaling, and other devices to provide ATC services to aircraft operating in the vicinity or an airport or on the movement area. Authorizes aircraft to land or takeoff at the airport controlled by the tower or to transit the airport traffic area regardless of flight plan or weather conditions (IFR or VFR). A tower may also provide approach control services (radar or non-radar).

Traffic Pattern – The traffic flow that is prescribed for aircraft landing at, taxiing on, or taking off from an airport. The components of a typical traffic pattern are upwind leg, crosswind leg, downwind leg, base leg and final approach.

- **Upwind Leg** – A Flight path parallel to the landing runway in the direction of landing.
- **Crosswind Leg** – A flight path at right angles to the landing runway off its upwind end.

- **Downwind Leg** – A flight path parallel to the landing runway in the direction opposite to landing. The downwind leg normally extends between the crosswind leg and the base leg.
- **Base Leg** – A flight path at right angles to the landing runway off its approach end. The base leg normally extends from the downwind leg to the intersection of the extended runway centerline.
- **Final Approach** – A flight path in the direction of landing along the extended runway centerline. The final approach normally extends from the base leg to the runway. An aircraft making a straight-in approach VFR is also considered to be on final approach.

Transportation Demand Management (TDM) – Measures that make better use of existing transportation facilities by reducing the peak hour demand for automobile trips, as opposed to increasing roadway capacity. Examples of TDM measures include increased or expanded transit service, carpool/vanpool programs, employee rideshare programs, and staggered work hours.

Transportation Improvements Plan (TIP) – A five-year plan that programs federally fund roadway and transit projects. Metropolitan Planning Organization updates the TIP on an annual basis.

Transportation Management Association (TMA) – A structured organization typically comprised of employers interested in collectively improving transportation access to an area through the implementation of cost-sharing approaches such as Transportation Demand Management (TDM) measures, public advocacy and marketing and information campaigns. The transportation access measures, as well as the dues and organizational structure, are tailored to the specific needs of the TMA membership.

Transportation Management Initiative (TMI) – A program that is administered by Mass*RIDES* on behalf of the Executive Office of Transportation. The program funds a Mass*RIDES* staff coordinator to plan and administer TDM actions with members. Membership in the program is free. Benefits are provided based on the level of participation in TDM, with employees of partner companies eligible to use Mass*RIDES*'s guaranteed ride home program.

Transportation Security Administration (TSA) – Federal agency created as part of the Aviation and Transportation Security Act passed by the U.S. Congress and signed into law on November 19, 2001 and in response to the September 11, 2001 attacks on the World Trade Center and The Pentagon. The agency is charged with developing policies to ensure the safety of U.S. air traffic and other forms of transportation.

Trip (vehicle) – A trip represents one vehicle entering or leaving a facility. A vehicle entering *and* leaving a facility represents two vehicular trips.

V

Vehicle Miles Traveled (VMT) – The product of the number of vehicles on a given roadway by the length of the roadway. The units are vehicle miles per year.

Vehicle Occupancy Rate (VOR) – Number of persons per vehicle.

Vegetation Management Plan (VMP) – A program of actions by Massport at Hanscom Field to comply with FAA regulations and Massachusetts General Laws regarding protected airspace. The VMP includes vegetation removal project addresses obstructions. Massport implemented the VMP in 2004. Since then, the VMP has moved into a maintenance phase.

Visibility – The ability, as determined by atmospheric conditions and expressed in units of distance, to see and identify prominent unlighted objects by day and prominent lighted objects by night. Visibility is reported as statute miles, hundreds of feet or meters.

- **Flight Visibility** - The average forward horizontal distance, from the cockpit of an aircraft in flight, at which prominent unlighted objects may be seen and identified by day and prominent lighted objects may be seen and identified by night.
- **Ground Visibility** – Prevailing horizontal visibility near the earth's surface as reported by the United States National Weather Service or an accredited observer.
- **Runway Visual Range (RVR)** – An instrumentally derived value, based on standard calibrations, that represents the horizontal distance a pilot will see down the runway from the approach end. It is based on the sighting of either high intensity runway lights or on the visual contrast of other targets, whichever yields the greater visual range. RVR, in contrast to prevailing or runway visibility, is based on what a pilot in a moving aircraft should see looking down the runway. RVR is horizontal visual range, not slant visual range. It is based on the measurement of a transmissometer made near the touchdown point of the instrument runway and is reported in hundreds of feet. RVR is used in lieu of RVV and/or prevailing visibility in determining minimums for a particular runway.
    - **Touchdown RVR** – The RVR visibility readout values obtained from RVR equipment serving the runway touchdown zone.
    - **Mid-RVR** – The RVR readout values obtained from RVR equipment located midfield of the runway.
    - **Rollout RVR** – The RVR readout values obtained from RVR equipment located nearest the rollout end of the runway.

Visual Approach - An approach wherein an aircraft on an IFR flight plan, operating in VFR conditions under the control of an air traffic facility and having an air traffic control authorization, may proceed to the airport destination in VFR conditions.

Visual Approach Slope Indicators (VASI) – See Airport Lighting

Visual Flight Rules (VFR) – Rules that govern the procedures for conducting flight under visual conditions. The "VFR" is also used in the United States to indicate weather conditions that are equal to or greater than minimum VFR requirements. In addition, it is used by pilots and controllers to indicate type of flight plan.

Visual Flight Rules (VFR) Conditions – Weather conditions equal to or better than the minimum for flight under visual flight rules.

Visual Meteorological Conditions – Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling equal to or better than specified minima.

Volatile Organic Compounds (VOC) – Hydrocarbons associated with motor fuels that are highly reactive and may help form ozone.

VORTAC - A navigation aid providing VOR azimuth, TACAN azimuth, and TACAN distance measuring equipment (DME) at one site.

W-Y

Wetlands Protection Act (WPA) – An Act (MGL Chapter 131 Section 40) that protects Massachusetts wetlands resources and ensures that the beneficial functions of these resources are maintained. Projects that affect wetlands are required to avoid impacts where possible, minimize unavoidable impacts, and mitigate for unavoidable impacts. Proponents of projects in wetlands or in the buffer zone around them must apply for an Order of Conditions from the municipal Conservation Commission.

Z

Zero Emissions Vehicle (ZEV) – A vehicle that has no air pollution emissions directly associated with it (e.g. vehicles powered with electricity or hydrogen fuel cells).

Distribution List

Those entities and individuals indicated with an * received a printed copy of the *2017 L.G. Hanscom Field Environmental Status and Planning Report*. The *2017 L.G. Hanscom Field Environmental Status and Planning Report* is also available on the Massport website.[1]

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[1] http://www.massport.com/massport/about-massport/project-environmental-filings/hanscom-field/

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All individuals who submitted comments on the *2012 ESPR* or the *2017 ESPR* Proposed Scope received printed copies of the *2017 L.G. Hanscom Field Environmental Status and Planning Report.*

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