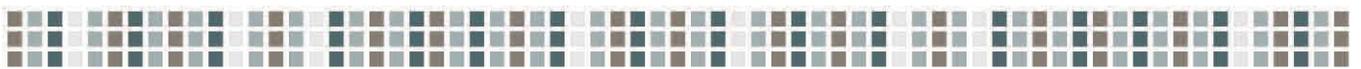


## **Appendix D**

### List of Acronyms & Glossary of Terms



## Appendix D: Acronyms and Glossary of Terms

### Acronyms

#### **A**

AAD	Average Annual Day
ACCRI	Aviation Climate Change Research Initiative
ACEC	Area of Critical Environmental Concern
AEE	FAA’s Office of Environment and Energy
AGL	Above Ground Level
ALP	Airport Layout Plan
APE	Area of Potential Effect
ARTCC	Air Route Traffic Control Centers, also referred to as “Centers”
ASR	Airport Surveillance Radar
ATADS	Air Traffic Activity Data System
ATC	Air Traffic Control
ATCT	Airport Traffic Control Tower
ATO	Air Traffic Organization (of the Federal Aviation Administration)

#### **B**

BLM	Bureau of Land Management
BLS	U.S. Bureau of Labor Statistics

#### **C**

CAAA	Clean Air Act Amendments
CARB	California Environmental Protection Agency Air Resources Board
CCDOA	Clark County Department of Aviation

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*Federal Aviation Administration Air Traffic Organization*

CEQ	Council on Environmental Regulations
CFR	Code of Federal Regulations
CH <sub>4</sub>	Methane
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide

**D**

dB	Decibel
DME	Distance Measuring Equipment
DNL	Day-Night Average Sound Level
DOT	Department of Transportation
DP	Departure Procedure

**E**

EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EOR	Element Occurrence Record
EPA	U.S. Environmental Protection Agency

**F**

FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FICON	Federal Interagency Committee on Noise
FMS	Flight Management System
FONSI	Finding of No Significant Impact
FR	Federal Register

## **G**

GAO	U.S. General Accounting Office
GHG	Greenhouse Gas
GIS	Geographic Information System
GPS	Global Positioning System
GSA	Generalized Study Area

## **H**

HHS	U.S. Department of Health and Human Services
HITL	Human-in-the-Loop
HND	Henderson Executive Airport
H <sub>2</sub> O	Water

## **I**

IFR	Instrument Flight Rules
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
INM	Integrated Noise Model

## **J**

## **K**

## **L**

L30	Las Vegas Terminal Radar Approach Control (TRACON)
LAS	Las Vegas McCarran International Airport
LSV	Nellis Air Force Base

## **M**

MITRE-CAASD MITRE Corporation's Center for Advanced Aviation System Development

MSA Metropolitan Statistical Area

## **N**

NAAQS National Ambient Air Quality Standards

NAICS North American Industry Classification System

NAS National Airspace System

NASA National Aeronautics and Space Administration

NATCF Nellis Air Traffic Control Facility

NAVAIDS navigational aids

NCA National Conservation Area

NEPA National Environmental Policy Act of 1969

NextGen Next Generation Air Transportation System

NIRS Noise Integrated Routing System

NLCD National Land Cover Database

NM Nautical Mile

NNHP Nevada Natural Heritage Program

NO<sub>x</sub> Oxides of Nitrogen

N<sub>2</sub>O Nitrous Oxide

NPIAS National Plan of Integrated Airport Systems

NPS National Park Service

NRHP National Register of Historic Places

NSR New Source Review

NWR National Wildlife Refuge

## **O**

O<sub>3</sub> Ozone

OPSNET The Operations Network

## **P**

Pb	Lead
PBN	Performance-Based Navigation
PL	Public Law
PM	Particulate Matter

## **Q**

## **R**

ROD	Record of Decision
RNAV	Area Navigation
RNP	Required Navigation Performance
RTCA	Radio Technical Commission for Aeronautics

## **S**

SAAAR	Special Aircraft and Aircrew Authorization Required
SFRA	Special Flight Rules Area
SHPO	State Historic Preservation Officer
SID	Standard Instrument Departure
SMS	Safety Management System
SO <sub>x</sub>	Oxides of Sulfur
SO <sub>2</sub>	Sulfur Dioxide
STAR	Standard Instrument Arrival Route
SUA	Special Use Airspace

## **T**

TAF	Terminal Area Forecast
TARGETS	Terminal Area Route Generation, Evaluation, Traffic and Simulation

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*Federal Aviation Administration Air Traffic Organization*

TERPS	Terminal Instrument Procedures
THPO	Tribal Historic Preservation Officer
TRACON	Terminal Radar Approach Control

## **U**

U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey

## **V**

VFR	Visual Flight Rules
VGT	North Las Vegas Airport
VMC	Visual Meteorological Conditions
VOC	Volatile Organic Compounds
VOR	Very High Frequency Omnidirectional Range

## **W**

WCI	Western Climate Initiative
WPSAWG	Western Pacific Subgroup of the Airspace Working Group
WSC	Western Service Center

## **X**

## **Y**

## **Z**

ZAB	Albuquerque Air Route Traffic Control Centers (ARTCC)
ZDV	Denver Air Route Traffic Control Centers (ARTCC)

ZLA	Los Angeles Air Route Traffic Control Centers (ARTCC)
ZLC	Salt Lake City Air Route Traffic Control Centers (ARTCC)
ZOA	Oakland Air Route Traffic Control Centers (ARTCC)

## **Glossary of Terms**

### **A**

**A-Weighted Sound Level**—The A-weighting scale discriminates against the lower frequencies below 1000 hertz according to a relationship approximating the auditory sensitivity of the human ear. The A-weighted sound level is approximately related to the relative “noisiness” or “annoyance” of many common sounds.

**Air Route Traffic Control Center (ARTCC or Center)**—An FAA facility established to provide air traffic control service to IFR aircraft principally within the en route airspace.

**Air Traffic Control**—The combination of people and the software, hardware, and facilities used to monitor and to guide or direct aircraft on their routes within the NAS is referred to collectively as air traffic control.

**Air Traffic Controller (or Controller)**—The people who monitor and guide or direct aircraft on their routes within the NAS

**Air Traffic Organization (ATO)**—The organization within the FAA that is responsible for moving air traffic safely and efficiently within the NAS.

**Air Traffic Routes**—Any routes through the ATCT, terminal, and en route airspace.

**Airfield Throughput**—Airfield throughput is a measure of the expected number of operations that multiple runways at an airport can accommodate in one hour, considering the operating dependencies between runways to maintain safe operating standards.

**Airport Traffic Control Tower (ATCT)**—A facility that provides ATC services to aircraft operating in the vicinity of an airport.

**Airspace**—Navigable area used by aircraft for purposes of flight.

**Airspace Management Structure**—The defined volumes of airspace assigned to ATC facilities and the sectors within the ATC facilities for purposes of managing aircraft flow.

**Airspace Throughput**—A measure of airspace capacity, the number of aircraft that can operate through the airspace in a safe manner based on the design of routes through the airspace and the management structure of the airspace (see also Sustained Airspace Throughput).

**Airway**—An area of airspace established in the form of a corridor, the centerline of which is defined by NAVAIDs. The network of airways serving aircraft up to but not including 18,000 feet MSL are referred to as Victor Airways. The network of airways serving aircraft operations at or above 18,000 feet MSL are referred to as Jet Airways.

**Approach Phase of Flight**—The segment of flight during which a pilot follows a standard procedure or series of verbal instructions from an air traffic controller to guide the aircraft to the landing runway.

**Area Navigation (RNAV)**—A method of air navigation that allows an RNAV-trained pilot operating an RNAV-equipped aircraft to fly a direct course within a network of NAVAIDs, rather than navigating by following a series of NAVAIDs.

**Arrival**—The act of landing at an airport, also referred to as landing.

**Arrival Gate**—The general area along the terminal–en route airspace boundary through which aircraft in the descent phase of flight typically pass (note that several entry points may be located along one arrival gate).

**Arrival Stream**—Procedure in which arriving air traffic is merged into an orderly flow for entering the terminal airspace or landing on a runway. Also see Sequencing.

## **B**

## **C**

**Climb or Climb-out**—The act or instance of increasing altitude.

**Controller**—(see **Air Traffic Controller**)

**Conventional Standard Instrument Procedures (SIDs or STARs)**—Procedures based on ground-based navigational aids (NAVAIDs), which provide instrument guidance to a pilot as the aircraft flies over each NAVAID, or if they are based on verbal instructions from an air traffic controller.

## **D**

**Day-Night Average Sound Level (DNL)**—A measure of the annual average noise environment over a 24-hour day. The measure is a 24-hour, logarithmic, (or energy-) average, A-weighted sound pressure level with a 10-decibel penalty applied to nighttime event that occur between 10 p.m. and 7 a.m.

**Departure**—The act of an aircraft taking off from an airport, also referred to as take-off.

**Departure Gate**—The general area along the terminal–en route airspace boundary through which aircraft in the departure phase of flight typically pass (note that several exit points may be located along one departure gate).

**Departure Phase of Flight**—The in-flight transition of an aircraft from take-off to the en route phase of flight, during which the aircraft climbs to its assigned cruising altitude following a standard instrument procedure (predefined set of guidance instructions that define a route for a pilot to follow) or a series of verbally issued instructions from an air traffic controller.

**Departure Stream**—Procedure in which departing air traffic is merged into an orderly flow to exit the terminal airspace. Also see Sequencing.

**Descent**—The process of decreasing altitude.

**Descent Phase of Flight**—The in-flight transition of an aircraft from the assigned cruising altitude to the point at which the pilot initiates the approach to a runway at the destination airport.

## **E**

**EA Airports**—McCarran International Airport (LAS), North Las Vegas Airport (VGT), and Henderson Executive Airport (HND).

**En Route Airspace**—A general term used to describe the airspace controlled by an ARTCC.

**En Route Phase of Flight**—The generally level segment phase of flight (“cruise altitude”) between the departure and destination airports.

**Entry Point**—The point along the terminal airspace – en route airspace boundary – at which the aircraft enters the terminal airspace and exits the en route airspace and control of the aircraft is passed from ARTCC to TRACON controllers.

**Environmental Assessment**—An EA is a concise document used to describe the environmental impacts of a proposed federal action.

**Exit point**—The point along the terminal airspace – en route airspace boundary – at which the aircraft exits the terminal airspace and enters the en route airspace and control of the aircraft is passed from TRACON to ARTCC controllers.

## **F**

**Federal Aviation Administration (FAA)**—The agency of the U.S. government with primary responsibility for the safety of civil aviation. Among its major functions are the regulation of civil aviation to promote safety and fulfill the requirements of national defense and development and operation of a common system of air traffic control and navigation for both civil and military aircraft.

**Final Approach**—The segment of flight along which an aircraft is aligned with the landing runway and operates along a straight route at a constant descent rate to the runway.

**Flight Check**—The process of flying new procedures to validate design.

**Flight Track**—The route used by an aircraft in flight.

## **G**

**Global Positioning System (GPS)**—A satellite-based radio positioning and navigation system operated by the Department of Defense. The system provides highly accurate position and velocity information and precise time, on a continuous global basis to an unlimited number of properly equipped users.

## **H**

**Heading**—A compass bearing indicating the direction of travel.

**Hold Pattern/Ground Hold**—An ATC coordination technique that involves assigning an aircraft to a holding pattern in the air or holding an aircraft on the ground before departure.

## **I**

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

**Instrument Meteorological Conditions (IMC)**—Weather conditions with a cloud ceiling height of less than 1,000 feet above ground level (AGL), visibility of less than 3 miles, or the presence of another visual impairment such as rain, snow, fog, and dust.

## **J**

**Jet Airway**—(see Airway)

## **K**

## **L**

**Landing**—(see Arrival)

**Landing Phase of Flight**—The touch-down of the aircraft at the destination airport's runway including taxing and managing taxi flow into gate.

**LAS Optimization**—(see Las Vegas Area Optimization)

**Las Vegas Area Optimization**—The proposed project, the subject of this EA, to redesign the air traffic routes in the Las Vegas area serving the EA Airports. The project is referred to as “LAS Optimization.”

**Lateral separation**—The separation between aircraft operating along two separate but proximate flight routes.

**Level-off**—An ATC coordination technique that involves directing an aircraft that is ascending or descending to maintain a constant altitude. This can be done once the aircraft reaches its cruise

altitude in the en route environment, or as a series of steps taken as the aircraft transitions to/from the en route airspace to maintain adequate separation from other aircraft.

**Longitudinal Separation**—The separation between two aircraft operating along the same flight route referring to the distance between a lead and a following aircraft. Longitudinal separation is also referred to as in-trail separation.

## **M**

**Mean Sea Level (MSL)**—The height of the surface of the sea for all stages of the tide, used as a reference for elevations or altitude of aircraft flight. Also called sea level datum.

## **N**

**National Airspace System (NAS)**—The area within which the FAA manages aircraft takeoffs and landings and the flow of aircraft between airports through a system of infrastructure (such as air traffic control facilities), people (such as air traffic controllers, maintenance and support personnel), and technology (sensors such as radar and communications equipment).

**Nautical Mile (NM)**—A measure of distance equal to 1 minute of arc on the earth's surface (approximately 6,076 feet).

**Navigational Aids (NAVAIDS)**—A visual or electronic device airborne or on the ground that provides guidance information or position data to aircraft in flight.

**Next Generation Air Transportation System (NextGen)**—The FAA's plan to modernize the National Airspace System to meet expected future demand for air transportation services.

**Noise**—Any sound that is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying.

**Noise Exposure**—The cumulative acoustic stimulation reaching the ear of a person over a specified period of time (e.g., a year, a work shift, a working life, or a lifetime).

**Noise Integrated Routing System (NIRS)**—A computer program developed, updated, and maintained by the FAA to evaluate aircraft noise impact for air traffic actions involving multiple airports over broad geographic areas.

## **O**

**Operation**—The landing or take-off of an aircraft.

**Overlay**—An overlay is a term used to describe the condition in which a conventional and RNAV standard instrument procedures closely mimic each other to allow for both RNAV-equipped aircraft and aircraft that are not RNAV-equipped to follow a similar route.

## P

**Performance-Based Navigation**—A framework for defining performance requirements in navigation that can be applied to an air traffic route, an instrument procedure, or a defined airspace. Once the performance level is established, the aircraft's capability determines whether the aircraft can safely achieve the specified performance and qualify for the operation. The two main components of PBN framework are Area Navigation (RNAV) and Required Navigation Performance (RNP).

**Point-out**—An ATC coordination technique that involves pointing out, or notifying an air traffic controller of an adjacent sector of the proximity of an aircraft to the adjacent sector's boundary.

**Population Centroid**—A point representing the geographic center of a census block defined by the U.S. Bureau of Census.

**Preflight Phase of Flight**—The phase of flight that includes the preflight planning and checks as well as the ground movement of the aircraft (referred to as “taxiing”) to the departure end of a runway.

## Q

## R

**Reroute**—An ATC coordination technique that involves rerouting aircraft to manage aircraft flow.

**RNAV**—See **Area Navigation**.

**Runway Operating Configurations**—The optimal combinations of use of two or more runways to accommodate arriving and departing aircraft under differing conditions such as weather, prevailing winds, type of traffic (e.g., predominately arrivals or departures), and amount of traffic.

**Runway Throughput**—A runway can accommodate a defined number of aircraft operations, which can be measured by runway throughput, or the expected number of operations (arrivals and/or departures) that a runway can accommodate in one hour while maintaining safe operating standards.

**Runway Transition**—The segment of a route (1) defined in a SID that provides guidance from a runway end to an exit point or to a common segment of the SID, or (2) defined in a STAR that provides guidance from an entry point or a common segment of the SID to the final approach to a runway end.

## S

**Satellite EA Airports**—North Las Vegas Airport (VGT) and Henderson Executive Airport (HND).

**Section 4(f)**—A resource that may be protected under special provisions of the U.S. Department of Transportation Act (49 USC 303(c)).

**Sector**—A defined volume of airspace, including both lateral and vertical limits, in which a single air traffic controller is responsible for the safe movement of air traffic. A TRACON's or ARTCC's airspace is comprised of multiple sectors.

**Separation**—Spacing between aircraft. (Also see Vertical, Lateral, or Longitudinal Separation.)

**Sequencing**—Procedures in which air traffic is merged into an orderly flow. Also see Arrival Stream and Departure Stream.

**Special Use Area (SUA)**—A volume of airspace that supports activities, often of military nature, that may present a safety hazard for nonparticipating aircraft. Therefore, limitations are imposed on aircraft operations that are not a part of the defined activities, such as requiring nonparticipating aircraft to remain outside of the SUA.

**Speed Control**—An ATC coordination technique that involves reducing or increasing aircraft speed.

**Standard Instrument Arrival Route (STAR)**—A procedure that defines for a pilot standard and predictable lateral and vertical guidance to facilitate safe and predictable navigation from a jet airway in the en route airspace through the terminal airspace and to a runway.

**Standard Instrument Departure (SID)**—A procedure that defines for a pilot standard and predictable lateral and vertical guidance to facilitate safe and predictable navigation from an airport through the terminal airspace (while remaining clear of obstacles such as cell towers, buildings, and trees) and to a jet airway in the en route airspace.

**Standard Instrument Procedure**—A predefined set of guidance instructions that define a route along which aircraft operate, intended to provide predictable, efficient flight routes to move aircraft through the airspace in an orderly manner and to minimize the need for communication between the controller and pilot.

**Sustained Airspace Throughput**—The greatest number of operations per hour that can be accommodated in an area of airspace for successive hours without eventually resulting in delays. During some hours, the airspace can accommodate more operations than what is considered to be sustainable; in other words, the higher level of operations that may be accommodated during some hours could not be sustained during every hour of the day.

**Sustained Throughput**—The greatest number of operations per hour that can be accommodated for *successive hours* without eventually resulting in delays. In other words, a higher level of operations may be accommodated during some hours that could not be sustained during every hour of the day. (See also Throughput).

## T

**Take-off**—See **Departure**.

**Takeoff Phase of Flight**—The phase of flight in which an aircraft transitions from a runway to flight.

**Terminal Airspace**—The airspace in which aircraft operating under the control of a terminal radar approach control (TRACON) facility.

**Terminal Radar Approach Control (TRACON)**—The FAA ATC facility at which controllers manage aircraft operating within the terminal airspace that are transitioning between the airspace under control of an ATCT and the en route airspace.

**Throughput**—The expected number of aircraft operations (arrivals and/or departures) that a runway, an airfield, or an defined area of airspace can accommodate in one hour while maintaining safe operating standards. (See also Sustained Throughput, Runway Throughput, Airfield Throughput, and Airspace Throughput).

## U

## V

**Vectoring**—An ATC coordination technique that involves issuing a series of headings to a pilot to route an aircraft.

**Vertical Separation**—The separation between aircraft operating at different altitudes.

**Victor Airway**—(see Airway).

**Visual Flight Rules (VFR)**—The rules that govern the procedures for conducting flight under Visual Meteorological Conditions (VMC), under which the pilot is responsible to “see-and-avoid.”

**Visual Meteorological Conditions (VMC)**—Conditions that exist during fair to good weather.

## W

## X

## Y

## Z