Airport Noise Glossary of Terms

- **DNL (Day-Night Average Sound Level):** is a measure of noise level based on a 24-hour average. Night noise, between the hours of 10:00 PM and 7:00 AM is weighted with an additional 10 decibels to compensate for sleep interference and other disruptions. An *annual* average of DNL is used by the FAA to describe airport noise exposure on surrounding areas. Areas with noise impacts less than 65 dB DNL are considered "compatible" with residential use; areas at or above 65 dB DNL are designated "incompatible" with residential use. Source www.massport.com

- **CNEL (Community Noise Equivalent Level):** Adds a ten point weighting to DNL measurements for flights between 7:00 PM and 10:00 PM. This method is used in the state of California and there are efforts in Illinois and Georgia to adopt it state-wide as well. Any future contours out of an EIS or Part 150 would use the CNEL.

- **NextGen: (Next Generation Air Transportation System):** is a wide ranging transformation of the entire national air transportation system to be implemented between 2012-2025. NextGen moves away from ground-based technologies to satellite-based technology. In 2003, Congress established the Joint Planning and Development Office (JPDO) to plan and coordinate the development of NextGen. The JPDO is a multi-agency public/private initiative that includes the Federal Aviation Administration, Department of Transportation, Department of Defense, Department of Commerce, Department of Homeland Security, NASA and the White House Office of Science and Tech Policy. Source: (www.faa.gov)

- **PBN (Performance Based Navigation):** is a technology within the NextGen system that provides a framework for the design and implementation of automated flight paths. With PBN, pilots can navigate an aircraft without reliance on ground-based beacons. Instead, PBN allows aircraft to navigate based on built-in aircraft capabilities, like GPS. The two main components of PBN are Area Navigation (RNAV) and Required Navigation Performance (RNP). Source: http://www.geaviation.com

- **RNAV (Area Navigation and formerly Random Navigation):** is a software program developed to give aircraft the basic ability to navigate based on a variety of sensors and signals. Without RNAV, aircraft have to navigate directly from one ground-based, in-range radio point, directly to another. Using RNAV, aircraft are able to steer directly to a destination or steer along a preprogrammed path. In general, RNAV is less precise/advanced than a technology referred to as Required Navigation Performance (RNP), because it does not offer curved paths and does not provide feedback to pilots on the performance of the technology. Source: http://www.geaviation.com

- **RNP (Required Navigation Performance):** is a much more advanced form of RNAV and can be tailored to specific use. Aircraft using RNP are able to precisely fly predetermined paths loaded into their flight computers. Accurate navigation performance is ensured through continual monitoring with alerts if the aircraft's position becomes uncertain. These

procedures may be designed with paths that reduce flight distances and narrow flight paths. Source: http://www.geaviation.com

- **F.A.R. Part 150:** is a voluntary program that U.S. airports may enter into with the FAA and with the input of community stakeholders, to investigate noise impacts on surrounding neighborhoods and explore opportunities for mitigation. A Part 150 establishes two products: 1. Noise Exposure Maps, which describe existing noise conditions in the airport area and projected conditions if no noise abatement actions are taken; and 2. Noise Compatibility Programs, which provide guidelines for the mitigation of existing incompatible land uses and the prevention of development that would introduce new incompatible uses.

- **EIS (Environmental Impact Statement):** An Environmental Impact Statement (EIS) is a document prepared to describe the effects for proposed activities on the environment. "Environment," in this case, is defined as the natural and physical environment and the relationship of people with that environment. This means that the "environment" considered in an EIS includes land, water, air, structures, living organisms, environmental values at the site, and the social, cultural, and economic aspects. An "impact" is a change in consequence that results from an activity. Impacts can be positive or negative or both. An EIS describes impacts, as well as ways to "mitigate" impacts. To "mitigate" means to lessen or remove negative impacts. http://web.ead.anl.gov/uranium/eis/whatiseis/index.cfm

- **Fly Quiet Program:** Fly Quiet Programs are voluntary programs at U.S. airports that encourage pilots and air traffic controllers to use designated nighttime preferential runways and flight tracks. These preferred routes are intended to direct aircraft over less populated and more compatible areas. These programs are voluntary and cannot be required nor can airports be penalized for violating them due to safety restrictions. In some instances, airports and local stakeholders have incentivized program participation by publically awarding airlines that have a higher rate of compliance.

- **INM (The Integrated Noise Model):** is used to evaluate aircraft noise impacts in the vicinity of airports. The INM has been the FAA's standard tool since 1978 for determining the predicted noise impact in the vicinity of airports. The FAA requires that airports use the INM in assessing environmental impacts for soundproofing, evaluating physical improvements to the airfield, analyzing changes to existing or new procedures, and in assessing land use compatibility. The FAA will begin using the Aviation Environmental Design Tool (AEDT) in May of 2015 and phase out the INM. AEDT builds on the INM model by considering interdependencies between aircraft-related fuel burn, noise and emissions. Source: www.massport.com and www.faa.gov

- **FAA Order 1050.1F:** The FAA has issued an updated draft of their existing regulations or, "Order 1050.1 Environmental Impacts: Policies and Procedures." This order serves as the FAA's policy and procedures for compliance with the National Environmental Policy Act (NEPA) and implementing regulations issued by the Council on Environmental Quality (CEQ). This Order updates FAA Order 1050.1E to provide a clear, concise, and up-to-date discussion of the FAA's requirements for implementing NEPA and clarifies requirements in

order to facilitate timely, effective, and efficient environmental reviews of FAA actions, including NextGen improvements. There are two updates to Categorical Exclusions in the 1050.1.
http://www.faa.gov/about/office_org/headquarters_offices/apl/environ_policy_guidance/policy/draft_faa_order/

- **CATEX (Categorical Exclusion):** A categorical exclusion is an FAA action that is not considered to have a significant effect on the human environment and therefore, neither an environmental assessment nor an environmental impact statement is required. Regulatory CATEXes have been used to implement new air traffic procedures including PBN procedures. In the 2012 FAA Reauthorization, a legislative CATEX was included that impacts PBN implementation but, as we understand it, mirrors a current regulatory CATEX.

- **CATEX 2**: In the February 2012 FAA Reauthorization bill, language was passed in Section 213(c)(2) that would categorically exclude (PBN) procedures from environmental review if said procedures would result in *measurable reductions* in fuel consumption, carbon dioxide emissions, and noise, *on a per flight basis*, as compared to aircraft operations that follow existing instrument flight rules procedures in the same airspace.