

## VI. GEOLOGY AND SOILS -- Would the project:

- a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
- i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Finding: Less than significant impact

The Van Nuys Airport, and therefore the project site, is not located within an Alquist-Priolo Special Studies zone.<sup>11</sup> There are no known or mapped active faults that pass through the project area. The nearest known potentially active fault is the Verdugo fault, located approximately 5 miles north of the project site. Therefore, ground surface rupture in the project area is considered remote.

Due to the location of the project site within the seismically active Southern California region, the project site has the potential to experience strong ground shaking as a result of earthquakes occurring on regional faults. Although the project site could be subjected to strong ground shaking in the event of an earthquake, this hazard is common in Southern California and the effects of ground shaking can be mitigated to a less than significant level by proper engineering design and construction in conformance with the Uniform Building Code seismic standards as approved by the Department of Building and Safety.

Therefore, the project will result in a less than significant impact due to the exposure of people or structures to potential substantial adverse effects due to rupture of a known earthquake fault.

- ii) Strong seismic ground shaking?

Finding: Less than significant impact

See response to Section VI (a)(i), Geology and Soils. The project site is currently developed with aviation and associated office uses. The project includes the replacement of a portion of these existing uses with hangar and office facilities which will not substantially increase the number of people who have been employed at the project site on a daily basis since aviation uses were developed on the site in the late 1960s. The potential for exposure at the site due to strong seismic ground shaking will not increase as a result of new facilities, and this exposure would not be greater than normal seismic risk as compared to other areas in Southern California. Proper engineering design and construction in conformance with the Uniform Building Code seismic standards as approved by the Department of Building and Safety will reduce potential impacts due to seismic ground shaking to a less than significant level.

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<sup>11</sup>Background Report, Van Nuys Airport Master Plan. City of Los Angeles Department of Airports. January, 1995.

Therefore, the project will result in a less than significant geologic impact due to the exposure of people or structures to strong seismic ground shaking.

iii) Seismic-related ground failure, including liquefaction?

Finding: Less than significant impact

According to the California Department of Conservation, Division of Mines and Geology, California Division of Mines and Geology,<sup>12</sup> the project site is not located within an area identified as having a potential for liquefaction. Additionally, the City of Los Angeles records indicate that the site is not located within a liquefaction zone.<sup>13</sup> Therefore, the project will result in a less than significant geologic hazards impact due to liquefaction.

While the project is not anticipated to result in a significant impacts due to the location of the project within an area of liquefaction, compliance with the Uniform Building Code Chapter 18, Division 1, Section 1804.5 Liquefaction Potential and Soil Strength Loss will ensure that any potential impacts due to liquefaction are reduced to a less than significant level. The project will result in a less than significant geologic hazards impact due to liquefaction.

iv) Landslides?

Finding: No impact

The project site is not located within a Slope Stability Study Area as designated by the City of Los Angeles.<sup>14</sup> According to both the State of California Seismic Hazard Zones Map<sup>15</sup> and the Los Angeles Citywide General Plan Framework, the project site is not located within an area of earthquake induced landslide hazard. There are no known landslides in the site vicinity and the site is not in the path of any known or potential landslides. The project will not result in a significant geologic hazards impact due to the potential for landslides.

b) Result in substantial soil erosion or the loss of topsoil?

Finding: Less than significant impact

The project includes the replacement of existing aviation facilities on the project site. The site is currently fully developed and will remain fully developed under the project. The site is graded, paved,

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<sup>12</sup>State of California Seismic Hazard Zones, Van Nuys Quadrangle (February 1, 1998). California Department of Conservation, Division of Mines and Geology.

<sup>13</sup><http://zimas.lacity.org>. August 2006.

<sup>14</sup>Los Angeles Citywide General Plan Framework, Figure GS-4 *Landslide Inventory and Hillside Areas in the City of Los Angeles*. Envicom Corporation. January 19, 1995.

<sup>15</sup>State of California Seismic Hazard Zones, Van Nuys Quadrangle (February 1, 1998). California Department of Conservation, Division of Mines and Geology.

and improved for storm drainage and is considered to be approximately 100 impervious. Therefore, the project will result in a less than significant impact due to the substantial loss of top soil which could create soil erosion.

- c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Finding: Less than significant impact

The Van Nuys Airport is situated in the central portion of the San Fernando Valley. The ground surface within the Airport slopes gently to the south and ranges in elevation from approximately 920 feet mean sea level near Lassen Street to 680 feet mean sea level in the Sepulveda Dam Recreational Area.

The Airport is underlain by several hundred feet of Holocene and Pleistocene alluvium and terrace deposits. The thickness of the alluvium in the central portion of the San Fernando Valley is not known, but may exceed 1,000 feet in the area west of Burbank. Near-surface soils encountered in the study area consist of predominantly of firm to stiff, lean clays with sand or sandy lean clays that generally exhibit low plasticity. These soils can be classified, as Group E-7 soil according to the FAA method of soil classification. According to FAA guidelines, these soils range from friable to hard consistency when dry and are plastic when wet. Group E-7 soils are stiff and dense when compared at the proper moisture content.<sup>16</sup>

The project site has been developed with structures and/or pavement since the late 1960s. During this time, there has been no indication of building or structural damage caused by unstable soil. Building design and construction in conformance with the Uniform Building Code Chapter 18. Division 1, Section 1804.5: Liquefaction Potential and Soil Strength will reduce potential impacts due to liquefaction to a less than significant level. As presented in Section VI (a)(iv), the project site is not located in the path of a known landslide. Therefore, the project will result in a less than significant geologic impact due to unstable soils.

- d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Finding: Less than significant impact

The project site has been developed with structures and pavement since the late 1960s and is considered approximately one hundred percent impervious. During this time, there has been no indication of damage to existing structures related to expansive soils. All proposed foundations will be constructed in compliance with the Municipal Building Code. Therefore, the project will result in a less than significant impact due to expansive soil.

- e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water

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<sup>16</sup>Van Nuys Airport Master Plan, Background Report. City of Los Angeles Department of Airports. January, 1995.

disposal systems where sewers are not available for the disposal of waste water?

Finding: No impact

The site is currently fully developed and serviced by wastewater disposal sewers. The project will not utilize septic tanks or alternative wastewater disposal systems on the site. Therefore, the project will not result in an impact due to soils incapable of adequately supporting septic systems.