Chapter 6
Environmental Overview

The objective of this inventory is to document all environmentally-sensitive areas governed by the National Environmental Policy Act (NEPA) of 1969 within the existing Airport property boundaries; however, the assessment of impacts is not a part of this report. This inventory follows applicable Federal Aviation Administration (FAA) guidelines and examines impact categories identified in FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures.* NEPA has a significant impact on Airport planning and development by requiring that environmental impacts of proposed developments be considered early and throughout the entire planning process. Environmental feasibility is as critical as economic, engineering, or operational feasibility in determining the Airport's future development. In accordance with FAA Orders 1050.1E, *Environmental Impacts: Policies and Procedures,* and 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instruction for Airport Actions*, a brief examination of each of the impact areas has been conducted for the impact categories listed below:

FAA Order 1050.1E addresses the types of impacts and the thresholds that determine whether an impact is considered significant. Each of the impact categories has been reviewed in relation to the Asheville Regional Airport (Airport) throughout the following sections. Again, it is critical to note that this review only reports existing conditions as they relate to FAA guidelines. Compliance with NEPA guidelines, permitting, and coordination activities with agencies will need to be conducted prior to the development of any projects illustrated on the Airport Layout Plan (ALP).

The data and information contained in this chapter was obtained directly from the 2011 Runway Reconstruction and New Parallel Taxiway Environmental Assessment (EA), with the exception to Section 5.2, Compatible Land Use.

The applicability of 15 of the 18 impact categories was considered for this environmental overview. It was determined that three categories were not present in the study area as illustrated in **Table 6-1**. Consequently, they are not further discussed in this chapter.

Table 6-1: Impact Categories Not Present in Study Area

Impact Category	Status
Coastal Resources	No coastal resources are located in Buncombe County.
Historic & Cultural Resources	No National Register of Historic Places (NRHP) listed or NRHP-eligible properties are located within the Airport boundaries. Section 106 consultation with the North Carolina State Historic Preservation Office (NC SHPO) was completed during the 2011 EA.
Wild & Scenic Rivers	No Federal Wild or Scenic Rivers, Congressionally Authorized Study Rivers, or Nationwide River Inventory Listed Rivers are located within Buncombe County

Source: Asheville Regional Airport, Runway Reconstruction and New Parallel Taxiway Environmental Assessment, The LPA Group Aviation Consultants (August 2011)

6.1 Air Quality

The North Carolina Department of Environment and Natural Resources (NCDENR) Division of Air Quality is primarily responsible for the regulation of statewide air quality as well as air quality in Buncombe County. On the federal level, the United States Environmental Protection Agency (EPA) establishes air quality goals and sets standards under the federal Clean Air Act (CAA). For airport projects, the FAA is responsible for the assessment of air quality impacts to comply with the NEPA as well as compliance with the CAA's General Conformity Rule.

The CAA requires that the EPA establish National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to the health of the public and the environment. The EPA defines ambient air within 40 Code of Federal Regulations (CFR) Part 50, as "that portion of the atmosphere, external to buildings, to which the general public has access."

The EPA established two types of NAAQS. *Primary standards* are pollutant limits that protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. *Secondary standards* are pollutant limits that protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. The EPA Office of Air Quality Planning and Standards (OAQPS) established NAAQS for six principal pollutants, referred to as the "criteria" pollutants; these are carbon monoxide (CO), sulfur oxides (SO_x), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), and lead (Pb). The primary and secondary NAAQS standards for these pollutants are provided in **Table 6-2**. Notably, O_3 and certain types of PM (those formed secondarily), are not emitted directly by an air pollutant source. Rather, in certain meteorological conditions, these pollutants are formed by pollutant precursors. For instance, in the presence of sunlight, emissions of volatile organic compounds (VOC) react with emissions of nitrogen oxides (NO_x) to form O_3.

Table 6-2: National Ambient Air Quality Standards

Criteria Pollutant	Averaging Time[1]	PPM[2]	µG/M[3]	Type of Standard[4]
Carbon monoxide (CO)	1-hour	35	40,000	Primary
	8-hour	9	10,000	Primary
Sulfur oxides (SO_x)	1-hour	0.075	--	Primary
	3-hour	0.5	1,300	Secondary
	24-hour	0.14	--	Primary
	Annual Mean	0.03	--	Primary
Nitrogen dioxide (NO_2)	1-hour	0.100	--	Primary & Secondary
	Annual Mean	0.053	--	
Ozone (O_3)	1-hour	0.12	--	Primary & Secondary
	8-hour	0.08	--	
Particulate matter, diameter ≤ 10 µm (PM_{10})	24-hour average	--	150	Primary & Secondary
Particulate matter, diameter ≤ 2.5 µm ($PM_{2.5}$)[b]	24-hour average	--	35	Primary & Secondary
	Annual Mean	--	15	Primary & Secondary
Lead (Pb)	Quarterly average	--	1.5	Primary & Secondary
	Rolling 3-month average	--	0.15	

Notes: 1 = The averaging time is the time period over which air pollutant concentrations are averaged for the purpose of determining attainment with the NAAQS
2 = Parts per million (PPM)
3 = Micrograms per cubic meter (µG/M)
4 = Primary standards are set to protect public health. Secondary standards are designed to protect public welfare. 1997 standards are currently in place, pending re-evaluation of the 2008 standards by the US EPA.

Source: US EPA, Office of Air and Radiation, http://www.epa.gov/air/criteria.html (November 17, 2010)

Regions that comply with the NAAQS are designated as “attainment” areas; however, areas that do not meet the NAAQS are designated from marginal to extreme “non-attainment” areas. Under the CAA and associated amendments, state and local air pollution agencies have the authority to adopt and enforce ambient air quality standards (AAQS) more stringent than the NAAQS. The state of North Carolina has

adopted the NAAQS. Buncombe County and Henderson County have been designated attainment areas by the U.S. EPA for all criteria pollutants as of August 30, 2011.

6.2 Compatible Land Use

Land use plays a critical role in the ability of an airport to expand and develop into the future. More importantly, land uses surrounding an airport can impact the safety of aircraft operations and persons in the air and on the ground. Beyond the need to protect the safety, airport sponsors are obligated to promote and maintain compatible land uses around their respective airports according to Grant Assurances they agree to when they accept FAA grant funding for airport improvements. Specifically, Grant Assurance 21 states:

"All airports that accept federal money must take appropriate action, to the extent reasonable, including the adoption of zoning laws, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft."

Land use near airports should be evaluated for five main areas of concern: noise, tall structures, visual obstructions, wildlife and bird attractants, and high concentrations of people. Each of these concerns is discussed in the following paragraphs.

Noise – When addressing compatible land use, aircraft noise is often a primary concern. At times noise is considered the key factor affecting or limiting airport operations since it is most often noticed by individuals living near an airport. Aircraft operations can create sound levels that produce annoyance in communities near airports, as well as affect speech, sleep, and classroom learning. These annoyances are of concern as they impact the quality of life for residents located in proximity to an airport.

Tall Structures – It is critical to avoid tall structures within the approach and departure surfaces of an airport, as described in Federal Aviation Regulation (FAR) Part 77. Low-level flight occurs on or near an airport during approach and departure, as well as during flights such as crop dusting and search-and-rescue operations. Inadvertent collisions with tall structures during any stage of flight are detrimental to the safety and welfare of those in the aircraft and those on the ground. Tall structures include buildings, objects, and natural vegetative growth such as trees. Tall objects adversely affect approach corridors and instrument approach altitudes. Therefore, the siting of tall objects such as multi-story structures, power lines, wind farms, and telecommunication towers, or allowing trees to grow to substantial heights near airport traffic patterns and flight paths, should be discouraged. The risk to aircraft safety associated with tall structures can be minimized if structures are clearly marked with lighting and if the airport issues a Notice to Airmen (NOTAM) to pilots. Typically, the location and height of tall structures that are obstructions to airspace are identified on aeronautical charts and/or approach protection plans as a part of the Airport Layout Plan drawing set.

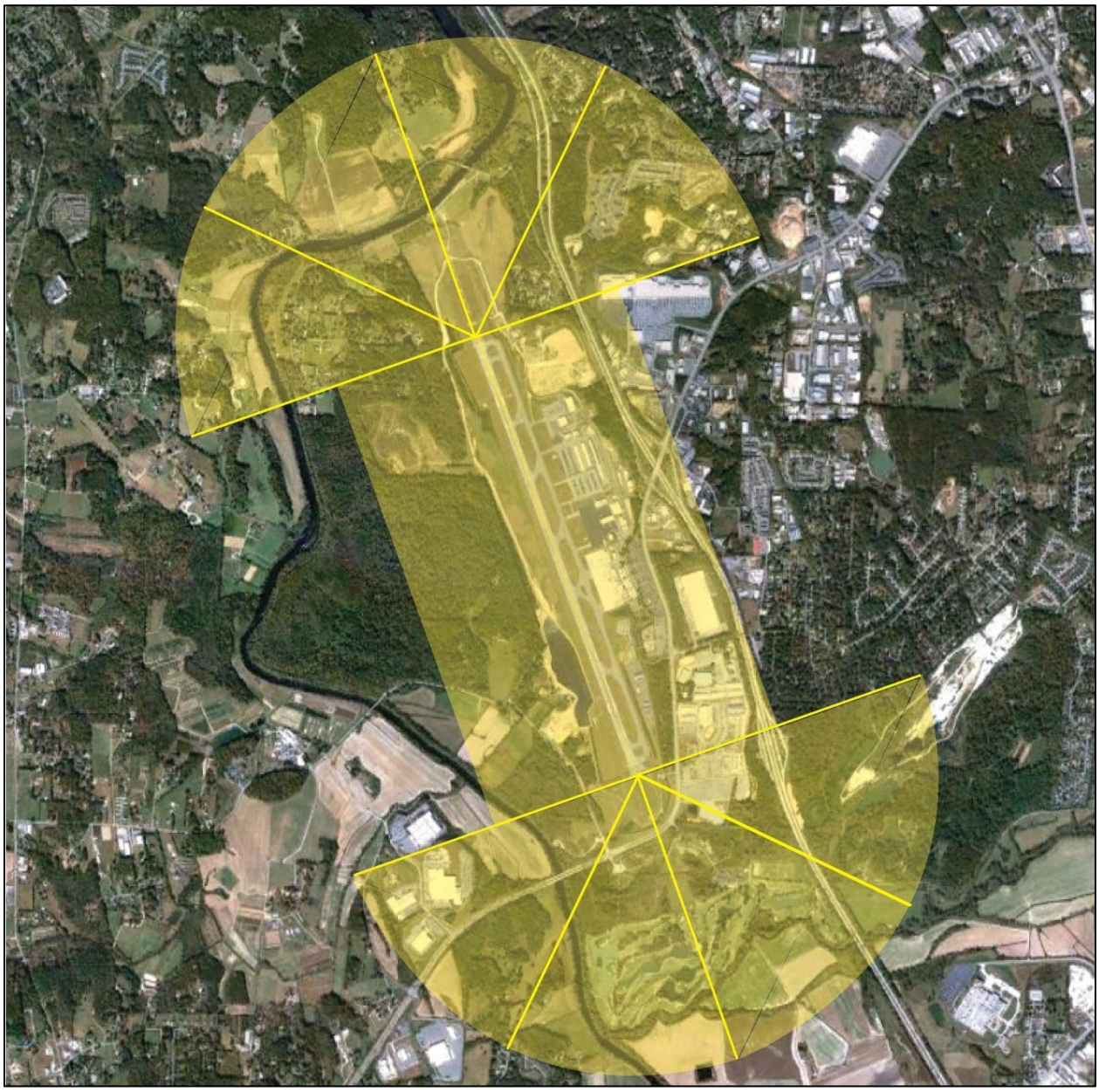
Visual Obstructions – Although not a physical obstruction in the same sense as tall structures, visual obstructions also pose hazards to flight by reducing pilot visibility. Many aircraft operations occur without navigational aids (NAVAIDs); therefore, clear visibility in the area surrounding an airport is vital. Land uses that obscure pilot visibility should be limited to ensure safe air navigation. Visibility can be obscured by dust, glare, light emissions, smoke, steam, and smog. Consequently, each of these should be managed when feasible to limit adverse impacts.

Wildlife and Bird Attractants – Aircraft collisions with wildlife are a threat to human health and safety. Wildlife strikes killed 194 people and destroyed 163 aircraft according to the FAA report *Wildlife Strikes to Civil Aircraft in the United States 1990-2005*. Since 1990, 82,057 wildlife strikes have been reported to the FAA; 97.5 percent involved birds, 2.1 percent involved terrestrial mammals, 0.3 percent involved bats, and 0.1 percent involved reptiles. The number of strikes reported annually has quadrupled since 1990 resulting from an increase in the number of aircraft operations as well as populations of hazardous wildlife species. Some common wildlife attractants include landfills, waste disposal receptacles and facilities, and bodies of water.

High Concentrations of People – Concentrations of people, or density, can be defined as the number of people within a particular land area. Density is measured by the number of people per unit of area and is often categorized as high, medium, or low depending on the number of people a development contains. Available accident data suggests that the greatest percentage of aircraft accidents occur near runway ends during approach and departure. The risk of damage and personal injury to both people on the ground and in the aircraft can be reduced significantly by limiting the number of people in areas adjacent to an airport, particularly near runway ends. In general, the higher the concentration of people that a land use supports or attracts the less compatible it will be in proximity to an airport. The lower the concentration of people the more compatible the land uses will be near an airport.

Current Conditions – A general analysis of land uses near the Airport is provided in Chapter 2 – Inventory of Facilities. As noted in the inventory, the Airport is located in both Buncombe and Henderson counties and the zoning around the Airport is divided between four entities: Buncombe County, the City of Asheville, the Town of Fletcher, and the Town of Mills River. The zoning in all four entities has been analyzed for compatibility with Airport operations within the surrounding vicinity (generally one mile from the runway ends and a half-mile parallel to Runway 16/34), shown in **Figure 6-1** as the influence area. A detailed discussion of the level of compatibility in the surrounding jurisdictions is provided in the following subsections. In general, the zoning classifications that fall within the influence area are not impacted by aircraft noise; however, the few areas that allow residential development may be impacted by aircraft noise due to the proximity to the Airport. To help minimize the incompatibility resulting from noise, local jurisdictions can take action to require real estate disclosures for any residential property within the influence area so that potential buyers are made aware of the proximity to the Airport and potential noise issues.

Figure 6-1: Land Use Influence Area



Source: Mead & Hunt, Inc. (2012)

6.2.a Buncombe County

As noted in Chapter 2, the land to the north of the Airport in Buncombe County is zoned primarily for office use, industrial use, storage, warehousing, wholesale trade (Employment District), and various residential developments that include low-density (R-LD) and single family uses (R-1). While the majority of these land uses are generally found to be compatible with Airport operations, precautions should be taken to reduce any potential concerns. Actions that should be taken include down shielding lights (neighborhood lights, parking lot lighting, etc.), frequently emptying waste receptacles (dumpsters, parking lot trash cans, etc.), minimizing the number and/or size of water detention ponds (subdivision

developments, etc.), and ensuring the height of tall structures (lights, water towers, communication towers, trees, etc.) do not exceed the height allowable by FAR Part 77. While Chapter 2, Article II, Division 3 of the Buncombe County Code of Ordinances prohibits telecommunication towers from exceeding 200 feet in height, no language is included in County ordinances that protect FAR Part 77 airspace around the Airport. It is encouraged the Airport work with the Buncombe County Planning and Development Department to include language in its zoning ordinance or develop an FAA model height zoning ordinance that protects FAR Part 77 airspace surfaces around the Airport.

According to the zoning regulations of Buncombe County, uses that are permitted in the Employment District include vocational or business schools and hospitals. It should be noted that these uses are typically considered incompatible with Airport operations because of the high density of people that are associated with them. Schools and hospitals should be strongly discouraged or prohibited near the Airport, especially within the influence area. Also, it should be noted that the permitted height of structures in this district is 90 feet above ground level. Currently, there are no structures in the employment districts identified north of the Airport that penetrate FAR Part 77 surfaces; however, construction of future structures in this area that meet the height requirements of the zoning ordinance may penetrate existing or future FAR Part 77 surfaces as a result of the contour of the land within these areas. The Airport should work with Buncombe County to prevent incompatible land uses and obstructions to FAR Part 77 surfaces in these areas that could impact existing and future Airport development.

Finally, an area to the northeast of the Airport that falls within the influence area is zoned R-3, or higher density residential use. This zoning should be reconsidered by zoning officials in Buncombe County as this zone allows a greater density of people which is considered to be incompatible with Airport operations. If this area were zoned low density residential (LD-R) or single-family residential (R-1), it would be more compatible.

6.2.b City of Asheville

The Airport and an area of land to the northeast lie within the City of Asheville and are subject to the City's zoning and land use controls. The land immediately surrounding the vicinity of the Airport within the influence area is zoned for a wide range of commercial and industrial uses such as light manufacturing, wholesale, warehousing, services, offices, and automobile-oriented commercial development. These uses are generally considered compatible with Airport operations; however, special attention needs to be paid to any industrial use that would include the emission of smoke or tall structures such as smoke stacks. Any use that could impair a pilot's ability to see while navigating upon takeoff or landing (smoke or steam emissions, for example), is considered incompatible. Development in this zone is restricted in height to 80 feet which appears to prevent obstructions to FAR Part 77 surfaces that lie over these areas. It should be noted that the Progress Energy Plant located three miles northeast of the Airport has multiple smoke stacks that exceed 400 feet above ground level (AGL) which occasionally emit steam across the arrival/departure path of aircraft north of the Airport. However, these smoke stacks have been clearly identified on aeronautical charts and instrument approach plates and are not located within the arrival and departure paths of aircraft at the Airport.

A small portion of an area zoned for Highway Business falls within the influence area. Some of the development in this area can be expected to have a high turnover rate of patrons entering and exiting businesses (fast food restaurants, gas stations, etc.); therefore, there is limited concern for large concentrations of people. However, according to the Asheville Code of Ordinances, this zone also allows for multi-family residential uses, colleges, universities (including dormitories), hospitals, medical centers, orphanages, and schools which all are considered incompatible due to the large concentrations of people that are associated with them. For safety reasons these uses should be strongly discouraged or prohibited near the Airport, especially within the influence area. Parking decks, amphitheaters, and auditoriums are also among the permitted uses in this zone that cause concern because of the tall and bright lighting typically associated with these uses. Should these uses be constructed, they must down shield their lights and comply with local height restrictions for this zone (60 feet) which appear adequate in preventing buildings from penetrating FAR Part 77 surfaces. It should also be noted in Article XVI, Section 7-16-1 of the City of Asheville Code of Ordinances that antennas located in all zoning districts must comply with FCC and FAA rules and regulations. It is also recommended the City of Asheville adopt an FAA model height zoning ordinance to further protect FAR Part 77 surfaces and prevent airspace obstructions around the proximity of the Airport.

6.2.c Town of Fletcher

The influence area for the Town of Fletcher includes several areas to the immediate south and southwest of the Airport and a small area to the east. The majority of this land is zoned C-2 (Interstate Commercial District) which allows mixed commercial, residential, and service oriented uses. The same mitigation strategies presented for land use compatibility in the City of Asheville also apply to the uses allowed in the C-2 zone. Lighting should be down shielded, water detention ponds should be small or minimized completely, and waste receptacles need to be emptied frequently. The zoning provisions of the Town of Fletcher do not limit the development density or the height in stories of development within the C-2 zone. Furthermore, district provisions for the C-2 zone state that individual buildings in these areas are encouraged to be multi-story with uses mixed vertically (i.e. street level commercial with upper level office and residential) and promotes higher densities of residential development. It is critical that the Airport work with zoning officials from the Town of Fletcher to identify reasonable standards for height and density to protect the safety of persons on the ground and preserve FAR Part 77 airspace around the Airport. This is recommended to be accomplished through the adoption of an FAA model height zoning ordinance.

Because mixed-use development can occur in this zone, it is important that buildings do not exceed reasonable height restrictions (i.e. multi story buildings with commercial uses on the first floor and residential uses above). Residential uses within this zone should be required to be low-density (i.e. single family) to minimize the concern for attracting large concentrations of people, especially within the approach to the Airport.

According to the district provisions for the C-2 zone, outdoor amusement parks are allowed in this zone which is incompatible with Airport operations, especially if located within the approach to the Airport. Amusement parks are typically considered incompatible for these reasons: they attract birds and other wildlife with the food and waste that is often left behind by people, they usually have high intensity lighting

associated with parking lots and infrastructure, they attract a large concentration of people, and they typically feature tall structures.

In addition, colleges, universities, hospitals, and schools are permitted in the C-2 zone which is also considered incompatible with Airport operations. There is a significant safety concern associated with these uses as they have large concentrations of people present for the majority of the day and sometimes overnight. Just as in Buncombe County and the City of Asheville, these uses should be strongly discouraged or prohibited near the Airport, especially within the influence area.

A small area to the southwest of the Airport is zoned M-1 which allows manufacturing, processing, assembling of parts, and distribution of products and services. The same concerns surrounding industrial uses allowed in the City of Asheville apply to uses within this zoning designation. The size of the use (manufacturing plant, etc.) and the density of people (employees, patrons) also need to be considered as population density could be an issue with large developments within this zone. Development within this zone is restricted to three stories in height according to the district provisions for the M-1 zone. Since the allowable height of a three-story building is not defined, it is encouraged that language defining this zone is strengthened to prevent the construction of three-story buildings that may penetrate FAR Part 77 surfaces associated with the Airport.

6.2.d Town of Mills River

Land west of the Airport falls within the zoning jurisdiction of the Town of Mills River. This land is zoned MR-LI or light industrial use which includes manufacturing, storage, processing, distribution, and sale of equipment. The same concerns for the area zoned M-1 in the Town of Fletcher apply to this zoning designation to protect the Airport from incompatible uses that may affect existing infrastructure or future planned projects such as a runway relocation or extension. Structures may have a maximum height of 50 feet according to Chapter 154, Zoning of the Town of Mills River Code of Ordinances. While it appears this 50 feet height limitation is sufficient in protecting FAR Part 77 surfaces at the Airport, it is recommended additional language be included in the zoning ordinance and/or an FAA model height zoning ordinance be adopted to protect FAR Part 77 airspace surrounding the Airport for existing infrastructure and future planned projects. Such projects as a relocation and/or extension of the runway may shift the transitional and horizontal surface over existing or future planned developments in these areas that could become obstructions to airspace. It is encouraged the Airport share its future development plans with the Town of Mills River to help protect airspace and persons and property on the ground.

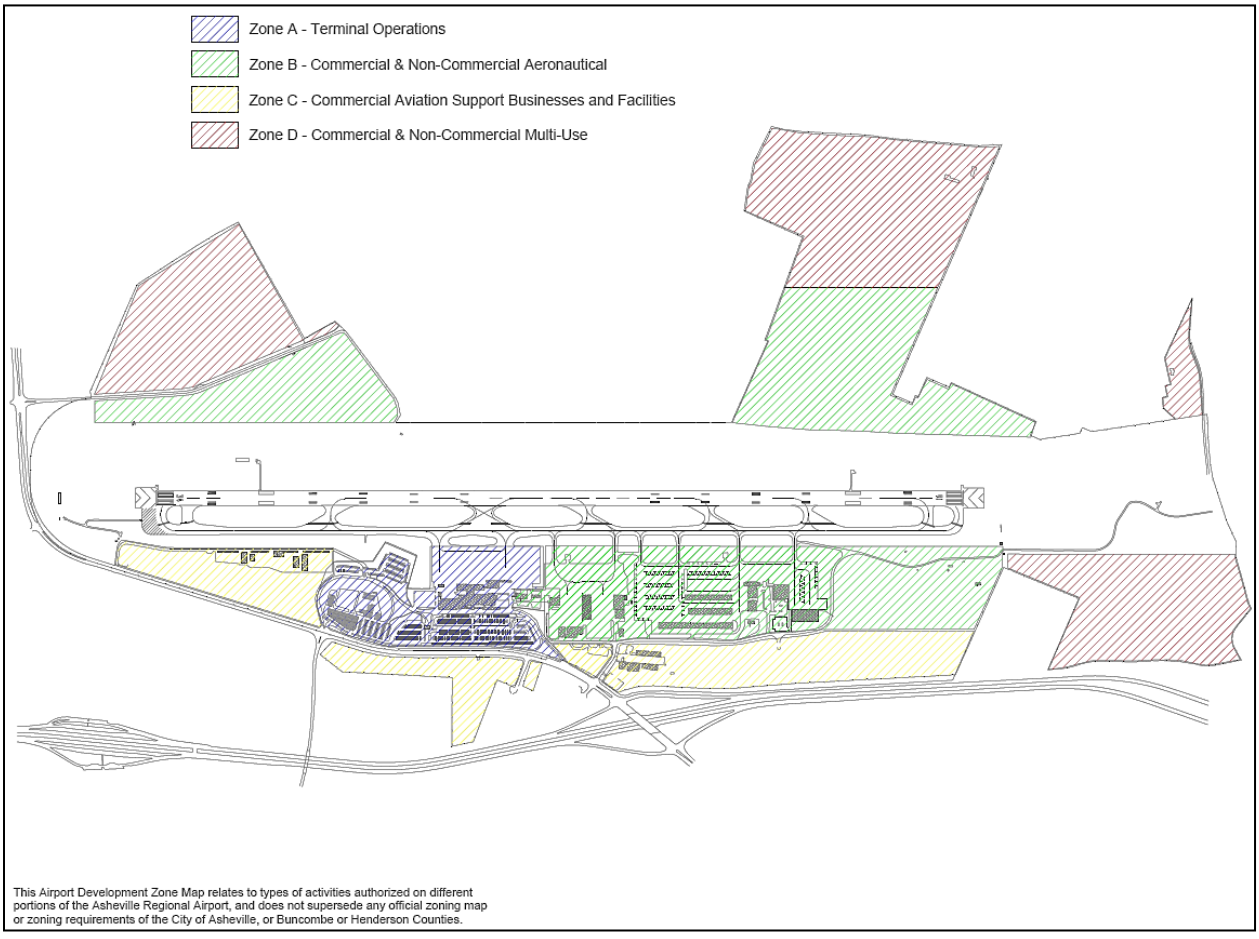
6.2.e Future Considerations

The *Asheville Regional Airport Master Land Use and Site Development Plan* was developed in 2008 to help identify relationships between aviation and real estate while also determining which types of development are appropriate for the Airport and desired by the Greater Asheville Regional Airport Authority. This plan identified current zoning conditions in the municipalities surrounding the Airport which coincide with those presented previously in this Chapter. The *Asheville Airport Master Land Use and Site Development Plan* references two economic development studies pertaining to the Asheville area. This plan identifies two possible industries to target, healthcare and education, to boost local

economies. Some healthcare (hospital) and educational (university) facilities are considered incompatible with Airport operations due to the safety concerns associated with high concentrations of people. Should these industries be targeted in the greater Asheville area, it is important to keep in mind the safety considerations associated with these specific uses, especially if they are to be located near the Airport. It should also be noted that land use plans and zoning ordinances in all jurisdictions may need to be updated if significant development such as a runway extension or relocation occurs to continually protect airspace from obstructions and encourage land uses that are compatible with Airport operations.

Figure 6-2 illustrates the Development Zone Map from the Airport's development guidelines that identifies types of authorized activities on different portions of Airport property. It should be noted that the Development Zone Map does not supersede any official zoning map or zoning requirements of the City of Asheville, Buncombe County, or Henderson County.

Figure 6-2: Airport Development Zone Map



Source: Asheville Regional Airport (2012)

6.3 Construction Impacts

Construction impacts are typically temporary conditions that result from infrastructure development that includes short-term degradation of noise, air, and water quality. The following specific areas of concern should be considered for all construction activities that occur in proximity to the Airport.

Noise – Noise from construction equipment and related activities of the site development may temporarily increase during various stages of construction. In the immediate vicinity of construction activity the level of noise would be the greatest, but would drop off significantly a short distance from the site.

Dust – Dust from the delivery of materials to a construction site at the Airport would pose only minor impacts to residential areas and to the traveling public. Overall, the impacts of noise and dust from delivery of equipment and materials would be for a short duration and would be considered negligible.

Water Quality – Risk to water quality during construction would be from erosion and siltation created during clearing, grubbing, earthmoving, and excavating activities. The means of reducing the risk would involve both temporary and permanent control measures to ensure that erosion and siltation are kept to a minimum.

These measures are outlined in FAA Advisory Circular (AC) 150/5370-10E, Item P-156, *Temporary Air and Water Pollution, Soil Erosion, and Siltation Control*. A Storm Water Pollution Prevention Plan (SWPPP) was completed in January 2011 for the airport consistent with NCDENR and EPA. The SWPPP would be updated upon completion of any development affecting the contents of the plan. Contents to be revised include, but are not limited to, those that change the location or size of the discharge outfalls, that require any changes to the location or capacity of the fuel farm, or that significantly increase the impervious surface resulting in significant volume increase and/or velocity of storm water runoff.

Air Pollution – Air pollution, as a result of the open burning of construction debris, may be permitted provided there is strict adherence to all local and state laws, ordinances, and regulations.

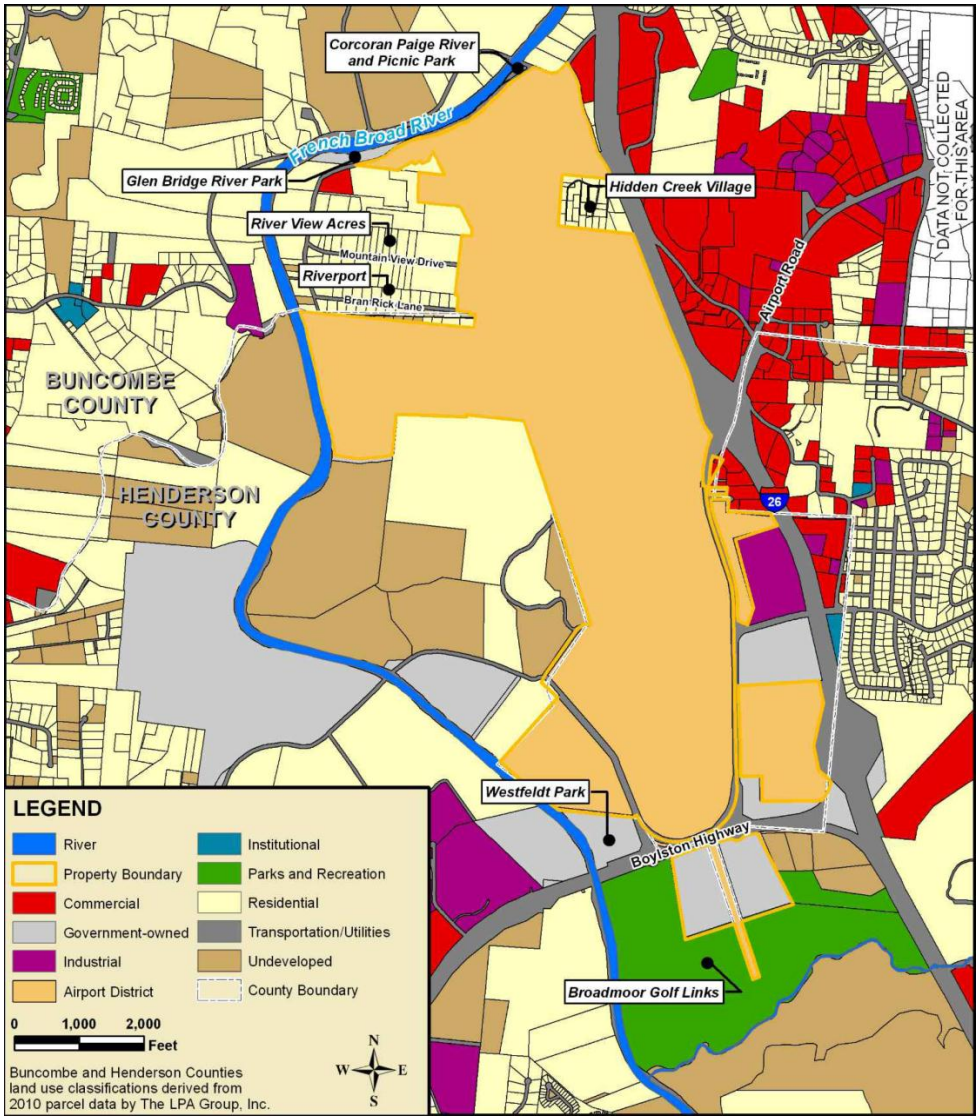
Material Storage/Disposal – Airport development may require significant excavation of unsuitable material, placement of embankments, and the use of materials such as aggregates, and bituminous and Portland Cement Concrete. The stockpiling of the construction and excavation materials may be visually displeasing to some traveling in the area. However, this is a temporary condition and would pose no permanent impacts.

6.4 Department of Transportation Act, Section 4(f)

Section 4(f) of the federal Department of Transportation Act states that any project requiring the use of any publicly-owned land from a public park or recreation area, or from a historic site of national, state, or

local significance shall not be approved unless there is no feasible and prudent alternative for the use of such land. There are no Section 4(f) lands within the boundaries of the Airport; however, three parks are located adjacent to the Airport: Glen Bridge River Park, Corcoran Paige River and Picnic Park, and Westfeldt Park (**Figure 6-3**). Glen Bridge River Park (one acre) and Corcoran Paige River and Picnic Park (0.85 acre) are both northwest of the Airport and owned by Buncombe County. The primary use of these parks is to provide access to the French Broad River. Westfeldt Park is a significantly larger recreation area (17 acres) owned by Henderson County and is located southwest of the Airport. This park also provides access to the French Broad River as well as offers picnic areas. Westfeldt Park received funding from the Land and Water Conservation Fund Act of 1965, protecting it as a Section 4(f) resource from conversion to non-public recreational uses.

Figure 6-3: Section 4(f) Properties



Sources: Asheville Regional Airport, Runway Reconstruction and New Parallel Taxiway Environmental Assessment, The LPA Group Aviation Consultants (August 2011).
Delta Airport Consultants, Inc. per information received from Asheville Regional Airport (August 2012)

6.5 Farmlands

Farmlands are protected under the Farmland Protection Policy Act (FPPA). According to Order 1050.1E, the FPPA authorizes the Department of Agriculture (USDA) to develop criteria for identifying the effects of Federal programs on the conversion of farmland to non-agricultural uses. This is done to minimize the extent to which those programs contribute to the unnecessary and irreversible conversion of prime, unique, and statewide or locally important farmlands to nonagricultural uses.

Guidelines established by the USDA under the FPPA for identifying the effects of federal programs on the conversion of farmland to nonagricultural uses became effective August 1, 1989. However, according to the provisions of the FPPA, it does not apply if the following exists: 1) the land for development was purchased prior to August 6, 1984 and 2) the potential area for development is zoned for airport development.

According to 7 CFR Part 658.2(a) of the FPPA, the Airport property does not meet the definition of farmland because it is "already in or committed to urban development," and therefore exempt from the FPPA. Buncombe and Henderson Counties have 11 soil series designated as prime farmland soils, eight designated as soils of statewide importance, and six designated as soils of local importance.

6.6 Fish, Wildlife, and Plants

The majority of Airport property is comprised of actively managed herbaceous cover. Although forested habitats do occur within the property boundary, they provide little in the way of high quality or unique wildlife habitat since aircraft noise and active management of the Airport makes the area less desirable for wildlife.

A Wildlife Hazard Assessment (WHA) was completed for the Airport from January 2008 to January 2009 to investigate wildlife species and habitats near the aircraft operation area (AOA) that may pose potential hazards to aviation. Nearby habitats that were documented during the WHA include stands of mature hardwoods, pine stands, and large grassed areas interspersed with occasional scrub-shrub vegetation. A total of 72 different bird species were observed during the 12-month survey with locking and soaring birds (i.e. Canada geese, turkey vultures, blackbirds, and starlings) posing the most significant threat to air traffic safety. A total of four different mammal species were documented during the WHA, consisting primarily of cottontail rabbits. Although no deer were observed inside the 12-foot tall wildlife perimeter fence, several were observed outside of the fence. Field signs or observations of coyote, gray fox, woodchuck, opossum, rabbit, and skunk were also documented during the WHA.

6.6.a Endangered Species

Section 7 of the Endangered Species Act of 1973, as amended, requires federal agencies to ensure that any proposed action does not jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of associated habitat. Section 7a(3) also requires that consultation occur with the United States Fish and Wildlife Service (USFWS) regarding the presence of threatened and endangered species within a proposed project area. Under the act, an endangered species is defined as any species that is in danger of extinction throughout all, or a significant portion, of its range. A threatened species is considered to be any species that is likely to become an endangered species within the foreseeable future.

The Airport property was evaluated for the presence of protected species or their suitable habitats during field surveys conducted in November and December of 2009 as well as in April, November, and December of 2010 as part of the 2011 EA. Additionally, the NCDENR Natural Heritage Program (NHP) species database was searched to verify any known occurrences of federally or state protected species within a five-mile radius of the Airport. Although, species were found in the five-mile radius, existing habitat combined with the field survey results concluded it was unlikely that any federally or state protected species are present within Airport boundaries.

6.6.b Biotic Communities

Biotic communities may be directly or indirectly affected by aviation development and aviation activities. Specifically, development that affects existing watercourses or vegetation may alter wildlife habitat in the area, resulting in potentially significant impacts to flora and fauna. **Table 6-3** details upland communities that were documented within the 2011 EA.

Table 6-3: Upland Communities

Community Type	Description
Riparian Forest	Located adjacent to the French Broad River and unnamed tributaries. Represent the interface between the wetland and upland areas on site. Tree growth rate is generally high and sub-canopy typically denser than other forested habitats. Undergrowth includes a wide variety of shrubs, grasses, and other herbaceous species.
Mixed Pine/Hardwood	Well-developed on airport and is comprised of a closed-canopy dominated by deciduous hardwood trees. Diverse assemblage of deciduous and evergreen tree species in canopy and understory, shade-tolerant shrubs, and a sparse groundcover.
Mixed Upland Hardwood	Occurs on upland sites that have dry soils and lack a significant presence of pine; characterized by a continuous, often dense, canopy of deciduous trees.
Mountain Mixed Pine	Occurs on upland sites that have acidic soils and lack a significant presence of hardwoods; characterized by a continuous, often dense, canopy of pines and a locally dense shrub layer.
Herbaceous Cover	Lack a significant presence of trees and shrubs as actively managed for airport operation and safety; abandoned borrow areas and herbaceous wetlands. Herbaceous plants are non-woody and usually die back following each growing season.

Source: Asheville Regional Airport, Runway Reconstruction and New Parallel Taxiway Environmental Assessment, The LPA Group Aviation Consultants (August 2011)

6.7 Floodplains

Floodplains are a critical element to both the environment and the community. They perform vital natural functions that include temporarily storing floodwater, moderating peak flood flows, maintaining water quality, recharging groundwater, providing a habitat for wildlife, and controlling erosion. They also provide recreational grounds and establish an aesthetic quality to natural areas.

Critical elements of Executive Order (E.O.) 11988, *Floodplain Management,* state:

- Federal agencies should make efforts to avoid, to the extent possible, long and short-term adverse impacts associated with the occupancy and modification of floodplains.

- Federal agencies should avoid direct or indirect support of floodplain development wherever there is a practicable alternative.

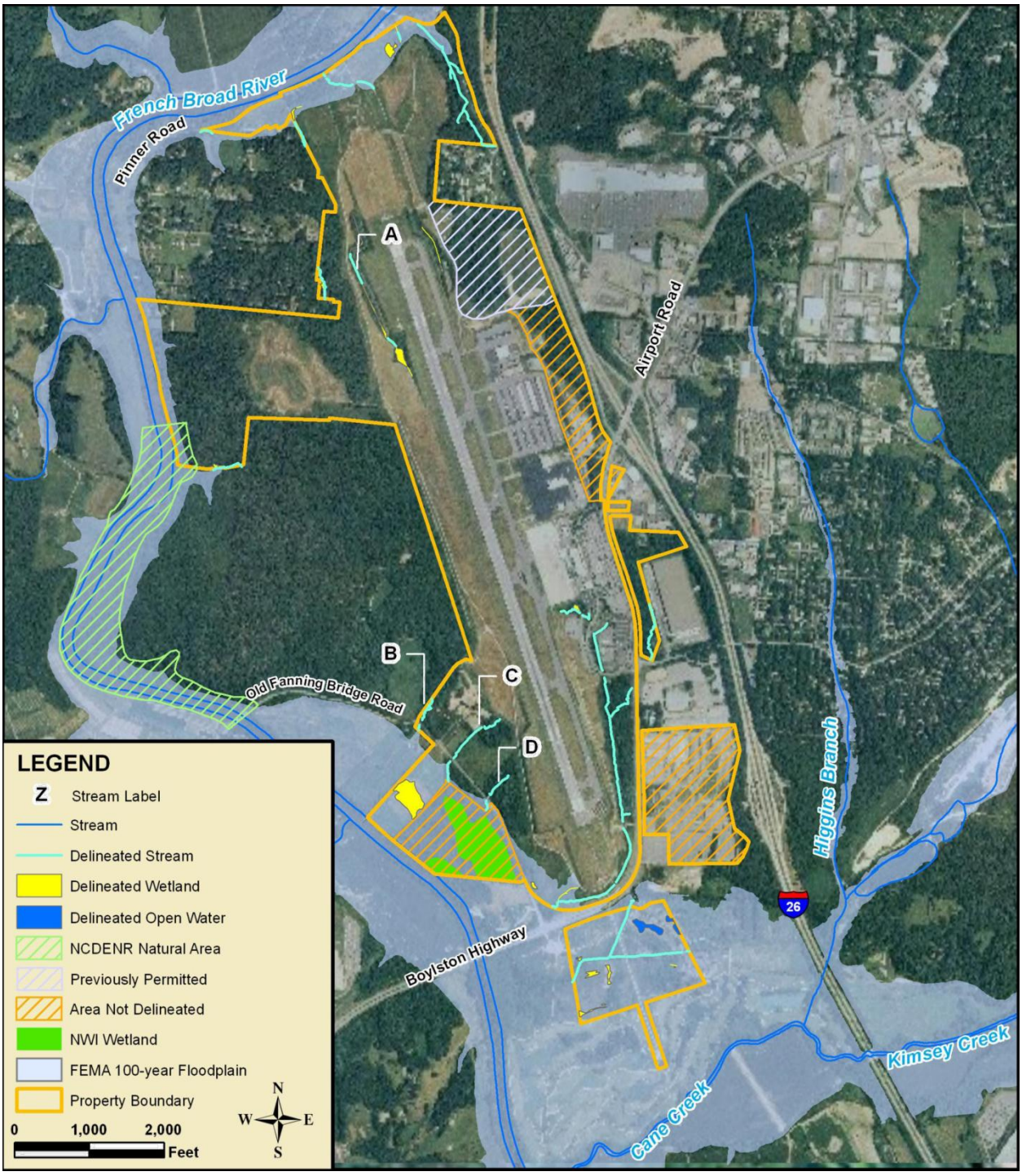
- Floodplain encroachments that are uneconomical, hazardous, or result in an incompatible development of the floodplain are prohibited.

- Any action that would cause a critical interruption of an emergency transportation facility, a substantial flood risk, or an adverse impact on the floodplain's natural resource values is prohibited.

The 100-year floodplain boundary delineates a flood elevation that has a one percent chance of being equaled or exceeded each year.

The Airport is located on Flood Insurance Rate Maps (FIRM) for Buncombe County and Henderson County (map numbers 3700964300K and 3700964200K, respectively, effective January 6, 2010). The FIRM indicates that the majority of the Airport is located in Zone X, an area determined to be outside the 100- and 500-year floodplains. However, 100-year floodplains are located along the periphery of the Airport boundary associated with the French Broad River to the west and its tributaries. The 100-year floodplains are classified as Zone AE, an area inundated by 100-year flooding, for which base flood elevations (BFEs) have been determined. The 100-year floodplain on Airport property to the north has BFEs ranging from 2,048 to 2,049 feet and to the south the BFEs range from 2,060 to 2,061 feet. **Figure 6-4** illustrates the 100-year floodplain.

Figure 6-4: Wetlands, Streams, and Floodplains



Source: Asheville Regional Airport, Runway Reconstruction and New Parallel Taxiway Environmental Assessment, The LPA Group Aviation Consultants (August 2011)

6.8 Hazardous Materials, Pollution Prevention, and Solid Waste

Hazardous materials are those substances defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, by the Superfund Amendments and Reauthorization Act (SARA), and by the Toxic Substances Control Act. In general, hazardous materials include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may present substantial danger to public health or welfare, or to the environment, when released or otherwise improperly managed.

Analysis of this impact category involves the evaluation of three potential areas of impact. These are:

- The release of any existing undisturbed toxic substances;
- The release of toxic substances from construction equipment maintenance and materials; and
- The release of toxic substances from any newly constructed facilities.

Hazardous substances known to be found at airports include aircraft and ground equipment fuel and aircraft deicing fluid. As a part of the 2011 EA a regulatory record search was performed to identify known or potential hazardous material sites, hazardous waste generators, and hazardous material users in the vicinity of the Airport. Environmental databases containing information about hazardous sites from multiple federal and state agencies, including the EPA and NCDENR, were used to identify potentially hazardous materials. According to the EPA and NCDENR databases, no National Priority List sites or Solid Waste Management Units exist on the Airport.

The database searches did identify six documented hazardous material and waste sites located along the eastern portion of Airport property. **Table 6-4** lists the status of each site while **Figure 6-5** identifies their locations. Four of the six sites are considered closed; the other two identified as US Airways, Inc. (Map ID 4) and Airport Exxon #4 (Map ID 6) are identified in the Leaking Underground Storage Tank (LUST) database as both having leaks in 1991 with corrective action taken in the same year.

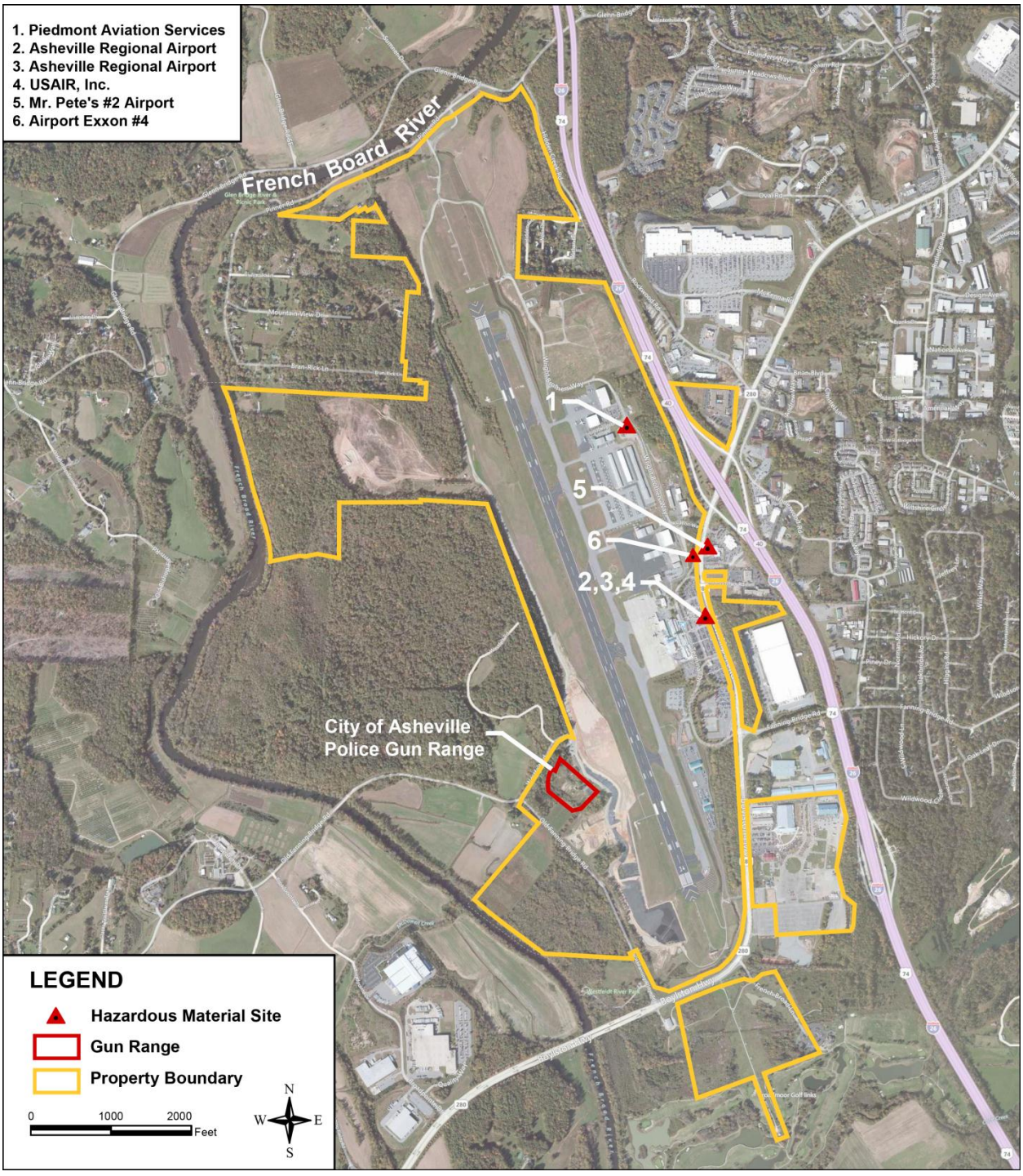
Table 6-4: Potential Hazardous Material Sites

Map ID	Name	Database/Status
Regulatory Record Search Sites		
1	Piedmont Aviation Services	FINDS, UST / Closed
2	Asheville Regional Airport	LUST / Closed
3	Asheville Regional Airport	LUST / Closed
4	US Airways, Inc.	LUST / Remedial Action Implemented
5	Mr. Pete's #2 – Airport	LUST / Closed
6	Airport Exxon #4	LUST / Follow Up
Additional Sites		
-	City of Asheville Police Gun Range	Closed

Notes: FINDS – Facility Index System, listing of EPA regulated facilities; UST – Underground Storage Tank database; LUST – Leaking Underground Storage Tank, database of USTs with reported releases; NFRAP – No Further Remedial Action Planned

Sources: FirstSearch Technology Corp. (November 4, 2010); EA, The LPA Group Aviation Consultants (August 2011); Delta Airport Consultants, Inc. updated per information received from Asheville Regional Airport (2012)

Figure 6-5: Hazardous Sites



Sources: Asheville Regional Airport, Runway Reconstruction and New Parallel Taxiway Environmental Assessment, The LPA Group Aviation Consultants (August 2011)
Delta Airport Consultants, Inc. updated per information received from Asheville Regional Airport (August 2012)
Aerial imagery obtained from Bing maps (October 25, 2012)

6.9 Light Emissions and Visual Impacts

FAA Order 1050.1E requires the operator to consider the extent to which any lighting associated with a development action will create an annoyance among residents in an airport region. Any project that involves the installation, replacement, or relocation of airfield lighting such as runway/taxiway edge lights, approach lighting systems, and other forms of visual NAVAIDs should be evaluated for adverse light emissions and visual impacts. Improvements to existing lighting or the installation of new lights could potentially impact land uses to the east of the Airport during nighttime hours. Airport management reports that no formal complaints have been made from nearby residences and no adverse light emissions and visual impacts are anticipated with future airside and landside infrastructure improvements.

6.10 Natural Resources and Energy Supply

Energy and natural resource impacts are those that are related to the amount of energy required to operate aircraft, Airport-related service vehicles, terminal lighting, and other uses such as heating and air-conditioning. Energy requirements for the Airport with the exception of lighting are largely dependent upon the level of aviation activity.

Impacts to energy supplies and natural resources from Airport development could result from a host of factors, including energy required for ground support vehicles, aircraft, airfield lighting, and terminal heating and cooling. The FAA defines two types of energy use to consider when determining potential environmental impacts of a proposed project:

- Uses related to major changes in stationary facilities (e.g. airfield lighting, terminal building heating and cooling) that may exceed local supplies or capacities.

- Uses related to major changes in the movement of aircraft and ground vehicles to the extent that demand exceeds energy supplies.

Increased aviation activity levels translate into higher energy requirements for operation of aircraft, vehicles, and Airport facilities. According to FAA Order 1050.1E, most airport development projects will not produce changes in energy use or other natural resource consumption resulting in significant impacts.

Existing demand for electrical power at the Airport is within the capacity currently provided and current operations do not have an adverse impact on energy supplies or natural resources.

6.11 Noise

Noise is typically the most significant off-airport environmental impact associated with aircraft operations. Noise is measured in decibels (dB) on a scale from 1 to 180 through a mathematical process called a logarithm. Aircraft sound levels are quantified for single events using the A-weighted decibel scale (dBA), which was developed to measure sounds with more emphasis on frequencies that can be heard by the human ear. Generally, it would take at least a five dBA difference for the human ear to perceive a difference in sound in most exterior environments.

The FAA has a national policy that airports be constructed and operated to minimize current and future noise impacts on surrounding communities. The FAA also specifies metrics to be used in measuring aircraft noise. The metric used in this analysis is the Day Night Average Sound Level (DNL). The DNL noise metric was developed by the EPA and is used by the FAA, the United States Department of Housing and Urban Development, and other federal agencies concerned with community noise levels. DNL is the average cumulative sound level that provides a measure of the total sound energy during a 24-hour period. A 10-decibel (dB) weighting penalty is added to aircraft noise occurring during the nighttime hours (between 10:00 p.m. and 7:00 a.m.). The 10 dB penalty represents the added intrusiveness of noise events that occur during normal sleep hours when ambient sound levels are typically about 10 dB lower than during the day because of the annoyance associated with sleep disruption.

The FAA's Integrated Noise Model (INM) is used to prepare noise contours to evaluate potential aircraft noise effects. INM is the computer program used to determine the total effect of aircraft noise in an airport environment. INM produces noise contours, which are computer-generated lines that connect points of equal noise levels resulting from aircraft operations. Using standard methodology, cumulative noise produced by aircraft operations at the Airport was modeled using the INM, version 7.0b as part of the 2011 EA. Lines of contiguous noise levels at 65, 70 and 75 DNL are represented as noise contours overlaid onto a base map. Noise contours generated by the INM do not show a distinct demarcation of where the noise levels end or begin. Rather, their purpose is to describe the generally expected noise exposure. Although the INM is the current state-of-the-art aircraft noise modeling software, input variables to the INM require several simplifying assumptions to be made.

Estimates of noise effects resulting from aircraft operations can be interpreted in terms of the probable effect on human activities characteristic of specific land uses. 14 CFR Part 150 guidelines for evaluating land use compatibility with noise exposure are presented in **Table 6-5**. These guidelines reflect the average response of large groups of people to noise. Therefore, the guidelines might not reflect an individual's perception of an actual noise environment. Compatible or non-compatible land use is determined by comparing the predicted or measured DNL at a specific site with the compatibility guidelines provided in the table. DNL 75 and higher is considered incompatible with most land uses by the FAA, while the DNL 65 is generally accepted as the threshold level at or below which all land uses are considered compatible. Above 65 DNL, noise sensitive land uses such as residential are typically discouraged unless a degree of noise attenuation has been incorporated into the design of the structure. Furthermore, there are some land uses that are compatible with noise levels between DNL 65-75.

Table 6-5: 14 CFR Sound Exposure/Land Use Compatibility Guidelines

Land Use	Yearly Day-Night Average Sound Level (DNL)					
	Below 65	65-70	70-75	75-80	80-85	Over 85
Residential						
Residential	Y	N[1]	N[1]	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N[1]	N[1]	N[1]	N	N
Public Use						
Schools	Y	N[1]	N[1]	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y[2]	Y[3]	Y[4]	Y[4]
Parking	Y	Y	Y[2]	Y[3]	Y[4]	N
Commercial Use						
Offices, business, and professional	Y	Y	25	30	N	N
Wholesale and retail-building materials	Y	Y	Y[2]	Y[3]	Y[4]	N
Hardware and farm equipment	Y	Y	Y[2]	Y[3]	Y[4]	N
Retail trade - general	Y	Y	25	30	N	N
Utilities	Y	Y	Y[2]	Y[3]	Y[4]	N
Communication	Y	Y	25	30	N	N
Manufacturing and Production						
Manufacturing, general	Y	Y	Y[2]	Y[3]	N	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture and forestry	Y	Y[6]	Y[7]	Y[8]	Y[8]	Y[8]
Livestock farming and breeding	Y	Y[6]	Y[7]	N	N	N
Mining and fishing	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor sports arenas/spectator sports	Y	Y[5]	Y[5]	N	N	N
Outdoor music shells/amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts, and camps	Y	Y	Y	N	N	N
Golf courses, riding stables	Y	Y	25	30	N	N

Key:
SLUCM = Standard Land Use Coding Manual
Y = Land Use and related structures compatible without restrictions.
N = Land Use and related structures are not compatible and should be prohibited.
NLR = Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.
25, 30, or 35 = Land use and related structures generally compatible; measures to achieve NLR of 25, 30 or 35 dB must be incorporated into design and construction of structure.

Notes:
1 Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.
2 Measures to achieve NLR 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas or where the normal noise level is low.
3 Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas or where the normal noise level is low.
4 Measures to achieve NLR 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas or where the normal level is low.
5 Land use compatible provided special sound reinforcement systems are installed.
6 Residential buildings require an NLR of 25.
7 Residential buildings require an NLR of 30.
8 Residential buildings not permitted.

Source: Federal Aviation Regulations 14 CFR Part 150 (effective January 18, 1985)

The following assumptions were used for modeling noise at the Airport during the 2011 EA:

Aircraft Operations – Existing Airport operations were obtained from the most recent FAA Terminal Area Forecast (TAF) at the time of the EA. The total operations were listed at 66,258, or an average of approximately 182 daily operations. Based on the TAF, operations were divided into itinerant and local operations and then further divided by fleet mix.

Aircraft Fleet Mix – Commercial fleet mix was derived using the published commercial flight schedules from November 2010 for the Airport. General aviation and military fleet mix were developed through analyzing the previous 12 months of FAA Enhanced Traffic Management System Counts (ETMSC). Fleet mixes were refined through discussions with Airport staff and the Air Traffic Control Tower (ATCT). In certain instances, FAA approved substitution aircraft were utilized for aircraft not having an Integrated Noise Model (INM) noise profile.

Runway Utilization and Time of Day – Based on interviews with ATCT personnel at the Airport, it was determined that Runway 34 is used 70 percent of the time and Runway 16 is used 30 percent of the time, on average. In addition, approximately 95 percent of Airport operations occur between 7:00 a.m. and 10:00 p.m., with the remainder occurring from 10:00 p.m. to 7:00 a.m.

Approach and Departure Profiles – Arrival and departure procedures for high performance aircraft at the Airport were considered standard for the noise model.

Stage Length – An aircraft's stage length refers to the distance an aircraft must travel to reach its next destination after departing an airport. All aircraft used in the INM model were assigned a stage length of 500 nautical miles or less.

These assumptions were used to determine the INM operational inputs for the existing and the future scenarios. The 2009 scenario INM operational inputs are shown in **Table 6-6**.

Figure 6-6 illustrates the 2009 noise conditions at the Airport prepared during the 2011 EA. As shown in the figure, the majority of land within the 65, 70, and 75 DNL is contained within the boundary of the Airport with a total of 2.9 acres lying outside of existing property. Using FAA land use guidelines, no incompatible land uses were found within the off-Airport exposure areas.

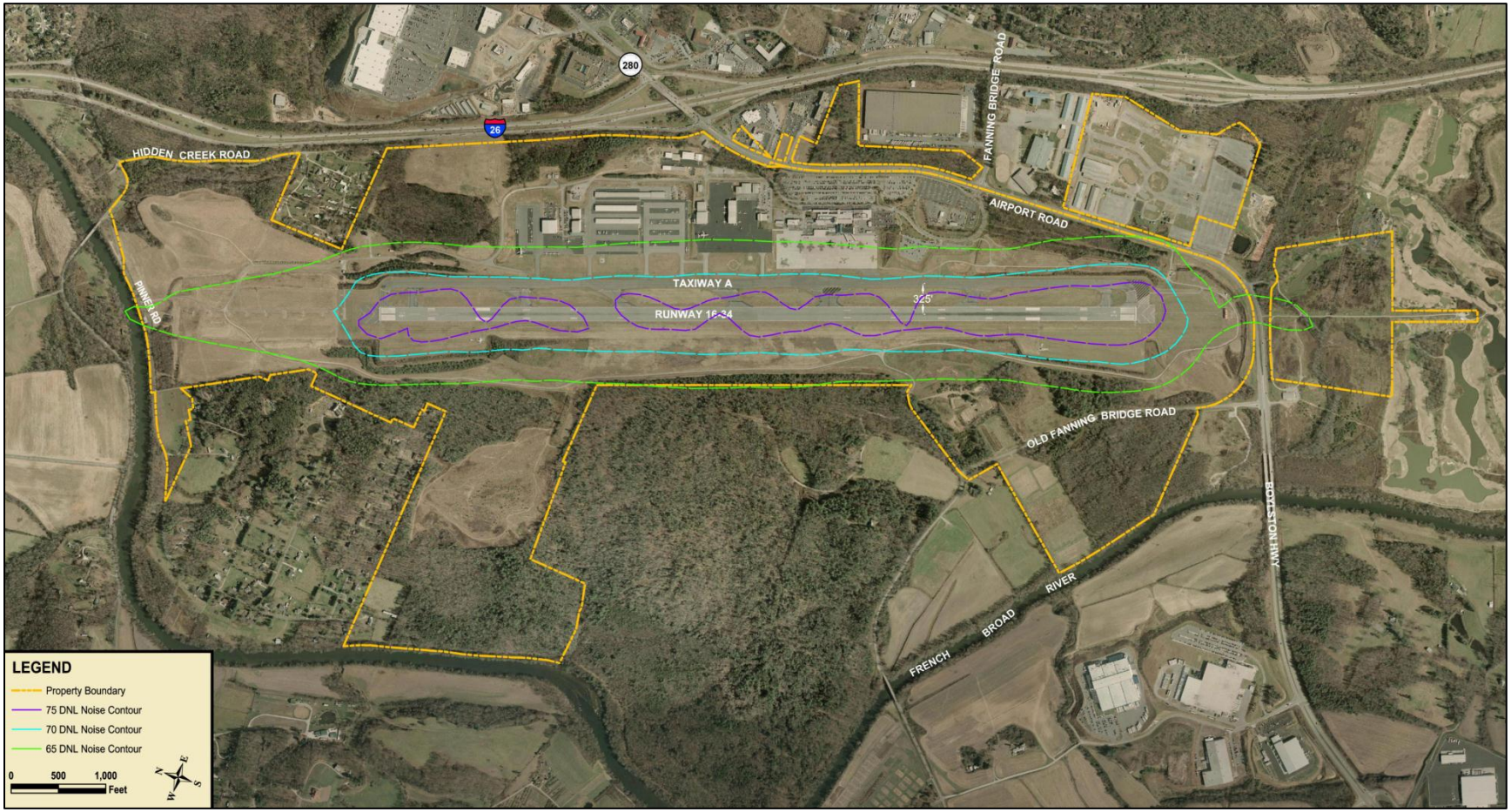
Table 6-6: Summary of INM Inputs for Airport Noise Analysis

Representative Aircraft	INM Profile	% Use	24-hour Operations	Day Operations		Night Operations	
				Arrival	Departure	Arrival	Departure
Itinerant Operations							
Commercial		**37.28**	**49.59**				
Boeing 717	717200	1.67	0.83	0.41	0.41	0.00	0.00
CRJ-700	CRJ9-ER	3.34	1.66	0.41	0.41	0.41	0.41
CRJ-100/200	CL601	78.27	38.82	16.44	16.44	2.97	2.97
Dash 8-100	DHC8	0.84	0.41	0.21	0.21	0.00	0.00
Dash 8-300	DHC830	4.74	2.35	1.17	1.17	0.00	0.00
ERJ-140/145	ERJ145	11.14	5.53	2.76	2.76	0.00	0.00
General Aviation		**57.97**	**77.12**				
Single Engine	GASEPF	15.00	11.57	5.49	5.49	0.29	0.29
Complex	GASEPV	30.00	23.13	10.99	10.99	0.58	0.58
Baron 58	BE58	15.00	11.57	5.49	5.49	0.29	0.29
CNA441	CNA441	17.00	13.11	6.23	6.23	0.33	0.33
CNA500	CNA500	23.00	17.74	8.42	8.42	0.44	0.44
Military		**4.74**	**6.31**				
T-6	U21	40.00	2.52	1.20	1.20	0.06	0.06
T-45	LR45	25.00	1.58	0.75	0.75	0.04	0.04
P-3	P3A	25.00	1.58	0.75	0.75	0.04	0.04
Helicopter	BEL206	10.00	0.63	0.30	0.30	0.02	0.02
	TOTAL	**100.00**	**133.02**	**61.04**	**61.04**	**5.47**	**5.47**
Local Operations							
General Aviation		**94.25**	**45.72**				
Single Engine	GASEPF	70.00	32.00	30.40		1.60	
Complex	GASEPV	25.00	11.43	10.86		0.57	
Beech Baron	BE58	5.00	2.29	2.17		0.11	
Military		**5.75**	**2.79**				
T-6 Texan	U21	100.00	2.79	1.33	1.33	0.07	0.07
	TOTAL	**100.00**	**48.51**	**44.76**	**1.33**	**2.36**	**0.07**

Note: An average of approximately 182 operations occur daily at the Airport, consisting of 133.02 total local and itinerant operations by commercial, GA, and military aircraft, as well as 48.51 total touch and go operations by general aviation and military aircraft.

Source: Asheville Regional Airport, Runway Reconstruction and New Parallel Taxiway Environmental Assessment, The LPA Group Aviation Consultants (August 2011)

Figure 6-6: Noise Contours



Source: Asheville Regional Airport, Runway Reconstruction and New Parallel Taxiway Environmental Assessment, The LPA Group Aviation Consultants (August 2011)

6.12 Secondary (Induced) Impacts

Secondary or induced impacts are alterations in regional growth, development patterns, population, public service demands, or economic activity that are brought about as a result of development actions at an airport. Developments proposed in this master plan are not expected to negatively impact economic activity and quality of life in both the near proximity to the Airport and throughout the region. In fact, beneficial induced impacts are anticipated throughout the region as a result of the proposed Airport development actions. Examples include short-term economic gains earned by the temporary increase in construction jobs and the long-term growth of business activity in the region that is dependent upon the movement of people, goods, and services provided by aviation. The well-being and quality of life in the region is also expected to benefit from the proposed development actions through increased air transportation services that will help to support the vitality of the surrounding community. It is not anticipated that any negative secondary or induced impacts affecting economic development or quality of life will result from development actions proposed in this master plan.

6.13 Socioeconomic Impacts, Environmental Justice, Children's Environmental Health, and Safety Risks

According to FAA Order 1050.1E, the principal social impacts of an alternative to be considered in an environmental assessment are as follows:

- The extensive relocation of residents without sufficient replacement housing;
- The relocation of businesses creating a severe economic hardship for the community;
- Any disruptions of local traffic patterns that would substantially reduce the levels of service of the roads serving the airport and its surrounding communities; and
- A substantial loss in community tax base.

Guidelines for evaluating social impacts are presented in Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Population.* The three general purposes of this executive order are to:

- Focus federal agency attention on human health and environmental conditions in minority and low-income communities with a goal of achieving environmental justice;
- Foster non-discrimination in federal programs that substantially affect human health or the environment; and
- Give minority and low-income communities greater opportunities for public participation in, and access to, public information on matters relating to human health and the environment.

The evaluation of environmental justice must determine if the proposed project would cause a "disproportionate impact" to minority and/or low- income populations.

Children's environmental health and safety risks include those that are attributable to products or substances that a child is likely to come in contact with or ingest, such as air, food, drinking water, recreational waters, soil, or to products which they may use or be exposed.

The 2011 EA utilized the EPA's EJView mapper to find detailed information about residents living adjacent to the Airport. The property to the northwest, encompassing River View Acres and Riverport Subdivisions, have low minority percentages ranging from zero to ten percent based on block level data from the 2000 U.S. Census. The Hidden Creek Village subdivision to the northeast also has a minority population between zero and ten percent, based on block level data. The percentage of those living below the poverty level in these areas was not accounted for in the 2000 U.S. Census at the block level, however, property parcel data from Buncombe County indicates that, in general, the homes to the northwest are above the median home value for the County ($102,200 based on 2000 U.S. Census data), while those in the Hidden Creek Village subdivision are below the County's median home value. This may suggest that the residential area to the northwest of the Airport is not likely to contain many people living below the poverty threshold, while the Hidden Creek Village subdivision on the northeast may have some residents living below the poverty threshold. Therefore, potential environmental justice populations may be adjacent to the Airport in the Hidden Creek Village subdivision.

Since Airport operations are within its existing property boundary, no disruption to or alteration of surface traffic patterns exist. Airport operations also do not currently disrupt established communities, impact future planned development, affect traffic patterns, or result in appreciable changes in employment. Minority and low-income populations are not currently being affected by Airport operations.

6.14 Water Quality

Along with air quality, the quality of water is one of the most sensitive areas of environmental concern with airport development projects. Protection and management of water resources at the Airport is mandated by a number of federal laws, regulations, and guidelines. Water features are under the jurisdiction of the U.S. Army Corp of Engineers (COE) and the NCDENR, Division of Water Resources (DWR).

6.14.a Groundwater

The Airport property and surrounding areas are situated above the Surficial and Fractured Bedrock Aquifers of the Blue Ridge Province in the western portion of North Carolina. An aquifer is an underground layer of porous rock or gravel that serves as a natural storage tank for water. The Surficial Aquifer is used throughout North Carolina for individual home wells, which are up to three feet in diameter and sixty feet deep. Due to its proximity to the surface and lack of a confined layer, the Surficial Aquifer is the most sensitive to pollution and contamination. The Fractured Bedrock Aquifer is widely used by home well users as well as small industrial and municipal users for water supply. Fractured bedrock aquifers are breaks or "fractures" in the bedrock that were created when the Appalachian Mountains were formed, and are capable of storing water collected from rain percolating down from the surface. Six-inch wells are

drilled to intercept these water-bearing fractures commonly found in the valleys or draws in the vicinity of the study area.

The NCDENR DWR has established a groundwater resources monitoring well network consisting of 186 water quality monitoring stations and 563 wells to assess North Carolina's water supply and ensure that residents have an adequate water supply; 23 of these wells are located in the Piedmont and Blue Ridge Provinces, while the remaining 540 are located in the Coastal Plain Provinces. No wells or stations are located in either Buncombe County or Henderson County. The closest station is located in Polk County approximately 30 miles southeast of the study area. Due to this, the groundwater quality at the Airport is unknown at this time. Information from the EPA does not identify whether sole-source aquifers are present within the study area.

6.14.b Surface Water

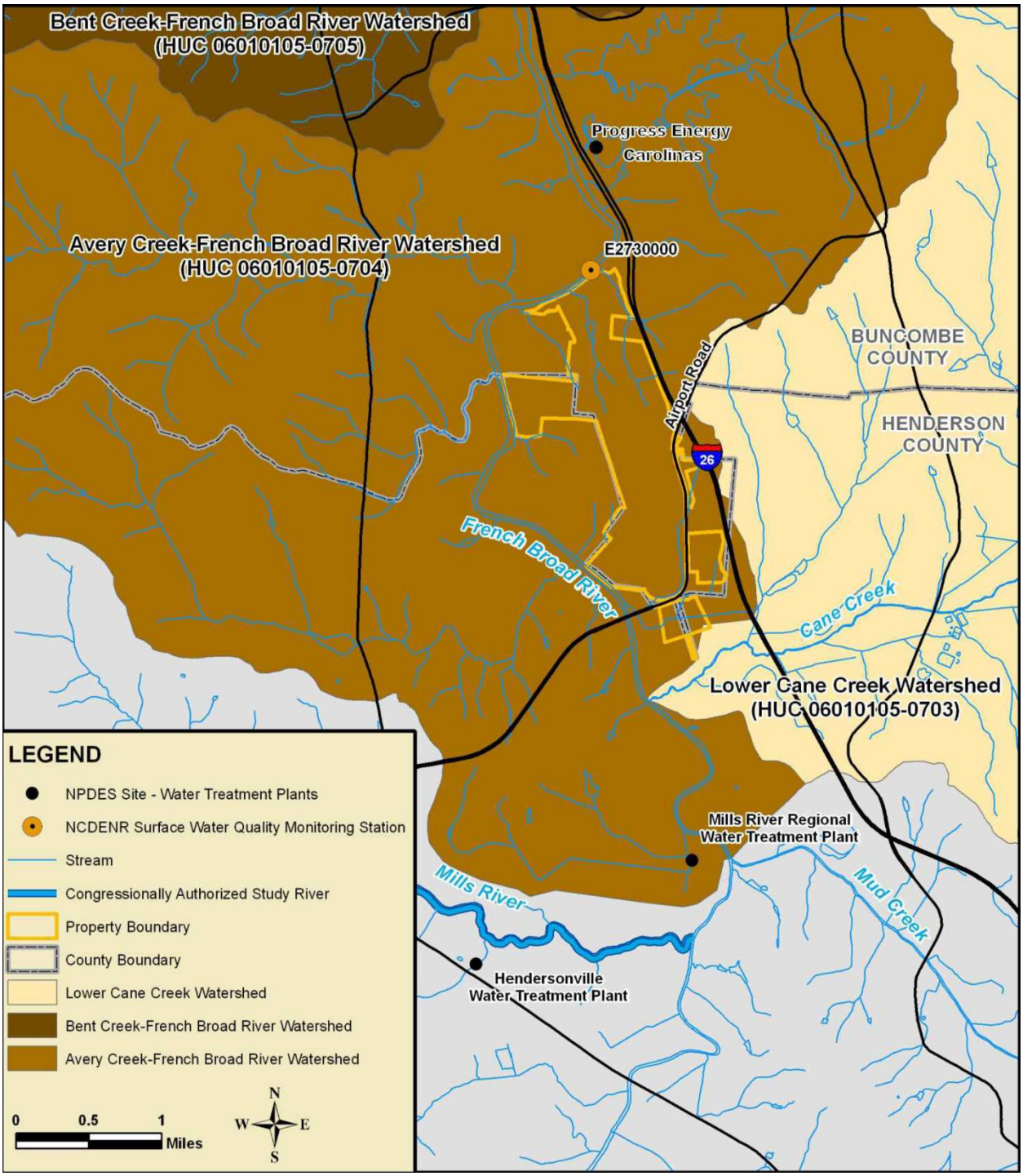
The predominant body of surface water in the vicinity of the Airport is the French Broad River, which forms a portion of the property boundary to the northwest and has several unnamed tributaries that flow through Airport property. The property boundary of the Airport is located almost entirely within the Avery Creek – French Broad River sub-watershed with only a small portion to the southeast located in the Lower Cane Creek sub-watershed. Both sub-watersheds are contained by the Cane-Creek French Broad River Watershed within the larger French Broad River Basin as illustrated in **Figure 6-7**. The Cane Creek watershed unit covers approximately 153.8 square miles of which approximately 15,610 linear feet is located on the Airport, and includes surface water comprised of various channels and wetlands.

Unnamed tributaries on the Airport hold the same stream classification as the named tributary into which they flow. The French Broad River is classified as a Class "B" water by the NCDENR DWQ which is protected for recreation, including frequent or organized swimming and other uses suitable for Class "C" waters. Discharges and sources of water pollution that preclude any of these uses on either a short-term or long-term basis shall be considered to be a violation of water quality standards.

Under the CWA, states are required to record the condition of surface waters in their respective jurisdictions through Section 305(b) and Section 303(d) documentation. Section 305(b) documentation serves to evaluate the extent to which surface waters are supporting their designated uses for categories such as drinking water supply, aquatic life, recreational use, and fish consumption. The NCDENR produces a Basinwide Assessment Report (BAR) to meet the requirement under Section 305(b), publishing an updated BAR every five years for each basin in the state. The most recent draft BAR for the French Broad River Basin was published in 2010.

The Section 303(d) documentation is a comprehensive list of water bodies that do not support their designated use classifications and are considered impaired. The NCDENR develops a priority list of water bodies pursuant to Section 303(d) of the CWA and in accordance with 40 CFR §130.7. The North Carolina Section 303(d) List, published in 2010, lists the water bodies that do not meet state water quality standards after the application of required controls for point and non-point source pollutants. It also lists priority water bodies to which the NCDENR can direct its attention when developing required controls such as Total Maximum Daily Loads (TMDLs).

Figure 6-7: Watershed Locations



Sources: Asheville Regional Airport, Runway Reconstruction and New Parallel Taxiway Environmental Assessment, The LPA Group Aviation Consultants (August 2011)
Delta Airport Consultants, Inc. updated per information received from Asheville Regional Airport (August 2012)

Watersheds that consistently fail to meet their designated uses are required to develop TMDLs per Section 303 of the CWA. A TMDL is a calculation of the total amount of pollutant a water body can accept from point and non-point sources and still meet water quality standards. Existing and future projects or facilities discharging into a watershed with a TMDL in place must coordinate with state water quality agencies to ensure compliance with the TMDL.

The French Broad River, along with two water bodies located within five stream miles of the Airport, are on North Carolina's 2010 Section 303(d) List. These include Cane Creek located approximately 2.8 stream miles upstream from the Airport and Mud Creek located approximately 2.4 stream miles upstream from the Airport. **Table 6-7** summarizes information about the Section 303(d) impaired waters within the proximity of the Airport. No TMDLs are in place for any of the impaired water bodies within five stream miles of the Airport.

Table 6-7: 2010 Section 303(d) Impaired Waters

Name	Impairment	Use Category	First Appearance on 303(d) List	TMDL
French Broad River	Fecal Coliform	Recreation	2006	No
French Broad River	Agricultural Runoff	Aquatic Life	2002	No
Mud Creek	Agricultural/Urban Runoff, Habitat Degradation	Aquatic Life	2006	No
Cane Creek	Agricultural/Urban Runoff, Habitat Degradation	Aquatic Life	2006	No

Source: NCDENR, *NC 2010 Integrated Report Categories 4 and 5 Impaired Waters* (August 31, 2010)

Both Cane Creek and Mud Creek are on the 303(d) list and are considered impaired for aquatic life as indicated by ecological/biological integrity benthos testing. Possible sources of the impairments include runoff from agricultural fields and farming operations, as well as local habitat degradation and urban runoff. Both water bodies are tributaries of the French Broad River, which is also listed as impaired from Mud Creek to North Carolina Route 146. Each water body is classified for recreational use by level of fecal coliform contamination present and classified for aquatic life use as indicated by ecological/biological integrity benthos sampling due to agricultural runoff. A NCDENR water quality monitoring station is located just north of the Airport property boundary on the impaired portion of the French Broad River. Three tributaries of Mud Creek, including Bat Fork, Devils Fork, and Clear Creek, are also on the 303(d) list; however, these are not within five stream miles of the Airport.

In 1975, the EPA granted NCDENR the authority to administer the National Pollutant Discharge Elimination System (NPDES) permit program as outlined in Section 402 of the CWA for all point source and non-point source discharges. Point source discharges are those from a discreet source such as the wastewater from a sanitary sewer treatment facility or an industrial plant. Ten NPDES-permitted sites are located within five stream miles of the Airport, including the Mills River Regional Water Treatment Plant and Hendersonville Water Treatment Plant, both of which are located upstream along the Brandy Branch. The Progress Energy Carolinas plant is also located in proximity to the Airport to the north which is downstream along the French Broad River.

Non-point source discharges are those from diverse or unknown sources such as stormwater runoff. According to the NCDENR, no non-point source NPDES-permitted facilities are found within the boundary of the Airport.

6.14.c Stormwater

Stormwater occurs during and immediately after rain events when water flows across land surfaces. The presence of impervious surfaces such as roadways, runways, parking lots, buildings, and other hard surfaces allows stormwater to flow more quickly while picking up pollutants which then can be deposited into natural waterways such as wetlands, streams, rivers, and lakes.

Stormwater is regulated by NCDENR under the NPDES as a non-point source discharge. The NCDENR also regulates stormwater under the *North Carolina Clean Water Responsibility Act* and NCDENR regulations. The City of Asheville requires that a stormwater permit be obtained when the amount of disturbed area equals or exceeds five acres, the proposed impervious area equals or exceeds 50 percent of the development property, or 5,000 square feet or more of impervious surface is being added to an existing development.

The Airport completed its Stormwater Pollution Prevention Plan (SWPPP) in January 2011 which specified actions to be taken to control and monitor stormwater. Any development action at the Airport automatically triggers a review of the SWPPP to determine if revisions need to be made. Actions likely to require revisions to the SWPPP include, but are not be limited to, those that change the location or size of the discharge outfalls, that require any changes to the location or capacity of fuel farms, or that significantly increase an impervious surface that significantly increases the volume and/or velocity of stormwater runoff. Currently, all runoff from the runway and taxiways is treated through grassed waterways adjacent to the runway and taxiways. The grassed waterways filter the runoff before it is collected through various outfalls to the French Broad River.

As part of the SWPPP, the Airport has a Spill Prevention, Control, and Countermeasures (SPCC) plan that specifies actions to be taken in the event of an accidental release of hazardous material and/or hazardous wastes. Compliance with this plan helps prevent contamination of stormwater as required by the SWPPP. The SPCC Plan is reviewed annually to determine if there are changes that would require revisions.

6.15 Wetlands

Wetlands are defined in Executive Order 11990 as areas that are inundated by surface or ground water with a frequency sufficient to support under normal circumstances a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds. Wetlands also include estuarine areas, tidal overflows, and shallow lakes and ponds with emergent vegetation. Furthermore, the wetlands ecosystem includes those areas that affect or are affected by the wetland itself, such as adjacent uplands or regions upstream and

downstream of the wetland area. Those areas that are covered with water for a short period of time (where there is no effect on moist soil vegetation) are not included within the definition of wetlands nor are the permanent waters of streams, reservations, and deep lakes.

6.15.a Identification and Classification

On-site wetland delineations were performed for the majority of the Airport property in November and December of 2009 as well as in April, November, and December of 2010 during the preparation of the 2011 EA. Wetlands around the proximity of the Airport were identified on the basis of soils, hydrology, and vegetation as set forth by the *1987 Corps of Engineers Wetlands Delineation Manual.* The jurisdictional areas identified on Airport property are depicted in **Figure 6-4.** These areas were determined by the COE in a Jurisdictional Determination (JD) issued on February 9, 2011.

Wetlands identified on site include areas within the presence of three criteria as outlined in the *Corps of Engineers Wetlands Delineation Manual*: the presence of hydric soil, hydrophytic vegetation, and evidence of wetland hydrology and connectivity. Forested, shrub scrub (dominated by woody vegetation less than 20 feet in height), and herbaceous wetlands also exist within wetlands found on the Airport. Approximately 5.2 acres of wetlands were delineated on Airport property. This acreage is in addition to the two National Wetland Inventory (NWI) wetland areas (totaling 13.8 acres) that were identified on the southwestern portion of Airport property that was not delineated as illustrated in **Figure 6-4**.

6.15.b Jurisdictional Streams

Channel determinations are based primarily on the definition of "waters of the US" found in 33 CFR 328. The jurisdictional extent is considered the upper limits of the ordinary high water mark (OHWM) as identified in the field. The COE District Office has provided additional regional guidance for jurisdictional designations on drainage features. Only those channels with adequate groundwater discharge to maintain intermittent or perennial flow are found to be jurisdictional.

Drainage features that exhibited an OHWM during the field investigations are considered to be U.S. jurisdictional waters and are included in **Figure 6-4**. Streams within or adjacent to the Airport include the French Broad River and unnamed intermittent and perennial tributaries. There are approximately 16,766 linear feet of streams on airport property, all of which originate in close proximity to the toe-of-slope of existing development that are impacted by sediment flow.

6.16 Summary

An environmental inventory of Airport property was conducted in accordance with FAA Order 1050.1E, *Airport Environmental Handbook*, to document the Airport's existing environmental conditions. Existing conditions were based upon information contained in the 2011 Runway Reconstruction and New Parallel Taxiway EA. The EA documented both existing conditions and impacts to each category based upon the proposed development and a Finding of No Significant Impact was received, dated August 19, 2011 (see Appendix B).

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